DOE/EA-1834

FINAL ENVIRONMENTAL ASSESSMENT

Environmental Assessment For Department Of Energy Loan To Severstal Dearborn, Inc., For Advanced Technology Vehicles Manufacturing Project In Dearborn, Michigan

U.S. Department of Energy
Advanced Technology Vehicles Manufacturing Loan Program
Washington, DC 20585

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Acronyms and Abbreviations	Full Phrase
AHSS	Advanced High Strength Steel
APE	Area of Potential Effect
ATV	Advanced Technology Vehicles
ATVM	Advanced Technology Vehicles Manufacturing
BIW	Body-in-white
CAA	Clean Air Act
CAL	Continuous Annealing Line
CEQ	Council on Environmental Quality
CO	Carbon Monoxide
CT	Census Tract
CWA	Clean Water Act
DIG	Dearborn Industrial Generation
DOE	U.S. Department of Energy
DWSD	Detroit Water and Sewerage Department
EA	Environmental Assessment
EAF	Electric Arc Furnace
EISA	Energy Independence and Security Act
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
$FeCl_3$	Iron (III) Chloride
FEMA	Federal Emergency Management Agency
FORD	The Ford Motor Company
FWS	Fish and Wildlife Service
GHG	Greenhouse Gas
GPM	Gallons Per Minute
HASP	Health and Safety Plan
HCl	Hydrogen Chloride
HDGL	Hot-Dip Galvanizing Line
MDNRE	Michigan Department of Natural Resources and Environment
MGD	Million Gallons per Day
MMBtu	Million British Thermal Units
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NANSR	Non-attainment New Source Review
NaOH	Sodium Hydroxide
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutant
NHPA	National Historic Preservation Act

Acronyms and Abbreviations	Full Phrase
NO_x	Nitrogen Oxides
NSR	New Source Review
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Administration
P	Primary
PL	Pickling Line
PLTCM	Pickling Line and Tandem Cold Rolling Mill
PM	Particulate Matter
PPE	Personal Protective Equipment
PSD	Prevention of Significant Deterioration
PTI	Permit to Install
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
S	Secondary
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SNA	Severstal North America, Inc.
SPL	Spent Pickle Liquor
SRWWTP	Schaefer Road Waste Water Treatment Plant
T-BACT	Best Available Control Technology for Toxics
TCM	Tandem Cold Rolling Mill
TMDL	Total Maximum Daily Loads
U.S.	United States
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

Executive Summary

Introduction

United States (U.S.) Department of Energy (DOE) is proposing to issue a loan to Severstal Dearborn, Inc. (Severstal Dearborn, or "the Applicant"), a subsidiary of Severstal North America, Inc. (SNA). SNA ranks as the fourth largest steel manufacturer in the U.S. (Severstal 2009). The loan would be from the Advanced Technology Vehicles Manufacturing Incentive Program (ATVM Program) and would be used to design, manufacture, and construct facilities to produce Advanced High Strength Steel (AHSS) for the automotive industry. The loan would be for the construction of a: (1) new Pickling Line (PL) and Tandem Cold Rolling Mill (TCM) (PLTCM) to replace the existing PLs and cold rolling mill; (2) hot strip mill exit end modification; (3) new Hot Dip Galvanizing Line (HDGL); (4) new Continuous Annealing Line (CAL); (5) new T-Section Shipping facility; and (6) relocation of the Quality Control/Metallurgy Laboratory (Laboratory), collectively known as the "proposed project". All of the construction is to take place at Severstal Dearborn's current location at 4001 Miller Road, Dearborn, Michigan.

DOE has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) (42 USC 4321, et. seq.), Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508) and DOE NEPA regulations (10 CFR Part 1021). The EA examines the potential environmental impacts associated with the Proposed Action and the No Action Alternative and determines whether the Proposed Action has the potential for significant environmental impacts. The information contained in the EA will enable DOE to fully consider the potential impacts of the Proposed Action on the human environment in accordance with the CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508) and DOE NEPA Implementing Procedures (10 CFR 1021).

Purpose and Need

The Proposed Action evaluated by DOE in this EA is to issue a loan to Severstal Dearborn from the ATVM Program that Severstal Dearborn would use to design, manufacture, and construct facilities to produce AHSS for the automotive industry.

The ATVM Program was authorized under Section 136 of The Energy Independence and Security Act of 2007 (EISA) (P.L. 110-140) to facilitate the development of energy-efficient vehicles. On September 30, 2008, Congress authorized up to $25 billion in direct loans to eligible applicants for the costs of reequipping, expanding, and establishing manufacturing facilities in the United States to produce advanced technology vehicles (ATV)[1] that provide meaningful improvements in fuel economy performance and components for such vehicles.

[1] Under the ATVM Program, ATV and ATV component manufacturers may be eligible for direct loans for up to 30% of the cost of reequipping, expanding, or establishing manufacturing facilities in the U.S. used to produce qualified ATVs or ATV components. Qualified ATVs are light-duty vehicles or ultra-efficient vehicles that meet specified federal emission standards and fuel economy requirements. Qualified components must be designed for ATVs and installed for the purpose of meeting ATV performance requirements, as determined by the U.S. Department of Energy. (Reference Public Law 111-85, Section 312; Public Law 110-140, Section 136; and 42 U.S. Code 17013)

The purpose and need for agency action is to comply with DOE's mandate under Section 136 of the EISA by selecting eligible projects that meet the goals of the Act; DOE is using the NEPA process to gather information on potential environmental impacts in order to help decide whether to issue a loan to Severstal Dearborn to support the proposed project.

This proposed project would:

- Produce AHSS, a component of automobiles, that could reduce the curb mass weight of automobiles by 10% which could allow for an increase of 2 miles per gallon of gasoline for each vehicle,
- Stimulate the local Dearborn, Michigan economy by utilizing local vendors during the construction and operational phases of the project, and
- Add, on average, 336 temporary construction related jobs during the 2-year construction period, and 169 permanent high-paying skilled jobs in Dearborn, Michigan which is located in Metropolitan Detroit, Michigan (Severstal 2009).

Proposed Action and No Action Alternative

DOE's Proposed Action is to issue a loan to Severstal Dearborn under the ATVM Program, which would be used to produce AHSS. Utilizing private funds, and before application for this loan, Severstal Dearborn began construction on the project in March of 2008, and since that time, the Severstal Dearborn has continued work on the project, utilizing $348 million in non-federal funds. Status of activities at the Severstal Dearborn's facility in Dearborn, Michigan is summarized below:

- Demolition of 11 existing buildings that were obsolete
- Installation of pilings for PLTCM and HDGL
- Erection of Structural Steel for:
    - PLTCM
        - 100% of main bay
        - 50% of roll shop
        - 0% of transverse bay storage bay
        - 0% of utility building
    - HDGL
        - 100% of shipping bay 1
        - 0% of production bay
        - 0% of after-pot cooling (APC) tower
- Installation of roof on PLTCM (between January and July 2010)
- Structural Steel: 100% of roll shop steel, 100% of transverse bay, and 50% of storage bay steel (January to July 2010)
- 100% of siding on PLTCM (January to July 2010)
- Excavation and installation of interior equipment foundations for the PLTCM
- Installation of siding on PLTCM
- Installation of mechanical equipment in PLTCM
- CAL
    - Not initiated
- T-Section Shipping Facility
    - Not initiated

- Laboratory Relocation
  - Not initiated

Severstal Dearborn submitted an application for an ATVM Program loan in April 2009, and DOE made the determination to prepare an EA in June 2010. This EA analyzes the impacts for the activities that have occurred since the beginning of January 2010 and the impacts related to plant operations. DOE conservatively chose the beginning of January 2010 based on the dates Severstal Dearborn submitted its application (April 2009), DOE determined to prepare an EA (June 2010), and the approximate date that Severstal Dearborn restarted construction activities (February 2010). The beginning of January 2010 conservatively captures the impacts of the activities that have occurred since Severstal Dearborn submitted its application in April 2009.

The proposed project includes completing the construction of the PLTCM, and HDGL, modifying Hot Strip Mill exit end, constructing a new CAL, modifying an existing structure for the T-Section Shipping facility, and relocating the Laboratory at Severstal Dearborn's existing facility. The new buildings and equipment would be used to produce AHSS.

To produce AHSS, Severstal Dearborn will utilize coils of steel from the existing Hot Strip Mill located at the Dearborn, Michigan facility. The coils will be unrolled, "pickled" (acid treatment) in the pickling line and cold rolled in the new TCM where they will be either sent to the HDGL, CAL, or existing facilities for final treatment. However, some of the existing production of hot and cold rolled steel will continue at Severstal Dearborn under the proposed action.

A No Action Alternative is also evaluated in this EA. Under the No Action Alternative, DOE would not issue the loan to Severstal Dearborn for the project. For purposes of the No Action Alternative, DOE assumes that construction of the proposed project would not be completed, it would not achieve commercial operation for AHSS production, and that the existing production of steel would continue[2].

Project Effects

Severstal Dearborn's project began in February 2008 with $348 million of private funding. In November 2008, the project to upgrade the facility to produce AHSS was suspended due to the downturn in the economy in general and the automotive economy specifically; production of hot and cold rolled steel continued. Following the down turn, the private funding was exhausted and Severstal Dearborn decided to apply for a loan from DOE's ATVM Program. This EA analyzes the potential effects of utilizing the Severstal Dearborn facility to install and operate the PLTCM, Hot Strip Mill exit end modification, HDGL, CAL, a T-Section Shipping facility, and Laboratory at Severstal Dearborn's existing facility.

Table ES-1 summarizes the potential impacts associated with the Proposed Action and No Action Alternative.

[2] DOE recognizes that the proposed project may eventually secure other financing and proceed without DOE's loan; however, the potential impacts would be essentially identical to those under DOE's Proposed Action.

Table ES-1: Summary of Potential Impacts

Resource Area	Proposed Action	No Action Alternative
Land Use	Negligible impact; the proposed action is consistent with the existing land use and industrial activities already taking place on the site.	No impact; no change in current land use.
Visual Resources	Negligible impact on visual resources, as new facilities match the existing character and setting of the industrial site.	No impact; no change in current visual setting.
Air Quality	Short-term impacts from construction-generated emissions and dust. Operations would increase emissions of PM, NOx, CO, and VOC. All new emission sources would require a permit from MDEQ.	No impact; no new emissions.
Noise	Construction activities would generate temporary increases in noise levels. No sensitive receptors are located near the site. Negligible noise impacts related to operations.	No impact; no increase over ambient noise level.
Geology and Seismicity	Negligible impact; no effects associated with geology or seismicity.	No impact; no effects associated with geology or seismicity.
Water Resources	Negligible impact; no wetlands or floodplains at the site. No interference with on-going corrective actions at the site. No effects to groundwater. Discharges will be within existing permitted levels.	No impact; no change to current water resources.
Biological Resources	No impact; no suitable habitat for any protected species is present at the site, and the area is an active industrial complex.	No impact; no change to current conditions.
Cultural Resources	Ford Rouge River Complex is listed on the National Register of Historic Places. Severstal Dearborn site is part of the listed complex. State Historic Preservation Officer concurred with DOE determination of no adverse effect on historic properties.	No impact; no change to current conditions.
Socioeconomic and Environmental Justice	Long-term beneficial impact on employment and local economy. No environmental justice impacts.	No impact; no change to current conditions.
Environmental Health and Safety	Negligible impact. Studies have documented soil and groundwater contamination at the site. Construction workers and operations workers would follow site-specific health and safety plans and would comply with all appropriate regulations and wear personal protective equipment.	No impact; no change in exposure to hazardous conditions at the site.

Resource Area	Proposed Action	No Action Alternative
Transportation	Negligible impact associated with construction and operational traffic. Levels would be higher than current levels, but lower than existed in 2008. Additional transportation activity would be a small increase over existing levels and would not impact level of service conditions on nearby road network.	No impact; no change in existing conditions.
Waste Management	Negligible impact; some waste streams would increase over current conditions and others would decrease. All waste streams would be within permitted levels. Severstal Dearborn has established procedures to evaluate and manage waste streams.	No impact; no change in current waste management practices.
Utilities	Negligible impact on utilities. No additional utility lines would be required, electricity use would increase, however, capacity exists.	No impact; no change in current utilities.
Soils / Prime Farmland	No impact; natural soils conditions do not exist at the site due to decades of industrial activity. Best management practices would be implemented to control soil erosion during construction. No Prime Farmland exists on the site.	No impact; no changes in current conditions.

The public final EA and DOE's finding of no significant impact are posted at the following DOE webpage: http://lpo.energy.gov/?page_id=1502.

Section 1: Purpose and Need

1.1 Purpose and Need for Action

The Proposed Action evaluated by the United States (U.S.) Department of Energy (DOE) in this Environmental Assessment (EA) is to issue a loan to Severstal Dearborn, Inc. (Severstal Dearborn) a subsidiary of Severstal North America, Inc. [SNA]). The loan would be from the Advanced Technology Vehicles Manufacturing Incentive Program (ATVM Program) and would be used to design, manufacture, and construct facilities to produce Advanced High Strength Steel (AHSS) for the automotive industry. AHSS is currently in demand by U.S. automotive designers and manufacturers in order to meet the future design and weight requirements of advanced technology automobiles and light trucks (Severstal, 2009).

The ATVM Program was authorized under Section 136 of The Energy Independence and Security Act of 2007 (EISA) (P.L. 110-140) to facilitate the development of energy-efficient vehicles. On September 30, 2008, Congress authorized up to $25 billion in direct loans to eligible applicants for the costs of reequipping, expanding, and establishing manufacturing facilities in the United States to produce advanced technology vehicles (ATV)[3] that provide meaningful improvements in fuel economy performance and components for such vehicles. The purpose and need for agency action is to comply with DOE's mandate under Section 136 of the EISA by selecting eligible projects that meet the goals of the Act; DOE is using the National Environmental Policy Act (NEPA) process to assist in determining whether to issue a loan to Severstal Dearborn to support the proposed project.

This proposed project would:

- Produce AHSS, a component of automobiles that could reduce the weight of steel components in automobiles by 10% which could allow for an increase of 2 miles per gallon of gasoline for each vehicle.
- Based solely on existing demand from SNA customers, SNA estimated that a minimum of 29.7 million gallons of fuel could be saved per model year in the U.S. from the use of AHSS. This stems from an average increase of 2 miles per gallon in fuel efficiency per vehicle achieved from up to a 10 percent curb mass weight reduction (Severstal, 2009).
- Stimulate the local Dearborn, Michigan economy by utilizing local vendors during the construction and operational phases of the project.
- Create approximately 336 jobs during the 2-year construction period, and up to 169 new full-time jobs during operation in Dearborn, Michigan which is located in Metropolitan Detroit, Michigan.

1.2 Background

The EISA authorized several new grant, loan, and aid programs to stimulate the transformation of local communities, states, and industries adopting and adapting to renewable energy and

[3] Under the ATVM Program, ATV and ATV component manufacturers may be eligible for direct loans for up to 30% of the cost of reequipping, expanding, or establishing manufacturing facilities in the U.S. used to produce qualified ATVs or ATV components. Qualified ATVs are light-duty vehicles or ultra-efficient vehicles that meet specified federal emission standards and fuel economy requirements. Qualified components must be designed for ATVs and installed for the purpose of meeting ATV performance requirements, as determined by the U.S. Department of Energy. (Reference Public Law 111-85, Section 312; Public Law 110-140, Section 136; and 42 U.S. Code 17013)

energy conservation programs. Section 136 authorized funding awards and a direct loan program for original equipment manufacturers and component suppliers that reequip, expand, or establish manufacturing facilities in the United States to produce ATVs or components. In November 2008, DOE issued an Interim Final Rule to implement the ATVM Program (73 Federal Register 66721 (November 12, 2008)). In the fiscal year 2009 Continuing Resolution, Congress authorized up to $25 billion in direct loans to eligible applicants under the program.

Eligibility for loans under EISA Section 136 is based on the reequipment, expansion, and establishment of manufacturing facilities in the United States to produce components for ATVs. To meet the demands of the automotive industry for lightweight high strength steel, Severstal Dearborn's proposed project consists of the following activities at its Dearborn, Michigan facility:

- Hot Strip Mill exit end modifications
- New Pickling Line (PL) and Tandem Cold Rolling Mill (TCM) (PLTCM) to replace the existing PLs and cold rolling mill to produce AHSS
- New Hot Dip Galvanizing Line (HDGL) to produce AHSS
- New Continuous Annealing Line (CAL) to produce AHSS
- Relocate the Quality Control/Metallurgy Laboratory (Laboratory)
- Modification to Hot Rolled and Cold Rolled steel shipping including conversion of a skeletal structure into an enclosed and climate controlled structure (the T-Section Shipping facility)

Severstal Dearborn's project began in February 2008 with $348 million of private funding. In November 2008, the project to upgrade the facility to produce AHSS was suspended due to the downturn in the economy in general and the automotive economy specifically; production of hot and cold rolled steel continued. Since that time limited activities to upgrade the facility to produce AHSS have been performed at the Dearborn, Michigan site. From February through August 2008, the following activities occurred:

- February 2008: Project Begins
- February 2008-August 2008: 11 buildings demolished
- February 2008- October 2008: Pilings installed for PLTCM and HDGL
- September 2008: Start of Structural Steel erection for PLTCM and HDGL
- November 2008: Project Suspended

In April 2009, Severstal Dearborn submitted an application to DOE for a federal loan. In June 2010, based on the information provided in the application, DOE determined that it would prepare an EA under NEPA. NEPA review of the project was then postponed as DOE worked with Severstal Dearborn to determine project eligibility and whether to invite Severstal Dearborn to further due diligence (project review) under DOE's ATVM Program.

The following presents the status of activities for Severstal Dearborn's project:

Hot Strip Mill exit end modifications

- Equipment has not been purchased or installed

PLTCM

- Demolition – Completed

- Earth work – Completed within the building foot print; utility earthwork and the coil staging area are on hold
- Foundations – Building foundations completed; foundations for the coil staging area are on hold
- Building Erection – Started October 2008, and is an on-going activity
- Equipment purchasing – Mill equipment contract signed April 2007
- Began installing roof on PLTCM in March 2010
- Restarted excavating and installing equipment foundations inside of the PLTCM in May 2010
- Began installing siding on PLTCM in June 2010
- Equipment installation began in September 2010

HDGL
- Foundations – Building foundations completed
- Building Erection – Started September 2008, and is an on-going activity
- Equipment purchasing – Mill equipment contract signed November 2007
- Equipment installation began in September 2010

CAL
- Not initiated

T-Section Shipping Facility
- Not initiated

Laboratory Relocation
- Not initiated

1.3 Scope of this Environmental Assessment

This EA provides DOE environmental information for use in making a decision as to whether to provide Severstal Dearborn a loan for the Proposed Action. This EA: (1) describes the purpose of and need for the Proposed Action; (2) describes the Proposed Action and the No Action Alternative; (3) describes the existing environment at the Severstal Dearborn facility and analyzes the potential environmental impacts that could result from the Proposed Action and the No Action Alternative; and (4) identifies and characterizes cumulative impacts that could result from proposed project impacts in relation to other on-going or reasonably foreseeable activities within the surrounding area.

This EA analyzes the impacts for the activities that have occurred since January 1, 2010 and the impacts related to plant operations. DOE conservatively chose January 2010 based on the dates Severstal Dearborn submitted its application (April 2009), DOE determined to prepare an EA (June 2010), and the approximate date that Severstal Dearborn restarted construction activities (February 2010). The beginning of January 2010 conservatively captures the impacts of the activities that have occurred since Severstal Dearborn submitted its application in April 2009. Although construction of portions of the project has occurred or is underway (as discussed in Section 1.2), the baseline for the existing environment described in this EA consists of the conditions that existed as of January 2010, before construction resumed. These conditions take into account the site preparation and construction that was completed using private funds. If the existing environment has been altered as a result of construction activities

conducted since January 2010, it is described in this EA in the discussion of potential effects of the project. The construction activities that have taken place to date have been completed with the assistance of private funds.

In addition to evaluating the Proposed Action of issuing the loan to Severstal Dearborn for the project, DOE evaluates a No Action Alternative in this EA. Under the No Action Alternative, DOE would not issue a loan to Severstal Dearborn for the project. DOE assumes that construction of the proposed project would not be completed, it would not achieve commercial operation for AHSS production, and that the existing production of steel products would continue[4].

This EA has been prepared to assess the potential impacts of the Proposed Action and the No Action Alternative on the human environment in accordance with the requirements of NEPA (42 U.S.C. 4321-4347), Council on Environmental Quality (CEQ) NEPA implementing regulations (Code of Federal Regulations [CFR] Parts 1500-1508), and DOE NEPA implementing procedures (10 CFR 1021). If DOE does not identify significant impacts during the preparation of this EA, it will issue a Finding of No Significant Impact (FONSI). If DOE identifies potentially significant impacts, it will prepare an Environmental Impact Statement.

The public final EA and DOE's finding of no significant impact are posted at the following DOE webpage: http://lpo.energy.gov/?page_id=1502.

1.4 Document Organization

This EA has been organized into the following sections. A list of acronyms and abbreviations follows the Table of Contents.

Section 1: Purpose and Need, describes the purpose of and need for the Proposed Action, the background of the ATVM Loan Program, and the scope of the analysis. It also describes the organization of the EA.

Section 2: Proposed Action and No Action Alternative, discusses the Proposed Action, the No Action Alternative, the alternatives considered but eliminated, and lists the permits and authorizations required for the proposed project.

Section 3: Affected Environment and Environmental Consequences, describes the existing baseline conditions of the resources that may be affected by implementing the Proposed Action, including: land use, visual resources, air quality, noise, geology and seismicity, water resources, biological resources, cultural resources, socioeconomics and environmental justice, public health and safety, transportation, utilities and waste management. Additionally, this section describes potential environmental and socioeconomic impacts associated with the Proposed Action and No Action Alternative described in Section 2. A discussion of cumulative effects is also provided.

[4] DOE recognizes that the proposed project may eventually secure other financing and proceed without DOE's loan; however, the potential impacts would be essentially identical to those under DOE's Proposed Action.

Section 4: List of Preparers, provides a brief description of credentials for the preparers of the EA.

Section 5: List of Agencies Contacted, provides a list of agencies contacted regarding this EA.

Section 6: References, describes the sources of information used in preparing this EA.

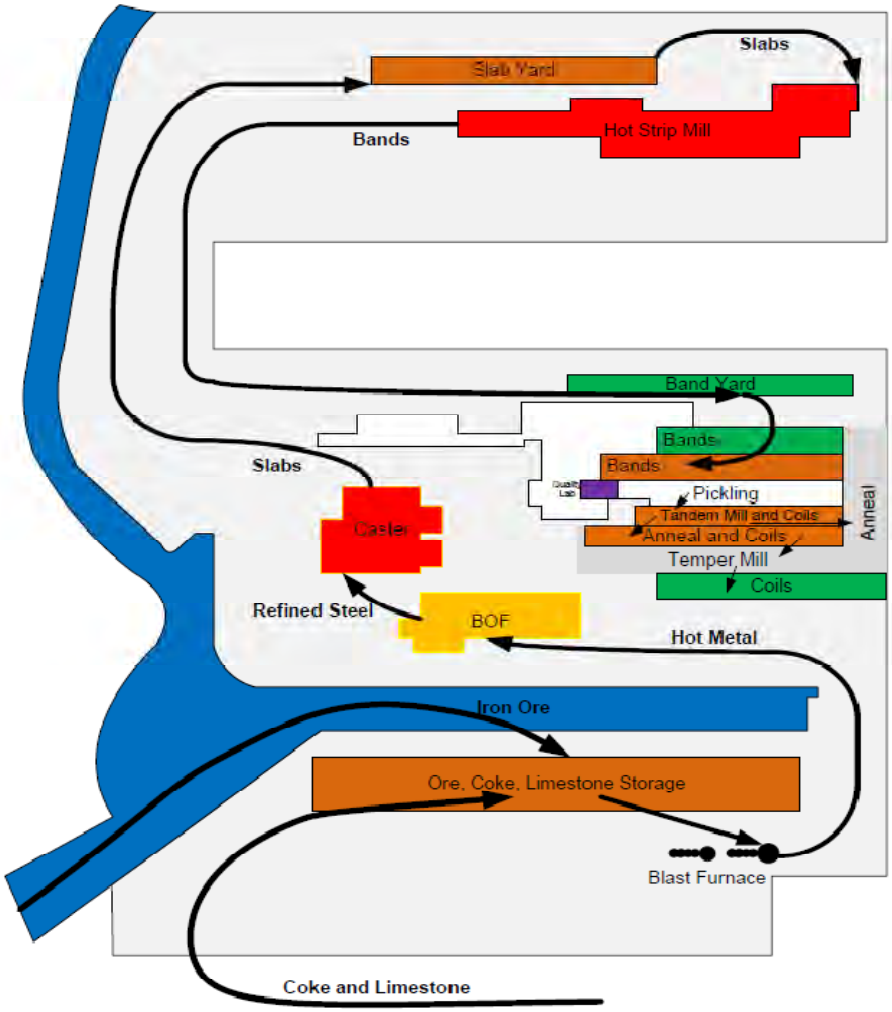
Section 2: Proposed Action and Alternatives

This section provides information on Severstal Dearborn's processes and products. It discusses the Proposed Action, the No Action Alternative, alternatives considered but eliminated, and lists the permits and authorizations required for the proposed project.

2.1 Introduction

Currently, Severstal Dearborn utilizes the following steps (see Figure 2.1) to annually produce up to 5.8 MM tons of hot rolled sheet steel, cold rolled sheet steel, and galvanized sheet steel using assets (buildings, machines, and processes) originally installed by the Steel Division of Ford Motor Company (Ford).:

Figure 2.1 Current Process Flow Diagram



Source: Severstal 2009

Step 1: Blast Furnace

Coke, pulverized coal, limestone, hot gases, and iron ore are heated in the blast furnace to create molten iron.

Step 2: Basic Oxygen Furnace (BOF)

The molten iron is transported in railcars to the basic oxygen furnace where lime, flux, scrap metal and oxygen are added to the molten iron to produce liquid steel.

Step 3: Ladle Metallurgy and Vacuum Degassing

During this step, the liquid steel is chemically adjusted to meet the specifications of each end customer. Chemicals are added to the liquid steel to change its physical properties. Additionally, gases, like oxygen, are removed from the steel mixture.

Step 4: Continuous Slab Caster

The molten steel is then poured into the slab caster which turns the molten steel into uniform slab steel.

Step 5: Hot Strip Mill (modified under the Proposed Action)

The steel slab is transported to the slab reheat furnace where it is reheated and sent through the hot strip mill resulting in rolled steel coils.

Step 6: PL (modified under the Proposed Action)

The coils of steel are brought to the pickling line process where they are uncoiled and passed through pickle liquor (a mixture of acids and other chemicals [hydrochloric (HCl) acid and sodium hydroxide (NaOH)]) to clean the surface of the steel by removing scale and other impurities.

Step 7: TCM (modified under the Proposed Action)

The TCM reduces the gauge (thickness) of the steel and adds additional strength to the steel.

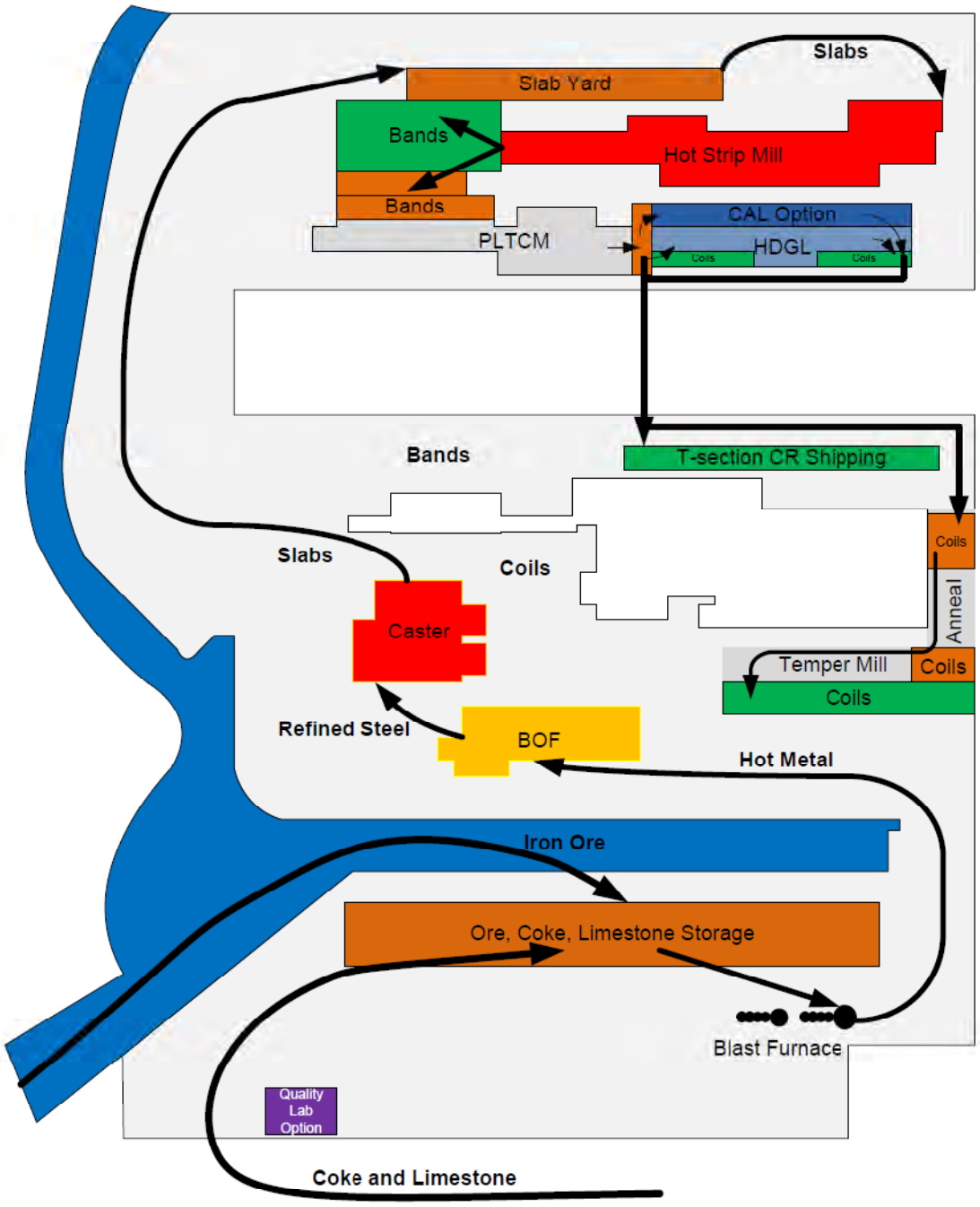
Of the three PLs, two were originally installed in 1936 and the third in 1954. The TCM was installed in 1959. Maintenance and upgrade activities have taken place since they were originally installed, but the fundamental designs are outdated.

After the TCM, Severstal Dearborn sells the raw steel, or may further process the steel. The additional process steps include some form of annealing to develop mechanical properties and may include galvanized coating to protect against corrosion.

Severstal Dearborn has determined that the hot strip mill, PLs, and TCM must be rehabilitated and updated as part of the Proposed Action in order for the company to serve the modern automotive market. Moreover, to produce AHSS, the steel must undergo additional processing after the existing TCM, that may include processing the steel through a hot-dip galvanizing line

and/or a continuous annealing line, which are both included as part of the Proposed Action. The process flow that would result after implementation of the Proposed Action is presented in Figure 2.2 and described in Section 2.2.

Figure 2.2: Proposed Severstal Dearborn Process Flow Diagram



Source: Severstal 2009

2.2 Proposed Action

The DOE Proposed Action is to provide Severstal Dearborn a loan under the ATVM Program to design, manufacture, and construct facilities to produce AHSS for the automotive industry.

The Dearborn site is located within the Ford Rouge River Industrial Complex. Since the early 1920's, various companies have manufactured steel at this location. The location of the proposed project consists of existing facilities and vacant land within the complex. The complex is bordered by commercial roads, the Rouge River, and Interstate 94 (see Figure 2.3). The Ford Rouge River Industrial Complex covers 940 acres of land; Severstal Dearborn's portion of that is approximately 418 acres. The Proposed Action will disturb only 27 acres of Severstal Dearborn's area in the Ford Rouge River Industrial Complex.

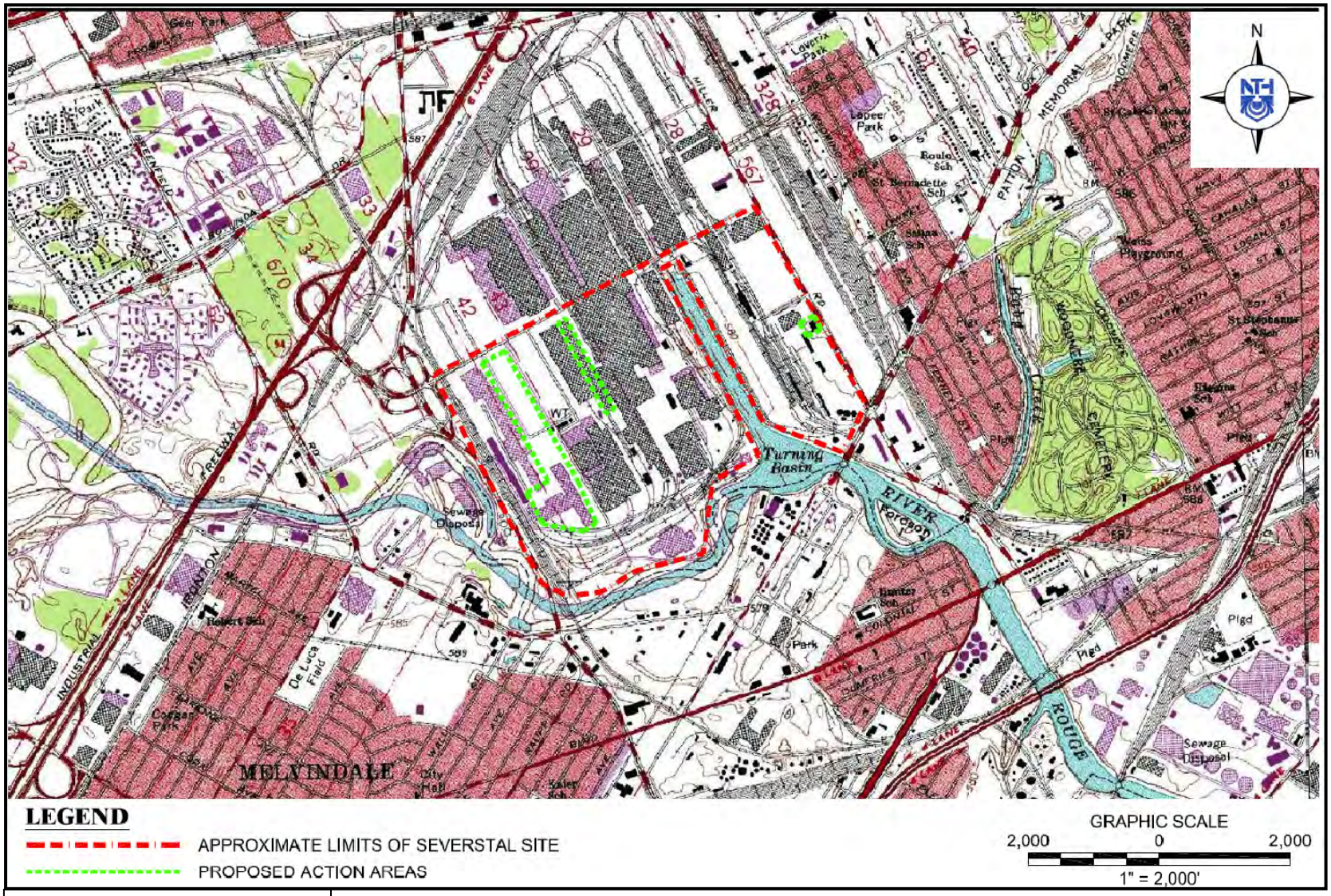
The Ford Motor Company (Ford) occupies over 500 acres at the Ford Rouge River Industrial Complex. Ford operates the Ford F-150 pickup truck assembly and production line, research and development facilities, and runs The Henry Ford Museum within the complex. Ford employs approximately 6,000 at its facilities within the complex (Ford, 2011).

Severstal Dearborn currently produces cold and hot rolled sheet steel at the Dearborn site using assets originally installed by the Steel Division of Ford. The existing pickling line process is used to remove oxide scale from the steel bands that exit from the hot strip mill. The pickled steel is staged in inventory prior to being fed into a TCM where the gauge (thickness) is reduced and a controlled surface finish is developed. The full-hard cold rolled steel can follow a number of different further processing paths. These steps include some form of annealing to develop mechanical properties and may include galvanized coating to protect against corrosion.

Using the funding proposed to be provided by DOE under the ATVM Program, Severstal Dearborn intends to modernize its steel finishing operations, and expand its product offering by modifying how steel exits the Hot Strip Mill, by building a new PL process coupled with a TCM, a HDGL, a T-Section Shipping facility, and a CAL. Additionally, Severstal Dearborn intends to relocate the Laboratory into an existing building at the Dearborn location. The Proposed Action would modify the mix of steel product that is sold (i.e. AHSS versus hot rolled sheet steel, cold rolled sheet steel, and galvanized sheet steel), but not the total production volume.

Under the Proposed Action, Severstal Dearborn would modernize its steel finishing operations at Dearborn Michigan. By modernizing these operations, Severstal Dearborn would be able to expand its product offering to include AHSS. Below is a discussion of the modernization activities associated with the Proposed Action.

Figure 2.3– Dearborn Location Map



Source: USGS Quad Map, Dearborn, Michigan. 1983.

2.2.1 Picking Line Process

The proposed new facility would be able to adequately pickle incoming hot bands of steel and feed the TCM at a pace to support the targeted production capacity. In order to meet this operating requirement, Severstal Dearborn would construct an all-new PL process. The three existing PLs would be decommissioned and a single new PL would be installed. The PL would use hydrochloric acid (HCl) and sodium hydroxide (NaOH) in the cleaning process.

2.2.2 Tandem Cold Rolling Mill

The proposed new facility would be able to cold reduce (reduce the thickness of the steel) the entire breadth of product mix (AHSS, hot rolled sheet steel, cold rolled sheet steel, and galvanized sheet steel) at a pace to support the targeted production capacity of up to 1.87 MM tons per year of AHSS. In order to meet this operating requirement, Severstal Dearborn would construct an all-new TCM.

Figure 2.4 shows the existing conditions of the operating PL and TCM at Severstal Dearborn and Figure 2.5 shows the typical conditions of a combined PL and TCM (the PLTCM) with complete fume capture hood and offline filtration that is part of the Proposed Action (Severstal 2009).

2.2.3 Hot-Dip Galvanizing Line

Severstal Dearborn would construct an all-new HDGL. The HDGL would consist of a continuous hot dip process. In this process, the steel would be heat treated and coated with zinc on two sides in the zinc pot. The zinc tightly adheres to the steel through the formation of an iron-zinc alloy-bonding layer. The HDGL would use nitrogen and hydrogen from existing onsite pipelines for furnace atmosphere, and sodium hydroxide (NaOH) and potassium hydroxide (KOH) as a cleaning solution.

As the steel strip exits the zinc pot; however, a liquid layer of zinc remains on the strip. Until this zinc layer has solidified and cooled sufficiently to develop some strength, the surface cannot be touched.

Based on customer demands, the proposed HDGL process would be able to galvanize some of the AHSS to protect it from corrosion for use as external components of the automobile.

Figure 2.4: Current Tandem Mill While Operating

Figure 2.5: Typical Modern PLTCM While Operating

Without this precaution, the zinc would be significantly deformed by any rolls touching the strip. To prevent this, a vertical path without disturbance is required above the pot (the After Pot Cooling tower). The cooling in this section is by radiation to the surroundings and by gentle air currents, essentially at a fixed rate. The height of the tower therefore fixes the maximum strip speed in the facility. Because technical improvements to other sections of the facility which also limit the maximum strip speed are anticipated in the near term, Severstal Dearborn designed the After Pot Cooling tower to match the anticipated maximum speed.

The tower associated with the HDGL will be a 239-foot tall box shaped tower.

2.2.4 Continuous Annealing Line

The proposed new facility would be able to support the targeted production capacity for annealing (heating and cooling) the steel. In order to meet this operating requirement, Severstal Dearborn would construct an all-new CAL line. Under the Proposed Action the CAL line would be located at the Dearborn site in close proximity to the PLTCM.

The CAL Line would be used for heat-treating and softening steel sheets to increase workability. The cold rolled steel would be fed through a continuous process where the steel is uncoiled as it is fed through a furnace, water quenched, run through a pickling line to remove oxide, and re-coiled as it exits the process.

The design of a CAL building is an instance of optimization of competing costs; building length and building height need to be optimized to optimize the cost of the equipment installed within it. For a given production capacity of a CAL, the length of strip exposed in the furnace is set because the rate of heating depends on exposed area. The operating cost of a furnace is reduced by minimizing the external surface area of the furnace, so the strip is passed up and down through the furnace over rolls. The capital cost and maintenance cost of the furnace is increased by increasing the number of rolls. As a result of this optimization, the ideal furnace is found to be as tall as possible. The strip within the furnace must support its own weight as well as a minor amount of tension (needed to keep the strip tracking straight). Since the strip is heated to as high as 900° Celsius (C) in the furnace, the strength of steel at elevated temperatures fixes the height of the furnace. With the space required for the overhead crane and the roof trusses, this results in a 115 foot structure required to clear the furnace.

The tower associated with the CAL will be a 115-foot tall box shaped tower.

2.2.5 T-Section Shipping

The proposed new T-section shipping area would house the coils from the PLTCM, HDGL, and CAL process lines in accordance with customer delivery schedules. An existing skeletal structure that is used for storage and shipment of hot rolled steel would be converted to an enclosed building with climate controls (the T-Section Shipping facility) to prevent rust and manage customer deliveries. The storage and shipping functions for hot rolled product would be transferred to an area near the hot mill exit and the steel bands would be stored outside and in a portion of the PLTCM band staging area.

2.2.6 Laboratory

The proposed new facility would be able to support the increase in laboratory usage (metallurgy, materials testing, and quality control checks). The proposed laboratory would be relocated to an existing building at Severstal Dearborn and would encompass 16,482 square feet within the building.

2.2.7 Operations

As of January 2010, Severstal Dearborn employs 1,420 personnel, including 11 personnel associated with the existing laboratory, and 102 personnel associated with the existing PL and TCM. The existing employees at the laboratory, PL and TCM would be retained under the proposed action and no new employees would be required for the laboratory or PLTCM. The new facilities and processes developed under the Proposed Action would operate continuously (up to 8,760 hours per year) and would create an additional 164 to 169 full time jobs. The 164 to 169 new jobs created under the Proposed Action include:

- T-Section Shipping: 14 new jobs
- CAL: 65-70 new jobs
- HDGL: 85 new jobs

The Proposed Action would also create the following temporary construction jobs:

- 1st Qtr 2010: 0
- 2nd Qtr 2010: 135
- 3rd Qtr 2010: 368
- 4th Qtr 2010: 881
- 1st Qtr 2011: estimated at 735
- 2nd Qtr 2011: estimated at 490
- 3rd Qtr 2011: estimated at 100
- 4th Qtr 2011: estimated at 25

The Proposed Action would modify the mix of steel product that is sold (i.e. AHSS versus hot rolled sheet steel, cold rolled sheet steel, and galvanized sheet steel), but not the total volumes of raw materials used to maintain the current production of up to 5.8 MM tons annually. Consequently, the major raw materials utilized in the process, as described in Section 2.1, would not be affected:

- Coke – Severstal Dearborn currently receives coke via rail shipments. The shipment level would not change as a result of the Proposed Action.
- Pulverized coal – Severstal Dearborn current receives Pulverized coal via rail shipments. The shipment level would not change as a result of the Proposed Action.
- Limestone – Severstal Dearborn currently receives limestone via rail shipments. The shipment level would not change as a result of the Proposed Action.
- Iron ore – Severstal Dearborn currently receives iron ore via lake boats. The shipment level would not change as a result of the Proposed Action.

The above items represent the majority of materials shipped into the facility. The minority materials (alloys, chemicals, spare parts, etc.) shipped into and out (excluding final products sold) of the facility would be affected by the Proposed Action. There are some new materials that would be received to support the new processes (such as zinc for the HDGL), but there are also efficiencies which would reduce the quantity of consumables and wastes. In balance, a net reduction to no change in volume or waste concentrations would be expected. No anticipated changes in the volume of shipments of minority materials are expected as a result of the Proposed Action.

The new production of up to 1.87 MM tons of AHSS would come at the expense of hot rolled steel production. The piece count shipped would not change, and the mass shipped would decline by approximately 1% due to process yield losses, as the raw steel must undergo additional process steps to produce AHSS. The majority of finished steel shipments would occur via semi-truck. The greater efficiency of rail shipments would generally not be available due to a minority of customers with rail receiving capabilities. The railroads also prefer long distance unit train shipping and price their services accordingly. The relatively close locations of most customers and the small quantities delivered are a poor fit for railroad operations. Severstal Dearborn does not and would not ship any product via barge.

The overall operations related to environmental and occupational safety and health at the existing Severstal Dearborn facility would not change under the proposed action. The entire Severstal Dearborn complex is fenced with controlled access points to ensure security and that unauthorized personnel do not enter the complex. Severstal Dearborn manages all material, including hazardous materials in accordance with Federal and State regulatory requirements and specifications. Materials including lubricating oil, hydraulic oil, hydrochloric acid, and caustic soda solutions would be delivered, stored, used, and disposed of in accordance with their specific regulatory requirements. In addition, Severstal Dearborn maintains material safety data sheets for such materials, as well as process and material response plans in case of inadvertent release, mechanical breakdown, or accidents. Such plans and procedures would be developed for the proposed new processes and for any new materials used at the facility.

Severstal Dearborn is subject to Federal and State environmental laws and regulations to include the Resource Conservation and Recovery Act (RCRA) for regulated wastes; the Clean Air Act (CAA) for its regulated air emissions (Title V permit); the Clean Water Act (CWA) for its regulated water discharges (National Pollution Discharge Elimination System (NPDES) permit), and the Occupational Safety and Health Act (OSHA) related to worker safety. Since January 2010, Severstal Dearborn has received the following formal and informal notices: no formal non-compliance or informal notices under RCRA; an informal notice of discoloration from a permitted NPDES discharge; two nuisance fallout notices and two excess emission notices related to its Title V permit, and no OSHA related notices; however, Severstal Dearborn continues to work with the Michigan OHSA to resolve worker safety issues (e.g. operating procedures and respirable dust levels) identified during State inspections and sampling in 2008.

In response to the informal discoloration notice Severstal Dearborn verified that its discharge is within NPDES permit limits and is working with Michigan Department of Environmental Quality (MDEQ) and is monitoring its process wastewater to detect any discoloration prior to discharge. Severstal Dearborn reviewed results of the air fallout notice and its operations for the day identified in the notice. Severstal Dearborn is consulting with Michigan Department of Natural

Resources (MDNR) to clarify the source of the fallout material identified in the notice; regarding the excess emission notices, Severstal Dearborn has implemented a new work practice to reduce or eliminate the emissions from its blast furnace and is monitoring the new process.

2.3 No Action Alternative

Under the No Action Alternative, DOE would not issue the loan to Severstal Dearborn for the project. DOE assumes that construction of the proposed project would not be completed, it would not achieve commercial operation for AHSS production, and that the existing production of steel products would continue[5].

2.4 Alternatives Considered but Eliminated

In its NEPA reviews, DOE considers where feasible a reasonable range of alternatives. DOE has reviewed Severstal Dearborn's existing project, the feasibility and advisability of modifying that project, and the goals of the ATVM legislation. DOE also notes that Severstal Dearborn itself has already considered and eliminated multiple alternatives, as discussed below.

Rather than purchasing new equipment and constructing a new PL and TCM (as described under the Proposed Action), Severstal Dearborn evaluated revamping the existing PL process and TCM. Severstal Dearborn considered a number of evaluation criteria in determining if the PL process and TCM would be able to be revamped or if the purchase of new equipment and construction of a new PL and TCM (the Proposed Action) would be required. The primary driver in making this decision was the requirement to be able to meet operational demands during and after project completion. Also important in this determination were the following factors:

- Capital Cost
- Operating Cost
- Production Capacity
- Quality Performance
- Emissions Capture and Control
- Constructability

While the revamping of the PL process and the TCM would have been more cost effective, it would not have reduced emissions from the facility and the operational capacity during construction would be reduced below its current capacity. Based on these criteria, Severstal Dearborn determined for both the PL process and TCM that the purchase of new equipment and installation of a new PL and TCM would be the optimal action. In addition, Severstal Dearborn determined that by constructing an all-new TCM, coupled with the all-new continuous PL, Severstal Dearborn would be able to achieve their targeted production capacity to 1.87 MM tons per year of AHSS. Therefore, Severstal Dearborn removed revamping the existing PL process and TCM from consideration.

[5] DOE recognizes that the proposed project may eventually secure other financing and proceed without DOE's loan; however, the potential impacts would be essentially identical to those under DOE's Proposed Action.

Rather than constructing a new HDGL (as described under the Proposed Action) Severstal Dearborn considered continuing to ship coiled steel to other manufacturers with galvanizing facilities. Severstal Dearborn decided to install an all-new HDGL at Severstal Dearborn based on the high cost of trucking, capital and operating cost, production capacity, quality performance, constructability, emissions capture and control, and the initial construction schedule and potential impacts on current operations. Therefore, Severstal Dearborn removed continuing to ship coiled steel to other manufacturers with galvanizing facilities from consideration.

For the CAL line, Severstal Dearborn evaluated several locations for construction of the new facility. The primary driver for selecting a site was the proximity to the Dearborn location and accessibility to the Ford Rouge Complex, because of the expense of transporting steel between facilities. Also important in the selection process were the following factors:

- Transportation Infrastructure (for transporting completed coils to distributers)
- Air emission limitation
- Site Constraints (such as zoning or noise ordinances)

During the site selection process, Severstal Dearborn also evaluated four sites in Southeast Michigan and Northern Ohio which included: (1) the existing Severstal Dearborn Site (Proposed Action); (2) a vacant site in Gibraltar, Michigan; (3) a former Jeep manufacturing plant in Toledo, Ohio; and (4) a former General Motors manufacturing facility in Livonia, Michigan.

Severstal Dearborn eliminated the Gibraltar site due to potential environmental impacts associated with Indiana Bat habitat, wetlands, sensitive cultural resources, and potential floodplain issues. Additionally, the Gibraltar site had higher transportation costs than the Livonia or Dearborn site.

Severstal Dearborn eliminated the Toledo site due to the higher transportation cost of shipping the steel coils from Dearborn, Michigan to Toledo, Ohio, as well as potential floodplain issues with the site.

Severstal Dearborn eliminated the Livonia site due to higher mobile emissions and the cost of shipping the steel to Livonia, Michigan as well as problems with site acquisition and building schedule.

Also, Severstal Dearborn determined that Severstal Dearborn would save $35 million in construction cost by remaining in Dearborn. Therefore, Severstal Dearborn removed the Gibraltar, Michigan, Toledo, Ohio, and Livonia, Michigan sites from consideration and kept the Severstal Dearborn Site as the Proposed Action.

Based on DOE's review of the demands, feasibility and goals of Severstal Dearborn's proposed project, DOE has concluded that the two alternatives analyzed here reflect the reasonable range of alternatives for its decision whether to lend the funds that Severstal Dearborn requests.

2.5 Permits and Authorizations

Severstal Dearborn would be required to obtain local, state, and federal permits for the Proposed Action. The list of permits include the Federal permits or permits associated with Federal laws administered by Michigan and include permits related to air emissions with the Michigan Department of Natural Resources and Environment (MDNRE) Air Quality Division, a sanitary sewer discharge permit and a wastewater discharge permit from the City of Detroit, and a soil erosion and sediment control permit from MDNRE, Wayne County, and the City of Dearborn.

Table 2.1 Permit Status

Source	Media	Permit No.	Date issued
PLTCM/HDGL	Air (Permit-to-Install)	8-08	February 4, 2008
CAL & T-section Shipping Building	Air (Permit-to-Install)	NA	Not issued yet, permit application to be submitted in 2011
HDGL	Water (Discharge Permit)	NA	Permit application submitted on 12/23/10
PLTCM/HDGL/CAL	Sanitary Sewer	NA	Will require City of Detroit approval if process water is discharged to the sanitary sewer (via Ford's discharge permit)
PLTCM/HDGL	Soil Erosion and Sedimentation Control Permit	08-1834	May 3, 2010

In addition, for all sites with existing buildings, permits for construction and engineering would require a completed building permit application, the appropriate fee for plan review, prints and specifications for the proposed work signed and sealed by a State of Michigan licensed architect or engineer, and a Soil Erosion and Sedimentation Control Permit Application. Permit requirements for new construction are more detailed and include cost breakdowns and plan reviews. All sites with existing buildings would require construction permits, and the proposed new construction would require a complete building permit application filed and approved by Wayne County, Michigan. Severstal has obtained all local construction permits for the hot strip exit end modifications, the PLTCM, and the HDGL; Severstal would need to obtain all local construction permits for the CAL, T-Section Shipping Facility, and the Laboratory (Severstal, 2009).

Section 3: Affected Environment and Environmental Consequences

3.1 Introduction

This section describes the existing environmental and socioeconomic conditions for the Dearborn, Michigan site and evaluates the impacts resulting from the No Action Alternative and the Proposed Action as described in Section 2, Proposed Action and Alternatives.

In its evaluation of the potential impacts, DOE LPO defines a "negligible" impact as an impact where the environmental effects are not detectable or are so minor that they would neither destabilize nor noticeably alter any important attribute of the resource.

3.2 Land Use

3.2.1 Affected Environment

The site of the proposed action (27 acres) is located on 418 acres owned by Severstal Dearborn within the 940 acre Ford Rouge River industrial complex. The location of the proposed project consists of existing facilities, parking areas, roads, rail lines, and vacant land within the complex. The complex is bordered by commercial roads, the Rouge River, and Interstate 94 (see Figure 2.3).

The site is composed of the active steel mill operations of Severstal Dearborn and various Ford Motor Company facilities including an assembly plant, research and design facilities, and a museum. According to the City of Dearborn's Assessor's office the site is also zoned industrial. To the east of the plant, across Miller Road, is the Dearborn Industrial Generation (DIG) power plant facility; to the west are commercial and industrial properties; to the north is I-94 and primarily residential properties; and to the south is the Rouge River, beyond which are industrial and commercial properties. No service roads or rail lines would be modified for this project.

3.2.1.1 No Action Alternative

Under the No Action Alternative there would be no impact on current land use.

3.2.1.2 Proposed Action Impacts

Implementation of the proposed action would result in negligible impacts on land use. The Proposed Action is consistent with existing land use (industrial zoning) and industrial activities already taking place on and around Severstal Dearborn. The CAL and HDGL would be new structures within the complex, while the PLTCM, Hot Strip Mill exit end modifications, Laboratory, and T-Section Shipping Facility would be within or modifications of existing structures. The new structures would be developed on disturbed areas including parking areas, access roads, and open gravel areas resulting in a change of the land use within the Severstal Dearborn industrial complex, but one with only negligible impacts on land use.

3.3 Visual Resources

3.3.1 Affected Environment

There are no scenic resources (national parks, monuments, or cemeteries) on or within 0.5 mile of the proposed action (see Figure 2.3). The entire Several Dearborn industrial complex is within the larger Ford Rouge River industrial complex. Figures 2.6 (existing hot strip mill, PL, TCM and skeleton of HDGL) and 2.7a and 2.7b (facing east looking at existing hot strip mill) show the existing setting in the vicinity of the proposed action. The existing smoke stacks associated with the hot strip mill are 208 feet tall, and the BOF smoke stack is 213 feet tall.

Figure 2.6: Existing Hot Strip Mill, PL, TCM, and Skeleton of HDGL

Figure 2.7a: View of Hot Strip Mill and Skeleton of HDGL (Facing East)

Figure 2.7b: View of Hot Strip Mill and Skeleton of HDGL (Facing East)

3.3.1.1 No Action Alternative Impacts

Under the No Action Alternative there would be no change in the visual setting and no impact on visual resources.

3.3.1.2 Proposed Action Impacts

The construction would include modification of existing facilities and construction of new facilities located within the confines of Severstal Dearborn's existing industrial complex as described in Section 3.2. Because the overall Ford Rouge River industrial complex (which includes Severstal Dearborn) has existed and expanded in the same area for more than 80 years and the proposed action is within the existing industrial complex, it would result in negligible impacts on visual resources. As shown in Figures 2.6 (existing hot strip mill, PL, TCM and skeleton of HDGL) and 2.7a and 2.7b (facing east looking at existing hot strip mill and HDGL), the construction of the proposed new facilities would be consistent with the existing structures in both size and height and would match the industrial nature of the site. For example, the new 239-foot tower is comparable in height with the existing two towers, which are each over 200 feet. In addition, there would be no adverse affects on the historic buildings within the confines of the complex, see Section 3.9 for additional information.

3.4 Air Quality

The region of influence (ROI) for air quality varies according to the type of air pollutant. Pollutants such as carbon monoxide (CO) and particulate matter (PM) have a localized ROI generally restricted to the immediate vicinity of the source of emissions, while pollutants such as ozone have a broader ROI. This section presents general air quality information, followed by information and a discussion of greenhouse gases.

3.4.1 Regulatory Framework

Clean Air Act

The Clean Air Act (CAA) of 1970, as amended (42 USC §§ 7401 et seq.), regulates emissions from stationary, mobile, and area sources and establishes National Ambient Air Quality Standards (NAAQS) for pollutants that can harm human health or the environment. Under the CAA, the U.S. Environmental Protection Agency (EPA) is responsible for revising these standards when necessary as new air quality data and data on related impacts on the human environment become available.

National Ambient Air Quality Standards

In accordance with 40 CFR Parts 50 to 99, NAAQS have been adopted for six criteria pollutants—ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended PM (PM_{10} and $PM_{2.5}$), and airborne lead. The NAAQS may include primary or secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Averaging periods vary by criteria pollutants based on potential health and welfare effects of each pollutant. The NAAQS are enforced by the states or local air quality agencies.

States may choose to adopt their own air quality standards, but state standards must be at least as stringent as federal standards. Michigan has adopted the national standards; Table 3-1, National Ambient Air Quality Standards, lists the current national ambient air quality standards.

EPA evaluates whether the criteria air pollutant levels within a geographic area meet NAAQS. Areas that violate air quality standards are designated as nonattainment areas for the relevant pollutants. Nonattainment areas are sometimes further classified by degree (marginal, moderate, serious, severe, and extreme for ozone, and moderate and serious for CO and PM_{10}). Areas that comply with air quality standards are designated as attainment areas for the relevant pollutants. Areas that have been re-designated from nonattainment to attainment are considered maintenance areas. Areas of uncertain status are generally designated as unclassifiable but are treated as attainment areas for regulatory purposes. Federal law requires states to develop plans, known as State Implementation Plans (SIPs), describing how they will implement, maintain, and enforce NAAQS in areas under their jurisdiction. SIPs must be approved by the EPA and are federally enforceable.

Table 3.1 National Ambient Air Quality Standards

Pollutant	Averaging Times	National Ambient Air Quality Standard[1]	Primary (P) or Secondary (S) Standard[2]
Ozone	8 hours	0.075 ppm (147 µg/m^3)	P, S
Carbon monoxide CO	1 hour	35 ppm (40 mg/m^3)	P
	8 hours	9 ppm (10 mg/m^3)	P
Particulate Matter PM_{10}	24 hours	150 µg/m^3	P, S
Particulate Matter $PM_{2.5}$	24 hours	35 µg/m^3	P, S
	Annual	15 µg/m3	P, S
Nitrogen dioxide NO_2	Annual	0.053 ppm (100 µg/m^3)	P, S
	1 hour	0.1 ppm	P
Sulfur dioxide SO_2	Annual	0.03 ppm (80 µg/m^3)	P
	24 hours	0.14 ppm	P
	3 hour	0.5 ppm	S

Pollutant	Averaging Times	National Ambient Air Quality Standard[1]	Primary (P) or Secondary (S) Standard[2]
Lead Pb	Quarterly Average	1.5 µg/m^3	P, S
	Rolling 3 Month Average	0.15 µg/m^3	P, S

[1] ppm = parts per million; mg/m3 = milligrams per cubic meter; µg/m^3 = micrograms per cubic meter
[2] P = primary standard (health-based); S = secondary standard (welfare-based)
Source: 40 CFR Part 50

Dearborn is located within Wayne County, and EPA lists Wayne County as nonattainment for $PM_{2.5}$ and as a maintenance area for ozone and PM_{10} (EPA 2011). Current air quality reporting data for Wayne County in 2009 provides concentrations for NOx, VOCs, CO, NO_2 Lead, SO_2, PM_{10}, and $PM_{2.5}$. Currently all reported values are below NAAQS standards. EPA air quality reports showed ozone in Wayne County exceeding the NAAQS standard in 2005 and 2007, but below the standard in 2009. On June 29, 2009, Wayne County's designation changed from marginal nonattainment for ozone to attainment (MDEQ 2009e); however, Wayne County is still classified by EPA as a maintenance area for ozone.

Clean Air Act Conformity Guidelines

Section 176(c) of the Federal CAA contains requirements that apply specifically to federal agency actions, including actions receiving federal funding. Per 61 FR 3815, Michigan has adopted EPA's general conformity rules verbatim (criteria and procedures) at 40 CFR part 93. Section 176(c) of the CAA requires Federal agencies to ensure that their actions are consistent with the CAA and applicable state air quality management plans. Federal agencies are required to evaluate their proposed actions to ensure that they will not cause or contribute to new violations of any Federal ambient air quality standards, that they will not increase the frequency or severity of any existing violations of Federal ambient air quality standards, and that they will not delay the timely attainment of Federal ambient air quality standards. EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions.

DOE completed a conformity review of the project, and compared the project emissions against established emission thresholds (40 CFR §93.153). The emission thresholds include:

- Ozone (Volatile Organic Compounds [VOCs] or oxides of nitrogen [NOx]), all maintenance areas, 100 tons per year
- PM_{10}, all maintenance areas, 100 tons per year
- $PM_{2.5}$, direct emissions, 100 tons per year, and the following precursors
    - SO_2 (as a precursor), 100 tons per year
    - Oxides of nitrogen (as a precursor), 100 tons per year
    - VOCs and ammonia where either the State or EPA determines that they are significant precursors, 100 tons per year

Conformity requirements only apply to an action where emissions of a criteria pollutant or its precursors occur in a nonattainment or maintenance area of that pollutant. Therefore, the

conformity review for this Proposed Action reviewed PM_{10}, $PM_{2.5}$, its precursors (SO_2, NOx, VOCs, and ammonia), and ozone related emissions (NOx and VOCs).

Prevention of Significant Deterioration and Nonattainment New Source Review

The following subsections provide a general overview of the Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NANSR) review regulations.

Prevention of Significant Deterioration (PSD)

Michigan has adopted by reference EPA regulations to implement the federal PSD preconstruction permitting program (40 CFR 52.21), and has incorporated additional provisions under Part 18 of the Michigan Air Pollution Control Rules. Major stationary sources are those that have either of the following:

- The potential to emit 100 tons per year or more of "a regulated NSR pollutant" and are one of 28 listed source categories, or
- The potential to emit 250 tons per year or more of "a regulated NSR pollutant" (not listed in the 28 listed source categories). 40 CFR § 52.21(b)(1)(i).

Construction of a new stationary source or modification at an existing source that meets certain criteria and emissions thresholds are subject to PSD permitting.

Nonattainment New Source Review (NANSR)

The State of Michigan has established NANSR preconstruction permitting regulations (codified at Part 19 [R 336.2901 – 2910]) applicable to new major stationary sources or major modifications that are in a nonattainment area. A major stationary source in a nonattainment area is defined as a stationary source that has a potential to exceed certain emission thresholds. The only pollutant for which Wayne County is in nonattainment is $PM_{2.5}$. Construction of a new stationary source or modification at an existing source that meets certain criteria and emissions thresholds are subject to NANSR permitting.

PSD and NANSR as Applied to the Proposed Project

The existing Severstal Dearborn facility is considered a major source for purposes of the PSD and NANSR regulations, and the Title V program. Currently, the facility is operating pursuant to Renewable Operating Permit (ROP) No. 199700004. Because Severstal Dearborn is a major source with an ROP, a permit-to-install must be submitted to MDEQ for review and approval to modify the ROP in accordance with PSD and NANSR permitting requirements.[6] In December 2007, Severstal Dearborn submitted a permit-to-install application to MDEQ for the PLTCM and HDGL emissions associated with the Proposed Action in accordance with Michigan Rule 201(1) to modify its existing Title V permit. For that permit action, MDEQ determined that it was a

[6] Prevention of Significant Deterioration (PSD) NSR is required for sources located in areas that have been determined to be in attainment and unclassified areas with respect to criteria pollutants. Nonattainment New Source Review (NANSR), or Part D, is required in nonattainment areas. A new source, or modification of an existing source, can be subject to both PSD and NANSR if the area in which the source is located is attainment for one or more pollutants and nonattainment for another pollutant(s).

minor modification to Severstal Dearborn's existing permit, as it did not have the potential to emit any criteria pollutant in excess of the PSD Significant Emission Rates as defined in 40 CFR 52.21 or NANSR thresholds. Since issuance of that permit modification, Severstal Dearborn has determined to include a CAL and a T-Section Shipping facility as part of the Proposed Action considered in this EA (see Section 2 for additional information). Severstal Dearborn has determined that the emissions from the CAL and T-Section Shipping facility would require another modification to its existing permit. Severstal Dearborn would consult with MDEQ and submit a permit-to-install application to MDEQ in accordance with the PSD and NANSR requirements (Severstal 2009). Severstal Dearborn intends to submit a permit-to-install application to MDEQ for the CAL and T-Section Shipping facility in 2011. MDEQ would review the application and decide whether the proposed activities would trigger PSD or NANSR requirements.

State Rules and Standards

The MDEQ Air Quality Division administers the state's air quality rules and regulations. MDEQ Air Pollution Control Rules have been adopted pursuant to Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). The Air Quality Division is responsible for monitoring compliance with and enforcing the Air Pollution Control Rules, including permitting new sources of air emissions in the state.

The MDEQ Air Pollution Control Rules specify permitting requirements. These permits are MDEQ-required approvals before air emission sources can be constructed. For the activities under the proposed action, Severstal Dearborn has obtained a Permit-to-Install for the PLTCM and HDGL from MDEQ, and is in the process of preparing a Permit-to-Install Application for the CAL and T-Section Shipping facility. The laboratory and Hot Strip Mill Exit-end modifications do not require any air permits because no new emissions sources or modifications to existing sources would be required.

Permit-to-Install

MDEQ specifies its Permit-to-Install requirements under Part 2 of the Air Pollution Control Rules (R336.1201). These rules define the sources required to obtain a Permit-to-Install before construction can begin and outline the application process, including the required application content, emission control evaluation, and air toxics analyses. Michigan Rule 201(1) requires that any facility must receive approval prior to installing any equipment that emits any pollutant into the ambient air, unless the equipment is allowed to be installed under certain exemptions specified by the Air Pollution Control Rules.

As the installation of the new equipment would not be allowed under the exemption criteria, Severstal Dearborn submitted a permit-to-install application for the PLTCM/HDGL process, which was approved by the State of Michigan on February 4, 2008 to satisfy the requirements of Rule 201(1).

Under the Proposed Action, Severstal Dearborn would need to submit a permit-to-install application for the CAL and T-Section Shipping facility.

Title V Renewable Operating Permit

Michigan's Title V permit program (also known as the Renewable Operating Permit program) outlines stationary sources that are subject to Title V permit requirements, as follows:

- Sources with a potential to emit 10 tons per year of any hazardous air pollutant or 25 tons per year of any combination of hazardous air pollutants
- Sources with the potential to emit 100 tons per year or more of the criteria pollutants lead, sulfur dioxide, oxides of nitrogen, carbon monoxide, particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), and VOCs
- Sources subject to New Source Performance Standards (NSPS) or that emit any Class I or II ozone-depleting substances
- Major sources in nonattainment areas
- Any affected source that is subject to the Acid Rain Program
- Any solid waste incineration unit, as defined in CAA Section 129(g)
- Any municipal solid waste landfill with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters
- Any 40 CFR Part 70 source

Air Toxics

The MDEQ Air Quality Division began developing an air toxics monitoring strategy in 1992. Detroit is one of several cities where air toxics are being continuously monitored. In addition to regulating hazardous air pollutants listed in CAA Section 112(b), Michigan's air toxics program (R 336.1224 through R 336.1232) regulates additional compounds. The MDEQ defines toxic air contaminants as "any air contaminant for which there is no national ambient air quality standard and which is or may become harmful to public health or the environment when present in the outdoor atmosphere in sufficient quantities and duration" (MDEQ 2010). Sources of toxic air contaminants are subject to two main requirements: each source must apply the best available control technology for toxics (T-BACT) and emissions from the source cannot result in a maximum ambient concentration that exceeds the applicable health-based screening level. Certain sources can be exempt from the T-BACT requirements if they emit only small amounts of low-potency carcinogens or low toxicity non-carcinogens, or if they already meet best available control technology (BACT), lowest achievable emission rate (LAER), or maximum achievable control technology (MACT) requirements. Certain sources can be exempt from the health-based screening requirements if they emit only small amounts of non-carcinogens or other products not listed as high-concern compounds, or are regulated under a MACT or residual risk regulation.

However, Michigan Rule 224(2)(a)(i) states that the requirement for T-BACT does not apply to "the hazardous pollutants listed in section 112(b) of the Clean Air Act." EPA has promulgated National Emission Standards for Hazardous Air Pollutants (NESHAP) for Steel Pickling - HCl Process Facilities and Hydrogen Chloride (HCl) Regeneration Plants (Subpart CCC), under Section 112(d) of the CAA. Thus, Federal citation takes precedent over the state T-BACT and Severstal Dearborn would comply with the NESHAP standards.

3.4.2 No Action Alternative Impacts

Under the No Action Alternative there would be no new emissions or changes in air quality over existing conditions, resulting in no change in current impacts. The existing emissions of the processes that would be decommissioned under the proposed action are presented in Table 3.3a.

3.4.3 Proposed Action Impacts

Construction

Grading and construction for the proposed project may result in short-term adverse air quality impacts such as dust generated by clearing and grading activities, exhaust emissions from gas- and diesel-powered construction equipment, and vehicular emissions associated with the commuting of construction workers. As shown in Table 3.2, emissions during the construction phase would be below the general conformity thresholds (see Table 3.3c and associated text for further discussion of calculating emissions for the conformity review).

For onsite construction equipment, the general contractor would use diesel, gasoline, and propane powered internal combustion engines during construction of the facilities. The brake specific fuel consumption (BSFC) for various engine types was reviewed to determine appropriate ranges for fuel consumption rates. The BSFC for diesel engines ranges between 178 to 209 grams per kilowatt hour (g/kW-hr), and for assessment purposes, 190 g/kW-hr has been selected as representative of the fuel consumption for diesel engines in construction applications. The BSFC for gasoline fueled spark ignition engines ranges between 227 to 273 g/kW-hr, and for assessment purposes, 250 g/kW-hr has been selected as representative of gasoline fueled spark ignition engines in construction applications. Propane engines would also be spark ignited; the BSFC for gasoline-fueled engines was proportioned according to the relative lower heat value of propane to gasoline to yield 237 g/kW-hr.

Severstal Dearborn and DOE consulted the posted emissions standards from EPA (http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm) for Non-road Compression Ignition Engines. The emission limit for non-methane hydrocarbons plus nitrogen oxides (NO_x) of 4.7 g/kW-hr was selected as a conservative representation of the emissions from construction diesel engines, as well as 5.0 g CO/kW-hr and 0.4 g $PM_{2.5}$/kW-hr. Non-road Large Spark Ignition Engines standards were considered and conservative values of 2.7 g Non-methane Hydrocarbon (NMHC) + NO_x/kW-hr, and 4.4 g CO/kW-hr were selected as representative of construction applications for gasoline and propane fuel use. The emission by type was calculated as mass of fuel divided by BSFC times the emission value.

The fuel sulfur (S) standards for diesel and gasoline from the EPA were reviewed and 15 parts per million (ppm) S in diesel fuel and 30 ppm S in gasoline were selected as representative of fuels used during the construction period. The SO_2 was calculated assuming all of the sulfur in the fuel is oxidized to SO_2, and 4 grams of SO_2 per gram of Sulfur. Table 3.2 presents the annual construction related emissions.

Table 3.2. Construction Emissions

	NMHC + NOx**	CO	SO_2	Total $PM_{2.5}/PM_{10}$***
Construction Emissions* (in tons per year)	29.4	33.9	0.107	2.1
General Conformity Applicability Thresholds (tons per year)	100	NA	100	100/100

Notes:
* Annual emissions for each construction year, 2010 and 2011
** NMHC concentrations are evaluated against the VOC general conformity thresholds of 100 tons per year
*** The total $PM_{10}/PM_{2.5}$ emissions represent the total PM emissions; the individual emissions of PM_{10} or $PM_{2.5}$ would be no more than the total presented.
NA – not applicable

Operations

As shown in Table 3.3b and 3.3c, implementation of the proposed action is anticipated to result in an increase in the emissions of PM, NOx, CO, SO_2, and VOCs from Severstal Dearborn; however, these emissions would be subject to Michigan state permit and associated monitoring and reporting requirements.

In accordance with the Michigan State requirements, Severstal Dearborn submitted a permit-to-install (PTI) application for the PLTCM and HDGL processes. On February 4, 2008, Severstal Dearborn received an approved permit-to-install for the new PLTCM/HDGL processes and is currently preparing a permit-to-install for the CAL and T-Section Shipping facility. When Severstal Dearborn renews its Renewable Operating Permit, all the new emissions associated with the PLTCM, HDGL, CAL, and T-Section Shipping facility would be incorporated at that time.

As presented in Tables 3.3b and 3.3c, operation of the CAL and the T-Section Shipping facility would result in emissions of $PM_{10}/PM_{2.5}$, NO_x, CO, and VOCs and would require prior approval from MDEQ before construction and operations can commence. A permit-to-install has not yet been submitted; however, emission estimates and a preliminary impact analysis using dispersion modeling have been completed, and the emission values are presented in Tables 3.3b and 3.3c.

The CAL and T-Section Shipping facility would operate strictly on pipeline quality natural gas as currently received at the Severstal Dearborn facility. Natural gas usage has been estimated based upon full operation at 8,760 hours per year. Table 3.3a provides a summary of the existing emission sources that would be removed under the proposed action.

Table 3.3a. Annual Operational Emissions in Tons Per Year for Existing Processes To Be Removed

Process	Total $PM_{10}/PM_{2.5}$*	NOx	CO	SO_2	VOC
PL	0	0	0	0	5.69
TCM	56.31	0	0	0	2.33
Totals	**56.31**	**0**	**0**	**0**	**8.02**

Notes:
* The total $PM_{10}/PM_{2.5}$ emissions represent the total PM emissions; the individual emissions of PM_{10} or $PM_{2.5}$ would be no more than the total presented.
Source: Severstal 2009; and Severstal Permit to Install 2008.

Table 3.3b, provides the expected annual operating emissions for those processes related to the Proposed Action.

Table 3.3b. Expected Annual Operational Emissions in Tons Per Year for New Processes under Proposed Action

Process	Total $PM_{10}/PM_{2.5}$***	NOx	CO	SO_2	VOC
PL*	6.63	0	0	0	0
TCM*	38.67	0	0	0	2.73
HDGL*	5.5	14.07	39.4	0.28	9.89
PL-Heat*	0.89	11.68	9.81	0.07	0.33
HDGL-Heat and Dew Control*	0.7	9.25	7.77	0.06	0.26
CAL (all sources)	5.0	12.4	52	0	0.26
T-Section Shipping	0	3.5	0	0	0
Total Emissions of Sources Permitted in 2008*	**52.39**	**35**	**56.98**	**0.41**	**13.21**
Change in Emissions from Existing Sources (Table 3.3a) to Sources Permitted in 2008	**-3.92**	**35**	**56.98**	**0.41**	**5.19**
Total of Emissions of New Sources Yet to Receive a Permit (CAL and T-Section Shipping facility)**	**5**	**15.9**	**52**	**0**	**0.26**
Total Increase in Emissions Over the No Action Alternative	**1.08**	**50.9**	**108.98**	**0.41**	**5.45**

Notes:
* Already permitted (permit-to-install issued February 2008)

** New processes (CAL and T-Section Shipping facility) were identified in 2010 and Severstal Dearborn intends to submit a permit-to-install application in 2011. No new emission sources or modifications to existing sources are associated with the laboratory relocation or the hot strip mill exit-end modifications.
*** The total $PM_{10}/PM_{2.5}$ emissions represent the total PM emissions; the individual emission of PM_{10} or $PM_{2.5}$ would be no more than the total presented.
Source: Severstal 2009; and Severstal Permit to Install 2008.

Severstal Dearborn has determined that the emissions from CAL and T-Section Shipping facility would require another modification to its existing ROP. Severstal Dearborn would consult with MDEQ and submit a permit-to-install to MDEQ in accordance with the PSD and NANSR requirements (Severstal 2009). Severstal Dearborn intends to submit a permit-to-install application to MDEQ for the CAL and T-Section Shipping facility in 2011. MDEQ would evaluate the proposed sources as well as the currently permitted sources in determining whether the proposed activities would trigger PSD or NANSR permitting requirements. Severstal Dearborn would have to receive an MDEQ approved permit prior to the start of construction of the CAL and T-Section Shipping facility.

Based upon the emissions presented in Table 3.3c, the increase in emissions over the no action alternative during operation for $PM_{2.5}$, NOx, SO_2, and VOCs would be below the general conformity thresholds. For DOE's conformity review process, DOE looked at emissions from two years of construction as well as the first full year of operation. The year with the maximum expected level of emissions for each criteria pollutant associated with the Proposed Action was then compared against the conformity threshold. None of the emission estimates (construction or operation) would exceed the general conformity threshold.

Table 3.3c. Expected Annual Operational Emissions (including employee transportation emissions) in Tons Per Year for New Processes under Proposed Action, and Conformity Threshold

Process	Total $PM_{10}/PM_{2.5}$**	NOx	SO_2	VOC
PL*	6.63	0	0	0
TCM*	38.67	0	0	2.73
HDGL*	5.5	14.07	0.28	9.89
PL-Heat*	0.89	11.68	0.07	0.33
HDGL-Heat and Dew Control*	0.7	9.25	0.06	0.26
CAL (all sources)	5.0	12.4	0	0.26
T-Section Shipping	0	3.5	0	0
Employee Transportation (vehicle) Emissions***	0.5	1.6	negligible	0.8
Total Emissions+	**57.89**	**52.5**	**0.41**	**14.27**
Increase in Emissions Over the No Action Alternative	**1.58**	**52.5**	**0.41**	**6.25**
Conformity Threshold	***100/100***	***100***	***100***	***100***

Notes:
* Already permitted (permit to install issued February 2008)
** The total $PM_{10}/PM_{2.5}$ emissions represent the total PM emissions; the individual emissions of PM_{10} or $PM_{2.5}$ would be no more than the total presented.

*** Vehicle emissions calculated from estimated vehicle miles traveled and emission factors from EPA and the California Air Resources Board (CARB); (http://www.epa.gov/oms/ap42.htm).
+ No new emission sources or modifications to existing sources are associated with the laboratory relocation or the hot strip mill exit end modifications.
Source: Severstal 2009; and Severstal Permit to Install 2008.

The PTI for the PLTCM and HDGL identified several regulated air toxics that would be emitted under the proposed action including:

- HCl up to 7.98 tons annually or up to 1.6 pounds per hour
- Ammonia (NH_3) 1.92 tons annually
- NaOH up to 0.441 pounds per hour or up to 2.187 pounds per hour
- KOH up to 0.441 pounds per hour
- Petroleum distillates up to 0.073 pounds per hour
- 2-Ethylhexanoic acid up to 0.875 pounds per hour
- VOCs up to 0.0043 pounds per hour

As indicated in the PTI, the ambient concentrations of the regulated air toxics would be less than or equal to the health based screening levels established by MDEQ, resulting in a negligible impact on air quality.

3.5 Greenhouse Gas Emissions

> ***CO_2- equivalent*** is a measure used to compare greenhouse gases based on their global warming potential (GWP), using the functionally equivalent amount or concentration of CO_2 as the reference. The CO_2-equivalent for a gas is derived by multiplying the amount of the gas by its global warming potential; this potential is a function of the gas's ability to absorb infrared radiation and its persistence in the atmosphere after it is released. The Intergovernmental Panel on Climate Change utilizes the 100 year GWPs to determine carbon dioxide equivalents.

Severstal Dearborn would emit greenhouse gases, primarily in the form of carbon dioxide (CO_2). Based on information provided by the Applicant, review of EPA emission reports (EPA420-F-05-004) and standards available at (http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm), DOE estimates that the proposed construction activities would emit 11,819 tons of CO_2-equivalents (CO_2e) per year, and during operation the proposed facility would emit 374,007 tons of CO_2e per year (including CO_2-equivalents associated with increased power consumption). The CO_2e emission values were derived from the following calculations:

Construction: During peak construction with 735 workers each traveling an assumed 40 miles each way (80–mile round trip) would result in 56,450 pounds per day (28.3 tons per day) of CO_2e emissions[7]. The assumption regarding the average commute for construction workers is a conservative estimate based upon the average commute time for construction workers in a metropolitan area. Assuming each new worker would work 5 days a week, 50 weeks a year,

[7] CO_2 emissions were calculated assuming all of the carbon in the fuel is oxidized to CO_2 with a value of 19.4 pounds of CO_2 per gallon of gasoline used and an average fuel economy of 21.3 miles per gallon yielding a factor of 0.91 pound CO_2 per vehicle mile traveled (as determined in EPA document Number EPA420-F-05-004). To incorporate emissions from methane, nitrous oxide, and hydrofluorocarbon emissions, a scaling factor of 1.05 is added to the 0.91 resulting in 0.96 pounds CO_2, equivalent emissions, per vehicle mile traveled. Carbon dioxide equivalent (CO_2e) is a metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

this would result in 7,075 tons of CO_2e from construction worker commutes. The construction equipment CO_2 emissions were calculated assuming all of the carbon in the fuel is oxidized to CO_2, and 22.2 pounds of CO_2 per gallon of diesel fuel, 19.4 pounds of CO_2 per gallon of gasoline, and 3 pounds of CO_2 per pound of propane. A factor of 1.05 was applied to the gasoline and diesel emissions for CO_2e, resulting in 4,744 tons of CO_2e annually from construction equipment.

Operation: Transportation during operation with 169 new employees each traveling an assumed 22 miles each way (44-mile round trip) would result in approximately 6,550 pounds per day (3.3 tons per day) of CO_2e emissions. The assumption regarding the average commute for new permanent employees is based upon typical employee commutes at the Severstal Dearborn location. Assuming each new worker would work 5 days a week, 50 weeks a year, this would result in 825 tons of CO_2e from transportation. Additionally, the operations associated with the proposed project would emit greenhouse gases, specifically CO_2, N_20, and methane. Table 3.4 lists the total amount by process equipment.

Table 3.4 CO_2 Equivalent Emissions

Building / Process Equipment	Process CO_2e (tons per year)	Building Heat CO_2e (tons per year)	Totals (tons per year)
PLTCM	0	7,121.34	7,121.34
HDGL	35,967.47	10,765.16	46,732.63
CAL	44,768.41	7,471.58	52,239.99
T-Section	0	7,765.48	7,765.48
Laboratory*	0	--	--
Totals	**80,735.88**	**33,123.56**	**113,859.44**

Notes: * The laboratory would be heated by electric units; the emissions associated with such electricity use are discussed elsewhere in this section.

CO_2e building and process equipment emissions were calculated from the hourly estimated British Thermal Unit (BTU) into standard cubic feet (scf) of natural gas (1,000 BTUs per 1 cubic foot) and then applying the EPA derived emission factors from natural gas combustion (120,000 pounds of CO_2, 0.64 pounds of N_2O, and 2.3 pounds of methane per 106 scf of natural gas). In addition, the proposed action would require an additional 384,880 megawatt hours annually. Using the EPA derived conversion of 0.67 tons of CO_2e per megawatt hour for Michigan (http://cfpub.epa.gov/egridweb/view_st.cfm) equals 259,323 tons of CO_2e.

The Impacts of Greenhouse Gases on Climate

There is much uncertainty regarding the extent of global warming caused by anthropogenic greenhouse gases, the climate changes this warming has or will produce, and the appropriate strategies for stabilizing the concentrations of greenhouse gases in the atmosphere. The World Meteorological Organization and United Nations Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) to provide an objective source of information about global warming and climate change, and the IPCC's reports are generally considered to be an authoritative source of information on these issues.

According to the IPCC Fourth Assessment Report, "*Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level*" (IPCC, 2007). The report concludes that most of the temperature increase since the middle of the 20th century "*is very likely due to the observed increase in anthropogenic [greenhouse gas] concentrations*."

Environmental Impacts of Climate Change

The IPCC report states that, in addition to increases in global surface temperatures, the impacts of climate change on the global environment may include:

- More frequent heat waves, droughts, and fires;
- Rising sea levels and coastal flooding; melting glaciers, ice caps and polar ice sheets;
- More severe hurricane activity and increases in frequency and intensity of severe precipitation;
- Spread of infectious diseases to new regions;
- Loss of wildlife habitats; and
- Heart and respiratory ailments from higher concentrations of ground-level ozone (IPCC, 2007).

In addition to increased temperatures, impacts on the environment attributed to climate change that have been observed in North America include:

- Extended periods of high fire risk and large increases in burned area;
- Increased intensity, duration, and frequency of heat waves;
- Decreased snow pack, increased winter and early spring flooding potentials, and reduced summer stream flows in the western mountains; and
- Increased stress on biological communities and habitat in coastal areas (IPCC, 2007).

On a regional scale, there is greater natural variability in climate parameters that makes it difficult to attribute particular environmental impacts to climate change (IPCC, 2007).

Climate Change, Greenhouse Gases, and the Project

As discussed above, DOE estimates that annual emissions of greenhouse gases from the proposed project would be approximately 11,819 tons of CO_2e per year during the two year

construction period and 374,007 tons per year of CO_2e during operation. The release of anthropogenic greenhouse gases and their potential contribution to global warming are inherently cumulative phenomena. Greenhouse gas emissions from the proposed project are relatively small compared to the 8,026 million tons (7,282 million metric tonnes) of CO_2e greenhouse gases emitted in the U.S. in 2007 (EIA 2007) and the 54 billion tons (49 billion metric tonnes) of CO_2-equivalent anthropogenic greenhouse gases emitted globally in 2004. (Intergovernmental Panel on Climate Change Fourth Assessment Report Climate Change 2007: Synthesis Report (IPCC 2007)). However, emissions from the proposed project in combination with past and future emissions from all other sources would contribute incrementally to climate change impacts. At present there is no methodology which would allow DOE to estimate the specific impacts this increment of climate change would produce in the vicinity of the proposed project or elsewhere.

3.6 Noise

The Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978 (42 USC 4901-4918), delegates to the states the authority to regulate environmental noise. It also directs government agencies to comply with local community noise statutes and regulations, and to conduct their programs to promote an environment free of any noise that could jeopardize public health or welfare.

3.6.1 Affected Environment

Existing on-site noise sources include the existing steel mill operations. Nearby existing noise sources that affect the project site include vehicle assembly operations at the Ford Rouge Complex adjacent to the project area, industrial operations in the general area of the site and traffic on Interstate 94. Typical sound levels within urban areas range from 70 dBA to 82 dBA (EPA, 1981).

The nearest receptor is a residential neighborhood located more than 0.5 miles south-southwest of the site.

The State of Michigan has no specific noise limits that apply to either the construction or operation of industrial sites. The state encourages local jurisdictions to establish their own noise limits and regulations. The City of Dearborn has a noise ordinance (Article II Sections 13-41 through Section 13-47) that defines the maximum noise level based on land use and time of day. The noise ordinance criteria listed in Table 3.5 would be applicable to the project.

Table 3.5 City of Dearborn Noise Ordinance

Type of Noise	Residential		Commercial		Industrial	
	9 pm - 8 am	8 am - 9 pm	9 pm - 8 am	8 am - 9 pm	9 pm - 8 am	8 am - 9 pm
Impulsive	60 dB(A)	70 dB(A)	70 dB(A)	80 dB(A)	80 dB(A)	90 dB(A)
Intermittent	55 dB(A)	60 dB(A)	60 dB(A)	65 dB(A)	70 dB(A)	75 dB(A)

Type of Noise	Residential		Commercial		Industrial	
	9 pm - 8 am	8 am - 9 pm	9 pm - 8 am	8 am - 9 pm	9 pm - 8 am	8 am - 9 pm
Continuous	45 dB(A)	50 dB(A)	50 dB(A)	55 dB(A)	55 dB(A)	60 dB(A)
Perpetual	45 dB(A)	50 dB(A)	50 dB(A)	55 dB(A)	55 dB(A)	60 dB(A)

3.6.2 No Action Alternative Impacts

Under the No Action Alternative there would be no impact on noise levels in the project area.

3.6.3 Proposed Action Impacts

Construction and demolition activities would generate temporary increases in ambient noise levels that may impact adjacent properties. Table 3.6 lists typical construction noise sources that would occur associated with the proposed action.

Table 3.6 Typical Construction Noise

Noise Source	Noise Level (dBA) at 50 Feet from Source
Air Compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile-driver (Impact)	101
Pile-driver (Sonic)	96

Source: (Colby, 2009)

Construction noise at level of up to 90 dBA would be at 60 dBA at a distance of 1,200 feet,[8] which would be at or below ambient noise levels of between 70 and 80 dBA for a typical urban area (EPA 1981; and Engineering Page 2011). In addition, the construction activities would be required to comply with the City of Dearborn's Noise Ordinance, which limits construction to certain times of the day to reduce noise to acceptable levels. The nearest receptors are located more than 0.5 miles; therefore, due to natural noise attenuation by distance, there would be negligible noise related impacts on the nearest sensitive receptor (a school located 0.6 miles northeast). No project-specific mitigation measures would be required for noise impacts on nearby receptors.

Typical noise levels associated with individual process at steel plants range between 59 and 84 dBA, while the combined noise levels for entire steel complexes range between 90 and 92 dBA (Kerketta et al., 2009). Similar to the construction noise, such noise levels would be at 60 dBA at a distance of 1,200 feet (Engineering Page 2011). Because Severstal Dearborn has a record of compliance with the Dearborn noise ordinance, this facility does not appear to generate noise at the upper range for a typical steel complex. The proposed new processes involve the same types of activities that are already occurring at Severstal Dearborn. Therefore, it is anticipated that Severstal Dearborn will remain in compliance or will implement measures as necessary to remain in compliance during both construction and operation of the Proposed Action. Therefore, there would be negligible impacts from any increase in noise levels from the Proposed Action.

3.7 Geology and Seismicity

3.7.1 Affected Environment

The Dearborn site, according to historical seismic risk maps published by the United States Geodetic Survey, Michigan is located within Seismic Risk Zone No. 1 and, as such, possesses a relatively low risk for earthquake occurrence. While tremors from earthquakes with epicenters in other regions have been recorded in Michigan, only 34 earthquakes with epicenters in Michigan have been recorded since 1872. With the exception of two seismic events that occurred in the Keweenaw Peninsula at the turn of the 20th century, all recorded events had recorded intensities of less than IV on the modified Mercalli scale. This corresponds to approximately magnitude 4.7 on the Richter scale.

According to the Geologic Survey Division of the MDNRE, the majority of the previous seismic events resulted in slippage along deep-seated Pre-Cambrian Faults and are not believed to involve slippage along the faulting of the overlying Paleozoic units.

3.7.2 No Action Alternative Impacts

Under the No Action Alternative there would be no change in the exposures or structures and no effect associated with geology or seismicity.

[8] The nearest receptor is more than 2,640 feet from any source of outside construction related to the Proposed Action.

3.7.3 Proposed Action Impacts

There is no risk of landslide, fault rupture, or slope failure at the project site. All structures on the site would employ appropriate engineering designs that are in conformance with geotechnical standards for construction as required by the 2003 Michigan Building Code. A geotechnical engineering study has been prepared for the site. The recommendations and conclusions presented in the study have been incorporated into the design and construction of the project to minimize potential soil- or foundation-related problems, including issues related to liquefaction (Severstal 2009). As a result the proposed action has taken into consideration geologic and seismic risks, resulting in negligible geologic and seismic impacts.

3.8 Water Resources

Regulatory Framework

Applicable Federal Plans, Policies, and Regulations
The Clean Water Act (CWA) of 1972, as amended (33 USC §1251 et seq.), regulates surface water quality in waters of the United States. The CWA gives EPA the authority to set standards for discharge of point source pollutants, as well as set water quality standards for all contaminants in surface waters. EPA publishes surface water quality standards and toxic pollutant criteria at 40 CFR Part 131.

The CWA mandates water quality-based control measures. Water quality standards define the goals for a water body by designating its uses, setting criteria to protect those uses, and establishing provisions to protect water bodies from pollutants (U.S. Environmental Protection Agency 2008b). Water quality standards are set by states, territories, and authorized tribes. Under Section 303(d) of the CWA, states, territories, and tribes are required to develop lists of impaired waters that do not meet water quality standards and establish total maximum daily loads (TMDL) for specific pollutants. TMDLs represent the maximum amount of a pollutant that a water body can receive from all contributing point and nonpoint sources and still meet water quality standards. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the State has designated and must account for seasonal variations in water quality to gain approval by EPA. The National Pollution Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches.

Section 404 of the CWA, as amended, regulates development in wetlands and surface water bodies and requires agencies to obtain a permit from the U.S. Army Corps of Engineers to dredge or fill in U.S. waters. Executive Order 11990, Protection of Wetlands, directs Federal agencies to avoid to the extent possible adverse impacts associated with the destruction or modification of wetlands. Executive Order 11988, Floodplain Management and Protection, directs Federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Under DOE policy, a floodplain assessment is required for actions in a 100 year floodplain (10 CFR 1022).

3.8.1 Affected Environment

Surface Water

The nearest surface water body is the Rouge River located directly adjacent to the southeastern edge of the Severstal Dearborn property, but over 200 feet from the Proposed Action area (see Figure 2.3). The Rouge River runs in the west-east direction, with water flowing toward the Detroit River to the east. As presented in Section 3.15, Severstal Dearborn withdraws noncontact cooling water from the Detroit River and potable water from the Dearborn Water and Sewer Authority (DWSA). Severstal Dearborn maintains an existing NPDES permit (MI0043524), available on line at: http://www.deq.state.mi.us/owis/Page/main/Home.aspx, which allows for up to 102 million gallons a day of permitted discharge to the Rouge River. A component of the permitted 102 million gallons a day discharge is treated liquid industrial waste discharge. Currently, Severstal treats and discharges up to 9 million gallons annually of liquid industrial waste (see Section 3.14 for additional information on waste streams).

Wetlands

The National Wetlands Inventory (NWI) map of the Severstal Dearborn site and site observations were used to determine if wetlands were potentially located within the proposed project area. The NWI map and site observations do not indicate there are wetlands located in the project area (see Attachment II).

Floodplains

The Severstal Dearborn project area is located in an area designated as “Zone X” according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map. This means that the site has been determined to be outside of the 100 and 500 year floodplains (see Attachment II) (FEMA 1996).

Groundwater

No groundwater wells are reported for the project area (MDNRE, Water Well View, March 11, 2010). The closest groundwater well is located 3.25 miles northwest (up gradient) of the project area; this well is utilized for irrigation and has a static water level of 17 feet below ground surface.

The near surface granular deposits and fill layers in the project area typically contain groundwater, which is perched above the underlying clay strata. This groundwater forms an intermittent unconfined aquifer, which varies seasonably in depth and extent. In addition, confined groundwater is often contained within relatively thin granular layers that are occasionally present within the thick cohesive deposits and/or hardpan present throughout the area. Such confined aquifers are usually limited in extent, and therefore, have limited recharge capabilities.

Residual historic environmental contamination may be present in shallow groundwater at various locations within the near surface granular layers at the site. These contaminated areas are being addressed as part of site-wide corrective action procedures underway on the site.

The Severstal Dearborn property is the former Rouge Steel property, which was a part of the Ford Motor Company's Rouge Manufacturing Complex. The MDNRE, Rouge Steel Company (now Severstal –referenced in the documents as SNA), and Ford Motor Company (Ford) (collectively the "Parties") entered into a Corrective Action Consent Order, WMD Order No. 111-04-00, as amended, for the Rouge Manufacturing Complex (CACO) on May 1, 2000. The CACO was amended on May 3, 2000, January 29, 2004, May 27, 2005, and February 28, 2006. Because a portion of the property had previously been the site of a permitted hazardous waste injection well, the entire property is considered a hazardous waste management facility and is subject to this CACO.

There are six areas identified in the CACO: Area 1 – Coke Operations Area; Area 2 – SNA Area; Area 3 – Ford Area; Area 4 – Powerhouse Area; Area 5 – Perimeter Area/Environmental Indicator Monitoring; and Area 6 the Schaefer Road Area (SRA). According to the current quarterly progress report of CACO/Resource Conservation and Recovery Act (RCRA) corrective action activities dated November 5, 2010, the current estimate of project completion for Areas 1 through 4 of the Rouge Manufacturing Complex portion of the CACO investigation is 76%; the current estimate of project completion for the Schaefer Road Area portion of the CACO investigation is 46%.

On-going corrective action activities on the Severstal Dearborn property are being addressed as part of the Phase 2 portion of the CACO. The RCRA Facility Investigation (RFI) elements for Phase 2 are being completed to investigate potential areas of perched groundwater conditions. As part of the RFI, the Parties identified shallow pockets of contaminated groundwater and the RFI/Phase 2 activities are continuing to assess whether there are areas where the perched groundwater may be migrating to the Rouge River.

A number of activities associated with the Interim Response Corrective Action Work Plan are in currently in progress for the SRA.

3.8.2 No Action Alternative Impacts

Under the No Action Alternative there would be no change from the current impacts on water resources at the Dearborn site.

3.8.3 Proposed Action Impacts

Because the construction associated with the Proposed Action is located more than 200 feet from existing surface water, existing storm water control conveyances are already in place, and Best Management Practices (BMPs) pursuant to the sediment and erosion control plan would be implemented, the Proposed Action would have a negligible impact on surface water. The water supply from the Detroit River and DWSA would remain within MDNRE approved withdrawal rates and DWSA capacity (Severstal 2009). There would be no impacts on wetlands or floodplains because none are located within the Proposed Action area.

The construction area for the PLTCM, HDGL, and CAL had soil testing and no contamination was found, and is not in an area of on-going corrective actions. As described in Section 2, the laboratory portion of the project involves interior refurbishment of an existing building and some paving, with no excavation required. The laboratory project is not in an area of on-going

corrective actions; however, it is adjacent to an on-going corrective action (old coke ovens decommissioned under Ford ownership and recently demolished). The T-section portion of the project involves pouring a concrete floor and covering a skeletal building in an area that is part of on-going corrective actions. Therefore, the Proposed Action would not impact groundwater and would not interfere with the on-going corrective actions.

The operation of the proposed action would result in negligible impacts on water resources. The decommissioning of the existing PL and TCM would result in a decrease of the existing liquid industrial waste of 9 million gallons annually to approximately 2.2 million gallons of liquid industrial waste. However, the new processes would increase the overall daily volume of discharge under the existing NPDES permit (MI0043524) by increases in process water and non-contact cooling water (see Section 3.14 for a complete discussion). The additional discharges would remain within the existing permitted volumes, and because the effluent would be processed by Severstal Dearborn's existing wastewater treatment facility the effluent concentrations would be in accordance with Severstal Dearborn's existing NPDES permit (MI0043524).

3.9 Biological Resources

Biological resources, as described in this section, include native or naturalized plants and animals and their habitats. Protected and sensitive biological resources include specific habitats and the plant and animal species listed as threatened and endangered by the U.S. Fish and Wildlife Service (FWS).

Regulatory Framework

The principal statute pertaining to the protection of plants and animals is the Federal Endangered Species Act (ESA), 16 U.S.C. § 1531 et seq., as amended, which requires protection of Federally listed threatened and endangered species and their habitats. The ESA is administered by the U.S. FWS and establishes protection and conservation of threatened and endangered species and the ecosystems upon which they depend.

As the bald eagle is no longer a listed species under ESA, its regulatory protection falls under the Bald and Golden Eagle Protection Act of 1940, which prohibits the taking or possession of and commerce in bald and golden eagles.

The Migratory Bird Treaty Act of 1918, 16 U.S.C. § 703 et seq., is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protect selected species of birds that are common to both countries (i.e., species occur in both countries at some point during their annual life cycle). The Act protects all migratory birds and their parts (including eggs, nests, and feathers).

The state of Michigan considers 119 species of plants and animals a special concern, threatened, or endangered, with 70 state-listed threatened or endangered species within Wayne County (MDNR 2011). Due to the industrial setting and active disturbance of the site noted during site visits in 2010, no suitable habitat appeared to exist for these species in the project area.

The U.S. FWS provides a list of threatened or endangered species and potential natural communities on a county-wide basis in the Environmental Conservation Online System, available at http://ecos.fws.gov/ecos/indexPublic.do. The proposed site is located in Wayne County, Michigan. Table 3.6 lists the FWS-listed threatened or endangered species for Wayne County.

Table 3.6 FWS Threatened and Endangered Species

Scientific Name	Common Name	Status
Myotis sodalis	Indiana Bat	Endangered
Sistrurus catenatus catenatus	Eastern Massasauga Rattlesnake	Candidate
Dysnomia torulosa rangiana	Northern Riffleshell Mussel	Endangered
Villosa fabalis	Rayed Bean Mussel	Candidate
Plantathera leucophaea	Eastern Prairie Fringed Orchid	Threatened

Source: Species By County Report for Wayne County, http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=26163

Indiana Bat

The Indiana bat (*Myotis soladis*) is a medium-sized bat, closely resembling the little brown bat (*Myotis lucifugus*) but differing in coloration. Its fur is a dull grayish chestnut rather than bronze, with the basal portion of the hairs of the back dull lead colored. This bat's underparts are pinkish to cinnamon, and its hind feet smaller and more delicate than in *M. lucifugus*. The calcar (heel of the foot) is strongly keeled. The Indiana bats spend their summer months living throughout the eastern United States. During the winter, the bats cluster together and hibernate in small caves (FWS 2011).

Eastern Massasauga

The eastern massasauga (*Sistrurus catenatus catenatus*) is a small venomous rattlesnake found in the northeastern United States. Massasaugas are small snakes with thick bodies, heart-shaped heads and vertical pupils. The average length of an adult is about 2 feet. Adult massasaugas are gray or light brown with large, light-edged chocolate brown blotches on the back and smaller blotches on the sides. The snake's belly is marbled dark gray or black and there is a narrow, white stripe on its head. Its tail has several dark brown rings and is tipped by gray-yellow horny rattles. Young snakes have the same markings, but are more vividly colored. The young snake's head is a triangular shape and the pupils are vertical. Massasaugas may be found in various habitats ranging from swamps and marshes to grasslands, usually below 1500 m altitude. This is the only venomous snake in Michigan, where it is known as the Michigan rattler (FWS 2011).

Northern Riffleshell

The northern riffleshell (*Epioblasma torulosa rangiana*) is a freshwater (river) mussel. The ovate shape of an adult riffleshell will reach 2 inches in diameter. They are light green-yellow to olive

green and have dark, narrowly spaced rays. Their habitat is swiftly flowing, well-oxygenated water. Coarse gravel runs provide the best bottom habitat in these rivers. The historic range was confined to southeastern Michigan, in several of the major river systems including the Detroit, St. Clair, and Raisin rivers. Recent surveys have found the riffleshell in only the Black, St. Clair, and Detroit rivers. The reduction in range seems to be principally due to damming and the consequential silting up of rivers below the dam and competition from zebra mussels (FWS 2011).

Rayed Bean

The rayed bean (*Villosa fabalis*) is a freshwater (river) mussel. The rayed bean mussel is a small mussel, usually less than 1.5 inches in length. The shell is elliptical in shape, and varies in degree of inflation. The shell is usually solid, with heavy hinge teeth. The exterior is light to dark green or olive, with heavy wavy rays. The nacre is white to whitish-blue, often iridescent posteriorly. The rayed bean mussel occurs in small, shallow rivers, in and near riffles, where it is buried deep in sand and/or gravel, often near aquatic vegetation. The rayed bean mussel is also found in slow flowing rivers, and along the shallow, wave- swept shores of lakes. While it was historically found frequently in areas ranging from Ontario to Alabama and Illinois to New York, only a few populations are currently known to exist. It is now only confirmed in the lower Tippecanoe River in Indiana, Fish Creek, the Blanchard River, Scioto Brush Creek and the Stillwater River in Ohio, and the Pine and Clinton Rivers in Michigan (FWS 2011).

Eastern Prairie Fringed Orchid

The Eastern Prairie Fringed Orchid (*Platanthera leucophaea*) is a rare species of orchid native to North America. The plant can grow up to three (3) feet tall with a large showy flower cluster that may have up to 40 white flowers. It is distinguished from *Platanthera praeclara*, the western prairie fringed orchid, by its smaller flowers (less than one inch [2.5 cm] long), more oval petals, and a shorter nectar spur. The eastern prairie fringed orchid is a long-lived perennial plant. Its tuber rootstalk helps it survive grass fires. Fires and rain stimulate the plant to grow and flower. The plant emerges each year in May and flowering begins by late June. The flowers are pollinated at night by large sphinx moths. Certain night flying insects that are attracted to the orchid's fragrance are able to obtain its nectar with their long proboscis. Others cannot because of the flower's long, narrow, oddly positioned nectar spur. In the eastern part of its range, it is found in wet sedge meadows. For optimum growth, little or no woody encroachment should be located near the habitat (FWS 2011).

Bald Eagle

The Bald Eagle (*Haliaeetus leucocephalus*) is a large bird, with a body length of 28–40 inches, a wingspan of up to 96 inches, and a mass of 5.5–15 lb; females are about 25 percent larger than males. The adult Bald Eagle has a brown body with a white head and tail, bright yellow irides, and golden taloned feet and hooked beak; juveniles are completely brown except for the yellow feet. Males and females are identical in plumage coloration. Its diet consists mainly of fish, but it is an opportunistic feeder. It hunts fish by swooping down and snatching the fish out of the water with its talons. It is sexually mature at four years or five years of age. In the wild, Bald Eagles can live up to thirty years, and often survive longer in captivity. The Bald Eagle builds the largest nest of any North American bird, up to 13 feet deep, 8.2 feet wide, and 1.1 tons in weight (FWS 2011).

3.9.1 Affected Environment

Existing habitat at the site in Dearborn includes a mix of industrial and urban habitat. Most of the habitat consists of concrete and gravel covered areas. Existing vegetation primarily consists of areas of planted grass lawns, shrubs, and trees that were mainly used for landscaping near former buildings. Due to the disturbed nature and industrial setting of the project area, wildlife in the area include species tolerant of human disturbance. There are no documented occurrences of federally-listed threatened or endangered species at Severstal Dearborn (FWS 2011; MDNR 2011).

3.9.2 No Action Alternative Impacts

Under the No Action Alternative there would be no changes to the existing conditions (actively disturbed industrial area), as described above and in Section 3.2, Land Use, and no impact on any listed species.

3.9.3 Proposed Action Impacts

Due to the lack of suitable habitat within and adjacent to the project area and the active human disturbance associated with the 940-acre industrial complex, the Proposed Action would have no effect on vegetation or wildlife or on any of the federal- or state-listed species (see Attachment I for federally-listed species). Construction and operations would occur on previously developed industrial properties/urban areas that do not have the habitat/conditions to support these species.

3.10 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA) is the primary Federal law protecting cultural, historic, and Native American resources. Per 36 CFR Part 800, Section 106 of the NHPA requires DOE to take into account the effects of its undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.

The Section 106 process is initiated by first determining whether the Proposed Action is a type of activity that could affect historic properties. Historic properties are properties that are included on the National Register of Historic Places or that meet the criteria for listing on the National Register. After an effects determination is made, it is submitted to the SHPO for concurrence or for further consultation (see Appendix III).

3.10.1 Affected Environment

The Severstal Dearborn site is part of the historic Ford Rouge River Complex. The Ford Rouge River Complex was added to the list of National Historic Landmarks and the National Register of Historic Places on June 2, 1978. The Ford Rouge River Complex was the most fully integrated car manufacturing facility in the world in the 1920's. Many of the buildings in the complex have changed over time; however, the integrated nature of the complex (the main reason for being listed as a historic place) remains intact. No other historic properties were located within the Area of Potential Effect (APE). The APE developed during consultation with the SHPO extends

to north to Rotunda Drive, to the south to the Rouge River, to the west to Schafer Highway and to the east to Miller Road. Due to the highly disturbed nature of the site, it is not considered an archaeological site.

3.10.2 No Action Alternative Impacts

If no construction occurs, there would be no impact on historic, archaeological, or Native American resources for the site.

3.10.3 Proposed Action Impacts

The construction and operation associated with the Proposed Action would not alter any characteristics of the Ford Rouge River Complex that affect its inclusion in the National Register of Historic Places or impact Native American resources. To identify potentially interested Native American tribes, DOE consulted the National Park Service NAGPRA database (http://www.cr.nps.gov/nagpra/onlinedb/index.htm) and the U.S. Housing and Urban Development Tribal Directory Assessment Tool (http://www.hud.gov/offices/cpd/environment/tribal/index.cfm). In August 2010, DOE notified the Hannahville Indian Community and the Forest County Potawatomi Community of the proposed undertaking, and did not receive a response. The new construction and operations would be consistent with past industrial activities on that portion of the property, and would not introduce adverse visual elements, air emissions, or unacceptable noise elements affecting the properties historic features. On July 19, 2010, DOE submitted its no effect determination and an Application for Section 106 Review to the Michigan SHPO. On August 4, 2010, the Michigan SHPO concurred with these conclusions and DOE's determination that the proposed project would have no adverse effect on historic properties (see Attachment III).

3.11 Socioeconomics and Environmental Justice

The socioeconomic resources that influence the quality of the human environment include demographic information on population and housing and economic figures such as employment, income, and earnings. Population is the number of residents in the area and the recent change in population growth. Housing includes numbers of units, ownership, and vacancy rate. Employment data include labor sectors, labor force, and statistics on unemployment. Income information is provided as per capita income. The present day socioeconomic setting is described using the most recently available U.S. Census Bureau data from 2006-2008 American Community Survey 3-Year Estimates, unless otherwise noted.

In February 1994, President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low- Income Populations. This order requires that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations" (Executive Order 12898, 59 Federal Register 7629 [Section 1-201]).

The CEQ has issued guidance to Federal agencies to assist them with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. DOE guidance recommends that DOE consider pathways or uses of resources that are unique to a minority or

low income community before determining that there are no disproportionately high and adverse impacts on the minority or low income population (U.S. Department of Energy 2004).

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045, 62 Federal Register 19885), states that each Federal agency shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or to safety that are attributable to products or substances that children are likely to come into contact with or to ingest.

3.11.1 Affected Environment

Socioeconomics

Because the proposed project may affect the socioeconomics of Dearborn and Wayne County, the ROI for the socioeconomic impact analysis for the Proposed Action is Wayne County, Michigan and the City of Dearborn, Michigan. Selected economic indicators for the ROI and comparative data for the state are presented in Table 3.7, Selected Socioeconomic Indicators for the ROI and State of Michigan.

The population in Wayne County totaled 1,949,929 in 2008. The population has contracted 5.3 percent from 2000, due in part to the down-turn in the Michigan economy and the U.S. automotive industry. In the City of Dearborn, the 2008 population was 86,477, a decrease of 11.6 percent from 2000. Within the 940-acre Rouge River complex, Ford Motor Company occupies approximately 500 acres and employs approximately 6,000 personnel (Ford, 2011).

There are 838,760 housing units in the ROI, with a 16.1-percent vacancy rate (about 4 percent more than the national average). More than two-thirds of the housing units are owner occupied (68.2 percent), and less than one-third are renter occupied (31.8 percent). The median value of a home in the ROI is $135,800, which is approximately $55,000 less than the U.S. average of $192,400.

The average per capita income in the ROI is $22,407. The primary employment sectors include education, health care and social services, manufacturing, and retail trade. Unemployment in the ROI averages 13.9 percent. The existing Severstal Dearborn plant and headquarters employ approximately 1,400 people. The proposed project site is within the existing Severstal Dearborn facility. As such, demographics (race and ethnicity) and income and poverty level data for the specific census tract (CT) for the new facilities and for the City of Dearborn are included below under Environmental Justice.

Table 3.7 Dearborn Site Selected Socioeconomic Indicators

Geographic Area	Population	Labor Force	Housing Units	Housing Vacancy Rate (percent)	Median Home Price
City of Dearborn	86,477	43,936	38,414	10.0	$159,200

Geographic Area	Population	Labor Force	Housing Units	Housing Vacancy Rate (percent)	Median Home Price
Wayne County	1,949,929	919,542	838,760	16.1	$135,800
Michigan	9,969,727	5,042,854	4,525,160	15.0	$152,600

Source: U.S. Census Bureau data from 2006-2008 American Community Survey 3-Year Estimates

Environmental Justice

Demographics

Racial and ethnic data for the geographic areas and comparative data for the state are presented in Table 3.8 for the CT where the Proposed Action is located, the surrounding census tracts adjacent to the proposed action, and data for Wayne County and the State of Michigan.

Table 3.8 Dearborn Site Total Percentage of Population by Race/Ethnicity

Race/Ethnicity	Proposed Action (CT 5242)	CT 5735	CT 5741	CT 5785	CT 5245	Wayne County	Michigan
White alone	77%	91%	89%	89%	69%	53%	81.2%
Black or African American alone	17%	1%	5%	4%	13%	41%	14.2%
American Indian and Alaska Native alone	0%	0%	1%	0%	0%	0%	0.6%
Asian alone	4%	6%	2%	0%	2%	3%	2.4%
Native Hawaiian and Other Pacific Islander alone	0%	0%	0%	0%	0%	0%	<0.1%
Some other race alone	0%	0%	0%	4%	17%	2%	1.6%
Total Population	**2,374**	**5,153**	**3,449**	**4,680**	**2,411**	**1,977,997**	**9,969,727**

Notes:
Notes: Disadvantaged populations are defined as either: (a) the minority population of the affected area exceeds 50 percent, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (Wayne County) (CEQ 1997)
Hispanic data are not reported as single population
Data from U.S. Census Bureau data from 2005-2009 American Community Survey 5-Year Estimates

As shown in Table 3.8, there are no minority population census tracts in the affected area that exceed 50 percent of the population and none that are meaningfully greater than general population of Wayne County.

Income and Poverty Level

Income and poverty level data for the geographic areas and comparative data for the state are presented in Table 3.9. These data are for the CT where the Proposed Action is located, the surrounding census tracts, Wayne County, and the State of Michigan.

Table 3.9 Dearborn Site Income and Poverty Level

Geographic Area	Median Household Income	Median Family Income	Percent below Poverty Line
Proposed Action area (CT 5742)	$53,190	$97,293	6.81
CT 5245	$28,265	$36,835	16.91
CT 5735	$19,713	$28,122	36.29
CT 5741	$31,682	$46,097	19.29
CT 5785	$46,349	$58,134	7.17
Wayne County	$43,925	$54,706	20.0
Michigan	$49,694	$61,617	14.0

Notes: Low income populations are defined as either: (a) the low income population (percent below poverty line) of the affected area exceeds 50 percent, or (b) the low income population percentage of the affected area is meaningfully greater than the low income population percentage in the general population (Wayne County) (CEQ 1997)
Data from U.S. Census Bureau data from 2006-2008 American Community Survey 3-Year Estimates

As shown in Table 3.9, there are no low income population census tracts in the affected area that exceed 50 percent of the population. Census tract 5735 appears to have a meaningfully greater population percentage below the poverty line than Wayne County.

Protection of Children

In the City of Dearborn, 30 percent of the population is under the age of 18. Thirty percent is slightly higher than the levels in Wayne County (26.5 percent), Michigan (24.3 percent), and the U.S. (24.5 percent). The closest public schools to the proposed action at Severstal Dearborn are located 0.6 miles northeast (Salina Intermediate Schools) and 1.1 miles southwest (Richard D. Evans School).

3.11.2 No Action Alternative Impacts

DOE assumes that the current production levels and employment would persist under the No Action Alternative, resulting in no impact on the existing socioeconomic and environmental justice setting.

3.11.3 Proposed Action Impacts

Under the Proposed Action, direct and indirect beneficial impacts on socioeconomic resources would occur as a result of additional job opportunities. The construction of these facilities would employ on average approximately 336 contract laborers from the Metropolitan Detroit area through the 2-year construction period. Upon completion, the additional facilities would generate up to 169 full-time jobs. Additional jobs could be created as the facilities' maintenance demands are better understood after operations begin. The construction of the facilities constitutes a replacement of obsolete old facilities. The facilities would be constructed within the confines of the Severstal Dearborn's existing industrial complex. As such, no residents or businesses would be displaced by the project. Because this facility has existed and expanded in the same industrial complex for decades, no meaningful additional burden on government services including school operating costs, road maintenance and repair, public safety, or public utilities would be expected to be encountered.

No disproportionately high and adverse human health or environmental effects would result from implementing the Proposed Action; therefore, no significant impacts would disproportionately affect low-income populations, minority populations, or children. Public schools are located greater than 0.5 mile from the proposed action at Severstal Dearborn and as discussed in this EA the impacts of the proposed action, except for the regional air quality impacts discussed in Section 3.5, do not extend to such distances. In addition, construction of the new Severstal Dearborn facilities would occur in the existing Severstal Dearborn steel manufacturing facility that is within the Ford Rouge Complex, which is currently zoned for industrial use.

3.12 Environmental Health and Safety

This section describes concerns related to the health and safety of the public, of construction workers during construction of the facility, and of workers at the completed sites, and the associated regulatory framework. It also describes concerns related to intentionally destructive acts. Construction sites are high-risk environments involving many opportunities for falls, trips, impacts, exposure to hazardous materials, and other injuries. The disturbance of contaminated soils introduces an additional risk of hazardous material exposure, which could lead to various medical conditions depending upon the contaminant, the level of exposure, and the person being exposed. These medical conditions may include, but are not limited to, headaches, nausea, respiratory illness, skin reactions, and increased risk of cancer.

Construction sites can also pose a safety hazard for members of the general public who access the site without authorization. The sites often involve open holes in the ground, into which an individual can fall, and structures in various stages of completion that can be a falling hazard when used for climbing. Workers at the completed facility would be working with hazardous materials on a daily basis that, if contacted, could pose health risks. All workers with potential for exposure to hazardous materials are trained in proper handling procedures and are outfitted with personal protective equipment (PPE), as necessary. Additionally, engineering controls may be in place to prevent accidental exposure.

Occupational health and safety rights for both construction workers and workers at the completed facility are protected through the Federal Occupational Safety and Health Act (29

USC 651 et seq.). Under this act, Congress created the Occupational Safety and Health Administration (OSHA), an agency of the U.S. Department of Labor. OSHA's mission is to assure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. States may have additional laws and regulations that build on the Occupational Safety and Health Act.

3.12.1 Affected Environment

Although the entire Ford Rouge Complex is subject to RCRA Corrective Action, subsurface sampling at the project site in 2007 identified only three parameters, barium, selenium, and silver, at concentrations exceeding applicable cleanup criteria. For each parameter, the concentrations exceeded their respective groundwater/surface water interface protection criteria, as defined in the RCRA Corrective Action Consent Order.

As described in Section 2, Severstal Dearborn complies with several Federal and State laws and regulations related to environmental health and safety. Severstal Dearborn is an active steel mill that treats, recycles, and disposes of several waste streams. Severstal Dearborn continually reviews and updates its processes and procedures to minimize environmental risks and preserve worker safety (Severstal 2009).

3.12.2 No Action Alternative Impacts

Under the No Action Alternative, no personnel or members of the public would be exposed to hazardous conditions beyond those that currently exist and there would be no impact.

3.12.3 Proposed Action Impacts

Environmental Health and Safety

Project activities during construction and operation at the Severstal Dearborn facility would be carried out in compliance with OSHA requirements, reducing potential impacts on workers. The construction site would be fenced against unauthorized entry and noticed with "no trespassing" signs. Additionally, access to Severstal Dearborn's site is restricted at the perimeter of the site by security personnel that require gate passes to enter the site. Potential health and safety impacts on the general public would be reduced by the use of restricted access to the project and engineering controls on the air and waste emissions. Because of the measures identified above and additional measures discussed below, the construction phase of Proposed Action would result in negligible environmental health and safety impacts.

Since there is documentation of contamination at the project site, there is the potential for exposure of construction workers to contaminated media. In order to minimize any risk, only authorized personnel would have access to the site during construction activities.

Contractors that may come into contact with contaminated media (e.g. soil and groundwater), or at a minimum the General Contractor on behalf of those contractors, would be provided a copy of environmental sampling results, and would be required to adhere to the Health and Safety

Plan (HASP) prepared in accordance with regulatory requirements including OSHA 1970, 29 CFR 1910.120 and the Michigan Occupational Safety and Health Act.

The site-specific HASPs outline measures to be taken to protect site workers during construction activities. These measures include, but are not limited to: wearing appropriate PPE, prohibition of eating, drinking, smoking while present in impacted areas, implementation of appropriate decontamination procedures and fugitive dust control (e.g., periodic application of water or alternative dust suppressant to exposed ground surface if dust is being visibly emitted from the site). Based on current site conditions and proposed construction activities, modified Level D PPE (e.g. hard hat, safety glasses, and safety work boots with metatarsal guards) would be required. Should unknown conditions be encountered during construction, PPE would be upgraded as appropriate.

Daily operations at the manufacturing plant involve the storage, handling, and transporting of hazardous materials. The proposed project would require numerous tanks containing hazardous materials on the site, the largest of which include a 40,000 gallon tank for the storage of the spent pickle liquor (SPL). The other tanks would contain chemicals including lubricating oil, hydraulic oil, hydrochloric acid, and caustic soda solutions. These and all other hazardous materials would be delivered and stored in accordance with regulatory specifications. Additionally, Severstal Dearborn currently manages these chemicals on the site and these chemicals are typical for the steel industry. Under the proposed action, Severstal Dearborn would develop new standard operating procedures and material handling procedures for the new processes and materials in accordance with the applicable and relevant regulations (e.g. OSHA and RCRA). As described in Section 2, workers would follow procedures prepared in accordance with OSHA, and would follow appropriate emergency response plans in the event of an inadvertent release, equipment malfunction, or other type of accident.

DOE reviewed the materials currently used at the existing Severstal Dearborn facility as they relate to the materials associated with the proposed action. Several of the materials associated with the proposed action are already in use at Severstal Dearborn including HCl, KOH, NaOH, SPL, and both hydrogen and nitrogen gas. The zinc used in the HDGL hot dip process would be a new material at Severstal Dearborn; however, the hot dip process would be similar to the existing PL processes. Based upon the similarity of the materials and processes between the proposed action and the existing operations, and that there have been no reported inadvertent off-site releases of such materials from Severstal Dearborn in more than 5 years, DOE reviewed a 0.5 mile area around the proposed action to identify any potential sensitive receptors. There are no hospitals, senior housing/residential care facilities, single-family homes, public school or other sensitive receptors within a one-half mile of the project site.

All hazardous materials used and stored on the site would be managed according to applicable regulations and regulated wastes would be transported and disposed by licensed vendors. The daily operations of the facilities would comply with regulations regarding hazardous materials according to the standards of the federal, state, and local regulations. Under those requirements, Severstal Dearborn would be required to submit a Hazardous Materials Business Plan (HMBP), which would be reviewed by the City of Dearborn during the building permit process to ensure that it conforms to the standards of the pertinent regulations. The project would require administrative approval through the building permit process to ensure that the design, layout, and construction of buildings would not interfere with any emergency response plans or evacuation plans and would not pose a public health hazard.

Workers at the proposed facility would be handling hazardous materials and wastes. Hazardous materials would be handled per the Material Safety Data Sheets for that substance, per OSHA safety requirements, and hazardous wastes per RCRA handling, disposal, and storage requirements. Hazardous wastes would be contained and managed by hazardous waste handlers; the materials would be handled and processed in accordance with applicable regulations. Because of the measures identified above, the operational phase of Proposed Action would result in negligible environmental health and safety impacts.

Intentionally Destructive Acts

Intentionally destructive acts, or acts of sabotage or terrorism, may also impact the health and safety of workers and members of the general public. The location and the nature of work being performed on site leads to a low probability of being the object of an insidious attack. The site also has preexisting security measures provided by the complex including fencing, manned gates, monitored parking, and security guards. The complex does ship or use flammable materials such as natural gas, coal, lubricants, hydraulic fluids, and dust. The complex also contains corrosive materials such as SPL, HCl, KOH, and NaOH. Since the probability of intentionally destructive acts is low, preventative measures currently in place would be sufficient. As the proposed facility is being constructed and during operation, proper measures would be taken to ensure the health and safety of the workers and the general public.

3.13 Transportation

This section presents existing transportation routes (road, rail, and water) and traffic conditions on these roadways and the intersections around the proposed project sites.

3.13.1 Affected Environment

Roadway Network

The existing Severstal Dearborn facility is bordered by roadways on all sides. The main site access points are from Miller Road, Dix Street and Schaefer Highway. Schaefer Highway can be accessed from I-94, while Miller Road intersects both Rotunda Drive and Dix Street. The key segments of the roadway system serving the project area and existing facility are discussed below.

Schaefer Highway

Schaefer Highway is located off of I-94. It directly intersects with Rotunda Drive and Dix Street which border the site on its northern and southern sides. Schaefer Highway provides access to light industrial and commercial businesses. Gates 9, 10 and 12 for the Ford Rouge/Severstal Dearborn complex can be accessed from Schaefer Highway.

Rotunda Drive

Rotunda Drive is located off of I-94. It directly intersects with Schaefer Highway and Miller Road, which border the site on its eastern and western sides. Rotunda Drive provides access

to light industrial and commercial businesses. In 2009, the average daily traffic from Rotunda Drive to I-94 east was 28,500 (SEMCOG 2011).

Dix Street

Dix Street is located between I-94 and I-75. It directly intersects Schaefer Highway and Miller Road, which border the site on its eastern and western sides. Dix Street provides access to light industrial and commercial businesses. In addition, the Rouge River drawbridge for the waterway network is located on Dix Street. Gate 1 is accessed from Dix Street. In 2009, the average daily traffic along Dix Street was 11,000 (SEMCOG 2011).

Miller Road

Miller Road is indirectly accessible off of I-94. It directly intersects with Rotunda Drive and Dix Street which border the site on its northern and southern sides. Miller Road provides access to the industrial facilities. Gates 4 and 6 for the Ford Rouge/Severstal Dearborn complex can be accessed from Miller Road. In 2009, the average daily traffic along Miller Road was 16,000 (SEMCOG 2011).

Interstate Highway 94

I-94, also known as the Edsel Ford Freeway, spans east to west across southern Michigan. I-94 terminates at the Canadian border in Port Huron, but continues westward past Michigan to Billings, Montana. I-94 provides access points to the Severstal Dearborn complex through Schaefer Highway and Rotunda Drive. Gate 10 can be accessed from I-94. In 2009, the average daily traffic from Schafer Road to I-94 west was 57,400; the average daily traffic along Schafer Road was 21,000; and along I-94 was 65,000 (SEMCOG 2011).

Railway Network

The Ford Rouge Industrial complex is serviced by CSX Transportation. Additionally, there is an internal rail system that is used to move materials around Severstal Dearborn.

Waterway Network

The existing Severstal Dearborn facility receives deliveries by lake ships. The lake ships come in through a drawbridge on the main branch of the Rouge River. The main branch of the Rouge River flows through Detroit and feeds into the Detroit River. From the Detroit River, the waterway flows south to Lake Erie. The Detroit River is a main transportation route connecting Lakes Michigan, Huron, and Superior to the east coast.

3.13.2 No Action Alternative Impacts

Under the No Action Alternative, no change in existing transportation (road, rail, and water) levels would occur in the project area and there would be no impact on the transportation networks.

3.13.3 Proposed Action Impacts

3.12.3 Proposed Action Impacts

The Proposed Action would not require any additional roadways to be built. The average daily traffic increase associated with an average increase of 336 temporary construction jobs (672 average daily trips) and up to 169 permanent jobs (338 average daily trips) at Severstal Dearborn would be a small proportion of the 2009 average daily traffic levels on the surrounding road network (between 0.01 percent and 0.06 percent increase). In addition, Severstal Dearborn's traffic levels would not exceed levels previously seen at Severstal Dearborn when the Ford Rouge Complex was in full operation.

In 2008, the employee passenger vehicle traffic at Severstal Dearborn was approximately 2,000 per day. As of January 1, 2010, the employee passenger vehicle traffic was approximately 1,400 per day. The Proposed Action would increase the employee passenger vehicle traffic to approximately 1,600 per day, which is below the traffic levels in 2008. Therefore, the addition of employee traffic would have a negligible impact on transportation and would not be expected to affect the existing level of service or transportation conditions.

Additionally, Severstal Dearborn conducted a parking study and determined that ample on-site parking would be available once the Proposed Action is completed. During construction temporary workers would park at an off-site location and utilize a shuttle bus to work at Severstal Dearborn.

3.14 Waste Management

Table 3.10 is a summary of the existing waste streams and the new waste streams under the Proposed Action. The sections that follow provide additional details for these waste streams.

Table 3.10 Summary of Waste Streams

Waste Stream	New / Existing	Media	Current rate	Future Rate	Change	Final Disposition and Quantity per Year
PLTCM						
Pickling Line Entry End Dust	Existing	Water	6 pounds / hour	0 pounds / hour	Net decrease of 6 pounds / hour	NA
Spent Pickling Liquid*	Existing	Liquid	4,293 gallons / hour	3,434 gallons / hour	Net decrease of 859 gallons / hour, 25%	Sold for beneficial reuse
PL Rinse and Scrubber water	Existing	Water	83,000 gallons / hour	7,344 gallons / hour	Net decrease of 75,656 gallons / hour	WWTP 64,333,444 gallons / year
Used Tandem Mill Rolling Solution (oil)	Existing	Liquid	7 million gallons / year	300,000 gallons / year	Net decrease of 6.7 million gallons / year, 96%	Liquid Industrial Waste Treatment 300,000 gallons / year

Waste Stream	New / Existing	Media	Current rate	Future Rate	Change	Final Disposition and Quantity per Year
Non-contact Cooling Water	Existing	Water	400,000 gallons / hour	565,540 gallons / hour	Net increase of 165,540 gallons per hour	WWTP 4,954,130,400 gallons / year
Industrial Oils	Existing	Oil	146,000 gallons / year	1,100 gallons/ year	Net decrease of 144,900 gallons/year, 99%	Recycled 1,000 gallons / year
Paper Filter Media	Existing	Solid	5 tons / month	5 tons/month	No net change, 0%	Landfill 60 tons / year
Roll Grinding Swarf	Existing	Solid	576 feet^3 / week	576 feet^3/week	No net change, 0%	Recycled
Pickling Line Entry End Dust	New	Solid	0 pounds / hour	217 pounds / hour	Net increase of 217 pounds / hour	Landfill 950 tons / year
Magnetic Separator Sludge	New	Solid	0 tons / year	15 tons/year	Net increase of 15 ton/year	Landfill 15 tons / year
HDGL						
Wastewater	New	Water	0	5,749 gallons / hour	Net increase of 5,749 gallons / hour	SRWWTP 50,361,240 gallons/year
Non contact cooling Water	New	Water	0	1,720 gallons / hour	Net increase of 1,720 gallons / hour	WWTP 15,067,200 gallons / year
Used Oil	New	Oil	0	6,000 gallons / year	Net increase of 6,000 gallons / year	Recycled 6,000 gallons / year
Wastewater Treatment solids	New	Solid	0	1,950 pounds / day	Net increase of 1,950 pounds / day	Landfill 8,541 tons/year
Iron fines	New	Solid	0	2 pounds / hour	Net increase of 2 pounds / hour	Landfill 8.76 tons / year
CAL						
Wastewater	New	Water	0	5,749 gallons / hour	Net increase of 5,749 gallons / hour	SRWWTP 50,361,240 gallons / year
Non contact process Water	New	Water	0	1,720 gallons / hour	Net increase of 1,720 gallons / hour	SRWWTP 15,067,200 gallons / year
Used Oil	New	Recycle	0	6,000 gallons / year	Net increase of 6,000 gallons / year	Recycled 6,000 gallons / year
Cleaning Section without Ultrafiltration	New	Water / Oil	0	800 gallons per event; and 15,850 gallons every 2 months	Net Increase	Handled and disposed of by licensed waste hauler and disposal facility
Spent Pickling	New	Liquid	0	34,600 gallons per	Net increase of 34,600	Beneficial reuse

Waste Stream	New / Existing	Media	Current rate	Future Rate	Change	Final Disposition and Quantity per Year
Liquid*				day		
Iron Fines	New	Landfill	0	2 pounds / hour	Net increase of 2 pounds / hour	Landfill 8.76 tons / year
Laboratory						
Scrap Steel	Existing	Solid	58 tons / month recycled	58 tons / month recycled	No change or 0%	696 tons / year
Cutting Fluid	Existing	Water	1 gallon / month to treatment facility	1 gallons / month to treatment facility	No change or 0%	12 gallons / year
Polishing Swarf and Lubricant	Existing	Water	1/4 gallons / month to treatment facility	1/4 gallon / month to treatment facility	No change or 0%	3 gallons/ year
Spent Etchant	Existing	Solid	2 pounds / month to landfill	2 pounds / month to landfill	No change or 0%	24 pounds / year
Polishing Dunnage	Existing	Solid	2 pounds / month to landfill	2 pounds / month to landfill	No change or 0%	24 pounds / year
Discarded metallography mounts	Existing	Solid	10 pounds / month to landfill	10 pounds / month to landfill	No change or 0%	120 pounds / year
Spent Zinc Stripping Solution	Existing	Water	0.1 gallon / month to treatment facility	0.1 gallon / month to treatment facility	No change or 0%	1.2 gallons / year
T – Section						
Scrap Iron	New	Solid	0	10 tons / month recycled	Net Increase of 120 tons / year	120 tons / year

Notes: * Spent pickling liquid is classified as a hazardous waste only if it is a "waste"; because Severstal Dearborn handles its spent picking liquid as a beneficial reuse product it is not classified as a hazardous waste.

No other waste streams are currently classified or would be expected to be classified as a hazardous waste. Severstal Dearborn will test all new waste streams to confirm that they do not meet the definition of RCRA hazardous waste.

3.14.1 Affected Environment: Dearborn

The Severstal Dearborn facility currently generates solid waste, liquid industrial waste, wastewater, and air emission residuals at the site. Severstal Dearborn recycles as much of the waste generated as possible. Severstal Dearborn's site identification number is MID087738431 and, according to MDNRE, Severstal Dearborn manages:

- Hazardous Waste – Large Quantity Generator (no RCRA permitted or interim status units)

- Liquid Industrial Waste (e.g., used oil and other liquid wastes) – LIW Generator
- Universal Waste – Large Quantity Handler (e.g., Batteries, Elemental Mercury, Mercury Switches, Electric Lamps, Consumer Electronics)

3.14.1.1 No Action Alternative Impacts

Under the No Action Alternative, no change in waste management practices would occur.

3.14.1.2 Proposed Action Impacts

Severstal Dearborn has established procedures to evaluate each new waste stream and to perform an annual review of each existing waste stream to ensure that the wastes are being properly managed. Based on these evaluations, Severstal Dearborn selects the appropriate vendor to manage waste materials based on the vendor's financial standing, environmental compliance history, and an environmental site audit. Table 3.11 summarizes the existing and proposed waste streams at Severstal Dearborn.

Table 3.11 Severstal Dearborn Waste Streams

Waste Type	Volume Under Current Operations	Change Under the Proposed Action	Volume Under Proposed Action Operation
Hazardous Waste Generation * (tons per year)	2,100	0	2,100
Liquid Industrial Waste (gallons per year)	9,000,000	-6,833,000	2,167,000
Universal Waste (pounds per year)	921	92	1,013

Notes: *The hazardous waste generation is for the entire Severstal Dearborn facility. The Proposed Action would not generate any hazardous waste as reflected in Tables 3.10 and 3.11.

Under the proposed project, as reflected in Tables 3.10 and 3.11, some waste streams would increase over current conditions and others would decrease. Severstal Dearborn has established procedures to evaluate and manage these waste streams, and all waste streams would be within permitted levels. Therefore, the proposed project is expected to result in only negligible impacts associated with waste management.

The following presents a summary of the various wastestreams (liquid and solid) by facility (PLTCM, HDGL, CAL, T-Section Shipping facility, and laboratory). The waste streams descriptions presented below includes the waste streams presented in Table 3.10 and adds in a description of sanitary, potable, and rain water discharges, and recycled scrap metal, as appropriate.

PLTCM Water Discharges

Non-Contact Cooling Water (Mill Water)

- Non-contact cooling water used in sealing or cooling of items such as bearings and oil coolers through the use of heat exchangers
- 565,540 gallons/hour average
- 710,570 gallons/hour maximum
- This water will be sent to the Schaefer Road Waste Water Treatment Plant (SRWWTP)

Sanitary

- From drains, toilets, sinks, etc.
  - Peak Flow of 124 Gallons per Minute (GPM)
- From the water softener for the de-super heater
  - 710 gallons per 3 days
    - Mg^{2+} = 833mg/L
    - Ca^{2+} = 1,542 mg/L
    - Na^{+} = 6,433 mg/L
    - Cl^{-} = 15,139 mg/L
- This water will go to the sanitary sewer (Detroit Water and Sewerage Department (DWSD))
- These estimates represent a decrease in Sanitary wastewater generation for Severstal Dearborn

Potable Water

- From safety showers
  - Used in only emergency situations

Rain Water Collection

- Used to collect water from the building during rain.
  - 31,764 gallons/minute maximum, most of which is currently sent to SRWWTP

PLTCM Process Fluids

Spent Pickling Liquid

- SPL that is used in the processing of pickling of the steel in the pickling line.
- 3,434 gallons/hour average
- 5,098 gallons/hour maximum
  - HCl – approximately 3 percent
  - Fe^{2+} – 120 g/L
- This process solution is sent to an acid tank farm while awaiting beneficial reuse. It can be made into Iron (III) Chloride ($FeCl_3$) or regenerated into HCl for return to the pickle tanks, and iron oxide for recycling into steel.
- These estimates represent an approximate decrease of 25% SPL for Severstal Dearborn due to updated equipment.

Pickling Line Rinse and Scrubber Water

- Rinse water comes from the rinse section of the pickling line when the steel is rinsed to remove remaining hydrochloric acid from the pickling process. The acid fume scrubber water is also included in this wastewater stream.
- The wastewater is neutralized through an acid neutralization system as specified by the engineer of record, CV Engineering.
- 7,344 gallons/hour
  - HCl – 5,000 mg/L
  - $FeCl_2$ – 2,500 mg/L
  - Sodium Hydroxide (NaOH) – 5,000 mg/L
- This waste water, after neutralization, is sent to SRWWTP.

Used Tandem Mill Rolling Solution (Industrial Oils)

- Used oil and water are generated from the tandem mill fume exhaust system. Semi-annual drain-down of roll coolant system for maintenance is expected (industry standard is semi-annual, will strive for less frequent). Partial drain-downs are used to remove contaminants from hydraulic oil leaks. Mill wash down water that is contaminated by rolling oil, enters this wastewater stream. Oil from the fume exhaust system that is degraded by bacteria is sent to this system.
- Used oil that is recovered from the system is sent to used oil storage tanks (52,835 gallons) inside the utility building of the PLTCM and then shipped to used oil processors.
- Approximately 300,000 gallons of used oil/wastewater is generated per year. Typically the used oil/wastewater contains less than 5 percent oil in water.
- This estimate represents a decrease in the amount of used oil generated from the existing tandem mill for Severstal Dearborn due to the updated process.

Spent Lubrication & Hydraulic Fluids (Industrial Oils)

- Fluids generated are based on lubrication intervals of the machinery serviced.
- Less than 1,000 gallons fluids/year are generated from these activities, the spent fluids will be sent to a used oil processor.
- This estimate represents a decrease in spent lubrication and hydraulic fluids due to the elimination of the Morgil system (a dated rolling mill lubrication system) for Severstal Dearborn.

Roll Grinding Operation Waste (Industrial Oils)

- Roll grinding lubricant will be occasionally removed and sent to a used oil processor.
- Less than 100 gallons fluids/year will be generated.

PLTCM Solid Waste Streams

PL Entry-end Dust

- Waste from the removal of iron oxide (scale) from the entry dust collection system stream by use of a baghouse; estimated to be 217 lbs/hour.
- Enters waste oxide stream, sent to a landfill or recycled.
- This estimate represents a reduction in entry-end dust collection and a beneficial shift in technology from a wet process to a dry process due to the updated process.

Magnetic Separator Sludge

- Waste from the removal of iron fines from the roll coolant solution system. Wastes are comprised of mixed iron fines and oil; estimated to be 15 tons/year.
- This waste is collected in barrels and sent to an approved processor/disposal facility, as appropriate.

Vacuum Filter Media and Solids (Paper Filter Media)

- Waste from the removal of iron fines and solids from the roll coolant solution system by use of media bed filter. The wastes are comprised of paper filter media, dirt, iron fines, and oil; estimated to be 5 tons/month.
- This waste is disposed as general trash and is sent to a sanitary landfill.

Roll Grinding Swarf

- This waste is comprised of mixed alloy steel fines and grinding wheel dust.
- The waste stream is recycled; estimated to be 576 ft^3/week.

Scrap

- Metal scrap from the process of entry preparation station shearing, in-line process shearing, weld point detector punch, notching, side trimming, and inspection shearing.
- These collected materials are returned to the Basic Oxygen Furnace for recycling; estimated to be 100,000 tons/year.

HDGL Water Discharges

Non-contact process water; comprised of Mill Water, city water and demineralized water

- Clean (non-contact) water used in sealing or cooling of items such as bearings and heat exchangers
- 1,720 gallons per hour average
- 5,680 gallons per hour maximum
- Sent to SRWWTP

Treated Effluent from Onsite Wastewater Treatment Plant (WWTP) (Wastewater)

- Process effluent treated and neutralized at onsite WWTP
- 4,200 gallons per hour average
- 4,800 gallons per hour maximum
- Influent characteristics are described in the solid waste streams section below
- Sent to SRWWTP after treatment on-site

Neutralized Wastewater from the Demineralization Unit (Wastewater)

- HCl and NaOH mixed and neutralized to a pH between 6.5 and 7.5
- 4 gallons per hour HCL (30 percent), 2 gallons per hour NaOH (50 percent), 30 gallons per hour city water, totaling 36 gallons per hour on average
- 2,000 gallons per hour maximum
- Sent to SRWWTP

Carbon Filter Backwash from the Demineralization Unit (Wastewater)

- Carbon filter backwash (city water)
- Average 100 gallons per hour
- Maximum 6,500 gallons per hour
- Sent to SRWWTP

Cooling Tower Blowdown (Wastewater)

- Mill water
- Continuous 2,000 gallons per hour
- Sent to SRWWTP

Sanitary

- From drains, toilets, sinks, etc.
    - Maximum flow 7,000 gallons per hour
- Sent to DWSD

Potable Water

- Safety showers
- 1 gallon per hour average (emergency events and testing)
- 3,600 gallons per hour maximum (3 operating)
- Sent to SRWWTP

Rain Water Collection

- Used to collect water from the building during rain.
- 323 gallons per hour average
- 332,000 gallons per hour maximum
- Sent to SRWWTP (most of this estimated volume is currently sent to SRWWTP)

HDGL Process Fluids

Used Pre-Lubrication Oil (Used Oil)

- Mixture from oil type switches is contained in portable tanks (totes)
- Average 0.6 gallons per hour (5,000 gallons per year)
- Empty totes and drums are sent back to oil supplier for recycling.

Used Lubrication Oil (Used Oil)

- Materials generated are based on lubrication intervals of machinery
- Used oil generated is less than 1,000 gallons per year
- Used oil is sent to used oil processor

HDGL Solid Waste Streams

Wastewater Treatment Solids

- Solids and precipitates are removed from the waste stream at the WWTP using a filter press and collected into a roll off bin
- Influent waste characteristics are as follows:
    - Quench tank: 800 gallons/hour .0135 pounds/gallon zinc
    - Skin Pass: 400 gallons/hour 5 percent oil

  - Washer: 400 gallons/hour 5 percent oil, zinc traces
  - Cleaning: 800 gallons/hour 0.25 pounds/gallon NaOH, .0584 pounds/gallon oil, 0.0417 pounds/gallon iron
    - Rinse: 270 gallons/hour 0.0835 pounds/gallon NaOH, 0.0167 pounds/gallon oil, 0.00835 pounds/gallon iron
- Average output is 30 cubic feet per day of 25 percent solids with a density of 65 pounds per cubic foot (1,950 pounds per day)
- Roll off bins containing solids are sent offsite for disposal

Magnetic Filter Particulate from Cleaning Section (Iron Fines)
- Iron particles with residual oil and cleaning solution (NaOH) are collected and disposed of offsite.
- Continuous flow of 2 pounds per hour

Scrap
- 5700 tons/year side trim and end cuts
- Returned to Basic Oxygen Furnace for recycling

CAL Water Discharges

Non-Contact Process Water (City Water and Demineralized Water)
- Clean (non-contact) water used in sealing or cooling of items such as bearings and heat exchangers
- 1,720 gallons per hour average
- 5,680 gallons per hour maximum
- Sent to SRWWTP

Treated Effluent from on site WWTP (Wastewater)
- Process effluent treated and neutralized at onsite WWTP
- 4,200 gallons per hour average
- 4,800 gallons per hour maximum
- See solid waste below for influent characteristics
- Sent to SRWWTP

Neutralized Wastewater from the Demineralization Unit (Wastewater)
- Mixed HCl and NaOH mixed and neutralized to a pH between 6.5 and 7.5
- 4 gallons per hour HCL (30%), 2 gallons per hour NaOH (50%), 30 gallons per hour city water – (total 36 gallons per hour) average
- 2,000 gallons per hour maximum
- Sent to SRWWTP

Carbon Filter Backwash from the Demineralization Unit (Wastewater)
- Carbon filter backwash (city water)
- Average 100 gallons per hour
- Maximum 6,500 gallons per hour
- Sent to SRWWTP

Sanitary
- From drains, toilets, sinks, etc.
  - 7,000 gallons per hour
- Sent to DWSD

Potable Water
- Safety showers
- 1 gallon per hour average (emergency events and testing)
- 3,600 gallons per hour maximum (3 operating)
- Sent to SRWWTP

Rain Water Collection
- Used to collect water from the building during rain.
- 323 gallons per hour average
- 332,000 gallons per hour maximum
- Sent to SRWWTP

CAL Process Fluids

Cleaning Section without Ultrafiltration
- 800 gallons per hour alkaline waste water from the rinsing section
- 15,850 gallons every 2 months from the used degreasing bath.
  - The used fluids from the degreasing bath are transferred into the degreasing tank.
- Degreasing tank is emptied periodically by a licensed waste hauler for disposal.

Spent Pickling Liquid
- SPL that is used in the processing of pickling of the steel in the pickle section.
- Resin Regeneration
  - 2,650 gallons/day
- Resin Rinsing after Regeneration
  - 24,000 gallons/day
- This process solution is sent to an acid tank farm while awaiting beneficial reuse. It can be made into $FeCl_3$ or regenerated into HCl for return to the pickle tanks, and iron oxide for recycling into steel.
- Waste rinse water
  - 7,950 gallons a day
  - Neutralized and sent to SRWWTP

Contaminated Oil Emulsion (Wastewater)
- 265 gallons/hour from Wet rolling with detergent
- 1,100 gallons/hour from high pressure cleaning device
- Sent to onsite WWTP, ultimately to SRWWTP

Used Oil Emulsion
- 6,000 gallons a year from CAL equipment
- Used oil that is recovered from the system is sent to used oil storage tanks and then shipped to used oil processors.

Furnace Fluids (Wastewater)
- 84,000 gallons 3-4 times a year from the Quench Tank
- 2,115 gallons per purge from the water closed cooling circuit
- 4,000 gallons per purge from the hot water closed circuit.
- Totals approximately 400,000 gallons per year (46 gallons per hour) sent to SRWWTP

Rapid Quench (Wastewater)
- 4,000 gallons per purge from the innovative water cooling system.
- Totals approximately 16,000 gallons per year (2 gallons per hour) sent to SRWWTP

CAL Solid Waste Stream

Iron Fines
- Iron particles with residual oil and cleaning solution are collected and disposed of off site.
- Continuous flow of 2 pounds per hour

Laboratory

Spent Etchants
- Low concentration solutions of Nitric Acid, Hydrochloric Acid, and Picric Acid along with alcohol after reacting with steel, contained in cotton swabs
- 2 pounds/month
- Sent to landfill

Spent Zinc Stripping Solution
- Hydrochloric acid used to remove zinc from galvanized steel
- 0.1 gallon/month
- Sent to onsite WWTP, then to SRWWTP

Scrap Steel
- From material tested
- 58 tons/month
- Recycled on-site

Cutting Fluid
- Water- oil emulsion used in milling machine
- 1 gallon/month
- Sent to onsite WWTP, then to SRWWTP

Polishing Swarf and Lubricant
- Mixed iron, plastic, abrasive, and lubricant sludge
- 0.25 gallon/month
- Sent to onsite WWTP, then to SRWWTP

Polishing Dunnage
- Packaging and substrate (used polishing cloths)

- 2 pounds/month
- Sent to landfill

Discarded Metallography Mounts
- Steel samples encapsulated in plastic (1 ½ " x 1 " cylinders)
- 10 pounds/month
- Sent to landfill

Sanitary
- From drains, toilets, sinks, etc.
    - 1,920 gallons per hour maximum
- Sent to DWSC

T-Section Shipping Facility

Scrap Steel
- Scrap from strapping used to secure coils prior to shipping
- 10 tons/month
- Recycled on-site

Sanitary
- From drains, toilets, sinks, etc.
    - 1,920 gallons per hour maximum
- Sent to DWSC

Rain Water Collection
- Used to collect water from the building during rain.
- 36,000 gallons per hour (maximum)
- Sent to SRWWTP (most of this volume is currently sent to SRWWTP)

3.15 Utilities

This section presents information regarding existing utilities on and around the proposed project sites.

3.15.1 Affected Environment

Electricity

The Ford Rouge/Severstal Dearborn complex was originally designed to be self sufficient in electricity with an on-site coal fired power plant. This on-site power plant was later replaced with a cogeneration facility (DIG) that is located just outside the complex boundary. When an electric arc furnace (EAF) and a ladle refining furnace were installed as part of Ford Steel Division, there was no longer sufficient on-site electrical generation capacity. Two substations/transformers were constructed to service the electricity demands of the EAF and the ladle refining furnace from power off the grid, supplied by DTE Energy. When the EAF was decommissioned, these substations were retained, and currently are used to supply electricity to the ladle refining furnace.

Natural Gas

Severstal Dearborn's facilities have a baseline utilization of approximately 9,700,000 million British Thermal Units (MMBtu). However, Severstal Dearborn's facilities have the capacity to utilize 17,800,000 MMBtu. The reduction from the capacity value has resulted from improved equipment efficiencies and the absence of one Blast Furnace. Natural gas is supplied to the site by DTE Energy.

Water

Non-contact cooling water is supplied to Severstal Dearborn from the Detroit River and both process wastewater and storm water is sent to the SRWWTP. The limitation on these flows is the permitted flow of water to SRWWTP 102 million gallons per day (MGD) as defined by SRWWPT's water permit. In 2009, the maximum recorded flow was 71.55 MGD (average was 57.75 MGD). Sanitary wastewater is sent to the DWSD WWTP.

Potable water is obtained for drinking and showers from the DWSD. Water use is proportional to the number of employees. Sanitary sewerage demand is also proportional to the number of employees.

Nitrogen and Hydrogen

Nitrogen and Hydrogen gas are supplied through a pre-existing pipeline for various usages throughout Severstal Dearborn's facility. The gas is supplied through an agreement with Praxair.

3.15.2 No Action Alternative Impacts

Under the No Action Alternative no change in utility utilization would occur in the project area, and there would be no impacts.

3.15.3 Proposed Action Impacts

The Proposed Action would not require additional utility lines to be built.

Electricity

In 2010, Severstal Dearborn's peak electrical demands were 97 megawatts (MW), with an average of 90 MW. The new peak electrical demand from the PLTCM, HDGL, and CAL would be 36.5 MW, 21 MW, and 18.1 MW, respectively, for a total of 75.6 MW. For the PLTCM, the new 36.5 MW peak electrical demand represents a 17.5 MW increase from the existing 19 MW peak electrical demand of the PL and TCM. The T-Section Shipping facility, the hot strip mill exit end modifications, and the relocated Laboratory would not alter the current electrical demands. Therefore, Severstal Dearborn would require a net peak electrical demand increase of 56.6 MW (the sum of 17.5 MW, 21 MW, and 18.1 MW). Severstal Dearborn's new peak electrical demands facility-wide are expected to be 153.6 MW (the current 97 MW plus the 56.6 MW increase from the proposed action). Severstal Dearborn has contacted the local energy provider, DTE Energy, to ensure it can provide the additional peak electrical demand.

The new electrical demand would be provided through existing onsite substations/transformers that are rated to provide up to 133 MW, and are currently distributing 25 MW to the ladle refining furnace. These existing substations/transformers would provide the electrical demand for the proposed action (75.6 MW), for a total of 100.6 MW at peak electrical demand, which is within the rated capacity. The remaining 53 MW of peak electrical supply needed for plant operations would continue to be provided from other substations/transformers at Severstal Dearborn. Because DTE Energy would be able to supply the new peak electrical demand and that existing infrastructure would be used, there would be no impacts associated with electrical supply or demand other than greenhouse gas emission impacts from electricity generation discussed in the greenhouse gas section above.

Natural Gas

The PLTCM and HDGL projects have a designed natural gas usage of 1,200,000 MMBtu per year. The CAL line gas usage has not yet been determined, but would not be expected to exceed the complex's capacity based on values from similar Severstal Dearborn processes. The complex is currently utilizing 9,700,000 MMBtu of its 17,800,000 MMBtu capacity. Therefore, with the current usage of 9,700,000 plus the 1,200,000 for the PLTCM and HDGL projects, there is an additional capacity of 6,900,000, which is more than enough for the CAL and T-Section Shipping facility.

Water

As previously mentioned, potable water usage and sanitary sewer demand is proportional to the number of employees. At peak employment levels the PL and TCM complex had 534 employees. The PLTCM portion of the project is a replacement for pickling and tandem cold rolling facilities in the existing PL and TCM complex. When the proposed PLTCM is running and the existing operations have shut down, there would be 102 employees engaged in cold mill activities. The HDGL would add a further 85 personnel and the CAL line would add an additional 65 to 70 employees, for a total of 257 employees, which is less than the 534 employees present during peak employment. The total potable water demand and sanitary sewer demand would be within the proven delivery capacity. The water supply from the Detroit River would remain within MDNRE approved withdrawal rates (Severstal 2009).

The PLTCM and HDGL would send 18 MGD of non-contact cooling water to the SRWWTP for a maximum flow of 90 MGD, which would be less than the permitted level of 102 MGD.

Nitrogen and Hydrogen Gas

The PLTCM would not use nitrogen or hydrogen. The HDGL would use nitrogen and hydrogen for furnace atmosphere. These gases would be supplied via pre-existing pipeline. Praxair has verified that they have the capability to deliver the required volumes.

3.16 Soil and Prime Farmland

3.16.1 Affected Environment

Because the Dearborn site is a mixture of industrial and urban development, the natural soil has been modified by historic construction. This construction has changed the natural soil to a

mixture of construction fill soil and native soil. No prime farmland, as defined by the Farmland Protection Policy Act, is located in the project area.

3.16.2 No Action Alternative Impacts

If no action occurs, no change would occur and there would be no impacts on soil.

3.16.3 Proposed Action Impacts

Construction activities could cause erosion and compaction under the Proposed Action. BMPs, such as erosion prevention and sediment control measures, would be used to avoid adverse affects on the soil. There would be no impacts on prime farmland as none is located in the project area.

3.17 Cumulative Effects

A cumulative effect is defined as, "the impact on the environment that results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action" (40 CFR Part 1508.7).

The following discussion of cumulative impacts reviews the broad cumulative impact with the use of AHSS in the automotive industry and its impact on fuel consumption, and then reviews local projects and their cumulative impact on the resources impacted by the Proposed Action.

3.17.1 Cumulative Effects of AHSS

The weight savings of substituting AHSS for low-carbon steel in a single automotive body with mass reduction compounding can reduce total vehicle weight by as much as 10 percent without any degradation of strength or performance. Similar weight reductions without the use of AHSS or similar materials are not possible in a cost effective manner (Severstal 2009).

AHSS is particularly important for weight-efficient reductions in components that are applied for crash energy management to meet critical safety standards that increase simultaneously with requirements for better fuel economy. Based on a reasonable functional relationship between mass and fuel economy, one can roughly approximate a 10 percent reduction of curb mass to yield a 5 percent fuel savings in a sedan. The effect of mass savings achieved through the application of AHSS in advanced technology vehicles is shown in Figure 3.1 below. With the application of AHSS, a component-based 25 percent mass reduction of body-in-white (BIW) translates to a 10 percent reduction of curb mass, resulting in a 5 percent reduction in fuel usage. For a typical (using conventional steels in BIW) sedan yielding 35 mpg (not typical), this will imply an increase to nearly 37 mpg when AHSS replaces conventional steels in automotive components (Severstal 2009).

Conservatively, Severstal Dearborn's proposed project would deliver a minimum of 0.5 million tons of AHSS per year, which, if applied to vehicles at 407 lbs/vehicle may result in 1.6 million vehicles with optimal BIW weight being delivered to the fleet annually. Assuming 12,000 miles per vehicle per year, the improvement in fuel economy from 35 to 37 mpg would result in an incremental 29.7 million fewer gallons of gas consumed per year in the U.S. based upon

Severstal Dearborn's contribution alone. After ten years, this savings would have grown to nearly 300 million gallons of fuel savings per year, and would total 1.65 billion gallons of fuel savings over that ten year period. It should be noted that these fuel efficiency calculations only take into consideration internal combustion engine vehicles and consumer hybrid and electric vehicles. The fuel savings figures presented here would only rise when other types of vehicles are introduced in the calculation (Severstal 2009).

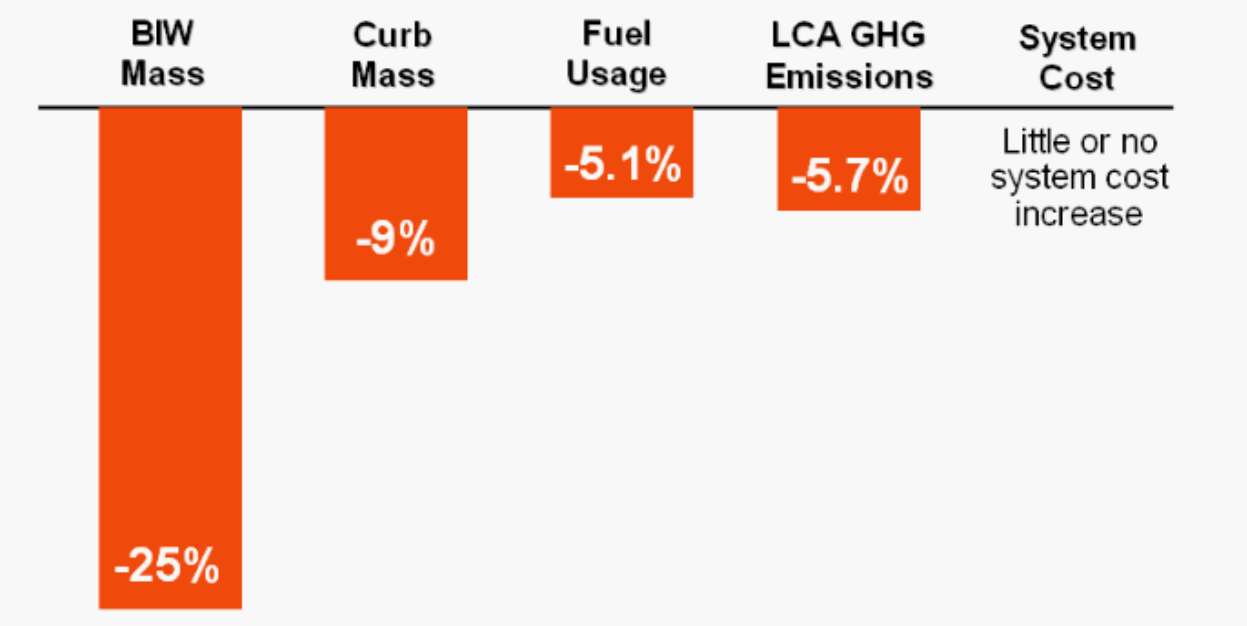


Figure 3.1 Influence of Direct Weight Reduction through AHSS Application on Fuel Economy and Cost

Another outcome of the usage of AHSS in vehicles is the reduction of life-cycle GHG emissions with little impact on cost. A recent study by Dr. Roland Geyer, Ph.D. at the University of California-Santa Barbara developed a comprehensive model to evaluate GHG emissions related to automotive materials (Geyer 2008). The study methodology and model have been validated by an International Organization for Standardization (ISO) Critical Review Panel, consisting of representatives from universities, two U.S. automotive manufacturers, and the European Aluminum Research Institute. Adopting the restricted definition of "use-phase" GHG emissions, reducing the weight of the vehicle by going from conventional steel to AHSS reduces "use phase" GHG emissions. The "use phase" refers to the period of time from manufacturing completion until termination of its use as an automobile (Severstal 2009). Further reduction of GHG emissions in the "use-phase" may result from weight reduction with aluminium as shown in Figure 3.2.

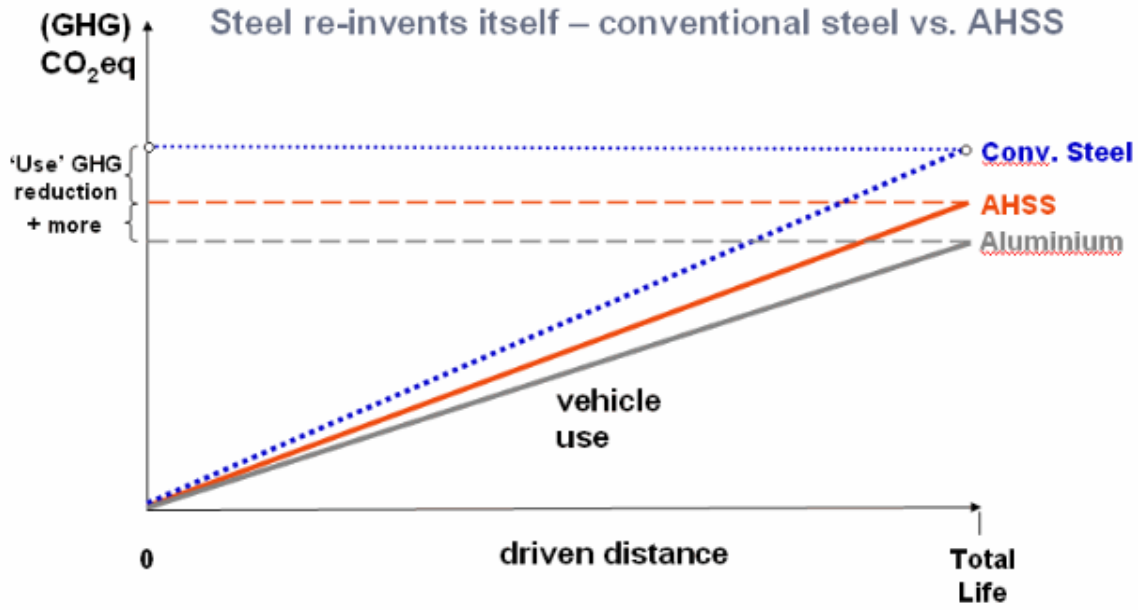


Figure 3.2 Effect of Materials Used in Vehicles on "Use-Phase" GHG Emissions.

While the scientific understanding of climate change continues to evolve, the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report has stated that warming of the Earth's climate is unequivocal, and that warming is very likely attributable to increases in atmospheric greenhouse gases caused by human activities (anthropogenic) (IPCC Fourth Assessment Report, Climate Change 2007: Synthesis Report (IPCC 2007)). The IPCC's Fourth Assessment Report indicates that changes in many physical and biological systems, such as increases in global temperatures, more frequent heat waves, rising sea levels, coastal flooding, loss of wildlife habitat, spread of infectious disease, and other potential environmental impacts are linked to changes in the climate system, and that some changes may be irreversible (IPCC 2007). The release of anthropogenic greenhouse gases and their potential contribution to global warming are inherently cumulative phenomena.

Greenhouse gas emissions from the Proposed Action (see Section 3.5; 11,819 tons annually during construction and 374,007 tons annually during operation) would be relatively small compared to the 8,026 million tons (7,282 million metric tonnes) of CO_2-equivalent greenhouse gases emitted in the U.S. in 2007 (Energy Information Administration, Report # DOE/EIA-0573 (2007)) and the 54 billion tons (49 billion metric tonnes) of CO_2-equivalent anthropogenic greenhouse gases emitted globally in 2004 (IPCC 2007). Notwithstanding the comparatively small contribution to total GHG, DOE recognizes that emissions from the Proposed Action, in combination with past and future emissions from all other sources, would contribute incrementally to the potential climate change impacts described above. However, at present there is no methodology that would allow DOE to estimate the specific impacts (if any) this increment of CO2-equivalentwould produce in the vicinity of the proposed project in southeast Michigan or elsewhere.

3.17.2 Local Cumulative Effects

As presented in the previous sections, there would be only negligible impacts or no impacts from the implementation of the Proposed Action on land use, visual resources, geology and seismicity, water resources, biological resources, cultural resources, environmental justice, environmental health and safety, waste management, utilities, and soils and prime farmland. These impacts would not contribute to cumulative impacts such that they warrant further analysis herein. However, the Proposed Action could incrementally contribute to cumulative impacts on air quality, noise, socioeconomic, and transportation, so these resources are discussed below.

The operation of the existing Ford facility adjacent to Severstal Dearborn has been incorporated as part of the affected environment throughout the analyses in this EA. The cumulative impact analysis presented below includes a review of the emissions associated with five permitted sources from the Ford complex in Dearborn (Ford Motor Company, Ford Motor Company Boiler House, Ford Motor Company Research and Development Center, Ford Motor Company Research and Engineering Center, and the Ford Motor Company Rouge Complex).

A review of the local past, present, and reasonably foreseeable future projects that could incrementally contribute to a cumulative impact on air quality, noise, socioeconomics, and transportation was conducted. The review for other local projects identified two such projects: the upgrade of the Marathon Oil Refinery located 0.4 miles southeast of Severstal Dearborn, and the addition of two storage tanks and racks (tanker truck filling facility) at the Waterfront Petroleum Terminal Company facility located 0.4 miles east of Severstal Dearborn.

In June 2008, Marathon Oil began construction on a heavy oil upgrade project at the refinery. The projected $2.2 billion investment will increase the refinery's capacity from approximately 106,000 barrels per day (bpd) to 115,000 bpd, adding more than 400,000 gallons per day of fuel to the marketplace. The project is scheduled for completion in the second half of 2012.

The Waterfront Petroleum Terminal Company is a full service fuel supply company serving Michigan and Illinois. The company is expanding one of its supply hubs to increase its storage capacity and distribution service.

3.17.2.1 Air Emissions

As presented in Section 3.4, air emissions from the proposed project are anticipated to result in an increase in PM, SO_2, VOC, NO_x, and CO from Severstal Dearborn. DOE reviewed the Michigan Department of Environmental Quality (MDEQ) Site Registry program to locate permitted air emission sources in Dearborn (including the Waterfront Petroleum project and all other permitted facilities in Dearborn) as well as for the Marathon Oil Refinery in Detroit. Using the MDEQ Air Emissions Reporting System (MDEQ 2009d), sources of air emissions were inventoried from 2003 to 2007. Table 3.12 provides the results of this analysis.

Currently, in Wayne County, all criteria pollutants levels are below the ambient air quality standards. The proposed project, other current projects, and other reasonably foreseeable future projects would be subject to the CAA air quality standards and permitting requirements.

Such requirements ensure that the Region continues to maintain air quality standards as new sources are incorporated into the air permitting program. Therefore, there would be negligible cumulative impacts on regional air quality.

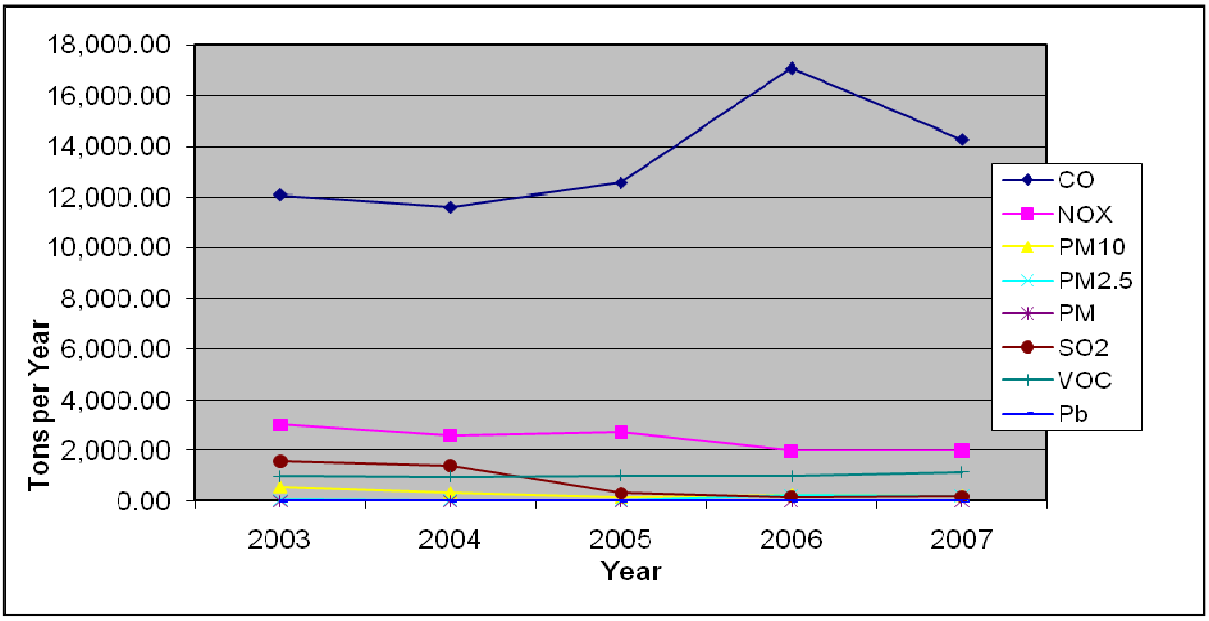
Table 3.12 – Criteria Pollution Emission Trends

Year	Permitted Sources	(tons) CO	(tons) NO_X	(tons) PM_{10}	(tons) $PM_{2.5}$*	(tons) SO_2	(tons) VOC	(tons) Pb
2003	15	12,089.43	3,007.75	551.59	42.85	1,585.15	983.53	0.00
2004	13	11,603.57	2,588.04	320.69	31.89	1,407.34	974.90	0.00
2005	16	12,551.75	2,708.71	129.22	26.42	313.82	1,019.96	0.00
2006	16	17,095.85	1,984.79	249.80	226.00	173.20	995.76	0.00
2007**	18	14,290.46	1,991.05	211.88	189.84	178.37	1,160.67	0.14

* EPA first established a standard for PM2.5 in 1997, and in 2006, EPA revised the standard (made the standard more stringent), which dramatically increased the reported emission rates.

** 2007 represents the most recent available data.

Source: MDEQ. 2010. Michigan Air Emissions Reporting System Annual Pollutant Totals Query. Accessed at: http://www.deq.state.mi.us/maers/emissions_query.asp



3.17.2.2 Noise

Because the construction activities at the Marathon Oil Refinery, the Waterfront Petroleum Terminal Company, and the Severstal Dearborn facility occur at existing facilities located in industrial areas, and are more than 1-mile away from one another, the additional temporary noise associated with the expansion construction activities would result in a negligible cumulative noise impact. The local noise associated with each project (up to 100 dBA) would naturally attenuate to noise levels consistent of urban areas (70 to 82 dBA) within a half-mile of the source (Engineering Page 2011).

3.17.2.3 Socioeconomic

The combination of the new temporary construction jobs of the Marathon Oil Refinery, the Waterfront Petroleum Terminal Company, and the Severstal Dearborn facility, as well as the new permanent jobs would result in a beneficial cumulative impact on the socioeconomic setting in the Detroit metropolitan area.

3.17.2.4 Transportation

There would be a small temporary adverse cumulative effect on traffic levels due to the overlapping construction periods of the Marathon Oil Refinery, the Waterfront Petroleum Terminal Company, and the Severstal Dearborn facility. However, due to the decline in the workforce in the Detroit metropolitan area (more than 2 percent over the past year), the temporary increase of construction related traffic would not be expected to exceed previous road levels of service in the Dearborn area. However, post construction, the permanent staff levels would be less than the temporary construction workers and no notable long-term cumulative impacts on transportation and level of service would be anticipated.

Section 4: List of Preparers

U.S. Department of Energy, Loan Guarantee Program Office

Angela Colamaria
NEPA Document Manager
U.S. Department of Energy
11 years of environmental experience

Todd Stribley
NEPA Compliance
IBM under contract with U.S. Department of Energy
18 years of environmental experience

Severstal Dearborn, Inc.

James Earl
Manager, Environmental Engineering
Severstal Dearborn, Inc.
21 years in the Steel Industry

Mark Blankenau, Ph.D.
Cold Mill Modernization Metallurgist
Severstal Dearborn, Inc.
14 years in the Steel Industry

William D. Wednieski
Director of Taxation
Severstal Dearborn, Inc.
3 years in the Steel Industry/13 years manufacturing and accounting

NTH Consultants, Ltd.

Roger Kalinowsky, P.E.
Sr. Vice President
NTH Consultants, Ltd.
31 years of experience

Bradley C. Venman
Sr. Vice President
NTH Consultants, Ltd.
30 years of environmental experience

Eric A. Welling, MSES, QEP
Sr. Project Professional
NTH Consultants, Ltd.
23 years of environmental experience

Steven L. Crider
Assistant Project Professional
NTH Consultants, Ltd.
10 years of environmental experience

Julia Guernsey
Staff Engineer
NTH Consultants, Ltd.
2 years of environmental experience

Section 5: List of Agencies Consulted

Southeast Michigan Council of Governments, Regional Review Office

U.S. Fish and Wildlife Service, Region 3

State of Michigan, Michigan State Housing Development Authority, State Historic Preservation Office

Hannahville Indian Community

Forest County Potawatomi Community

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Attachment I

U.S. Fish and Wildlife Service Evaluation

Endangered Species

Home

Section 7 Consultation

Section 7: A Brief Explanation

Section 7: Technical Assistance

Biological Assessment Guidance

Section 7 Consultation Handbook

S7 Consultation Technical Assistance

Decision Process for "No Effect" Determinations

Projects within a Develped Area - Step 5

Step 5. "No Effect" Determination and Documentation

Your project will have "no effect" on federally listed species. A "No Effect" determination is appropriate because your project is

- within a Developed Area (an area that is already paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping), and
- does not involve removing native vegetation.

Since it will not affect suitable habitat for listed species, no listed species or designated critical habitat is anticipated to be directly or indirectly affected by this action.

To document your section 7 review and "no effect" determination, we recommend that you print this page (go to File<Print Preview), fill-in the project name and date, attach your species list, and file in your administrative record.

Project Name: Severstal North America

Date: March 9, 2010

Back

Home "No Effect" Determination Process

Last updated: August 4, 2009

USFWS Ecological Services Field Offices in the Upper Midwest
Illinois | Chicago | Indiana | Iowa | Michigan | Minnesota | Missouri | Ohio | Wisconsin

USFWS Midwest Region Sites
Home | Ecological Services | Coastal Conservation | Endangered Species | Environmental Contaminants | Wind Energy | Ecological Services Field Offices

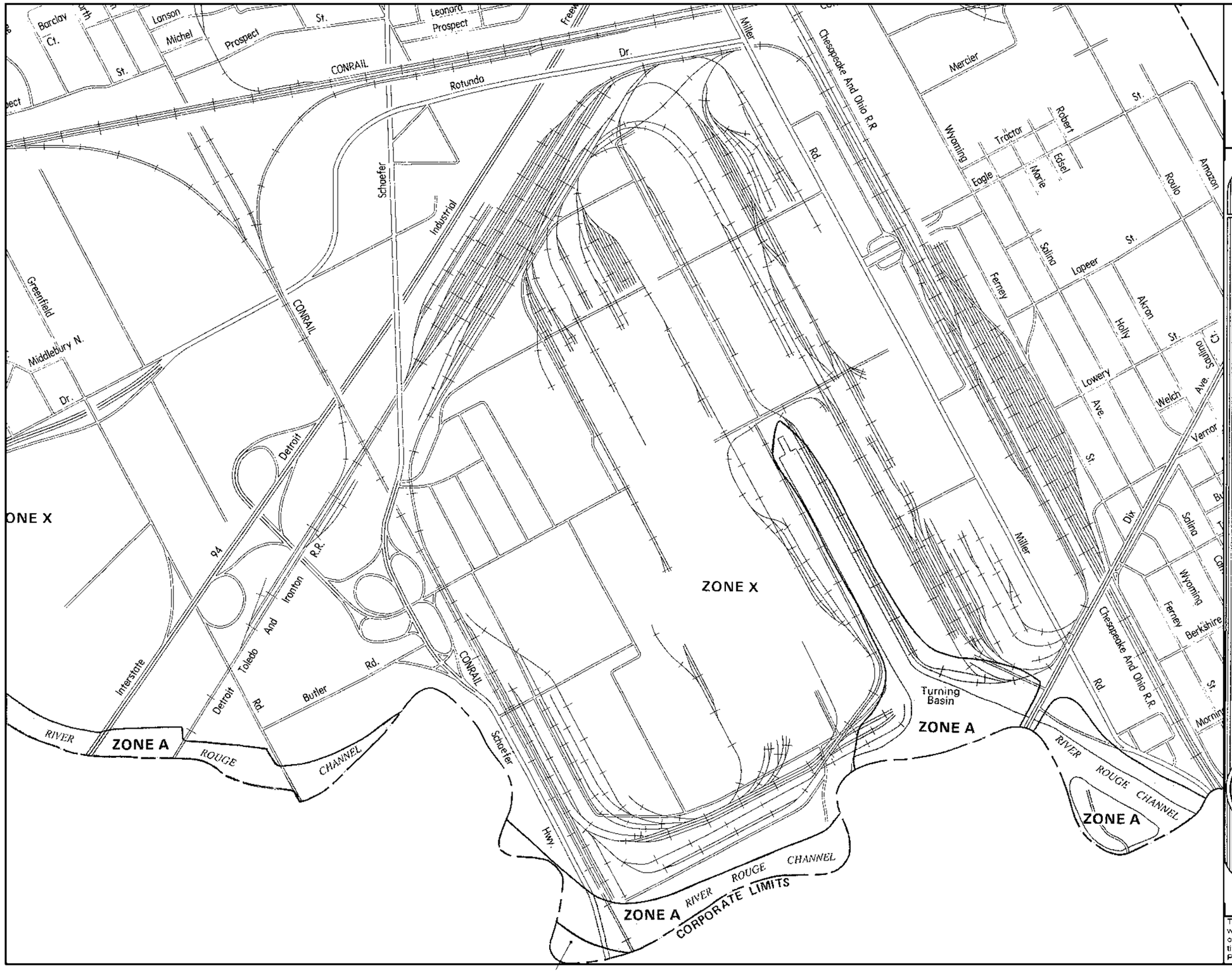
USFWS National Sites
Coastal Conservation | Endangered Species | Environmental Contaminants | Fisheries and Habitat Conservation

Attachment II

National Flood Insurance Program, Flood Insurance Rate Map

and

Wetland Map



APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

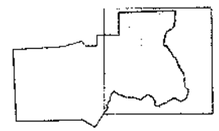
FIRM

FLOOD INSURANCE RATE MAP

CITY OF
DEARBORN,
MICHIGAN
WAYNE COUNTY

PANEL 10 OF 10

(SEE MAP INDEX FOR PANELS NOT PRINTED)



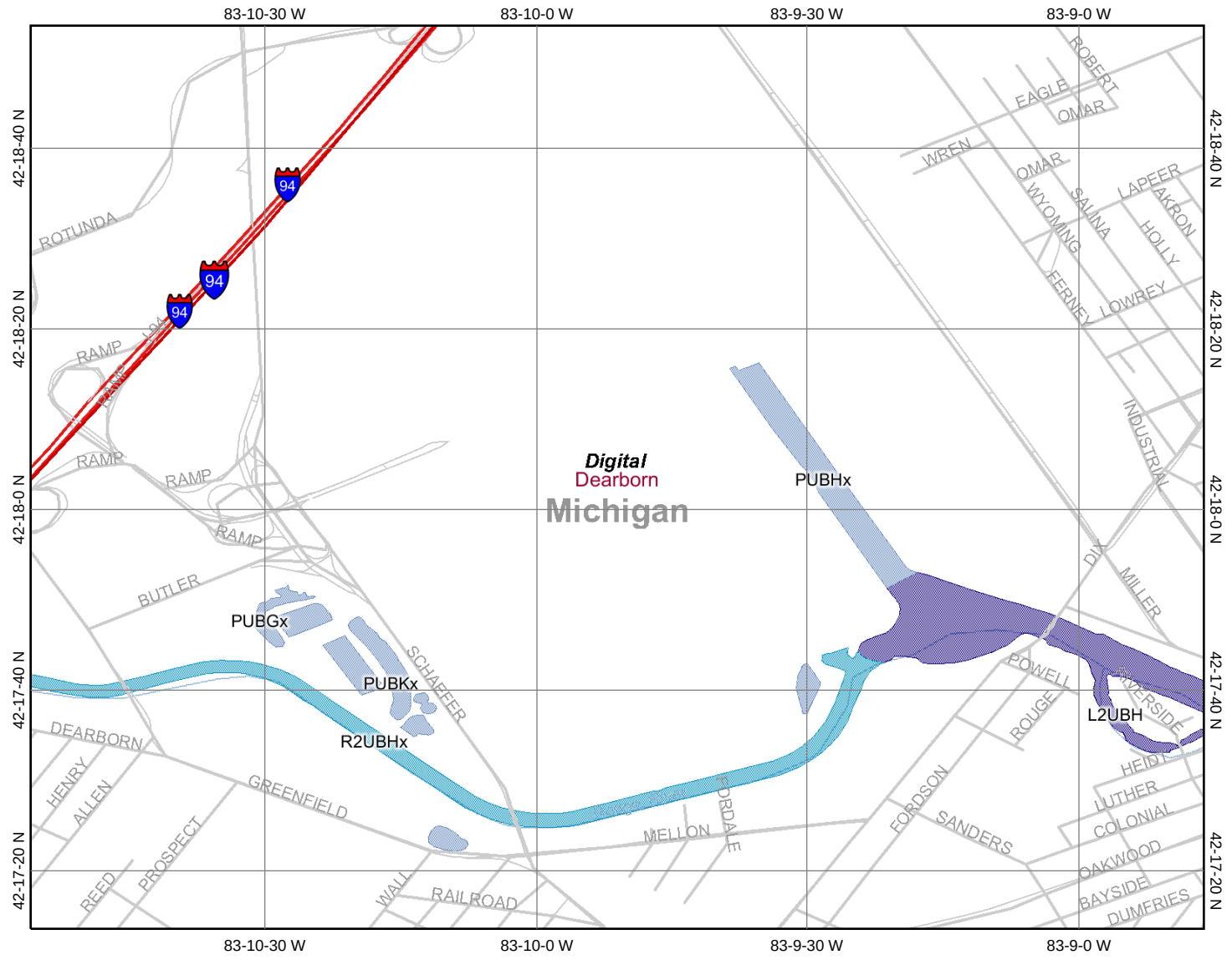
PANEL LOCATION

COMMUNITY-PANEL NUMBER
260220 0010 D

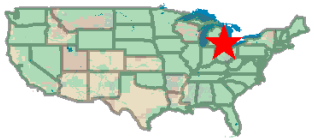
MAP REVISED:
MAY 6, 1996

Federal Emergency Management Agency

SNA



Map center: 42° 18' 4" N, 83° 9' 51" W



Legend

Ohio_wet_scan
- 0
- 1
- Out of range

Interstate
Major Roads
- Other Road
- Interstate
- State highway
- US highway

Roads
Cities
USGS Quad Index 24K
Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan

NHD Streams
Counties 100K
States 100K
South America
North America

Scale: 1:21,594

Attachment III

SHPO, Native American, and State Consultation

Department of Energy
Washington, DC 20585

July 19, 2010

State Historic Preservation Office
Environmental Review Office
Michigan Historical Center
702 W. Kalamazoo Street
P.O. Box 30740
Lansing, MI 48909-8240

Subject: Severstal North America (Severstal) Modernization Project

Dear Historic Preservation Office:

The U.S. Department of Energy (DOE) is proposing to issue Severstal a loan under the Advanced Technology Vehicle Manufacturing Incentive Program to support the planned construction of an advanced high-strength steel production facility in the State of Michigan. The Modernization Project consists of two phases: 1) expansion of the existing Dearborn facility; and 2) construction of a new continuous annealing line and associated infrastructure. Severstal is considering the following site options for the location for Phase II: the existing Dearborn property; Gibraltar, MI; Livonia, MI; and, Toledo, OH. DOE is submitting the enclosed "State Historic Preservation Office Application for Section 106 Review" forms and accompanying materials (for the Michigan locations) to comply with Section 106 of the National Historic Preservation Act. DOE requests State Historic Preservation Office concurrence with the findings reported in the forms for each of the possible Michigan locations.

Please address correspondence to me at the following address: U.S. Department of Energy, LP-20, 1000 Independence Ave., S.W., Washington, DC 20585. If email is more convenient for you, my email address is angela.colamaria@hq.doe.gov. You may also contact me by phone at 202-287-5387.

Sincerely,

Angela Colamaria
NEPA Document Manager
DOE Loan Programs Office

STATE HISTORIC PRESERVATION OFFICE
Application for Section 106 Review

SHPO Use Only					
☐ IN	Received Date ____ / ____ / ____		Log In Date ____ / ____ / ____		
☐ OUT	Response Date ____ / ____ / ____		Log Out Date ____ / ____ / ____		
	Sent Date ____ / ____ / ____				

Submit one copy for each project for which review is requested. This application is required. Please type. Applications must be complete for review to begin. Incomplete applications will be sent back to the applicant without comment. Send only the information and attachments requested on this application. Materials submitted for review cannot be returned. Due to limited resources we are unable to accept this application electronically.

I. GENERAL INFORMATION

☒ THIS IS A NEW SUBMITTAL ☐ THIS IS MORE INFORMATION RELATING TO ER#

a. Project Name: Severstal North America Dearborn, MI
b. Project Address (if available): 4001 Miller Road, Dearborn, Wayne County, Michigan
c. Municipal Unit: Dearborn County: Wayne
d. Federal Agency, Contact Name and Mailing Address (*If you do not know the federal agency involved in your project please contact the party requiring you to apply for Section 106 review, not the SHPO, for this information.*): Angela Colamaria U.S. Department of Energy, 1000 Independence Avenue., SW, Washington, DC 20585 202-287-5387
e. State Agency (if applicable), Contact Name and Mailing Address: Not Applicable
f. Consultant or Applicant Contact Information (if applicable) *including mailing address*: Steven Crider NTH Consultants, Ltd. 608 S. Washington Ave, Lansing, MI 48933 517-719-0396; William Wednieski Severstal North America, Inc. 14661 Rotunda Dr. Dearborn, MI 48120

II. GROUND DISTURBING ACTIVITY (INCLUDING EXCAVATION, GRADING, TREE REMOVALS, UTILITY INSTALLATION, ETC.)

DOES THIS PROJECT INVOLVE GROUND-DISTURBING ACTIVITY? ☒ YES ☐ NO (If no, proceed to section III.)

Exact project location must be submitted on a USGS Quad map (portions, photocopies of portions, and electronic USGS maps are acceptable as long as the location is clearly marked).

a. USGS Quad Map Name: Dearborn
b. Township: 2S Range: 10E Section: 23
c. Description of width, length and depth of proposed ground disturbing activity: The area where excavations will occur for machine and building foundations is 1640 feet by 480 feet and the approximate depth is 10 feet.
d. Previous land use and disturbances: The land was previously part of a steel mill and had buildings and a parking area
e. Current land use and conditions: Industrial Property, steel mill
f. Does the landowner know of any archaeological resources found on the property? ☐ YES ☒ NO
Please describe:

III. PROJECT WORK DESCRIPTION AND AREA OF POTENTIAL EFFECTS (APE)
Note: Every project has an APE.

a. Provide a detailed written description of the project (plans, specifications, Environmental Impact Statements (EIS), Environmental Assessments (EA), etc. **cannot** be substituted for the written description): Severstal North America plans to build a coupled Pickle Line Tandem Cold-rolling Mill and a Hot Dip Coating Line. These buildings are being built to replace a former pickling line, and cold-rolling mill. This project will consist of constructing 11 buildings and their assocated utilities
b. Provide a localized map indicating the location of the project; road names must be included and legible.
c. On the above-mentioned map, identify the APE.

d. Provide a written description of the APE (physical, visual, auditory, and sociocultural), the steps taken to identify the APE, and the justification for the boundaries chosen. The APE for this project is as follows: To the north Rotunda Drive, to the south the Rouge River, to the west Schafer Highway and to the east Miller Road. The project is located in the middle of the 1200 acre Ford Rouge Complex. Due to the presence of existing buildings and manufacturing processes the noise and visual impact of this project is limited. Additionally, the impact is limited by the reuse of an industrial area in the interior of Severstal's property. There will be little sociocultural impact because the land use, traffic patterns and public access will not change as result of this project.

IV. IDENTIFICATION OF HISTORIC PROPERTIES

a. List and date **all** properties 50 years of age or older located in the APE. If the property is located within a National Register eligible, listed or local district it is only necessary to identify the district:
Ford Rouge Complex

b. Describe the steps taken to identify whether or not any **historic** properties exist in the APE and include the level of effort made to carry out such steps:
NTH Consultants reviewed the 1950 Sanborn Fire Insurance maps to determine which buildings were present in 1950. NTH then drove through the area and looked to see if any additional structures within the APE should be added that were not the the Sanborn Maps. NTH determined that the historic buildings were located within the Ford Rouge Complex and that buildings outside of the complex within the APE were less then 50 years old.

c. Based on the information contained in "b", please choose one:
- ☒ Historic Properties Present in the APE
- ☐ No Historic Properties Present in the APE

d. Describe the condition, previous disturbance to, and history of any historic properties located in the APE:
The historic properties within the APE are part of the Ford Rouge Complex. The Ford Rouge Complex was the most fullly integrated car manufacturing facility in the world in the 1920's. Many of the buildings in the complex have changed overtime; however, the integrated nature of the complex remains intact.

V. PHOTOGRAPHS

Note: All photographs must be keyed to a localized map.

a. Provide photographs of the site itself.

b. Provide photographs of all properties 50 years of age or older located in the APE (faxed or photocopied photographs are not acceptable).

VI. DETERMINATION OF EFFECT

☐ No historic properties affected based on [36 CFR § 800.4(d)(1)], please provide the basis for this determination.

☒ No Adverse Effect [36 CFR § 800.5(b)] on historic properties, explain why the criteria of adverse effect, 36 CFR Part 800.5(a)(1), were found not applicable.

The new construction replaces obsolete buildings that did not have characteristics of significance to the Ford Rouge Complex's historic properties. The new construction will not alter any characteristics of the Ford Rouge Complex that affect its inclusion in the National Register of Historic Landmarks. The new construction and subsequent industrial operations are entirely consistent with past industrial activities on this portion of the property. Furthermore, the new buildings and industrial operations will not introduce adverse visual elements, air emissions, or unacceptable noise elements affecting the property's significant historic features. The construction project as part of the Ford Rouge Complex does not have qualities of religious or cultural significance to an Indian tribe.

☐ Adverse Effect [36 CFR § 800.5(d)(2)] on historic properties, explain why the criteria of adverse effect, [36 CFR Part 800.5(a)(1)], were found applicable.

Please print and mail completed form and required information to:

State Historic Preservation Office, Environmental Review Office, Michigan Historical Center, 702 W. Kalamazoo Street, P.O. Box 30740, Lansing, MI 48909-8240

JENNIFER GRANHOLM
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
LANSING

GARY HEIDEL
INTERIM EXECUTIVE DIRECTOR

August 4, 2010

ANGELA COLAMARIA
U S DEPARTMENT OF ENERGY
1000 INDEPENDENCE AVENUE SW
WASHINGTON DC 20585

RE: ER10-733 Severstal North America Dearborn Modernization Project, 4001 Miller Road, Section 23, T2S, R10E, Dearborn, Wayne County (DOE)

Dear Ms. Colamaria:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that the effects of the proposed undertaking do not meet the criteria of adverse effect [36 CFR § 800.5(a)(1)]. Therefore, the project will have **no adverse effect** [36 CFR § 800.5(b)] on the Ford River Rouge Complex, which is a National Historic Landmark.

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 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).

This letter evidences the DOE's compliance with 36 CFR § 800.4 "Identification of historic properties" and 36 CFR § 800.5 "Assessment of adverse effects", and the fulfillment of the DOE's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.5(c) "Consulting party review".

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 Brian Grennell, Cultural Resource Protection Specialist, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:JRH:BGG

copy: Steven Crider, NTH Consultants, LTD.

Department of Energy
Washington, DC 20585

August 19, 2010

Honorable Harold Frank
Chairman
Forest County Potawatomi Community
P.O. Box 340
Crandon, WI 54520

Subject: Severstal Dearborn, Inc., (Severstal) for an Advanced Technology Vehicles Manufacturing Project

Dear Chairman Frank:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for a Federal loan to Severstal for an Advanced Technology Vehicles Manufacturing Project (manufacturing advanced high strength steel) in Dearborn and potentially Livonia, Wayne County, Michigan. The Dearborn site is located at an existing steel manufacturing facility within the Ford Rouge industrial complex, and the Livonia site is located on vacant land that is part of the former General Motors, Livonia Plant, at 13000 Eckles Road. As part of this environmental review process, DOE is also conducting an historic resources review in compliance with Section 106 of the National Historic Preservation Act (NHPA).

Our records show that your Tribe has expressed an historical interest in Wayne County, Michigan. I am writing this letter to extend an opportunity to you to engage DOE in government to government consultation on the proposed Severstal project. Consideration of any comments or concerns you provide will help ensure that DOE complies with its NEPA and NHPA Section 106 responsibilities.

Severstal's Advanced Technology Vehicles Manufacturing Project would include modifications to some existing steel manufacturing processes, as well as new facilities to house new pickling lines, a new tandem cold roll mill, a new hot dip galvanizing line, a new continuous annealing line, and a quality control / metallurgy laboratory at the Dearborn, Michigan site. Activity that may occur at the Livonia site includes the development of a facility for a new continuous annealing line. The facility at the Livonia site would be an alternative to a new continuous annealing line at the Dearborn site.

The Dearborn and Livonia sites are developed industrial sites consisting of large buildings, paved and gravel parking areas, railroad lines, and roads interspersed with mowed lawns. Our review of the project has identified the Ford Rouge Complex at the Dearborn site on the list of National Historic Landmarks and the National Register of Historic Places, for its association

with Henry Ford and as one of the industrial wonders of the world, an integrated operations plant encompassing all basic steps in automobile production. No other historic or archeological resources, or sites of religious and cultural significance in the vicinity of the proposed project sites (Dearborn and Livonia) have been identified; however, we want to give you the opportunity to raise any issues or concerns you may have regarding each site. To assist you with your review we have enclosed a description of Severstal's proposed action and the forms submitted to the State Historic Preservation Office as part of the Application for Section 106 Review.

We would greatly appreciate receiving any comments or concerns you may have by September 17, 2010. Written comments can be provided by surface mail or email. Written comments can be sent to me at the following address: U.S. Department of Energy, 1000 Independence Ave., SW, LP-20, Washington, DC 20585. Or provide comments by email to angela.colamaria@hq.doe.gov. I can also be reached by telephone at 202-287-5387.

Respectfully,

Angi C

Angela Colamaria
NEPA Document Manager,
DOE Loan Guarantee Program

Enclosures

Description of Severstal's Proposed Project

Severstal currently produces cold rolled sheet steel using assets installed by the Steel Division of Ford Motor Company (a corporate predecessor). Three pickling lines are used to remove oxide scale from the hot rolled steel which is a raw material for cold rolled steel production. The pickled steel is then staged in inventory prior to being fed into a tandem cold rolling mill where the gauge (thickness) is reduced and a controlled surface finish is developed. The full-hard cold rolled steel will then follow one of three further processing paths that includes some form of annealing (heating and cooling) to develop desired physical and mechanical properties, and a galvanized coating may be added to protect against corrosion.

Of the three existing pickling lines, two were originally installed in 1936 and one in 1954. The tandem mill was originally installed in 1959. Maintenance and upgrade activities have taken place since they were originally installed, but the fundamental designs are outdated.

The general production of rolled steel is a multi-step process that takes raw material through the following phases:

1. Blast furnace
2. Basic oxygen furnace
3. Continuous caster
4. Hot strip mill (proposed modernization)
5. Pickling line and tandem cold-rolling mill (proposed modernization) – the output then can go to one of the three following processes
    a. Hot dip coating line (proposed modernization) [final product]
    b. Continuous annealing line (proposed modernization) [final product]
    c. Batch annealing and tempering [final product]

Severstal is proposing to modernize its manufacturing process by constructing new facilities to serve the modern automotive market and produce quality and cost competitive advanced high strength steels. Severstal has determined that new facilities using the best available technology and expanded capability should be built to better service its existing and emerging markets.

The proposed modernization is a multi-phase approach that includes the following phases:

1. Development of a new coupled pickling line and tandem cold-rolling mill (new infrastructure and equipment) at the Dearborn site
2. Modifications to the hot strip mill exit end (infrastructure modifications and new equipment) at the Dearborn site
3. Development of a new hot dip coating line (new infrastructure and equipment) at the Dearborn site
4. Development of a new continuous annealing line (new infrastructure and equipment) at either the Dearborn or Livonia site

In addition to the modernization of the production line, Severstal is proposing to continue its ongoing research and development to develop the next generation of advanced high strength steels. To support this effort, Severstal has proposed a new metallurgy laboratory at the Dearborn site.

Severstal has initiated portions of the project, but has requested a Federal loan pursuant to the Energy Independence and Security Act of 2007. Severstal intends to complete construction and start production by the end of calendar year 2011.

STATE HISTORIC PRESERVATION OFFICE
Application for Section 106 Review

SHPO Use Only			
☐ IN	Received Date ____ / ____ / ____	Log In Date ____ / ____ / ____	
☐ OUT	Response Date ____ / ____ / ____	Log Out Date ____ / ____ / ____	
	Sent Date ____ / ____ / ____		

Submit one copy for each project for which review is requested. This application is required. Please type. Applications must be complete for review to begin. Incomplete applications will be sent back to the applicant without comment. Send only the information and attachments requested on this application. Materials submitted for review cannot be returned. Due to limited resources we are unable to accept this application electronically.

I. GENERAL INFORMATION

☒ THIS IS A NEW SUBMITTAL ☐ THIS IS MORE INFORMATION RELATING TO ER#

a. Project Name: Severstal North America Dearborn, MI
b. Project Address (if available): 4001 Miller Road, Dearborn, Wayne County, Michigan
c. Municipal Unit: Dearborn County: Wayne
d. Federal Agency, Contact Name and Mailing Address (*If you do not know the federal agency involved in your project please contact the party requiring you to apply for Section 106 review, not the SHPO, for this information.*): Angela Colamaria U.S. Department of Energy, 1000 Independence Avenue., SW, Washington, DC 20585 202-287-5387
e. State Agency (if applicable), Contact Name and Mailing Address: Not Applicable
f. Consultant or Applicant Contact Information (If applicable) *Including mailing address*:
Steven Crider NTH Consultants, Ltd. 608 S. Washington Ave, Lansing, MI 48933 517-719-0396;
William Wednieski Severstal North America, Inc. 14661 Rotunda Dr. Dearborn, MI 48120

II. GROUND DISTURBING ACTIVITY (INCLUDING EXCAVATION, GRADING, TREE REMOVALS, UTILITY INSTALLATION, ETC.)

DOES THIS PROJECT INVOLVE GROUND-DISTURBING ACTIVITY? ☒ YES ☐ NO (If no, proceed to section III.)

Exact project location must be submitted on a USGS Quad map (portions, photocopies of portions, and electronic USGS maps are acceptable as long as the location is clearly marked).

a. USGS Quad Map Name: Dearborn
b. Township: 2S Range: 10E Section: 23
c. Description of width, length and depth of proposed ground disturbing activity: The area where excavations will occur for machine and building foundations is 1640 feet by 480 feet and the approximate depth is 10 feet.
d. Previous land use and disturbances: The land was previously part of a steel mill and had buildings and a parking area
e. Current land use and conditions: Industrial Property, steel mill
f. Does the landowner know of any archaeological resources found on the property? ☐ YES ☒ NO
Please describe:

III. PROJECT WORK DESCRIPTION AND AREA OF POTENTIAL EFFECTS (APE)
Note: Every project has an APE.

a. Provide a detailed written description of the project (plans, specifications, Environmental Impact Statements (EIS), Environmental Assessments (EA), etc. **cannot** be substituted for the written description):
Severstal North America plans to build a coupled Pickle Line Tandem Cold-rolling Mill and a Hot Dip Coating Line. These buildings are being built to replace a former pickling line, and cold-rolling mill. This project will consist of constructing 11 buildings and their assocated utilities
b. Provide a localized map indicating the location of the project; road names must be included and legible.
c. On the above-mentioned map, identify the APE.

d. Provide a written description of the APE (physical, visual, auditory, and sociocultural), the steps taken to identify the APE, and the justification for the boundaries chosen. The APE for this project is as follows: To the north Rotunda Drive, to the south the Rouge River, to the west Schafer Highway and to the east Miller Road. The project is located in the middle of the 1200 acre Ford Rouge Complex. Due to the presence of existing buildings and manufacturing processes the noise and visual impact of this project is limited. Additionally, the impact is limited by the reuse of an industrial area in the interior of Severstal's property. There will be little sociocultural impact because the land use, traffic patterns and public access will not change as result of this project.

IV. IDENTIFICATION OF HISTORIC PROPERTIES

a. List and date **all** properties 50 years of age or older located in the APE. If the property is located within a National Register eligible, listed or local district it is only necessary to identify the district:
Ford Rouge Complex
b. Describe the steps taken to identify whether or not any **historic** properties exist in the APE and include the level of effort made to carry out such steps:
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c. Based on the information contained in "b", please choose one:
☒ Historic Properties Present in the APE
☐ No Historic Properties Present in the APE
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The historic properties within the APE are part of the Ford Rouge Complex. The Ford Rouge Complex was the most fullly integrated car manufacturing facility in the world in the 1920's. Many of the buildings in the complex have changed overtime; however, the integrated nature of the complex remains intact.

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Note: All photographs must be keyed to a localized map.

a. Provide photographs of the site itself.
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VI. DETERMINATION OF EFFECT

☐ No historic properties affected based on [36 CFR § 800.4(d)(1)], please provide the basis for this determination.

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☐ Adverse Effect [36 CFR § 800.5(d)(2)] on historic properties, explain why the criteria of adverse effect, [36 CFR Part 800.5(a)(1)], were found applicable.

Please print and mail completed form and required information to:
State Historic Preservation Office, Environmental Review Office, Michigan Historical Center, 702 W. Kalamazoo Street, P.O. Box 30740, Lansing, MI 48909-8240

Department of Energy
Washington, DC 20585

August 19, 2010

Honorable Kenneth Meshigaud
Chairperson
Hannahville Indian Community
N14911 Hannahville B1 Road
Wilson, MI 49896-9728

Subject: Severstal Dearborn, Inc., (Severstal) for an Advanced Technology Vehicles Manufacturing Project

Dear Chairperson Meshigaud:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for a Federal loan to Severstal for an Advanced Technology Vehicles Manufacturing Project (manufacturing advanced high strength steel) in Dearborn and potentially Livonia, Wayne County, Michigan. The Dearborn site is located at an existing steel manufacturing facility within the Ford Rouge industrial complex, and the Livonia site is located on vacant land that is part of the former General Motors, Livonia Plant, at 13000 Eckles Road. As part of this environmental review process, DOE is also conducting an historic resources review in compliance with Section 106 of the National Historic Preservation Act (NHPA).

Our records show that your Tribe has expressed an historical interest in Wayne County, Michigan. I am writing this letter to extend an opportunity to you to engage DOE in government to government consultation on the proposed Severstal project. Consideration of any comments or concerns you provide will help ensure that DOE complies with its NEPA and NHPA Section 106 responsibilities.

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Respectfully,

Angela Colamaria
NEPA Document Manager,
DOE Loan Guarantee Program

Enclosures

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STATE HISTORIC PRESERVATION OFFICE
Application for Section 106 Review

SHPO Use Only
☐ IN Received Date ___ / ___ / ___ Log In Date ___ / ___ / ___
☐ OUT Response Date ___ / ___ / ___ Log Out Date ___ / ___ / ___
Sent Date ___ / ___ / ___

Submit one copy for each project for which review is requested. This application is required. Please type. Applications must be complete for review to begin. Incomplete applications will be sent back to the applicant without comment. Send only the information and attachments requested on this application. Materials submitted for review cannot be returned. Due to limited resources we are unable to accept this application electronically.

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e. State Agency (if applicable), Contact Name and Mailing Address: Not Applicable
f. Consultant or Applicant Contact Information (if applicable) *including mailing address*: Steven Crider NTH Consultants, Ltd. 608 S. Washington Ave, Lansing, MI 48933 517-719-0396; William Wednieski Severstal North America, Inc. 14661 Rotunda Dr. Dearborn, MI 48120

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V. PHOTOGRAPHS

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☐ Adverse Effect [36 CFR § 800.5(d)(2)] on historic properties, explain why the criteria of adverse effect, [36 CFR Part 800.5(a)(1)], were found applicable.

Please print and mail completed form and required information to:
State Historic Preservation Office, Environmental Review Office, Michigan Historical Center, 702 W. Kalamazoo Street, P.O. Box 30740, Lansing, MI 48909-8240

Department of Energy
Washington, DC 20585

June 29, 2010

Mr. William Parkus
Coordinator, Regional Review Office
Southeast Michigan Council of Governments
535 Griswold, Suite 300
Detroit, MI 48226

SUBJECT: Intent to Prepare an Environmental Assessment (EA) for a proposed Federal loan for Severstal Dearborn, Inc. (formerly Severstal North America, Inc.) (Severstal)

Dear Mr. Parkus:

Under Section 136 of the Energy Independence and Security Act of 2007, the U.S. Department of Energy (DOE) is evaluating whether or not to provide a loan to Severstal for the planned construction of an advanced high-strength steel (AHSS) production facility in Dearborn, Michigan, as well as one other location in Michigan or Ohio (the Modernization Project). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The Modernization Project consists of two phases: 1) expansion of the existing Dearborn facility through the construction of new building space and the renovation of existing facilities, which will house a new continuous pickle line and tandem cold-rolling mill, a new continuous hot-dip coating line, and associated infrastructure modifications and upgrades; and 2) construction of a new continuous annealing line and associated infrastructure. The Modernization Project will allow Severstal to produce AHSS that can be used throughout a vehicle. Phase I activities would occur on the existing Severstal Dearborn property in existing industrial areas or on previously disturbed soils. The location for Phase II has not yet been selected. However, Severstal is considering the following site options: the existing Dearborn property; Gibraltar, Michigan; Livonia, Michigan; and, Toledo, Ohio.

The purpose of and need for agency action is to comply with DOE's mandate under Section 136 of the Energy Independence and Security Act of 2007 to issue loans to eligible applicants that retrofit, expand, or create manufacturing facilities in the United States for advanced technology vehicles or qualifying components. The principal goal of the loan program is to provide meaningful improvements in fuel economy performance of advanced technology vehicles. DOE is using the NEPA process to assist in determining whether to issue a loan to Severstal to support the Modernization Project.

The DOE NEPA regulations provide for the notification of host states of NEPA determinations and for the opportunity for host states to review EAs prior to DOE approval. This process is

intended to improve coordination and to facilitate early and open communication. DOE will provide the draft EA to the host states of Michigan and Ohio, as well as the affected host cities, for review and comment.

If you or your staff would like to receive further information concerning this project or DOE's NEPA process for Federal energy loans, please contact Ms. Angela Colamaria at 202-287-5387 or email angela.colamaria@hq.doe.gov.

Sincerely,

Jonathan Silver
Executive Director, Office of Loan Programs

Cc: Mayor John B. O'Reilly, Jr.
Office of the Mayor
Dearborn City Hall
13615 Michigan Avenue
Dearborn, MI 48126

Mayor Jim Gorris
Office of the Mayor
City of Gibraltar
29450 Munroe Avenue
Gibraltar, MI 48173

Mr. Mark S. Taormina
Planning Director
33000 Civic Center Drive
Livonia, MI 48154

Department of Energy
Washington, DC 20585

Mr. William Parkus
Coordinator, Regional Review Office
Southeast Michigan Council of Governments
535 Griswold, Suite 300
Detroit, MI 48226

JAN 31 2011

SUBJECT: Notification of Draft Environmental Assessment Availability for a Loan to Severstal Dearborn, Inc., for Advanced Technology Vehicles Manufacturing Project in Dearborn, Michigan

Dear Mr. Parkus:

In a letter dated June 29, 2010, the U.S. Department of Energy (DOE) notified you of its intent to prepare an Environmental Assessment (EA) to assist DOE in evaluating whether or not to provide a loan to Severstal Dearborn, Inc., (Severstal) to design, manufacture, and construct facilities to produce advanced high strength steel (AHSS) for the automotive industry at Severstal's existing facility located at 4001 Miller Road, Dearborn, Michigan. The proposed federal loan would be made available through DOE's Advanced Technology Vehicle Manufacturing Incentive Program (ATVM Program) pursuant to Section 136 of the Energy Independence and Security Act of 2007 (EISA).

The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council of Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021). DOE has completed the enclosed draft EA for the proposed project and is sending it to you for your review.

The purpose and need for agency action is to comply with DOE's mandate under Section 136 of the EISA by selecting eligible projects that meet the goals of the Act. The principal goal of the ATVM Program is to provide meaningful improvements in fuel economy performance by establishing manufacturing facilities in the U.S. that produce advanced technology vehicles and components for such vehicles. Severstal is developing technology to produce AHSS (a component for such vehicles) that when incorporated into an automobile would reduce the weight, thereby improving fuel efficiency and reducing overall national emissions of air pollutants and human-caused greenhouse gases that would otherwise be produced.

DOE's NEPA implementing procedures provide host States the opportunity to review EAs prior to DOE approval; therefore, we are providing you with the enclosed draft EA. The draft EA is also available to the public on DOE's Loan Programs Office website at: http://lpo.energy.gov/?page_id=1502.

Please provide any comments on the enclosed draft EA by February 14, 2011. Email correspondence to Angela.Colamaria@hq.doe.gov is recommended and preferred. Written comments can also be sent via regular mail to the following address: Ms. Angela Colamaria, U.S. Department of Energy, 1000 Independence Ave., SW (LP-10), Washington, DC 20585. If comments are submitted via regular mail, please notify me via email when they are sent, as DOE's regular mail is screened for security purposes and requires additional time for processing. I can also be reached by telephone at 202-287-5387.

If you or any affected organization would like to receive additional information concerning DOE's NEPA process for the Severstal project, please feel free to contact me.

Sincerely,

Angela Colamaria
NEPA Document Manager
Loan Programs Office

Enclosure