DOE/EA-1721

FINAL ENVIRONMENTAL ASSESSMENT

For
Johnson Controls, Inc. and ENTEK

Electric Drive Vehicle Battery and Component Manufacturing Initiative Application

Holland, Michigan, Lebanon, Oregon, and Milwaukee, Wisconsin

March 2010

U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

a.m.	*ante meridiem* (i.e. before noon)
AQCR	Air Quality Control Region
ATF	Abuse Tolerance Facility
BMPs	Best Management Practices
BTC	Battery Technology Center
BTF	Battery Test Facility
BTU	British Thermal Units
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
DNL	Day-night Average Sound Level
DOE	U.S. Department of Energy
e.g.	*Exempli gratia,* for example
EA	Environmental Assessment
EDV	Electric Drive Vehicles
EERE	Energy Efficiency and Renewable Energy
EIS	Environmental Impact Statement
ENTEK	ENTEK International, LLC
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
et seq.	*et sequens,* and the following one or ones
etc.	*et cetera,* and so on
FONSI	Finding of No Significant Impact
ft	Feet
ft^2	Square Feet
FTE	full-time equivalent
GCP	General Construction Permit
gpd	Gallons per Day
Hz	Hertz
I	Interstate
i.e.	*id est,* that is
JCI	Johnson Controls, Inc., or Johnson Controls
kl	Kiloliters
km	Kilometer
lbs	Pounds
LEED	Leadership in Energy and Environmental Design

L_{eq}	Equivalent Sound Level
Li-Ion	Lithium Ion
LQG	Large Quantity Generator
m	Meters
m^2	Square Meters
MACT	Maximum Available Control Technology
MAX	Macatawa Area Express
MDEQ	Michigan Department of Environmental Quality
MI	Michigan
MMBTU	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NETL	National Energy Technology Laboratory
NHPA	National Historic Preservation Act
NMP	n-methyl pyrrolidone
NNSR	Nonattainment New Source Review
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
NWI	National Wetland Inventory
O_3	Ozone
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
OR	Oregon
OSHA	Occupational Safety and Health Administration
P.L.	Public Law
p.m.	*post meridiem* (i.e. after noon)
Pb	Lead
PM_{10}	Particulate Matter of 10 Micrometers or Less in Aerodynamic Diameter
$PM_{2.5}$	Particulate Matter Less than 2.5 Micrometers in Aerodynamic Diameter
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RCRA	Resource Conservation and Recovery Act
Recovery Act	American Recovery and Reinvestment Act of 2009, Public Law 111-5
SHPO	State Historic Preservation Office or Officer
SIPs	State Implementation Plans
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SQG	Small Quantity Generator
TCE	Trichloroethylene
tpy	Tons per Year
TSP	Total Suspended Particles

USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds
VT	Vehicle Technologies
WDNR	Wisconsin Department of Natural Resources
WI	Wisconsin

1.0 INTRODUCTION

1.1 Background

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy (EERE). A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles (EDVs).

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. DOE solicited applications for this funding by issuing a competitive Funding Opportunity Announcement (DE-FOA-0000026), *Recovery Act - Electric Drive Vehicle Battery and Component Manufacturing Initiative,* on March 19, 2009. The announcement invited applications in seven areas of interest:

- Area of Interest 1 – projects that would build or increase production capacity and validate production capability of advanced automotive battery manufacturing plants in the United States.
- Area of Interest 2 – projects that would build or increase production capacity and validate production capability of anode and cathode active materials, components (e.g. separator, packaging material, electrolytes, and salts), and processing equipment in domestic manufacturing plants.
- Area of Interest 3 – projects that combine aspects of Area of Interest 1 and 2.
- Area of Interest 4 – projects that would build or increase production capacity and validate capability of domestic recycling or refurbishment plants for lithium ion batteries.
- Area of Interest 5 – projects that would build or increase production capacity and validate production capability of advanced automotive electric drive components in domestic manufacturing plants.
- Area of Interest 6 – projects that would build or increase production capacity and validate production capability of electric drive subcomponent suppliers in domestic manufacturing plants.
- Area of Interest 7 – projects that combine aspects of Area of Interest 5 and 6.

The application period closed on May 19, 2009, and DOE received 119 proposals across the seven areas of interest. DOE selected 30 projects based on the evaluation criteria set forth in the funding opportunity announcement; special consideration was given to projects that promoted the objectives of the Recovery Act – job preservation or creation and economic recovery – in an expeditious manner.

This project, Lithium Ion (Li-Ion) Battery Manufacturing Project, was one of the 30 DOE selected for funding. DOE's Proposed Action is to provide $299,200,000 in financial assistance

in a cost sharing arrangement with the project proponent, Johnson Controls, Inc. (Johnson Controls or JCI) and ENTEK International, LLC (ENTEK). The total cost of the project is estimated at $599,449,514.

1.2 Purpose and Need for DOE Action

The overall purpose and need for DOE action pursuant to the VT program and the funding opportunity under the Recovery Act is to accelerate the development and production of various electric drive vehicle systems by building or increasing domestic manufacturing capacity for advanced automotive batteries, their components, recycling facilities, and EDV components, in addition to stimulating the United States' economy. This work will enable market introduction of various electric vehicle technologies by lowering the cost of battery packs, batteries, and electric propulsion systems for EDVs through high-volume manufacturing. DOE intends to further this purpose and satisfy this need by providing financial assistance under cost-sharing arrangements to this and the other 29 projects selected under this funding opportunity announcement.

This and the other selected projects are needed to reduce the United States' petroleum consumption by investing in alternative vehicle technologies. Successful commercialization of EDVs would support DOE's Energy Strategic Goal of "protect[ing] our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy." This project will also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the Recovery Act.

1.3 Legal Framework

DOE has prepared this EA in accordance with the Council on Environmental Quality (CEQ) "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act," codified in Title 40 of the *Code of Federal Regulations* in Parts 1500 through 1508 (40 CFR 1500-1508). These implement the procedural requirements of the National Environmental Policy Act (NEPA), found in Title 40 of the *United States Code* in Section 4321 and following sections (42 USC § 4321 *et seq*.).

NEPA *requires* Federal agencies to consider the potential environmental consequences of a Proposed Action in their decision-making processes. NEPA *encourages* Federal agencies to protect, restore, or enhance the environment through well-informed Federal decisions. The CEQ NEPA regulations specify an EA:

- Provide sufficient analysis and evidence for determining whether or not to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when no EIS is deemed necessary.
- Facilitate EIS preparation when one is necessary.

Further, the CEQ NEPA regulations encourage agencies to integrate NEPA requirements with other environmental review and consultation requirements. Relevant environmental requirements are contained in other Federal statutes, such as the Clean Air Act and the Clean

Water Act, and their state counterparts. The following Federal and state statutes and regulations are relevant to this EA. Federal and state permits that may be required are outlined herein, but may not be exhaustive.

American Recovery and Reinvestment Act

The American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) is an act making supplemental appropriations for job preservation and creation, infrastructure investment, energy efficiency and science, assistance to the unemployed, and State and local fiscal stabilization. It is funding through this act that DOE could utilize to support the Proposed Action.

Clean Air Act

The Clean Air Act (CAA), 42 USC § 7401 *et seq.*, establishes the National Ambient Air Quality Standards (NAAQS) developed by the U.S. Environmental Protection Agency (USEPA) for the pervasive pollutants: sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), and particulate matter (both particulate matter of 10 micrometers or less in aerodynamic diameter (PM_{10}) and particulate matter less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$)). The NAAQS are expressed as concentrations of the criteria pollutants in the ambient air, the outdoor air to which the general public is exposed. The CAA also contains emission control permit programs to protect the nation's air quality and establishes New Source Performance Standards that establish design standards, equipment standards, work practices, and operational standards for new or modified sources of air emissions. Where the NAAQS emphasize air quality in general, the New Source Performance Standards focus on particular industrial categories or sub-categories (e.g., fossil fuel fired generators, grain elevators, and steam generating units). Regulations implementing the CAA are found in 40 CFR Parts 50-95.

Clean Water Act

The Clean Water Act (CWA), 33 USC § 1251 *et seq.*, establishes a comprehensive framework of standards, technical tools, and financial assistance to address "point source" pollution from municipal and industrial wastewater discharges and "nonpoint source" pollution from urban and rural areas. Applicants for federal licenses or permits to conduct any activity that may result in a discharge to navigable waters must provide the Federal agency with a state CWA Section 401 certification that the discharge would comply with applicable provisions of the CWA. CWA Section 404 establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), which requires point sources of pollutants to obtain permits to discharge effluent to surface waters. Regulations for implementing relevant CWA programs are found in 33 CFR Parts 320-331 and 40 CFR Parts 400-503

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 *et seq.*, regulates the treatment, storage, and disposal of solid and hazardous wastes. RCRA sets "cradle to grave" standards for both solid waste and hazardous waste management. Certain wastes are specifically excluded from RCRA because they are regulated under other statutes. Some examples are domestic sewage and septic tank waste; agricultural wastes; industrial discharges; some nuclear wastes; and mining overburden. RCRA regulations include 40 CFR Parts 239-282.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC § 9601 *et seq*., also known as "Superfund," established a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA also established requirements for closed and abandoned hazardous waste sites, provided for the liability of persons responsible for the release of hazardous substances, and established a trust fund to pay for orphan facility cleanup and closure. Regulations for implementing CERCLA include 40 CFR Parts 300-312.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA), 42 USC § 1001 *et seq.*, requires Federal agencies to provide information on hazardous and toxic chemicals to state emergency response commissions, local emergency planning committees, and USEPA. EPCRA's goal is to provide this information to ensure that local emergency plans are sufficient to respond to unplanned releases of hazardous substances. Regulations implementing EPCRA include 40 CFR Parts 350-374.

National Historic Preservation Act

The National Historic Preservation Act (NHPA), 16 USC § 470 *et seq.*, requires DOE to consult with the State Historic Preservation Officer (SHPO) prior to any construction to ensure that no historical properties would be adversely affected by a proposed project. DOE must also afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed project. Regulations for implementing NHPA include 36 CFR 800-812.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act, 16 USC § 470aa *et seq.*, requires a permit for excavation or removal of archaeological resources from publicly held or Native American lands. The Act requires that excavations further archaeological knowledge in the public interest and that the resources removed remain the property of the United States. Regulations for implementing the Act include 43 CFR 7 and 36 CFR 296.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act, 42 USC § 1996, establishes policy to protect and preserve the inherent and Constitutional right of Native Americans to believe, express, and exercise their traditional religions. The law ensures the protection of sacred locations; access of Native Americans to those sacred locations and traditional resources that are integral to the practice of their religions; and establishes requirements that would apply to Native American sacred locations, traditional resources, or traditional religious practices potentially affected by construction and operation of proposed facilities. Regulations for implementing the Act include 43 CFR 7.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act, 25 USC § 3001, directs the Secretary of the Interior to guide the repatriation of federal archaeological collections and collections that are culturally affiliated with Native American tribes and held by museums that receive federal funding. DOE would follow the provisions of this Act if any excavations associated with the proposed construction led to unexpected discoveries of Native American graves or grave artifacts. Regulations for implementing the Act include 43 CFR 10.

Endangered Species Act

The Endangered Species Act (ESA), 16 USC 1531 *et seq.*, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants, as well as the preservation of the ecosystems on which they depend. ESA Section 7 requires any federal agency authorizing, funding, or carrying out any action to ensure that the action is not likely to jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of critical habitat of such species. Regulations implementing the ESA interagency consultation process include 50 CFR Part 402.

Fish and Wildlife Conservation Act/Fish and Wildlife Coordination Act

The Fish and Wildlife Conservation Act, 16 USC § 2901 *et seq.*, encourages Federal agencies to conserve and promote conservation of non-game fish and wildlife species and their habitats. In addition, the Fish and Wildlife Coordination Act, 16 USC § 661 *et seq.*, requires Federal agencies undertaking projects affecting water resources to consult with the United States Fish and Wildlife Service (USFWS) and the state agency responsible for fish and wildlife resources. Compliance with these statutes is internal to DOE NEPA process.

Noise Control Act

The Noise Control Act of 1972, 42 USC § 4901 *et seq.*, directs federal agencies to carry out programs in their jurisdictions to the fullest extent within their authority and in a manner that furthers a national policy of promoting an environment free from noise that jeopardizes health and welfare. This would involve complying with applicable municipal noise ordinances to the maximum extent practicable.

Occupational Safety and Health Act

The Occupational Safety and Health Act, 29 USC § 651 *et seq.*, requires employers to furnish employees a place of employment that is free from recognized hazards that are causing or are likely to cause death or serious physical harm to the employees, and to comply with occupational safety and health standards promulgated by the Occupational Safety and Health Administration (OSHA). OSHA standards include 29 CFR Parts 1900-2400.

Pollution Prevention Act

The Pollution Prevention Act, 42 USC § 13101 *et seq.*, establishes a national policy for waste management and pollution control that focuses first on source reduction, and then on environmentally safe waste recycling, treatment, and disposal. Three executive orders provide guidance to agencies to implement the Pollution Prevention Act: Executive Order 12873, "Federal Acquisition, Recycling, and Waste Prevention", Executive Order 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition," and Executive Order 13148, "Greening the Government through Leadership in Environmental Management."

Proposed Hazardous Materials: Transportation of Lithium Batteries

The Pipeline and Hazardous Materials Safety Administration published a notice of proposed rulemaking on January 11, 2010, for the transportation of lithium batteries (Federal Register Document 2010–281). The proposed rule would include enhanced safety when transporting these materials as fires with lithium batteries are difficult to extinguish.

Executive Orders

A number of presidential executive orders in addition to those noted above provide additional guidance to Federal agencies in developing EAs, including this EA. The most relevant of them include:

- Executive Order 11514, "Protection and Enhancement of Environmental Quality"
- Executive Order 11988, "Floodplain Management"
- Executive Order 12856, "Right to Know Laws and Pollution Prevention Requirements" Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"
- Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management"
- Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance"

Federal executive orders can be accessed at: http://www.archives.gov/federal-register/codification/.

Federal and State Permitting

The following are potentially applicable federal permitting requirements to construct and operate the proposed facilities.

- Clean Water Act, Section 401 Certification, Section 402 NPDES Permit, Section 404 Wetlands Permit, and Pretreatment Authorization for Discharge of Wastewater to Municipal Collection System, 40 CFR Parts 104-140, 403
- Clean Air Act, 40 CFR Parts 50-96
- Federal Construction General Permit, Stormwater Discharge
- Hazardous Waste Permit, Title 40 Part 270
- Major Source Construction Permits, Title V Part 71

The following are potentially applicable state permitting requirements to construct and operate the proposed facilities.

Michigan:

- National Pollution Discharge Elimination System MDEQ 5.2.1
- Wetland Permits, Natural Resource and Environmental Protection Act 1994, PA 451
- General Permit for Air Pollution Control MDEQ, R. 336.120a (Rule 201a)
- Permit to Install or New Source Review (NSR), R. 336.1201a
- Change of Status from conditionally exempt small quantity generator (CESQG) to large quantity generator (LQG), 40 CFR Part 261, Part 111

Wisconsin:

- General Construction Permit (GCP) 28 Chapter NR 406.03
- Wisconsin Pollutant Discharge System Permit, Chapter NR 216.27

Oregon:

- General Air Contaminant Discharge Permit, OAR 340-216-0050(5)
- Oregon Title V (Air) Operating Permit
- National Pollution Discharge Elimination System, Construction Stormwater Permit, 1200-C

2.0 PROPOSED DOE ACTION AND ALTERNATIVES

DOE's Proposed Action for the Vehicle Technologies Program is to accelerate the development and production of electric-drive vehicle systems in order to reduce the United States' consumption of petroleum by providing Johnson Controls with $299.2 million in financial assistance in a cost-sharing arrangement in order to facilitate construction and operation of an advanced lithium ion (Li-ion) battery manufacturing facility.

2.1 Johnson Controls'/ENTEK's Proposed Project

The objective of Johnson Controls' proposed project is to establish a world-class, domestic, advanced battery manufacturing industry. If DOE funds the project, Johnson Controls would develop facilities in Michigan (MI), Wisconsin (WI), and Oregon (OR) for the manufacturing of Li-ion cells and the assembly of batteries. Johnson Controls would expand its existing Li-ion prototype development, manufacturing and testing capabilities for component qualification. Further, Johnson Controls would validate and produce battery systems in support of their customers' programs, including domestic supplier qualifications. Finally, Johnson Controls would partner with ENTEK to expand production capacity to manufacture separators for electric drive vehicle applications.

2.1.1 Holland, Michigan

At the Holland facility, the proposal is to outfit and bring into production a state-of-the art cell manufacturing and pack assembly facility in Michigan (Figure 2.1.1-1). At the Holland facility, an existing 130,000 square foot (ft^2) (approximately 12,000 square meters (m^2)) building located in an industrial park would be supplemented with an 18,000 ft^2 (1,700 m^2) addition and two outbuildings for material storage [4,500 ft^2 (approximately 420 m^2) and 6,500 ft^2 (approximately 600 m^2)] (Figure 2.1.1-2). The existing building is in good condition and would be renovated for Leadership in Energy and Environmental Design (LEED) certification, some concrete work for equipment, and interior building renovations for dry/clean rooms. The office area would also be updated. This would produce approximately 292 full-time equivalent (FTE) construction jobs over approximately 31 months of construction.

This project would involve new technology and equipment. The technology involves applying mixed metal oxides and graphitic slurries onto metal foils. The foils are dried, calendered, and slit to final width. These finished electrodes are wound with an intermediate separator and inserted into a metal can to form the cell. The equipment that would be installed at the site includes the machines necessary to mix materials and coat foils, press the material and wind the foils, the equipment necessary to assemble and seal the battery canister, and testing equipment. Proper maintenance schedules would be established and adhered to as part of the company's best management practices (BMPs). The operation of the facility would produce approximately 266 FTE positions.

A full decommissioning of Li-Ion Battery Manufacturing Project components is not anticipated to occur after cessation of the proposed project/funding. The site is part of an existing manufacturing facility. Johnson Controls may continue to use the facility and equipment after the Electric Drive Vehicle Battery and Component Manufacturing Initiative funding stops.

When decommissioning of the building or equipment would occur, the activities would occur in compliance with all applicable regulations.

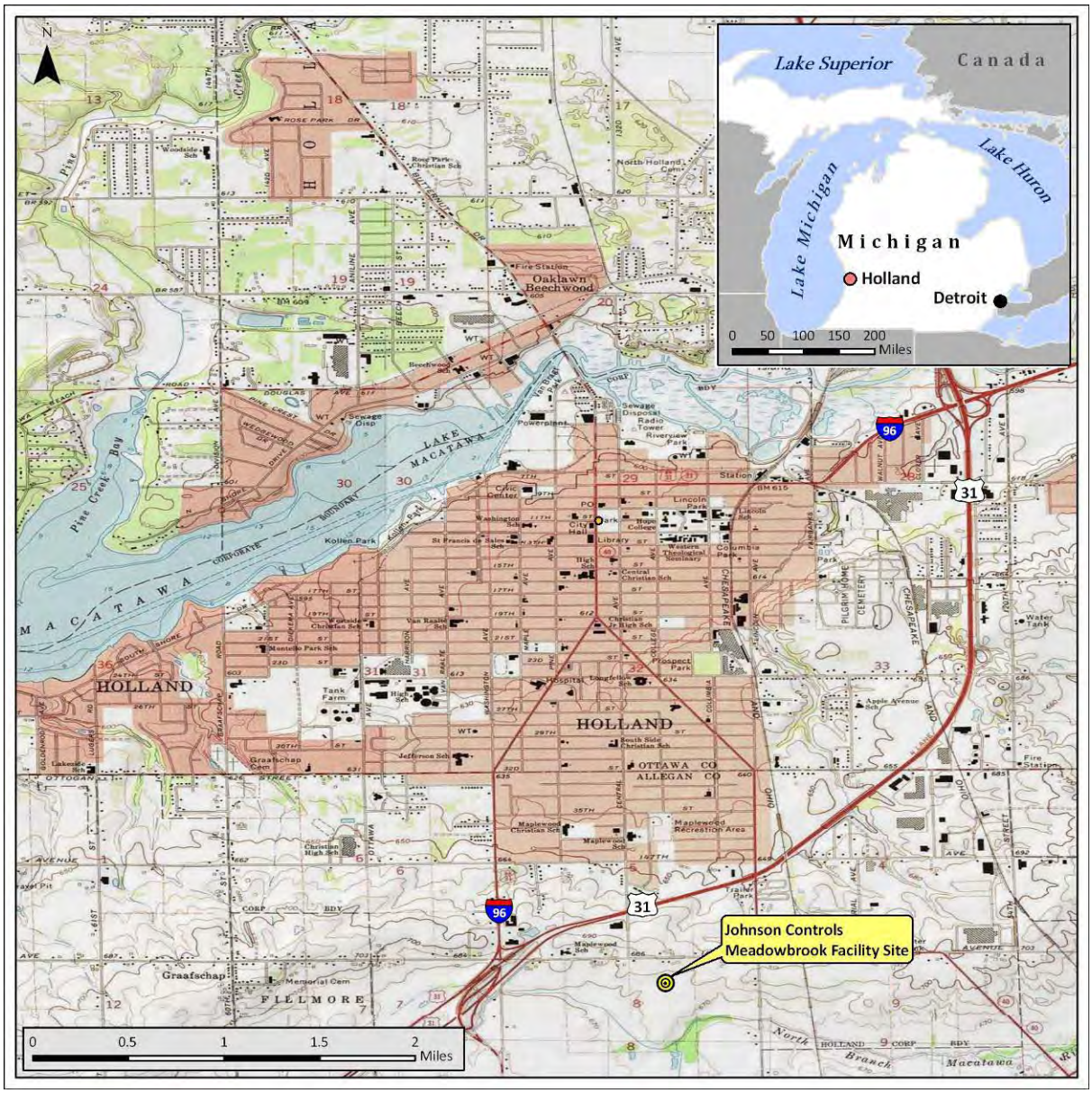


Figure 2.1.1-1. Holland Vicinity Map

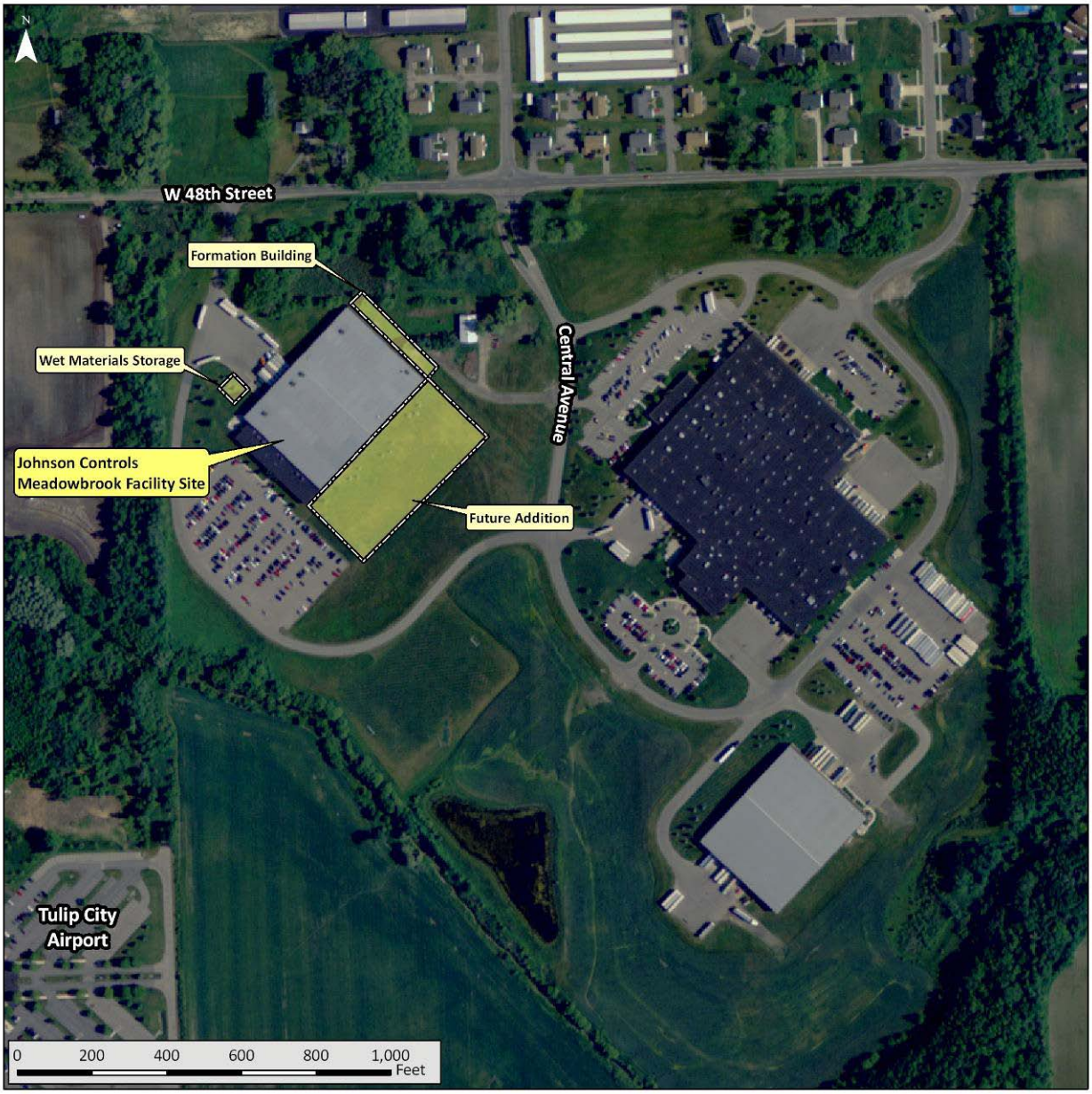


Figure 2.1.1-2. Holland Project Area Map

2.1.2 Milwaukee, Wisconsin

At the Milwaukee facility (Figure 2.1.2-1), the intent is to support the production of cell manufacturing and pack assembly facilities in Michigan by providing laboratories and necessary analytical equipment to support the implementation of advanced lithium ion research and development at the Michigan sites. The testing facility was created from a Greenfield in 2007 and this project would be an addition to that. At this Milwaukee site, an approximately 3,000 ft^2 (300 m^2) extension would be constructed (Figure 2.1.2-2). This would create 75 FTE construction jobs over the 30 months of construction. The road was renovated in 2007 and would not be reworked for this project.

This project would also involve new technology and equipment. The technology involves applying mixed metal oxides and graphitic slurries onto metal foils. The foils are dried, calendered, and slit to final width. These finished electrodes are wound with an intermediate separator and inserted into a metal can to form the cell. The equipment that would be installed at the site includes the machines necessary to mix materials and coat foils, press the material and wind the foils, the equipment necessary to assemble and seal the battery canister, and testing equipment. Proper maintenance schedules would be established and adhered to as part of the company's BMPs. The proposed project would generate approximately148 FTE operational positions.

It is not anticipated that a full decommissioning of Li-Ion Battery Manufacturing Project components would occur after cessation of the proposed project/funding. The site is part of an existing manufacturing facility. Johnson Controls may continue to use the facility and equipment after the Electric Drive Vehicle Battery and Component Manufacturing Initiative funding stops. When decommissioning of the building or equipment would occur, the activities would occur in compliance with all applicable regulations.

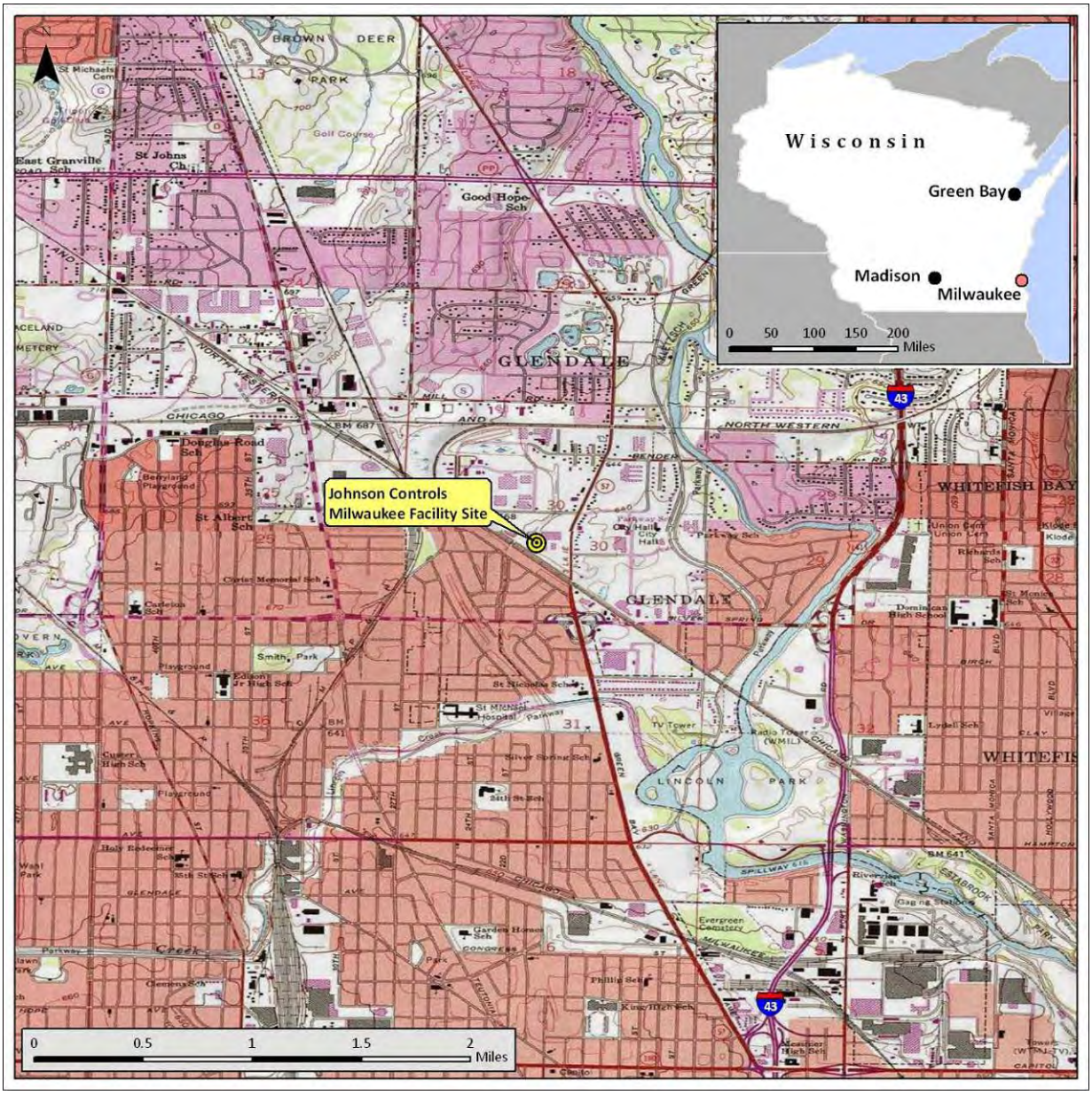


Figure 2.1.2-1. Milwaukee Vicinity Map

Figure 2.1.2-2. Milwaukee Project Area Map

2.1.3 Lebanon, Oregon

At the ENTEK site in Lebanon (Figure 2.1.3-1), the capacity and capability to produce both unfilled and highly filled separators on the existing production line would be expanded. The building is approximately 4 years old. No roads or access would be expanded at this site. This may or may not require expansion of the footprint of the existing building where production would take place. If an expansion were necessary, the design engineering team would verify space requirements for equipment and initial layout first. The expansion under review could double the current footprint, an expansion of 15,000 to 20,000 ft^2 (1,400 to 1,900 m^2). Figure 2.1.3-2 only indicates the possible 15,000-ft^2 expansion. The construction jobs have not been determined, as a number of variables, including the size of the facility, are not available.

This project would involve new technology and equipment. In general, the manufacturing process begins with the mixing of powdered forms of polyethylene, oil, and other minor ingredients. The mixture is extruded at elevated temperatures into a sheet. The oil is extracted using trichloroethylene (TCE) bath. The sheet is then dried to remove residual TCE, slit, and wound onto spools for QC testing and then shipment. The thickness, width, etc., of the product sheet are determined by customer specifications. Raw materials are delivered as follows: polyethylene and minor ingredients are delivered via truck. Oil and TCE are delivered in bulk via tanker truck. The end products are shipped to the customer via truck. Proper maintenance schedules would be established and adhered to as part of the company's BMPs. If all the proposed components were built, a total of 26 FTE operational positions would be expected.

Full decommissioning of Li-Ion Battery Manufacturing Project components would not be anticipated to occur after cessation of the proposed project/funding. The site is part of an existing manufacturing facility. ENTEK may continue to use the facility and equipment after the Electric Drive Vehicle Battery and Component Manufacturing Initiative funding stops. When decommissioning of the building or equipment would occur, the activities would occur in compliance with all applicable regulations.

Figure 2.1.3-1. Lebanon Vicinity Map

Figure 2.1.3-2. Lebanon Project Area Map

2.2 Alternatives

DOE's alternatives to this project consist of the 45 technically acceptable applications received in response to the Funding Opportunity Announcement, *Recovery Act - Electric Drive Vehicle Battery and Component Manufacturing Initiative.* Prior to selection, DOE made preliminary determinations regarding the level of review required by the National Environmental Policy Act (NEPA) based on potentially significant impacts identified in reviews of acceptable applications. DOE conducted these preliminary environmental reviews pursuant to 10 CFR 1021.216, although a variance to certain requirements in that regulation was granted by the Department's General Counsel (74 Federal Register 30558, June 26, 2009). These preliminary NEPA determinations and reviews were provided to the selecting official, who considered them during the selection process.

Because DOE's Proposed Action is limited to providing financial assistance in cost-sharing arrangements to projects submitted by applicants in response to a competitive funding opportunity, DOE's decision is limited to either accepting or rejecting the project as proposed by the proponent, including its proposed technology and selected sites. DOE's consideration of reasonable alternatives is therefore limited to the technically acceptable applications and a No-Action Alternative for each selected project.

2.3 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funds to the proposed projects. As a result, these projects would be delayed as they look for other funding sources to meet their needs, or abandoned if other funding sources are not obtained. Furthermore, acceleration of the development and production of various electric drive vehicle systems would not occur or would be delayed. DOE's ability to achieve its objectives under the VT program and the Recovery Act would be impaired.

Although this and other selected projects might proceed if DOE decided not to provide financial assistance, DOE assumes for purposes of this environmental analysis that the project would not proceed without DOE assistance. If projects did proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative (i.e., providing assistance that allows the project to proceed). In order to allow a comparison between the potential impacts of a project as implemented and the impacts of not proceeding with a project, DOE assumes that if it were to decide to withhold assistance from a project, it would not proceed.

2.4 Comparison of Impacts

Table 2.4 below comparing impacts of Johnson Controls'/ENTEK's Proposed Project and the No-Action Alternative is based on that premise.

Table 2.4. Comparison of Impacts		
Resource	**No-Action Alternative**	**Johnson Controls'/ENTEK's Proposed Project**
Air Quality	No impact	Short-term and long-term, minor, and adverse effects on air quality would be expected from air emissions during construction and from new stationary sources of air emissions at the proposed facilities. Increases in emissions would not exceed applicability thresholds, be regionally significant, or contribute to a violation of any federal, state, or local air regulation.
Geology and Soils	No impact	Proposed construction is limited to surface and near-surface activity that would have no potential to affect minerals and deeper geological strata. Changes in geological or soil stability, permeability, or productivity would be limited in extent. Full recovery* would occur in a reasonable time, as provided for in permit conditions for the project.
Water Resources	No impact	Slight changes to surface water quality or hydrology would be confined to the immediate project area. Full recovery would occur in a reasonable time, as provided for in NPDES permit conditions for the project.
Wetlands	No impact	With proper implementation of preventative measures and wetlands not existing within the proposed project footprint, impacts would be less than significant due to minimal risk of impacts on wetlands.
Terrestrial Vegetation	No impact	Due to existing site conditions at the proposed sites and with BMPs in place, the overall impacts on native vegetation would not be expected to exceed the significance threshold.
Wildlife	No impact	Overall impacts on wildlife at all proposed locations would not be expected to exceed the significance threshold due to existing conditions and BMPs implemented.
Threatened and Endangered Species	No impact	Unless a discovery of previously unknown threatened and endanger species occurs or USFWS consultation finds otherwise, impacts from implementing this alternative would be expected to be less than the significance threshold due to absence of these species or their habitats.
Socioeconomic Resources	Potential loss of new income source but no change	Temporary construction jobs and the ongoing operations jobs would be filled from local or nearby communities, which would be beneficial but less than the significance threshold.

Table 2.4. Comparison of Impacts		
Resource	**No-Action Alternative**	**Johnson Controls'/ENTEK's Proposed Project**
Environmental Justice	Potential loss of new income source but no change	No disproportionate adverse environmental, social, or economic consequences to the African-American community that surrounds the site in Milwaukee, or the Hispanic community in Holland.
Infrastructure	No impact	Short-term, minor, and adverse as well as long-term, moderate, and adverse effects on transportation infrastructure and utilities would be expected from implementing Johnson Controls'/ENTEK's Proposed Project from utility upgrades and services to support the proposed facilities and construction and operation activities.
Noise	No impact	Short-term, minor, and adverse effects on the noise environment would be expected from implementing Johnson Controls'/ENTEK's Proposed Project. Noise levels in the project area would not exceed ambient noise level standards as determined by the Federal, state, and/or local government.
Human Health and Safety	No impact	With proper safety procedures in place, the impact to human health and safety should be minimal and would not be expected to exceed the significance threshold.
Waste Management	No impact	With proper BMPs in place, overall impacts to waste management from implementing this alternative would be expected to be less than the significance threshold.

* Recovery in a reasonable time: Constant, sustainable improvement is apparent and measurable when the site is routinely observed, and full recovery is achieved over a period of no more than several years.

2.5 Issues Considered But Dismissed from Further Analysis

The Purpose and Need section above highlighted the importance of the overall program of evaluating EDV as one tool among many to address VT and Recovery Act objectives while providing this nation with a secure energy future and job stability. Many potential impact issues associated with EAs were reviewed to compile this EA for DOE. Because of the lack of potential impact to certain resources due to the specific characteristics of Johnson Controls'/ENTEK's Proposed Project, the following issues were considered but dismissed from detailed analysis:

Groundwater

Information relevant to groundwater issues includes the local groundwater aquifer systems, including the sand and gravel; and deeper bedrock systems, including the water table depth and hydraulic conditions. Any existing groundwater pumping by other facilities around the project

sites should be considered with cumulative impacts if any dewatering activity is planned during the duration of construction. For example, it is likely that local groundwater movement in the proposed Wisconsin project area is towards the Milwaukee River to the east (WDNR, 2010). Contamination from on-site spills at that site could, therefore, be carried to that river unless prevented and remediated.

Water supply for both construction and operation of the Johnson Controls'/ENTEK's Proposed Project would be from a public source. Construction would be limited to near-surface activity with no need for dewatering of the area during construction. Best management practices would be in place to control and contain spills, and immediate actions would be initiated to remove any contaminated soil that might result from spill events that could migrate to groundwater resources. Further, the projects would comply with all applicable regulations and permits as well as additional best management practices to ensure no impacts to groundwater. With these practices in place, impacts to groundwater would not be expected; therefore, impacts to groundwater were dismissed from further analysis.

Floodplains

No floodplains exist at or near any of the proposed project locations (EDR 2009a, 2009b, 2009c). Therefore, impacts to floodplains were dismissed from further analysis.

Wetlands (Milwaukee, Wisconsin and Lebanon, Oregon)

No wetlands are indicated on the National Wetland Inventory (NWI) at either the Lebanon, Oregon or the Milwaukee, Wisconsin site (EDR, 2009a; EDR, 2009b). Thus, no impacts to wetlands are expected at the Lebanon or Milwaukee sites due to the absence of wetlands near the sites according to the NWI. Impacts to wetlands were dismissed from further analysis for these two sites (Milwaukee and Lebanon) only.

Land Use

Under the No-Action Alternative, the sites at Holland, Michigan; Milwaukee, Wisconsin; and Lebanon, Oregon would continue current uses and ownership. This would result in no impacts to land use. Under Johnson Controls'/ENTEK's Proposed Project at the Milwaukee site, there would be an approximately 3,000 ft^2 (300 m^2) extension. At the Lebanon site, implementation of Johnson Controls'/ENTEK's Proposed Project would entail a 15,000 to 20,000 ft^2 (1,400 to 1,900 m^2) expansion of an existing facility. At the Holland facility, an existing 130,000 ft^2 (approximately 12,000 m^2) building would be supplemented with an 18,000 ft^2 (1,700 m^2) addition including two outbuildings for material storage [4,500 ft^2 (approximately 420 m^2) and 6,500 ft^2 (approximately 600 m^2)]. The proposed constructions would be compatible with current land use at the respective facilities as they are expansions of current activities on lands already owned by the proponents. Further, the proposed project would be implemented to ensure avoidance or mitigation of any land use issues at that site. Moreover, the nearest park for Holland site is Maplewood Recreation Area, which is 0.65 miles (about one kilometer (km)) to the north; for Lebanon, Had Irvine Park is 0.75 miles (1.2 km) to the east; and for the Milwaukee site, Kletsch Park is 0.50 miles (0.8 km) to the east. Thus, the proposed project is unlikely to

impact parks and recreation. The closest Class I Area for the Holland site is Seney Wilderness, which is 230 miles (370 km) to the north; for the Lebanon site, Three Sisters Wilderness is 50 miles (80 km) to the east; and for the Milwaukee site Seney Wilderness is 235 miles (380 km) to the north.

The proposed project would not interfere with surrounding land uses due to the presence of similar activities already occurring on the sites. Additionally, the project does not require any zoning changes. Moreover, there are no prime farmlands at the site. Therefore, because projected impacts to land use would be negligible, if any, this topic was dismissed from further analysis.

Environmental Justice (Lebanon, Oregon)

The population of Lebanon is 92% White non-Hispanic, and 15.7% of residents live below the Federal poverty level, compared to 11.6% of Oregon residents and 12.7% of U.S. residents overall. The very low percentage of "minority" residents (defined as Black or African-American, Hispanic or Latino, Asian, American Indian, Native Hawaiian or other Pacific Islander) and the relative statistical equality of poverty levels between Lebanon and the U.S. suggest there would be no disproportionate impacts on minority communities from implementing Johnson Controls'/ENTEK's Proposed Project. Therefore, environmental justice was dismissed from further analysis for the Lebanon, Oregon site only.

Cultural Resources

There are no known eligible or listed National Register of Historic Places (NRHP) sites within a mile (1.6 km) of the proposed project location in Holland, Michigan (EDR, 2009c). For the Milwaukee, Wisconsin project, the closest NRHP site is the Town of Milwaukee Town Hall, which is about a quarter of a mile (0.4 km) east of the proposed project site (EDR, 2009b). For the Lebanon project in Oregon, no known eligible or listed sites on the NRHP exist within one-half mile (0.8 km) (EDR, 2009a). While ground disturbance would occur at all three locations, all of these activities would occur at an existing industrial site and in disturbed or previously disturbed locations, which reduces the probability of discovering previously unknown cultural resources during ground disturbance.

For the Holland project, the closest reservation is Isabella Indian Reservation at 80 miles (about 130 km) northeast, and the closest cemetery is Graafschap Cemetery, which is 2 miles (about 3 km) northwest. For the Milwaukee site, the closest reservation is Oneida Indian Reservation, which is 90 miles (about 140 km) north, and the closest cemetery is Union Cemetery at 1.2 miles (1.9 km) to the east. For the Lebanon site, the closest reservation is Siletz Indian Reservation, which is 50 miles (80 km) west, and the closest cemetery is James Cemetery at 0.7 miles (approximately 1.0 km) east. Impacts to these cultural resources are unlikely due to the distances of each site from these sensitive areas and the types of proposed activities. This reduces the incremental impacts, if any, to surrounding sensitive cultural areas. Also, because cultural resource impacts are generally local (within the radius of the proposed construction site), cultural resource impacts to reservations or cemeteries unlikely. The SHPO and relevant Tribes have been contacted for any possible concerns regarding this project (Appendix C and D). Therefore,

unless the SHPO or Tribes have any concerns, the chance of impacting cultural resources is negligible. Therefore, cultural resources have been eliminated from further analysis. Should any cultural resources be discovered during construction, work in the area would cease, and the discovery would be reported immediately to appropriate SHPO and any relevant Tribes.

Below are additional issues considered but dismissed due to absence in the project areas.

Right-of-Way Acquisition	There was no need for additional right-of-way.
Wild & Scenic Rivers	There are no designated Wild & Scenic Rivers within proximity of the project site.
Alter Local Hydrology Patterns	None of the proposed construction would impact drainage in the local watershed.

3.0 THE ENVIRONMENTAL ANALYSIS APPROACH

This chapter describes how the environmental review team analyzed the potential impacts of this Johnson Controls'/ENTEK's Proposed Project (i.e., the building and operation of the Li-Ion Battery Manufacturing Project). Chapter 4 provides a description of the affected environment and the potential environmental effects of Johnson Controls'/ENTEK's Proposed Project along with an analysis of environmental effects if Johnson Controls'/ENTEK's Proposed Project was not implemented (No-Action Alternative).

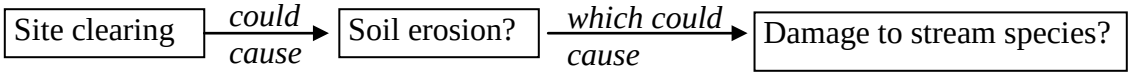
3.1 Approach to the Analysis

An EA is intended to be a clear, focused analysis of impacts. It is not intended to be merely a compilation of encyclopedic information about the project or about the environment. Accordingly, the environmental review team used a systematic approach to identifying, and then answering the relevant impact questions.

The initial step was to develop a detailed description of the components of the Li-Ion Battery Manufacturing Project Center process proposed at the sites to study the potential of furthering VT and Recovery Act objectives. This description was presented in Chapter 2.

For each project component (e.g., construction of the facility), the team sought to identify all the types of direct effects which the activity could cause on relevant environmental resources. For example, clearing a site of vegetation could cause soil erosion. In doing this preliminary identification of the types of potential impacts, the team drew upon their experience with previous projects.

For each potential direct effect, the team then sought to identify the potential indirect effects on other environmental resources. For example, soil erosion could cause sedimentation in nearby streams, which could in turn harm the fish and other species in the stream.



This served as the framework of the analysis of impacts. That is, the team focused their efforts on answering these questions as to whether these effects would in fact occur, and if so, how extensive, how severe, and how long lasting they would be. This was compared to the significance levels found in Table 3.2 below.

3.2 Analysis of Significance

The review team used a systematic process to evaluate the importance, or significance, of the predicted impacts. This process involved comparing the predictions to the significance criteria established by the team and set out below in Table 3.2. These significance criteria were based on legal and regulatory constraints and on team members' professional technical judgment.

Table 3.2. Impact Significance Thresholds	
Resource Area	**Impact Significance Thresholds** **An impact would be significant if it EXCEEDS the following conditions.**
Air Quality	The project would not produce emissions that would exceed applicability thresholds, be regionally significant, or contribute to a violation of any federal, state, or local air regulation.
Geology and Soils	Any changes in soil stability, permeability, or productivity would be limited in extent. Full recovery would occur in a reasonable time*, considering the size of the project. Mitigation, if needed, would be simple to implement.
Surface Water	Any changes to surface water quality or hydrology would be confined to the immediate project area. Full recovery would occur in a reasonable time, considering the size of the project and the affected area's natural state.
Wetlands	Any impacts to wetlands would be confined to the immediate project area and would not cause any regional impacts.
Terrestrial Vegetation	Any changes to native vegetation would be limited to a small area and would not affect the viability of the resources. Full recovery would occur in a reasonable time, considering the size of the project and the affected resource's natural state. Mitigation, if needed, would be simple to implement.
Wildlife	Any changes to wildlife would be limited to a small portion of the population and would not affect the viability of the resource. Full recovery would occur in a reasonable time, considering the size of the project and the affected species' natural state.
Threatened or Endangered Species	Any effect to a federally listed species or its critical habitat would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. This negligible effect would equate to a "no effect" determination in U.S. Fish and Wildlife Service terms.
Socioeconomic Resources	Changes to the normal or routine functions of the affected community are short-term or do not alter existing social or economic conditions in a way that is disruptive or costly to the community.
Environmental Justice	Neither minority nor low-income groups within the affected community would experience proportionately greater adverse effects than other members of the community would.
Infrastructure/ Utilities	The project would not noticeably affect or disrupt the normal or routine functions of public institutions, roads, electricity, and other public utilities and services in the project area.
Noise	Noise levels in the project area would not exceed ambient noise level standards as determined by the Federal, state, and/or local government.

Table 3.2. Impact Significance Thresholds	
Resource Area	**Impact Significance Thresholds** **An impact would be significant if it EXCEEDS the following conditions.**
Human Health and Safety	The project, with current and updated safety procedures, would pose no more than a minimal risk to the health and safety of on-site workers and the local population.
Waste Management	The action, along with planned mitigation measures, would not cause air, water, or soil to be contaminated with hazardous material that poses a threat to human or ecological health and safety.

* Recovery in a reasonable time: Constant, sustainable improvement is apparent and measurable when the site is routinely observed, and full recovery is achieved over a period of no more than several years.

4.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

4.1 Air Quality

4.1.1 Description

The USEPA Region 5 and the Wisconsin Department of Natural Resources (WDNR), regulate air quality in Wisconsin; USEPA Region 5 and the MDEQ, regulate air quality in Michigan; and USEPA Region 10 and the Oregon Department of Environmental Quality (ODEQ) regulate air quality in Oregon. The CAA (42 USC 7401-7671q), as amended, gives USEPA the responsibility to establish the primary and secondary NAAQS (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: PM_{10}, $PM_{2.5}$, SO_2, CO, nitrogen oxides (NO_x), O_3, and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (annual averages) have been established for pollutants that contribute to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, Wisconsin, Michigan, and Oregon accept the federal standards. Federal regulations designate Air-Quality Control Regions (AQCRs) that are in violation of the NAAQS as nonattainment areas and those in accordance with the NAAQS as attainment areas.

4.1.1.1 Holland

Ottawa County, Michigan (and therefore the proposed Holland facility) is within the Central Michigan Intrastate AQCR (40 CFR 81.195). The USEPA has designated Ottawa County, MI as a maintenance area for the 8-hour O_3 NAAQS, and attainment for all other criteria pollutants (USEPA, 2009a).

Because the Holland Facilities are in nonattainment or maintenance areas, the air conformity regulations may apply. The project's emissions and the *de minimis* thresholds were carried forward for these sites to determine the applicability of the general conformity rules and the level of impact under NEPA.

4.1.1.2 Milwaukee

Milwaukee County, Wisconsin (and therefore the proposed Milwaukee facility) is within the Southeastern Wisconsin Intrastate AQCR (40 CFR 81.30). The USEPA has designated Milwaukee County, WI as moderate nonattainment for the 8-hour O_3 NAAQS, nonattainment for the $PM_{2.5}$ NAAQS, and attainment for all other criteria pollutants (USEPA, 2009a).

Because the Milwaukee Facilities are in nonattainment or maintenance areas, the air conformity regulations may apply. The project's emissions and the *de minimis* thresholds were carried forward for these sites to determine the applicability of the general conformity rules and the level of impact under NEPA.

4.1.1.3 Lebanon

Linn County, OR (and therefore the proposed Lebanon facility) is in the Portland Interstate AQCR (40 CFR 81.51). USEPA has designated Linn County, OR as an attainment area for all criteria pollutants (USEPA, 2009a). Because it is in an attainment area, the air conformity regulations do not apply to this portion of the project. However, the project's emissions and the applicability thresholds under the general conformity rules were carried forward to determine the level of impact under NEPA.

The existing Lebanon facility currently has the potential to emit greater than 100 tons per year (tpy) of a single criteria pollutant; it operates as a major source under an Oregon Title V Operating Permit (Permit No. 22-6024) issued in February of 2006 (ODEQ, 2006). The significant sources of emissions at the facility include microporous plastic production operations, the defect marking system, and boilers for heating the facility. The permit outlines controls, monitoring, and recordkeeping requirements for the facility. Table 4.1.1.3 lists the emissions from the facility for calendar year 2008 (ENTEK, 2009).

Table 4.1.1.3. ENTEK Facility Wide Emissions

Pollutant	Emissions (tpy)
PM_{10}	14.0
SO_2	39.0
NO_x	42.0
Volatile Organic Compounds (VOC)	1.2
Trichloroethylene	55.9
Ethanol	2.0

Source: (ENTEK, 2009)

4.1.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Short- and long-term minor adverse effects on air quality would be expected. The effects would be from air emissions during construction and from new stationary sources of air emissions at the proposed facilities. Increases in emissions would not exceed applicability thresholds, be regionally significant, or contribute to a violation of any federal, state, or local air regulation.

Estimated Emissions and General Conformity. The General Conformity Rule specifies threshold emissions levels by pollutant to determine the applicability of conformity requirements for a project. For both a maintenance and a moderate nonattainment area for the 8-hour O_3 NAAQS, the applicability criterion is 100 tpy for NO_x and volatile organic compounds (VOCs) (40 CFR 93.153). All direct and indirect emissions of criteria pollutants for Johnson Controls'/ENTEK's Proposed Project have been estimated and compared to the *de minimis* (of minimal importance) rates to determine the applicability of the general conformity rules and the level of impact under NEPA. The total direct and indirect emissions associated with the following activities were accounted for:

- Constructing the new facilities
- Operating vehicles for construction workers

- Paving parking areas
- Operating personal vehicles for employees
- Operating new stationary sources of air emissions

The requirements of the general conformity rule are not applicable because the highest total annual direct and indirect emissions from these alternatives would not exceed the applicability threshold for any criteria pollutant (Table 4.1.2-1). Because of the limited size and scope of Johnson Controls'/ENTEK's Proposed Project, it is not expected that the estimated emissions from the development and operation of the proposed facilities would make up 10 percent or more of regional emissions for any criteria pollutant, and therefore, they would not be regionally significant. A detailed breakdown of construction and operational emissions are in Appendix A. Moderate changes in the size or type of equipment ultimately selected or the number of personnel would not substantially change the total direct or indirect emissions or the level of impact under NEPA.

Table 4.1.2-1. Johnson Controls'/ENTEK's Proposed Project Emissions Compared to Applicability Thresholds

	Annual emissions (tpy)							
Activity	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	***De minimis* threshold (tpy)**	**Would emissions exceed applicability thresholds? [Yes/No]**
Holland Facility								
Construction	13.0	7.1	1.9	<0.1	0.9	0.4	100	No
Operational	94.5	54.9	24.6	0.05	25.4	25.2	100	No
Milwaukee Facility								
Construction	2.2	1.7	0.4	<0.1	0.1	0.1	100	No
Operational	2.6	0.3	0.3	<0.1	<0.1	<0.1	100	No
ENTEK Site in Lebanon								
Construction	6.8	6.4	1.3	<0.1	0.7	0.4	100	No
Operational	2.2	0.3	0.2	<0.1	<0.1	<0.1	100	No

Note: SO_x is sulfur oxides.

Regulatory Review. The CAA, as amended in 1990, mandates that state agencies adopt and implement State Implementation Plans (SIPs) to eliminate or reduce the severity and number of violations of the NAAQS. Since 1990, Wisconsin, Michigan, and Oregon developed a core of air quality regulations that the EPA has approved. These approvals signified the development of the general requirements of the SIP. The Wisconsin, Michigan, and Oregon programs for regulating air emissions affects industrial sources, commercial facilities, and residential development activities. Regulation occurs primarily through a process of reviewing engineering documents and other technical information, applying emission standards and regulations in permit issuance, performing field inspections, and assisting industries in determining their compliance status with applicable requirements.

As part of these requirements, WDNR, MDEQ, and ODEQ oversee programs for permitting the construction and operation of new or modified stationary source air emissions in their states. Air permitting is required for many industries and facilities that emit regulated pollutants. These requirements include Title V permitting of major sources, NSR, Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS) for selected categories of industrial sources, and the National Emission Standards for Hazardous Air Pollutants (NESHAP). An overview of the applicability of these regulations to the projects is outlined in Table 4.1.2-2.

Table 4.1.2-2. Air Quality Regulatory Review for Proposed Facilities

Regulation	Holland Facility	Milwaukee Facility	ENTEK Site in Lebanon
Nonattainment New Source Review (NNSR)	The area is in attainment and the NNSR regulations do not apply.	Potential to Emit (PTE) would not exceed NNSR threshold and would be exempt from NNSR permitting requirements.	If PTE exceeds NNSR threshold, they would be subject to NNSR permitting requirements.
PSD	PTE would not likely exceed the 250-tpy PSD threshold. Therefore, the project would not be subject to PSD review.		
Title V	If the facility's PTE exceeds the major source thresholds, a Title V permit may be required.	The facility's PTE would be below the Title V major source threshold.	Entex is currently a Title V facility
NESHAP	Potential Hazardous Air Pollutant emissions would not exceed NESHAP thresholds. Therefore, the use of Maximum Available Control Technology (MACT) would not be required.		
NSPS	All new stationary sources would meet NSPS if required.		

Holland, MI. New emission sources at the proposed Holland Facility would include two drying ovens, two condensers/carbon beds, and a baghouse dust collector. The system is still in the design phase; however, the equipment specification would be as follows. The two drying ovens combined would emit less than 50 tpy of CO and NO_x. The two condensers/carbon beds would incorporate thermal destruction fume incinerators, and combined would emit less than 20 tpy n-methyl pyrrolidone (NMP). The baghouse would collect dust from various sources (i.e. charging to mixers and various small dust sources in the lab), and would emit less than 25 tpy of particulates. The baghouse would have specially selected bags, and potentially a HEPA after-filter. A state air permit would be required for both the NMP and particulate emissions.

Other non-permitting requirements may be required through the use of compliant practices and/or products. These regulations are outlined in Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 and include:

- General Provisions (PA 451 – Part 1)
- Prohibitions and Limitations on Particulate matter (PA 451 – Part 3)
- Prohibitions and Limitations on VOCs (PA 451 – Part 7)

- Miscellaneous Prohibitions and Limitations (PA 451 – Part 9)

Milwaukee ,WI. There would be no new sources of air emissions at the Milwaukee facility site. Non-permitting requirements are outlined in Wisconsin Statues Chapter 285 - Air Pollution and include:

- Air Quality Standards, Performance Standards, Emission Limits and Nonattainment Areas (Subchapter III)
- VOC and Mobile Sources – Emission Limits and Standards (Subchapter IV)
- Miscellaneous Air Regulations (Subchapter VIII)

Lebanon, OR. Based on the processes involved at the proposed facility, potential emissions of criteria pollutants from the process equipment may occur. However, it is unknown at this time what the levels of emissions would be. In the final design stages, if facility-wide emissions exceeded 100 tpy it is likely that this emission would be offset during the permitting process and not subject to the general conformity rules. Therefore, they were not included in the analysis. The facility would reduce and control emissions from process equipment through the use of air pollution control devices such as a vapor recovery unit, bag house, and/or granulated activated carbon system. Non-permitting requirements are outlined in OAR Division 200, and include:

- Visible Emissions and Nuisance Requirements (Division 208)
- Rules For Open Burning (Division 264)

This listing is not all-inclusive; Johnson Controls, ENTEK, and any contractors would comply with all applicable air pollution control regulations. Outside of these best management practices, no mitigation measures would be required for the construction and operation of the proposed facilities. Following BMPs and applicable regulations and permits, overall air impacts would be expected to be less than the significance threshold.

4.1.3 Effects of No-Action

Selecting the No-Action Alternative would result in no impact to ambient air-quality. No construction would be undertaken, and no new facility operations would take place. Ambient air-quality conditions would remain as described in Section 4.1.1.

4.1.4 Cumulative Effects

The States of Wisconsin, Michigan, and Oregon take into account the effects of all past, present, and reasonably foreseeable emissions during the development of their SIPs. The states account for all significant stationary, area, and mobile emission sources in the development of these plans. Estimated emissions generated by Johnson Controls'/ENTEK's Proposed Project in any area would be *de minimis* and would not be regionally significant. Therefore, Johnson Controls'/ENTEK's Proposed Project would not contribute significantly to adverse cumulative effects to air quality and would be less than the significance threshold.

4.2 Geology and Soils

4.2.1 Description

4.2.1.1 Holland

Glaciers created much of the Black River Watershed near the Holland, MI project site, leaving a landscape dominated by lacustrine sand and gravel, fine-textured glacial till, glacial outwash, and end moraines. The bedrock of Coldwater shale is covered with 50 to 350 feet (ft) (15 to 107 meters (m)) of glacial deposits. Topography is flat to gently rolling with some steeper ravines (Fuller, 2005).

The building site for this project contains two soils designated as Brady sandy loam and Belleville-Brookston Complex. The Brady sandy loam is a somewhat poorly drained soil derived from loamy and/or sandy outwash (USDA, 2009a). Soils of this type are generally found on outwash plains ranging from 0% to 3% slopes. The Belleville-Brookston Complex is a poorly drained soil derived from Sandy glaciofluvial deposits over loamy till (USDA, 2009a). Soils of this type are generally found on till plains ranging from 0% to 1% slopes.

Historically, residents of Allegan County have felt earthquake tremors periodically since 1811. Most of the earthquakes have had epicenters outside the county (USGS, 2009a). The area is located in seismic zone 0, the lowest seismic risk zone defined by the Uniform Building Code, which has no additional enforceable requirements for structural design due to earthquakes in this zone.

4.2.1.2 Milwaukee

Glacial deposits superimposed on underlying bedrock formed the surface geology of the Milwaukee River watershed, which contains the project site. The physiography is typical of rolling ground moraine, although surface drainage networks are generally well connected, leaving relatively few areas of the watershed that are internally drained (WDNR, 2001).

Minerals and soils in Milwaukee County have not been surveyed in decades because of the urban character of the county. Specific soil types are therefore not available for analysis, but generally, any soil that is exposed or disturbed during construction activities would cause soil loss and a decrease in water quality if best management practices were not utilized.

A minor earthquake of unknown magnitude occurred in May 1947 centered just south of Milwaukee near the shore of Lake Michigan. In addition, there have been other earthquake tremors that have been felt in the county, but most of the earthquakes that were felt have had epicenters outside the county (USGS, 2009b). Despite this history, the area is located in seismic zone 0, the lowest seismic risk zone defined by the Uniform Building Code, which has no additional enforceable requirements for structural design due to earthquakes in this zone.

4.2.1.3 Lebanon

Low foothills lie between the Willamette Valley to the west and the Cascade Range to the east that range in elevation from 300 to 1,400 feet. The soils in these areas are well drained to poorly drained, are in gently sloping areas on low plateaus to steeply sloping areas on side slopes, and are formed in material derived from igneous or sedimentary rock. The South Santiam and Calapooya Rivers dissect these low foothills in the central and southern parts of the county near the project site and form major valleys that have both narrow flood plains and stream terraces (Langridge, 1987).

Mineral resources near the project site include gold, which has been mined in the mountains north of Cascadia, and there is still gold panning taking place both in Quartzville Creek and in the Calapooya River. Lava flows and intrusive volcanic outcrops are good sources of rock for construction of logging roads and highways (Langridge, 1987).

The building site for this project contains soil designated as Coburg silty clay loam. This soil is a moderately well drained soil having as parent materials silty and clayey alluvium derived from mixed sources (USDA, 2009b). Soils of this type are generally found on stream terraces at slopes ranging from 0% to 3%. These soils are used for production of small grain, hay, pasture, and grass seed crops. Natural vegetation is Douglas fir, Oregon white oak, blackberries, Pacific poison oak, and other shrubs and grasses (NCSS, 2006).

Oregon is rated third highest in the nation for potential loss due to earthquakes. Until recently, Oregon was not considered an area of high seismicity, and the majority of its buildings and infrastructure were not designed for ground shaking at the magnitude now expected (LINNCO, 2005).

Recent studies of geological records show that Oregon has a history of seismic events, and that the Cascadia Subduction Zone is capable of producing magnitude 9.0 earthquakes. Projected losses in the Cascadia region could exceed $12 billion; 30,000 buildings could be destroyed and 8,000 lives lost in the event of a magnitude 8.5 Cascadia Subduction Zone earthquake (LINNCO, 2005). This area is located in seismic zone 3, the second highest seismic risk zone defined by the Uniform Building Code, which has critical enforceable requirements for structural design due to earthquakes in this zone.

4.2.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Construction activities associated with the project sites in Holland, MI; Milwaukee, WI; and Lebanon, OR would have the potential to generate effects on geological and soil resources. Proposed construction is limited to surface and near-surface activity that would have no potential to affect minerals and deeper geological strata. Seismic activity for two of the sites is negligible, but the Oregon site has potentially hazardous seismic activity. All sites would be adequately addressed through compliance with local building codes.

Soil loss and erosion are the major geological resources to be considered and managed with this project. Planned best management practices that can effectively prevent major effects to this

resource include stormwater training for onsite personnel, use of erosion control blankets where soil would otherwise be exposed, avoidance of excessive soil stockpiling where soil is exposed to wind and rain, a sediment settling basin as part of the runoff control program, use of water and dust palliatives on soils that are temporarily exposed to erosive elements, and proper use of temporary or permanent landscaping that would hold soils in place and prevent unwanted soil movement.

Changes in geological or soil stability, permeability, or productivity are limited in extent. Full recovery would occur in a reasonable time, as provided for in permit conditions for the project. Therefore, the impacts would be expected to be less than the significance threshold.

4.2.3 Effects of No-Action

Without Department of Energy funding (the No-Action Alternative), none of the proposed construction activity, or the operations activities would occur. The absence of construction or operations activities would cause no effects on this resource.

4.2.4 Cumulative Effects

There are no past, present, or foreseeable future projects, which can be analyzed collectively with Johnson Controls'/ENTEK's Proposed Project that would result in a greater cumulative effect on this resource than what would occur singularly as a result of Johnson Controls'/ENTEK's Proposed Project.

4.3 Water Resources

4.3.1 Description

4.3.1.1 Holland

The project site lies within the Black River watershed in Allegan County. A tributary of the Black River, the North Branch of the Macatawa River, passes within 200 yards of the project site before it enters the Black River 4.2 miles northeast of the project site. The Black River Watershed contains approximately 287 square miles in Allegan and Van Buren Counties in southwestern Michigan and contains 530 miles of rivers, streams, and drains. The watershed also contains 43 named lakes and over 500 small, unnamed lakes and ponds. Most of the named lakes and many of the smaller, unnamed ones are connected by surface water to the Black River through streams and drains (WDNR, 2001).

The project proponents would utilize local public systems for water supply and wastewater disposal (JCI, 2009a). They would comply with an existing wastewater discharge permit that is sufficient for discharges arising from activities associated with the proposed project (JCI, 2009a). Operational wastewater discharges are estimated to be 75,000 gallons per day (gpd) (280 kiloliters (kl)) non-contact cooling water, 25,000 gpd (95 kl) of process water, and 25,000 gpd (95 kl) of sanitary sewage and/or grey water (JCI, 2009a; Lafond, 2009).

The project proponents would also implement best management practices for erosion control during and after construction. Planned best management practices that can effectively prevent major effects to this resource include use of erosion control blankets where soil would be exposed, avoidance of excessive soil stockpiling where soil is exposed to wind and rain, a sediment settling basin as part of the runoff control program, use of water and dust palliatives on soils that are temporarily exposed to erosive elements, and proper use of temporary or permanent landscaping that would hold soils in place and prevent unwanted soil movement. There is existing storm sewer infrastructure onsite that would accept runoff resulting from the new project development (Lafond, 2009).

4.3.1.2 Milwaukee

The Milwaukee River Basin is located in portions of seven counties, contains (entirely or portions of) 13 cities, 32 towns, 24 villages and is home to about 1.3 million people. The southern quarter of the basin is the most densely populated area in the state, holding 90 percent of the basin's population. The basin is divided into six watersheds that contain about 500 miles (800 km) of perennial streams, over 400 miles (600 km) of intermittent streams, 35 miles (56 km) of Lake Michigan shoreline, 57 named lakes and many small lakes and ponds. The main stem of the Milwaukee River passes within 1350 yards (1.23 km) of the project site.

The project proponents would utilize local public systems for water supply and wastewater disposal. The proposed project is a 3,000 square feet laboratory expansion, for which little additional water supply and wastewater treatment requirements are expected (Lafond, 2009). The incremental wastewater usage would be due to the new emergency eyewash station. Toilet facilities would be upgraded to low water usage flush valves. The facilities water usage and wastewater production are unchanged.

The project proponents would also implement best management practices for the small amount of erosion control expected during and after construction. Planned best management practices that can effectively prevent major effects to this resource include use of erosion control blankets where soil would otherwise be exposed, avoidance of excessive soil stockpiling where soil is exposed to wind and rain, use of water and dust palliatives on soils that are temporarily exposed to erosive elements, and proper use of temporary or permanent landscaping that would hold soils in place and prevent unwanted soil movement. There is existing storm sewer infrastructure onsite that would accept runoff resulting from the new project development (Lafond, 2009).

4.3.1.3 Lebanon

The South Santiam River drains approximately 1,040 square miles and is a primary tributary to the Willamette River. The South Santiam River watershed is situated in the Western Cascades and flows into the Willamette Valley. The River runs approximately from east to west, with steep mountainous terrain comprising the eastern 80% of the watershed. The western 20% of the watershed leading to the Santiam River and ultimately the Willamette River features a floodplain dominated by grass seed farming and urban/rural development (ESEC, 2000).

The project proponents would utilize local public systems for water supply and wastewater disposal (Pekala, 2009). All process wastewater would be treated onsite by distilling through an existing cracking tower and reused. Sanitary sewage and/or grey water would be discharged to the public wastewater collection system. Operational wastewater discharges are estimated to be 20,000 gpd (76 kl) non-contact cooling water, 15,000 gpd (57 kl) of process water, and 14,000 gpd (53 kl) of sanitary sewage and/or grey water (JCI, 2009b).

The project proponents would also implement best management practices for erosion control during and after construction. Planned best management practices that can effectively prevent major effects to this resource include use of erosion control blankets where soil would otherwise be exposed, avoidance of excessive soil stockpiling where soil is exposed to wind and rain, a sediment settling basin as part of the runoff control program, use of water and dust palliatives on soils that are temporarily exposed to erosive elements, and proper use of temporary or permanent landscaping that would hold soils in place and prevent unwanted soil movement.

4.3.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Both construction and operations activities have the potential to affect water resources in the project area. During the construction and operations phases, erosion control measures are planned at all sites that are the basis for compliance with local regulations.

Infrastructure capacity is sufficient for water supply and wastewater discharge to a public system. Since water supply and wastewater treatment would be accomplished through properly sized public and on-site systems, any potential concerns with groundwater sources and unregulated waste disposal would be avoided.

Slight changes to surface water quality or hydrology are confined to the immediate project area. Full recovery would occur in a reasonable time, as provided for in NPDES permit conditions for the project. Therefore, the impacts would be expected to be less than the significance threshold.

4.3.3 Effects of No-Action

Without Department of Energy funding (the No-Action Alternative), none of the proposed construction activity or the operations activities would occur. The absence of construction or operations activities would cause no effects on this resource.

4.3.4 Cumulative Effects

There are no past, present, or foreseeable future projects, which can be analyzed collectively with Johnson Controls'/ENTEK's Proposed Project that would result in a greater cumulative effect on this resource than what would occur singularly as a result of Johnson Controls'/ENTEK's Proposed Project.

4.4 Wetlands

4.4.1 Description

4.4.1.1 Holland

There are wetlands at the Holland, MI site (Figure 4.4.1.1).

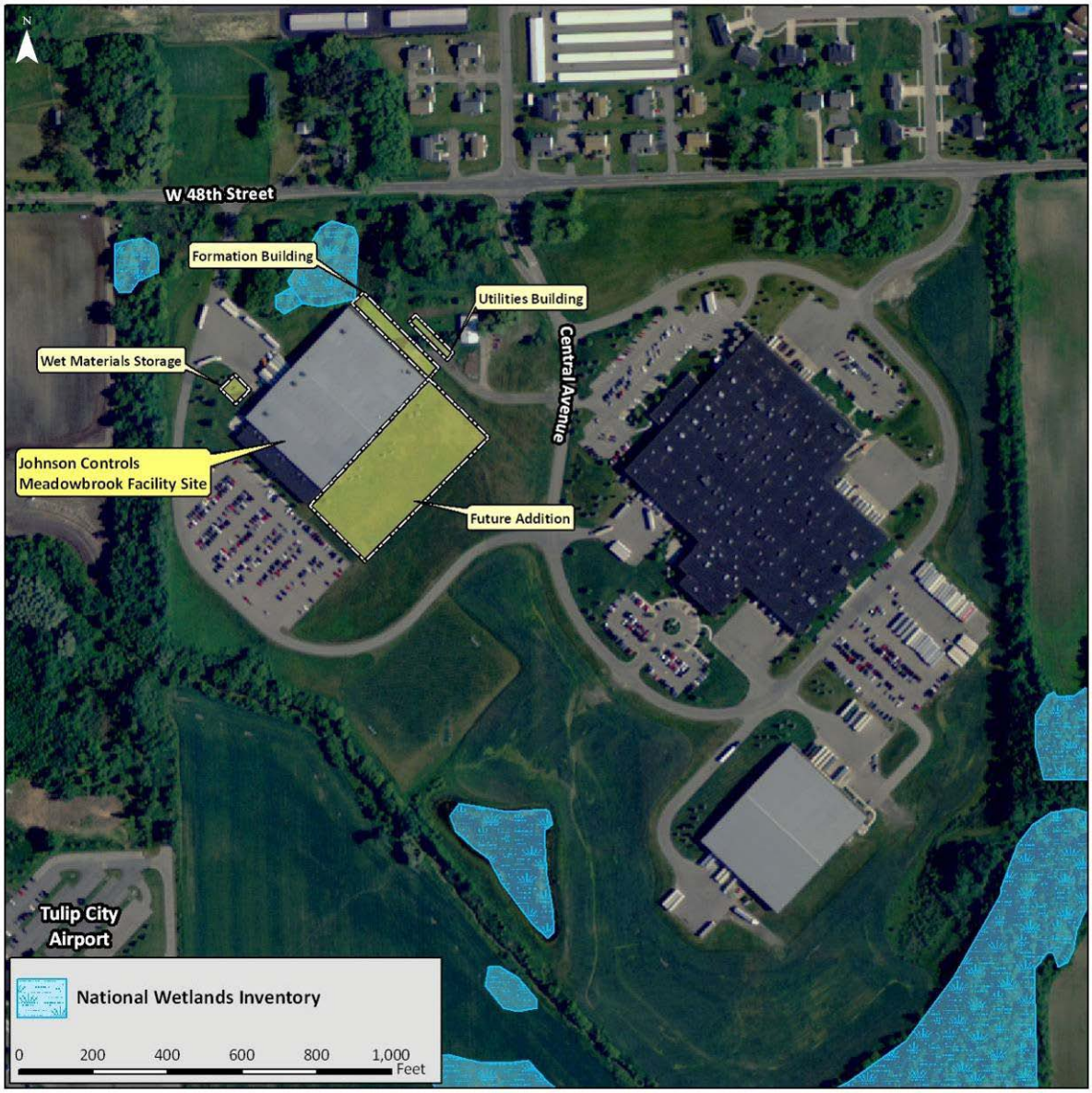


Figure 4.4.1.1. Wetlands and Floodplains near the Holland, Michigan Site

Wetlands next to the proposed building at the Holland site are Palustrine freshwater emergent wetlands that are seasonally flooded (USFWS, 2009). Palustrine system designations include all non-tidal wetlands dominated by trees, shrubs, persistent emergent vegetation, emergent mosses,

or lichens (Cowardin et al., 1979). While not shown in the above map, wetlands may occur in the proposed project areas that are not on the NWI due to the age of the data and the scale of that study.

4.4.1.2 Milwaukee

Impacts to wetlands were dismissed from further analysis (Section 2.5).

4.4.1.3 Lebanon

Impacts to wetlands were dismissed from further analysis (Section 2.5).

4.4.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Impacts to wetlands could occur from construction activities. Changing hydrology, spills from equipment and runoff can contribute indirect impacts and their magnitude would depend on the composition and extent of the pollution. The risk of these potential impacts would be minimized through proper **mitigation** and the use of BMPs, such as prohibiting construction equipment on the wetlands and stormwater management measures. For example, installing silt fences, which prevent spills and/or other runoff reaching the wetlands, is an effective mitigation technique.

Due to the potential proximity of wetlands to the Holland site, as indicated on the NWI, Johnson Controls would need to perform a wetlands delineation and a jurisdictional determination by the Michigan Department of Environmental Quality or U.S. Army Corps of Engineers in the vicinity of the proposed construction limits would be required prior to construction. If there were no jurisdictional wetlands within the proposed construction limits, then there would be no direct impacts. Any adjacent wetlands would be flagged or otherwise marked during the construction phase to avoid encroachment on the wetlands. In addition, more **mitigation** measures would be necessary than the normal construction BMPs. The specific BMPs would depend on the distance of the project to the wetland. With proper implementation of these preventative measures impacts to adjacent wetlands would be less than significant. If jurisdictional wetlands were found within the project site, alternative locations or design modifications to avoid the wetland were not possible, a Michigan Department of Environmental Quality permit would be needed. The type of permitting and subsequent mitigation that would be required would depend on the acreage of wetlands impacted. As long as the requirements of the permit are satisfied, the impacts to wetlands should be less than significant.

4.4.3 Effects of No-Action

Under the No-Action Alternative, the construction and other project components would not occur. Thus, no impacts to wetlands or floodplains would occur due to lack of earthmoving or ground disturbing activities, which would be below the significance threshold.

4.4.4 Cumulative Effects

Past activities have altered the floodplains and wetlands in the area where these resources exist (Holland, Michigan). The proposed project would represent a minimal impact to wetlands due to the size of the project and compliance with applicable regulations and best management practices. Further, there are no other known present or reasonably foreseeable projects impacting these same resources. Therefore, the cumulative impacts are expected to be less than the significance threshold.

4.5 Terrestrial Vegetation

4.5.1 Description

Executive Order 13112 Invasive Species directs federal agencies to make efforts to prevent the introduction and spread of invasive plant species. Invasive species are usually destructive, difficult to control or eradicate, and generally cause ecological and economic harm. A noxious weed is any plant designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property. Wisconsin, Michigan, and Oregon have laws that list species that must be controlled on both public and private lands within the states. The departments of agriculture and generally the local municipalities or counties enforce the laws.

4.5.1.1 Holland

The landscape in the project area is largely fragmented by industrial and commercial development. Woodlands are primarily deciduous species with minimal coniferous tree cover. Dominate species include ash, hackberry, poplar, and maple. The Holland property proposed for the new facilities is mostly open, maintained (mowed) turf grasses with a few trees (Figure 2.1.1-2).

4.5.1.2 Milwaukee

The highly developed surroundings of the Milwaukee facility location limit the presence and type of vegetation. The vegetation surrounding the project site includes landscaping and turf grass around buildings and parking lots, and a grove of deciduous trees (i.e. elm, ash, and oak) that line the adjacent railroad (Figure 2.1.2-2).

4.5.1.3 Lebanon

The open area proposed for the expansion to the Lebanon facility was previously disturbed to construct the existing facility, parking lot, and storage area. Existing vegetation consists of agricultural fields adjacent to the facility (Figure 2.1.3-2).

4.5.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Grading and preparing the sites for construction of the Milwaukee and Lebanon facilities would

not have any impact to native terrestrial vegetation because the sites were previously disturbed and lack vegetation. Construction of the Formation Building at the Holland facility may require the removal of a few trees; otherwise, impacts would be limited to landscaped and turf grass areas. Disturbed areas around the new facilities would be landscaped with native vegetation and seed mixtures, or stabilized with mulch or pavement.

Noxious weeds and invasive plant species are generally found in disturbed soil conditions. Surface disturbance and construction activities could facilitate the establishment and spread of noxious weeds. Aggressive non-native species could become established if ground disturbance during construction is extensive and lengthy. However, the size of disturbance for the proposed facilities and the short length of time before the ground surface is stabilized would minimize the risk of noxious weeds becoming established and therefore any potential impacts would be negligible. Preventive measures such as monitoring and eradication would be implemented, as necessary, to reduce weeds from emerging after ground disturbance occurs. Any hay bales used to control surface runoff during construction would be certified as free from weed seeds.

Overall, any changes to native vegetation would be limited to a small area and would not affect the viability of the resources. Full recovery would occur in a reasonable time, considering the size of the project and the affected resource's natural state. Therefore, impacts on terrestrial vegetation would not be expected to exceed the significance threshold.

4.5.3 Effects of No-Action

Site conditions at each location would remain unchanged under the No-Action Alternative. The surface soils would not be disturbed for construction and no impacts to vegetation would occur.

4.5.4 Cumulative Effects

Expansion of industrial development in the three locations would have a cumulative effect to native vegetation in the area; however, there are no reasonably foreseeable projects in the vicinity that would have such an effect with Johnson Controls'/ENTEK's Proposed Project. Cumulative impacts from the proposed project (at all locations) when added to other past, present, and reasonably foreseeable future actions would be minimally adverse and are not expected to exceed the threshold of significance.

4.6 Wildlife

4.6.1 Description

4.6.1.1 Holland

Wildlife that could typically be found in a rural/urban interface area similar to the Holland facility, include white-tailed deer, fox, rabbit, chipmunk, squirrel, skunk, and different species of mice, moles, shrews, and bats. Avian species may include passerines (such as sparrows, finches, warblers, swallows, robins, and blackbirds), doves, crows, ravens, and raptors (hawks and owls). With the close proximity to a surface water source (North Branch Macatawa River), amphibian

species such as turtles, salamanders, and frogs are likely present in the project area (Figure 2.1.1-2).

4.6.1.2 Milwaukee

The highly developed surroundings of the Milwaukee facility location limit the presence of desirable wildlife species. Available habitat to support desirable species is generally limited to landscaping, tree-lined buffers, and natural storm water drainages. Wildlife species that could be found in developed areas include ground squirrels, opossums, skunks, rats, mice, and bats. Common bird species may include robins, sparrows, doves, pigeons, crows, and ravens (Figure 2.1.2-2).

4.6.1.3 Lebanon

The Lebanon facility is located on the edge of the city in a rural/urban interface area, with agricultural land the predominant rural land use. Wildlife likely found in this setting includes deer, coyote, fox, rabbit, ground squirrel, skunk, and different species of mice, moles, and shrews. Avian species may include passerines (such as sparrows, finches, swallows, and blackbirds), doves, crows, ravens, and raptors (hawks and owls). Upland game birds such as quail, grouse, and turkey may seasonally inhabit the agricultural areas (Figure 2.1.3-2).

Most birds are protected by the Migratory Bird Treaty Act that prohibits the destruction of active nesting habitat. The wooded areas and agricultural areas near the Holland and Lebanon facilities likely provide habitat for foraging and nesting for various species of birds.

4.6.2 Effects of Johnson Controls'/ENTEK's Proposed Project

The Milwaukee campus was recently expanded and large landscaped areas were developed that eliminated available habitat for urban wildlife. Construction for Johnson Controls'/ENTEK's Proposed Project would occur on previously disturbed ground and therefore would not have an impact to wildlife in the project area.

Common wildlife species inhabiting or using the wooded and landscaped areas surrounding the Holland facilities for forage or cover would be displaced during construction and direct mortality of less mobile species could potentially occur. Similar habitat on adjacent wooded and open land would support the displaced species and thus potential impacts would be negligible. The typical species that could be impacted are widely distributed and thus loss of some individuals and habitat would not impact the populations throughout their range. Construction activities could displace any birds foraging, roosting, or nesting adjacent to the facility; however, potential impacts would be negligible because of available adjacent habitat and the mobility of the species. If clearing and grading activities are scheduled to occur during breeding season (generally March through August), the construction area should be surveyed to confirm the absence of nests and nesting activity. Construction would be curtailed around active nests (containing eggs or young) until the nests are no longer active or the young birds have fledged. The area to be avoided would be appropriate to the species present.

Construction of the Lebanon facility would occur on previously disturbed ground. Therefore, it would not have an impact to wildlife in the project area.

Overall, any impacts on wildlife from Johnson Controls'/ENTEK's Proposed Project would be limited to a small portion of the population and would not affect the viability of the resource. Full recovery would occur in a reasonable time, considering the size of the project and the affected species' natural state. Therefore, overall impacts on wildlife would not be expected to exceed the significance threshold.

4.6.3 Effects of No-Action

The No-Action Alternative would not impact wildlife in the area of any facility. There would be no construction that would disturb habitat or displace wildlife species.

4.6.4 Cumulative Effects

Conversion of open land to industrial development would have a cumulative effect to wildlife species in the area; however, cumulative impacts from the proposed project (at all locations) when added to other past, present, and reasonably foreseeable future actions would be minimally adverse and are not expected to exceed the threshold of significance.

4.7 Threatened and Endangered Species

4.7.1 Description

A species listed under the ESA is so designated because of danger of its extinction because of economic growth and development without adequate conservation.

4.7.1.1 Holland

The Holland facility is located in Allegan County, Michigan. The Karner blue butterfly (*Lycaeides melissa samuelis*) and pitcher's thistle (*Cirsium pitcher*) are federally listed species known to occur in nearby Ottawa County, Michigan. The USFWS listed the butterfly in 1992 as endangered under the ESA and the thistle in 1988 as endangered. Both species are also listed by the State of Wisconsin. Karner blue caterpillars feed only on the leaves of the wild lupine plant, which severely restricts where they can survive (USFWS, 2008a). The lupine plants historically occurred in savanna and barrens habitats typified by dry sandy soils, and now occur in remnants of these habitats, as well as other locations such as roadsides, military bases, and some forestlands (USFWS, 2008b). The pitcher's thistle grows on the beaches and grassland dunes along the shore of Lake Michigan (USFWS, 2001).

4.7.1.2 Milwaukee

The Milwaukee facility is located in Milwaukee County in Wisconsin. There are no known occurrences of federally listed threatened or endangered plant or animal species in this county, and thus, this location is not discussed further.

4.7.1.3 Lebanon

ENTEK's Lebanon facility is located in Linn County, Oregon. There are five federally listed plant species, one butterfly, two fish, and one bird as well as one candidate bird species known to occur in Linn County (USFWS, 2010). The project area is mostly asphalt with the remaining area having a thick layer of asphalt such that no vegetation is present (Parker, 2010). The two bird species do not utilize built environments as found in the project site, and no wildlife has been seen utilizing the project area (Parker, 2010; USFWS, 2008b; USFWS, 2009b).

4.7.2 Effects of Johnson Controls'/ENTEK's Proposed Project

The known habitats for Karner blue butterfly and pitcher's thistle do not occur in the vicinity of the Holland facility. As the Lebanon project site is devoid of vegetation and water, the project site lacks the preferred habitat of the federally listed species in Linn County. Thus, it is unlikely that the proposed project would impact these species. Construction activities for these new facilities would not affect any threatened or endangered species. DOE consulted with the USFWS to confirm the determination of no impacts to threatened and endangered species and Michigan and Wisconsin offices concurred and all USFWS correspondence in Appendix B. Unless a discovery of previously unknown threatened and endangered species occurs, impacts from implementing this alternative would be expected to be less than the significance threshold.

4.7.3 Effects of the No-Action

There are no known threatened or endangered species habitats in the vicinity of any of the three facilities. Taking no action would have no effect to federally listed species.

4.7.4 Cumulative Effects

Because Johnson Controls'/ENTEK's Proposed Project would have no effect to listed species or habitat, it would not contribute to any cumulative effects on the species due to loss of potential habitat from other development in the project areas. Therefore, cumulative impacts from the proposed project when added to other past, present, and reasonably foreseeable future actions would be minimally adverse and are not expected to exceed the threshold of significance.

4.8 Socioeconomic Resources

Socioeconomic factors describe the local demographics, economy, and employment that could be influenced by Johnson Controls'/ENTEK's Proposed Project.

4.8.1 Description

As part of Johnson Controls'/ENTEK's Proposed Project, a pilot production facility would be built in Holland, MI a Battery Technology Center, Battery Test Facility, and Abuse Tolerance Facility would be built in Milwaukee, WI, and a new manufacturing facility would be built in Lebanon, OR.

4.8.1.1 Holland

Holland, Michigan is a community of roughly 33,797 residents, situated on Lake Macatawa and the Macatawa River, near the eastern shore of Lake Michigan. The city spans the Ottawa/Allegan County line. It is the largest municipality of the Holland-Grand Haven Metropolitan Statistical Area, with an estimated population of 257,671 as of July 1, 2006 (Census, 2008a).

The economy of Holland is dominated by manufacturing, which employs 42% of the employed workforce. Educational services, health care and social assistance employ another 16.5% (Census, 2008a).

The unemployment rate in September 2009 was 12.8% for the Holland-Grand Haven Metropolitan Area. This is above the national average of 9.5%, but slightly lower than the Michigan rate of 15.2% (BLS, 2009a).

4.8.1.2 Milwaukee

The proposed facility is located in a densely populated urban zip code (53209) of Milwaukee with roughly 49,019 residents (Census, 2000a).

The economy of the surrounding area is dominated by educational services, health care, and social assistance, which together employ 25% of the local workforce (Census, 2008b). Manufacturing employs another 19%, and retail trade employs another 11%. The Milwaukee, WI metro area had an unemployment rate of 8.5% in September 2009, below the national average of 9.5%, and approximately equal to the Wisconsin rate of 8.4% (BLS, 2009a).

4.8.1.3 Lebanon

Lebanon is located in Linn County, Oregon about 28 miles from Salem, the state capital. Its population in 2000 was 12,950 (Census, 2000b).

The economy of Lebanon is dominated by manufacturing, which employs 22% of the workforce. Educational services, health care and social assistance together employ 20% of the local workforce, and retail trade employs 12% (Census, 2000b). Unemployment data is only available at the state level; Oregon's unemployment rate in October 2009 was 11.3%, higher than the national average of 9.5% (BLS, 2009a).

4.8.2 Effects of Johnson Controls'/ENTEK's Proposed Project

This section addresses the potential for positive and negative socioeconomic impacts that might occur in the local community.

The Johnson Controls'/ENTEK's Proposed Project would involve constructing:

(1) A pilot facility in Holland, Michigan. At the Holland facility, the intent is to outfit and bring to production a state-of-the art cell manufacturing and pack assembly facility. An existing 130,000 ft^2 (approximately 12,000 m^2) building would be supplemented with an 18,000 ft^2 (1,700 m^2) addition including two outbuildings for material storage [4,500 ft^2 (approximately 420 m^2) and 6,500 ft^2 (approximately 600 m^2)]. The second site at Holland would utilize an existing 130,000 ft^2 (approximately 1,700 m^2) building.

(2) A Battery Technology Center (BTC), Battery Test Facility (BTF), and Abuse Tolerance Facility (ATF) would be built in Milwaukee, WI. At this Milwaukee site, an approximately 3,000 ft^2 (300 m^2) extension would be added to the existing plant.

(3) A production facility in Lebanon, OR would be constructed at the existing ENTEK site. Depending on separator demand, a decision would be made later whether to install a second upgraded production line and additional building space. This may or may not require expansion of the footprint of the existing building where production would take place. The expansion could double the current footprint, an expansion of 15,000-20,000 ft^2 (1,400 to 1,900 m^2), and would take place over a 2 ½-3 year period.

The Johnson Controls'/ENTEK's Proposed Project would generate minor beneficial increases in economic activity in the following ways:

Construction

(1) **Holland.** The construction of the facilities at the Holland facility would be expected to create a total of 292 FTE construction jobs over the 31 months of proposed construction. Project proponents estimate capital construction costs of approximately $93.1 million and a construction labor cost of approximately $36 million. Roughly, 40% of capital construction costs—$36 million—and all of the labor costs would be spent on construction goods and services within Michigan.

(2) **Milwaukee.** The proposed construction of the facility at the Milwaukee site would create a total of 75 FTE construction jobs over the 30 months of construction. Project proponents estimate capital construction costs of approximately $10.3 million and a construction labor cost of approximately $4M. Roughly, 80% of capital construction costs—$8 million—and all of the labor costs would be spent on construction goods and services within Wisconsin.

(3) **Lebanon.** If only the first project were built, there would be no building constructed. Roughly, $5 million would be spent on new equipment, 50% of which would be spent in Oregon. Only two new jobs would be created. If the second expansion were built, that would add another $21 million in construction capital spending, 24 new construction jobs, and roughly $6 million in labor. Again, roughly half of the capital costs ($10.5 million) would be spent in Oregon.

Operations

(1) Once operational, the Holland facilities are expected to produce a total of approximately 266 FTE operational positions. The addition of 266 permanent manufacturing jobs to the community would have a moderate beneficial impact on economic activity in the region, as the salaries and wages paid to facility staff flow through the local and regional economy in the purchase of goods and services.
(2) The facilities in Milwaukee are expected to generate a total of 148 FTE engineering positions. The addition of 148 permanent engineering jobs to the community would have a minor beneficial impact on economic activity in the region, as the salaries and wages paid to facility staff flow through the local and regional economy in the purchase of goods and services.
(3) The facilities in Lebanon, if both were built, would be expected to generate a total of 26 FTE operational positions. The addition of 26 permanent manufacturing jobs to the community would have a minor beneficial impact on economic activity in the region, as the salaries and wages paid to facility staff flow through the local and regional economy in the purchase of goods and services.

In general, the sale of manufactured products creates employment both "backwards"—in mining and construction—and "forward", in the transportation, finance and wholesale trade sectors. The U.S. Department of Commerce estimated that every dollar in final sales of manufactured products supports $1.37 in other sectors of the economy (NAM, 2006).

DOE anticipates that, for all projects, the temporary construction jobs and the ongoing operations jobs can be filled from local or nearby communities. This is especially beneficial for the sites in Holland, where unemployment is at 12.8%, above the national average. Thus, overall, Johnson Controls'/ENTEK's Proposed Project would not require an influx of workers and employees that could increase the population, change the demographics of the project area, or potentially overburden finite community resources, such as schools, housing, health facilities, or law enforcement capabilities. Therefore, the impacts would be beneficial but less than the significance threshold.

4.8.3 Effects of No-Action

If the facilities were not built, the opportunity to create short-term construction jobs, long-term manufacturing jobs, and the benefits of resulting economic activity would be lost. This alternative would represent a lost opportunity for a relatively small number of jobs and income in the community and this alternative would not worsen current conditions. Therefore, the impacts would be less than the significance threshold.

4.8.4 Cumulative Impacts

The Johnson Controls'/ENTEK's Proposed Project would not add to local economic development pressures in the three communities, since the new facilities are proposed within the existing Johnson Controls or ENTEK footprints. In addition, cumulative economic impacts are unlikely because the Johnson Controls'/ENTEK's Proposed Project is not large enough to result in sufficiently increased demands for goods and services that would trigger further economic

development in any location, and because there are no other planned or reasonable foreseeable projects affecting the same socioeconomic resources. Therefore, the cumulative impacts would be less than the significance threshold.

4.9 Environmental Justice

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic or socioeconomic group, should bear a disproportionate share of the adverse environmental consequences resulting from a proposed federal action.

Federal agencies must identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations (Executive Order 12898). An environmental justice population is defined as a population comprised of at least half minority status or at least half low-income status, or whose representation of these categories is greater than the general population in a meaningful way. The U.S. Department of Health & Human Services defines the average poverty threshold as a maximum annual income of $22,025 or less for a family of four for the year 2009 (HHS, 2009).

DOE has prepared a document titled Draft Guidance on Incorporating Environmental Justice Considerations into DOEs NEPA (DOE, 2008). The draft guidance is based on Executive Order 12898 and the CEQ environmental justice guidance. Among other things, DOE draft guidance states that even for actions that are at the low end of the sliding scale with respect to the significance of environmental impacts, some consideration (which could be qualitative) is needed to show that DOE considered environmental justice concerns. DOE needs to demonstrate that it considered apparent pathways or uses of resources that are unique to a minority or low-income community before determining that, even in light of these special pathways or practices, there are no disproportionately high and adverse impacts on the minority or low-income populations.

4.9.1 Description

4.9.1.1 Holland

As shown in Table 4.9.1.1 below, the population of Holland is 68% White, with a Hispanic population of 22%, compared to a Hispanic percentage of 15% in the total U.S. population. Only 7.4% of Holland residents had incomes below the poverty level, compared to 13.2% in the U.S. overall (Census, 2008c).

Table 4.9.1.1. Minority and Poverty-Level Status, Holland, Michigan

	Holland, Michigan	State of Michigan	Total U.S.
White non-Hispanic	62.1%	77.2%	64.4%
Hispanic	22.0	4.0	15.1
African American	2.1	14.0	12.3

Table 4.9.1.1. Minority and Poverty-Level Status, Holland, Michigan			
	Holland, Michigan	**State of Michigan**	**Total U.S.**
Asian-Pacific Islander	10.5	2.3	4.5
Native American	0.0	.5	0.8
Two or more races	3.4	2.0	2.2
% Individuals below Poverty Level	7.4	14.0	13.2

Source: (Census, 2008c)

The higher percentage of Hispanic residents in Holland requires consideration of whether the Johnson Controls'/ENTEK's Proposed Project would have a disproportionate adverse impact on this community.

4.9.1.2 Milwaukee

As shown in Table 4.9.1.2 below, the population of the project's impact area, defined by a 1-mile radius surrounding the proposed facility site, is 49.4% White and 44.2% African American, and 13.8% of the impact area's residents had incomes below the poverty level, compared to 12.4% in the U.S. overall, although it is slightly lower than the percentage for the whole county of Milwaukee (Census, 2000c).

Table 4.9.1.2. Minority and Poverty-Level Status of the Proposed Project Area of Impact			
	Project Impact Area (1-mile radius from site)	**County of Milwaukee**	**Total U.S.**
Total Population	20,180	940,164	281,421,906
% White non-Hispanic	49.4%	62.1%	69.1%
% Hispanic	2.8	4.0	12.6
% African American	44.2	24.3	12.1
% Asian/Pacific Islander	1.6	1.7	3.7
% Native American	0.3	.6	0.7
% Two or more races	1.5	1.6	1.7
% Individuals below Poverty Level	13.8	14.9	12.4

Source: (Census, 2000c). Note: More recent data from the Census is not available for block groups.

4.9.1.3 Lebanon

Environmental justice was dismissed from further analysis at this location (Section 2.5).

4.9.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Based on the following summary of resource impacts taken from other sections in this EA, the

Johnson Controls'/ENTEK's Proposed Project would not be expected to have disproportionate adverse environmental, social, or economic consequences to the African-American community that surrounds the site in Milwaukee, or the Hispanic community in Holland.

Holland, Michigan. As mentioned, the percentage of Hispanics in Holland, MI, is 22%, five times higher than in the state of Michigan overall, and 50% higher than in the U.S. overall.

There would be new emissions sources from the Holland facilities, for which a state air permit would be required, producing minor adverse air quality impacts (Section 4.1) that would still be below the threshold of significance.

The proposed operations at Holland facility would generate greater amounts of hazardous waste than the current operations that would be phased out (Section 4.13). A change to the generator status of the facility from CESQG to LQG would be necessary. This would require more frequent transport off-site, additional reporting, and possibly structural and physical changes to hazardous waste accumulation points within the facility. Corrosive and reactive hazardous waste streams would be generated from the new operations. Although this could represent a 10-fold increase in waste generated, compliance with applicable USEPA and State of Michigan regulatory requirements would minimize any potential impact. Emergency response procedures and spill contingency plans would be updated at the facility to address the new process.

The project proponents would utilize local public systems for water supply and wastewater disposal as currently done for the existing operations at this site (Section 4.3). They would continue to comply with an existing wastewater discharge permit that is sufficient for discharges arising from activities associated with the proposed project.

The project proponents would also implement best management practices for erosion control during and after construction. There is existing storm sewer infrastructure onsite that would accept runoff resulting from the new project development.

Milwaukee, Wisconsin. The add-on facility in Milwaukee would be built within an impact area (1-mile radius) where 44.2% of residents are African American.

There would be no new sources of air emissions at the site. The additional facility would produce minor adverse air quality impacts, given that its emissions would be *de minimis*, and well below regulatory thresholds (Section 4.1).

The existing facility produces small quantities of hazardous waste, including solvents lead, and corrosive and reactive wastes (Section 4.13), and manages them through an existing Small Quantity Generator permit through RCRA. No new types of wastes would be produced, and the increase in quantities produced would be negligible. Management of non-hazardous solid waste would be the same as current actions, in accordance with applicable regulations.

The proposed project would require very little additional water supply and wastewater treatment requirements, which would be met by existing infrastructure, as would stormwater runoff from the project construction area (Section 4.3).

For both projects, appropriate monitoring equipment and systems that are consistent with all BMPs and regulations would be in place for the materials and wastes produced, to minimize risks to health and human safety. As a further precaution, and when necessary as required by regulatory mandate, the local communities and other relevant agencies would be notified of the materials present so that appropriate emergency plans could be modified.

Social Impacts. Because the proposed facilities at both Milwaukee and Holland are add-ons to an existing developed site, they would not create social dislocation of nearby communities by isolating, displacing, or significantly inconveniencing residents, visitors or merchants.

Economic Impacts. As stated above, the actions at Milwaukee and Holland would provide minor economic benefits to the surrounding communities, in the form of jobs (Milwaukee would provide 75 FTE construction jobs and 148 engineering jobs; Holland would provide 292 FTE construction jobs, and 266 FTE operations jobs) that could be filled by workers from the surrounding areas. Given the minor environmental impacts, no adverse social impacts, and the potential for new jobs, the new facilities should not have any adverse impacts on property values in the surrounding areas.

Therefore, overall environmental justice impacts would be expected to be less than the significance threshold.

4.9.3 Effects of No-Action

If the Johnson Controls'/ENTEK's Proposed Project were not implemented, the opportunity to create short-term construction jobs, long-term manufacturing jobs, and the benefits of resulting economic activity would be lost. This alternative would represent a lost opportunity for a relatively small number of jobs and income in the community and this alternative would not worsen current conditions. Therefore, the impacts would be less than the significance threshold.

4.9.4 Cumulative Impacts

The Johnson Controls'/ENTEK's Proposed Project would not add to local economic development pressures in the Holland, Milwaukee, and Lebanon communities since the new facilities would be within the existing Johnson Controls and ENTEK facility footprints. Also, cumulative environmental justice impacts are unlikely because the Johnson Controls'/ENTEK's Proposed Project is not large enough to result in sufficient increased demands for goods and services to trigger further economic development, and because there are no other planned or reasonably foreseeable projects affecting the same resources. Therefore, the cumulative impacts would be expected to be less than the significance threshold.

4.10 Infrastructure/Utilities

Characterization of the infrastructure and utilities within the project area focuses on the ability of these elements to serve existing demand as well as any increase that may result from implementation of the Johnson Controls'/ENTEK's Proposed Project.

4.10.1 Description

4.10.1.1 Holland

Traffic in Holland is generated primarily by personal operating vehicles. However, the proposed location also has direct access to Macatawa Area Express (MAX) bus routes on West 48th Street. Regional access to Holland is provided by Interstate (I) 96 traveling northeast to southwest between Grand Rapids and Chicago, approximately one mile south of the site. Once entering the area, travelers would approach the site most efficiently via Route 40 (Lincoln Road) that exits directly onto 48th Street and into the existing Johnson Controls facility. Depending on their point of origin, travelers could approach via Michigan Avenue from the north, or via Route 31 from the east and west. The existing facility has electrical transmission lines, potable water utilities, and sewerage access.

4.10.1.2 Milwaukee

Traffic in Milwaukee is generated primarily by personal operating vehicles. However, the proposed location also has direct access to Milwaukee County Transit System bus routes on North Green Bay Avenue. Regional access is provided by I-43 traveling north to south as a major thoroughfare through downtown Milwaukee, approximately one mile east of the site. Once entering the area, travelers would approach the site most efficiently via Route 57 (North Green Bay Avenue) that exits directly onto North Florist Avenue and into the existing facility. Depending on their point of origin, travelers could approach via Silver Spring Drive from the east and west. The existing facility has electrical transmission lines, potable water utilities, and sewerage access.

4.10.1.3 Lebanon

Traffic in Lebanon is generated primarily by personal operating vehicles. Regional access to Lebanon is provided by I-5 traveling north to south between Salem and Eugene approximately seven miles west of the site. Once entering the area, travelers would approach the site most efficiently via Route 34 (Corvallis-Lebanon Highway) with access to Hansard Avenue and the existing facility. Depending on their point of origin, travelers could approach via State Route 20 from the north or south. The existing facility has electrical transmission lines, potable water utilities, and sewerage access.

4.10.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Short-term minor and long-term moderate adverse effects on transportation infrastructure and utilities would be expected from implementing the Johnson Controls'/ENTEK's Proposed Project. The changes would be due to construction vehicles and small changes in localized traffic patterns from the additional personnel. Proposed development at the Milwaukee and the Lebanon facilities would not noticeably affect or disrupt the normal or routine functions of public institutions, roads, electricity, and other public utilities and services in the project area. Effects would be greater at the Holland facility, and some upgrades may be required.

At all three sites, traffic would increase because of additional construction vehicles and traffic delays near the construction sites. These effects would be temporary in nature and would end with the construction phase. The local roadway infrastructure would be sufficient to support any increase in construction vehicle traffic. Such effects would be minimized by placing construction staging areas where they interfere with traffic the least. All construction vehicles would be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs when appropriate.

Holland, MI. Access to the site would be limited to a single entrance/exit from 48th Street, which would result in effects that are more noticeable on streets near the site than on any of the regional roadways. The Johnson Controls'/ENTEK's Proposed Project would introduce approximately 266 permanent employees at the proposed facility. These personnel would constitute approximately 3,607 more vehicle trips per normal weekday, and less on the weekend (ITE, 2003). Some infrastructure upgrades near the site may be required; such as intersection improvements, turning lanes, and signal timing modifications. During the final design stage, extra care would be taken to ensure the new trips would not impede the level of service for any adjacent intersections or roadway segments. There would be an increase in public bus use on routes servicing the facility. No changes in rail or air traffic would be expected. Additional parking would be adequate for the additional personnel. These effects would be minor to moderate.

Milwaukee, WI. Access to the site would be limited to the existing entrance/exit on West Florist Avenue. The Johnson Controls'/ENTEK's Proposed Project would introduce approximately 148 permanent employees at the proposed facility. These personnel would constitute approximately 107 more vehicle trips per normal weekday, and less on the weekend (ITE, 2003). There would be a small increase in public bus use on routes servicing the facility. No changes in rail or air traffic would be expected. Parking would be adequate for the additional personnel. These effects would be minor and below the threshold of significance.

Lebanon, OR. Access to the site would be limited to the existing entrance/exit on Hansard Avenue. The Johnson Controls'/ENTEK's Proposed Project would introduce approximately 26 permanent employees at the proposed facility. These personnel would constitute approximately 87 more vehicle trips per normal weekday, and less on the weekend (ITE, 2003). There would be a small increase in public bus use on routes servicing the facility. No changes in rail or air traffic would be expected. Parking would be adequate for the additional personnel. These effects would be minor and below the threshold of significance.

At the Milwaukee and Lebanon sites, these small increases in traffic would not affect the capacity of any nearby roadway segments or intersections. These effects would be minor. Moderate changes in the number of additional personnel would not substantially change the number of daily trips, the times of travel, or the level of impact under NEPA.

All sites would require utility upgrades and services to support the proposed facilities; primarily electrical, water, and sewage. These improvements would be more substantial at the Holland facility. In the final design stages, all utility upgrades would be reviewed carefully to ensure

compatibility with the site as well as local zoning ordinances. There would be limited potential to alter or disturb power or other infrastructure services to the area because of the Johnson Controls'/ENTEK's Proposed Project. These effects would be minor and below the threshold of significance.

4.10.3 Effects of No-Action

Selecting the No-Action Alternative would result in no impact to infrastructure and utilities at either location. No construction or changes in facility operations would take place. Conditions would remain unchanged when compared to the existing situation.

4.10.4 Cumulative Impacts

Cumulative impacts would not be anticipated with the Johnson Controls'/ENTEK's Proposed Project. There are no planned or reasonably foreseeable actions for either project area, which when added to the effect of the Johnson Controls'/ENTEK's Proposed Project would substantially change local road use or traffic patterns. There would be limited potential to alter or disturb power or other infrastructure services to the area as a result of the Johnson Controls'/ENTEK's Proposed Project. These impacts would be minor.

4.11 Noise

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, the distance between the noise source and the receptor, receptor sensitivity, and time of day.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. A-weighing, described in a-weighted decibels (dBA), approximates this frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate levels in dBA are provided in Table 4.11.

Table 4.11. Common Sounds and Their Levels

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: (Harris, 1998)

The dBA noise metric describes steady noise levels. Very few noises are, in fact, constant, so a noise metric, day-night sound level (DNL) has been developed. DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because it averages ongoing yet intermittent noise, and it measures total sound energy over a 24-hour period. In addition, equivalent sound level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB.

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, the EPA provided information suggesting that continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals.

4.11.1 Description

4.11.1.1 Holland

Existing sources of noise near the Holland site include highway and local road traffic, aircraft, and natural noises such as leaves rustling and bird vocalizations. The site is collocated within one-quarter mile of the Tulip City regional airfield, I-196, and State Route 31. There are no nearby rail corridors. The State of Michigan does not maintain a statewide noise regulation. Holland does maintain a nuisance noise ordinance; however, it does not specifically outline not-to-exceed noise levels or standards (Holland Municipal Code, Article 1, Section 19-5 Noise). The city code exempts construction between the hours of 7:00 a.m. and 10:00 p.m.

Existing noise levels (DNL and L_{eq}) were estimated for the proposed site and surrounding areas using the techniques specified in the *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present* (ANSI, 2003). Table 4.11.1.1 outlines the closest noise-sensitive areas such as residents, schools, churches, and hospitals, and the estimated existing noise levels at each location. Notably, although the areas are primarily industrial-commercial, there are residences within several hundred feet of each site.

Table 4.11.1.1. Estimated Existing Noise levels at Nearby Noise-Sensitive Areas

Site	Closest noise-sensitive area			Estimated existing sound levels (dBA)		
	Distance	Direction	Type	DNL	L_{eq} (Daytime)	L_{eq} (Nighttime)
Holland	400 ft (140 m)	north	Quiet Urban Residential	55	56	50
Milwaukee	300 ft (90 m)	southwest	Commercial, Industrial, and Normal Urban Residential	58	58	52
Lebanon	680 ft (210 m)	west				

Source: (ANSI, 2003)

4.11.1.2 Milwaukee

Existing sources of noise near the Milwaukee site include local road traffic, rail traffic, high altitude aircraft, and natural noises such as leaves rustling and bird vocalizations. The site is adjacent to an active rail spur and one mile west of I-43. The State of Wisconsin does not maintain a statewide noise regulation. Milwaukee does maintain a nuisance noise ordinance; however, it does not specifically outline not-to-exceed noise levels or standards.

See Section 4.11.1.1 for nearby sensitive areas.

4.11.1.3 Lebanon

Existing sources of noise near the Lebanon site include local road traffic, rail traffic, high altitude aircraft, and natural noises such as leaves rustling and bird vocalizations. The maximum noise level from the existing operation at the Lebanon facility is 94 dB within the production building, and 52 dB in the adjacent parking area. The site is adjacent to an active rail spur and one mile north of the Lebanon State regional airport. The OAR limits both the overall noise environment and the maximum allowable noise level from new industrial and commercial noise source (Table 4.11.1.3). Construction activities are specifically exempt from the regulation. The City of Lebanon maintains a nuisance noise ordinance; however, it does not specifically outline not-to-exceed noise levels or standards (Lebanon Municipal Code Title 16, Article 2).

Table 4.11.1.3. State of Oregon New Industrial and Commercial Noise Source Standards

	Level that Cannot be Exceeded		
Period	**50% of the Time**	**10% of the Time**	**1% of the Time**
Day	55	60	75
Night	50	55	60

Source: OAR, Division 35 Noise Control Regulations

See Section 4.11.1.1 for nearby sensitive areas.

4.11.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Short-term minor adverse effects on the noise environment would be expected from implementing the Johnson Controls'/ENTEK's Proposed Project. Noise levels in the project area would not exceed ambient noise level standards as determined by the Federal, state, and/or local government. Minor increases in noise would be primarily from using heavy equipment during construction. The effects would be temporary in nature and would end upon completion of construction. Noise from facility operations would be negligible.

The Johnson Controls'/ENTEK's Proposed Project would require the construction of new facilities at all three site. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (Table 4.11.2). With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction

noise levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. There are residences closer than 800 feet to all three sites that would experience appreciable amounts of construction noise. Given the temporary nature of the construction, these effects would be minor.

Table 4.11.2. Noise Levels Associated with Outdoor Construction

Construction phase	dBA L_{eq} at 50 feet from source
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89

Source: (USEPA, 1974)

Although construction-related noise effects would be minor, contractors would limit construction to occur primarily during normal weekday business hours, and properly maintaining construction equipment mufflers. Noise effects on construction personnel could be limited by ensuring that all personnel wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Operation of the proposed facilities would not generate disruptive noise levels at the adjacent residences. All equipment would be completely enclosed in the proposed buildings. In the final design stages, care would be taken to insure compliance with federal, state, and local noise regulations. Therefore, with BMPs implemented and relevant regulation compliance, impacts would be expected to be less than the significance threshold.

4.11.3 Effects of No-Action

Selecting the No-Action Alternative would result in no effect on the ambient noise environment. No construction would be expected. Ambient noise conditions would remain as described in Section 4.11.1.

4.11.4 Cumulative Impacts

The Johnson Controls'/ENTEK's Proposed Project would introduce short-term incremental increases to the noise environment. These changes would be minor, temporary, and have negligible cumulative effects, which would be less than the significance threshold.

4.12 Human Health and Safety

4.12.1 Description

Air pollution causes human health problems. Air pollution can cause breathing problems; throat and eye irritation; cancer; birth defects; and damage to immune, neurological, reproductive, and respiratory systems (USEPA, 2009b). National and state ambient air quality standards represent the maximum allowable atmospheric concentrations that may occur while still protecting public

health and welfare within a reasonable margin of safety (See Section 4.1). In addition, OSHA regulations specify appropriate protective measures for all employees.

Spills from the construction of the Johnson Controls'/ENTEK's Proposed Project and its operation could also be a source of possible impacts to human health and safety. Spills can introduce soil contamination and allow exposure pathways to workers and the public. The risks and effects of a spill depend on its composition. Similarly, waste management also is a source of possible human health and safety risks from exposure to contaminants (See Section 4.13). Another accident scenario would be with the storage and transportation of lithium batteries.

A primary concern to human health and safety within the project area would be industrial accidents. Although the proposed project would be using innovative technology, the new building construction and operation would not present unusual risks for the workers due to the BMPs and safety protocols present and the similar nature to the tasks already occurring. Thus, the workers on the project would be subject to the same types of health risks that are generally associated with their professions. The most fatalities of any industry in the private sector in 2008 occurred in the construction industry with 404 deaths in 2008 (BLS, 2009b). The construction incident rate of total recordable cases of non-fatal occupational injuries and illnesses in 2008 was 4.7 per 100 full-time workers. The motor vehicle electrical and electronic equipment manufacturing industry had an incidence rate of total recordable cases of non-fatal occupational injuries and illnesses in 2008 of 3.7 per 100 full-time workers (BLS, 2009c).

4.12.2 Effects of Johnson Controls'/ENTEK's Proposed Project

The objective of the proposed project, as discussed in Chapter 2 of this EA, is to establish a world-class domestic advanced battery manufacturing industry through coordinated activities at three sites. Johnson Controls, along with its partner in this proposed project- ENTEK - have safety programs applicable for their respective facilities. The purpose of these programs is to establish a robust health & safety leadership culture that eliminates or mitigates health and safety risks.

If the Johnson Controls'/ENTEK's Proposed Project is implemented, the equipment and operations used in the project should only present minimal risks to human health and safety when operated under normal conditions. Thus, if BMPs, maintenance, and regulations are followed, the equipment should pose little threat to human health and safety. All personnel would be trained regarding the safety measures and procedures (such as handling hazardous materials) associated with the job. All necessary safety equipment would be worn during operating hours or while on the premises. If necessary, the Johnson Controls and ENTEK safety manuals would be updated. By following safety protocols and these other measures, occupational hazards and risks would be minimized.

Since all of the construction and operation of the Johnson Controls'/ENTEK's Proposed Project would be on either Johnson Controls or ENTEK property, the increase in traffic from workers and delivery of equipment and materials would be mostly limited to onsite. This reduces many risks to pedestrians and the general public near the proposed project. However, the Johnson Controls'/ENTEK's Proposed Project would still represent an increase in traffic, which increases

the potential for accidents. The current roads near the sites should be able to handle the increase in vehicles associated with this project. Thus, the impact to human health and safety from the increase in transportation is not expected to exceed the level of significance threshold (See Section 4.10).

Air emissions from the Johnson Controls'/ENTEK's Proposed Project are anticipated to be less than significant (See Section 4.1). Thus, the impacts to human health from air emissions would not be expected to exceed the significance threshold. Following mitigation measures and BMPs would reduce any impacts to human health from air quality. Further, workers would follow OSHA procedures, which would further reduce the impact to human health. Therefore, there would be a minimal risk to human health and safety as long as safety procedures are followed.

The soils are not highly erodible (See Section 4.2); therefore, water contamination from increased runoff, which could lead to human health and safety risks, is not a major issue (See Section 4.3). If significant changes were to occur to stormwater runoff, a new or modified NPDES permit would be required. Further, wastewater would be collected and treated according to applicable regulations and by qualified personnel (Section 4.2). Therefore, the overall effect of the Johnson Controls'/ENTEK's Proposed Project to surface water quality would not be expected to exceed the significance threshold.

If safety procedures and BMPs were followed, spills and leaks from equipment and processes (other than the hazardous wastes) would be of low concentrations as well as nonhazardous and non-toxic. This would represent a low risk to human health and safety. Under normal conditions, hazardous and toxic materials can be used safely when appropriate safety precautions are followed. All generated waste materials would be handled and disposed in accordance with applicable regulations.

With regard to the handling of hazardous materials, both Johnson Controls and ENTEK would effectively control chemicals and exposure through hazardous materials control programs developed to protect health, safety and the environment. Procedures would include chemical right-to-know information regarding the chemicals used in operations, need and use of personal protective equipment, lock out tag out, hearing protection, electrical hazards, eye protection, respirator fit and use, etc.

Appropriate monitoring equipment and systems that are consistent with all BMPs and regulations would be in place for the materials and wastes produced. This operating procedure would detect leaks and equipment malfunctions to ensure the safety of the workers and allow appropriate early responses to any problems. This would reduce the risk to human health and safety on the site as well as in the local community. As a further precaution, and when necessary as required by regulatory mandate, the local communities and other relevant agencies would be notified of the materials present so that appropriate emergency plans could be modified.

Facility decommission would represent the same types of risks as the operation. Thus, with proper safety procedures in place, the impact to human health and safety should be minimal. Appropriate BMPs and adherence to regulations would minimize the risks present with project

implementation. Therefore, the overall impact to human health and safety would not be expected to exceed the significance threshold.

4.12.3 Effects of No-Action

Under the No-Action Alternative, there would be no construction, operation, or decommissioning of the proposed project. Thus, none of the risks listed in the previous section would occur, which would mean no impacts to human health and safety. The exception would be the fact that the Johnson Controls'/ENTEK's Proposed Project's purpose, which is to advance research EDV in battery technology and provide economic stimulation, would not be implemented. However, many other projects are in operation or are being proposed to assist in the EDV battery technology and economic stimulation. Thus, not all possible issues with delaying the advancement of EDV research and economic stimulation are attributable to implementing the No-Action Alternative (DOE refusing to fund the Johnson Controls'/ENTEK's Proposed Project) for this project.

4.12.4 Cumulative Effects

The cumulative impacts of existing activities in and around the project area do not represent a substantial risk to human health and safety with existing and upcoming mitigation and safety procedures in place. Further, the proposed project would contribute minimally to cumulative impacts due to the minimal risk to human health and safety with BMPs in place. Therefore, the cumulative impacts with implementing the Johnson Controls'/ENTEK's Proposed Project would not be expected to exceed the significance criteria.

Since the current projects in the area do not pose a substantial risk to human health and safety, the No-Action Alternative does not represent any additional risks to human health and safety. As described in the previous section, the exception is that not implementing the Johnson Controls'/ENTEK's Proposed Project (thus, implementing the No-Action Alternative) would have an adverse impact on the progress towards solutions for electric drive component manufacturing and economic stimulus. However, since this is a single project of many, the cumulative impacts to human health and safety for the No-Action Alternative are not expected to exceed the threshold of significance.

4.13 Waste Management

4.13.1 Description

4.13.1.1 Holland

The Holland facility is identified by the USEPA as a CESQG of hazardous waste under identification number MIR000019919 (USEPA, 2009c). As a CESQG, the facility generates less than 220 pounds (100 kilograms) of hazardous waste per calendar month. The product development function of the Holland facility is currently being phased out of operation (JCI, 2009a).

4.13.1.2 Milwaukee

The Milwaukee facility is identified by the USEPA as a small quantity generator (SQG) of hazardous waste under identification number WID000808865 (USEPA, 2009d). The Milwaukee facility tests and validates relays and industrial controls for vehicle engines and batteries. As a SQG the facility generates between 220 and 2,200 pounds (100 and 1,000 kilograms) of solid hazardous waste each calendar month. The hazardous waste stream includes solvents, lead, and corrosive and reactive wastes (EDR, 2009d).

4.13.1.3 Lebanon

The ENTEK facility in Lebanon is identified by the USEPA as a LQG of hazardous waste under identification number ORD981770761 (USEPA, 2009e). The Lebanon facility manufactures various parts, equipment, and plastics for appliances, machinery, and semiconductors. As a LQG the facility generates more than 2,200 pounds (1,000 kilograms) of solid hazardous waste per calendar month. The hazardous waste stream includes halogenated solvents such as trichloroethylene (TCE) (JCI, 2009b). There have been past releases of TCE from the Lebanon facility and TCE has been detected in shallow groundwater north of the facility (EDR, 2009e). The issue of TCE in shallow groundwater is in the final stages of remediation pending the finding of No Further Action from the Oregon DEQ.

4.13.2 Effects of Johnson Controls'/ENTEK's Proposed Project

Construction activities present the potential to encounter previously unidentified contaminated soils or groundwater. Based on a database search of known locations of hazardous sources and reported activity near the Milwaukee and Holland facilities, the likelihood of encountering contamination is low and impacts from contaminants expected during construction would be negligible. Construction activities at the Lebanon facility may expose workers to TCE contamination should the shallow groundwater be encountered. The extent and severity of any risk would be dependent on the location of the construction activity to known locations of past releases and concentrations of contaminants. Appropriate worker safety precautions would be implemented to reduce any risk.

Small amounts of potentially hazardous waste materials (e.g., waste oils, lubricants, solvents, cleaners, paints) would be generated during construction but proper use and storage of the materials would ensure no impact to workers and the environment. Use or storage of hazardous materials on site during construction would be in accordance with applicable regulations, and appropriate spill prevention measures would be implemented. If hazardous materials are spilled or deposited on the site during or after construction, the responsible party would immediately notify appropriate regulatory parties, take all necessary actions to clean up and properly dispose of the materials, and complete all reporting requirements.

The proposed operations at the Holland facility would generate greater amounts of hazardous waste than the current operations that would be phased out. A change to the generator status of the facility from CESQG to LQG would be necessary. This would require more frequent transport off-site by a licensed recycler, additional reporting, and possibly structural and physical

changes to hazardous waste accumulation points within the facility. Reactive waste streams would include solvents, electrolyte, and scrap cells. Other waste includes copper, aluminum, mixed metal and graphite coated substrate, and separator material, generated from the new operations. Although this could represent a 10-fold increase in waste generated, compliance with applicable USEPA and State of Michigan regulatory requirements would minimize any potential impact. Emergency response procedures and spill contingency plans would be updated at the facility to address the new process.

Operations at the Milwaukee and Lebanon facilities are not expected to generate hazardous waste of a different type and have only minor increases in amount than what is currently generated; therefore, no changes to the facilities' status as a SQG at Milwaukee and LQG at Lebanon are anticipated. There would be a negligible impact on accumulation quantities or time limits, or frequency of off-site transport by licensed waste handlers for recycling due to the new operations at these locations. Emergency response procedures and spill contingency plans would be updated at each facility if new materials were brought into the facility.

Increases in office trash are expected with the additional employees needed to operate the new facilities. Non-hazardous solid waste generated by the new manufacturing process would be approximately 45 tons (41 metric tons) annually from the Lebanon facility (JCI, 2009b), less than 20 tons (18 metric tons) annually from the Holland facility (JCI, 2009a), and less than 1 ton (0.9 metric ton) at the Milwaukee facility (JCI, 2009b). Most of the non-hazardous solid waste generated is recycled, and thus, the amount of solid waste requiring disposal by the new development, validation, and manufacturing processes would have a negligible impact on the volume received at the transfer stations for disposal in landfills.

With proper BMPs in place, overall impacts to waste management from implementing this alternative would be expected to be less than the significance threshold.

4.13.3 Effects of No-Action

The construction of new facilities and expansion of existing facilities would not occur under the No-Action Alternative. There would be no new development, validation, and manufacturing processes affecting the management of existing hazardous and solid waste at these facilities.

4.13.4 Cumulative Impacts

Increased testing, validation, and manufacturing of parts for electric drive vehicles would have a cumulative beneficial effect on the environment from improved electric drive vehicles. There are no reasonably foreseeable projects in the vicinity of any of the proposed sites that would have similar effects as the Johnson Controls'/ENTEK's Proposed Project. Cumulative impacts from the proposed project when added to other past, present, and reasonably foreseeable future actions would be minimally adverse and are not expected to exceed the threshold of significance.

4.14 Sustainability

Executive Order (EO) 13541 on Federal Sustainability issued on 5 October 2009, states in part

that it is the **policy** of the Federal government *"to create a clean energy economy"* and that *"Federal agencies shall increase energy efficiency; measure, report, and reduce their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and stormwater management; eliminate waste, recycle, and prevent pollution; … design, construct, maintain, and operate high performance sustainable buildings in sustainable locations; and strengthen the vitality and livability of the communities in which Federal facilities are located."*

Section 2(f)(iv) of the EO states that each agency shall *"advance regional and local integrated planning by … identifying and analyzing impacts from energy usage and alternative energy sources in all Environmental Impact Statements and Environmental Assessments for proposals for new or expanded Federal facilities under the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.)."*

The Johnson Controls'/ENTEK's Proposed Project reviewed by this EA is part of a larger national effort to move this country to a more sustainable future. Efforts are underway to begin the move from non-renewable fuel sources to renewable fuel sources to power our economy. A major part of that non-renewable fuel use is in personnel transportation and the use of internal combustion engines in our automobiles. A move to electric vehicles can be seen as a very visible move to a more sustainable future.

Johnson Controls hopes to do its part in this national move to a sustainable future. The action proposed and reviewed in this EA is a part of that effort. If initiated, not only would this project assist in the development of the viable use of electric vehicles, but also Johnson Controls and ENTEK would also implement specific project designs as part of the project to increase the sustainability of the proposed project. For example, ENTEK recycles raw materials (e.g., naphthenic process oil, trichloroethylene) as part of its separator production process, and the Holland facility is in the process of becoming Leadership in Energy and Environmental Design (LEED) certified while the Milwaukee site is already LEED platinum.

5.0 CONSULTATION AND COORDINATION

A kick-off meeting was held on October 20, 2009, at NETL's office in Morgantown, West Virginia, with representatives from NETL and Mangi Environmental Group to begin formally the EA process. Subsequent to that meeting, a review was made of available information necessary for the completion of the EA and data gaps were sent to NETL as well as Johnson Controls and ENTEK.

5.1 Agency Coordination

The CEQ's regulations for implementing NEPA allows federal agencies to invite comment from Tribal, state, and local agencies, as well as other federal agencies in the preparation of EAs. The purpose of this coordination is to obtain special expertise with respect to environmental and cultural issues in order to enhance interdisciplinary capabilities and otherwise ensure successful, effective consultation in decision-making. The below entities were contacted for this effort.

5.1.1 U.S. Fish and Wildlife Service (USFWS)

The mission of the USFWS is to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of American people. Consultation with USFWS also assists with the Endangered Species Act compliance.

See Appendix B for correspondence with this agency.

5.1.2 State Historic Preservation Office (SHPO)

The National Historic Preservation Act (NHPA) requires DOE to consult with the SHPO prior to any construction to ensure that no historical properties would be adversely affected by a proposed project. DOE must also afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed project.

See Appendix C for correspondence with this agency.

5.1.3 Bureau of Indian Affairs

The American Indian Religious Freedom Act, 42 USC § 1996, establishes policy to protect and preserve the inherent and Constitutional right of Native Americans to believe, express, and exercise their traditional religions. The law ensures the protection of sacred locations; access of Native Americans to those sacred locations and traditional resources that are integral to the practice of their religions; and establishes requirements that would apply to Native American sacred locations, traditional resources, or traditional religious practices potentially affected by construction and operation of proposed facilities.

See Appendix D for correspondence with the Bureau of Indian Affairs and Tribal Councils.

5.2 Public Involvement

The public comment period on the Draft EA was January 24 to February 23, 2010. An article informing the public of the availability of the Draft EA at a Herrick District Library, Villard Avenue Library, and Lebanon Public Library ran January 24 to January 26, 2010 in the Holland Sentinel, Milwaukee Journal Sentinel, and Democrat Herald, respectively. DOE received the public comments in found in Appendix E.

6.0 LIST OF PREPARERS

James Mangi; Contract Management, Project Oversight
Randy Williams, Co-Project Manager, Human Health and Safety, Land Use, Sustainability, Alternatives
Meghan Morse; Co-Project Manager, Document/Administrative Record Management, Wetlands/Floodplains, Cultural Resources
Mark Blevins; Maps
Erica Earhart; Cumulative Impacts Research, Document Management Support, Legal Assistance
Dave Henney; Geology and Soils; Water Resources
Bruce Kaplan; Socioeconomics, Environmental Justice
Tim Lavallee; Air Quality, Noise, Infrastructure and Utilities
Robert Macha; Glossary
Mary Peters; Wildlife, Terrestrial Plants, Threatened and Endangered Species, Waste Management
Pam Sarlouis; Document Management Support

7.0 REFERENCES

(ANSI, 2003). American National Standards Institute. 2003. A*merican National Standard Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3: Short-term measurements with an observer present*. New York: Acoustical Society of America.

(BLS, 2009a). Bureau of Labor Statistics. 2009. *Local Area Unemployment Statistics-Unemployment Rates for Metropolitan Areas*. Accessed December 2009 at http://www.bls.gov/web/laummtrk.htm.

(BLS, 2009b). U.S. Bureau of Labor Statistics. 2009. *Census of Fatal Occupational Injuries Summary, 2008*. Accessed November 2009 at http://www.bls.gov/news.release/cfoi.nr0.htm.

(BLS, 2009c). U.S. Bureau of Labor Statistics. 2009. *Incidence Rates of Total Recordable Cases of Nonfatal Occupational Injuries and Illnesses by Quartile Distribution and Employment Size, Private Industry, 2008*. Accessed November 2009 at http://www.bls.gov/iif/oshwc/osh/os/ostb2075.txt.

(CARB, 2007). California Air Resource Board. 2007. *Air EMission FACtors (EMFAC) Model*. Accessed December 2009 at http://www.arb.ca.gov/msei/onroad/latest_version.htm.

(Census, 2008a). U.S. Census Bureau. 2008. *American Community Survey Demographic and Housing Estimates: 2006-2008: Michigan*. Accessed December 2009 at http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=04000US26&-qr_name=ACS_2008_3YR_G00_DP3YR5&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-redoLog=false&-_sse=on.

(Census, 2008b). U.S. Census Bureau. 2008. *Selected Economic Characteristics: 2006-2008: PUMA5 02101, Wisconsin*. Accessed December 2009 at http://factfinder.census.gov/servlet/ADPTable?_bm=y&-_geo_id=79500US5502101:Y&-zip=53209&-context=adp&-qr_name=ACS_2008_3YR_G00_DP3YR3&-street=5757%20N.%20Green%20Bay%20Avenue&-ds_name=ACS_2008_3YR_G00_&-city=Milwaukee,&-tree_id=3308&-_execClient=Y&-redoLog=true&-all_geo_types=N&-geo_id=79500US5502101&-_stateSelectedFromDropDown=Wisconsin&-format=&-_lang=en&-states=Wisconsin.

(Census, 2008c). U.S. Census Bureau. 2000. Census 2000 Demographic Profile Highlights: Holland, MI. Accessed at http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=&geo_id=06000US2613938660&_geoContext=01000US%7C04000US26%7C05000US26139%7C06000US2613938660&_street=&_county=holland&_cityTown=holland&_state=04000US26&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=060&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=&qr_name=&reg=%3A&_keyword=&_industry=.

(Census, 2000a). U.S. Census Bureau. 2000. *Census 2000 Demographic Profile Highlights: Zip Code Tabulation Area 53209*. Accessed December 2009 at

http://factfinder.census.gov/servlet/SAFFFacts?_event=ChangeGeoContext&geo_id=86000US53209&_geoContext=01000US%7C04000US42%7C16000US4287232&_street=&_county=&_cityTown=&_state=04000US55&_zip=53209&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=&qr_name=&reg=%3A&_keyword=&_industry=.

(Census, 2000b). U.S. Census Bureau. 2000. *Table DP-1. Profile of General Demographic Characteristics: 2000: Lebanon city, Oregon.* Accessed December 2009 at http://censtats.census.gov/data/OR/1604141650.pdf.

(Census, 2000c). U.S. Census Bureau. 2000. Census 2000, custom data set using TIGER files to delineate area of impact (accessed at http://www.census.gov/geo/www/tiger/tgrshp2009/tgrshp2009.html) and applying Census data from Summary Files 1 & 3 (accessed at http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=&_lang=en&_ts=).

(Cowardin et al., 1979). Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Accessed November 2009 at http://www.wbdg.org/ccb/ENVREG/habitat.pdf.

(DOE, 2008). Department of Energy. 2008. *Environmental Assessment, Construction and Operation of a Proposed Lignocellulosic Biorefinery, POET Project LIBERTY*. p. 3-44.

(DOE, 2003). Department of Energy. 2003. *Consumption and Gross Energy Intensity by Census Region for Sum of Major Fuels, Commercial Buildings Energy Consumption Survey*. Accessed December 2009 at http://www.eia.doe.gov/emeu/cbecs/.

(EDR, 2009a). Environmental Data Resources. 2009. *EDR NEPACheck® for Johnson Controls Lebanon, 250 N. Hansard Avenue., Lebanon, OR 97355.* Inquiry Number 2631734.2s. 33 pp.

(EDR, 2009b). Environmental Data Resources. 2009. *EDR NEPACheck® for Johnson Controls Milwaukee, 5757 N. Green Bay Avenue, Milwaukee, WI 53209.* Inquiry Number 2631727.2s. 38 pp.

(EDR, 2009c). Environmental Data Resources. 2009. *Johnson Controls Meadowbrook, 70 West 48th Street, Holland, MI 49423.* Inquiry Number: 2631677.1s. 29 pp.

(EDR, 2009d). Environmental Data Resources, Inc. 2009. *The EDR Radius Map Report with GeoCheck for Johnson Controls Milwaukee, 5757 N. Green Bay Avenue, Milwaukee, WI 53209. Inquiry Number 2631727.1s. November 5, 2009.* 2,029 pp.

(EDR, 2009e). Environmental Data Resources, Inc. 2009. *The EDR Radius Map Report with GeoCheck for Johnson Controls Lebanon, 250 N. Hansard Ave., Lebanon, OR 97355. Inquiry Number 2631734.1s. November 5, 2009.* 395 pp.

(ENTEK, 2009). ENTEK International, LLC. 2009. *2008 Annual Air Emissions Report to the Oregon Department of Environmental Quality*. 52 pp.

(ESEC, 2000). E&S Environmental Chemistry and South Santiam Watershed Council. 2000. *South Santiam Watershed Assessment.* Accessed December 2009 at http://www.sswc.org/wp-content/uploads/2008/12/SouthSantiamWatershedAssessment.pdf.

(Fuller, 2005). Fuller, Erin. 2005. *Black River Watershed Management Plan.* Accessed December 2009 at http://www.michigan.gov/documents/deq/ess-nps-wmp-black-river_208912_7.pdf.

(Harris, 1998). Harris, Cyril M. 1998. *Handbook of Acoustical Measurement and Noise Control*. New York: Acoustical Society of America.

(HHS, 2009). U.S. Department of Health & Human Services. 2009. *The 2009 HHS Poverty Guidelines*. Accessed December 2009 at http://aspe.hhs.gov/poverty/09poverty.shtml.

(ITE, 2003). Institute of Transportation Engineers. 2003. Transportation Engineers Trip Generation Manual, 7th Edition. Washington, D.C.: Institute of Transportation Engineers.

(JCI, 2009a). Johnson Controls. 2009. *Environmental Questionnaire (Holland Plants 1 & 2)*. 27 pp.

(JCI, 2009b). Johnson Controls. 2009. *Environmental Questionnaire (all sites)*. 46 pp.

(Lafond, 2009). Lafond, Timothy J., Technical Representative, Johnson Controls. Personal Communication. *Status update on data requests for Johnson Controls?* November 12, 2009.

(Langridge, 1987). Langridge, Russell W. U.S. Department of Agriculture, Soil Conservation Service. 1987. *Soil Survey of Linn County Area, Oregon.* Accessed December 2009 at http://soildatamart.nrcs.usda.gov/Manuscripts/OR639/0/or639_text.pdf.

(LINNCO, 2005). Linn County Planning and Building Department. 2005. *Linn County Natural Hazard Mitigation Plan.* Accessed December 2009 at https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/3160/Linn_County_NHMP_07.31.06.pdf?sequence=1.

(NAM, 2006). National Associations of Manufactures. 2006. *Manufacturing's Multiplier Effect is Stronger than Other Sectors*. Accessed December 2009 at http://www.nam.org/~/media/Files/s_nam/docs/237700/237698.pdf.ashx.

(NCSS, 2006). National Cooperative Soil Survey. 2006. *Coburg Series.* Accessed December 2009 at http://www2.ftw.nrcs.usda.gov/osd/dat/C/COBURG.html.

(ODEQ, 2006). Oregon Department of Environmental Quality. 2006. *Issuance of Oregon Title V Operating Permit Renewal: Permit No. 22-6024.* 14 pp.

(Pekala, 2009). Pekala, Rick, Technical Representative, ENTEK. Personal Communication. *ENTEK Input / DOE Stimulus Program with JCIl.* November 18, 2009.

(SCAQMD, 1993). South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. South Coast Air Quality Management District, Diamond Bar, CA.

(USDA, 2009a). U.S. Department of Agriculture.2009. *Custom Soil Resource Report, Allegan County, MI.* Soil survey data prepared June 2009. Accessed December 2009 at http://websoilsurvey.nrcs.usda.gov.

(USDA, 2009b). U.S. Department of Agriculture. 2009. *Custom Soil Resource Report, Linn County, OR.* Soil survey data prepared August 2009. Accessed December 2009 at http://websoilsurvey.nrcs.usda.gov.

(USEPA, 2009a). U.S. Environmental Protection Agency. 2009. *The Green Book Nonattainment Areas for Criteria Pollutants*. Accessed December 2009 at http://www.epa.gov/oar/oaqps/greenbk/.

(USEPA, 2009b). U.S. Environmental Protection Agency. 2009. *Basic Information: Air and Radiation*. Accessed December 2009 at http://www.epa.gov/air/basic.html.

(USEPA, 2009c). United States Environmental Protection Agency. 2009. *Facility Detail Report, Johnson Controls Interiors LLC, Holland, MI 49423.* Accessed December 2009 at http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=MIR000019919&pgm_sys_acrnm_in=RCRAINFO.

(USEPA, 2009d). United States Environmental Protection Agency. 2009. *Facility Detail Report, Johnson Controls, Inc., Milwaukee, WI 53201.* Accessed December 2009 at http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=WID000808865&pgm_sys_acrnm_in=RCRAINFO.

(USEPA, 2009e). United States Environmental Protection Agency. 2009. Facility Registry System. *Facility Detail Report, ENTEK International, LLC, Lebanon, OR 97355.* Accessed December 2009 at http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=ORD981770761&pgm_sys_acrnm_in=RCRAINFO.

(USEPA, 2005). U.S. Environmental Protection Agency. 2005. *Methodology to Estimate the Transportable Fraction (TF) of Fugitive Dust Emissions for Regional and Urban Scale Air Quality Analyses.* Accessed December 2009 at http://www.epa.gov/ttn/chief/emch/dustfractions/transportable_fraction_080305_rev.pdf.

(USEPA, 1995). U.S. Environmental Protection Agency. 1995. *Compilation of Air Pollutant Emission Factors, AP-42, 5th edition, Vol. I: Stationary Point and Area Sources.* Accessed December 2009 at http://www.epa.gov/ttnchie1/ap42/.

(USEPA, 1974). U.S. Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* Accessed December 2009 at http://www.nonoise.org/library/levels74/levels74.htm#table%20of%20contents.

(USFWS, 2009). United States Fish and Wildlife Service. 2009. *National Wetlands Inventory: Wetlands Mapper.* Accessed December 2009 at http://www.fws.gov/wetlands/Data/Mapper.html.

(USFWS, 2008a). United States Fish and Wildlife Service. 2008. *Karner Blue Butterfly (Lycaeides Melissa samuelis) Fact Sheet.* Accessed December 2009 at http://www.fws.gov/Midwest/endangered/insects/kbb/kbbFactSheet.pdf.

(USFWS, 2008b). United States Fish and Wildlife Service. 2008. *Draft Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington.* Accessed December 2009 at http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/Prairie_Species_Draft_Recovery_Plan.pdf.

(USFWS, 2006). United States Fish and Wildlife Service. 2006. *Recovery Outline for Lupinus sulphureus ssp. kincaidii (Kincaid's lupine).* U.S. Fish and Wildlife Service, Region 1, Oregon Fish and Wildlife Office. 23 pp.

(USFWS, 2001). United States Fish and Wildlife Service. 2001. *Pitcher's Thistle (Cirsium pitcheri) Fact Sheet.* Accessed December 2009 at http://www.fws.gov/midwest/endangered/plants/pdf/Pitchersthistle.pdf.

(USFWS, 1998). United States Fish and Wildlife Service. 1998. *Recovery Plan for the Threatened Nelson's Checker-mallow (Sidalcea nelsoniana*). Accessed December 2009 at http://ecos.fws.gov/docs/recovery_plans/1998/980930e.pdf.

(USGS, 2009a). US Geological Survey. 2009. *Michigan Earthquake History.* Accessed December 2009 at http://earthquake.usgs.gov/earthquakes/states/michigan/history.php.

(USGS, 2009b). US Geological Survey. 2009. *Wisconsin Earthquake History.* Accessed December 2009 at http://earthquake.usgs.gov/earthquakes/states/wisconsin/history.php.

(WDNR, 2001). Wisconsin Department of Natural Resources. 2001. *The State of the Milwaukee River Basin.* Accessed December 2009 at http://dnr.wi.gov/org/gmu/milw/milwaukee_801.pdf.

8.0 GLOSSARY

Ambient - The natural surroundings of a location.

BMPs (Best Management Practices) - Methods or techniques found to be the most effective and practical means in achieving an objective (such as preventing or minimizing pollution) while optimally using the firms resources.

Cultural Resources - Any building, site, district, structure, object, data, or other material significant in history, architecture, archeology, or culture. Cultural resources include: historic properties as defined in the National Historic Preservation Act; cultural items as defined in the Native American Graves Protection and Repatriation Act; archeological resources as defined in the Archeological Resources Protection Act; sacred sites as defined in Executive Order 13007, *Protection and Accommodation of Access To "Indian Sacred Sites,"* to which access is provided under the American Indian Religious Freedom Act; and collections.

Cumulative Effects - Those effects on the environment that result from the incremental effect of the action when added to past, present and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions.

Cumulative Impacts - Impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or non-Federal) or person undertakes such other actions; effects resulting from individually minor, but collectively significant, actions taking place over a period of time.

End Moraine - A moraine that forms at the end of the glacier called the snout.

Endangered Species - A species that is threatened with extinction throughout all or a significant portion of its range.

Environmental Assessment (EA) - A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

Environmental Impact Statement (EIS) - A detailed written statement required by Section 102(2) (C) of the National Environmental Policy Act, analyzing the environmental impacts of a Proposed Action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitment of resources (40 CFR 1508.11).

Executive Order (EO) - Official proclamation issued by the President that may set forth policy, direction or establish specific duties in connection with the execution of federal laws and programs.

Floodplain - The flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding.

Full-time Equivalent (FTE) - Defined by the Government Accountability Office (GAO) as the number of total hours worked divided by the maximum number of compensable hours in a work year as defined by law. For example, if the work year is defined as 2,080 hours, then one worker occupying a paid full time job all year would consume one FTE.

Glacial Outwash - Sediments deposited by meltwater at the terminus of a glacier.

Glacial Till - Unsorted glacial sediment.

Glaciofluvial - Of, or pertaining to streams or rivers associated with glaciers, ice sheets, or ice caps.

Hydrology - The study of the movement, distribution, and quality of water throughout Earth, and thus addresses both the hydrologic cycle and water resources.

Igneous - Formed by magma (molten rock) being cooled and becoming solid.

Invasive Species - An alien (nonnative to the ecosystem) species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Lacustrine - Of, or pertaining to a lake.

Meltwater - Water released by the melting of snow or ice, including glacial ice.

Mitigation - Methods or actions taken to improve site conditions by limiting, reducing or controlling adverse impacts to the environment.

Moraine - Glacially formed accumulation of unconsolidated glacial debris (soil and rock).

National Environmental Policy Act (NEPA) - Requires all agencies, including Department of Energy, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision making (40 CFR 1500).

Prime Farmland - Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops and is available for these uses. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Sedimentary - Formed by the deposition of sediment, as certain rocks.

Sustainability - The capacity to endure. In ecology, the word describes how biological systems remain diverse and productive over time.

Threatened Species - A species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Topography - The relief features or surface configuration of an area.

Watershed - An extent of land where water from rain or snow melt drains downhill into a body of water, such as a river, lake, reservoir, estuary, wetland, sea or ocean.

Wetlands - Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil, including swamps, marshes, bogs, and other similar areas.

APPENDICES

Appendix A Air Emission Calculations

A.1 Holland

Table A1-1. Construction Equipment Use – Holland Facility				
Equipment type	**Number of units**	**Days on site**	**Hours per day**	**Operating hours**
Excavators Composite	1	115	4	460
Rollers Composite	1	173	8	1384
Rubber Tired Dozers Composite	1	115	8	920
Plate Compactors Composite	2	115	4	920
Trenchers Composite	2	58	8	928
Air Compressors	2	115	4	920
Cement & Mortar Mixers	2	115	6	1380
Cranes	1	115	7	805
Generator Sets	2	115	4	920
Tractors/Loaders/Backhoes	2	230	7	3220
Pavers Composite	1	58	8	464
Paving Equipment	2	58	8	928

Table A1-2. Construction Equipment Emission Factors (lbs/hour) – Holland Facility						
Equipment	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Excavators Composite	0.5828	1.3249	0.1695	0.0013	0.0727	0.0727
Rollers Composite	0.4341	0.8607	0.1328	0.0008	0.0601	0.0601
Rubber Tired Dozers Composite	1.5961	3.2672	0.3644	0.0025	0.1409	0.1409
Plate Compactors Composite	0.0263	0.0328	0.0052	0.0001	0.0021	0.0021
Trenchers Composite	0.5080	0.8237	0.1851	0.0007	0.0688	0.0688
Air Compressors	0.3782	0.7980	0.1232	0.0007	0.0563	0.0563
Cement and Mortar Mixers	0.0447	0.0658	0.0113	0.0001	0.0044	0.0044
Cranes	0.6011	1.6100	0.1778	0.0014	0.0715	0.0715
Generator Sets	0.3461	0.6980	0.1075	0.0007	0.0430	0.0430
Tractors/Loaders/Backhoes	0.4063	0.7746	0.1204	0.0008	0.0599	0.0599
Pavers Composite	0.5874	1.0796	0.1963	0.0009	0.0769	0.0769
Paving Equipment	0.0532	0.1061	0.0166	0.0002	0.0063	0.0063

Note: lbs is pounds.

Table A1-3. Construction Equipment Emissions (tons per year) – Holland Facility						
Equipment	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Excavators Composite	0.1341	0.3047	0.0390	0.0003	0.0167	0.0167
Rollers Composite	0.3004	0.5956	0.0919	0.0005	0.0416	0.0416
Rubber Tired Dozers Composite	0.7342	1.5029	0.1676	0.0011	0.0648	0.0648
Plate Compactors Composite	0.0121	0.0151	0.0024	0.0000	0.0010	0.0010
Trenchers Composite	0.2357	0.3822	0.0859	0.0003	0.0319	0.0319
Air Compressors	0.1740	0.3671	0.0567	0.0003	0.0259	0.0259
Cement and Mortar Mixers	0.0309	0.0454	0.0078	0.0001	0.0031	0.0031
Cranes	0.2419	0.6480	0.0716	0.0006	0.0288	0.0288
Generator Sets	0.1592	0.3211	0.0494	0.0003	0.0198	0.0198
Tractors/Loaders/Backhoes	0.6542	1.2470	0.1939	0.0012	0.0964	0.0964
Pavers Composite	0.1363	0.2505	0.0455	0.0002	0.0178	0.0178
Paving Equipment	0.0247	0.0492	0.0077	0.0001	0.0029	0.0029
Total	**2.84**	**5.73**	**0.82**	**0.0051**	**0.35**	**0.35**

Table A1-4. Painting – Holland Facility			
VOC Content	0.84	lbs/gallon	
Coverage	400	ft^2/gallon	
Emission Factor	0.0021	lbs/ft^2	
Building/Facility	Wall Surface	VOC (lbs)	VOC (tpy)
All Buildings Combined	58000	121.8	0.061
Total	**58000**	**121.80**	**0.06**

Table A1-5. Delivery of Equipment and Supplies – Holland Facility						
Number of Deliveries	2					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	230					
Total Miles	27600					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007
Total Emissions (lbs)	605.80	654.47	82.60	0.71	23.63	20.41
Total Emissions (tpy)	0.30	0.33	0.04	0.0004	0.01	0.01
Source: (CARB, 2007)						

Table A1-6. Paving Off Gasses– Holland Facility			
VOC Emissions Factor	2.62	lbs/acre	
Building/Facility	Area (acres)	VOC (lbs)	VOC (tpy)
All Combined Parking	0.23	0.60	0.0003
Total	**0.23**	**0.60**	**0.0003**
Source: (SCAQMD, 1993)			

Table A1-7. Surface Disturbance – Holland Facility						
TSP Emissions	80	lb/acre				
PM_{10}/TSP	0.45					
$PM_{2.5}/PM_{10}$	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	**Area (acres)**	**TSP (lbs)**	**PM_{10} (lbs)**	**PM_{10} (tons)**	**$PM_{2.5}$ (lbs)**	**$PM_{2.5}$ (tons)**
Demolition	0.9	2153	969	0.48	73	0.04
Total	**0.9**	**2153**	**969**	**0.48**	**73**	**0.04**
Sources: (USEPA, 1995; USEPA, 2005)		Note: TSP is total suspended particles.				

Table A1-8. Worker Commutes – Holland Facility						
Number of Workers	136					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	230					
Total Miles	1876800					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	19797.31	2069.89	2025.43	20.17	159.63	99.34
Total Emissions (tpy)	9.90	1.03	1.01	0.0101	0.08	0.05
Source: (CARB, 2007)						

Table A1-9. Total Construction Emissions (tons per year) – Holland Facility						
Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	2.84	5.73	0.82	0.0051	0.35	0.35
Painting	0.00	0.00	0.06	0.0000	0.00	0.00
Delivery of Equipment and Supplies	0.30	0.33	0.04	0.0004	0.01	0.01
Paving Off Gasses	0.00	0.00	0.00	0.0000	0.00	0.00
Surface Disturbance	0.00	0.00	0.00	0.0000	0.48	0.04
Worker Commutes	9.90	1.03	1.01	0.0101	0.08	0.05
Total Construction Emissions	**13.04**	**7.09**	**1.93**	**0.0156**	**0.93**	**0.45**

Table A1-10. Boiler Emissions – Holland Facility						
Gross Area	29000	ft^2				
Heating Requirements	99000	BTU/ft^2				
Total Annual Heat Required	2871	MMBTU				
Heating Value	150	MMBTU/1,000 Gallons				
Total #2 Oil Used	19.1	Thousand Gallons				
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lb/1,000 gal)	5	24	2.493	0.1	2	2
Total Emissions (tons)	**0.05**	**0.23**	**0.02**	**0.00**	**0.02**	**0.02**
Notes: Emission factors for all pollutants were obtained from EPA's AP-42, Section 1.3 (USEPA, 1995); conservatively assume that PM_{10} = PM; assumed sulfur concentration 1%; and heating requirements obtained from Commercial Buildings Energy Consumption Survey, (DOE, 2003). Note: MMBTU is Million British Thermal Units and BTU is British Thermal Units.						

Table A1-11. Worker Commutes – Holland Facility						
Number of Workers	540					
Number of Trips	2					
Miles Per Trip	30					
Days of Work	260					
Total Miles	8424000					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	88860.03	9290.69	9091.12	90.54	716.50	445.87
Total Emissions (tons)	44.43	4.65	4.55	0.05	0.36	0.22
Source: (CARB, 2007)						

Table A1-12. Total Operational Emissions (tons) – Holland Facility						
Activity/Source	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Boiler Emissions	0.05	0.23	0.02	0.00	0.02	0.02
Worker Commutes	44.43	4.65	4.55	0.05	0.36	0.22
Industrial Process	50.00	50.00	20.00	0.00	25.00	25.00
Total Operational Emissions	94.48	54.88	24.57	0.05	25.38	25.24

A.2 Milwaukee

Table A2-1. Construction Equipment Use – Milwaukee Facility				
Equipment type	**Number of units**	**Days on site**	**Hours per day**	**Operating hours**
Excavators Composite	1	29	4	115
Rollers Composite	1	43	8	346
Rubber Tired Dozers Composite	1	29	8	230
Plate Compactors Composite	2	29	4	230
Trenchers Composite	2	15	8	232
Air Compressors	2	29	4	230
Cement & Mortar Mixers	2	29	6	345
Cranes	1	29	7	201
Generator Sets	2	29	4	230
Tractors/Loaders/Backhoes	2	58	7	805
Pavers Composite	1	15	8	116
Paving Equipment	2	15	8	232

Table A2-2. Construction Equipment Emissions (tons per year) – Milwaukee Facility						
Equipment	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Excavators Composite	0.0335	0.0762	0.0097	0.0001	0.0042	0.0042
Rollers Composite	0.0751	0.1489	0.0230	0.0001	0.0104	0.0104
Rubber Tired Dozers Composite	0.1835	0.3757	0.0419	0.0003	0.0162	0.0162
Plate Compactors Composite	0.0030	0.0038	0.0006	0.0000	0.0002	0.0002
Trenchers Composite	0.0589	0.0956	0.0215	0.0001	0.0080	0.0080
Air Compressors	0.0435	0.0918	0.0142	0.0001	0.0065	0.0065
Cement and Mortar Mixers	0.0077	0.0113	0.0019	0.0000	0.0008	0.0008
Cranes	0.0605	0.1620	0.0179	0.0001	0.0072	0.0072
Generator Sets	0.0398	0.0803	0.0124	0.0001	0.0049	0.0049
Tractors/Loaders/Backhoes	0.1636	0.3118	0.0485	0.0003	0.0241	0.0241
Pavers Composite	0.0341	0.0626	0.0114	0.0001	0.0045	0.0045
Paving Equipment	0.0062	0.0123	0.0019	0.0000	0.0007	0.0007
Total	**0.71**	**1.43**	**0.20**	**0.0013**	**0.09**	**0.09**

Table A2-3. Painting – Milwaukee Facility			
VOC Content	0.84	lbs/gallon	
Coverage	400	ft^2/gallon	
Emission Factor	0.0021	lbs/ft^2	
Building/Facility	Wall Surface	VOC (lbs)	VOC (tpy)
All Buildings Combined	6000	12.6	0.006
Total	**6000**	**12.60**	**0.01**

Table A2-4. Delivery of Equipment and Supplies – Milwaukee Facility						
Number of Deliveries	2					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	58					
Total Miles	6900					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007
Total Emissions (lbs)	151.45	163.62	20.65	0.18	5.91	5.10
Total Emissions (tpy)	0.08	0.08	0.01	0.0001	0.00	0.00
Source: (CARB, 2007)						

Table A2-5. Surface Disturbance – Milwaukee Facility						
TSP Emissions	80	lb/acre				
PM_{10}/TSP	0.45					
$PM_{2.5}/PM_{10}$	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	**Area (acres)**	**TSP (lbs)**	**PM_{10} (lbs)**	**PM_{10} (tons)**	**$PM_{2.5}$ (lbs)**	**$PM_{2.5}$ (tons)**
Demolition	0.1	166	75	0.04	6	0.00
Total	**0.1**	**166**	**75**	**0.04**	**6**	**0.00**
Sources: (USEPA, 1995; USEPA 2005)						

Table A2-6. Worker Commutes – Milwaukee Facility						
Number of Workers	75					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	58					
Total Miles	258750					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	2729.41	285.37	279.24	2.78	22.01	13.70
Total Emissions (tpy)	1.36	0.14	0.14	0.0014	0.01	0.01
Source: (CARB, 2007)						

Table A2-7. Total Construction Emissions (tons per year) – Milwaukee Facility						
Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	0.71	1.43	0.20	0.0013	0.09	0.09
Painting	0.00	0.00	0.01	0.0000	0.00	0.00
Delivery of Equipment and Supplies	0.08	0.08	0.01	0.0001	0.00	0.00
Surface Disturbance	0.00	0.00	0.00	0.0000	0.04	0.00
Worker Commutes	1.36	0.14	0.14	0.0014	0.01	0.01
Total Construction Emissions	**2.15**	**1.66**	**0.36**	**0.0028**	**0.14**	**0.10**

Table A2-8. Boiler Emissions – Milwaukee Facility						
Gross Area	3000	ft^2				
Heating Requirements	99000	BTU/ft^2				
Total Annual Heat Required	297	MMBTU				
Heating Value	150	MMBTU/1,000 Gallons				
Total #2 Oil Used	2.0	Thousand Gallons				
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lb/1,000 gal)	5	24	2.493	0.1	2	2
Total Emissions (tons)	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**
Notes: Emission factors for all pollutants were obtained from EPA's AP-42, Section 1.3 (USEPA, 1995); conservatively assume that PM_{10} = PM; assumed sulfur concentration 1%; and heating requirements obtained from Commercial Buildings Energy Consumption Survey, (DOE, 2003).						

Table A2-9. Worker Commutes – Milwaukee Facility						
Number of Workers	32					
Number of Trips	2					
Miles Per Trip	30					
Days of Work	260					
Total Miles	499200					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	5265.78	550.56	538.73	5.37	42.46	26.42
Total Emissions (tons)	2.63	0.28	0.27	0.00	0.02	0.01
Source: (CARB, 2007)						

Table A2-10. Total Operational Emissions (tons) – Milwaukee Facility						
Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Boiler Emissions	0.00	0.02	0.00	0.00	0.00	0.00
Worker Commutes	2.63	0.28	0.27	0.00	0.02	0.01
Total Operational Emissions	**2.64**	**0.30**	**0.27**	**0.00**	**0.02**	**0.02**

A.3 Lebanon

Table A3-1. Construction Equipment Use – Lebanon Facility				
Equipment type	**Number of units**	**Days on site**	**Hours per day**	**Operating hours**
Excavators Composite	1	115	4	460
Rollers Composite	1	173	8	1384
Rubber Tired Dozers Composite	1	115	8	920
Plate Compactors Composite	2	115	4	920
Trenchers Composite	2	58	8	928
Air Compressors	2	115	4	920
Cement & Mortar Mixers	2	115	6	1380
Cranes	1	115	7	805
Generator Sets	2	115	4	920
Tractors/Loaders/Backhoes	2	230	7	3220
Pavers Composite	1	58	8	464
Paving Equipment	2	58	8	928

Table A3-2. Construction Equipment Emissions (tons per year) – Lebanon Facility						
Equipment	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Excavators Composite	0.1341	0.3047	0.0390	0.0003	0.0167	0.0167
Rollers Composite	0.3004	0.5956	0.0919	0.0005	0.0416	0.0416
Rubber Tired Dozers Composite	0.7342	1.5029	0.1676	0.0011	0.0648	0.0648
Plate Compactors Composite	0.0121	0.0151	0.0024	0.0000	0.0010	0.0010
Trenchers Composite	0.2357	0.3822	0.0859	0.0003	0.0319	0.0319
Air Compressors	0.1740	0.3671	0.0567	0.0003	0.0259	0.0259
Cement and Mortar Mixers	0.0309	0.0454	0.0078	0.0001	0.0031	0.0031
Cranes	0.2419	0.6480	0.0716	0.0006	0.0288	0.0288
Generator Sets	0.1592	0.3211	0.0494	0.0003	0.0198	0.0198
Tractors/Loaders/Backhoes	0.6542	1.2470	0.1939	0.0012	0.0964	0.0964
Pavers Composite	0.1363	0.2505	0.0455	0.0002	0.0178	0.0178
Paving Equipment	0.0247	0.0492	0.0077	0.0001	0.0029	0.0029
Total	**2.84**	**5.73**	**0.82**	**0.0051**	**0.35**	**0.35**

Table A3-3. Painting – Lebanon Facility			
VOC Content	0.84	lbs/gallon	
Coverage	400	ft^2/gallon	
Emission Factor	0.0021	lbs/ ft^2	
Building/Facility	Wall Surface	VOC (lbs)	VOC (tpy)
All Buildings Combined	30000	63.0	0.032
Total	**30000**	**63.00**	**0.03**

Table A3-4. Delivery of Equipment and Supplies – Lebanon Facility						
Number of Deliveries	2					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	230					
Total Miles	27600					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007
Total Emissions (lbs)	605.80	654.47	82.60	0.71	23.63	20.41
Total Emissions (tpy)	0.30	0.33	0.04	0.0004	0.01	0.01
Source: (CARB, 2007)						

Table A3-5. Paving Off Gasses – Lebanon Facility			
VOC Emissions Factor	2.62	lbs/acre	
Building/Facility	Area (acres)	VOC (lbs)	VOC (tpy)
All Combined Parking	0.18	0.48	0.0002
Total	**0.18**	**0.48**	**0.0002**
Source: (SCAQMD, 1993)			

Table A3-6. Surface Disturbance – Lebanon Facility						
TSP Emissions	80	lb/acre				
PM_{10}/TSP	0.45					
$PM_{2.5}/PM_{10}$	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	**Area (acres)**	**TSP (lbs)**	**PM_{10} (lbs)**	**PM_{10} (tons)**	**$PM_{2.5}$ (lbs)**	**$PM_{2.5}$ (tons)**
Demolition	0.5	1270	571	0.29	43	0.02
Total	**0.5**	**1270**	**571**	**0.29**	**43**	**0.02**
Sources: (USEPA, 1995; USEPA, 2005)						

Table A3-7. Worker Commutes – Lebanon Facility						
Number of Workers	50					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	230					
Total Miles	690000					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	7278.42	760.99	744.64	7.42	58.69	36.52
Total Emissions (tpy)	3.64	0.38	0.37	0.0037	0.03	0.02
Source: (CARB, 2007)						

Table A3-8. Total Construction Emissions (tons per year) – Lebanon Facility						
Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	2.84	5.73	0.82	0.0051	0.35	0.35
Painting	0.00	0.00	0.03	0.0000	0.00	0.00
Delivery of Equipment and Supplies	0.30	0.33	0.04	0.0004	0.01	0.01
Paving Off Gasses	0.00	0.00	0.00	0.0000	0.00	0.00
Surface Disturbance	0.00	0.00	0.00	0.0000	0.29	0.02
Worker Commutes	3.64	0.38	0.37	0.0037	0.03	0.02
Total Construction Emissions	**6.78**	**6.44**	**1.26**	**0.0092**	**0.68**	**0.40**

Table A3-9. Boiler Emissions – Lebanon Facility						
Gross Area	15000	ft^2				
Heating Requirements	99000	BTU/ ft^2				
Total Annual Heat Required	1485	MMBTU				
Heating Value	150	MMBTU/1,000 Gallons				
Total #2 Oil Used	9.9	Thousand Gallons				
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/1,000 gal)	5	24	2.493	0.1	2	2
Total Emissions (tons)	**0.02**	**0.12**	**0.01**	**0.00**	**0.01**	**0.01**
Notes: Emission factors for all pollutants were obtained from EPA's AP-42, Section 1.3 (USEPA, 1995); conservatively assume that PM_{10} = PM; assumed sulfur concentration 1%; and heating requirements obtained from Commercial Buildings Energy Consumption Survey (DOE, 2003)						

Table A3-10. Worker Commutes – Lebanon Facility						
Number of Workers	26					
Number of Trips	2					
Miles Per Trip	30					
Days of Work	260					
Total Miles	405600					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	4278.45	447.33	437.72	4.36	34.50	21.47
Total Emissions (tons)	2.14	0.22	0.22	0.00	0.02	0.01
Source: (CARB, 2007)						

Table A3-11. Total Operational Emissions (tons) – Lebanon Facility						
Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Boiler Emissions	0.02	0.12	0.01	0.00	0.01	0.01
Worker Commutes	2.14	0.22	0.22	0.00	0.02	0.01
Total Operational Emissions	**2.16**	**0.34**	**0.23**	**0.00**	**0.03**	**0.02**

Appendix B USFWS Consultation

Holland

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR · Morgantown, WV · Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Mr. Craig Czarnecki, Field Supervisor
United States Fish and Wildlife Service
2651 Coolidge Road
East Lansing, MI 48823

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Holland, Michigan

Dear Mr. Czarnecki:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Holland, Michigan, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Holland facility, the intent is to outfit and bring to production a state-of-the art cell manufacturing and pack assembly facility in Michigan (see attached vicinity map). At the Holland facility, an existing 130,000 square foot (approximately 12,000 square meters) building would be used with an 18,000 square foot (1,700 square meters) addition including two small outbuildings for material storage [4,500 square feet (approximately 420 square meters) and 6,500 square feet (approximately 600 square meters)] (see attached site map).

As part of our coordination and consultation responsibilities and to comply with both Section 7 of the Endangered Species Act of 1973, as amended, and provisions of the Fish & Wildlife Coordination Act, we would appreciate receiving any information you have on important wildlife resources, including endangered and threatened species or critical habitat, in the project area.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no endangered or threatened species (or their habitat) are present in the project area and that neither protected species nor their habitat would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

>>> <Tameka_Dandridge@fws.gov> 12/8/2009 10:57 AM >>>

Ms. Pierina Fayish
National Energy Technology Laboratory

Re: Lithium Ion Battery Manufacturing in Holland, Michigan

Dear Ms. Fayish:

Please refer to the below information for initiating section 7 consultations with the U.S. Fish and Wildlife Service.

Region 3 of the U.S. Fish and Wildlife Service has designed a regional endangered species website to help federal agencies and their non-federal representatives complete section 7 consultations under the Endangered Species Act. The website is intended to be very useful for both federal agencies with section 7 obligations and non-federal entities. Please initiate consultations pursuant to the Endangered Species Act electronically, using the below websites. Some consultations may be concluded with this process without contacting this office. The following provides a brief description of the website.

Section 7 Consultation Main Page -
http://www.fws.gov/midwest/endangered/section7/index.html
This main Endangered Species Act Section 7 consultation webpage has been designed to provide a broad range of information, and includes links to the following specific pages:

- Section 7(a)(2) Consultation – An explanation of the consultation process
- Section 7(a)(2) Technical Assistance
- Guidelines for Preparing a Biological Assessment
- Section 7(a)(2) Guidance for Specific Species
- Section 7 Consultation Handbook

Section 7(a)(2) Technical Assistance page -
http://www.fws.gov/midwest/endangered/section7/s7process/index.htm
This page is designed to guide you through the consultation process step by step. By following the instructions, agencies can determine their action area, whether listed species may be found within the action area, and if the project may affect listed species.

Federal agencies and non-federal representatives will find several products on the site that can streamline the consultation process. When determining if listed species may be located within a project area, agencies can download county specific species lists for all of the states in Region 3. Species specific best management practices will also eventually be available. Example letters and templates are available to assist with documenting "no effect" determinations and preparing requests for concurrence on "not likely to adversely affect" determinations.

****
Tameka Dandridge
U.S. Fish & Wildlife Service
East Lansing Field Office

2651 Coolidge Rd., Suite 101
East Lansing, MI 48823
517-351-8315
tameka_dandridge@fws.gov

THE MANGI ENVIRONMENTAL GROUP, INC.
7927 Jones Branch Dr. McLean VA 22102
703 760 4801 Fax 703 760 4899
www.mangi.com

Viet Nam Veteran Owned

MEMO

Tameka Dandridge
U.S. Fish & Wildlife Service
East Lansing Field Office
2651 Coolidge Rd., Suite 101
East Lansing, MI 48823

FROM: Meghan Morse, Mangi Environmental Group c/o U.S. Dept. of Energy

DATE: December 9, 2009

RE: Section 7 Endangered Species Act Consultation- Johnson Controls' Lithium Ion (Li-Ion) Battery Manufacturing in Holland, Michigan

Thank you for taking the time to speak with me today. Johnson Controls, Inc. is in the process of completing NEPA requirements in order to move forward with the planned construction of a facility addition in Holland, Michigan. The current facility is in an industrial area, and the building has a 130,000 square feet footprint within this area. The proposed project will add 18,000 square feet of space to the existing footprint.

The U.S. Department of Energy, working through Mangi Environmental Group, has reviewed all information pertaining to threatened and endangered species within Holland, MI and Ottawa County. According to the U.S. Fish and Wildlife Survey, two species are listed as possible inhabitants of Ottawa County. These are the Indiana bat (*Myotis sodalis*) and pitchers thistle (*Cirsium pitcheri*).

The Indiana bat occupies specific niche habitats including cool cave areas and riparian forests. The pitchers thistle is typically found along the Lake Michigan shoreline. In the area of the proposed action, neither of these habitat types is found. As the proposed construction is in an existing industrial area, the expansion will take place within the footprint of the existing industrial area.

For these reasons, the Johnson Controls, Inc. Lithium Ion (Li-Ion) Battery Manufacturing in Holland, Michigan will have "no effect" on listed endangered species.

Please let me know if you have any questions or concerns.

Sincerely,

Meghan Morse
703-760-4801x242
mmorse@mangi.com

Milwaukee

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR · Morgantown, WV · Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Louise Clemency, Field Supervisor
United States Fish and Wildlife Service
2661 Scott Tower Drive
New Franken, WI 54229

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Milwaukee, Wisconsin

Dear Ms. Clemency:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Milwaukee, Wisconsin, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Milwaukee facility (see attached vicinity map), the intent is to support the production of cell manufacturing and pack assembly facilities in Michigan by providing laboratories and necessary analytical equipment to support the implementation of advanced lithium ion battery research and development at the Michigan sites center. At this Milwaukee site, an approximately 3,000 square foot (300 square meters) extension would be constructed (see attached site map).

As part of our coordination and consultation responsibilities and to comply with both Section 7 of the Endangered Species Act of 1973, as amended, and provisions of the Fish & Wildlife Coordination Act, we would appreciate receiving any information you have on important wildlife resources, including endangered and threatened species or critical habitat, in the project area.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no endangered or threatened species (or their habitat) are present in the project area and that neither protected species nor their habitat would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

From: Kevin_Maurice@fws.gov
Sent: Thursday, March 04, 2010 3:24 PM
To: Pierina.Fayish@NETL.DOE.GOV
Cc: Lorna_Ewell@fws.gov
Subject: Re: Fw: Consultation for DOE project
Attachments: Johnson Controls Consultation Letter - FWS - Oregon 11-13-2009.doc

Hi Pierina. Attached is the link to our Oregon Fish and Wildlife Offices web page. You can find a species list for the county your project is located in there. This office does not have local knowledgre of the specific property you refer to in your letter. It is the responsibility of the action agency to avoid taking listed species. This typically involves utilizing their biological staff or hiring a qualified consultant to determine if any listed species or their habitats will be affected by the proposed action. Typically this would involve reviewing the county species list and site map and identifying the potential conflicts. A site visit would be necessary and potentially surveys for the listed species or their habitats that could potentially be harmed/affected by the proposed action may be necessary. Feel free to call if you have any questions. KJM.

http://www.fws.gov/oregonfwo/Species/Lists/

Kevin J. Maurice
Wildlife Biologist
USFWS Oregon State Office
2600 SE 98th Ave., Suite 100
Portland, OR 97266
(503) 231-6179
(503) 231-6195 (fax)
Kevin_Maurice@FWS.Gov

TA - Jill
10-TA-0085

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

U.S. FISH & WILDLIFE SERVICE
RECEIVED
DEC 02 2009
GREEN BAY FIELD OFFICE

Louise Clemency, Field Supervisor
United States Fish and Wildlife Service
2661 Scott Tower Drive
New Franken, WI 54229

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Milwaukee, Wisconsin

Dear Ms. Clemency:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Milwaukee, Wisconsin, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Milwaukee facility (see attached vicinity map), the intent is to support the production of cell manufacturing and pack assembly facilities in Michigan by providing laboratories and necessary analytical equipment to support the implementation of advanced lithium ion battery research and development at the Michigan sites center. At this Milwaukee site, an approximately 3,000 square foot (300 square meters) extension would be constructed (

As part of our coordination and consultation responsi
Endangered Species Act of 1973, as amended, and pr
we would appreciate receiving any information you h
endangered and threatened species or critical habitat,

"The U.S. Fish and Wildlife Service (Service) has reviewed the proposed action and determined that no federally listed species, candidate species, or designated critical habitat occurs within the project area. Furthermore, the Service has determined that this action will have negligible impacts on wetlands, migratory birds, and other priority fish and wildlife resources."

for the Field Supervisor

12/11/09
Date

Lebanon

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Mr. Paul Henson, State Supervisor
United States Fish and Wildlife Service
2600 S.E. 98th Avenue, Suite 100
Portland, OR 97266

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Oregon

Dear Mr. Henson:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Lebanon, Oregon, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Entek site in Lebanon (see attached vicinity map), the intent is to expand the capacity and capability to produce both unfilled and highly filled separators on the existing production line. This may or may not require expansion of the footprint of the existing building where production will take place. If this action were implemented, the design engineering team would verify space requirements for equipment and initial layout first. The expansion could be doubling the current footprint, an expansion of 15,000 square feet (1,400 square feet) (see attached site map).

As part of our coordination and consultation responsibilities and to comply with both Section 7 of the Endangered Species Act of 1973, as amended, and provisions of the Fish & Wildlife Coordination Act, we would appreciate receiving any information you have on important wildlife resources, including endangered and threatened species or critical habitat, in the project area.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no endangered or threatened species (or their habitat) are present in the project area and that neither protected species nor their habitat would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

Appendix C SHPO Consultation

Holland

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR · Morgantown, WV · Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Mr. Brian D. Conway, State Historic Preservation Officer
Michigan State Historic Preservation Office, Michigan Historical Center
702 West Kalamazoo Street
PO Box 30740
Lansing, MI 48909-8240

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Holland, Michigan

Dear Mr. Conway:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Holland, Michigan, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Holland facility, the intent is to outfit and bring to production a state-of-the art cell manufacturing and pack assembly facility in Michigan (see attached vicinity map). At the Holland facility, an existing 130,000 square foot (approximately 12,000 square meters) building would be used with an 18,000 square foot (1,700 square meters) addition including two small outbuildings for material storage [4,500 square feet (approximately 420 square meters) and 6,500 square feet (approximately 600 square meters)] (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of Section 106 of the National Historic Preservation Act of 1966, we would appreciate receiving any information you have regarding historic or cultural properties in the project area.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no historic or cultural properties are present in the project area and that neither historic nor cultural properties would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

STATE OF MICHIGAN

JENNIFER GRANHOLM
GOVERNOR

MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
LANSING

KEITH MOLIN
EXECUTIVE DIRECTOR

November 5, 2009

PIERINA FAYISH
UNITED STATES DEPARTMENT OF ENERGY
626 COCHRANS MILL ROAD
PO BOX 10940
PITTSBURGH PA 15236

RE: ER-10-71 Johnson Controls SAFT Meadowbrook Lithium-Ion Facility Expansion, T4N, R15W, Sections 7 & 8, Holland, Ottawa County (DOE & HUD)

Dear Ms. Fayish:

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

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

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

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

If you have any questions, please contact Diane Tuinstra, Cultural Resource Protection Specialist, at (517) 335-2723 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Martha MacFarlane Faes
Cultural Resources Protection Manager

for Brian D. Conway
State Historic Preservation Officer

MMF:JRH:DRT

Copy: Meghan Morse, Mangi Environmental Group

Equal Housing Lender

STATE HISTORIC PRESERVATION OFFICE
702 WEST KALAMAZOO STREET • P.O. BOX 30740 • LANSING, MICHIGAN 48909-8240
www.michigan.gov/shpo (517) 373-1630 FAX (517) 335 0348

Printed by members of: SEIU

Milwaukee

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

December 4, 2009

Dr. Michael E. Stevens, State Historic Preservation Officer
Wisconsin Historical Society
816 State St.
Madison, WI 53706-1482

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Milwaukee, Wisconsin

Dear Dr. Stevens:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Milwaukee, Wisconsin, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Milwaukee facility (see attached vicinity map), the intent is to support the production of cell manufacturing and pack assembly facilities in Michigan by providing laboratories and necessary analytical equipment to support the implementation of advanced lithium ion battery research and development at the Michigan sites center. At this Milwaukee site, an approximately 3,000 square foot (300 square meters) extension would be constructed (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of Section 106 of the National Historic Preservation Act of 1966, we would appreciate receiving any information you have regarding historic or cultural properties in the project area.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze,

626 Cochrans Mill Road, P.O. Box 10940, Pittsburgh, PA 15236

document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no historic or cultural properties are present in the project area and that neither historic nor cultural properties would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

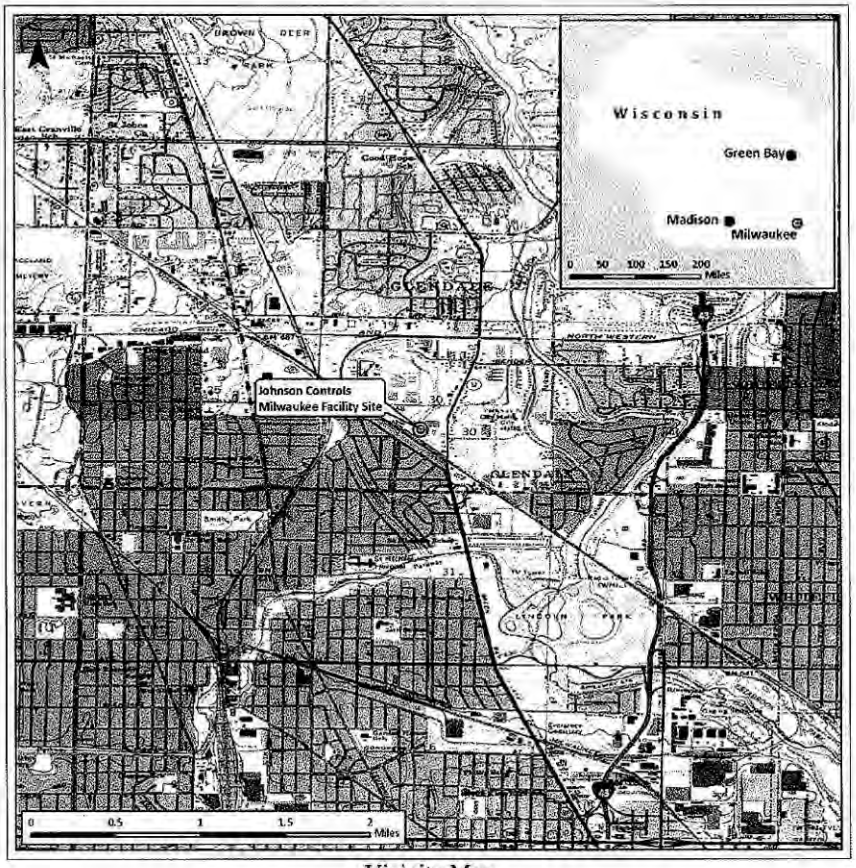
Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures



Vicinity Map

>>> "Duchrow, Daniel J - WHS" <Daniel.Duchrow@wisconsinhistory.org> 12/15/2009 12:13 PM >>>
Hi Ms. Fayish. We have received your submittal regarding the above referenced project. We have assigned Case Number 09-1155/MI to this project. Unfortunately, your submittal did not contain enough information for us to complete our review. The procedure for submitting projects to the Wisconsin State Historic Preservation Office may be found at http://www.wisconsinhistory.org/hp/protecting/106_intro.asp

The important thing to remember is that you need to complete the search of the Wisconsin Historic Preservation Database (WHPD) prior to submitting you project materials, not simply the National Register of Historic Places listing. You may come to our office to complete this research, or access is available via subscription or by purchase of data sets for specific locations. The results of your research must also be accompanied by the Request for SHPO Comment on a Federal Undertaking form which may be found at
http://www.wisconsinhistory.org/hp/handouts/106_form.pdf

All materials should be submitted via U.S. Mail, as we are not capable of receiving large attachments via email. We look forward to completing our review of this project, when the requested information becomes available.

Please consider this our official comment to your initial consultation materials, and please contact me with any questions you might have regarding this matter.

Dan Duchrow

Operations Program Associate

Wisconsin Historical Society

Division of Historic Preservation and Public History

816 State Street, Room 303

Madison, WI 53706

608-264-6505 (voice)

608-264-6504 (fax)

Dan.Duchrow@wisconsinhistory.org

www.wisconsinhistory.org

Collecting, Preserving and Sharing Stories Since 1846

THE MANGI ENVIRONMENTAL GROUP, INC.
7927 Jones Branch Dr. McLean VA 22102
703 760 4801 Fax 703 760 4899
www.mangi.com

Viet Nam
Veteran
Owned

February 12, 2010

Dan Duchrow
c/o Wisconsin Historical Society
Division of Historic Preservation, Office of Preservation Planning
816 State Street
Madison, WI 53706

RE: Johnson Controls Li-Ion Battery Manufacturing Facility
Case # 09-1155MI

Dear Mr. Duchrow,

This letter and supporting materials are being submitted on behalf of the Department of Energy regarding the proposed addition to an existing facility in Glendale, Wisconsin. There are no historic properties located within the Area of Potential Effect as illustrated by the prior evaluation completed through Gensler. The prior evaluation has been assigned the project number 21.7046.100 and File Code 1C, which is resubmitted for your convenience. Based on your January 25 letter and subsequent phone calls with us, we submit the enclosed: color photographs, a map outlining the proposed construction footprint, site map, and the topographic map. As stated in our February 10th conversation, the main buildings were built in 1965-1967 with numerous "remodeling" since then. Thus, the facility is less than 50 years old. Proposed project description was included in Pieri Fayish's letter on December 15th.

If you have any questions, please contact me through e-mail or phone. Thank you for your time and assistance.

Thank you,

Meghan Morse
Mangi Environmental Group
mmorse@mangi.com

HP-05-07 (8/15/03) For SHPO Use Only. Case #_____

REQUEST FOR SHPO COMMENT AND CONSULTATION ON A FEDERAL UNDERTAKING

Submit one copy with each undertaking for which our comment is requested. Please print or type. Return to:

Wisconsin Historical Society, Division of Historic Preservation, Office of Preservation Planning, 816 State Street, Madison, WI 53706

Please Check All Boxes and Include All of the Following Information, as Applicable:

I. GENERAL INFORMATION

☐ **This is a new submittal.**
☑ **This is supplemental information relating to Case #:** 09-1155MI **and title:** Johnson Controls Li-ion Battery MFG Facility
☐ **This project is being undertaken pursuant to the terms and conditions of a programmatic or other interagency agreement.**
The title of the agreement is _____

a. Federal Agency Jurisdiction (Agency providing funds, assistance, license, permit): Department of Energy

b. Federal Agency Contact Person: Pierina Fayish Phone: (412) 386-5428

c. Project Contact Person: Meghan Morse Phone: (703) 760-4801 x242

d. Return Address: 7927 Jones Branch Drive, Suite 150, McLean, VA Zip Code: 22102

e. Email Address: mmorse@mangi.com

f. Project Name: Li-ion Battery Manufacturing Facility

g. Project Street Address: 5757 North Green Bay Avenue

h. County: Milwaukee City: Glendale Zip Code: 53209

i. Project Location: Township _____, Range _____, E/W (circle one), Section _____, Quarter Sections _____

j. Project Narrative Description—Attach Information as Necessary.

k. Area of Potential Effect (APE). Attach Copy of U.S.G.S. 7.5 Minute Topographic Quadrangle Showing APE.

II. IDENTIFICATION OF HISTORIC PROPERTIES

☐ Historic Properties are located within the project APE per 36 CFR 800.4. Attach supporting materials.
☑ Historic Properties are not located within the project APE per 36 CFR 800.4. Attach supporting materials.

III. FINDINGS

☐ No historic properties will be affected (i.e., none is present or there are historic properties present but the project will have no effect upon them). Attach necessary documentation, as described at 36 CFR 800.11.
☑ The proposed undertaking will have no adverse effect on one or more historic properties located within the project APE under 36 CFR 800.5. Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will result in an adverse effect to one or more historic properties and the applicant, or other federally authorized representative, will consult with the SHPO and other consulting parties to resolve the adverse effect per 36 CFR 800.6. Attach necessary documentation, as described at 36 CFR 800.11, with a proposed plan to resolve adverse effect(s).

Authorized Signature: _____ Date: February 12, 2010

Type or print name: Meghan Morse

IV. STATE HISTORIC PRESERVATION OFFICE COMMENTS

☐ Agree with the finding in section III above.
☐ Object to the finding for reasons indicated in attached letter.
☐ Cannot review until information is sent as follows: _____

Authorized Signature: _____ Date: _____

11 East Madison Street
Suite 300
Chicago IL 60602
USA

Tel 312.456.0123
Fax 312.456.0124

Gensler

December 18th, 2009

Ward Komorowski
Director of Facilities and Building Solutions
Johnson Controls
507E. Michigan St.
P.O. Box 423
Milwaukee, WI 53201-0423

Subject: JCI Green Bay Avenue Facilities
Historic Register
Project Number: 21.7046.100
File Code: 1C

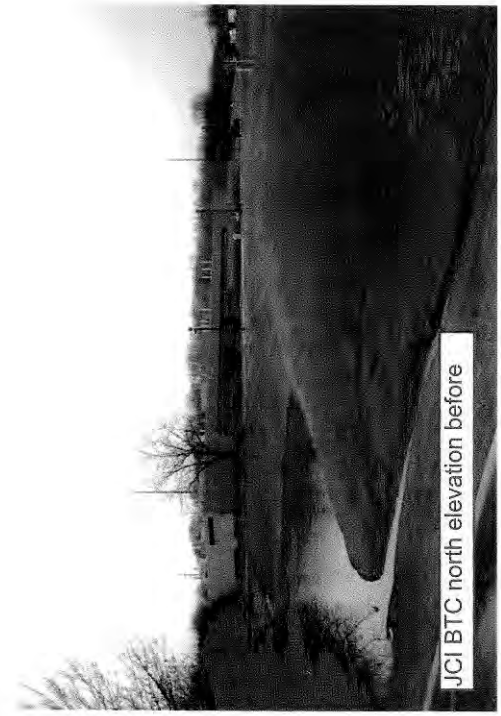
Dear Ward:

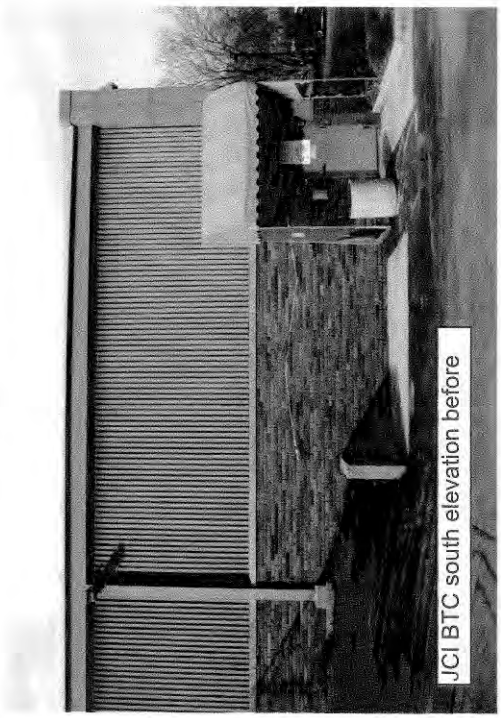
To the best of our knowledge, none of the buildings located on your Green Bay Avenue Campus (5757 North Green Bay Ave, Glendale, WI 53209) are listed on the National Register of Historic Places. Please let us know if you require any further clarification with regard to this issue and we would be happy to assist you.

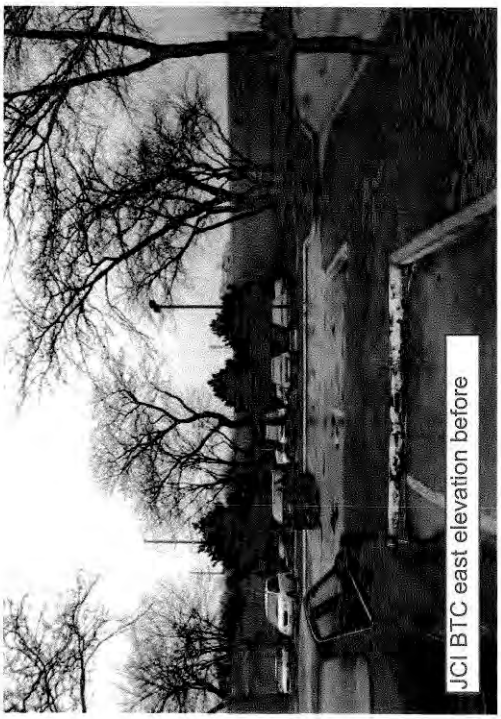
Sincerely,

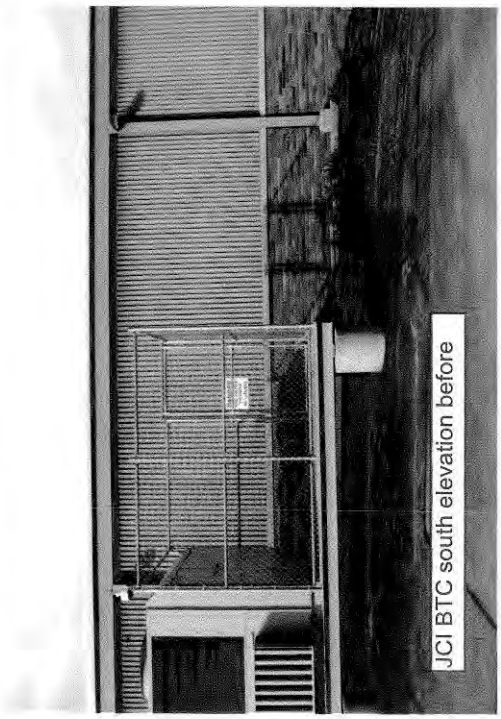
Stephen Katz
Senior Associate
Gensler – Chicago
11 East Madison St.
Suite 300
Chicago, IL 60602

p:\21.7046.100\documentation\1_general\1cl\misc\lt091218sk_not_historic.docx

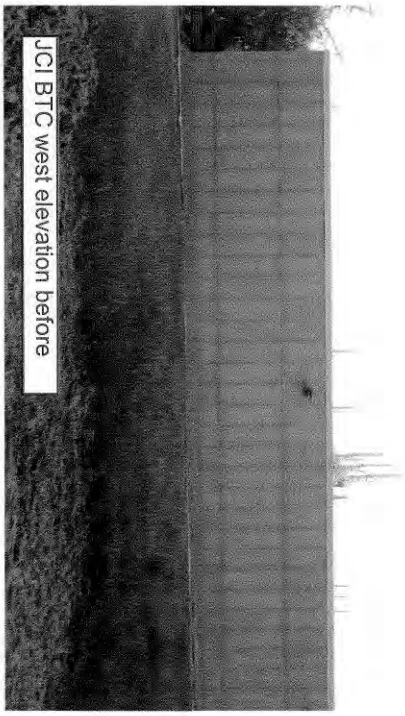

JCI BTC north elevation before

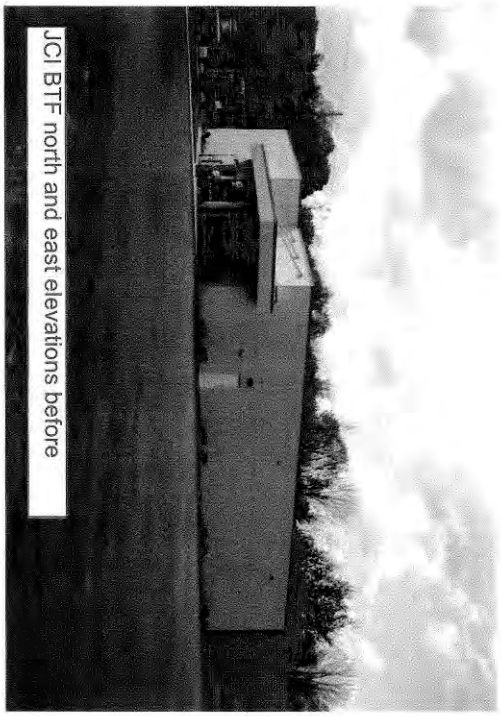

JCI BTC south elevation before

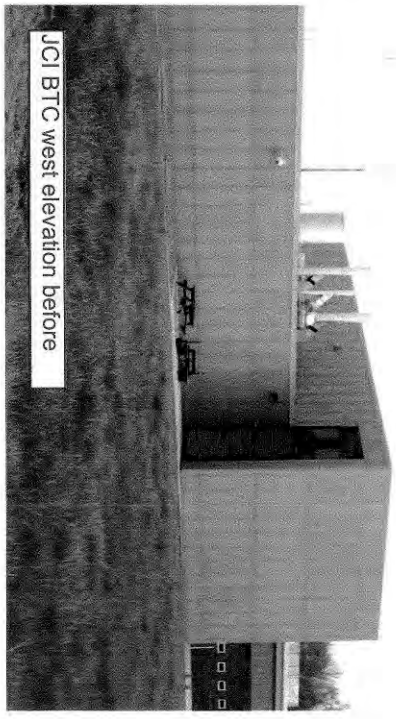

JCI BTC east elevation before

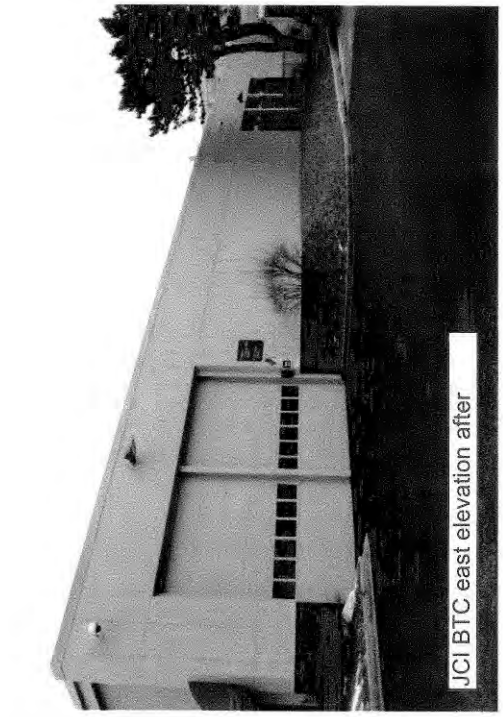

JCI BTC south elevation before

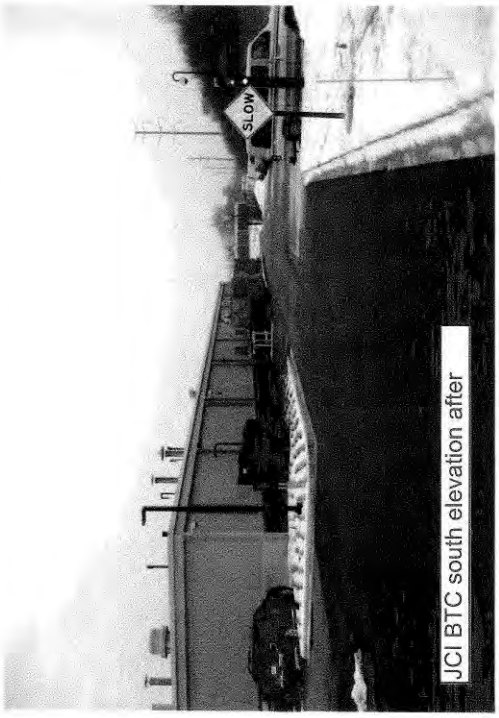
Continued >


JCI BTC west elevation before

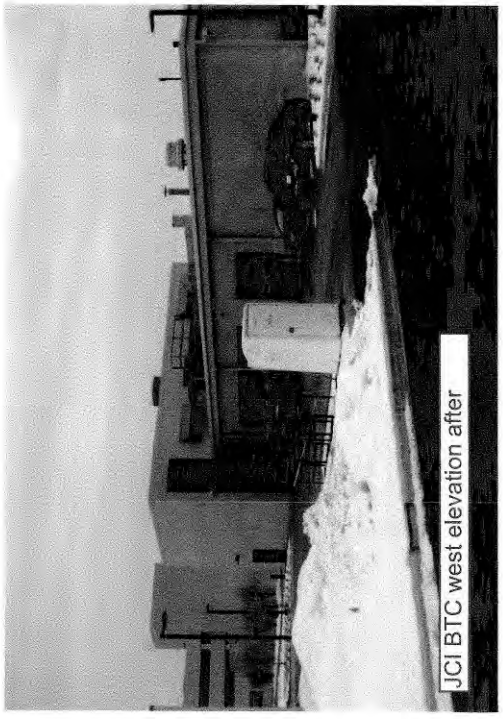

JCI BTF north and east elevations before

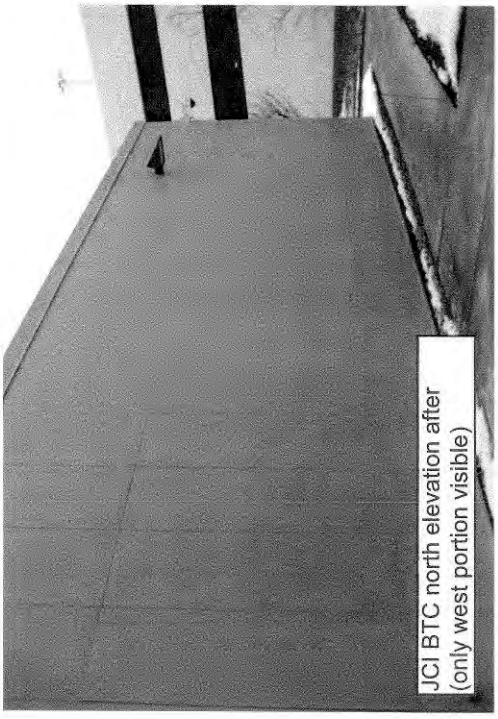

JCI BTC west elevation before

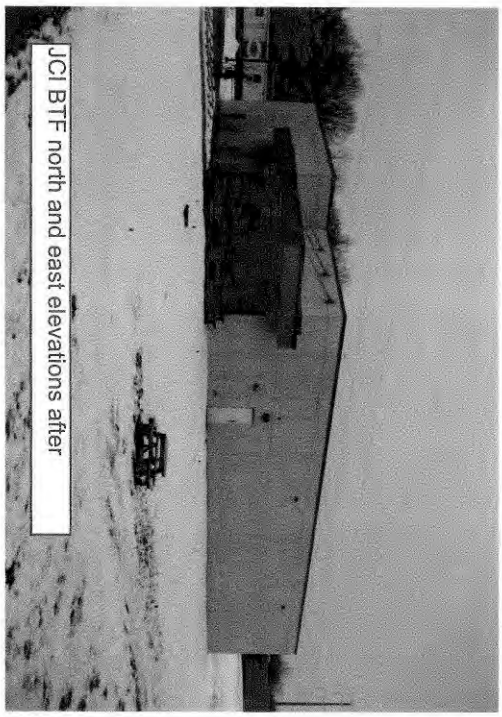

JCI BTC east elevation after

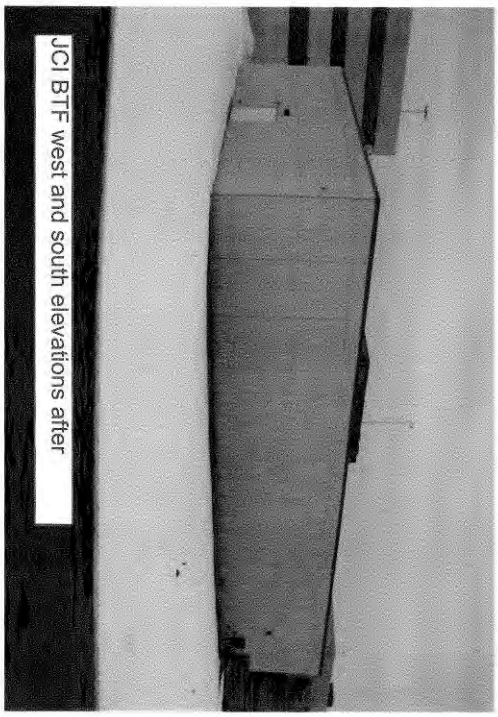

SLOW
JCI BTC south elevation after

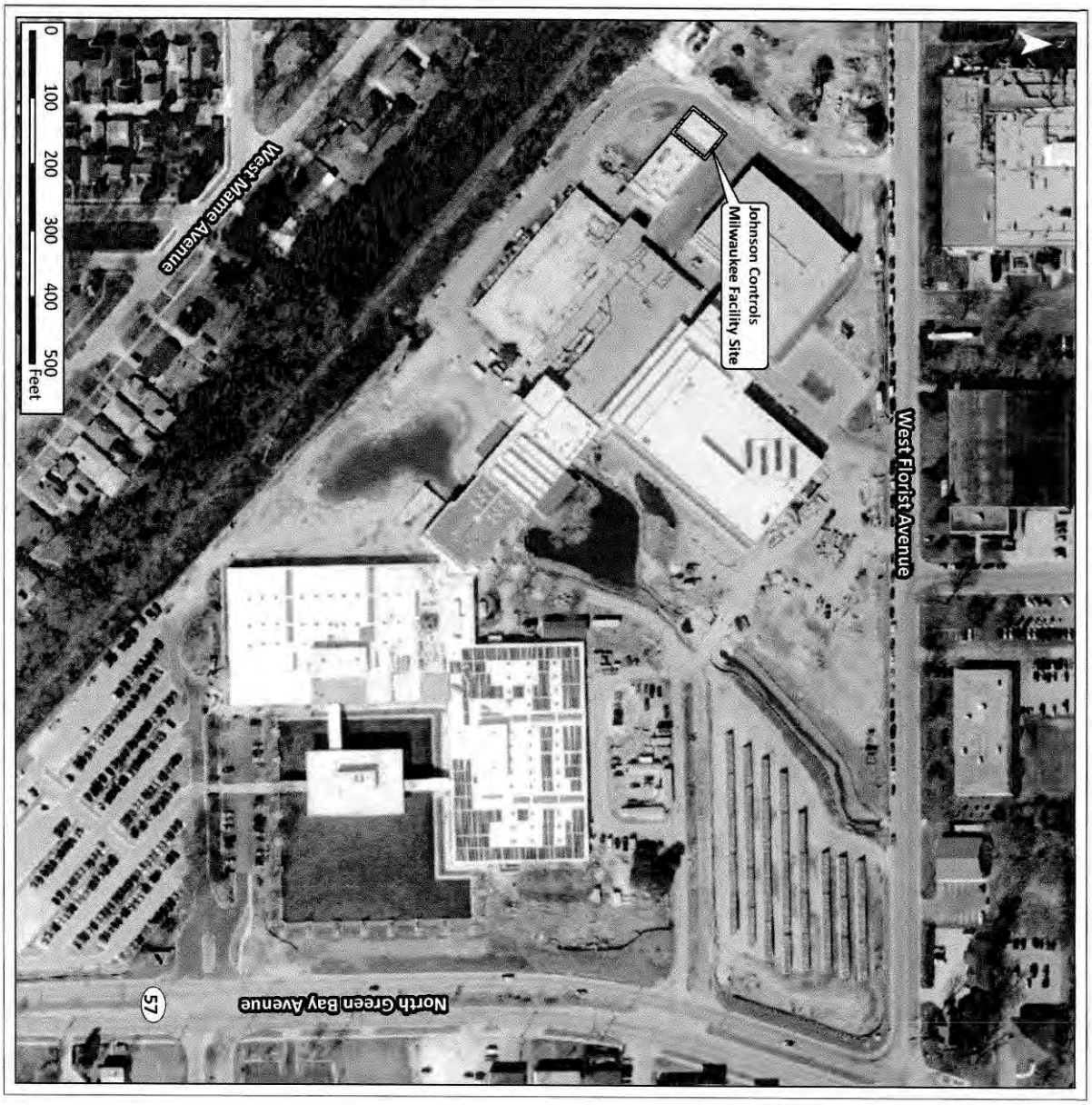
Continued=>

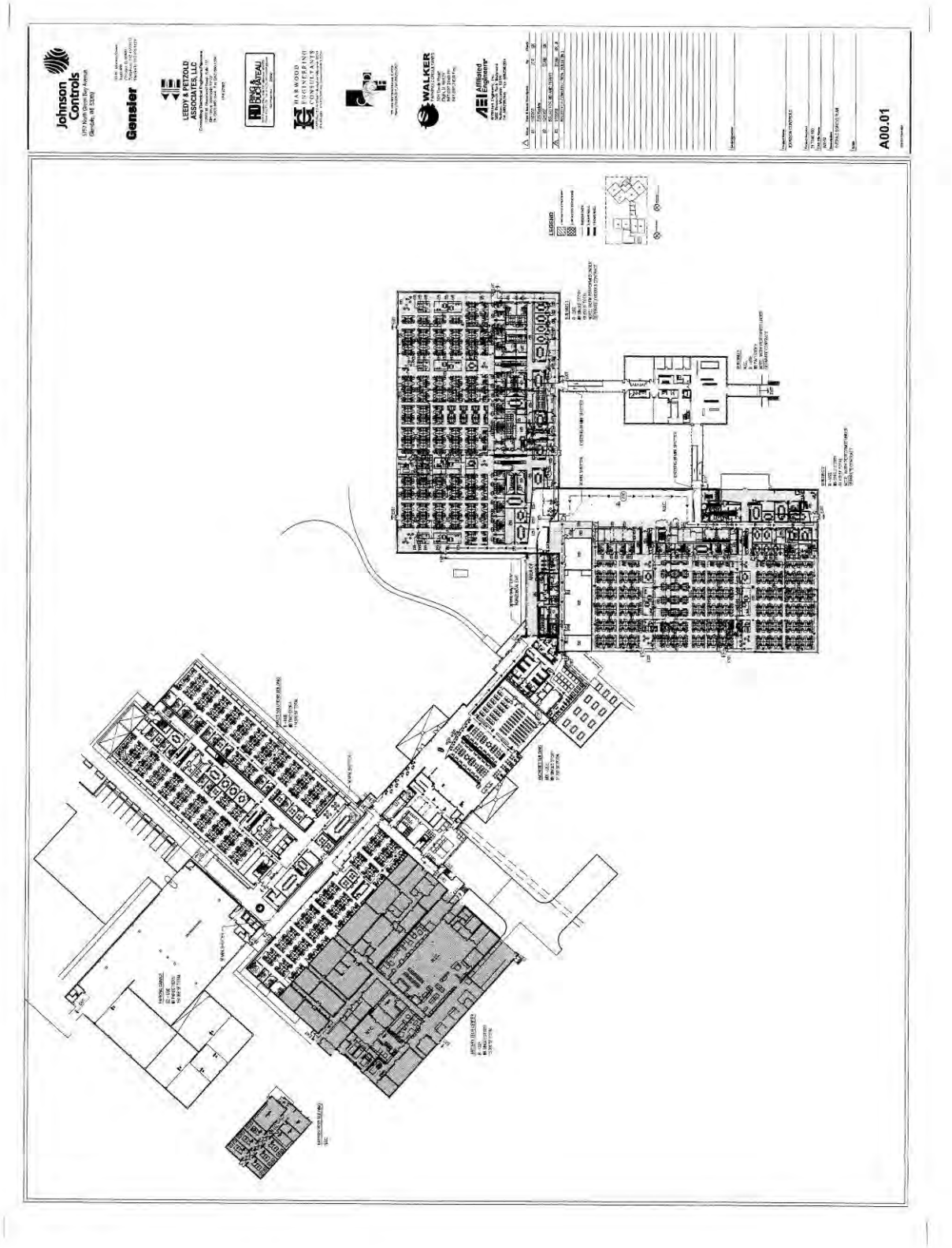

JCI BTC west elevation after

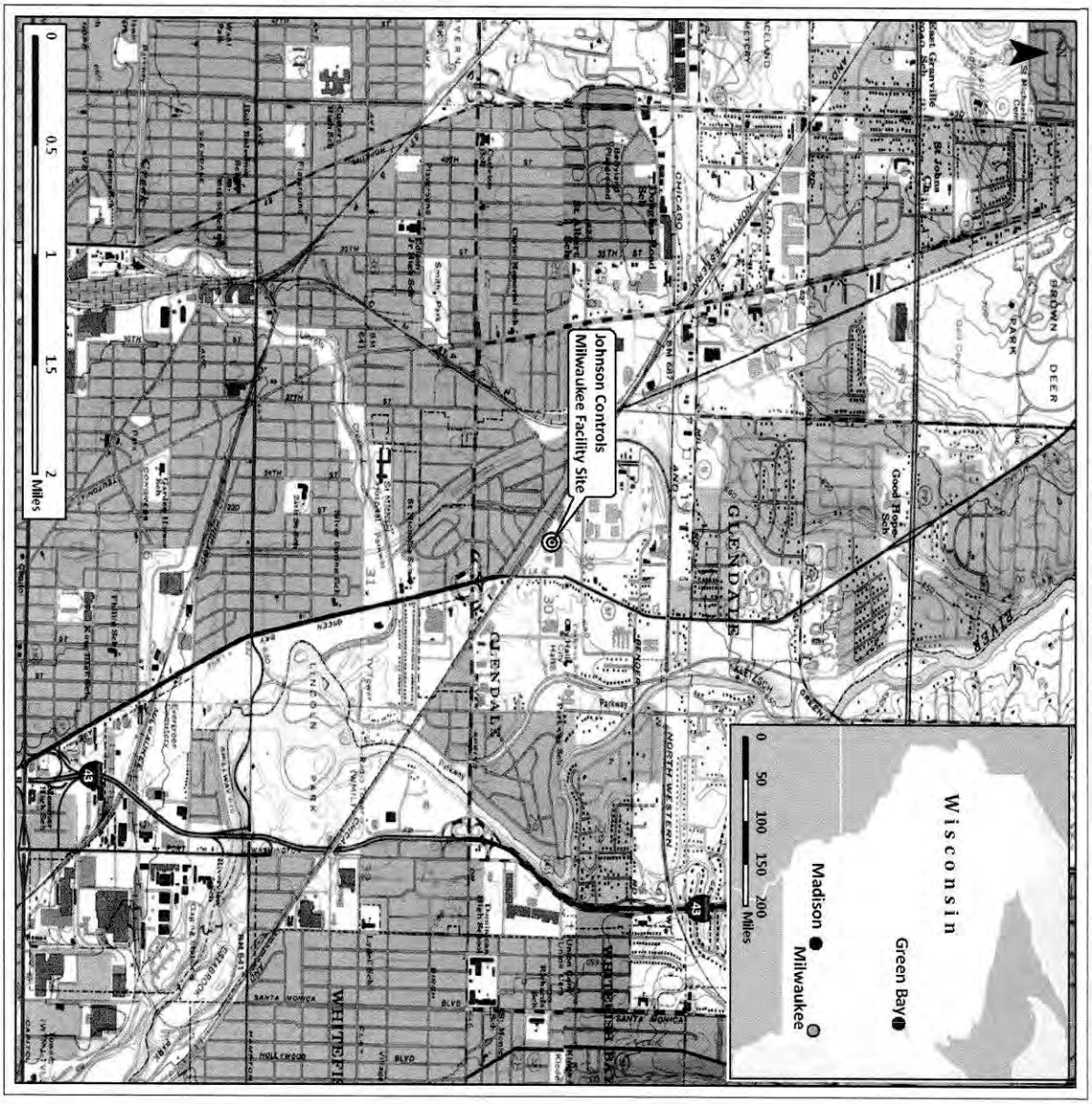

JCI BTC north elevation after
(only west portion visible)


JCI BTF north and east elevations after


JCI BTF west and south elevations after


0
100
200
300
400
500
Feet
West Maine Avenue
Johnson Controls
Milwaukee Facility Site
West Florist Avenue
North Green Bay Avenue
57


Johnson Controls
Gensler
WALKER
A00.01


Johnson Controls
Milwaukee Facility Site
0 0.5 1 1.5 2 Miles
GLENDALE
WHITEFISH BAY
BROWN DEER PARK
Good Hope Sch
Wisconsin
Green Bay
Madison
Milwaukee
0 50 100 150 200 Miles

HP-05-07 (8/15/03)

For SHPO Use Only. Case # _____

REQUEST FOR SHPO COMMENT AND CONSULTATION ON A FEDERAL UNDERTAKING

Submit one copy with each undertaking for which our comment is requested. Please print or type. Return to:

Wisconsin Historical Society, Division of Historic Preservation, Office of Preservation Planning, 816 State Street, Madison, WI 53706

RECEIVED
FEB 18 2010
DIV HIST PRES

Please Check All Boxes and Include All of the Following Information, as Applicable:

I. GENERAL INFORMATION

☐ **This is a new submittal.**
☑ **This is supplemental information relating to Case #:** 09-1155MI **and title:** Johnson Controls Li-ion Battery MFG Facility
☐ **This project is being undertaken pursuant to the terms and conditions of a programmatic or other interagency agreement. The title of the agreement is** _____

a. Federal Agency Jurisdiction (Agency providing funds, assistance, license, permit): Department of Energy

b. Federal Agency Contact Person: Pierina Fayish Phone: (412) 386-5428

c. Project Contact Person: Meghan Morse Phone: (703) 760-4801 x242

d. Return Address: 7927 Jones Branch Drive, Suite 150, McLean, VA Zip Code: 22102

e. Email Address: mmorse@mangi.com

f. Project Name: Li-ion Battery Manufacturing Facility

g. Project Street Address: 5757 North Green Bay Avenue

h. County: Milwaukee City: Glendale Zip Code: 53209

i. Project Location: Township _____, Range _____, E/W (circle one), Section _____, Quarter Sections _____

j. Project Narrative Description—Attach Information as Necessary.

k. Area of Potential Effect (APE). Attach Copy of U.S.G.S. 7.5 Minute Topographic Quadrangle Showing APE.

II. IDENTIFICATION OF HISTORIC PROPERTIES

☐ Historic Properties are located within the project APE per 36 CFR 800.4. Attach supporting materials.
☑ Historic Properties are not located within the project APE per 36 CFR 800.4. Attach supporting materials.

III. FINDINGS

D.D. ☑ No historic properties will be affected (i.e., none is present or there are historic properties present but the project will have no effect upon them). Attach necessary documentation, as described at 36 CFR 800.11.
☑ The proposed undertaking will have no adverse effect on one or more historic properties located within the project APE under 36 CFR 800.5. Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will result in an adverse effect to one or more historic properties and the applicant, or other federally authorized representative, will consult with the SHPO and other consulting parties to resolve the adverse effect per 36 CFR 800.6. Attach necessary documentation, as described at 36 CFR 800.11, with a proposed plan to resolve adverse effect(s).

Authorized Signature: Meghan Morse Date: February 12, 2010

Type or print name: Meghan Morse

IV. STATE HISTORIC PRESERVATION OFFICE COMMENTS

☒ Agree with the finding in section III above.
☐ Object to the finding for reasons indicated in attached letter.
☐ Cannot review until information is sent as follows: _____

Authorized Signature: DAN DUCHARME Date: 3/10/10

Lebanon

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Mr. Roger Roper, Deputy SHPO
Oregon Parks and Recreation Dept, State Historic Preservation Office
725 Summer St. NE, Suite C
Salem, OR 97301

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Oregon

Dear Mr. Roper:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Lebanon, Oregon, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Entek site in Lebanon (see attached vicinity map), the intent is to expand the capacity and capability to produce both unfilled and highly filled separators on the existing production line. This may or may not require expansion of the footprint of the existing building where production will take place. If this action were implemented, the design engineering team would verify space requirements for equipment and initial layout first. The expansion could be doubling the current footprint, an expansion of 15,000 square feet (1,400 square feet) (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of Section 106 of the National Historic Preservation Act of 1966, we would appreciate receiving any information you have regarding historic or cultural properties in the project area.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no historic or cultural properties are present in the project area and that neither historic nor cultural properties would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

Oregon
Theodore R. Kulongoski, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
(503) 986-0671
Fax (503) 986-0793
www.oregonheritage.org

December 08, 2009

Ms. Pierina Fayisk
US Dept of Energy NETL
626 Cochrans Mills Rd/PO Box 20940
Pittsburg, PA 15236

RE: SHPO Case No. 09-2636
Lithium Ion Battery Manufacturing Plant in Oregon
Possible expansion of existing bldg
Nat Energy Tech Lab/ARRA
, Lebanon, Linn County

Dear Ms. Fayisk:

Our office recently received a request to review the proposal for the project referenced above. In checking our statewide cultural resource database, I find that there have been no previous cultural resource surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains.

While not having sufficient knowledge to predict the likelihood of cultural resources being within your project area, extreme caution is recommended during future ground disturbing activities. ORS 358.905 and ORS 97.740 protect archaeological sites and objects and human remains on state public and private lands in Oregon. If any cultural material is discovered during construction activities, all work should cease immediately until a professional archaeologist can assess the discovery. If your project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with your federal agency representative to ensure that you are in compliance with Section 106 of the NHPA.

If you have any questions about my comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

Dennis Griffin

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

Appendix D Contact with the Bureau of Indian Affairs and Tribal Councils

For the Holland site, several relevant tribes were contacted. An example letter is presented below with a consultation letter list of recipients.

Holland

List of recipients

Name	Title	Agency	Address	City/State/Zip
Mr. Jeffrey D. Parker	President	Bay Mills Indian Community	12140 W. Lakeshore Drive	Brimley, MI 49715
Mr. Robert Kewaygoshkum	Chairperson	Grand Traverse Band of Ottawa and Chippewa Indians	2605 N. West Bayshore Dr.	Suttons Bay, MI 49682
Mr. Wesley Andrews		Little Traverse Bay Bands of Odawa	6229 East Sugar Grove Rd.	Fountain, MI 49410
Mr. Charles Todd	Chief	Ottawa Tribe of Oklahoma	P.O. Box 110, 811 Third Avenue NE	Miami, OK 74355
Mr. Cecil E. Pavlat Sr.		Sault Ste. Marie Tribe of Chippewa Indians	523 Ashmun Street	Sault Ste. Marie, MI 49783
Ms. Kathryn Beaulieu		Red Lake National Library and Archives	Tribal Information Center, P.O. Box 297	Red Lake, MN 56671

Holland Example Letter

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Ms. Kathryn Beaulieu
Red Lake National Library and Archives
Tribal Information Center
P.O. Box 297
Red Lake, MN 56671

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Holland, Michigan

Dear Ms. Beaulieu:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Holland, Michigan, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Holland facility, the intent is to outfit and bring to production a state-of-the art cell manufacturing and pack assembly facility in Michigan (see attached vicinity map). At the Holland facility, an existing 130,000 square foot (approximately 12,000 square meters) building would be used with an 18,000 square foot (1,700 square meters) addition including two small outbuildings for material storage [4,500 square feet (approximately 420 square meters) and 6,500 square feet (approximately 600 square meters)] (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of The American Indian Religious Freedom Act, 42 United States Code § 1996, we would appreciate receiving any information you have regarding Native American sacred locations, traditional resources, or traditional religious practices potentially affected by the proposed project.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no Native American sacred locations, traditional resources, or traditional religious practices would potentially be affected by the proposed project, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

Milwaukee

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Trayce Stanhoff, Chairperson
Prairie Band of Potawatomi Nation
16281 Q Road
Mayetta, KS 66509

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Milwaukee, Wisconsin

Dear Chairperson Stanhoff:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Milwaukee, Wisconsin, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Milwaukee facility (see attached vicinity map), the intent is to support the production of cell manufacturing and pack assembly facilities in Michigan by providing laboratories and necessary analytical equipment to support the implementation of advanced lithium ion battery research and development at the Michigan sites center. At this Milwaukee site, an approximately 3,000 square foot (300 square meters) extension would be constructed (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of The American Indian Religious Freedom Act, 42 United States Code § 1996, we would appreciate receiving any information you have regarding Native American sacred locations, traditional resources, or traditional religious practices potentially affected by the proposed project.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and

disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no Native American sacred locations, traditional resources, or traditional religious practices would potentially be affected by the proposed project, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

Holland and Milwaukee

Due to the proximity of these two sites, the Bureau of Indian Affairs and some Tribes had jurisdiction at both sites. For these groups, a single letter covering both sites was sent. Thus, an example letter is presented below with a list of recipients.

List of recipients

Name	Title	Agency	Address	City/State/Zip
Terrence Virden	Regional Director	Midwest Region Office, Bureau of Indian Affairs	One Federal Drive, Room 550	Ft. Snelling, MN 55111-4007
Mr. John A. Barrett	Chairperson	Citizen Potawatomi Nation	1601 S. Gordon Cooper Drive	Shawnee, OK 74801
Philip Shopodock	Chairman	Forest County Potawatomi Community of Wisconsin	P.O. Box 340	Crandon, WI 54520
Kenneth Meshigaud	Chairperson	Hannahville Indian Community	N14911 Hannahville B1 Rd.	Wilson, MI 49896-9728

Holland and Milwaukee Example Letter

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 16, 2009

Terrence Virden, Regional Director
Midwest Region Office
Bureau of Indian Affairs
One Federal Drive, Room 550
Ft. Snelling, MN 55111-4007

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Holland, Michigan, and Milwaukee Wisconsin

Dear Mr. Virden:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Holland, Michigan, and Milwaukee, Wisconsin, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Holland facility, the intent is to outfit and bring to production a state-of-the art cell manufacturing and pack assembly facility in Michigan (see attached vicinity map). At the Holland facility, an existing 130,000 square foot (approximately 12,000 square meters) building would be used with an 18,000 square foot (1,700 square meters) addition including two small outbuildings for material storage [4,500 square feet (approximately 420 square meters) and 6,500 square feet (approximately 600 square meters)] (see attached site map).

At the Milwaukee facility (see attached vicinity map), the intent is to support the production of cell manufacturing and pack assembly facilities in Michigan by providing laboratories and necessary analytical equipment to support the implementation of advanced lithium ion battery research and

development at the Michigan sites center. At this Milwaukee site, an approximately 3,000 square foot (300 square meters) extension would be constructed (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of The American Indian Religious Freedom Act, 42 United States Code § 1996, we would appreciate receiving any information you have regarding Native American sacred locations, traditional resources, or traditional religious practices potentially affected by the proposed project.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no Native American sacred locations, traditional resources, or traditional religious practices would potentially be affected by the proposed project, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

Lebanon

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 13, 2009

Northwest Regional Office, Bureau of Indian Affairs
911 Northeast 11th Avenue
Portland, Oregon 97232-4169

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Oregon

Dear Sir or Madam:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Lebanon, Oregon, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Entek site in Lebanon (see attached vicinity map), the intent is to expand the capacity and capability to produce both unfilled and highly filled separators on the existing production line. This may or may not require expansion of the footprint of the existing building where production will take place. If this action were implemented, the design engineering team would verify space requirements for equipment and initial layout first. The expansion could be doubling the current footprint, an expansion of 15,000 square feet (1,400 square feet) (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of The American Indian Religious Freedom Act, 42 United States Code § 1996, we would appreciate receiving any information you have regarding Native American sacred locations, traditional resources, or traditional religious practices potentially affected by the proposed project.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no Native American sacred locations, traditional resources, or traditional religious practices would potentially be affected by the proposed project, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

November 18, 2009

Mr. Ron Suppah, Chairperson
Confederated Tribes of the Warm Springs Reservation, Business Council
P.O. Box C
Warm Springs, OR 97761-3001

Subject: Lithium Ion (Li-Ion) Battery Manufacturing in Oregon

Dear Chairperson Suppah:

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) manages the research and development portfolio of the Vehicle Technologies (VT) Program for the Office of Energy Efficiency and Renewable Energy. A key objective of the VT program is accelerating the development and production of electric drive vehicle systems in order to substantially reduce the United States' consumption of petroleum. Another of its goals is the development of production-ready batteries, power electronics, and electric machines that can be produced in volume economically so as to increase the use of electric drive vehicles.

Congress appropriated significant funding for the VT program in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act) in order to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the VT program. NETL is considering funding the proposed Lithium Ion (Li-Ion) Battery Manufacturing project in Lebanon, Oregon, as one of 30 DOE selected for funding under the Recovery Act.

The objective of the proposed project is to establish a world-class domestic advanced battery manufacturing industry. If the proposed action is implemented, Johnson Controls intends to develop facilities in Michigan, Wisconsin, and Oregon for the manufacturing of Li-Ion cells and the assembly of batteries; expand their existing Li-Ion prototype development; manufacturing and testing capabilities for component qualification; validation and launch battery systems in support of customers production programs including domestic supplier qualifications; and partner with Entek to expand production capacity to manufacture separators for electric vehicle applications.

At the Entek site in Lebanon (see attached vicinity map), the intent is to expand the capacity and capability to produce both unfilled and highly filled separators on the existing production line. This may or may not require expansion of the footprint of the existing building where production will take place. If this action were implemented, the design engineering team would verify space requirements for equipment and initial layout first. The expansion could be doubling the current footprint, an expansion of 15,000 square feet (1,400 square feet) (see attached site map).

As part of our coordination and consultation responsibilities and to comply with the implementing provisions of The American Indian Religious Freedom Act, 42 United States Code § 1996, we would appreciate receiving any information you have regarding Native American sacred locations, traditional resources, or traditional religious practices potentially affected by the proposed project.

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA), in accordance with requirements of the National Environmental Policy Act, to analyze, document, and disseminate information on the potential environmental consequences of the proposed project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no Native American sacred locations, traditional resources, or traditional religious practices would potentially be affected by the proposed project, a written acknowledgement of that conclusion would be appreciated. In any case, the information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, please contact me by telephone at (412) 386-5428 or by email at pierina.fayish@netl.doe.gov.

Sincerely,

Pierina N. Fayish

Pierina Fayish
NEPA Document Manager

Enclosures

Appendix E Public Comments

WISCONSIN DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

February 23, 2010

Ms. Pierina N. Fayish
National Energy Technology Laboratory
626 Cochrans Mill Rd. PO Box 109040
Pittsburg, PA 15236

Subject: Draft EA, Johnson Controls Electric Drive Veh. Battery and Component Manufacturing Initiative

Dear Ms. Fayish:

The Wisconsin Department of Natural Resources, Office of Energy and Environmental Analysis (OE) has reviewed the subject document in response to your cover letter of January 15, 2010. In general, the document addresses most of the potential environmental quality issues subject to the authority or interest of this agency. However, there is one issue which should be explicitly addressed, even if the potential for impacts is found to be very small. That matter is the potential for impacts to groundwater quality and quantity during construction of this facility.

The two sentences on this subject on p. 20 only address impacts to groundwater that would occur by use of groundwater for water supply purposes. Impacts to groundwater during construction could occur due to dewatering of the excavated area, resulting in a lowering of the local aquifer level, or due to spills of chemicals or fuels used during construction, which could infiltrate the surficial sand and gravel aquifer.

Information relevant to these issues includes: The local groundwater aquifer systems, including the sand and gravel, and deeper bedrock systems, including the water table depth and hydraulic conditions. Any existing groundwater pumping by other facilities around the project site should be noted to consider cumulative impacts of any dewatering activity during the duration of construction. It is likely that local groundwater movement is towards the Milwaukee River to the East. Contamination from on-site spills could therefore be carried to the River unless prevented and remediated. We assume that a spill prevention and control plan will be prepared and implemented for this facility. That should be adequate to reduce these risks to acceptable levels.

If you have any questions about this letter, please contact me at the address above, or call at (608) 266-6673.

Sincerely,

Steven M. Ugoretz
Environmental Analysis and Review Specialist – Advanced

Cc: David Siebert – OE/7
Michael Thompson - SER

Ottawa County Economic Development Office, Inc.

6676 LAKE MICHIGAN DRIVE • P.O. BOX 539 • ALLENDALE, MICHIGAN 49401 • PHONE 616 892-4120 • FAX 616 895-6670

February 11, 2010

Ms. Pierina Fayish
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochrans Mill Road
P.O. Box 10940, MS 922-M217
Pittsburgh, PA 15236-0940

RE: Johnson Controls/ENTEK Project Draft EA Comments

Dear Ms. Fayish:

The Ottawa County Economic Development Office, Inc. would like to go on record in support of both the Draft Environmental Assessment and JCI's proposed Lithium Ion Battery Manufacturing Project in Holland, Michigan.

The Environmental Assessment report is very thorough and indicates that the impacts resulting from the proposed action will be only minor and temporary.

OCEDO supports the JCI/ENTEK project because of the direct and indirect positive economic impacts (private investments & new job creation) that will be associated with the implementation of this project. Johnson Controls, Inc. has a long history in the Holland area. JCI has consistently been one of the largest manufacturing employers in Ottawa County. The Company is an outstanding corporate citizen. Their past expansion projects have been supported by our local governmental units with incentives awarded for the maximum allowable terms, i.e. State of Michigan P.A 198 property tax abatements. OCEDO also supports the proposed project because it involves the reuse of an existing facility.

If you have any questions concerning the Ottawa County Economic Development Office, Inc.'s support for JCI's advanced battery manufacturing project or Environmental Assessment, please call me at 616-892-4120 or e-mail me at krizzio@altelco.net Thank you.

Sincerely,

Kenneth J. Rizzio, Executive Director

cc: Steven R. Patrick, OCEDO Chairman

E-MAIL KRIZZIO@ALTELCO.NET • WWW.OCEDO.ORG

SEMCOG established 1968 . . . *Equipping local government leaders for the future*
Southeast Michigan Council of Governments
535 Griswold Street, Suite 300 • Detroit, Michigan 48226-3602 • 313-961-4266 • Fax 313-961-4869
www.semcog.org

Date: February 02, 2010

To: Pierina N. Fayish, NEPA Document Manager
National Energy Technology Laboratory
626 Cochrans Mill Road, P O Box 10940
Pittsburgh, PA 15236

From: Michigan Single Point of Contact
SEMCOG (Southeast Michigan Council of Governments)

Subject: State Local Government Review Under Presidential Executive Order 12372

Project: Draft EA for Proj in Michigan, Oregon & Wisconsin - Outfit/Initiate Production at Battery Cell Manufacturing/Pack Assembly Facility in Holland, MI

Funding Agency/Program: Department of Energy
Catalog of Federal Domestic Assistance Number: 81.129

Your project has been received by SEMCOG, the public agency designated by the State of Michigan, to act as the "Single Point of Contact" for review of federal and federally assisted projects pursuant to Presidential Executive Order 12372 - Intergovernmental Review of Federal Programs. This intergovernmental review process allows state agencies, areawide/regional planning agencies, and local units of government the opportunity to perform an advisory review of projects seeking federal funds.

The review process should not exceed 60 days, unless the funding agency, reviewing agency, and project sponsor are in the process of negotiating/discussing concerns related to the project.The Michigan Federal Project Review System will attempt to limit reviews to 40 days. SEMCOG will send a list of projects received to state departments and regional planning agencies. For projects of less than statewide impact, please send a copy of the project application to the affected regional planning agency(ies). Additionally, regional planning agencies may contact affected local governments for comments on projects which directly impact them. If necessary, follow-up meetings or discussions will be held by state departments and/or regional planning agencies to resolve problems. Failure to resolve problems could result in negative comments being sent to the funding agency.

Please consider the review period to be concluded if you do not hear from a state or regional review agency within 40 days of this letter. Your project's file number is **092703** . Please refer to this number if the funding agency requires a state clearinghouse file application identifier number.

For further information contact Willam Parkus, Regional Review Office, SEMCOG, (313) 324-3305.

Note Applicant is responsible for providing all comments they receive to the funding agency.

State Planning and Development Regions
State of Michigan

1. **SEMCOG**
   535 Griswold, Suite 300
   Detroit, MI 48226
   313-961-4266
   Web site: www.semcog.org

2. **Region 2 Planning Commission**
   120 W. Michigan Ave.
   Jackson, MI 49201
   517-788-4426
   Web site: www.region2planning.com

3. **Southcentral Michigan Planning Council**
   P.O. Box 2137
   Portage, MI 49081
   616-323-0045

4. **Southwestern Michigan Commission**
   185 E. Main Street, Suite 701
   Benton Harbor, MI 49022
   616-925-1137
   Web site: www.swmicomm.org

5. **Genesse County Metro Planning Commission**
   1101 Beach Street, Room 223
   Flint, MI 48502
   810-257-3010

6. **Tri-County Regional Planning Commission**
   913 W. Holmes
   Lansing, MI 48910
   517-393-0342
   Web site: www-tri-co.org

7. **East Michigan Council of Governments**
   3144 Davenport Ave, Suite 200
   Saginaw, MI 48602
   989-797-0800
   Web site: www.ecmpdr.org

8. **West Michigan Regional Planning Commission**
   820 Monroe NW, Suite 214
   Grand Rapids, MI 49503
   616-774-8400
   Web site: www.wmrpc.org

9. **Northeast Michigan Council of Governments**
   P.O. Box 457
   Gaylord, MI 49735
   989-732-3551
   Web site: www.nemcog.org

10. **Northwest Michigan Council of Governments**
    P.O. Box 506
    Traverse City, MI 49685
    231-929-5000
    Web site: www.nwm.cog.mi.us

11. **Eastern Upper Peninsula Regional Planning & Development Commission**
    P.O. Box 520
    Sault Ste. Marie, MI 49783
    906-635-1581

12. **Central Upper Peninsula Planning & Development Commission**
    2415 14thAve. S.
    Escanaba, MI 49829
    906-786-9234

13. **Western Upper Peninsula Planning & Development Regional Commission**
    P.O. Box 365
    Houghton, MI 49931
    906-482-7205

14. **West Michigan Shoreline Regional Development Commission**
    P O Box 387
    Muskegon, MI 49443-0387
    231-722-7878
    Web site: www.wmsrdc.org