DOE/EA-1861

DRAFT
ENVIRONMENTAL ASSESSMENT

FOR THE

THE FRITO-LAY BIOMASS BOILER PROJECT, BELOIT, WISCONSIN

U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Golden Field Office

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COVER SHEET

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

TITLE: *Draft Environmental Assessment for the Frito-Lay Biomass Boiler Project, Beloit, Wisconsin* (DOE/EA-1861)

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ABSTRACT: The U.S. Department of Energy (DOE) is proposing to authorize the expenditure of Federal grant funding to design, permit, and construct a biomass boilerhouse at the Frito-Lay North America (Frito-Lay) plant in Beloit, Wisconsin. DOE awarded the grant under the State Energy Program, but has not yet authorized the expenditure of grant funds on this proposed project. DOE prepared this EA to evaluate the potential environmental consequences of DOE's Proposed Action, which is to authorize the expenditure of Federal funding for Frito-Lay's proposed boilerhouse. DOE's Proposed Action would authorize $3 million in grant expenditures. The total cost of Frito-Lay's proposed project would be approximately $6 million.

Frito-Lay would construct and operate a new boilerhouse for a wood chip boiler and purchase wood fuel from regional suppliers (proposed project). The proposed project would reduce the amount of natural gas the plant burns to provide high-pressure steam for operations. The project would also reduce the amount of wood products disposed of at local landfills.

To prepare this EA, DOE notified potentially interested local, state, and Federal agencies—including the office of the Governor of Wisconsin and local stakeholders—of a 15-day scoping period and the availability of a scoping letter for this EA on its website. In addition, DOE sent consultation letters to the U.S. Fish and Wildlife Service and the Wisconsin State Historic Preservation Officer. DOE also solicited input from 13 American Indian tribes.

This EA analyzes the potential environmental impacts of the proposed construction, operation, and decommissioning of the proposed project and the alternative of not implementing this project (No-Action Alternative).

PUBLIC INVOLVEMENT: DOE invites comments on this Draft EA via e-mail, mail, or facsimile marked to the attention of the NEPA Document Manager listed above. Envelopes, subject line of e-mails, and facsimiles should be labeled "Frito-Lay Biomass Boiler Project Draft EA Comments." Letters should be postmarked no later than June 6, 2011.

AVAILABILITY: The Draft EA is available on the DOE Golden Field Office website at http://www.eere.energy.gov/golden/Reading_Room.aspx and the DOE NEPA website at http://nepa.energy.gov/environmental_assessments.htm.

ACRONYMS AND ABBREVIATIONS

APE	area of potential effect
Btu	British thermal unit
CEQ	Council on Environmental Quality
CFR	*Code of Federal Regulations*
dBA	A-weighted decibels
DOE	U.S. Department of Energy
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
FWS	U.S. Fish and Wildlife Service
NEPA	National Environmental Policy Act of 1969, as amended
PM_{10}	particulate matter with median aerodynamic diameter less than or equal to 10 micrometers
$PM_{2.5}$	particulate matter with median aerodynamic diameter less than or equal to 2.5 micrometers
SEP	State Energy Program
SHPO	State Historic Preservation Officer
Stat.	*United States Statutes at Large*
U.S.C.	*United States Code*

CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

Congress created the U.S. Department of Energy (DOE) State Energy Program (SEP) in 1996. As part of the American Recovery and Reinvestment Act of 2009 (Public Law 111-5, 123 Stat. 115; (Recovery Act), SEP provides for up to $3.1 billion in formula grants and technical assistance to states. States use their formula grants to develop strategies and goals to address their energy priorities. They issue competitive grant solicitations annually for the adoption of energy efficiency and renewable energy products and technologies based on available funding. The energy offices in each state and territory are a vital resource for delivering energy benefits, addressing national energy goals, and coordinating energy-related emergency preparedness across the nation.

The Wisconsin Office of Energy Independence received $55.5 million of SEP funding through the Recovery Act (DOE 2010). The Wisconsin Office of Energy Independence selected Frito-Lay North America, which operates a manufacturing plant in Beloit, Wisconsin, to receive $3 million in SEP funding. Figure 1-1 shows the location of Beloit.

Figure 1-1. General location of Beloit, Wisconsin.

Frito-Lay's proposed project is to construct a boilerhouse and purchase and operate a wood-fired high-pressure biomass boiler using SEP funding. The project would also include, at Frito-Lay's expense, installation of a high-pressure steam line from the boilerhouse to the plant and three process steam heat exchangers in the plant. The proposed project would result in a reduction of natural gas use at the site.

This reduction would lead in turn to a reduction in the plant's overall operating expenses, and thereby provide additional opportunity to be more cost-competitive.

Federal funding of projects under SEP requires compliance with the National Environmental Policy Act of 1969, as amended (NEPA; 42 U.S.C. 4321 et seq.), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500 to 1508), and DOE NEPA implementing procedures (10 CFR Part 1021). Therefore, DOE has issued this *Draft Environmental Assessment for the Frito-Lay Biomass Boiler Project, Beloit, Wisconsin* (EA) (DOE/EA-1861). The purpose of this EA is to evaluate potential environmental consequences of DOE's Proposed Action, the Laboratory's proposed project, and the No-Action Alternative (Chapter 2). DOE's Proposed Action would authorize a total of $3 million in grant expenditures by Frito-Lay for the proposed project. The total cost of the proposed project would be about $6 million.

This chapter explains NEPA requirements (Section 1.1), DOE's purpose and need for action (Section 1.2), and the public involvement process and consultations with other agencies (Section 1.3). Chapter 2 discusses DOE's Proposed Action, the applicant's proposed project, and the No-Action Alternative. Chapter 3 discusses the environmental resource areas DOE did not carry forward to detailed analysis, the affected environment, and potential environmental consequences of the proposed project and the No-Action Alternative. Chapter 4 discusses cumulative impacts. Appendix A contains copies of the DOE scoping letter and consultation letters with other agencies.

1.1 National Environmental Policy Act Requirements

In accordance with its NEPA implementing procedures, DOE must evaluate the potential environmental impacts of its Proposed Action that could have a significant impact on human health and the environment, including decisions on whether to provide financial assistance to government agencies and private entities. In compliance with these regulations and DOE procedures, this EA:

- Examines the potential direct and indirect environmental impacts of the Proposed Action and the No-Action Alternative,
- Discusses the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity,
- Identifies unavoidable adverse environmental impacts if DOE implemented the Proposed Action,
- Characterizes irreversible and irretrievable commitments of resources that would be involved if DOE approved the Proposed Action, and
- Analyzes past, present, and reasonably foreseeable actions to evaluate potential cumulative impacts.

DOE must meet the requirements of NEPA before it can make a final decision to proceed with a proposed Federal action that could cause significant impacts to human health or the environment. This EA provides DOE and other decisionmakers the information necessary to make an informed decision about the construction and operation of the proposed project at the Frito-Lay plant. If DOE determines as a result of this EA that the project would not result in significant adverse impacts, it will issue a Finding of No Significant Impact. If DOE concludes that its Proposed Action would cause actions that would significantly and adversely affect the quality of the human environment, it would announce its intent to prepare an environmental impact statement to examine the proposed project in more detail.

For purposes of comparison, this EA evaluates the impacts that could occur if DOE did not provide funding (the No-Action Alternative), under which DOE assumes Frito-Lay would not proceed with the project. The EA does not analyze other action alternatives.

1.2 Purpose and Need of DOE's Proposed Action

The purpose of DOE's Proposed Action is to support the mission of SEP established by Congress and implemented by DOE to reduce energy use and emissions at the local and regional level. Providing funding as part of SEP would partially satisfy the need of that program to assist U.S. cities, counties, states, territories, and American Indian tribes to develop, promote, implement, and manage energy efficiency and conservation projects and programs designed to:

- Reduce fossil fuel emissions;
- Reduce the total energy use of the eligible entities; and
- Improve energy efficiency in the transportation, building, and other appropriate sectors.

SEP received funding through the Recovery Act. Congress enacted that law in part to create jobs, restore economic growth, and strengthen America's middle class through measures that modernize the nation's infrastructure, enhance America's energy independence, expand educational opportunities, preserve and improve affordable health care, provide tax relief, and protect those in greatest need. Provision of funds under SEP would partially satisfy the needs identified under the Recovery Act.

1.3 Public Involvement and Consultations

Public Scoping

In accordance with applicable regulations and policies, DOE notified potentially interested local, state, and Federal agencies—including the office of the Governor of Wisconsin and local stakeholders—of the availability of the scoping letter for this EA. DOE published the scoping letter on its Golden Field Office Public Reading Room website at http://www.eere.energy.gov/golden/Reading_Room.aspx. DOE also publicized the availability of the scoping letter in the *Beloit Times* on March 12, 14, and 15. Through the scoping process, DOE solicited input on the range and scope of issues it should consider in this EA. The scoping period ended on April 5, 2011.

DOE received one response to the scoping letter. In a March 25, 2011, letter, Andrew Janke, the Director of Economic Development for the City of Beloit, expressed support for the project. Appendix A contains a copy of the letter.

Consultations

DOE sent a consultation letter on March 8, 2011, to the Wisconsin State Historic Preservation Officer (SHPO) to request information about historic properties and comments on the proposed project. The SHPO responded on April 6 and concurred with DOE's determination that there are no archeological or architectural properties in the area of potential effect of the proposed undertaking that are listed in the *National Register of Historic Places* and that the SHPO is not aware of any properties in the area that are eligible for listing.

DOE sent a letter on March 8 to the U.S. Fish and Wildlife Service (FWS) to request confirmation that the proposed project would not affect species protected by Federal law (see Table 3-1). The FWS responded on April 19 and indicated no Federally listed, proposed, or candidate species would be

expected within the project area due to the location. Therefore, DOE concluded there would be no effect on such species.

In addition, DOE sent letters on March 8 to the following American Indian tribes with potential interests in the area to inform them of the project and request comments: Potawatomi Nation of Oklahoma, Flandreau Santee Sioux Tribe of South Dakota, Lower Sioux Indian Community of Minnesota, Forest County Potawatomi Community of Wisconsin, Hannahville Indian Community, Ho-Chunk Nation, Prairie Band of Potawatomi Nation of Kansas, Prairie Island Indian Community of Minnesota, Santee Sioux Nation of Nebraska, Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, Spirit Lake Tribe, Upper Sioux Community of Minnesota, and the Winnebago Tribe of Nebraska.

Appendix A contains copies of these letters.

2. DOE PROPOSED ACTION AND ALTERNATIVES

This chapter describes DOE's Proposed Action (Section 2.1), Frito-Lay's proposed project (Section 2.2), its purpose and need (Section 2.3), and the No-Action Alternative (Section 2.4).

2.1 DOE's Proposed Action

The Recovery Act provided for up to $55.5 million in SEP grant funding to the Wisconsin Office of Energy Independence, which selected the Beloit Frito-Lay plant to receive $3 million of SEP funding to construct a biomass boilerhouse. Under the Proposed Action, DOE would authorize the expenditure of Federal funding to construct a boilerhouse and support the purchase of equipment for a dry biomass-fired steam plant, which would consist of a fuel feed system, biomass fuel gasifier, combustor, electrostatic precipitator, and heat recovery system. This project would be on Frito-Lay property next to the existing plant at the Beloit Industrial Park in eastern Beloit, Wisconsin (Figure 2-1). This project would save about 37.2 million British thermal units (Btu) of natural gas per hour (325 billion Btu per year) at maximum capacity including future addition of more manufacturing lines.

Figure 2-1. Location of proposed project.

Funding of the proposed project would be consistent with DOE SEP goals under the objectives of the Recovery Act and would partially satisfy the need to promote economic growth with improved environmental quality, as discussed in Section 1.2.

2.2 Frito-Lay's Proposed Project

Frito-Lay's proposed project is to construct a boilerhouse and purchase and operate a wood-fired high-pressure biomass boiler (with a maximum heat output of about 34 million Btu per hour) using SEP funding at the Frito-Lay manufacturing plant in Beloit, Rock County, Wisconsin. The project would also include, at Frito-Lay's expense, installation of a high-pressure steam line from the boilerhouse to the plant and three process steam heat exchangers in the plant. The Frito-Lay plant is a full-service manufacturing and distribution center that primarily serves the region from Chicago, Illinois, to Minneapolis-St. Paul, Minnesota, and parts of Iowa. The proposed project would convert the plant to a high-pressure steam platform and create the ability to use steam heat exchangers on three corn-processing lines rather than the existing system of two gas-fired boilers and three gas-fired process heat exchangers. The project would result in a reduction in natural gas use at the plant and have a total cost of about $6 million.

The plant currently uses natural gas to fire two existing boilers to generate steam and to fire the existing heat exchangers. The biomass boiler has the capacity to create 25,000 pounds per hour of steam, using a maximum of 33 million Btu per hour of fuel, through the use of renewable biomass in the form of wood chips from used shipping pallets. This project would save about 37.2 million Btu of natural gas per hour (325 billion Btu per year) at maximum capacity with the assumption of additional manufacturing lines.

The boiler would consume about 6,300 pounds of wood chips per hour with an annual fuel requirement of approximately 27,000 tons. A local shipping pallet recycler about 3 miles from the Frito-Lay plant would supply the wood chips in three or four truck shipments a day Monday through Friday between the hours of 6 a.m. and 6 p.m. Trucks would enter the site through the Cranston Road entrance. At present, there is a lack of biomass facilities to handle the majority of wood waste generated in the Beloit area. Most wood waste that could be used for biomass energy generation is now disposed of in landfills.

To reduce particulate matter emissions, Frito-Lay would install an electrostatic precipitator to remove particles from the exhaust gas. The precipitator would be between the boiler and the stack.

2.2.1 Project Site and Components

The proposed project site is a 5-acre plot of managed grassland along Cranston Road near Interstate Highway 39/90 next to the Beloit Industrial Park in eastern Beloit (Figure 2-2). The site location, which was farmland but is now zoned industrial, is across the railroad tracks about 350 feet south of the existing 550,000-square-foot Frito-Lay plant. Frito-Lay purchased the land in 1995 from Wallace Farms. No farming occurs on the land.

Frito-Lay has not yet determined the exact location for the new boiler within the 5-acre plot, but Figure 2-3 shows an example layout of the proposed project. The boilerhouse would be a 60- by 62-foot (3,700-square-foot) prefabricated steel building with a 70-foot chimneystack for venting exhaust gases. The project would include a covered wood chip storage area of about 38 by 60 feet. Construction for the proposed project would include paved access, parking and loading zones, and installation of a high-pressure steam pipe above or underneath the railroad tracks to carry the steam to the existing plant. Figure 2-4 is a schematic of the boilerhouse.

Figure 2-2. Aerial photograph of proposed project site looking southeast.

Source: ©2011 Google - Imagery ©2011 DigitalGlobe, USDA Farm Service Agency, GeoEye, U.S. Geological Survey.

Figure 2-3. Example project layout.

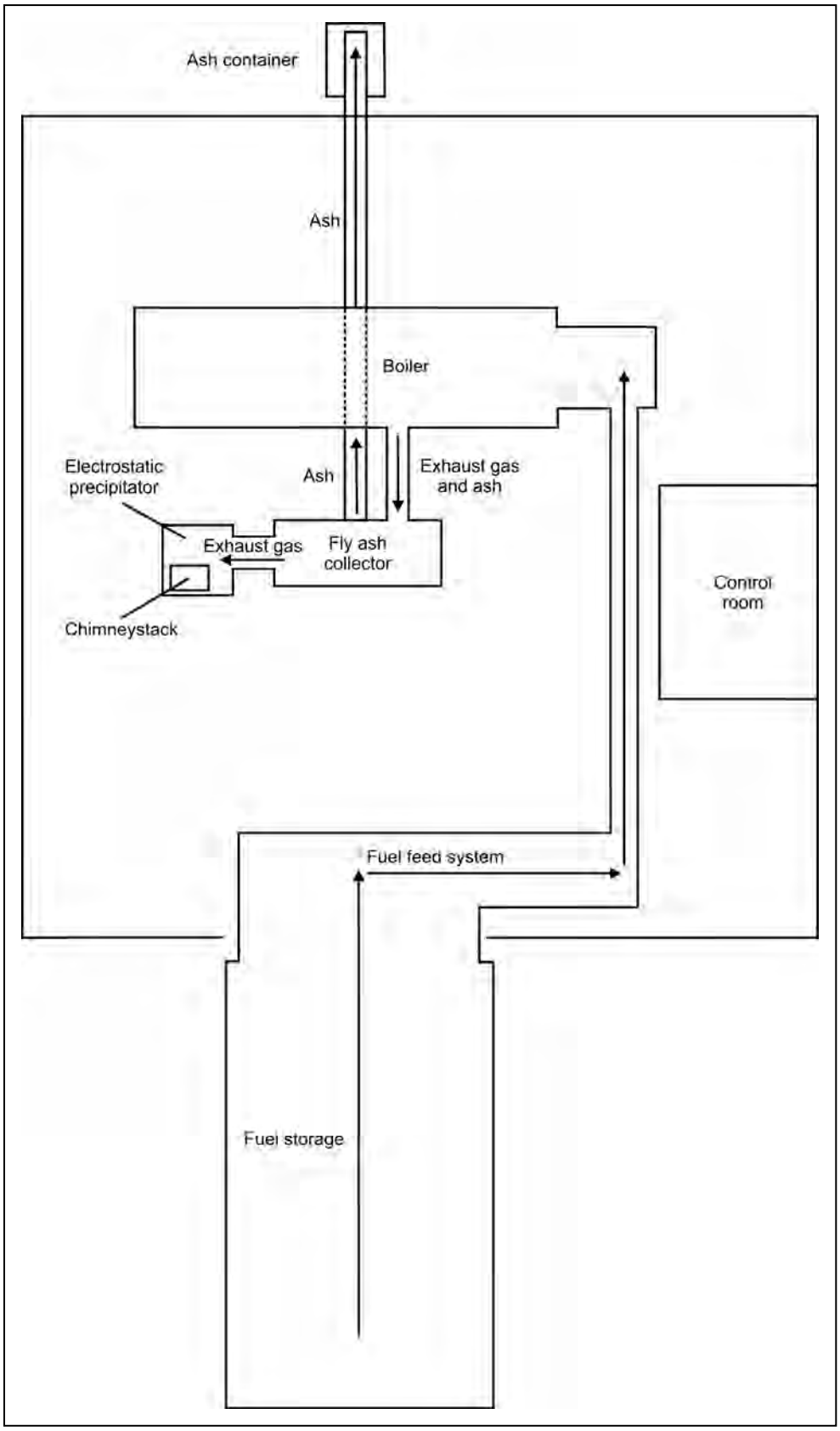

Figure 2-4. Schematic of proposed boilerhouse.

Typical maintenance activities would include:

- Emptying wood ash collection containers;
- Monitoring control devices to check combustion temperature, stack temperature, fuel consumption, and boiler operation;
- Checking boiler settings and alarms, such as those that alert to a problem with soot buildup;
- Greasing augers, gearboxes, and other moving parts; and
- Checking for wear on conveyors, augers, motors, or gearboxes.

In addition to the potential impacts of construction and operation of the boilerhouse, this EA evaluates the potential noise and transportation impacts from delivery of wood chips from a local wood pallet recycler and the construction of the high-pressure steam line to the existing facility. The travel distance between the Frito-Lay plant and the recycling facility is about 3 miles.

2.2.2 Mitigation Measures and Best Management Practices

Frito-Lay has committed to certain mitigation measures and best management practices to avoid or minimize the potential for impacts from construction and operation:

- The plant would use best management practices to control erosion and sedimentation. The company would prepare and implement a Stormwater Pollution Prevention Plan. The plan would address National Pollutant Discharge Elimination System requirements.
- The construction contractor and Frito-Lay would prepare a health and safety plan in compliance with Occupation Safety and Health Administration requirements before commencing work.
- All construction activities would occur during normal working hours to avoid noise and other disturbances to surrounding residences.
- Any waste, including used lubricants, from construction, operations, and decommissioning at the existing boiler would be handled, collected, transferred, and reused or recycled in accordance with applicable Federal, state, and local regulations.
- Fuel deliveries would occur during normal working hours under normal circumstances to avoid noise and other disturbances to surrounding residences. There could be emergency deliveries during nighttime hours, but Frito-Lay expects these would be infrequent.
- The plant would continue to comply with all applicable air quality standards.

2.3 Purpose and Need of Proposed Project

The purpose of the proposed project would be to facilitate use of renewable energy resources (wood chips) to provide the Beloit Frito-Lay plant a new source for most of its steam requirements.

The plant currently uses natural gas to fire two boilers and three process heat exchangers. The biomass boiler would have the capacity to create 25,000 pounds per hour of steam through renewable biomass and save 37.2 million Btu of natural gas per hour (325 billion Btu per year) at maximum capacity with additional manufacturing lines. The boiler would consume about 6,300 pounds of wood chips per hour.

A local pallet recycler about 3 miles from the Frito-Lay plant would provide the wood chips. Section 3.2.2.2 provides additional information about the pallet recycler.

2.4 No-Action Alternative

Under the No-Action Alternative, DOE would not authorize use of SEP funds for the construction and operation of the proposed project. As a result, Frito-Lay could delay the proposed project as it sought other funding sources or abandon the project if it could not obtain other funding. As a result, DOE's ability to achieve its objectives under SEP and the Recovery Act would be impaired.

Although Frito-Lay might proceed with the project if DOE did not authorize continued expenditures, DOE assumed for the No-Action Alternative analyses in this EA that the proposed project would not proceed. This approach provides a basis of comparison for the potential impacts of the proposed project. If the company did proceed without DOE's financial assistance, and assuming the scope of the project remained the same, the potential impacts would be essentially identical to those this EA identifies.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter of the EA describes the affected environment in terms of environmental, social, cultural, and economic conditions in the project area as well as the potential impacts to these resources that could result from implementation of the proposed project and from the No-Action Alternative. The proposed project site is a 5-acre plot that is currently grassland along Cranston Road near Interstate Highway 39/90 next to the Beloit Industrial Park in eastern Beloit in Rock County, Wisconsin. The site, which used to be farmland but is now zoned industrial, is about 350 feet south of the existing 550,000-square-foot plant.

This chapter of the EA examines the potential environmental impacts of the proposed project and of the No-Action Alternative for the following environmental resource areas: geology and soils; land use; water resources; biological resources; waste and hazardous materials; utilities, energy, and materials; occupational health and safety; air quality; transportation; noise; socioeconomics; environmental justice; aesthetics and visual resources; and historic and cultural resources.

3.1 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, DOE would not authorize Frito-Lay to expend Federal funding for the proposed project. As a result, the project could be delayed until the company could identify other funding sources. The project could also be abandoned if other funding sources could not be obtained. If the project was abandoned, reductions in fossil fuel use would not occur and DOE's ability to achieve its objectives for renewable energy would be impaired. In addition, the positive benefits of the infusion of $6 million into the state and local economies (with a final earnings effect of about $9.2 million), the cost savings to Frito-Lay, and the preservation of jobs in the region would not occur. Further, the small, positive benefit from the recycling of locally available wooden pallets would also not occur.

If the project did proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's Proposed Action (that is, providing assistance that allows the project to proceed). To allow a comparison between the potential impacts of a project as implemented and the impacts of not proceeding with a project, DOE assumes that, if it decided to withhold assistance from this project, final design and construction of Frito-Lay's proposed project would not proceed.

3.2 Frito-Lay's Proposed Project

The proposed project would potentially affect the environmental resources near the project site and in the region. The following sections describe each resource area and discuss potential impacts.

3.2.1 Considerations Not Carried Forward for Further Analysis

In an effort to focus the analyses on resource categories commensurate with their importance in relation to the proposed project, DOE limited the evaluations of these resource areas. This sliding-scale approach is consistent with NEPA [40 CFR 1502.2(b)], under which impacts, issues, and related regulatory requirements are investigated and addressed with a degree of effort commensurate with their importance. DOE concluded that the proposed project would result in no, minimal, or temporary impacts to the resource areas in Table 3-1 and did not carry those resource areas forward for detailed description and analysis.

Table 3-1. Environmental resource areas with no, minimal, or temporary impacts.

Environmental resource area	Impact consideration and conclusion
Geology and soils	The proposed project would require clearing and grading to prepare for foundation construction, drainage control, and paving activities, but this would not result in major changes to the topography of the site. There are no known active fault zones in southern Wisconsin. According to the U.S. Geological Survey National Seismic Hazard Map (USGS 2009), the proposed project location has a 2-percent probability over 50 years of having an earthquake whose peak acceleration (force) exceeds 4 to 6 percent of the force of gravity. This is considered to be a low potential for an earthquake hazard. The soil on the site consists primarily of plano silt loam, gravelly substratum, with 0 to 2 percent slopes (NRCS 2011). The U.S. Department of Agriculture normally designates this type of soil as prime farmland, but the land has not been farmed in more than 15 years, is no longer zoned as agricultural, and there are no active farms in the vicinity of the project site. The site is already committed to urban development and is not considered prime farmland. Therefore, DOE concluded that, given the committed erosion control measures, there would be minimal impacts to soils.
Land use	The proposed project site is a 5-acre plot of managed grassland along Cranston Road near Interstate Highway 39/90 in eastern Beloit. The site, which used to be farmland but is now zoned industrial, is about 350 feet south of the existing 550,000-square-foot plant. Frito-Lay purchased the land in 1995 from Wallace Farms. No farming currently takes place on or near the site. The proposed project would be consistent with land use in the immediate vicinity of the project. The site is currently zoned for general manufacturing and would not result in land use changes outside the site boundary. Therefore, DOE concluded that there would no impact to land use.
Water resources	Based on a review of soil maps (NRCS 2011), aerial photos, and the online National Wetlands Inventory map (FWS 2011), there are no wetlands on the project site. Springbrook Creek flows along the southeastern side of the Frito-Lay property, but construction for the proposed project would not take place near the creek. The site is not within either a 100- or 500-year flood zone as determined by the Federal Emergency Management Agency (City of Beloit 2008). Therefore, the proposed project would not affect a floodplain, and Frito-Lay would not require a Flood Hazard Development Permit. The water to support construction activities and operations would come from the City of Beloit municipal water supply, which consists of eight groundwater wells. Frito-Lay would use some water for construction activities including, if necessary, watering of exposed soils to control erosion, but this use would be temporary. Because the proposed boiler would replace an existing boiler, there would be no or negligible increase in water use during operations. Therefore, there would be no impacts to the regional groundwater supply. Frito-Lay would manage hazardous or toxic wastes for the project, such as lubricating oil, in accordance with applicable regulations including spill prevention and mitigation measures. Therefore, DOE determined there would be no impacts to groundwater quality. There are no sole-source aquifers, as classified by the U.S. Environmental Protection Agency (EPA) (EPA 2011). In addition, there are no impaired waters near the facility under Section 303(d) of the Clean Water Act of 1977 (33 U.S.C. 1251 et seq.) (WDNR 2011). The proposed project would include more than 6,000 square feet of impervious surface area and more than 1 acre of disturbed area. The facility would use best management practices to control storm water as shown in a site-specific Stormwater Erosion and Sedimentation

Table 3-1. Environmental resource areas with no, minimal, or temporary impacts (continued).

Environmental resource area	Impact consideration and conclusion
Water resources (continued)	Control Plan that includes temporary erosion control measures to be taken during construction and permanent features to be installed. The City of Beloit regulates construction storm water through Section 8.9 of Article VIII of the Zoning Code, which requires the use of best management practices and provides for periodic inspections by the city building inspector. The City of Beloit and the Turtle Creek Watershed District would provide oversight to ensure that storm water leaving the site would not cause adverse impacts to surface water or the adjacent properties. Therefore, DOE concluded the proposed project would not affect wetlands and other surface waters, groundwater, or floodplains.
Biological resources	All site preparation and construction activities would occur in a developed industrial area with no natural, undisturbed areas and little landscaping. The site is former farmland with vegetation consisting only of managed grass and some shrubs. The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) provides for conservation of ecosystems on which threatened and endangered species of wildlife and plants depend. The Act prohibits unauthorized taking, possession, sale, and transport of endangered species. Section 7 of the Act requires Federal agencies to ensure actions authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of listed species or modify critical habitats for those species. The FWS lists four Federal species of concern in Rock County: whooping crane (*Grus americana*), prairie bush-clover (*Lespedeza leptostachya*), eastern prairie fringed orchid (*Platantherea leucophaea*), and eastern Massassauga rattlesnake (*Sistrurus catenatus catenatus*). The FWS lists the local whooping crane population as a nonessential experimental population, the prairie bush-clover and the eastern prairie fringed orchid as endangered species, and the eastern Massassauga rattlesnake as a candidate species. Site preparation could result in some wildlife deaths and temporary relocation of wildlife due to construction activity and noise. The bald eagle is protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and, under certain circumstances, the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.). There are no known bald eagle nests in the immediate vicinity. Therefore, the proposed project complies with the FWS-suggested buffer zone of 330 feet to avoid disturbance of bald eagle nests (FWS 2007). DOE concluded that the proposed project would not affect any Federally listed or candidate species or critical habitat and would have minimal or no impact on other biological resources. DOE sent a letter to the FWS on March 8, 2011, to request confirmation that this proposed project would not affect species protected by Federal law. The FWS responded on April 19 and indicated no Federally listed, proposed, or candidate species would be expected within the project area due to the location. Therefore, DOE concluded there would be no effect on such species. Appendix A contains copies of these letters.
Waste and hazardous materials	There is a lack of biomass facilities to handle the majority of wood waste from the Beloit area. Most wood waste that could be used for biomass energy generation is disposed of in landfills. Operation of the proposed project would generate solid waste mainly in the form of wood ash. The burning wood chips would create ash at an estimated rate of 93 tons per year. This ash would be collected in roll-off container dumpsters at the site and hauled off the site about once a week. The facility would transport the ash to an approved landfill.

Table 3-1. Environmental resource areas with no, minimal, or temporary impacts (continued).

Environmental resource area	Impact consideration and conclusion
Waste and hazardous materials (continued)	The facility is a Conditionally Exempt Very Small Quantity Generator under the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 et seq.) (Arrowood 2011a). The proposed project would not require amendment of its existing licenses. Frito-Lay would manage hazardous or toxic wastes for the project, such as lubricating oil, in accordance with applicable regulations including spill prevention and mitigation measures.
Utilities, energy, and materials	The proposed project would not require increases in utility services. The plant obtains water from municipal sources, and the amount of water for the new wood-fired boiler would be the same as for the existing boilers. Therefore, there would be no net increase in water use. The proposed project would result in a reduction in natural gas use at the plant. The boiler would consume about 6,300 pounds of wood chips an hour or about 27,000 tons per year (Section 2.2.1). The reduction in the use of natural gas would result in a small positive energy cost savings for Frito-Lay, and that gas would be available to other users in the area. There would be essentially no change to other utilities such as electricity and sewer service, and the amounts of materials necessary to construct the proposed project would be negligible in comparison to existing supplies.
Occupational health and safety	Frito-Lay has a comprehensive occupational health and safety program that includes new employee training, safety meetings, emergency drills, and safety audits. Frito-Lay is in compliance with Occupational Safety and Health Administration reporting requirements, and the Administration has designated the Beloit plant a Voluntary Protection Programs Plant. As part of its overall occupational and public health and safety program, Frito-Lay has a Contingency Plan that addresses emergency events such as accidental spills, releases, explosions, or fires. The plans are in place to minimize injuries to people and damage to the environment. Frito-Lay has distributed the plans to its organization and to public emergency responders including the City of Beloit police and fire departments. Because the proposed biomass boiler would essentially replace two existing boilers, DOE determined there would be no or negligible change in the risk of impacts to worker health and safety.

3.2.2 Considerations Carried Forward for Further Analysis

3.2.2.1 Air Quality

3.2.2.1.1 Affected Environment

The ambient air quality in an area can be characterized in terms of whether it complies with the primary and secondary National Ambient Air Quality Standards. The Clean Air Act (42 U.S.C. 7401 et seq.) requires the U.S. Environmental Protection Agency (EPA) to set national standards for pollutants that are considered harmful to public health and the environment. The EPA established standards for six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter [both with a median aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}) and less than or equal to 2.5 micrometers ($PM_{2.5}$)], and sulfur dioxide. Primary standards define levels of air quality for each of the six criteria pollutants that would provide an adequate margin of safety to protect public health including the health of sensitive populations such as children and the elderly. Secondary standards define levels of air quality that are deemed necessary to protect the public welfare including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Wisconsin regulation of air pollution is codified in Chapters NR 400 through NR 499 of the *Wisconsin Administrative Code*. In general, Wisconsin rules are equal to the Federal New Source Performance

Standards that apply to the biomass boiler. *Wisconsin Administrative Code* Chapter NR 445, "Control of Hazardous Pollutants," limits hazardous air pollutant emissions in the absence of a Federal maximum achievable control technology standard.

Table 3-2 lists the primary National Ambient Air Quality Standards for each criteria pollutant and the 2008 values for Rock County. Rock County is in attainment of all criteria pollutant standards (EPA 2010).

Table 3-2. Primary National Ambient Air Quality Standards and 2008 Rock County air quality data.

Pollutant	Averaging period	Primary standard	Rock County[a]
Carbon monoxide	8 hours	9 ppm	NA
	1 hour	35 ppm	NA
Lead	Quarterly	1.5 $\mu g/m^3$	NA
Nitrogen dioxide	Annual	0.053 ppm	NA
Ozone	8 hours	0.075 ppm	0.065 ppm
PM_{10}	24 hours	150 $\mu g/m^3$	NA
$PM_{2.5}$	Annual	15.0 $\mu g/m^3$	NA
	24 hours	35 $\mu g/m^3$	NA
Sulfur dioxide	Annual	0.03 ppm	NA
	24 hours	0.14 ppm	NA

a. Source: EPA 2009.
NA = not available; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

Table 3-3 provides estimated current air emissions from the Frito-Lay facility from a January 2010 air emissions report (Arrowood 2011b). The table also provides the potential to emit for the facility, which serves as the basis for the existing air permit with the State of Wisconsin. Estimated emissions are based on the use of about 7.6 million standard cubic feet of natural gas per week.

Table 3-3. Estimated current Frito-Lay plant air emissions (tons per year).

Pollutant	2010 air emissions	Potential to emit
$PM_{10}/PM_{2.5}$	27.26	28
Nitrogen oxides	39.8	73.9
Carbon monoxide	33.425	53.1
Sulfur dioxide	0.238	0.2
Volatile organic compounds	5.35	5.7

Source: Arrowood 2011b.

The Beloit facility is currently a synthetic minor source under Title V, Part 70, of the Clean Air Act due to the potential for emissions of nitrogen oxides in excess of 100 tons per year. As recently as 2009, the facility was a designated major source for nitrogen oxides. The facility is defined as an area source of hazardous air pollutants because it emits those pollutants but the potentials for those emissions are below 10 tons per year for an individual hazardous air pollutant and 25 tons per year for all hazardous air pollutants combined. The facility is a minor source under Prevention of Significant Deterioration rules because the potentials for emissions of all criteria pollutants are each below 250 tons per year.

3.2.2.1.2 Environmental Consequences of the Proposed Project

Construction Impacts

Air emissions from construction activities for Frito-Lay's proposed project would include combustion emissions from vehicles and heavy-duty equipment for construction of the new foundation and building as well as fugitive dust from site preparation activities. These emissions would have short-term adverse impacts that the facility could mitigate through best management practices such as soil stabilization and watering of exposed soils. Fugitive dust emissions would end on completion of construction, so long-term impacts would be negligible.

Operations Impacts

The facility currently uses two boilers with maximum heat outputs of 14.7 million Btu per hour (Boiler 1) and 14.5 million Btu per hour (Boiler 2). Under the proposed project, Boilers 1 and 2 would no longer operate (except in emergency conditions). Frito-Lay would eventually remove Boiler 2 but keep Boiler 1 as an emergency backup that would not operate on a regular basis. The proposed biomass boiler would only use wood waste as fuel, essentially replacing Boilers 1 and 2 and the natural gas that fires them.

The proposed project location is in Rock County, which is in attainment for the National Ambient Air Quality Standards for all criteria air pollutants. Based on the currently available information, Frito-Lay estimated its maximum potential emissions (Table 3-4) using a combination of emission factors for combustion and control technology limits. Table 3-5 compares existing emissions (Table 3-3) and proposed project emissions (Table 3-4). The estimated proposed project emissions in Table 3-5 include emissions from Boiler 1 under the assumption it would operate at all times. However, Frito-Lay would only use this boiler for emergency backup and estimates it would operate only about 500 hours a year.

Table 3-4. Estimated proposed project air emissions.[a]

Pollutant	Emission factor (pounds per 1,000 gallons)[a]	Biomass boiler emissions (tons per year)
$PM_{10}/PM_{2.5}$	0.03	5.94
Nitrogen oxides	0.49	32.7
Carbon monoxide	0.105	32.7
Sulfur dioxide	0.025	3.72
Volatile organic compounds	0.017	1.93

Source: Stickney 2010.

a. Estimates are based on emission factors that assume the heat content of the wood is 4,500 Btu per pound of wood with 35-percent moisture content (wet wood).

Table 3-5. Estimated current and proposed project emissions (tons per year).

Pollutant	Current emissions	Biomass boiler emissions	Removal of Boiler 2 and heat exchangers	New projected facility totals	Emissions increase
$PM_{10}/PM_{2.5}$	27.26	5.94	0.734	32.466	5.206
Nitrogen oxides	39.8	32.7	9.122	63.378	23.578
Carbon monoxide	33.425	32.7	8.075	58.05	24.625
Sulfur dioxide	0.238	3.72	0.056	3.902	3.664
Volatile organic compounds	5.35	1.93	0.523	6.757	1.407

Source: Frito-Lay 2011.

Under the proposed project, emissions of all criteria pollutants would increase. With installation of the electrostatic precipitator, the proposed project would only increase particulate matter emissions by 5.2 tons per year. The precipitator would reduce the amount of particulate matter by almost 80 percent.

Emission of acrolein (a volatile organic compound) from the boilerhouse has the potential to exceed the applicability threshold for Wisconsin's hazardous air pollutant regulations (22.9 micrograms per cubic meter). The level of acrolein emissions would be dependent on the moisture levels of the available fuel from the wood chip supplier and cannot be modeled at this time. Additional dispersion modeling would be necessary to determine if the ambient air concentration of acrolein would not exceed this threshold and that the facility would therefore be in compliance with the regulations. The plant would comply with all regulatory air requirements such as those of the Clean Air Act and Maine environmental law.

In accordance with New Source Review performance standards for boilers, the biomass boiler would be limited to 20-percent opacity[1] and 0.03 pound of total particulate matter per million Btu. An initial performance test would be necessary, and the system would require a continuous opacity monitoring system. Frito-Lay would record the amount of wood the boiler burned each month and report semiannual excess emissions.

Section 176(c)(1) of the Clean Air Act requires Federal agencies to ensure that their actions conform to applicable implementation plans for the achievement and maintenance of the National Ambient Air Quality Standards for criteria pollutants (DOE 2000). To achieve conformity, a Federal action must not contribute to new violations of standards for ambient air quality, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern. The EPA general conformity regulations (40 CFR Part 93, Subpart B) contain guidance for determining if a proposed Federal action would cause emissions to be above specified levels in nonattainment or maintenance areas. Because Rock County is in attainment for all criteria pollutants, no conformity determination under the Clean Air Act would be necessary (DOE 2000).

Under the proposed project, emissions of all criteria pollutants would increase. However, the biomass boiler project would not trigger review under the Prevention of Significant Deterioration regulations because the potential for emission of each criteria pollutant would remain below 250 tons per year (the threshold for this minor source). Based on its potential to emit (Table 3-4), including the proposed project emissions, the facility would change from a minor source to a major source under Title V, Part 70, of the Clean Air Act. The Frito-Lay facility only recently has been designated a minor source by the Wisconsin Department of Natural Resources and was previously designated a major source as recently as the beginning of 2010. Frito-Lay has not yet received a modified air permit from the State of Wisconsin.

The proposed project would result in approximately 6,000 additional heavy truck miles a year, an increase of 0.001 percent on the roads by all traffic types. While the increased truck traffic would result in a corresponding increase in heavy truck air emissions, DOE concluded these emissions would be minimal when placed in context of the traffic baseline.

Greenhouse Gas Emissions

The burning of fossil fuels such as fuel oil emits carbon dioxide, which is a greenhouse gas. Greenhouse gases can trap heat in the atmosphere and have been associated with global climate change. The Intergovernmental Panel on Climate Change, in *Climate Change 2007: Synthesis Report, Summary for Policy Makers*, stated that warming of the earth's climate system is unequivocal, and that most of the

[1] *Opacity* is the amount of light obscured by particle pollution in the atmosphere and is used as an indicator of the performance of particulate control systems.

observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in concentrations of greenhouse gases from human activities (IPCC 2007). Greenhouse gases are well mixed throughout the lower atmosphere, such that any emissions would add to regional and global concentrations of carbon dioxide.

In a typical boiler, combustion converts nearly all of the carbon in the natural gas to carbon dioxide. Under existing conditions at the plant, the entire facility generates about 4,200 tons of carbon dioxide on an annual basis, about 2,100 tons of which are from Boilers 1 and 2.

In a biomass boiler, the combustion of the wood chips converts nearly all of the stored carbon in the wood to carbon dioxide. However, wood chips are considered a carbon neutral fuel for two reasons: (1) the carbon in plant material comes from the atmosphere through photosynthesis as plants grow, and (2) the vast majority of the carbon eventually returns to the atmosphere as the plant material decomposes naturally. Under current conditions, the recycled pallets proposed for use at the plant as wood chips are disposed of at a landfill where they eventually rot and release carbon dioxide. Therefore, burning the wood chips from these pallets would produce the same amount of carbon dioxide as the natural carbon cycle (that is, the decomposing pallets).

Because the wood chips for the proposed boiler would be carbon neutral, replacement of the natural gas for Boilers 1 and 2 would result in a decrease of about 2,100 tons of carbon dioxide emissions per year at the plant. Because the proposed project would displace energy currently being supplied via fossil fuels, there would be an expected reduction in regional greenhouse gas emissions and no cumulative carbon impacts.

3.2.2.2 Transportation

3.2.2.2.1 Affected Environment

This section describes the existing traffic conditions along the roadways the proposed project would affect and the analysis of changes in traffic due to construction and operation.

The analysis assumed that construction for the proposed project would involve commuting workers and supply deliveries and that operations would involve transportation of wood chips from a local vendor in Beloit to the Frito-Lay plant (Figure 3-1) and of wood ash to a local landfill. Frito-Lay evaluated three vendors in the area under several different criteria. While no contract has been signed, the analysis used the location of the preferred vendor. The one-way distance for the deliveries would be about 3 miles.

The wood chip trucks would leave the proposed vendor northbound on a private driveway, turn right on Cranston Road, then travel southeast to the biomass boiler. The study area roadways are described below:

- Cranston Road is a two- and four-lane collector street with a speed limit of 30 miles per hour that provides access to commercial areas along the street and to light industrial areas to the south of Milwaukee Road (State Road 81). The 2007 traffic volume (annual average daily traffic) ranged from 11,000 to 18,000 vehicles per day along the proposed route (WisDOT 2008). Cranston Road crosses Interstate Highway 39/90 via an overpass and terminates at its intersection with Gateway Boulevard (see Figure 3-1).

- Milwaukee Road (State Road 81) to the west of Interstate Highway 39/90 is a four-lane median-divided arterial street with a speed limit of 40 miles per hour that intersects with Cranston Road. Milwaukee Road serves regional travel through the City of Beloit to the west and Interstate

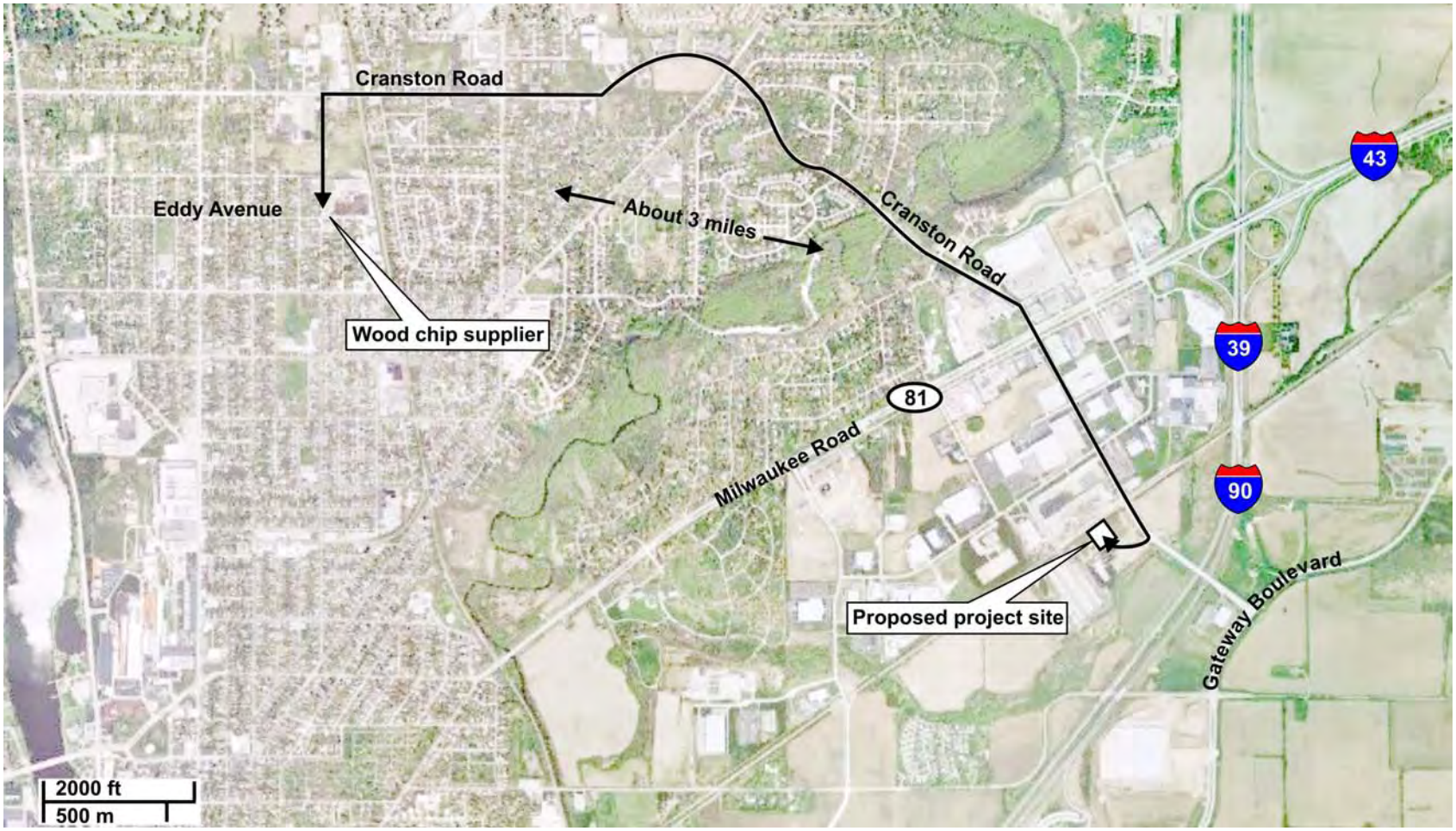

Figure 3-1. Truck route from local wood chip vendor to the proposed project site.

Highway 43 to the east. The 2007 traffic volume ranged from 14,800 to 23,900 vehicles per day (WisDOT 2008) on sections of the road near the Cranston Road intersection.

About 60 trucks per day come and go from the Frito-Lay facility (Arrowood 2011c), which represents about 120 of the vehicles in the traffic volumes discussed above or about 0.7 to 1.1 percent of the 11,000 to 18,000 vehicles per day that travel along Cranston Road near the Frito-Lay facility.

Traffic Flow

This section discusses existing traffic volumes and level of service, which is an important measure for determining the significance of impacts. If the level of service drops below a level acceptable to a road owner, then mitigation is necessary in the form of traffic improvements to raise the level to acceptable levels.

Level of service is a quantitative grade that refers to the overall average delay in seconds at an intersection during hours of peak volume. The levels range from very good (A) to very poor (F). Table 3-6 provides descriptions of the level of service grades.

Table 3-6. Level of service descriptions.

Level of service	Description
A	The highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. Average delays are less than 10 seconds at both signalized and nonsignalized intersections.
B	Represents stable operation. Average vehicle delays are 10 to 20 seconds at signalized intersections. Average delays are 10 to 15 seconds at nonsignalized intersections.
C	Still represents stable operation, but periodic backups of a few vehicles can develop behind turning vehicles. Most drivers begin to feel restricted but not objectionably so. Average vehicle delays are 20 to 35 seconds at signalized intersections and 15 to 25 seconds at nonsignalized intersections.
D	Represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles can be substantial during short intervals during the peak period, but periodic clearance of long lines prevents excessive backups. Average vehicle delays are 35 to 55 seconds at signalized intersections and 25 to 35 seconds at nonsignalized intersections.
E	Represents the capacity of the intersection and results in unstable flow. Average vehicle delays are 55 to 80 seconds at signalized intersections and 35 to 50 seconds at nonsignalized intersections.
F	Represents jammed conditions in which the intersection is over capacity. Acceptable gaps in the mainline traffic flow, to allow for entrance from nonsignalized intersections, are minimal. Average vehicle delays exceed 80 seconds at signalized intersections and 50 seconds at nonsignalized intersections.

Source: TRB 2000.

The intersection in the project area that would be most affected by transportation of the wood chips for the proposed project is the intersection of Cranston and Milwaukee roads (Figure 3-1). An average of 41,000 vehicles pass through this intersection on a given day (WisDOT 2008). In 2007, the U.S. Department of the Interior's Bureau of Indian Affairs published an environmental impact statement in response to an application from the Bad River Band of the Lake Superior Tribe of Chippewa Indians to evaluate the level of service of this intersection to determine potential impacts from the construction and operation of a casino south of the proposed project area along Interstate Highway 39/90 (BIA 2007).

To determine the existing level of service in the area of the casino, a transportation engineering firm conducted a traffic impact analysis (HNTB 2004, 2005). The analysis concluded that, in 2004, the

intersection of Cranston and Milwaukee roads operated at a level of service of C or better during peak afternoon hours. As part of the evaluation, the analysis determined that 1,252 vehicles per hour passed through the intersection during the peak traffic hour in 2004.

Traffic Accidents

In 2008, Wisconsin drivers traveled over 56 billion miles. During the same period, there were 605 traffic-related fatalities, a rate of 1.05 fatalities per 100 million miles or 1.05×10^{-8} (0.0000000105) fatalities per mile (NHTSA 2009). In 2008, the nationwide injury-to-fatality rate for all vehicles was 79 to 1.26 for a ratio of 62.7 injuries per fatality (NHTSA 2010). This implies that for Wisconsin, the injury rate would be about 6.58×10^{-7} (0.000000658) injuries per mile.

In Wisconsin, 7.8 percent of all fatalities involved large trucks (NHTSA 2009). This implies a fatality rate for large trucks of 8.19×10^{-10} (0.000000000819) fatalities per mile. In 2009, the nationwide heavy truck injury-to-fatality rate in the United States was 74,000 to 3,380 or about 22 injuries per fatality, which implies an injury rate of about 1.8×10^{-8} (0.000000018) injuries per heavy truck mile.

3.2.2.2.2 Environmental Consequences of the Proposed Project

Construction Impacts

Level of Service. Construction and installation of the wood chip boiler and other support structures would take about 4 months, and as many as 30 construction workers would be on the site (Arrowood 2011c). In addition, an additional 5 to 10 trucks per day would come and go from the construction site for materials delivery.

The addition of 30 construction workers and 10 delivery trucks could result in an increase in average traffic of 80 vehicles, assuming no car-pooling. This would result in an increase of 0.4 to 0.7 percent of the current traffic volume on Cranston Road. In addition, the 30 construction workers leaving the construction site in the afternoon would represent about 2.4 percent of the peak-hour traffic at the intersection of Cranston and Milwaukee roads of 1,252 vehicles per hour (Section 3.2.2.2.1). Therefore, DOE determined the impact of construction traffic on level of service from these increases would be minimal and temporary (about 4 months).

Traffic Accidents. The addition of as many as 30 construction workers could result in as many as 60 trips per day to and from the site of the proposed project. Assuming a travel distance of 20 miles per trip over the 4-month construction period, the construction workers would drive a total distance of about 50,000 miles. Based on the injury and fatality rates in Section 3.2.2.2.1, the total injuries and fatalities would be less than 1 during construction. This means that additional traffic injuries or fatalities due to construction worker vehicles would be unlikely.

Assuming an average of seven delivery trucks per day to and from the construction site 5 days a week for 4 months and each truck traveled 50 miles each way, the trucks would travel a total of about 56,000 miles. Based on the injury and fatality rates in Section 3.2.2.2.1, the total injuries and fatalities would be less than 1. This means that additional traffic injuries or fatalities due to construction activities involving heavy trucks would be unlikely.

Even in combination, the chance of an injury or fatality from worker and delivery truck traffic would be less than 1. Therefore, DOE determined the impact on the risk of injury or fatality from the increase in traffic for construction for the proposed project would be minimal and temporary.

Operations Impact

Level of Service. Operation of the wood chip boiler would require three new full-time employees, and three to four combination trucks would deliver wood chips to the boilerhouse Monday through Friday (Arrowood 2011c). This would add about 14 vehicles per day to the traffic volume on Cranston Road or from 0.08 to 0.13 percent. The addition of as many as five vehicles (two trucks and three employees) passing through the intersection of Cranston and Milwaukee roads would represent only 0.4 percent of the peak-hour traffic of 1,252 vehicles per day (Section 3.2.2.2.1). This small increase in traffic volume on Cranston Road and other nearby roads would not be likely to affect the level of service. Therefore, DOE determined the impact to local traffic conditions from boiler operations would be minimal.

Traffic Accidents. For the three new full-time employees, the analysis assumed an average commute of 20 miles each way or about 30,000 miles per year among the three employees. The wood chip delivery trucks (5 days per week) would travel about 6,000 miles per year. Using the injury and fatality rates from Section 3.2.2.2.1 for vehicles and heavy trucks, the additional number of injuries and fatalities over the 30-year life of the boiler would be less than 1, which means neither would be likely. Therefore, DOE determined the impact on the risk of injury or fatality of the increase in traffic from operations would be minimal.

3.2.2.3 Noise

Noise is defined as unwanted sound (ANSI 2004). It has the potential to interfere with communication, damage hearing and, in many cases, is viewed as an annoyance. Noise can occur at different levels and frequencies dependent on the type of source and the distance from the listener.

The standard unit for measuring sound pressure levels is the *decibel*, which is a unit that describes the amplitude (or difference between levels) of sound, equal to 20 times the logarithm to the base 10 of the ratio of the measured pressure to the reference pressure, which is 20 micropascals. Environmental and occupational sound pressure levels are typically measured on the A-weighted decibel scale (dBA). The A-weighted scale deemphasizes low- and high-frequency components of sound in a manner similar to the frequency response of the human ear. Figure 3-2 shows example sound levels of common indoor and outdoor sources.

Various measures are used to evaluate noise. The L_{max} is the maximum noise level over the measurement period, and the L_{eq} (noise level equivalent) is the energy-averaged noise level over the measurement period. The day-night average sound level is essentially a 24-hour average sound level with a 10-decibel upward adjustment for nighttime sound. This adjustment accounts for people's increased sensitivity to noise at night.

3.2.2.3.1 Affected Environment

Project activities that would produce noise include construction, operation of the facility, and increased heavy truck traffic to and from the site for fuel delivery. The nearest potential sensitive receptor is a residence in the Spring Brook Village about 3,000 feet to the southwest of the site of the proposed project. The nearest potential industrial receptor (other than the Frito-Lay plant itself) is about 1,000 feet from the site. The area around the project is industrial with multiple manufacturing facilities in the immediate vicinity. Local sound sources include activities at the industrial park as well as vehicular traffic on Interstate Highway 39/90. The loudest equipment currently in use at the Frito-Lay plant is an air blower, which has a measured noise level of 83 dBA at 75 feet (Arrowood 2011d). The existing boilers, which are in an insulated building, provide a negligible contribution to the current noise levels at the plant.

Common outdoor sound levels	dBA	Common indoor sound levels
Jet flyover at 1,000 feet	110	Rock band
	100	Inside subway train (New York)
Gas lawnmower at 3 feet		
Diesel truck at 50 feet	90	
Noisy urban daytime		Food blender at 3 feet
		Garbage disposal at 3 feet
	80	
		Very loud speech at 3 feet
Gas lawnmower at 100 feet		
	70	
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet		
	60	Large business office
		Quiet speech at 3 feet
		Dishwasher, next room
	50	Small theater, large conference room (background)
Quiet urban nighttime		
	40	
Quiet suburban nighttime		Library
	30	Bedroom at night
Quiet rural nighttime		Concert hall (background)
	20	
		Broadcast and recording studio
	10	
	0	Threshold of hearing

Figure 3-2. Common sound levels.

3.2.2.3.2 Environmental Consequences of the Proposed Project

Construction Impacts

Construction of the project would involve the use of heavy construction equipment. Table 3-7 lists typical noise levels for common construction equipment. The table lists L_{max} sound levels at 50 feet along with typical acoustic use factors. The acoustic use factor is the assumed percentage of time each piece of construction equipment would operate at full power (that is, at its noisiest). This values yield estimated L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power 50 percent of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value.

During construction, noise would be localized, intermittent, and temporary. Construction would last only about 6 months, and noise levels would vary on a daily basis dependent on the construction activity (for example, excavation involves higher noise levels than laying concrete). Nearby employees and residents could notice construction-related noise, but the noise would be confined to daytime hours when most people are at work and away from home (that is, between 7 a.m. and 5 p.m.). Increases in noise levels during construction would result mainly from the use of heavy construction equipment (for example,

bulldozers, scrapers, dump trucks, and concrete mixers). Given the equipment needs of the construction phase, typical noise levels on the site would likely range from 60 to 90 dBA.

Table 3-7. Typical construction equipment noise levels at 50 feet (dBA).

Equipment	Typical maximum noise level (L_{max}) (dBA)	Acoustical use factor (percent)	Typical equivalent noise level (L_{eq}) (dBA)
Compactor (ground)	83	20%	76
Bulldozer	82	40%	78
Dump truck	76	40%	72
Excavator	81	40%	77
Generator	81	50%	78
Grader	85	40%	81
Pickup truck	75	40%	71
Warning horn	83	5%	70
Crane	81	16%	73

Source: FHWA 2006.

Construction equipment for the proposed project would include an excavator that would result in a sound level of approximately 77 dBA L_{eq} at 50 feet. Assuming a reduction of 6 decibels per doubling of distance, the noise level at the nearest residential receptor (about 3,000 feet) would be approximately 42 dBA L_{eq}. Because construction noise would be temporary (about 6 months) and intermittent during daytime hours, adverse effects from such noise would be unlikely. Construction would not involve highly dynamic equipment, such as a pile driver, that would produce heavy vibration. Given this and the fact that the nearest residence is about 3,000 feet from the site, there would be no adverse vibration impacts from construction.

Operations Impacts

Noise at the Proposed Boilerhouse. During operations, noise-generating equipment would include the wood chip feed system that transfers the chips to the boiler, the trucks that would deliver the fuel chips, and blowers associated with the boiler. The new boiler would be in a new steel building. The analysis in this section does not account for sound dampening attributed to the building.

At the nearest residential receptor 3,000 feet away, assuming simple geometric attenuation of 6 dB per doubling of distance, the estimated sound level of the biomass boiler would be 43 dBA. However, the estimated noise level at the same receptor for the existing air blower is 52 dBA. In addition, measured ambient noise levels at the Spring Brook Village are about 60 dBA because of its proximity to Interstate Highway 90/39 (BIA 2007). Given the ambient noise levels and the noise from the existing air blower, the impact of the noise from the boilerhouse would be minimal.

Noise along Transportation Routes. Heavy trucks (using the Federal Highway Administration definition of three axles or more) would deliver wood chips three or four times a day to the proposed boilerhouse and would increase noise levels along routes to and from the facility. Deliveries would occur Monday through Friday between 6 a.m. and 6 p.m. At present, about 60 trucks arrive and depart the Frito-Lay plant each day. Therefore, the increase in noise from the additional three or four trucks per day would be negligible.

3.2.2.4 Aesthetics and Visual Resources

3.2.2.4.1 Affected Environment

This section describes the visual setting of the existing environment. The existing 550,000-square-foot Frito-Lay plant is a prominent feature in the current landscape, which is heavily industrialized as shown in Figure 3-3. The figure shows the existing visible features of the plant and its immediate surroundings, which include a mix of industrial buildings, asphalt parking areas, and grassy areas. A railroad with spurs to the Frito-Lay plant and a power line corridor run along the southeastern side of the plant. The proposed project site is visible from Interstate Highway 39/90 and the surrounding area.

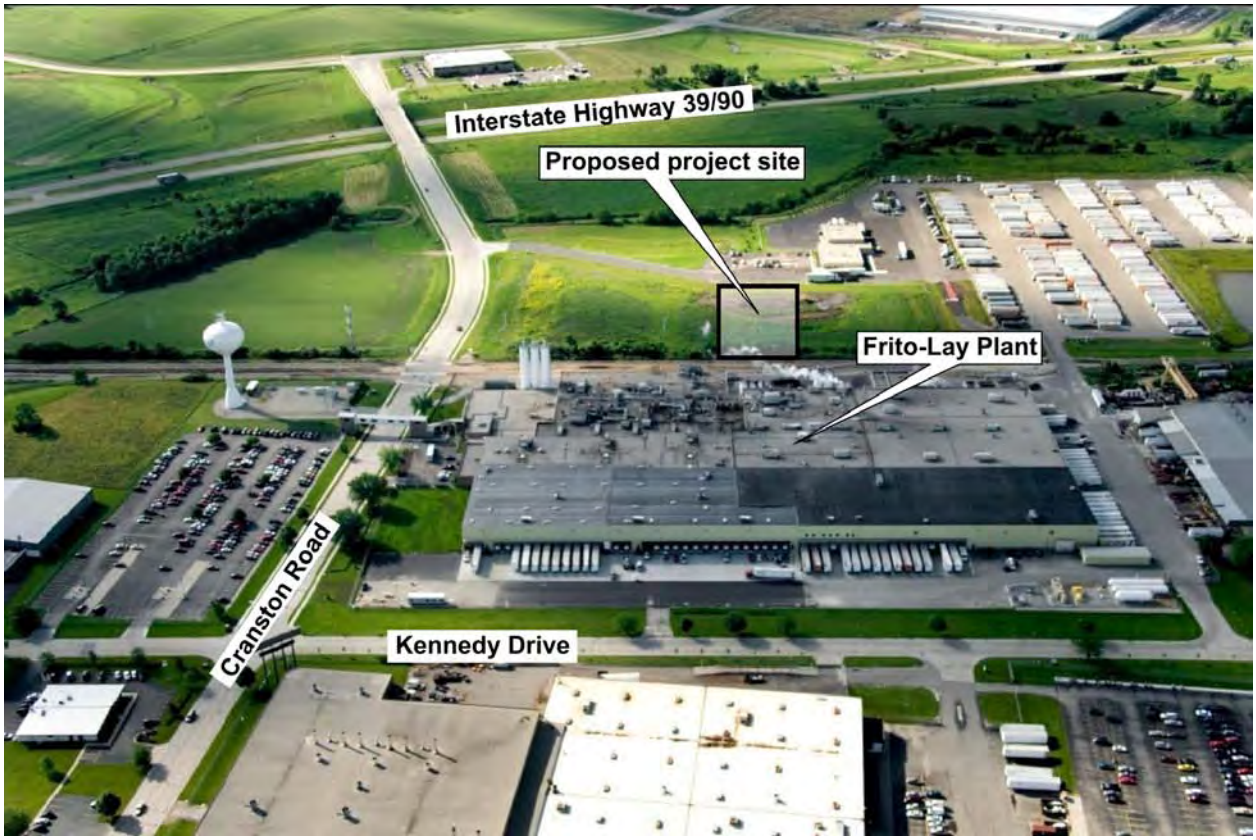

Figure 3-3. Aerial photograph of proposed project site looking southeast.

3.2.2.4.2 Environmental Consequences of the Proposed Project

Construction Impacts

During construction for the proposed project, there would be some effects to the viewscape from heavy equipment and soil disturbance. Fugitive dust could temporarily degrade the visual quality of the site. However, the site is in an industrial park with limited public views, and construction would last only 4 months. In addition, Frito-Lay would use appropriate dust control measures, such as watering of exposed soils, to control fugitive dust. Therefore, DOE determined that aesthetic and visual impacts from construction would be negligible.

Operations Impacts

The proposed project would affect 5 acres of the green space southeast of the plant's main building. The viewscape in the project area consists of large industrial structures, open grassy fields, and traffic on Interstate Highway 39/90. The new boilerhouse would be a preengineered steel building about 60 by 62 feet (about 3,700 square feet, and have a 70-foot-tall chimneystack. The chimneystack would be about 300 feet from an existing 70-foot stack and three 93-foot corn silos. The railroad and power line corridor would be between the existing plant and the proposed boilerhouse.

Once in operation, the biomass boilerhouse and stack would add to the industrial nature of the viewscape. Affected viewers would include motorists on the highway and surrounding roads. However, the site is zoned for industrial use and the additions would be consistent with the existing features of the viewscape. Therefore, DOE determined that aesthetic and visual impacts from the presence of the additional industrial features would be negligible.

3.2.2.5 Historic and Cultural Resources

A cultural resource is the physical remains of past human activity having demonstrable association with prehistoric or historic events, individuals, or cultural systems. Cultural resources can include archaeological sites, districts, and objects; standing historical structures, objects, or groups of resources; locations of important historic events; or places, objects, and living or nonliving things that are important to the practice and continuity of traditional cultures. Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq.) requires that Federal agencies consider the effects of their projects and programs on cultural resources listed or eligible for inclusion in the *National Register of Historic Places*. Section 101(b)(4) of NEPA requires the Federal agency to coordinate and plan its actions to identify any unique historic or cultural characteristics of the geographic area (40 CFR 1508.27) of the proposed project and act accordingly.

The area of potential effect (APE) typically includes all areas where the undertaking could cause changes to land, structures, or their uses whether the change would be direct, indirect, beneficial, or adverse. In addition to areas of ground disturbance, this includes all locations from which elements of the undertaking (such as structures or land disturbance) could be visible. By definition in 36 CFR 800.16(i) an "effect" is an "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register." The proposed project would not result in an effect that met this criterion.

Regulations for the protection of historic properties (36 CFR Part 800) describe the process for compliance with Section 106, including defining the APE, steps to identify resources and evaluate effects, and consultation with interested parties including the Wisconsin SHPO.

As part of the Section 106 process, DOE submitted a consultation letter to the Wisconsin SHPO, which oversees the preservation of cultural resources in Wisconsin. In addition, to meet its obligation under the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.), DOE reviewed the Native American Consultation Database to identify American Indian tribes with potential land claims or interest in the project area (NPS 2011a). DOE identified and sent consultation letters to 13 tribes with potential interest in the site of Frito-Lay's proposed project: Potawatomi Nation of Oklahoma, Flandreau Santee Sioux Tribe of South Dakota, Lower Sioux Indian Community of Minnesota, Forest County Potawatomi Community of Wisconsin, Hannahville Indian Community, Ho-Chunk Nation, Prairie Band of Potawatomi Nation of Kansas, Prairie Island Indian Community of Minnesota, Santee Sioux Nation of Nebraska, Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, Spirit Lake Tribe, Upper Sioux Community of Minnesota, and the Winnebago Tribe of Nebraska. Appendix A contains copies of these letters.

3.2.2.5.1 Affected Environment

The APE is the 131-acre Frito-Lay property next to the Beloit Industrial Park. Based on site observations, aerial images, and review of the National Register (NPS 2011b) and the City of Beloit's historic properties list (City of Beloit 2005), DOE determined that no archaeological sites or structures 50 years old or older are present within the APE. Soils at the location have likely been disturbed by previous industrial and agricultural activities.

The National Register lists 134 sites in Rock County, Wisconsin, of which 35 are in the City of Beloit. The nearest site to the proposed biomass boiler is the Dougan Round Barn about 0.7 mile away. Other nearby sites include the Strong Partridge Mound Group over 1 mile away, the Brasstown Cottage nearly 1.5 miles away, and the Florence Yates House about 1.7 miles away (NPS 2011b). Therefore, DOE concluded that there are no known historic properties within the proposed project's APE.

3.2.2.5.2 Environmental Consequences of the Proposed Project

Construction Impacts

The disturbance of land during construction for the proposed project could cause adverse effects to historic and cultural resources. However, as discussed above, DOE did not find any registered historic properties or archaeological sites within the APE and does not expect impacts to historic resources from construction. In a letter on April 6, in response to DOE's consultation letter, the Wisconsin SHPO concurred with DOE's determination that there are no archeological or architectural properties in the area of potential effect of the proposed undertaking that are listed in the *National Register of Historic Places* and that the SHPO is not aware of any properties in the area that are eligible for listing. Appendix A contains copies of these letters.

While unlikely, excavations and trenching could uncover unmarked graves or other potentially significant cultural items. If this occurred, Frito-Lay would cease construction activity within an appropriate radius (no less than 50 feet from the discovery) until an archaeologist qualified under 36 CFR Part 61 could examine the exposed resource and notify the SHPO. Tribes would be notified immediately if a grave were determined to have the potential to contain American Indian remains.

The Frito-Lay site is not adjacent to any listed National Register or City of Beloit sites. In addition, the potential for archaeological artifacts to be found at the site is low because soils at the location have likely been disturbed by previous farming activities. Because there are no known cultural resources within the project footprint, and because the proposed project fits the character of the industrial area, DOE determined direct impacts to cultural or historic resources during construction would be unlikely.

Operations Impacts

The proposed project would not alter the industrial character of the area, and DOE determined there would be no to minimal visual impacts (Section 3.2.2.4). Therefore, DOE determined there would be no direct impacts to cultural or historic resources from operation of the new facility. As noted above, the Wisconsin SHPO concurred with DOE's determination that there are no archeological or architectural properties in the area of potential effect of the proposed undertaking that are listed in the *National Register of Historic Places* and that the SHPO is not aware of any properties in the area that are eligible for listing.

3.2.2.6 Socioeconomics

3.2.2.6.1 Affected Environment

The site of the proposed project is next to the Beloit Industrial Park in Rock County, Wisconsin. The socioeconomic impact area (called the region of influence) for the proposed project is Dane and Rock counties, Wisconsin, and Winnebago County, Illinois. Rock County comprises the entire U.S. Census Bureau Janesville Wisconsin Metropolitan Statistical Area (Statistical Area 27500). Dane County is part of the Madison Wisconsin Metropolitan Statistical Area along with Columbia and Iowa counties, Wisconsin (Statistical Area 31540). Winnebago County, along with Boone County, is part of the Rockford Illinois Metropolitan Statistical Area (Statistical Area 40420). Dane, Rock, and Winnebago counties are adjacent to each other. Of the Rock County workforce where the proposed project would take place, the majority (77.6 percent) resides in Rock County, with 4.6 percent and 3 percent residing in neighboring Winnebago and Dane counties, respectively (USCB 2003).

In December 2010, the labor force in the region of influence consisted of about 518,600 persons. The unemployment rate for the three counties varied widely in December 2010. Dane County experienced a healthy rate of unemployment, 4.6 percent (BLS 2011a), while Winnebago County's unemployment rate was 12.7 percent (BLS 2011b). Rock County's December unemployment rate of 9.2 percent was down from 12.9 percent in January 2010 (BLS 2011c). The December unemployment rates represent about 39,300 people out of work in the region of influence. For comparison, the national unemployment rate was 9.1 percent in December 2010 (BLS 2011d).

In 2008, the total personal income in three-county region of influence was about $36.8 billion (BEA 2010a,b). The 2008 per capita income in Rock County of about $31,800 was about 84 percent of the Wisconsin statewide per capita income of $37,800 (BEA 2010c). In 2008, about 12 percent of residents in the three counties were living in poverty (USCB 2010a,b,c).

Table 3-8 compares population, employment, and income data for Dane, Rock, and Winnebago counties. The region of influence's estimated population of about 951,200 persons in 2009 reflects an 11-percent growth since 2000 (USCB 2010a,b,c). The City of Beloit had a 2009 population of about 36,600 people (USCB 2011).

Table 3-8. Population and employment demographics for the region of influence and Wisconsin.

Demographic	Dane County, Wisconsin	Rock County, Wisconsin	Winnebago County, Illinois	Region of influence	Wisconsin
Population[a]	491,357	160,155	163,370	299,702	951,214
Jobs, 2008[b]	396,379	84,361	110,144	173,043	653,783
Unemployment, December 2010[c]	4.6%	9.2%	5.9%	12.7%	7.6%
Per capita income, 2008[d]	$45,080	$31,826	$37,139	$33,102	$37,770
Living in poverty, 2008[a]	11.1%	11.3%	7.9%	13.8%	12%

a. USCB 2010a,b,c.
b. BEA 2010d,e,f.
c. BLS 2011a,b,c.
d. BEA 2010c,g.

The region of influence's employment-by-sector figures reflect the very industrial nature of the region; the region had about 67,900 manufacturing jobs, or about 10.4 percent of the total jobs in the region, in 2008 (BEA 2010d,e,f). The region's employment base is extremely diversified with nine industrial sectors that each account for at least 5 percent of the jobs (BEA 2010d,e,f). Table 3-9 lists these sectors, the number of jobs, and the percentage each sector represents of the total number of jobs.

Table 3-9. Region of influence workforce, 2008.

Industrial sector employment	Dane County, Wisconsin	Rock County, Wisconsin	Winnebago County, Illinois	Region of influence	Percent of region of influence employment
Government and government enterprises	9,371	80,816	15,593	105,780	16.2%
Retail trade	12,290	38,053	18,011	68,354	10.5%
Health care and social assistance	9,885	35,545	23,193	68,623	10.5%
Manufacturing	12,421	27,303	28,187	67,911	10.4%
Accommodation and food services	5,969	24,656	10,605	41,230	6.3%
Professional, scientific, and technical services	2,316	29,985	6,742	39,043	6.0%
Administrative and waste services	3,768	18,781	15,418	37,967	5.8%
Finance and insurance	2,172	27,385	7,953	37,510	5.7%
Other services, except public administration	4,505	19,894	10,716	35,115	5.4%

Source: BEA 2010d,e,f.

3.2.2.6.2 Environmental Consequences of the Proposed Project

Construction Impacts

Employment impacts include the loss or gain of two kinds of jobs, direct and indirect. Direct jobs result from a project when it requires the hiring of new workers. Indirect jobs result from the multiplier effect in which new, directly employed workers spend their earnings and thereby create a greater demand for goods and services than existed before the new direct jobs. The total number of jobs a project creates, including the original direct jobs, is called the direct effect employment multiplier. Indirect jobs include professional, skilled, and unskilled positions; they occur among suppliers of goods and services and for the vendors of materials those suppliers use to fashion goods and services. Under the earnings multiplier, each dollar spent on goods and services by a worker in a newly created position becomes income to the recipient, who saves a portion, pays taxes with a portion, and spends the rest. In turn, this spending becomes income to someone else, who in turn, saves a portion, pays taxes with a portion, and spends the rest. The number of times the final increase in consumption exceeds the initial dollar spent is called the direct effect earnings multiplier. Earnings by workers in these direct and indirect jobs generate wages taxable by the local, state, and Federal governments. In addition, these wages lead to an increase in banking deposits, which increases the community lending base, and to spending on consumable and durable goods and services.

DOE uses standard multipliers to estimate how much a one-time or sustained increase in economic activity (such as construction, installation, and operation for the proposed project) in a particular region such as the three-county region of influence would affect this defined region. Employment multipliers are used to estimate the number of indirect jobs created in a region. Frito-Lay estimated that the construction of the boilerhouse and installation of the boiler and other equipment would last about 4 months and require as many as 50 directly employed construction workers. Frito-Lay would contract with one or more local construction companies for this temporary work. The direct employment would not result in any indirect jobs because the direct workers would already be part of the existing local labor force. Therefore, the project would not result in workers moving to the area to fill the jobs.

There would be no discernable impacts to socioeconomic resources from construction because there would be so few jobs and these temporary positions would be unlikely to result in an increase in the region's population. The short-term construction positions would be filled from the local labor force. Therefore, there would be no project-related impacts to community infrastructure or public services. There would be a small, one-time boost in the economy from construction and operations for the

proposed project. The $6-million project expenditure would have a final earnings effect, because of the multiplier effect, of about $9.2 million.

Operations Impacts

Operation of the new biomass boiler would create three direct jobs. However, the workers who constructed the boilerhouse and installed the boiler and other equipment could fill these positions, hence transitioning the construction positions from short-term temporary positions to permanent full-time operations jobs. Therefore, these three jobs would not create new indirect positions. The operation of the boiler, with the inherent reduction in the dependency on fossil fuels, the associated cost savings, and the increased competitive advantage to the client from the cost savings, could help to preserve jobs or community resources. The likely supplier of the biomass wood is about 3 miles away in Beloit. Because there is no project-related change to employment (assuming the three construction workers transitioned to operations), there would be no project-related change to the regional population or to the number of jobs. Therefore, impacts to demographic changes and adverse impacts to the current level of public services and community infrastructure would be unlikely.

Frito-Lay would experience modest ongoing cost savings because the proposed project would reduce its natural gas consumption. In addition to possible cost savings for Frito-Lay, the economy in the region would receive a small, positive benefit from the recycling of locally available wooden pallets.

3.2.2.7 Environmental Justice

3.2.2.7.1 Affected Environment

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs Federal agencies to address environmental and human health conditions in minority and low-income communities. The evaluation of impacts to environmental justice is dependent on determining if high and adverse impacts from the proposed project would disproportionately affect any low-income or minority group in the affected community.

Table 3-10 compares racial and ethnic data about people in each of the three counties in the region of influence and the State of Wisconsin. Information about Wisconsin is provided because the City Beloit is in Wisconsin and that state serves as the comparison area for the environmental justice analysis. In 2009, the aggregate percent of all racial minorities (Black, American Indian or Alaskan Native, Asian, Native Hawaiian or other Native Islander, or persons of two or more races) was 12.2 percent in the region of influence and about 10.6 percent in Wisconsin. Persons of Hispanic or Latino origin made up about 7.1 percent of the population in the region and about 3.3 percent of the population in Wisconsin (USCB 2010a,b,c). The proposed project site is in the City of Beloit, which had a 2000 population that was about 75.6-percent white (USCB 2009). About 9.1 percent of the Beloit population was of Hispanic or Latino origin (USCB 2009). Hispanics may be of any race, so are included in applicable race categories.

In 2008, about 12 percent of the residents in region of influence lived below the poverty level, slightly more than the 10.5-percent statewide Wisconsin rate (USCB 2010a,b,c). The proposed project would be built in an area of intensely concentrated industrial facilities over one-half mile from the nearest residence.

Table 3-10. Racial, ethnic, and poverty data in the region of influence and Wisconsin.

Demographic	Dane County, Wisconsin	Rock County, Wisconsin	Winnebago County, Illinois	Region of influence	Wisconsin
Population, 2009	491,357	160,155	299,702	951,214	5,654,774
Race, 2009					
White	88.5%	92.5%	84.2%	87.8%	89.4%
Black or African American	4.7%	4.5%	11.6%e	6.8%	6.2%
American Indian and Alaska Native	0.5%	0.4%	0.4%	0.5%	1%
Asian	4.6%	1.1%	2.1%	3.2%	2.2%
Native Hawaiian and Other Pacific Islander	Z	0.1%	Z	Z	Z
Two or more races	1.7%	1.7%	1.7%	1.7%	1.2%
Ethnicity, 2009 (Hispanic or Latino Origin)	5.1%	6.6%	10.5%	7.1%	3.3%
Poverty, 2008	11.1%	11.3%	13.8%	12%	10.5%

Sources: USCB 2010a,b,c.
Z = Value undetermined but greater than zero and less than 0.05 percent.

3.2.2.7.2 Environmental Consequences of the Proposed Project

Construction Impacts

Construction of the boilerhouse and installation of the boiler and other equipment for the proposed project would result in about three temporary direct jobs. The jobs would be unlikely to result workers and families moving to Dane, Rock, or Winnebago County. Therefore, there would be no changes to public services or other socioeconomic factors. As noted in other sections of the document, there would be no high and adverse impacts from the proposed project, so no high and adverse impacts would disproportionately affect low-income or minority populations during construction.

Operations Impacts

Operation of the proposed biomass boiler would create three direct jobs. However, the workers who installed the boiler and heat exchangers could fill these positions, hence transitioning the positions from short-term temporary positions to permanent, full-time jobs. Therefore, these three jobs would not create new indirect positions. As noted above and in other sections of the document, there would be no high and adverse impacts from the proposed project. Therefore, no high and adverse impacts would disproportionately affect low-income or minority populations during operations.

3.2.2.8 Unavoidable Adverse Impacts

Site preparation could result in some wildlife deaths and temporary relocation of wildlife due to construction activity and noise.

Once the boilerhouse was operational, it would contribute minimal incremental noise levels to the ambient background noise levels in the local area.

3.2.2.9 Relationship Between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

Short-term uses of the environment in the context of this proposed project would encompass the operational life of the boilerhouse. Long-term productivity refers to the period after decommissioning and removal of the facility. The short-term use of the environment would not affect long-term productivity.

In the short term, the proposed project would require the use of the land on which the boilerhouse would stand and the resources necessary to operate and maintain the facility such as lubricants and about 27,000 tons per year of wood chips. Wood chips are a sustainable resource in the region, so there would be no effect on long-term productivity. Once the boilerhouse had served its operational life, Frito-Lay could dismantle and remove it, then return the site to its previous state or use it for another purpose.

3.2.2.10 Irreversible and Irretrievable Commitment of Resources

The proposed project would result in the irreversible commitment of resources necessary to prepare the site, construct the boilerhouse, fabricate the biomass system components, install the system, and provide maintenance for its operational life. These materials would consist of concrete, gravel, vehicle fuels, lubricants, electricity, water, metals, and composite materials. The expenditure of Recovery Act funding from DOE would also be irreversible. The boilerhouse site would represent an irretrievable commitment of land during its operational life.

4. CUMULATIVE IMPACTS

The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decisionmaking process for Federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7).

DOE determined the cumulative impacts for this EA by combining the impacts of other past, present, and reasonably foreseeable future actions with those of the proposed project. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future actions in the proposed project area and, if applicable, the surrounding region. Past environmental impacts have already passed through the environment or are captured as part of the existing baseline conditions as given in Chapter 3. Ongoing and reasonably foreseeable projects in the vicinity include possible subsequent phases of industrial and mixed-use developments in the area of the proposed project, including completion of the Beloit Industrial Park and the Gateway Project and construction of the Beloit Casino (Figure 4-1). DOE did not identify any other reasonably foreseeable projects in the vicinity.

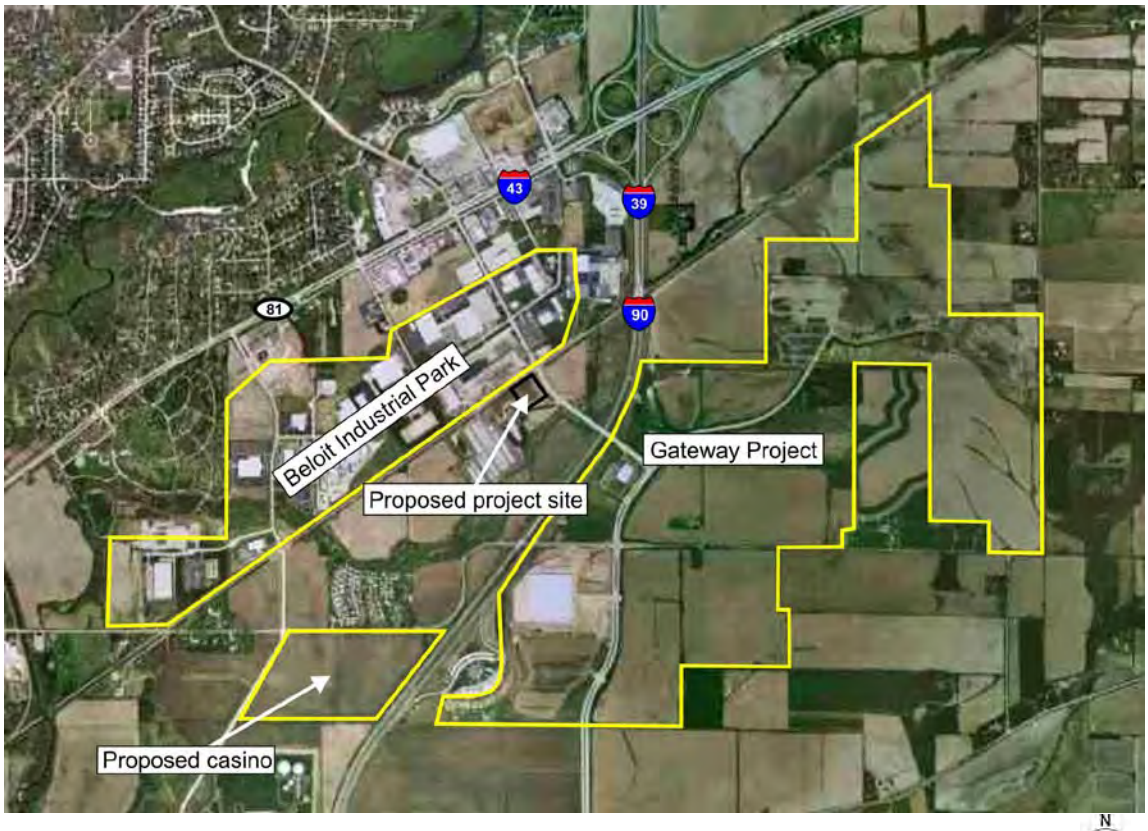

Figure 4-1. Area of potential cumulative impacts.

The Beloit Industrial Park has two vacant lots totaling about 3.6 acres and has a goal of attracting a variety of businesses in the manufacturing, distribution, and food processing industries (GBW 2009). Both sites are fully developed with access to major utilities including water, sewer, electric, gas, and telecommunications. The City of Beloit has zoned these sites to accommodate a wide range of industrial uses. Some commercial uses are possible with a Conditional Use Permit.

The Gateway Project is a mixed-use development just north of the Illinois-Wisconsin border at the intersection of Interstate Highways 39/90 and 43, east of the Beloit Industrial Park across the highway. The project consists of 450 acres with about 230 acres still available. The industrial sites, termed Gateway Business Park, are zoned to accommodate a wide range of industrial users. Development began in 2003 and is likely to last 20 years. The Gateway Project includes future development of multi- and single-family residences in the northeast portion of the Gateway Project. These housing units would be about a mile for the proposed project location (NMC 2007).

In 2001, the Bad River Band of the Lake Superior Tribe of Chippewa Indians and the St. Croix Chippewa Indians of Wisconsin submitted an application to the Bureau of Indian Affairs to take into trust land south of Frito-Lay's proposed project site for gaming purposes. The proposed Beloit Casino project consisted of a Class III gaming casino with a hotel, convention center, and water park. In 2003 the tribes enhanced the application by upgrading the required environmental assessment to an environmental impact statement, which they submitted to the Bureau in 2005. The Bureau denied the application in 2009, but DOE considers the project reasonably foreseeable.

Air Quality

The potential for cumulative impacts on air quality would depend on the type of businesses and industries that moved to the Beloit Industrial Park and the Gateway Business Park. Any business operating in those two locations would obtain and meet the conditions of applicable air permits from the Wisconsin Department of Natural Resources. Given this and the size of the developments, full occupancy of the business parks would not cause any pollutant concentrations to exceed Federal or Wisconsin ambient air quality standards. Therefore, the cumulative emissions of these development projects in combination with those of the proposed project would not cause noncompliance with applicable air quality standards and would cause only minimal impacts to air quality if any.

The release of greenhouse gases to the atmosphere from combustion and their contribution to climate change are inherently cumulative phenomena. Under the premise that combustion of biomass is carbon neutral, and because the plant would no longer burn natural gas for boiler operations, the proposed project would result in a net decrease in those emissions. However, the decrease would be relatively small in comparison with the estimated global emission in 2004 of 54 billion tons of carbon dioxide from nonnatural sources (IPCC 2007).

Transportation

The 2007 environmental impact statement for the Beloit Casino included a cumulative analysis that analyzed the intersection of Cranston and Milwaukee roads (BIA 2007). Although the casino project has not received development approval, the cumulative traffic impact analysis is applicable to the proposed boiler project. That analysis included development of the Gateway Project (Figure 4-1), the undeveloped lots at Beloit Industrial Park, and the initial phases of a light industrial development that would be likely if the casino project did not go forward (that is, the no-action alternative for the Beloit Casino).

The Beloit Casino no-action alternative projected an increase in peak-hour traffic from 1,252 vehicles per hour in 2007 to 2,460 vehicles per hour in 2016 at the intersection of Cranston and Milwaukee roads.

This increase in traffic was due primarily to the assumed build-out of the Gateway Business Park (which later became the Gateway Project) and other undeveloped lots in the project area. The increase would have resulted in a drop of level of service at the intersection of Cranston and Milwaukee roads from C to D. As a result of the decrease in the level, the environmental impact statement recommended mitigative actions that included the following (BIA 2007):

- Construct an additional eastbound left turn lane for eastbound traffic on Milwaukee Road for a total of two left turns.

- Adjust the signal timing to a 75-second clearance cycle, provide a protected northbound and southbound left turn phase, and provide an extended eastbound exclusive left turn and through phase.

The City of Beloit and the Wisconsin Department of Transportation have indicated they will continue to coordinate and regularly collect turning movement counts at this location. The relatively small addition in traffic volume due to the proposed wood chip boiler in this EA would be included in the turning movements counts. The cumulative impact would be minimal.

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6. NOTIFICATION LIST

Federal, State, and Local Agencies

Laura Bratz
Natural Resource Conservation Service

Carl Wacker
Natural Resource Conservation Service

Louise Clemency
U.S. Fish and Wildlife Service

Russell Anderson
Environmental Review
Wisconsin Department of Natural Resources

Anne Bogar
Air Management Specialist
Wisconsin Department of Natural Resources

Wisconsin Department of Transportation,
Southwest Region

Dan Duchrow
Wisconsin State Historic Preservation Office
Division of Historic Preservation and Public History

Paul Benjamin, Director
Planning, Economic & Community Development Agency
Rock County, Wisconsin

Larry Arft
City Manager
City of Beloit

David Botts
Department of Public Works
City of Beloit

Andrew Janke
Economic Development Director
City of Beloit

Drew Pennington
Community Development
City of Beloit

American Indian Tribes

John A. Barrett, Jr.
Chairman
Citizen Potawatomi Nation

Jamie Mouka
Tribal Historic Preservation Officer
Citizen Potawatomi Nation

Tony Reider
Chairman, Executive Committee
Flandreau Santee Sioux Tribe of South Dakota

Harold Frank
Chairman
Forest County Potawatomi Community of Wisconsin

Michael Alloway
Cultural Director
Forest County Potawatomi Community of Wisconsin

Kenneth Meshigaud
Chairperson
Hannahville Indian Community

Earl Meshigaud
Tribal Historic Preservation Officer
Hannahville Indian Community

Wilfrid Cleveland
President
Ho-Chunk Nation

Henning Garvin
Director for Historic Preservation
Ho-Chunk Nation

Gabe Prescott
President
Lower Sioux Indian Community of Minnesota

Andy Morris
Tribal Historic Preservation Officer
Lower Sioux Indian Community of Minnesota

Jancita Warrington
Tribal Historic Preservation Officer
Prairie Band of Potawatomi Nation

Victoria Winfrey
President
Prairie Island Indian Community

Whitney White
Tribal Historic Preservation Officer
Prairie Island Indian Community

Roger Trudell
Chairman
Santee Sioux Nation

Lee Ickes
Tribal Historic Preservation Officer
Santee Sioux Nation

Robert Shepherd, Sr.
Chairman
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation

Diane Desoriers
Tribal Historic Preservation Officer
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation

Myra Pearson
Chairperson
Spirit Lake Tribe

Kevin Jensvold
Chairman
Upper Sioux Community of Minnesota

John Blackhawk
Chairman, Tribal Council
Winnebago Tribe of Nebraska

Emily Smith
Tribal Historic Preservation Officer
Winnebago Tribe of Nebraska

APPENDIX A
SCOPING AND CONSULTATION LETTERS

This appendix contains copies of the scoping letter and DOE's letters of consultation as follows:

- Scoping letter (page A-2) and the one response (page A-7),
- The Wisconsin SHPO (page A-8) and the response (page A-13),
- The FWS (page A-14) and the response (page A-19).
- The following American Indian tribes (page A-20): Potawatomi Nation of Oklahoma, Flandreau Santee Sioux Tribe of South Dakota, Lower Sioux Indian Community of Minnesota, Forest County Potawatomi Community of Wisconsin, Hannahville Indian Community, Ho-Chunk Nation, Prairie Band of Potawatomi Nation of Kansas, Prairie Island Indian Community of Minnesota, Santee Sioux Nation of Nebraska, Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, Spirit Lake Tribe, Upper Sioux Community of Minnesota, and the Winnebago Tribe of Nebraska.

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

March 8, 2011

Subject: Notice of Scoping – Frito-Lay Biomass Boiler, Beloit, Rock County, Wisconsin

The U.S. Department of Energy (DOE) is proposing to authorize the Wisconsin Office of Energy Independence to provide federal funding to Frito-Lay North America to construct a new biomass wood-fired high-pressure boiler and three process steam heat exchangers at the Frito-Lay manufacturing plant in Beloit, Rock County, Wisconsin (proposed project). The proposed project would convert the plant to a high-pressure steam platform and create the ability to leverage steam heat exchange. The project would result in a 40-percent reduction in natural gas use at the plant.

Pursuant to the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500 to 1508), and DOE's NEPA implementing procedures (10 CFR Part 1021), DOE is preparing a draft Environmental Assessment (EA) to:

- Identify any adverse environmental effects and potential associated mitigation measures if this proposed project was implemented;
- Evaluate viable alternatives to the Proposed Action, including a No-Action Alternative;
- Describe the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity;
- Characterize any irreversible and irretrievable commitments of resources that would occur if this proposed project was implemented; and
- Analyze past, present, and reasonably foreseeable actions to evaluate potential cumulative impacts

The EA will describe and analyze any potential impacts on the environment of the proposed project and will identify possible mitigation measures to reduce or eliminate those impacts. At a minimum, the EA will evaluate the impacts that could affect:

- Land use
- Biological resources
- Cultural resources
- Noise
- Safety and occupational health
- Socioeconomics and environmental justice
- Utilities
- Traffic and transportation
- Visual resources
- Water resources

NEPA requires DOE to consider a reasonable range of alternatives to the proposed action during an environmental review. The definition of alternatives is governed by the "rule of reason." An EA must consider a reasonable range of options that could accomplish the agency's purpose and need and reduce environmental effects. Reasonable alternatives are those that may be feasibly carried out based on environmental, technical, and economic factors.

The No-Action Alternative will be addressed. The need for project redesign, or a project alternative, will be determined during the course of environmental review.

DOE invites the public; Federal, State of Wisconsin, and local agencies; and America Indian Tribes to identify issues they feel the Department should consider in the EA. The Department will post the draft EA in the DOE Golden Field Office online reading room later this year at http://www.eere.energy.gov/golden/Reading_Room.aspx.

The DOE Golden Field Office welcomes your input throughout our NEPA process. To ensure that your comments are received in time to be considered in the EA, please provide them on or before March XX, 2011 to:

Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401
melissa.rossiter@go.doe.gov

We look forward to hearing from you.

Sincerely,

Melissa Rossiter
NEPA Compliance Officer

Attachment: Project Description

PROJECT DESCRIPTION

FRITO-LAY BIOMASS BOILER
BELOIT, ROCK COUNTY, WISCONSIN

Frito-Lay is proposing to construct a new biomass wood-fired high-pressure boiler and three process steam heat exchangers at the Frito-Lay North America manufacturing plant in Beloit, Rock County, Wisconsin. The Frito-Lay plant is a full service manufacturing and distribution center that primarily serves the areas from Chicago, Illinois, to Minneapolis-St. Paul, Minnesota, including parts of Iowa. The proposed project would convert the plant to a high-pressure steam platform and create the ability to leverage steam heat exchangers, in comparison with two gas-fired boilers and 3 gas fired process heat exchangers on three corn-processing lines. The project would result in a 40-percent reduction in natural gas use at the plant.

The facility currently uses natural gas to fire boilers to generate steam. The biomass boiler has the capacity to create 25,000 pounds per hour of steam, using a maximum of 31 MMBTU/hr of fuel, through the use of renewable biomass. This project would save about 3.1 MMBTU of natural gas per hour, or 29,200 MMBTU per year, at maximum capacity with the assumption of additional manufacturing lines.

The boiler would consume about 5,200 pounds of wood chips or pellets per hour with an annual fuel requirement of approximately 7,400 tons. A local pallet recycler about 4 miles from the Frito-Lay plant would supply the wood chips in three or four truck shipments a day Monday through Friday between the hours of 6 a.m. and 6 p.m. Trucks would enter the proposed site through the Cranston Road entrance.

The proposed project site is a 5-acre plot that is currently grassland along Cranston Road near Interstate Highway 90/39 in east Beloit. The site location, which used to be farmland but is now zoned industrial, is about 350 feet south of the existing 550,000-square-foot plant. Frito-Lay purchased the land in 1995 from Wallace Farms. No farming currently takes place on the land.

The boilerhouse would be a 60- by-62 foot (3,700-square-foot) prefabricated steel building with a 70-foot stack for venting. The project would include a covered wood pellet storage area of about 38 by 60 feet. A pipe chase well would cross the railroad tracks and tie the new boiler into the current facility, to supply needed steam.

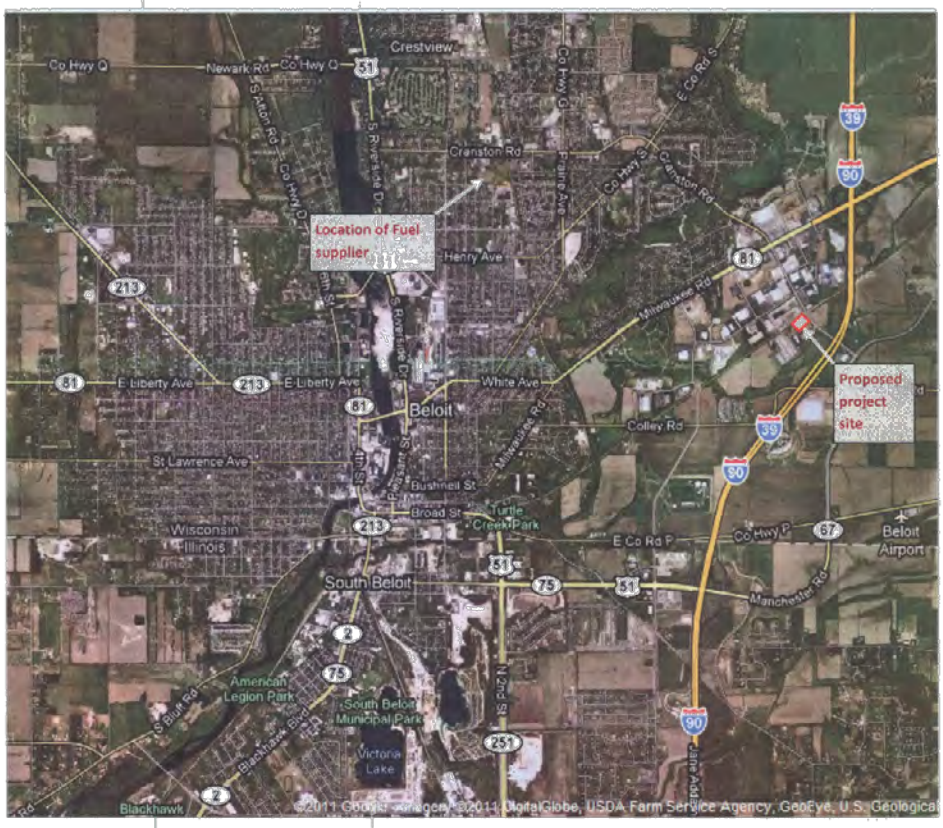


Figure 1. Beloit, Wisconsin, and Location of proposed project (Map data ©2011 Google).

Figure 2. Aerial photograph of the proposed project site looking southeast across the existing main Frito-Lay plant building.

City of BELOIT, Wisconsin

ECONOMIC DEVELOPMENT * CITY HALL * 100 STATE STREET * BELOIT, WI 53511
Office: 608/364-6748 * Fax: 608/364-6756
http://www.ci.beloit.wi.us
Equal Opportunity Employer

March 25, 2011

Melissa Rossiter
DOE Field Office
1617 Cole Blvd
Golden, CO 80401

RE: Beloit, WI Frito-Lay Biomass Boiler Project

Dear Melissa:

The City of Beloit is aware of the fact that the Beloit Frito-Lay plant has applied for federal funding through the Wisconsin Office of Energy Assistance for a proposed Biomass Boiler Project. As part of that process, the DOE Golden Field Office is preparing an Environmental Assessment (EA) that includes the opportunity for public comment.

The City of Beloit is very much in support of this project. The Frito-Lay Biomass Boiler project will allow Frito-Lay to burn sustainable indigenous wood feed stock to heat the boiler to produce high presser steam to run the plant's machinery and equipment. This will allow Frito-Lay to eliminate the need to use natural gas to produce steam.

As a self-designated Eco-Municipality since 2007, Beloit is supportive of this proposed project as it helps the City reach its sustainable goal to "reduce dependence on fossil fuels."

The positive economic impact that the project will have on the community is also highly desirable as it will leverage investment, create jobs, and make the Beloit Frito-Lay plant more efficient and competitive.

Thank you for providing an opportunity for comment from the City of Beloit and we hope Frito-Lay is successful in its efforts to obtain grant funding through the DOE.

Sincerely,

Andrew Janke

Andrew L. Janke, CPM
Economic Development Director

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

March 8, 2011

Mr. Dan Duchrow
Wisconsin State Historic Preservation Office
Division of Historic Preservation and Public History
816 State Street
Room 303
Madison, WI 53706-1417

Dear Mr. Duchrow:

The U.S. Department of Energy (DOE) is proposing to authorize the expenditure of Federal funds by Frito-Lay North America to construct a new biomass wood-fired high-pressure boiler and three process steam heat exchangers at the Frito-Lay manufacturing plant in Beloit, Rock County, Wisconsin. The proposed project would convert the plant to a high-pressure steam platform and create the ability to leverage steam heat exchange. The project would result in a 40-percent reduction in natural gas use at the plant.

The Frito-Lay facility is located at 2810 Kennedy Drive in Beloit in an industrial area. The 131-acre facility is bounded on the north by Kennedy Drive, on the south by Interstate (I)-90/I-39, on the east by Cranston Road, and on the west by the D.M. Manufacturing Inc. plant. The site for the proposed biomass boiler is about 350 feet south of the Frito-Lay manufacturing facility. The grass-covered proposed site, purchased by Frito-Lay in 1995, is on previously disturbed land that was a corn and soybean field for several years subsequent to its purchase. Photographs showing the proposed site and facility are attached to this letter.

The expected area of potential effect (APE) would be the 13-acre Frito-Lay facility in Beloit, which is where all construction activities would occur. The *National Register of Historic Places* (NRHP) lists 134 sites in Rock County, Wisconsin, of which 35 are in Beloit. The nearest NRHP site to the proposed biomass boiler is the Dougan Round Barn, about 0.7 mile to the southwest. The Strong Partridge Mound Group is over 1 mile from the site; the Brasstown Cottage is over 1.4 miles from the site; and the Florence Yates House about 1.65 miles from the site. Therefore, DOE concludes that there are no known historic properties within the proposed project's expected APE. The proposed project fits the character of the industrially zoned area and no visual impacts are expected.

Based on this analysis, DOE has determined that no historic buildings, structures, districts, objects, or archaeological resources would be adversely affected by the proposed project pursuant to Section 106 of the *National Historic Preservation Act* and 36 CFR Part 800. In compliance with 36 CFR 800.4(d) (1), DOE respectively requests concurrence on this determination. Attached to facilitate your review is the required Wisconsin *Request for SHPO Comment and Consultation On A Federal Undertaking* form. A photograph of the area where the new equipment would be located is also attached to this letter.

DOE's Golden Field Office is currently preparing a draft Environmental Assessment (EA) for this project and will send you a postcard announcing the online (website) availability of the Draft EA, at which time you can provide any specific concerns you may have about the proposed project. At this time, DOE is anticipating a 15-day public comment period on the Draft EA. Because of the public nature of NEPA

documents, all correspondence(s) with your office will be included in an appendix to the EA. Please contact DOE if you would like to receive a hardcopy of the draft EA.

Please forward the results of your review and any requests for additional information to Melissa Rossiter of the DOE's Golden Field Office as soon as possible at the following:

Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401
melissa.rossiter@go.doe.gov

Thank you in advance for your consideration.

Sincerely,

Melissa Rossiter
NEPA Compliance Officer

Attachments
Exhibit 1. USGS Quadrangle Showing APE
Exhibit 2. Aerial photograph of proposed project site looking southeast.
Exhibit 3. Proposed project layout.
Wisconsin *Request for SHPO Comment and Consultation On A Federal Undertaking* form

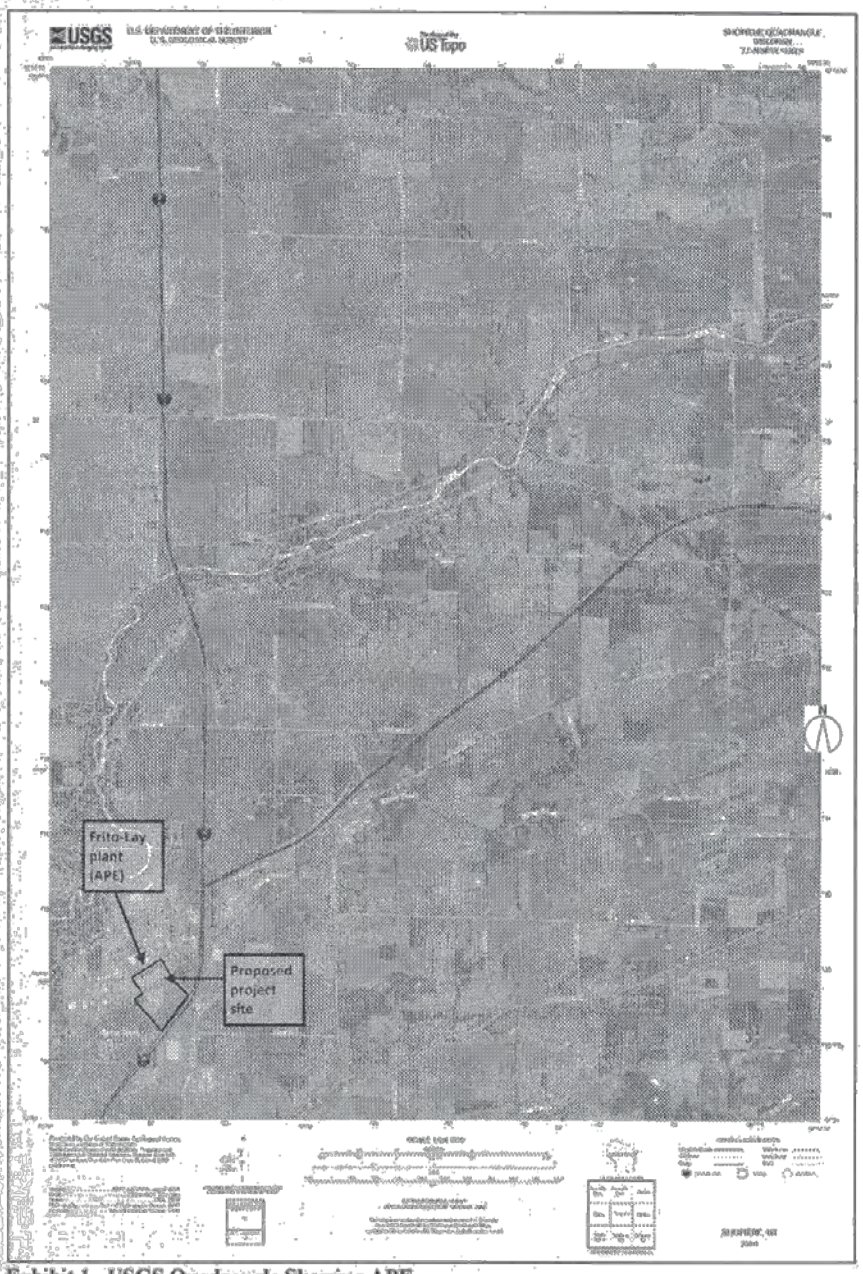


Exhibit 1. USGS Quadrangle Showing APE

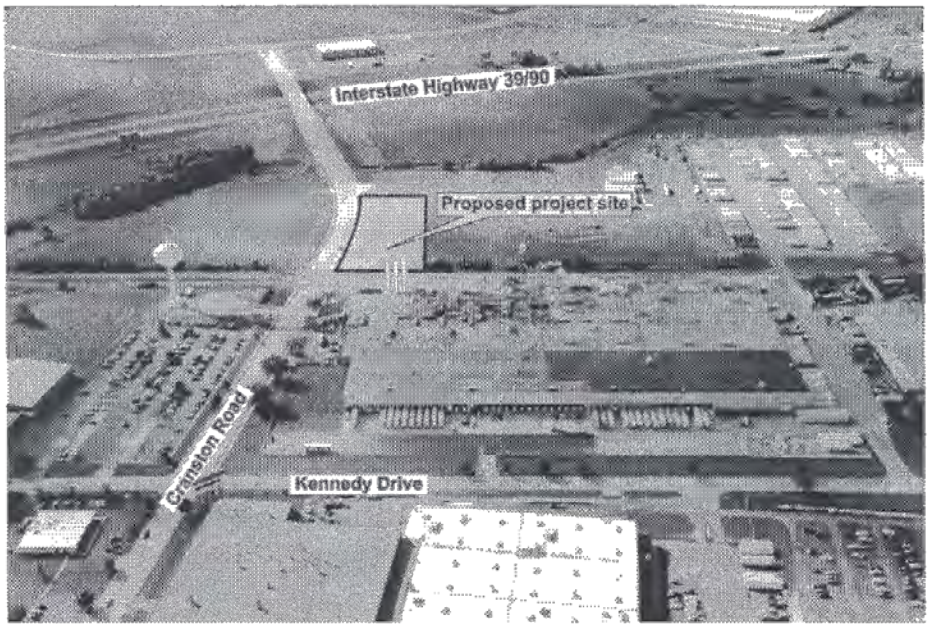
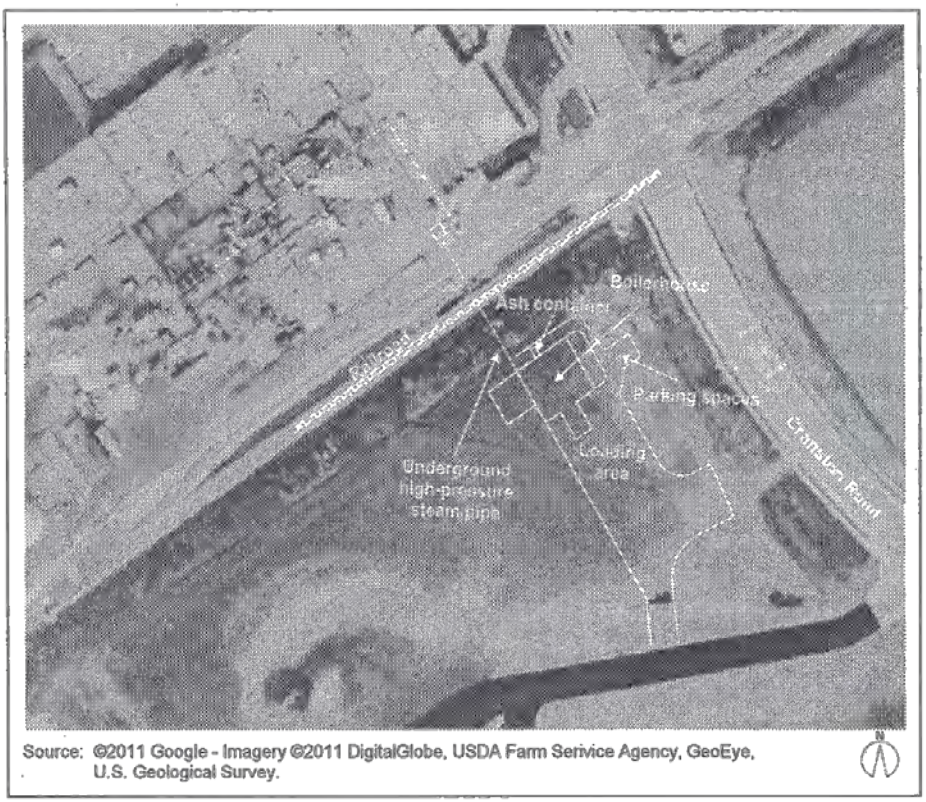


Exhibit 2. Aerial photograph of proposed project site looking southeast.



Source: ©2011 Google - Imagery ©2011 DigitalGlobe, USDA Farm Serivice Agency, GeoEye, U.S. Geological Survey.

Exhibit 3. Proposed project layout.

WISCONSIN HISTORICAL SOCIETY

April 6, 2011

Ms. Melissa Rossiter
U.S. Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, CO 80401

IN REPLY PLEASE REFER TO CASE #11-0200/RO
RE: Frito-Lay Biomass Boiler, Rock County, WI

Dear Ms. Rossiter:

We have reviewed the information which you provided concerning the above-referenced project as required for compliance with Section 106 of the National Historic Preservation Act and 36 CFR Part 800: Protection of Historic Properties, the regulations of the Advisory Council on Historic Preservation governing the Section 106 review process.

We concur with your determination that there are no archeological or architectural properties listed in the National Register of Historic Places located within the area of potential effect of the proposed undertaking. Furthermore, we are not aware of any properties that may be eligible for the National Register in this area.

We remind you that the regulations of the Advisory Council on Historic Preservation include the requirement that you seek information, as appropriate to the undertaking, from parties likely to have knowledge of or concerns with historic properties in the project area - such as Indian tribes, local governments, local landmark commissions and public and private organizations.

If there are any questions concerning this matter, I may be reached at (608) 264-6505.

Sincerely,

Dan Duchrow
Division of Historic Preservation
and Public History

Collecting, Preserving and Sharing Stories Since 1846
816 State Street Madison, Wisconsin 53706
wisconsinhistory.org

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

March 8, 2011

U.S. Fish and Wildlife Service-Region 3
Department of Ecological Services
1 Federal Drive
Fort Snelling, MN 55111

Dear Sir/Madam:

The U.S. Department of Energy (DOE) is proposing to authorize the expenditure of Federal funds by Frito-Lay North America to construct a new biomass wood-fired high-pressure boiler and three process steam heat exchangers at the Frito-Lay manufacturing plant in Beloit, Rock County, Wisconsin. The proposed project would replace an existing natural gas boiler and would convert the plant to a high-pressure steam platform and create the ability to leverage steam heat exchange. The project would result in a 40-percent reduction in natural gas use at the plant.

The Frito-Lay facility is located at 2810 Kennedy Drive in Beloit in an industrial area. The 131-acre facility is bounded on the north by Kennedy Drive, on the south by Interstate (I)-90/I-39, on the east by Cranston Road, and on the west by the D.M. Manufacturing Inc. plant. The site for the proposed biomass boiler is about 350 feet south of the Frito-Lay manufacturing facility. The grass-covered proposed site, purchased by Frito-Lay in 1995, is on previously disturbed land that was a corn and soybean field for several years subsequent to its purchase. Photographs showing the proposed site and facility are attached to this letter. Springbrook Creek, the nearest surface water body, is approximately 650 feet southeast of the proposed biomass boiler location.

DOE obtained the list of threatened, endangered, and candidate species for Cook County from the U.S. Fish and Wildlife Service Midwest Region 3 Section 7(a)(2) Technical Assistance Website. From this list, DOE has determined the following species have potential to occur in Rock County: whooping crane (*Grus americana*); prairie bush-clover (*Lespedeza leptostachya*); eastern prairie fringed orchid (*Platantherea leucophaea*); and Eastern Massassauga rattlesnake (*Sistrurus Catenatus Catenatus*). The whooping crane is listed as a non-essential experimental population; the prairie bush-clover and eastern prairie fringed orchid are listed as endangered; and the Eastern Massassauga is a candidate species.

The 131-acre Frito-Lay facility is located in a heavily industrialized area, which does not provide suitable habitat for the species of concern, nor have any of the species been observed in the area. The prairie bush- clover generally is found in gravelly or sandy hillside prairies. The eastern prairie fringed orchid prefers mesic to wet, unplowed tallgrass prairies and meadows, including bogs, fens, and sage meadows. The Eastern Massasuaga is typically found near sedge meadows, peatlands, wet prairies, open woodlands, and shrublands, none of which exist within the project area. The specific location for the proposed biomass boiler is a grass-covered, previously disturbed area.

DOE's Golden Field Office is currently preparing an Environmental Assessment (EA) for the proposed project to meet the requirements of the *National Environmental Policy Act*. Based on the above information, DOE determined that there would be no adverse effects to Federally threatened or endangered species.

In summary, pursuant to the requirements under Section 7(a) (2) of the *Endangered Species Act* and the U.S. Fish and Wildlife Service implementing regulations (50 CFR Part 402), DOE respectfully requests concurrence on the determination that installation and operation of the Frito-Lay biomass boiler project in Rock County, Wisconsin, would have no effect on these or any other Federally listed threatened, endangered, proposed, or candidate species, or their critical habitat. Please forward the results of your review and any requests for additional information within 30 days of receipt of this letter to the following:

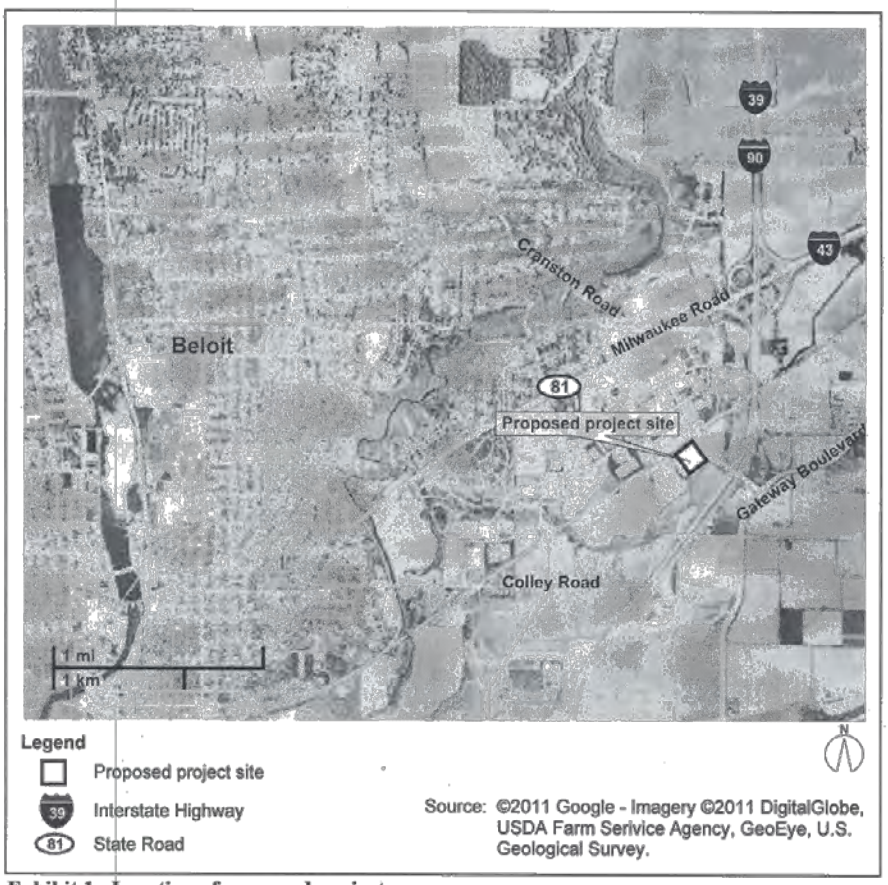
Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401
melissa.rossiter@go.doe.gov
Phone: 720-356-1566

DOE will send you a postcard announcing the online (website) availability of the Draft EA, at which time you can provide any specific concerns you may have about the proposed project. At this time, DOE is anticipating a 15-day public comment period on the Draft EA. Because of the public nature of NEPA documents, all correspondence(s) with your office will be included in an appendix to the EA. Please contact DOE if you would like to receive a hardcopy of the draft EA.

Sincerely,

Melissa Rossiter
NEPA Document Manager

Attachments
Exhibit 1. Location of proposed project.
Exhibit 2. Aerial photograph of proposed project site looking southeast.
Exhibit 3. Proposed project layout.



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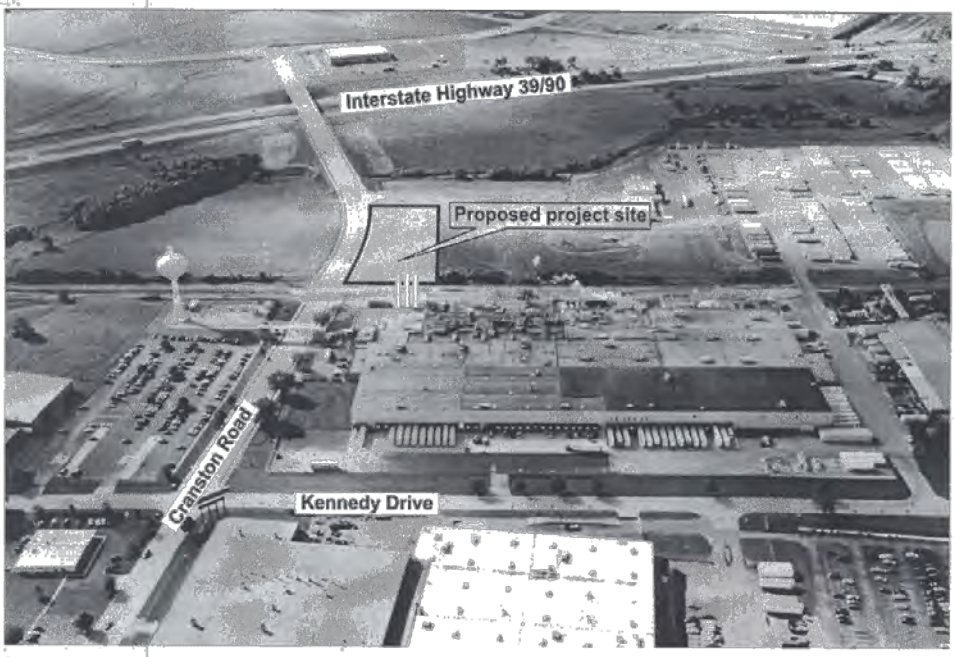

Exhibit 2. Aerial photograph of proposed project site looking southeast.

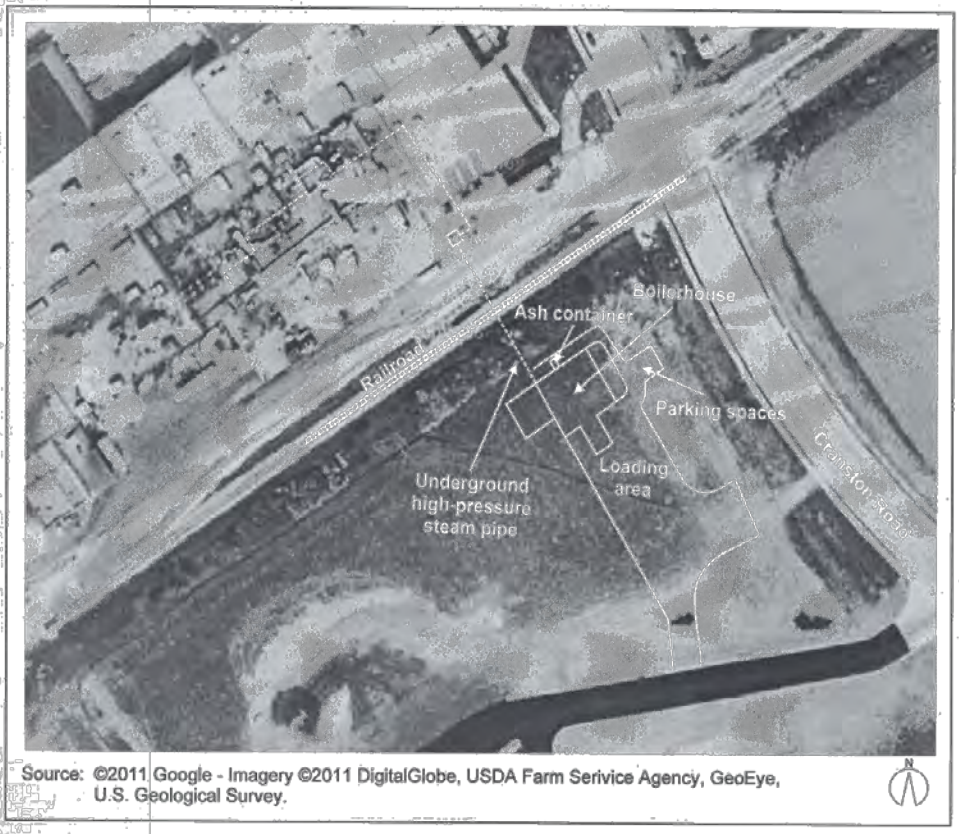

Exhibit 3. Proposed project layout.

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

March 8, 2011

Subject: Notice of Scoping – Frito-Lay Biomass Boiler, Beloit, Rock County, Wisconsin

The U.S. Department of Energy (DOE) is proposing to authorize the expenditure of Federal funds by Frito-Lay North America to construct a new biomass wood-fired high-pressure boiler and three process steam heat exchangers at the Frito-Lay manufacturing plant in Beloit, Rock County, Wisconsin. The proposed project would convert the plant to a high-pressure steam platform and create the ability to leverage steam heat exchange. The project would result in a 40-percent reduction in natural gas use at the plant.

The Frito-Lay facility is located at 2810 Kennedy Drive in Beloit in an industrial area. The 131-acre facility is bounded on the north by Kennedy Drive, on the south by Interstate (I)-90/I-39, on the east by Cranston Road, and on the west by the D.M. Manufacturing Inc. plant. The site for the proposed biomass boiler is about 350 feet south of the Frito-Lay manufacturing facility. The grass-covered proposed site, purchased by Frito-Lay in 1995, is on previously disturbed land that was a corn and soybean field for several years subsequent to its purchase. Photographs showing the proposed site and facility are attached to this letter.

DOE's Golden Field Office is currently preparing an Environmental Assessment (EA) for the proposed project to meet the requirements of the *National Environmental Policy Act*.

DOE is requesting information your tribe may have on properties of traditional religious and cultural significance within the vicinity of the proposed facility and any comments or concerns you have on the potential for this proposed project to affect those properties. This information is being requested to aid in the preparation of the EA and to meet our obligations under Section 106 of the *National Historic Preservation Act* and the *Native American Graves Protection and Repatriation Act of 1990*. If you have any such information, require additional information, or have any questions or comments about that project, please contact Melissa Rossiter of the DOE's Golden Field Office as soon as possible at the following:

Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401
melissa.rossiter@go.doe.gov

DOE will send you a postcard announcing the online (website) availability of the Draft EA, when you can again provide any specific concerns you may have about the proposed project. At this time, DOE is anticipating a 15-day public comment period on the Draft EA. Because of the public nature of NEPA documents, all correspondence(s) with your tribe will be included in an appendix to the EA.

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Thank you in advance for your consideration.

Sincerely,

Melissa Rossiter
DOE NEPA Document Manager

Attachments
Exhibit 1. Location of proposed project.
Exhibit 2. Aerial photograph of proposed project site looking southeast.
Exhibit 3. Proposed project layout.

Exhibit 1. Location of proposed project.

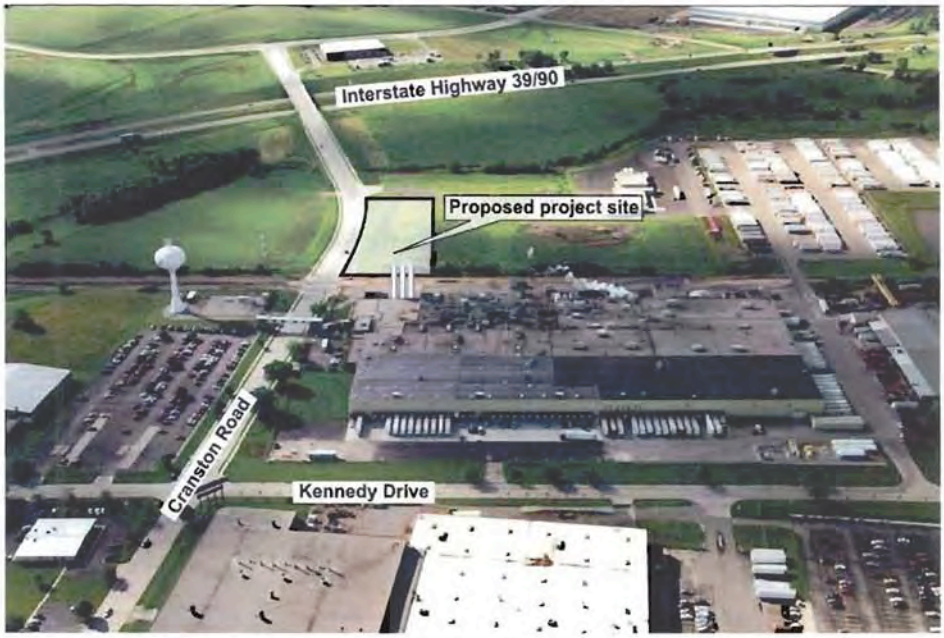

Exhibit 2. Aerial photograph of proposed project site looking southeast.

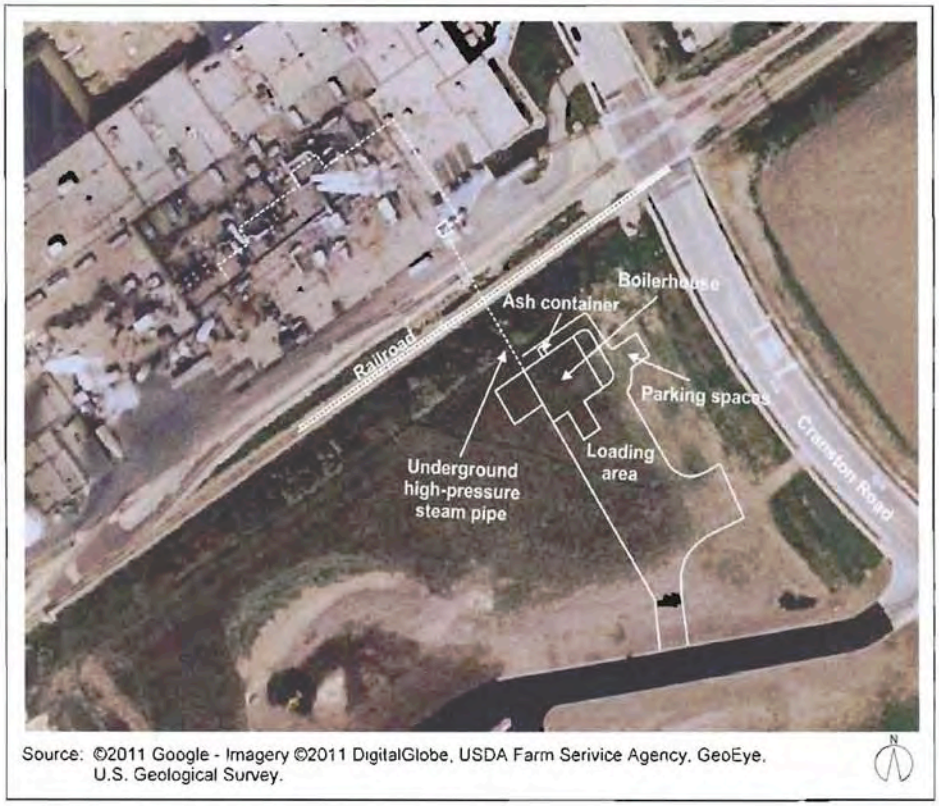

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Exhibit 3. Proposed project layout.