DOE/EA-1732

FINAL

ENVIRONMENTAL

ASSESSMENT

ENVIRONMENTAL ASSESSMENT FOR DEPARTMENT OF ENERGY LOAN TO NEXT AUTOWORKS LOUISIANA, LLC (FORMERLY V-VEHICLE COMPANY), FOR AN ADVANCED TECHNOLOGY GASOLINE VEHICLE MANUFACTURING PROJECT IN MONROE, LOUISIANA

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

January 2011

SUMMARY

INTRODUCTION

The U.S. Department of Energy (DOE) is evaluating whether to issue a loan to Next Autoworks Louisiana, LLC (Next Autoworks Louisiana) – formerly V-Vehicle Company – for the production of an advanced technology gasoline-powered vehicle named the V Car. Next Autoworks Louisiana's project would include the expansion and reequipping of a Monroe, Louisiana manufacturing plant, formerly the Guide Plant. The existing facility is 425,000 square feet, and would be increased to approximately 800,000 square feet. The U.S. Economic Development Administration, serving as a cooperating agency, would also issue a grant for infrastructure upgrades at the manufacturing plant.

DOE has prepared this environmental assessment (EA) to comply with the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1500–1508) and DOE National Environmental Policy Act Implementing Procedures (10 CFR 1021). The EA examines the potential environmental impacts associated with the Proposed Action and No-Action Alternative to determine whether the Proposed Action has the potential for significant environmental impacts.

PURPOSE AND NEED

The Energy Independence and Security Act of 2007 (EISA) (P.L. 110-140) authorized several new grant, loan, and aid programs to stimulate the transformation of local communities, states, and industries adopting and adapting to renewable energy and energy conservation programs. The Advanced Technology Vehicles Manufacturing Incentive Loan Program (ATVM) was authorized under Section 136 of EISA to facilitate the development of energy-efficient vehicles. On September 30, 2008, the ATVM was funded and up to $25 billion in direct loans were authorized to eligible applicants for the costs of reequipping, expanding, and establishing manufacturing facilities in the U.S. to produce advanced technology vehicles that provide meaningful improvements in fuel economy performance and components for such vehicles. The purpose and need for agency action is to comply with DOE's mandate under Section 136 of the EISA by selecting eligible projects that meet the goals of the Act. DOE is using the NEPA process to assist in determining whether to issue a loan to Next Autoworks Louisiana to support the Proposed Action.

Eligibility for loans under EISA Section 136 is based on the fuel economy improvement of the vehicle or vehicles that are the subject of the application. Section 136 requires that the vehicle be an "advanced technology vehicle." Advanced technology vehicles are subject to emission standard requirements and must also be "at least 125% of the average base year combined fuel economy for vehicles with substantially similar attributes." (73 *Federal Register* 66722). As such, the V Car is an eligible advanced technology vehicle.

PROPOSED ACTION AND ALTERNATIVES CONSIDERED

DOE's Proposed Action is to issue a loan to Next Autoworks Louisiana to reequip and expand the existing Guide Plant in Monroe, Louisiana (Ouachita Parish) for the production of the V Car. The existing Guide Plant was constructed in 1974. It produced automotive headlamps from 1975 to 2006, and closed in January 2007 when all Guide Plant operations ceased. Out of three planned construction phases, and under the terms of environmental permits obtained, Next Autoworks Louisiana has almost completed Phase 1 activities, which included performing demolition and remediation activities to address waste materials left from Guide Plant operations, and the relocation of Bennett Bayou channel, a perennial

stream that runs through the property. Phase 1 activities were undertaken using sources of funding other than a DOE loan. Construction Phases 2 and 3 are expected to be initiated shortly after the ATVM loan closes, and would include renovation of the existing building and expansion of the existing facility, respectively.

The DOE federal loan would support two activities – (1) engineering integration for the V Car and (2) the reequipping and expansion of an existing U.S. manufacturing plant to produce the V Car. The proposed Next Autoworks Louisiana project would involve engineering integration activities that include engineering design and development, vehicle testing, prototype and production tooling design, and process engineering. When the plant is operational, Next Autoworks Louisiana proposes to manufacture plastic and vehicle body components and conduct final assembly of the V Car, utilizing components shipped to the facility by rail and truck. At full production, Next Autoworks Louisiana proposes to produce 150,000 V Cars annually. The V Car is a gasoline-powered four-door hatchback expected to achieve an estimated 40 miles per gallon.

In addition to the Proposed Action of issuing the loan to Next Autoworks Louisiana for the project, a No-Action Alternative is also evaluated in this EA. Under the No-Action Alternative, DOE would not issue the loan for the project. Two scenarios exist under the No-Action Alternative: (1) the project would eventually secure other financing and proceed without DOE's loan, and the potential impacts would be essentially identical to those under DOE's Proposed Action; and (2) construction of the Next Autoworks Louisiana facility would not be completed, it would not achieve commercial operation, and the impacts potentially caused by additional plant construction and plant operation would not occur. Although the impacts associated with the relocation of Bennett Bayou and the remediation of the existing facility would remain under either No-Action scenario, the second scenario is presented in this EA as the No-Action Alternative to allow a comparison between the potential impacts of the project as implemented and the impacts of not proceeding with the project.

Next Autoworks Louisiana considered several alternative locations before proposing that the project be sited at the former Guide Plant. To assist with site selection, Next Autoworks Louisiana hired a site-selection consultant, a construction, development and environmental advisory service, and a design/build general contractor. Utilizing these resources and comprehensive site-selection criteria, Next Autoworks Louisiana executed an 11-state search that examined more than 400 existing facilities, and performed due diligence visits to more than 15 specific sites in 9 states. Site-selection criteria included available acreage, plant size, road and rail access, labor-force availability, labor costs, environmental considerations, and socioeconomic impacts. Based on these criteria, Next Autoworks Louisiana selected three finalist locations -- two re-use sites and one development-ready site. In considering potential sites, Next Autoworks Louisiana weighed environmental benefits and costs against economic benefits and costs, while also considering infrastructure, technological constraints, and procedural (permitting) requirements. Next Autoworks Louisiana selected the Monroe site because of the combination of the re-use of an existing industrial site, state and local financial support, and favorable logistics conditions.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

The EA evaluates the potential environmental effects that could result from implementing the Proposed Action and No-Action Alternatives, summarized in Table S-1. The information presented in this EA will serve to inform DOE’s decision on whether or not to approve the loan for the proposed Next Autoworks Louisiana project.

Table S-1. Summary of Potential Environmental Consequences

Resource Area	Proposed Action	No-Action Alternative
Transportation	Under the Proposed Action, the results of a Traffic Impact Study conducted for the Louisiana Department of Transportation and Development indicated that acceptable levels-of-surface would remain at the analyzed traffic intersections with three exceptions: (1) impacts to the I-20 eastbound exit ramp; (2) impacts to the Millhaven/Russell Sage Road intersection; and (3) impacts at the employee drive at Russell Sage Road. However, impacts to the I-20 and Millhaven/Russell Sage Road intersections would be at p.m. peak times only --- otherwise, the intersections would operate within acceptable levels-of-service throughout the remainder of the day. Impacts to employee arrival and departure would be lessened by a scheduled hour between shifts. Rail and truck traffic increases would be facilitated through improved access and staging areas, resulting in minimal impacts on Millhaven and Russell Sage Roads.	Under the No-Action Alternative, although the transportation impacts sustained during the Phase 1 construction would remain, they were limited and transient in nature. There would be no further transportation-related impacts resulting from additional construction or operations.
Land Use	Under the Proposed Action, there would be no land-use impacts. The Proposed Action is consistent with the historic, current, and planned land uses in the area.	Under the No-Action Alternative, there would be no land-use impacts.
Waste Management	Under the Proposed Action, Phase 1 construction activities have included near completion of the site remediation and demolition phase of the project. Operations activities would lead to minor waste impacts, including the generation of small quantities of hazardous wastes. Solid and hazardous wastes would be managed and disposed of in accordance with applicable, federal, state, and local regulations.	Under the No-Action Alternative, the beneficial impacts pertaining to the site remediation would remain, and would be the same as those under the Proposed Action. No further impacts would occur from Phase 2 or Phase 3 construction activities or from waste management operational requirements.
Socioeconomics	Under the Proposed Action, the Bennett Bayou relocation and site remediation activities required short-term construction jobs. Beneficial employment impacts would occur under future construction and operations activities, with a peak workforce of 544 during Phases 2 and 3 and more than 1,400 during plant operations. Additional indirect employment would also occur. At full operating capacity, the facility would support 3,200 direct and indirect jobs in the State of Louisiana, 2,700 of which would be in Ouachita Parish. This would generate an estimated $131 million in state tax revenues over a period of 15 years, $32 million of those revenues in Ouachita Parish.	Under the No-Action Alternative, a potential loss of 3,200 direct and indirect jobs would take place. The generation of $131 million in state tax revenues over a period of 15 years would also be forfeited. However, the positive employment impacts sustained during Phase 1 construction activities would remain.

Table S-1. Summary of Potential Environmental Consequences (continued)

Resource Area	Proposed Action	No-Action Alternative
Geology and Soils	Under the Proposed Action, all required soil excavations and surface grading activities have, and would continue to utilize erosion-control best management practices to minimize soil erosion. The Bennett Bayou channel relocation, one of the two elements of Phase 1 construction, followed this protocol. Impacts to prime farmland soils would not occur. The evaluation required by the National Resources Conservation Service yielded a score less than the 160-point threshold.	Under the No-Action Alternative, the vegetation and soil excavation impacts resulting from Phase 1 construction activities would be the same under the No-Action Alternative as for the Proposed Action. Under the No-Action Alternative, there would be no additional impacts to geology or soils as a result Phase 2 and 3 construction activities.
Water Resources	*Wetlands and Other Waters of the United States* Executive Order 11990, *Protection of Wetlands*, directs federal agencies to consider wetlands protection in decision-making and to evaluate the potential impacts of any new construction proposed in a wetland. Under the Proposed Action, impacts to wetlands have been, and would continue to be mitigated under the terms of the U.S. Army Corps of Engineers Section 404 permit. Special conditions listed in the Section 404 permit include: (1) measures to ensure that no unintended environmental impacts occur when borrow material is obtained; (2) provisions for implementing a mitigation covenant for the remaining wetlands on the property; and (3) provisions for compensatory mitigation for the permanent fill of wetland. *Floodplains* In compliance with Executive Order 11988, Floodplain Management and DOE's implementing regulations found at 10 CFR 1022, a notice of floodplain action was published in The News-Star on January 17, 2010. The Proposed Action is within a FEMA-designated 100-year floodplain. However, on January 21, 2010, FEMA issued a conditional letter of Map Revision indicating that the Proposed Action would not be located in a Special Flood Hazard due to Next Autoworks Louisiana's plans to construct a sump area for flood storage to compensate for floodplain capacity reduced by construction fill. *Groundwater* The Proposed Action would not generate impacts to groundwater quantity because the proposed Next Autoworks Louisiana facility would obtain all water for operations through the City of Monroe municipal water system.	Under the No-Action Alternative, Phase 1 construction activities have been conducted that have resulted in changes to wetlands, the 100-year floodplain, and streams on the project property. The mitigated impacts to wetlands and streams (Bennett Bayou) would remain, and would be the same under the No-Action Alternative as for the Proposed Action. Under the No-Action Alternative, no additional impacts would occur as a result of additional construction activities or from plant operations.
Biological Resources	Under the Proposed Action, the effects of Bennett Bayou relocation have been minimized through vegetation mitigation practices. These include: (1) the restriction of incidental vegetation clearing; (2) reseeding disturbed areas with native seed mix as soon as construction is complete; and (3) implementing an aggressive invasive species management plan to limit the introduction and spread of non-native plant species. Future construction efforts would incur only minimal disruption to undisturbed vegetation as the areas where the facilities will be built consist of mowed grasses and previously graded areas. Impacts would not occur to federally or state-listed endangered or threatened species or critical habitat.	Under the No-Action Alternative, Phase 1 construction activities have resulted in changes to vegetation. The mitigated impacts from the Bennett Bayou relocation would remain, and would be the same under the No-Action Alternative as for the Proposed Action. No additional impacts would occur as a result of Phase 2 or Phase 3 construction.

Table S-1. Summary of Potential Environmental Consequences (continued)

Resource Area	Proposed Action	No-Action Alternative
Air Quality and Climate	Under the Proposed Action, air emissions generated by Phase 1 construction activities have created minor air quality impacts related to construction equipment and miles driven by employees traveling to and from work. Overall, the construction and operation of the proposed facility is not expected to change the regional criteria pollutant in-attainment air quality status, and plant operation emissions do not meet major source threshold levels. The proposed plant would require a minor source air quality permit. With respect to potential climate impacts, DOE estimates that the V Car would yield a carbon dioxide equivalent (CO_2e)[1] emissions benefit compared to an average Model Year 2011 passenger car. The Model Year 2011 passenger car standard established by the National Highway Traffic Safety Administration standard is 30.2 miles per gallon (USDOT, 2009). Based on an emissions factor of 19.4 pounds of CO_2 per gallon of gasoline (EPA, 2005), it is expected that an annual production of 150,000 V Cars, with a fuel economy of 40 miles per gallon, driven an annual distance of 14,910 miles per vehicle per year, would yield an estimated savings of 18.1 million gallons of gasoline. This would result in an annual reduction of 162,600 metric tons per year of CO_2e emissions compared to the average new passenger car produced in Model Year 2011. Assuming a typical service life of 7 years, minimal fleet attrition, and continued production and operation of V Cars, a total reduction of 4.1 million metric tons of CO_2e emissions is estimated. Savings would continue to compound as the vehicle fleet grew.	Under the No-Action Alternative, Phase 1 construction-related emissions would remain, although limited and transient in nature. There would be no additional impacts associated with further construction or operations of the proposed facility.
Noise	Under the Proposed Action, there would be only minor impacts from noise associated with construction or operations because there are no noise sensitive receptors in the immediate vicinity.	Under the No-Action Alternative, the minor noise impacts created by Phase 1 construction activities would be the same as under the Proposed Action. There would be no additional impacts associated with further construction or plant operations.
Safety and Risk	Under the Proposed Action, the beneficial impacts of Phase 1 site demolition and remediation activities have mitigated the potential for occupational or public exposure to hazardous wastes. All contaminated materials have been removed, handled, and disposed of in accordance with applicable federal, state, and local regulations. Compliance with Occupational Safety and Health Standards, worker training, and implementation of protection measures have been instituted for Phase 1 construction activities and would be instituted for Phase 2 and 3 construction, and for plant operations.	Under the No-Action Alternative, the positive effects of remediation would remain. Phase 1 worker health and safety impacts would be the same as those related to the Proposed Action. No further impacts would take place from additional construction or from plant operations.

[1] **Carbon dioxide equivalent (CO_2e).** A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

Table S-1. Summary of Potential Environmental Consequences (continued)

Resource Area	Proposed Action	No-Action Alternative
Infrastructure and Energy Resources	Under the Proposed Action, energy and utilities would be utilized, but no impacts would occur to the infrastructure as sufficient resources are available.	Under the No-Action Alternative, no energy or utility use would occur except for the usage associated with the site remediation activities.
Cultural Resources	Under the Proposed Action, no cultural resources have been identified in the vicinity of the proposed Next Autoworks Louisiana facility, and the State of Louisiana SHPO has determined that no known historic properties would be affected. In addition, the involved Tribe which maintains ancestral associations throughout the state of Louisiana has stated that the proposed location is beyond their scope of interest.	Under the No-Action Alternative, there would not be any cultural resource impacts.
Environmental Justice	Under the Proposed Action, no pathways were identified through which minority and low-income groups in the area could be uniquely exposed to adverse human health and environmental effects. Therefore, there would be no disproportionately high and adverse human health or environmental impacts to minority populations and low-income populations.	Under the No-Action Alternative, the absence of impacts under the No-Action Alternative would be the same as those for the Proposed Action.
Cumulative Impacts	*Transportation* Potential cumulative traffic impacts associated with the Proposed Action and other planned projects in the area would be lessened through improved truck and rail access, road projects to widen bridges, railroad overpasses, improvement to interstate ramps, and the availability of two exit ramps off Interstate 20 equidistant between the Proposed Action and other planned developments. *Air Quality* The construction emissions for Next Autoworks Louisiana's facilities could potentially coincide with construction emissions of other area projects. However, the Proposed Action's status as a minor air quality source; physical distance among the projects, and short dispersion distances for some pollutants, such as fugitive dust, would combine to lessen the criteria pollutant emission levels. Consequently, it is not expected that the combined effect of the analyzed projects would cumulatively alter the air quality attainment status for any criteria pollutant. *Climate* The Proposed Action would contribute to cumulative increases in greenhouse gases (GHG) and related climate change when combined with other projects analyzed in this EA and globally. However, because DOE expects that there would be an overall net reduction in CO_2e emissions resulting from the proposed Next Autoworks Louisiana project compared to the emissions generated by an average Model Year 2011 passenger vehicle, the incremental impact on cumulative GHG emissions would be minor. Section 3.8.2.2 estimates that the V Car reduces CO_2e emissions by 162,600 metric tons per year. Assuming a service life of seven years, an annual production level of 150,000 cars	Under the No-Action Alternative, the beneficial socioeconomic impacts of the proposed projects would not materialize. The beneficial aspects of the Next Autoworks Louisiana project from a global climate change perspective would also not materialize.

Table S-1. Summary of Potential Environmental Consequences (continued)

Resource Area	Proposed Action	No-Action Alternative
	driven a distance of 14,910 miles per car, minimal fleet attrition, and continued production and operation of V Cars, a total reduction of 4.1 million metric tons CO_2e is estimated. The estimated annual GHG emissions generated by the Proposed Action are also noted in Chapter 3 --- 64,010 metric tons. Assuming a 7 year time frame, comparing the generated GHG emissions of 448,070 metric tons with 4.1 GHG savings $MMTCO_2e$, a net CO_2e savings of 3.7 $MMTCO_2e$ would be possible. GHG savings would continue to compound as the vehicle fleet grew. *Socioeconomics* Of the projects listed in Section 4.3, the new Louisiana Delta Community College, the Gardner Dever Thomas expansion, and Parish Square Village Project would increase local employment, both temporarily and long term. Next Autoworks Louisiana facility construction and operations would create temporary and long-term employment opportunities. Therefore, the Next Autoworks Louisiana project in combination with other projects in the area could result in beneficial cumulative impacts to temporary and long-term employment opportunities in the Monroe-West Monroe area. The analysis also indicates that a positive cumulative impact to state and local tax revenues would occur from the Next Autoworks Louisiana plant and other projects.	

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List of Acronyms and Abbreviations

ACGIH	The American Conference of Governmental Industrial Hygienists
BLS	Bureau of Labor Statistics
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO_2e	Carbon dioxide equivalent
dBA	A-weighted decibels
DCC	Louisiana Delta Community College
DNL	Day-night average noise level
DOE	U.S. Department of Energy
EA	Environmental Assessment
EISA	Energy Independence and Security Act
EPA	U.S. Environmental Protection Agency
°F	Degrees Fahrenheit
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HUD	U.S. Department of Housing and Urban Development
LAC	Louisiana Administrative Code
LDEQ	Louisiana Department of Environmental Quality
LEED	Leadership in energy and environmental design
LOS	Level of Service
LPDES	Louisiana Pollutant Discharge Elimination System
MSA	Metropolitan Statistical Area
$MMTCO_2$	Million metric tons of carbon dioxide
NAA	Non-attainment area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OSHA	Occupational Health and Safety Administration
PCB	Polychlorinated biphenyls
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
PPE	Personal protective equipment
PSD	Prevention of Significant Deterioration
SHPO	State Historic Preservation Office
TIMED	Transportation Infrastructure Model for Economic Development
U.S.C.	United States Code
VOC	volatile organic compound

1. Purpose and Need for Agency Action

1.1 PURPOSE AND NEED FOR ACTION

The Proposed Action evaluated by the U.S. Department of Energy (DOE) in this environmental assessment (EA) is to issue a loan to Next Autoworks Louisiana, LLC (Next Autoworks Louisiana) − formerly V-Vehicle Company − for the production of advanced technology gasoline-powered vehicles. The goal of the Proposed Action is to support the development and manufacture of an advanced technology vehicle named the V Car, a gasoline-powered four-door hatchback that would achieve an estimated 40 miles per gallon. The federal loan would support two activities: (1) engineering integration for the V Car and (2) the reequipping and expansion of an existing U.S manufacturing plant to produce the V Car.

The Advanced Technology Vehicles Manufacturing Incentive Loan Program (ATVM) was authorized under Section 136 of The Energy Independence and Security Act of 2007 (EISA) (P.L. 110-140) to facilitate the development of energy-efficient vehicles. On September 30, 2008, up to $25 billion in direct loans were authorized to eligible applicants for the costs of reequipping, expanding, and establishing manufacturing facilities in the U.S. to produce advanced technology vehicles that provide meaningful improvements in fuel economy performance and components for such vehicles. The purpose and need for agency action is to comply with DOE's mandate under Section 136 of the EISA by selecting eligible projects that meet the goals of the Act. DOE is using the NEPA process to assist in determining whether to issue a loan to Next Autoworks Louisiana to support the proposed project.

The Next Autoworks Louisiana proposed project would involve: (1) engineering integration activities, including engineering design and development, vehicle testing, prototype and production tooling design, and process engineering; and (2) the manufacture of plastic vehicle parts, and final vehicle assembly, utilizing additional parts shipped to the facility by rail and truck. At full production, Next Autoworks Louisiana proposes to manufacture 150,000 V Cars annually. Production is scheduled to start in the first quarter of 2011.

1.2 BACKGROUND

The EISA authorized several new grant, loan, and aid programs to stimulate the transformation of local communities, states, and industries adopting and adapting to renewable energy and energy conservation programs. Section 136 authorized funding awards and a direct loan program for original equipment manufacturers and component suppliers that re-equip, expand, or establish manufacturing facilities in the United States to produce qualifying vehicles and components. In November 2008, DOE issued an Interim Final Rule to implement the ATVM (73 *Federal Register* 66721 (November 12, 2008)). The fiscal year 2009 Continuing Resolution authorized up to $25 billion in direct loans to eligible applicants under the program.

In March 2009, Next Autoworks Louisiana submitted an application to DOE for a federal loan. Eligibility for loans under EISA Section 136 is based on the fuel economy improvement of the vehicle or vehicles that are the subject of the application. Section 136 requires that the vehicle be an "advanced technology vehicle." Advanced technology vehicles are subject to emission standard requirements and must also be "at least 125 percent of the average base year combined fuel economy for vehicles with substantially similar attributes" (73 *Federal Register* 66722).

To qualify for a loan, a new vehicle manufacturer must compare the subject vehicle with an equivalent vehicle in the same Model Year 2005 vehicle class. For the purposes of defining a vehicle within the

same class, DOE employs the Corporate Average Fuel Economy (CAFE) compliance definitions for vehicle class, i.e., a passenger car or light truck. To determine the relevant fuel economy baselines for a new manufacturer, the statute allows the Secretary to substitute industry averages. (42 United States Code [U.S.C.] 17013(e); 73 *Federal Register* 66722, 66723-24). DOE's technical review team utilized the 2005 CAFE passenger car vehicle standard as the industry average, and determined that the V Car is an eligible advanced technology vehicle.

DOE prepared this Environmental Assessment (EA) in accordance with the requirements of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321-4347), Council on Environmental Quality (CEQ) NEPA implementing regulations (Code of Federal Regulations [CFR] Parts 1500-1508), and DOE NEPA implementing procedures (10 CFR 1021). If DOE does not identify significant impacts during the preparation of this EA, it will issue a Finding of No Significant Impact. If DOE identifies potentially significant impacts, it will prepare an Environmental Impact Statement.

1.3 COOPERATING AGENCY

The U.S. Economic Development Administration is evaluating whether to issue a grant to Next Autoworks Louisiana to assist with the construction of approximately 7,000 feet of rail spurs to access the manufacturing plant. The grant would include construction of an at-grade rail crossing of Millhaven Road. The U.S. Economic Development Administration is a cooperating agency in the preparation of this EA.

1.4 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

This EA provides DOE environmental information for use in making a decision as to whether to provide Next Autoworks Louisiana a loan for the Proposed Action. This EA analyzes the impacts for construction Phases 1 – 3, and the impacts related to plant operations.

In addition to the Proposed Action of issuing the loan to Next Autoworks Louisiana for the project, a No-Action Alternative is also evaluated in this EA. Under the No-Action Alternative, DOE would not issue the loan to Next Autoworks Louisiana for the project. Two scenarios exist under the No-Action Alternative (1) the project would eventually secure other financing and proceed without DOE's loan, and the potential impacts would be essentially identical to those under DOE's Proposed Action; and (2) construction of the Next Autoworks Louisiana facility would not be completed, it would not achieve commercial operation, and the impacts potentially caused by additional plant construction and plant operation would not occur. Although the impacts associated with the relocation of Bennett Bayou and the remediation of the existing facility would remain under either No-Action scenario, the second scenario is presented in this EA as the No-Action Alternative to allow a comparison between the potential impacts of the project as implemented and the impacts of not proceeding with the project.

1.5 DOCUMENT ORGANIZATION

This EA is organized into the following sections:

- **Summary**
- **Chapter 1, Purpose and Need**, describes the background of the ATVM, the purpose of and need for the DOE action, and the scope and organization of the EA.
- **Chapter 2, Proposed Action and Alternatives**, describes the Proposed Action, project plans, project progress, alternatives considered, and the No-Action Alternative.

- **Chapter 3, Affected Environment and Effects of Project,** describes existing conditions and potential environmental impacts to transportation, land use, waste management, socioeconomics, geology and soils, water resources, biological resources, air quality and climate, noise, safety and risk assessment, infrastructure and energy resources, cultural resources, and environmental justice.
- **Chapter 4, Cumulative Impacts**, identifies and characterizes cumulative impacts that could result from the Proposed Action in relation to other ongoing or proposed activities in the surrounding area.
- **Chapter 5, Preparers**, identifies the primary technical contributors to the EA.
- **Chapter 6, References**, lists the sources of information DOE used to prepare the EA.
- **Appendix A, Consultation**, lists agencies and tribes contacted regarding this EA and includes copies of consultation letters.
- **Appendix B, Water Quality**, provides copies of the U.S. Department of the Army Permit, U.S. Army Corps of Engineers Public Notice, Louisiana Department of Environmental Quality Water Quality Certification and Storm Water Multi-Sector General Permit Coverage Notice.
- **Appendix C, Air Quality**, provides a copy of the Louisiana Department of Environmental Quality Minor Source Air Permit.

2. Proposed Action and Alternatives

This chapter describes the Proposed Action, the project background and location, construction and operation of the Next Autoworks Louisiana manufacturing facility to produce the V Car, project progress, alternatives considered but not analyzed in detail, and the No-Action Alternative.

2.1 BACKGROUND AND LOCATION

Next Autoworks Louisiana plans to commence production of V Cars in a proposed automotive plant in Monroe, Louisiana. The location of the proposed facility is shown in Figure 2-1.

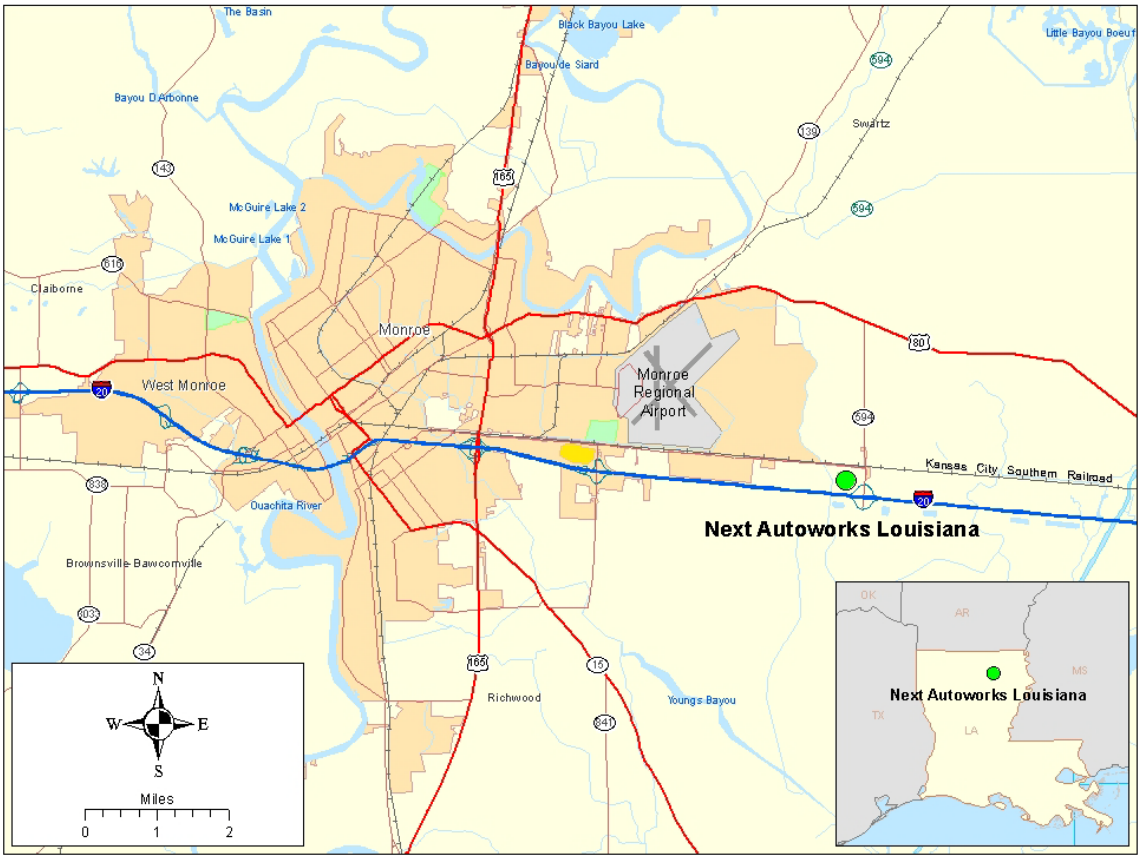


Figure 2-1. Location of Proposed Next Autoworks Louisiana Facility

Next Autoworks Louisiana intends to refurbish, construct, and operate a passenger vehicle manufacturing and assembly plant at the former Guide Plant at 11000 Millhaven Road, Monroe, Louisiana. Guideco, LLC, owns the plant. The site consists of a 425,000-square-foot plant, a 737-space parking lot, and assorted support structures situated on approximately 182 acres (see Figure 2-2). Interstate 20 borders the property to the south and there is an interchange adjacent to the southeast corner of the property. A Kansas City Southern main line rail track runs just north of the property and there is an existing triple spur to the plant. The current level of service on the main line averages approximately 30 trains per day. The existing Guide Plant was constructed in 1974; automotive headlamp production began in 1975; headlamp production ended in 2006; and all Guide operations ceased in January 2007. Headlamp production activities included the coating of cold rolled steel utilizing an autophoretic process (chemical deposition of an organic coating on a clean metal surface in a dip tank). The facility converted plastic

pellets into lighting lenses, and the light housings were assembled using adhesives before shipment. From 1975 to 1983 the facility operated a chromium coating process line, which involved the use of chemicals and petroleum products and generated related waste streams.

Figure 2-2. Map of Existing Facilities at the Former Guide Plant (before Bennett Bayou relocation; see Section 2.2.1.1)

2.2 PROPOSED ACTION

The DOE Proposed Action is to provide Next Autoworks Louisiana a loan under the ATVM. Next Autoworks Louisiana is seeking the loan to support the retrofitting and expansion of an existing plant facility to accommodate passenger vehicle manufacturing and assembly operations at the former Guide Corporation headlamp plant in Monroe, Louisiana. The proposed plant would support the manufacture of the V Car, a gasoline-powered four-door hatchback that would achieve an estimated 40 miles per gallon. Vehicle production would utilize plastic vehicle parts manufactured onsite, and other components shipped to the facility by rail and truck. Prior to the initiation of plant operations, the DOE loan would be used to support engineering integration work for the V Car.

2.2.1 Construction

The existing 425,000-square-foot industrial building would be expanded to approximately 800,000 square feet to support the new vehicle production requirements, primarily to the west of the existing structure. See Figure 2-3 for a map of the proposed facilities.

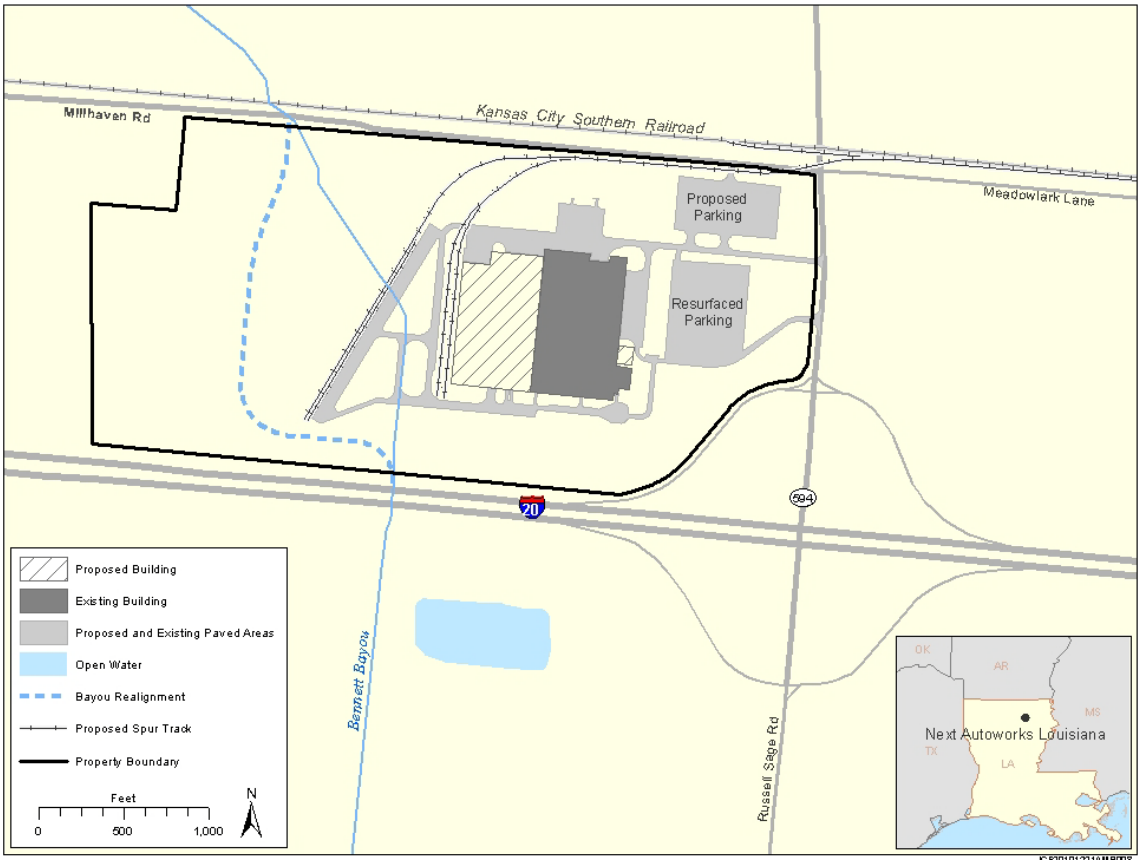


Figure 2-3. Map of Proposed Next Autoworks Louisiana Automotive Assembly Facility

Construction activities would take place in three phases. Phase 1 began in September 2009, and involved the relocation of Bennett Bayou (a perennial stream running across the property), and remediation and demolition activities on the existing building. All demolition – hazardous and non-hazardous – was coordinated with the State of Louisiana to ensure all state regulatory requirements were met. Phase 1 is mostly complete. (See Section 2.2.1.1. for further description.) Phase 2 would begin shortly after closing the ATVM loan and would involve renovating the existing building and associated infrastructure. Phase 2 is further described in Section 2.2.1.2. Phase 3 would also begin after closing the ATVM loan and would involve constructing the addition to the building and other new facilities, including the rail spur. Phase 3 is further described in Section 2.2.1.3.

Construction activities would take place over approximately 18 months, and construction equipment would include bulldozers, dump trucks, drill rigs, excavators, scrapers, compactors, motor graders, backhoes, water trucks, road sweepers, forklifts, fork trucks, various sizes of lifts, and cranes. Next Autoworks Louisiana's overall goal is to recycle 75 percent of debris and waste materials generated during construction and demolition. Anticipated recyclable materials include wood, metals, cardboard, plastics, paper, glass, masonry, and concrete. Throughout the 18-month period, construction would be expected to involve an average of 300 workers per month, with a peak of 544 and a low of 22. The analysis indicates that approximately 85 percent of the construction workforce would come from Louisiana-based contractors.

2.2.1.1 Phase 1

Construction Phase 1 began in September 2009 and is mostly complete. The activities associated with Phase 1 are described below. In addition, Next Autoworks Louisiana has completed or is in the process of completing facility design, engineering, and administrative activities required to prepare the site and existing facility for renovation and expansion.

Bennett Bayou Relocation

Bennett Bayou is a perennial stream with an upstream drainage area of 8.37 square miles. It drains into Lafourche Bayou, via Gourd and Youngs Bayous. The Bennett Bayou relocation work on the Next Autoworks Louisiana property began on October 5, 2009, and has almost been completed in accordance with Permit Number MVK-2009-14 issued by the U.S. Army Corps of Engineers. On September 11, 2009, the Section 404 permit was issued in accordance with Clean Water Act Section 404 (33 U.S.C. 1344), and the Development Permit and Drainage Impact Statement for the relocation of Bennett Bayou was approved by the Ouachita Parish Police Jury on September 24, 2009. Activities required for this work included surveying and delineating construction limits, and delineating wetland areas to remain undisturbed with high-visibility fencing; clearing vegetation from the construction limits; excavating the new bayou channel; excavating a new storm-water retention sump area to replace 100-year floodplain capacity that would be lost as a result of the proposed Next Autoworks Louisiana facility expansion; installing erosion control measures in accordance with the Stormwater Pollution Prevention Plan; linking the new bayou to the original bayou channel at the north and south property boundaries; reestablishing vegetation along the new bayou channel; clearing vegetation from the previous bayou channel; demucking and placement of fill material at the previous bayou channel; reestablishing vegetation at any remaining disturbed areas inside the construction limits, and treatment and transportation of excess excavated material for use in construction of the proposed Next Autoworks Louisiana facility expansion building pad. Table 2-1 lists the status of Bennett Bayou relocation activities.

Table 2-1. Status of Bennett Bayou Relocation Activities

Activity	Status as of May 2010
Survey construction limits.	Complete
Delineate wetlands to remain undisturbed.	Complete
Clear vegetation from new construction limits.	Complete
Excavate new bayou channel.	Complete
Excavate stormwater retention sump area.	Complete
Install erosion-control measures.	Complete
Tie-in new bayou at property boundaries.	Complete
Reestablish vegetation along new bayou channel.	In progress
Clear vegetation from previous bayou channel.	Complete
Place fill material along previous bayou channel.	Complete
Reestablish vegetation at remaining disturbed areas.	Complete – disturbed areas have been seeded
Treat and transport excess soil to building pad.	Complete

Figure 2-4 is an aerial photograph taken in September 2009 showing the manufacturing plant and the property before the relocation of Bennett Bayou. Figure 2-5 is an aerial photograph taken in May 2010 showing the relocated Bennett Bayou.

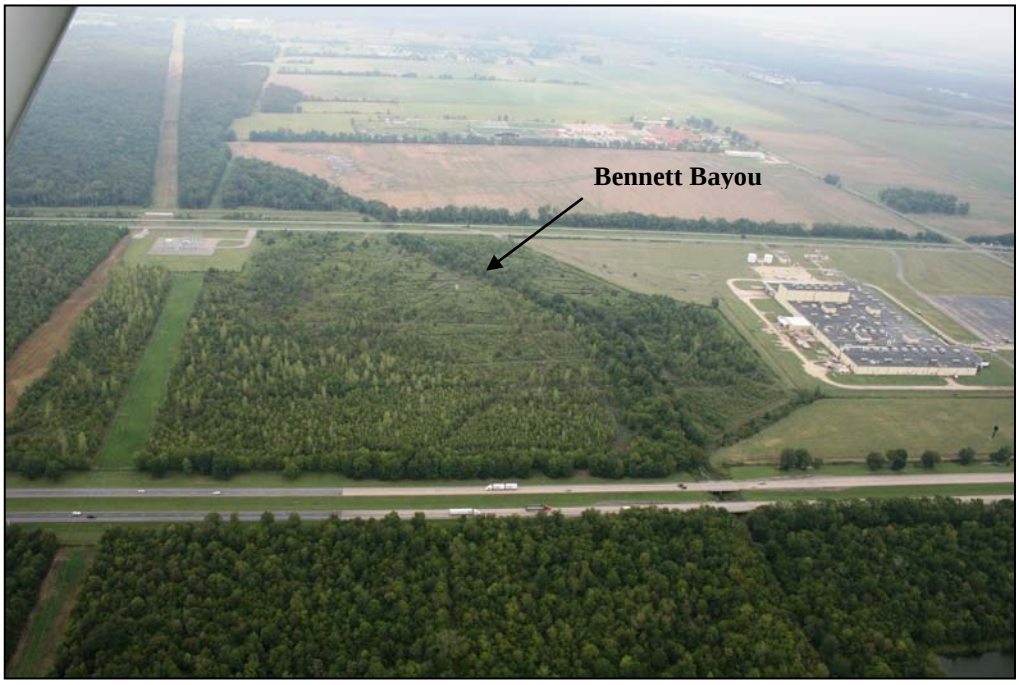


Figure 2-4. Aerial Photograph – September 2009

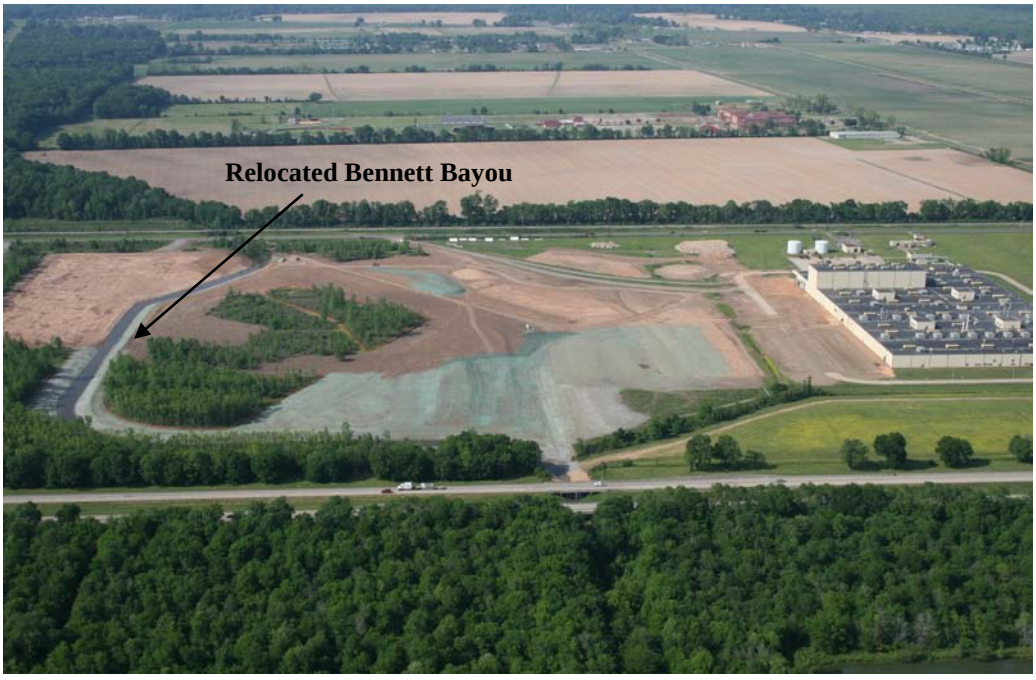


Figure 2-5. Aerial Photograph – May 2010

Remediation and Demolition

During the period of Guide Plant operations, there were numerous environmental site assessments (ESA) and remediation activities, resulting in a substantial historical record of environmental conditions. The following is a summary of the assessment activities performed over the last decade for this facility:

March 1998	Phase I ESA
April 1998	Phase II ESA
April 2000	Risk Evaluation/Corrective Action Program Submitted
June 2003	Risk Evaluation/Corrective Action Program Submitted
May 2004	Conveyance Notice Filed
April 2005	Louisiana Department of Environmental Quality (LDEQ) issues "No Further Action" Recommendation
June 2007	Site Deactivation Report Submitted
October 2008	Phase I ESA
July 2009	Phase I ESA Update

Several areas of concern were identified by Next Autoworks Louisiana as top priorities for remediation before initiating any major construction activities. During Phase 1 site remediation and demolition, Next Autoworks Louisiana performed LDEQ-recommended remedial actions to address the known potential hazards from the autophoretic oven, n-butyl acetate leak, the press oil/drawing compound seepage in the former injection molding operations area, and other potential hazards listed in Table 2-2. Demolition and remediation work has been completed for the exterior structures along the west expansion wall (exterior), the concrete tank farm, silo pads and the n-butyl acetate pipes and vents. All demolition activities involving hazardous and non-hazardous materials have been coordinated with the State of Louisiana, federal, and local officials, as appropriate. Disposal of all hazardous materials has been in accordance with existing environmentally safe waste-disposal practices.

Although Phase 1 remediation efforts are mostly complete, several remaining remediation items noted in Table 2-2 are in progress. When these items are completed, Next Autoworks Louisiana will issue a Phase 2 ESA detailing all remediation activities performed at this site, as previously addressed in the Phase 1 ESA issued on October 17, 2008 (PPM, 2009a). The Phase 2 ESA will be submitted to LDEQ for their evaluation and use in issuing a Ready for Reuse determination, which is an acknowledgement that environmental conditions on the property are protective of human health and the environment based on its current and anticipated future use.

Table 2-2. Possible Hazards at Facility and Status of Remedial Actions[a]

Item	Possible Hazard	Status of Remedial Actions (May 2010)
Autophoretic[b] bake oven	Hexavalent chromium, toxicity characteristic leaching procedure concentrations of chromium.	**Complete** – The area was contained and the oven was removed and disposed of in accordance with regulatory requirements.
Leaking vent in ceiling	N-butyl acetate leak.	**Complete** - The n-butyl acetate piping system, vent, and any remaining product was removed and disposed of in accordance with regulatory requirements.
Non-ASTM asbestos containing building materials (throughout)	Asbestos-containing materials inside the facility.	**Complete** – All asbestos-containing materials were removed and disposed of in accordance with regulatory requirements.
Press oil/drawing compound seepage in the former injection molding operations area	TPH and unknown PCB status.	**Complete** - Removed and disposed of in accordance with regulatory requirements. Soil and groundwater sampling and analysis performed in all areas of concern. Soil remediation was completed in areas where required as a result of the sampling and analysis.
Battery recharge area	Barium and lead concentrations.	
Tool room	Possible oil seepage into concrete pad, monitoring well MW-4.	
Former hazardous waste Storage Area	Staining observed at concrete floor.	
North equipment transformer area	PCB-containing electrical equipment.	**Complete** - Identified PCB-containing equipment has been removed and disposed of in accordance with regulatory requirements.
PCB-containing capacitors	14 PCB capacitors in transformer room.	**Complete** - Identified PCB-containing equipment has been removed and disposed of in accordance with regulatory requirements.
Light fixtures with PCBs or mercury		**Complete** – Contaminated material has been removed and disposed of in accordance with regulatory requirements. Several high-bay, metal halide fixtures remain in place for use as temporary lighting. During the next phase of construction, these fixtures will be removed and properly disposed of.
Bus-duct suspended from ceiling (and all unused conduit)		**Complete** - Removal of the existing bus-duct system is complete. This item is not considered to be an environmental hazard.
Potential PCB equipment	Might contain PCBs.	**Pending** - Removal and disposal in accordance with regulatory requirements will be performed in the next phase of construction. The hydraulic fluids in these units will be drained and tested and disposed of per all regulatory requirements.
Solvent recovery area	Concern with soil contamination from butyl acetate, benzo(a)pyrene, arsenic and 1,1-dicloroethene.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Hazardous waste storage area	Concern with soil contamination from VOCs, SVOCs, metals, PCBs, and benzo(a)pyrene.	**Pending Analysis** – Soil remediation was performed and analysis of sampling after remediation revealed additional remediation was required. Additional remediation has been performed and is pending final analysis to confirm if this item requires any further action.

Table 2-2. Possible Hazards at Facility and Status of Remedial Actions[a] (continued)

Item	Possible Hazard	Status of Remedial Actions (May 2010)
Secondary containment drain	Former basecoat aluminize topcoat with aboveground storage tank. Soils could be contaminated with virgin n-butyl acetate, spent n-butyl acetate, and isopropyl alcohol.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Vacuum pump room	Two vacuum pumps and compressors in building with staining and oily sediment observed in bottom of each sump. Possible seepage into the subsurface.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Press pit area	Abandoned pits caused concern with soil contamination from benzo(a)pyrene, arsenic and 1,1-dichloroethene.	**Complete** – Soil remediation was required. The concrete slab was removed and soil was excavated and disposed of. Sampling and analysis performed after remediation efforts have indicated that this area is now clean – No Further Action Required.
Open floor drains in the former chromium coating process area	Beneath the autophoretic oven; concerned with soil contamination from hexavalent chromium and trivalent chromium.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Parts washing in former chromium coating process area	Beneath the autophoretic oven; concerned with soil contamination from hexavalent chromium and trivalent chromium.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Sanitary sewer lift station failures	Concern with failures and soil contamination with VOCs and metals.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Closed floor drains, sumps, trenches, and underground air conditioning ductwork (throughout)	Underground duct has been capped and abandoned, leaving unknown soil conditions beneath the slab.	**Complete** – Soil remediation was required. The concrete slab was removed and soil was excavated and disposed of. Sampling and analysis performed after remediation efforts have indicated that this area is now clean – No Further Action Required.
Storm water retention pond	Concrete stormwater treatment pond used to retain and treat on-site spills caused concern with metals contaminating the subsurface.	**Complete** – Soil remediation was required. The concrete was removed and soil was excavated and disposed of. Sampling and analysis performed after remediation efforts have indicated that this area is now clean – No Further Action Required.
On-site drainage ditches	Storm water flow and overflow (before installation of treatment pond in 1980s). Possible contaminated soils from spills entering the stormwater run-off.	**Pending Analysis** – Soil remediation was performed and analysis of sampling after remediation revealed additional remediation was required. Additional remediation has been performed and is pending final analysis to confirm if this item requires any further action.
Equipment decommissioning on the north equipment yard	Hydraulic fluid released to dock pavement area during heavy rain event.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Staining beneath the cooling tower pump	Area of staining was observed and appeared to consist of oil.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Staining south of the cooling tower pump	Area of staining was observed and appeared to consist of iron.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.

Table 2-2. Possible Hazards at Facility and Status of Remedial Actions[a] (continued)

Item	Possible Hazard	Status of Remedial Actions (May 2010)
Staining on the north equipment yard	Area of staining was observed and appeared to consist of oil.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Former cooling tower pumps	Underground pump has been closed with possible leeching of hydraulic fluid and grease to subsurface.	**Complete** – Sampling and analysis has indicated that this area is clean – No Further Action Required.
Building roof	Asbestos-containing material used in existing roof flashing materials.	**Pending** – During the next phase of the project, a certified contractor will remove materials on the roof that contain asbestos, and will properly dispose of those materials in accordance with regulatory requirements.

a. ASTM = American Society for Testing and Materials; TCLP = toxicity characteristic leaching procedure; TPH = total petroleum hydrocarbons; VOC = volatile organic compounds; SVOC = semi-volatile organic compounds; ORO = oil range organics; DRO = diesel range organics; PCB = Polychlorinated biphenyls; LDEQ = Louisiana Department of Environmental Quality; RCAP = Risk Evaluation/Corrective Action Program

b. Chemical process for depositing a coating on a clean metal surface.

2.2.1.2 Phase 2

In Phase 2, scheduled to begin shortly after closure of the ATVM loan, the renovation of the existing building and associated utility infrastructure would take place. Truck access and parking would be improved, and storm water management improvements would be made. A new wastewater treatment system would be constructed inside the facility. New aboveground storage tanks for process fluids would be constructed at the southern side of the existing building. The existing concrete floor would be refinished and in some locations, require excavation and refinishing.

While the environmental history of the facility is well documented, it is possible that unknown environmental conditions could be discovered during the construction process. At that time, the appropriate decontamination and remediation would be determined in consultation with the appropriate federal, state, and local authorities. Appropriately trained and certified contractors would perform all decontamination and remediation, which would involve a separate set of workers than construction.

2.2.1.3 Phase 3

In Phase 3, also scheduled to begin after closure of the ATVM loan, Next Autoworks Louisiana would construct the facility expansion in compliance with requirements for construction waste management established by the U.S. Green Building Council program Leadership in Energy and Environmental Design (LEED). LEED is an internationally recognized green building certification system, providing third-party verification that a building was designed and built using strategies aimed at improving performance across metrics that include energy savings, water efficiency, carbon dioxide emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to impacts to resources (U.S. Green Building Council, 2009). Next Autoworks Louisiana would develop a Construction Waste Reduction Plan to help meet the goals of LEED.

Phase 3 would also include the removal of the three abandoned rail spurs on the project site and reconfiguration of the connection to the existing Kansas City Southern main rail line. The new rail spur would be constructed from the Kansas City Southern main line, across Millhaven Road and into the facility. The rail spur would be split into two inbound tracks and one outbound lead track. In total, approximately 7,000 feet of new spur track would be installed, most of which would be located within the

site boundary. It is expected that the crossing of Millhaven road could require approximately 1,000 feet of the road surface (approximately one-fifth of a mile) to be raised to meet the grade of the rail crossing. Because there was a previous crossing across Millhaven Road when the Guide Plant was in operation, the proposed new crossing does not present a new impact. Kansas City Southern would be responsible for determining the appropriate types of crossing protection, safety mechanisms, and final crossing design for the at-grade crossing, in coordination with the Louisiana Department of Transportation and Development. Design of the at-grade crossing would need to comply with appropriate Louisiana Department of Transportation and Development and Federal Railroad Administration requirements.

2.2.2 Operations

This section describes operations, including transportation requirements; provides an overview of the four main components of the proposed automotive plant; describes the manufacturing processes; and describes all other related and ancillary facilities.

2.2.2.1 Transportation Requirements

At maximum total capacity, the assembly plant would be sized to produce 150,000 V Cars annually, assuming an operating schedule of two shifts per day, 10 hours per shift with a 1-hour break between the shifts, 6 days per week. The 12 total shifts would be split between three workforces of about 500 employees per shift. Scheduled holidays and plant closures would total about 4 weeks each year.

Rail would be the principal transportation mode for both inbound shipments of major components and materials and outbound shipments of finished vehicles. Next Autoworks Louisiana estimates the following rail traffic:

- Two trains per day – one inbound (with materials) and one outbound (with finished V Cars).
- Inbound trains would contain 10 loaded rail cars. The inbound rail cars would carry approximately 135 tons of steel structural parts and 75 tons of plastic polypropylene pellets per day. No hazardous materials would be transported by rail.
- Outbound trains would contain 30 loaded rail cars. The outbound rail cars would carry approximately 500 V Cars per day. No hazardous materials would be transported by rail, with the exception of the fluids in the automobiles, such as gasoline.

Additional materials needed for V Car construction (including engines) would be shipped via rail and truck. The materials would be offloaded at the Ouachita Intermodal Terminal at 101 Valley Road, West Monroe, Louisiana and would require approximately 10 trucks per day to transfer the materials to the manufacturing facility. In addition to the truck traffic from the Ouachita Intermodal Terminal, an average of 50 trucks per day would enter the facility carrying other vehicle components for V Car assembly, and one inbound truck per day would transport hazardous materials, including automobile fill fluids (such as gasoline and brake fluid).

Using manufacturer specifications, the analysis assumes that the autophoretic system, which includes a dip tank to chemically deposit a coating on a clean metal surface, would produce 15 pounds per day of zinc that would be captured as sludge from the filter press in the new wastewater treatment system. There would be adhesives, liquid applied sound dampener, hot melt, urethanes, sealer residue, metal inert gas scrubber waste, stage 1 and 2 oily waste, and floor grime and dirt. The fluid fill areas are designed to collect gas, oils, and other vehicle fluids in sumps for periodic pumping into drums for off-site disposal. All of these wastes are expected to be of materials and quantities that would not be classified as hazardous, and would be transported off the site by truck in 55 gallon drums.

2.2.2.2 Overview of the Manufacturing Facility

The Next Autoworks Louisiana proposed plant would consist of four main sections as follows:

- ***Plastic Manufacturing.*** A plastic parts manufacturing section to manufacture V Car parts, using use the polypropylene pellets transported to the facility. The section would consist of an extruder (a machine that produces continuous lengths of plastic sections) and press system.
- ***Body Manufacturing.*** A body manufacturing section would robotically weld body components. This section would also contain an autophoretic dip line to corrosion-proof and weather-seal the body.
- ***Subassembly***. The major modules of the vehicle (such as the instrument panel, doors, the hood, the lift-gate, the power-train, chassis systems) would be sub-assembled before final assembly of the V Car.
- ***Final Assembly.*** The major sub-modules, numerous other discrete parts, and components would be assembled to produce the finished V Car. This section would also include quality-check stations and end-of-line test and calibration stations.

2.2.2.3 Summary of Processes, Materials, and Technologies

Next Autoworks Louisiana would use the processes, materials, and technologies summarized in the following paragraphs.

Body Shop – A supplier would operate the body shop and coatings area. Parts and subassemblies would be received in the body shop. These parts would be assembled using manual and robotic resistance spot and metal inert gas welding. Exhaust hoods over the metal inert gas weld areas would feed an exhaust scrubber unit prior to discharge via stack to the atmosphere. Scrubber solids would be collected in drums for recycle or disposal. The scrubber wastewater would be pumped to the waste sump. Pressurized gas tanks outside the building would store the inert gas to make the weld shield gas mixture (argon and carbon dioxide). The gas mixture would be piped to the metal inert gas welding areas. A welder water system would recirculate cool water to the welding machines and utilize cooling equipment, including heat exchangers, chillers, and a cooling tower.

Body Coatings Area – The automobile body structure would proceed to a cleaning and coating system. The system would utilize a combination of dip and spray stages. Certain heated stages would have exhaust hoods vented via stacks to the atmosphere to control heat and humidity. The coating system stages would be heated using a natural-gas-fired hot water boiler and heat exchangers.

Press Room – The body panels of the vehicle would be molded on the site. Polypropylene pellets would be mixed with other components such as fiberglass and colorant and fed into material mixers and then dispensed to specification. Each material mixer would have a small exhaust hood to control heat and odor from the heated material. The hoods would be ducted together and exhausted via stacks to the atmosphere.

Assembly Areas – The assembly area would include the main-line body assembly, subassembly buildup, and parts receiving, storage, and delivery. The major subassembly areas would include the drive train, suspension, instrument panel, doors, lift gate, hood, tire and wheel, and seats. The assembly work would be a combination of automatic and manual. Urethane adhesive would be used to install the glass panels and the headliner. Vehicle fluids would be added to the vehicle prior to completion. These would include transmission fluid, brake fluid, ethylene glycol, air conditioning refrigerant, windshield washer solvent, and fuel. The assembled vehicle would be started and tested on the Final Line. Alignment, roll test, and

leak tests would be performed. Multiple repair stalls would be available to perform mechanical repairs, replace parts, add fluids, and re-run diagnostics. The completed and tested vehicle would be driven out of the plant for transport.

There would be exhaust hoods and spot exhaust collection at each process location where adhesive that requires ventilation would be applied or present. The exhaust collected would be discharged via stacks to the atmosphere. Exhaust hoods would be installed to control tailpipe emissions in areas where the vehicle would be idling or driven. The alignment, roll test, and repair stall equipment would have specialized tailpipe emissions collection. The hoods and the tail pipe emissions collection points would be exhausted to the atmosphere.

Oils and vehicle fluids would be discharged in stations equipped with collection pans or pits with dry sumps for containment, washed down, and pumped out to drums for disposal.

Tank Farm – There would be a new tank farm south of the building. The tanks would be in a concrete containment structure. Tank containment would be segregated and arranged according to chemical compatibility. Tanks would hold process materials and vehicle fluids such as transmission fluid, ethylene glycol, air conditioning refrigerant, windshield washer solvent (methanol), and gasoline. There would be a nearby tanker truck containment pad to facilitate off-loading of chemicals and fluids to the bulk storage tanks. The containment structures would have sumps that pump spilled fluids into containers for disposal or rainwater into the waste holding tanks. There would be three bulk material silos adjacent to the building to store raw molding materials. Two silos would hold polypropylene resin pellets and one silo would hold micro-glass bubbles. The silos would be filled from hopper rail cars on the new rail spur. There would be a separate tanker truck containment pad outside the building near the autophoretic system bulk storage tanks.

Process General – There would be maintenance and tool stores cribs throughout the facility. These would contain various cleaners, soaps, lubricants, paints, solvents, and fluids needed to maintain, rebuild, and repair plant equipment. They would be in small, commercially available quantities and containers such as pails and cans. A welding table with welding exhaust ventilation would be installed in each of these areas for intermittent maintenance and welding purposes.

Building – The plant would have a natural-gas-fired hot water boiler, chillers and a cooling tower for chilled water and welder water, building air makeup units with natural-gas burners, a central air compressor system, and potable and process water systems. Roof exhausters would be installed at strategic locations to remove heat from the building interior and to maintain building pressurization. Plant and office heating, ventilation, and air conditioning systems would utilize natural gas for heating. There would be a diesel generator on the exterior of the building; the generator would be used for power outages and regular National Fire Protection Association testing.

Waste Treatment – There is an abandoned waste treatment system on the north side of the property with several empty tanks. An existing empty 250,000 gallon waste holding tank would be demolished. The existing 4,250 gallon empty sulfuric acid holding tank, existing chemical injection piping, pumps, and aerator fans would be removed and replaced with new equipment to suit the new waste treatment process. The new wastewater treatment equipment would be located in the building addition. The dilute wastewater would be pH adjusted and monitored for constituents before discharge to the city outflow. Concentrated wastewater would be sent to the new wastewater treatment system for metal precipitation, clarification, and sludge processing. The discharge waters would be discharged at the existing Outfall 001 Lift Station serving the city's collection system near the intersection of Millhaven Road and Love Road. Dewatered sludge would be collected in hoppers and sent to a landfill for appropriate disposal.

Plant sanitary wastewater would flow to the city sanitary sewer.

Storm-water runoff (including roof drainage) would be routed to and collected by drainage structures and pipes. The flows would then be directed to open channels and conveyed to Bennett Bayou. The general direction of flow would be to the south-southwest.

2.3 DECOMMISSIONING

The anticipated lifetime of the structural components of the proposed facility is expected to be approximately 30 years. If Next Autoworks Louisiana elects to continue operations at the site beyond the lifespan of the structure, the facility would have to be renovated or demolished and rebuilt. Both of these options would generate waste that would be disposed of and/or recycled, depending on recycling technologies and markets, and disposal regulations at the time of demolition or renovation. Should Next Autoworks Louisiana choose to cease operations at the facility before the end of the building's lifespan, it would likely remove all production line materials, leave the structure of the building as is, and the property owner would take over operations to determine if the property should be sold or reused.

2.4 PERMITS AND AUTHORIZATIONS

Required permits and authorizations include but are not necessarily limited to the following:

U.S. Army Corps of Engineers, Clean Water Act Section 404 Permit

A Clean Water Act Section 404 permit is required for any discharges of dredged or fill material into jurisdictional wetlands. On September 11, 2009, the Department of the Army issued a Section 404 permit for the Next Autoworks Louisiana project.

Ouachita Parish Police Jury

On September 24, 2009, Ouachita Parish Police Jury approved the plans for relocation of Bennett Bayou. On January 6, 2010, Oauchita Parish Police Jury issued a Development Permit approving refurbishment of the existing building, construction of the building expansion, and associated site improvements.

Louisiana Department of Environmental Quality, Air Quality Minor Source Permit

A Minor Source Permit application was submitted to the LDEQ on August 5, 2009. Next Autoworks Louisiana received permit approval from LDEQ on September 11, 2009.

Louisiana Pollutant Discharge Elimination System (LPDES), Multi-Sector General Permit for Storm Water Discharge Associated with Industrial Activities

Louisiana Water Quality Regulations require permits for the discharge of pollutants from any point source into waters of the state of Louisiana. This surface water discharge permitting system is administered under the Louisiana Pollutant Discharge Elimination System (LPDES) program, which is authorized under the EPA delegated National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act. The proposed facility is required to obtain coverage under an LPDES permit for storm water discharges associated with industrial activity. Next Autoworks Louisiana received a Storm Water Multi-Sector General Permit coverage notice on January 7, 2010, from LDEQ, which indicates coverage under General Permit LAR050000.

Louisiana Department of Environmental Quality, Hazardous Waste Generator Identification Number

Next Autoworks Louisiana does not expect to generate hazardous wastes in excess of regulatory thresholds identified in Louisiana Administrative Code (LAC) 33 Part V, Hazardous Wastes and Hazardous Materials, and is not required to obtain a generator identification number from LDEQ. However, Next Autoworks Louisiana intends to obtain an identification number. Next Autoworks Louisiana will submit the Hazardous Waste Notification Form to the LDEQ Office of Environmental Services, Waste Permits Division.

2.5 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Next Autoworks Louisiana considered several alternative locations using a site-selection process for its proposed automotive plant. The Next Autoworks Louisiana preferred option was to re-tool and re-use an existing industrial facility in the southeast United States in accordance with Next Autoworks Louisiana's business and logistical models. To assist with site selection, Next Autoworks Louisiana hired a site-selection consultant, a construction, development and environmental advisory service, and a design/build general contractor. Utilizing these resources and comprehensive site-selection criteria, Next Autoworks Louisiana executed an 11-state search that examined more than 400 existing facilities, and performed due diligence visits to more than 15 specific sites in 9 states. Site-selection criteria included available acreage, plant size, road and rail access, labor-force availability, labor costs, environmental considerations, and socioeconomic impacts.

Based on these criteria Next Autoworks Louisiana selected three finalist locations - two re-use sites and one development-ready site. The re-use locations were a former General Motors Guide Division facility in Monroe, Louisiana, and a former Pillowtex textile plant in Phenix City, Alabama (in the Columbus, Georgia, metropolitan area). The development-ready site was the Crossroads mega site in Lowndes County, Mississippi, approximately 10 miles west of Columbus, Mississippi.

In considering potential sites, Next Autoworks Louisiana weighed environmental benefits and costs against economic benefits and costs, while also considering infrastructure, technological constraints, and procedural (permitting) requirements. The State of Louisiana and local Monroe entities have provided Next Autoworks Louisiana with more than $133 million in incentives, including $87 million in performance-based grants for the Monroe site. Next Autoworks Louisiana selected the Monroe site because of the combination of the re-use of an existing industrial site, state and local financial support, and favorable logistics conditions.

Before and after selecting the Monroe site, Next Autoworks Louisiana and its development, engineering, and construction consultants evaluated several possible layouts for the facility. This evaluation included possible expansions of the existing building to the east, south, and west, along with numerous rail and road infrastructure combinations. The options were constrained by Interstate 20 to the south and the main line railroad to the north, and the wetlands to the south and west of the existing plant. Potential building expansions to the east would impact the existing employee parking lot, necessitating its relocation and directly affecting wetlands. The final layout was the optimum nexus among best use of available space, maximizing existing infrastructure, minimizing impacts to wetlands and other environmental impacts, and cost considerations.

2.6 NO-ACTION ALTERNATIVE

In addition to the Proposed Action of issuing the loan to Next Autoworks Louisiana for the project, a No-Action Alternative is also evaluated in this EA. Under the No-Action Alternative, DOE would not issue

the loan to Next Autoworks Louisiana for the project. Two scenarios exist under the No-Action Alternative (1) the project would eventually secure other financing and proceed without DOE's loan, and the potential impacts would be essentially identical to those under DOE's Proposed Action; and (2) construction of the Next Autoworks Louisiana facility would not be completed, it would not achieve commercial operation, and the impacts potentially caused by additional plant construction and plant operation would not occur. Although the impacts associated with the relocation of Bennett Bayou and the remediation of the existing facility would remain under either No-Action scenario, the second scenario is presented in this EA as the No-Action Alternative to allow a comparison between the potential impacts of the project as implemented and the impacts of not proceeding with the project.

3. Affected Environment and Effects of Project

3.1 TRANSPORTATION

This section describes the affected transportation environment and potential impacts to transportation under the Proposed Action and the No-Action Alternative. The section presents the results of a Louisiana Department of Transportation and Development Traffic Impact Study (Lazenby 2009), and addresses potential increased passenger and truck traffic; road traffic delay at railroad grade crossings caused by additional rail traffic; and truck-related road accidents involving hazardous materials.

3.1.1 Affected Environment

The Next Autoworks Louisiana facility would be near three roadways that could be affected by traffic generated as a result of the project – Russell Sage Road (Highway 594), which provides direct access to the facility for passenger vehicles and heavy-duty trucks; Millhaven Road, which runs north of the facility and provides access to Russell Sage Road; and Interstate 20, which runs south of the facility and also provides access to Russell Sage Road. Six intersections in the immediate area of the manufacturing facility were analyzed, listed below:

- Millhaven Road at Russell Sage Road;
- Employee drive at Russell Sage Road;
- Interstate 20 westbound off-ramp at Russell Sage Road;
- Interstate 20 eastbound off-ramp at Russell Sage Road;
- Truck staging lot drive at Millhaven Road; and
- Delivery and Rail Access Drive at Russell Sage Road.

The traffic study evaluated existing operating conditions at these roadway intersections by assessing level of service (LOS), the primary measurement used to determine the operating quality of a roadway segment or intersection. Methods applied to calculate LOS are provided in the Highway Capacity Manual (Transportation Research Board, 2000), which is the industry-standard document that guides traffic analyses. The quality of traffic operation is graded into one of six LOS designations – A, B, C, D, E, or F. LOS A represents the most favorable range of operating conditions and LOS F represents the least favorable. Frequently, however, intersections will be characterized by more than one LOS for different approaches, as seen in Tables 3-2 and 3-3 (e.g., A to B).

Table 3-1 provides a general description of conditions of a roadway intersection under each of the LOS designations.

Table 3-1. Characteristic Traffic Flow for LOS Designations

Level-of-Service Designation	Characteristic Traffic Flow
A	Free flow, few or no delays, delays of less than 10 seconds per vehicle.
B	Reasonably free flow, short traffic delays of 10 -15 seconds per vehicle.
C	Stab le flow, average traffic delays of 15 -25 seconds per vehicle.
D	Approaching unstable flow, long delays of 25 -35 seconds per vehicle.
E	Un table flow, very long delays of 35 -50 seconds per vehicle.
F	Forced or breakdown flow, extreme delays of over 50 seconds per vehicle.

Source: Highway Capacity Manual 2000.

Table 3-2 lists current traffic conditions for the roadway intersections potentially affected by the proposed Next Autoworks Louisiana facility.

Table 3-2. Existing Traffic Conditions at Surrounding Roadway Intersections

Intersection	LOS During Morning Peak Hour	LOS During Evening Peak Hour
Millhaven Road at Russell Sage Road	A (northbound and southbound) C (eastbound and westbound)	A (northbound and southbound) C (westbound) F (eastbound)
Employee drive at Russell Sage Road	NA*	NA*
Interstate 20 westbound off-ramp at Russell Sage Road	A to B	A to B
Interstate 20 eastbound off-ramp at Russell Sage Road	A to B	A to B
Truck staging lot drive at Millhaven Road	NA*	NA*
Delivery and rail access drive at Russell Sage Road	B	C

* Guide Plant closed-- no existing traffic.

The analysis also reviewed the railroad grade crossing conditions in the vicinity of the proposed Next Autoworks Louisiana facility. There are railroad at-grade crossings between the Kansas City Southern main line and Russell Sage Road (Highway 594), Chennault Park Drive and Kansas Lane/Pecanland Mall Drive to the west of the proposed Next Autoworks Louisiana facility, and throughout the Monroe metropolitan area. Current average rail traffic at these at-grade crossings is estimated at about 30 freight trains per day. Effects of Project

Under Phase 1 construction activities, a limited number of construction workers have been traveling to and from the site for the Bennett Bayou relocation, and demolition and remediation activities. Earth-moving equipment has been moved to the site, and materials and wastes related to the demolition and remediation activities have been transported using heavy-duty trucks.

3.1.1.1 Construction Impacts

During the peak construction period, about 500 construction workers would be traveling to and from the site. Materials and waste related to construction activities would be transported using heavy-duty trucks, with about five inbound truck trips and five outbound truck trips each day. Peak construction traffic would temporarily impact Russell Sage Road, with vehicles exiting and entering Interstate 20. No change in rail traffic would occur due to the facility construction. Overall, construction- related traffic would not likely affect LOS along roadways in the vicinity of the project except for the potential impacts to Russell Sage Road mentioned above.

3.1.1.2 Operations Impacts

The project would lead to an increase in both employee commuter traffic and truck and rail traffic. At full production, the traffic impact study assumed there would be two 10-hour shifts 6 days a week, with a maximum of 490 employees working during each shift. However, because there would be 1 hour between the two shifts, there would not be an overlap between employees leaving the facility after one shift and employees arriving at the facility for the following shift.

Table 3-3 lists the potential impacts to roadway intersection LOS from the Proposed Action. The table illustrates changes in LOS over existing conditions at each intersection by bolding the LOS.

Table 3-3. Impacts to Levels of Service During Peak Hours

Road	LOS During Morning Peak Hour	LOS During Evening Peak Hour
Millhaven Road at Russell Sage Road	A (northbound and southbound) C (eastbound and westbound)	A (northbound and southbound) **D (westbound)** F (eastbound)
Employee drive at Russell Sage Road	**B**	**A to F**
Interstate 20 westbound off-ramp at Russell Sage Road	A to B	A to **C**
Interstate 20 eastbound off-ramp at Russell Sage Road	A to B	A to **F**
Truck staging lot drive at Millhaven Road	**A**	**B**
Delivery and rail access drive at Russell Sage Road	**B**	**A to C**

Millhaven Road at Russell Sage Road. The lowest LOS demonstrated for this intersection under existing conditions is the eastbound movement, rated an "F" with a delay time of 79 seconds and a vehicle queue of 199 feet. The results of the traffic study indicated that the eastbound movement would continue to be rated as an "F," with a delay time of 211 seconds and the vehicle queue at 320 feet. This condition would occur for a brief time during the period when employees exit the facility and would be similar to conditions that existed when employees of the former Guide Plant exited the facility. The delay times for the other movements at this intersection would be within acceptable levels.

Employee drive at Russell Sage Road. This existing drive would serve as the employee entrance/exit for the site. The eastbound movement during the evening peak hour at this intersection is the employee traffic exiting the facility. Although the traffic study indicated that a delay of 655 seconds and a queue of 3,000 feet would exist at the exit, these delays would have little effect on Russell Sage Road, and all other movements at this intersection would be within an acceptable range for LOS.

Interstate 20 westbound off-ramp at Russell Sage Road. This intersection would service all of the traffic arriving via Interstate 20 westbound. Levels of Service, delay times, and vehicle queues would be within acceptable ranges. The lowest LOS demonstrated for this intersection would be a LOS C with an average delay time of 19.2 seconds for the evening peak hour.

Interstate 20 eastbound off-ramp at Russell Sage Road. This intersection would service all of the traffic arriving via Interstate 20 eastbound. Levels of Service, delay times, and vehicle queues would be within acceptable ranges except for the eastbound (Exit Ramp) traffic. This eastbound approach would have a delay of 54.6 seconds and a vehicle queue of 256 feet during the evening peak hour. Although the LOS for the exit ramp is an "F" with some resulting adverse effects on the intersection, these delays would be at peak times only and the existing exit ramp has plenty of capacity, extending almost 1,400 feet. This condition would occur for a brief time during the period when employees exit the facility and would be similar to conditions that existed when employees of the former Guide Plant exited the facility. The intersection should operate within an acceptable LOS throughout the remainder of the day.

Truck staging lot drive at Millhaven Road. Truck access improvements would be scheduled as a Phase 2 construction activity. There is currently a drive near this location; however, there is no traffic using the

drive since the plant is currently out of operation. Analysis indicates the driveway approach would operate at a LOS A with very low peak hour volumes. Minimal impact would be expected on Millhaven Road. The lowest LOS demonstrated for this intersection would be a LOS B with an average delay time of 11.6 seconds and a negligible vehicle queue for the evening peak hour.

Delivery and rail access drive at Russell Sage Road. This drive would serve as an entrance drive for large trucks entering the site and would have very low peak hour volumes. Analysis indicates the driveway approach would operate at a LOS B and C in the a.m. and p.m., respectively. The Russell Sage northbound approach would operate at a LOS B and A in the a.m. and p.m., respectively.

Formerly, the Guide facility was accessed by a rail spur that crossed Millhaven Road at grade. The at-grade crossing was removed when the plant was closed. The construction of a new rail spur from the Kansas City Southern main line (involving only public land) would require a new at-grade crossing of Millhaven Road approximately 0.4 miles east of the old rail crossing. Next Autoworks Louisiana plans to modify the configuration of the rail spur, and install a new at-grade crossing at Millhaven Road approximately 0.4 miles farther east than the original at-grade crossing. The U.S. Economic Development Administration is providing grant funding for design and construction of the rail crossing. Design of the crossing would be completed after a geotechnical analysis of the load bearing capacities of the crossing site. Although final confirmation of design plans would be confirmed, preliminary plans indicate that the new crossing could require raising approximately 1,000 feet (approximately one-fifth of a mile) of Millhaven Road to accommodate vehicle passage. The design of the crossing is expected to be similar to the former Guide Plant rail crossing of Millhaven Road. The analysis examined the potential effects of the Proposed Action on vehicle delay at at-grade crossings in the vicinity of the Next Autoworks Louisiana facility, including the proposed at-grade crossing of Millhaven Road. The Proposed Action would result in two additional freight trains to the existing 30. A 2,000-foot-long train (the longest train expected as a result of the project) would close the new Millhaven Road and existing Russell Sage Road crossings for about 2.8 minutes, assuming an average train speed of 10 miles per hour. Therefore, two daily trains would close the crossings for less than 6 additional minutes per day. Other crossings in the vicinity of the project would be blocked for shorter periods because trains would be traveling at higher speeds.

In addition to potential impacts to commuter traffic and rail crossings, project-related truck traffic would consist of 120 trips per day, including both inbound and outbound trips. The inbound and outbound trips would be facilitated by improved access and staging areas.

Transportation of hazardous materials associated with the Proposed Action would involve an estimated 1 inbound truck shipment of fill fluids such as gasoline and brake fluids. To assess potential impacts associated with an offsite accident involving a tanker truck carrying hazardous materials, based on data from the Louisiana Department of Transportation, the average crash rate between 2004 and 2008 in Ouachita Parish was about 319 crashes per 100 million vehicle miles traveled (Louisiana State University, 2008). Heavy-duty trucks were involved in about 3.5 percent of crashes (E.J. Ourso College of Business, 2007). Therefore, the crash rate for incidents involving heavy-duty trucks is about 11 crashes per 100 million vehicle miles traveled. Assuming the hazardous materials would be transported within a 50-mile radius of the Next Autoworks Louisiana facility, there would be 15,600 vehicle miles traveled involving hazardous materials in the vicinity of the Next Autoworks Louisiana facility in 1 year, assuming 312 operating days. Therefore, the Proposed Action could increase the number of crashes involving trucks carrying hazardous materials by 0.002 crashes per year. This is the equivalent of approximately one accident every 500 years, a potentially minor impact.

3.1.1.3 No-Action Alternative

Under the No-Action Alternative, transportation impacts sustained under Phase 1 activities would remain, although they were limited and transient in nature. There would be no further impacts resulting from additional construction or from operations.

3.2 LAND USE

This section describes the environmental setting and potential environmental impacts to land use from the Proposed Action and the No-Action Alternative.

3.2.1 Affected Environment

The facility would occupy approximately 800,000 square feet on approximately 182 acres just outside the eastern border of the City of Monroe, Louisiana, in Ouachita Parish. At present, the site contains a 425,000-square-foot facility and 737-space parking lot on the eastern half of the property. Approximately 60 acres of the Proposed Action location was used as farmland before it was converted to a car part manufacturing facility approximately 30 years ago. Since its conversion to a manufacturing facility, the western portion of the property has remained vacant and been allowed to revegetate. The facility is surrounded by farmland and other manufacturing facilities to the north and predominantly forested land to the south.

Because the facility is outside the city borders, there are no zoning ordinances at the site location. The nearest zoning areas to the facility are an area currently zoned for open land to the northwest and an area currently zoned for light industrial use to the southwest. Monroe Regional Airport is approximately 2 miles west of the facility. Future land use plans for the area, according to the city's Comprehensive Plan (Peter J. Smith & Company, Inc., 2008) do not cover the facility site because it is outside city borders. Land use plans do, however, include industrial development in the eastern portion of the city, covering land north of Interstate 20 all the way to the edge of the eastern border, and commercial mixed-use development south of Interstate 20.

There are no specially designated areas, such as conservation and recreation areas, adjacent to the project site. The nearest conservation area is the Russell Sage Wildlife Management Area, which is approximately 1 mile south of the property and extends northward approximately 2 miles east of the property. The Russell Sage Wildlife Management Area is comprised of 16,829 acres in the Bayou LaFourche floodplain and is owned by the Louisiana Department of Wildlife and Fisheries. In addition to its use as a conservation area, the Wildlife Management Area also offers hiking and camping activities. Chennault Park is another recreation area in the vicinity, 1 mile northwest of the facility. Chennault Park is a partially forested city park containing a picnic area, a golf course, and other sporting facilities.

The site of the Proposed Action is not within Louisiana's coastal zone as defined in the Louisiana Coastal Program and is therefore not required to comply with the Coastal Zone Management Act (16 U.S.C. 1456 (c)). In addition, the project site is not near any wild and scenic rivers as defined under 16 U.S.C. 1271 and 40 CFR 1508.27(b) (3). The nearest designated wild and scenic river is more than 50 miles away at Saline Bayou, from Saline Lake upstream to the Kisatchie National Forest.

The Monroe Comprehensive Plan (Peter J. Smith & Company, Inc., 2008) outlines the city's goals and objectives for near-term development. According to this Plan, one of Monroe's objectives is to ensure community vitality and revitalization through regional job and industrial development efforts. The plan indicates that the eastern border of the city is a priority area for industrial development.

3.2.2 Effects of Project

There have been no land-use impacts resulting from construction Phase 1 activities.

3.2.2.1 Construction and Operation

Land uses are not expected to change as a result of the Proposed Action. The Proposed Action is anticipated to be consistent with historic, current, and planned land uses in the area. Land use would be consistent with the past use of the land for manufacturing, and would be compatible with nearby land uses. The project also would be consistent with historic land uses of light industry in the surrounding area and would correspond with Monroe's goal of community vitality and revitalization by supporting regional job and industrial development efforts. Although the project would not be subject to Monroe zoning regulations because the project site is just outside the city border, it would nonetheless be consistent with the city's plans for industrial development in its eastern border. The Proposed Action would be consistent with historic, current, and planned land uses in the area.

3.2.2.2 No-Action Alternative

Under the No-Action Alternative, the absence of impacts would be the same as those under the Proposed Action.

3.3 WASTE MANAGEMENT

This section describes the affected environment for and consequences of waste generation and waste management for the Proposed Action. The section provides information about the types and quantities of wastes that would be generated, on-site waste storage and handling, and off-site waste management, recycling, and disposal capacity. The impacts analysis is based on the anticipated generation rates for specific categories of waste, including hazardous wastes, universal wastes, and non-hazardous solid wastes, and waste recycling during site remediation, construction, and facility operations.

3.3.1 Affected Environment

3.3.1.1 Types of Wastes

Waste can generally be categorized as hazardous, non-hazardous, and universal. Hazardous waste is a waste with properties that make it dangerous or potentially harmful to human health and/or the environment. Hazardous wastes are federally regulated under the Resource Conservation and Recovery Act Subtitle C (EPA, 2008a) . In Louisiana, hazardous wastes are defined and regulated by the LDEQ in accordance with Louisiana Administrative Code (LAC) 33 Part V, "Hazardous Wastes and Hazardous Materials." Hazardous wastes can be liquids, solids, contained gases, or sludge. They can be the byproducts of manufacturing processes or simply discarded commercial products, like cleaning fluids or pesticides. Both the Resource Conservation and Recovery Act and the LDEQ define a hazardous waste as a waste that appears on one of the four hazardous wastes lists produced by the Environmental Protection Agency (EPA), which include the F-list, K-list, P-list, or U-list, or that exhibits at least one of four characteristics – ignitability, corrosivity, reactivity, or toxicity (EPA, 2008a).

Non-hazardous solid wastes are other wastes not defined as hazardous as described above; non-hazardous wastes are typically thought of as residential and municipal wastes. Used oil and other lubricants (such as hydraulic fluids) also are generally included as non-hazardous wastes when they do not meet the EPA ignitability criterion (EPA 2008a).

Universal wastes are certain hazardous wastes, such as batteries, certain pesticides, mercury-containing equipment, lamps, and antifreeze, which when managed and/or recycled properly, are not included as hazardous wastes. Universal wastes were originally designated to encourage facilities to recycle these materials rather than dispose of them as hazardous wastes (EPA 2008b). These wastes would be subject to the universal waste requirements as described at LAC 33:V.3803 through LAC 33:V.3811.

Toxic chemicals like PCBs are specifically managed under the Toxic Substances Control Act, which limits the manufacture, processing, and distribution of PCBs (40 CFR 761) (EPA 2009a). PCBs are synthetic chemicals manufactured for use in various industrial and commercial applications, and include oil in electrical and hydraulic equipment, and plasticizers in paints, plastics, and rubber products. When released to the environment, PCBs do not easily break apart; instead, they persist for many years, bioaccumulate and bioconcentrate in organisms. The EPA has classified PCBs as probable human carcinogens (EPA, 2009b).

Asbestos is a mineral fiber that has been commonly used in a variety of building construction materials for insulation and as a fire-retardant. The Toxic Substances Control Act defines asbestos as the asbestiform varieties of chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite/ grunerite), anthophyllite, tremolite, and actinolite (EPA, 2009c). When asbestos-containing materials are damaged or disturbed by repair, remodeling, or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems. Asbestos regulations can be found at 15 U.S.C. 2601 *et seq*., 40 CFR Part 763- Asbestos, and 40 CFR Part 61, Subpart M - National Emission Standards for Asbestos (EPA 2009d).

3.3.1.2 Site Remediation/Demolition

The Guide Plant manufactured automotive headlights from 1975 to 2007. From 1975 to 1983 the facility also operated a chromium coating process line. The processes involved the use of chemicals, petroleum products, and generation of waste streams in many areas of the plant. The facility was decommissioned in June 2007 and is currently not operational.

LDEQ evaluated the site for a Ready for Reuse determination, which is an acknowledgement that environmental conditions on the property are protective of human health and the environment based on its current and anticipated future use. The LDEQ stated that before it would make a Ready for Reuse designation, specific remedial actions for some specific hazardous would be required (PPM, 2009a). These hazards include hexavalent chromium and toxicity characteristic leaching procedure concentrations of chromium from the interior and exterior of a previously used autophoretic bake oven; n-butyl acetate from a leaking ceiling vent; and total petroleum hydrocarbons and unknown PCB status from press oil/drawing compound seepage in the former injection molding operations area (PPM, 2009a). The LDEQ also evaluated asbestos-containing materials present throughout the existing building and indicated that each material identified was non-friable and no additional suspect asbestos-containing materials were noted (PPM, 2009a). However, during Phase 1 construction activities, Next Autoworks Louisiana removed and properly disposed of all asbestos-containing materials as a protective measure, and performed required testing, monitoring, and certification actions.

Other known concerns in the building interior included barium and lead concentrations in the concrete core in the battery recharge area, possible oil seepage into the concrete pad of the tool room, and observed staining on the concrete floor in the former hazardous waste storage area. Potential hazards identified included PCB-containing electrical equipment in the north equipment transformer area, 14 PCB-containing capacitors in the transformer room, light fixtures containing PCBs or mercury, potential PCB equipment like the hydraulic lift gates at all dock positions, and the bus-duct suspended from the ceiling and all unused conduit (PPM, 2009b).

All existing on-site tanks were north of the existing facility building. These included three 250,000 gallon tanks for wastewater treatment retention and water storage. Other tanks included wastewater treatment tanks of various capacities, two gasoline bulk storage tanks, one existing used oil storage tank, and one diesel bulk tank. Except for the water storage tanks used for fire protection, the other tanks were removed.

3.3.1.3 Waste Collection and Offsite Management

The City of Monroe, Department of Public Works' Sanitation Division does not provide waste collection services to commercial or industrial facilities such as the proposed Next Autoworks Louisiana facility. These facilities are required to retain a private collection service in accordance with applicable federal, state, and local regulation. Two landfills in the City of Monroe accept industrial and residential or commercial solid wastes (LDEQ, 2009)

3.3.2 Effects of Project

3.3.2.1 Site Remediation/Demolition

As described in Section 2.2.1.1, Next Autoworks Louisiana has almost completed the site remediation and demolition phase, during which it performed the LDEQ-recommended remedial actions to address the known potential hazards from the autophoretic oven, n-butyl acetate leak, and the press oil/drawing compound seepage in the former injection molding operations area. Next Autoworks Louisiana also performed additional remedial actions to address the other potential hazards described in Section 3.3.1.2, as needed. Table 2-2 describes status of Next Autoworks Louisiana's remedial actions. Completion of the remediation actions has improved the environmental condition of the facility and will reduce the potential risk of human exposure to the identified hazards. This is a beneficial impact of the project.

Next Autoworks Louisiana coordinated all demolition activities involving hazardous and non-hazardous materials with the State of Louisiana, local, and federal officials, as appropriate, and disposed of all hazardous materials in accordance with existing environmentally safe waste disposal practices. During remediation and demolition activities, anticipated hazards were addressed through planned remedial actions as listed in Table 2-2. Table 3-4 lists the estimated amounts of concrete and contaminated soils excavated, removed, and properly disposed of at a licensed hazardous waste landfill.

Table 3-4. Estimated Quantities of Hazardous Wastes from Site Remediation and Demolition Activities[a]

Waste	Estimated Quantity
Hazardous (waste) concrete	72,165 square feet; 181 tons
Contaminated soil to be excavated	9,056 cubic yards
Contaminated soil to be disposed of	14,267 tons
N-butyl acetate piping system; vent demolition and disposal of contaminated ducting	10 of each
Tool room oil-stained concrete; pressure wash and clean stains from concrete	1 each
PCB[b]-containing capacitors	14 each

a. Source: Gray Construction, 2009b.
b. PCB = polychlorinated biphenyl.

Asbestos-containing materials were properly disposed of at a licensed asbestos landfill. Asbestos waste included floor tiles, mastic, coatings, adhesives associated with walls and bulletin boards, electrical components, flex connectors, workbench tabletops, doors, boiler internal parts, insulation, valve packing, gaskets, window glazing, sealants, and transite asbestos cement pipes. The estimated quantities of

asbestos-containing materials removed and properly disposed of in accordance with applicable federal, state, and local regulations totaled 1,194 items, 52,843 square feet, and 7,348 linear feet (Gray Construction, 2009c).

3.3.2.2 Construction

New construction activities at the facility would generate construction refuse and debris that would need to be disposed of in accordance with applicable federal, state, and local regulations, or recycled. Part of the site is already covered with concrete, some of which would be removed and disposed of before construction. Diverting a high percentage of the construction debris (about 75 percent or more) from disposal in landfills and incinerators is an anticipated LEED aspect of the project.

The following potentially hazardous materials would be used during construction activities: gasoline, diesel, and propane; paints, solvents, and paint thinners; caulks, sealers, and construction adhesives; pipe dope and thread compounds; concrete coatings and sealers; and various lubricants. Other non-emitting hazardous materials would include fiberglass insulation and cementatious grouts.

Generated aqueous effluents would include wastewater from washdown, leak testing, pipe flushing, and the cement truck.

Solid wastes would include construction debris, pellets, packaging materials, scrap metal, wood and plastic. All wastes would be recycled when possible. Other wastes would include caulks, sealers, construction adhesives, pipe dope, and thread compounds, which would be disposed of in an appropriate landfill as determined by their material safety data sheets. The following would be recycled when possible, or returned to the supplier, or disposed of in an appropriate landfill as determined by their material safety data sheets: fiberglass insulation, polyvinyl chloride, chlorinated polyvinyl chloride pipes, and containers such as cans, pails, and drums.

Next Autoworks Louisiana has prepared a Construction Waste Management Plan (Gray Construction, 2009d) to manage construction waste on the site and help meet LEED requirements. Each subcontractor would be responsible for its employees' compliance with the plan. All hazardous waste generated during construction would be handled and disposed of in compliance with all applicable federal, state, and local regulations. For non-hazardous waste, there would be a designated area on the construction site reserved for a row of recycling dumpsters, and each would be specifically labeled for the respective materials, including wood, metals, cardboard, plastics, paper, glass, masonry, and concrete. For handling procedures, each of these recyclable wastes would be kept separately in a designated area on the site in a labeled container. Before removal of any construction material from the site, recycling coordinators would inspect containers for compliance with LEED requirements. Woodcutting would occur in centralized locations to maximize reuse and make collection easier. Table 3-5 lists the disposal method and handling procedures for recyclable wastes generated during construction activities.

Several new tanks would be constructed at the site for use in the manufacturing and assembly processes. These would include a total of 53 new tanks ranging in capacity from 200 to 21,500 gallons. The following paragraphs provide an overview of the locations, capacities, and descriptions of these tanks.

Table 3-5. Disposal Methods and Handling Procedures for Recyclable Wastes from Construction Activities[a]

Waste	Disposal Method	Handling Procedure
Wood	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Clean Wood" container.
Glass	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Glass" container.
Cardboard	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Cardboard" container.
Plastics	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Plastics" container.
Paper	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Paper" container.
Metals	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Metals" container.
Concrete	Keep separate in specified recycling dumpster	Keep separated in designated areas on site. Place in "Concrete" container.

a. Source: Gray Construction, 2009d.

A new tank farm with six storage tanks located in a concrete containment structure would be constructed south of the building. These tanks would store vehicle fill fluids and would include a 15,000-gallon gasoline tank; four 8,000-gallon bulk aboveground storage tanks for engine oil, methanol, ethylene glycol, and the automatic transmission fluid; and a 6,000 gallon tank for the refrigerant. The empty existing 250,000 gallon waste holding tank at the abandoned waste treatment system on the north side of the property would be reconditioned for reuse. New equipment would be installed to suit the new waste treatment process. The wastewater would be pH adjusted and monitored for constituents before discharge to the city outflow. The waters would be discharged at the existing Outfall 001: Lift Station serving the city's collection system near the intersection of Millhaven Road and Love Road. Plant sanitary waste would flow to the city sanitary sewer.

The compressed gases argon and carbon dioxide would be stored in tanks in a welding-gas enclosure to be constructed adjacent to the building to the northwest. There would also be a silo farm with three tanks constructed just outside the building to the southwest. The capacities of these tanks would be determined later.

The wastewater treatment system would include 15 tanks, including two 10,000-gallon water storage tanks. The remaining tanks of much smaller capacities (150 to 2,500 gallons) would be used for processes such as alkaline surge, aeration, neutralization, flocculation, clarifier transfer, sludge collection, and disposal. These tanks would be inside the new facility in the southern part of the building.

The coating system would have 26 tanks ranging in capacity from 300 to 21,500 gallons. There would be 10 21,500-gallon) tanks inside the new building in the environmental coatings area. Of the remaining 16 tanks, two would be 6,000-gallon bulk storage tanks in the southern part of the new building. In addition, there would be three 4,300-gallon water recycle tanks, two 3,000-gallon tanks, and seven 550-gallon tanks. All these tanks would be near the environmental coatings area. Last, there would be one 2,500-gallon sulfuric acid tank in the south area of the building near the 6,000-gallon bulk storage tanks.

3.3.2.3 Operations

Site operations would use various materials in the body shop, environmental coatings area, and press room. Material safety data sheets for all these substances would be available on the site for reference and emergency preparedness. Operations activities in the assembly areas would involve the use of hazardous materials such as fill fluids for the automobiles, including transmission fluid, gasoline, brake fluids, ethylene glycol, air conditioning refrigerant, and windshield washer solvent (methanol). These fluids would be stored at the tank farm and would be segregated and arranged according to chemical compatibility. The use of these materials would inevitably result in the disposal of minor amounts of hazardous or universal wastes. Activities such as periodic emptying and cleaning of storage tanks, maintenance of process piping, which would require opening of process lines and collection of the fluid contained in them, and cleaning of the occasional but inevitable spills would also lead to the generation of waste fluids.

Specifically, site operations would lead to the generation of air emissions, aqueous effluents, solid wastes, and some hazardous materials. The following paragraphs describe the types of emissions, effluents and wastes expected to be generated.

Sources of air emissions that would be generated during operations include metal inert gas welding fumes, metal inert gas shielding gas (90 percent argon and 10 percent carbon dioxide), tank vapors, waste treatment system vapors, and bulk-tank vapors. Exhaust from hot water heater fuel, flash-off, dehydration oven, forced cooler, infrared zone, cure oven and air seals, and the forced cooler also would serve as a source for air emissions.

Aqueous effluents would include reverse osmosis reject water, overflow to wastewater treatment, wastewater treatment outfall to the city sewer, cooling tower blowdown to the city sewer, and A-Coat laboratory chemicals to wastewater treatment.

Solid wastes would include wastewater treatment sludge; pellets and packing materials; body shop seam sealers; liquid applied sound dampener; powder coat; material containers such as cans, pails, and drums; assembly and glass urethane adhesives; scrap polypropylene materials; and hot-melt adhesive residue.

Hazardous materials used during site operations would include gasoline diesel fuel and propane; solvents, paint thinners and paints; caulks, sealers, construction adhesives, pipe dope, and thread compounds; concrete coatings for maintenance; lubricants; and epoxy cementations grouts.

All hazardous waste generated during construction would be handled and disposed of in compliance with all applicable federal, state, local regulations. Other wastes would be recycled where possible, or disposed of in a landfill based on their material safety data sheets.

3.3.2.4 No-Action Alternative

Under the No-Action Alternative, project impacts would be the same as those under the Proposed Action pertaining to remediation and demolition activities. No further impacts would occur with respect to Phase 2 or Phase 3 construction activities, or to waste management operational requirements. However, the positive impacts pertaining to the site remediation would remain.

3.4 SOCIOECONOMICS

When economic or social effects are interrelated with natural or physical effects to the human environment, CEQ NEPA implementing regulations require a discussion of those economic or social effects (40 CFR 1508.14). This section analyzes potential impacts to population and labor (employment), housing, and public utilities and services. Section 3.4.1 describes existing socioeconomic conditions and Section 3.4.2 describes potential impacts to socioeconomics.

3.4.1 Affected Environment

As of July 1, 2008, the population of the City of Monroe was 51,215, and the neighboring city of West Monroe was 12,899, for a combined population of 64,112 (U.S. Census Bureau, 2009a). Both cities are in Ouachita Parish and are part of the Monroe Urbanized Area that had a population of 110,577 in 2007 (Census Bureau, 2009b). Ouachita and Union Parishes together form the Monroe Metropolitan Statistical Area (MSA), which has a population of 172,743 (U.S. Census Bureau, 2009c). The population of both cities declined between 2000 and 2008, by 3.4 percent in Monroe and by 2.5 percent in West Monroe, for a combined net loss of 2,131 during that period. However, the population in Ouachita Parish grew by 1.9 percent during the same period to 150,051, while that of Union Parish remained roughly stable at 22,692 in 2008 (U.S. Census Bureau, 2009c).

The City of Monroe is a regional health care, retail, financial and insurance center (Peter J. Smith & Company, Inc. 2008). However, recent departures of important local employers had an important negative impact on the economy of the Monroe Urban Area. About 775 jobs were lost with the closure of the Guide Plant in 2007, and another 1,200 were lost when State Farm Insurance moved its regional headquarters out of the area. Important employers also have left neighboring areas, such as International Paper in 2008, which employed more than 500 people in nearby Bastrop. Of eight Louisiana MSAs tracked by the Louisiana Workforce Commission, the Monroe MSA was the only one to see a declining trend in non-farm employment in the last 3 years (Louisiana Workforce Commission 2009a). From 2005 to 2007, there were an estimated 45,657 workers in the Monroe Urbanized Area. Of these, 26 percent (11,944) were educational, health care, and social assistance workers, 16.3 percent (7,459) were wholesale or retail workers, 9.2 percent (4,208) were employed in manufacturing, 8.4 percent (3,852) were professional, scientific, and management workers, 6.6 percent (3,004) were finance, insurance, and real estate workers, and 6.4 percent (2,943) were construction workers (U.S. Census Bureau, 2009d). The median annual wage or salary in the Monroe MSA was $24,910 in 2008, the lowest among Louisiana MSAs (Louisiana Workforce Commission 2009b). The Louisiana Workforce Commission estimates the unemployment rate in Ouachita Parish to be 8.1 percent, where 5,776 workers are estimated to be unemployed (Louisiana Workforce Commission 2009c).

The number of housing units in the City of Monroe was estimated to be 21,239 during the period 2005 through 2007, of which 16.8 percent (3,578) were vacant, and almost half of which (49.8 percent) were rental facilities (U.S. Census Bureau, 2009d). Housing estimates are not available for West Monroe, but in the Monroe Urbanized Area there were 48,162 housing units during that same period, of which 14 percent (6,730) were vacant, 43.2 percent of those for rent. According to these estimates, the number of housing units in the City of Monroe slightly declined from the 21,278 housing units counted in the 2000 Census (U.S. Census Bureau, 2009d). The reduction was not as pronounced as that in population, and the vacancy rate in 2000 was 8.7 percent in the City of Monroe. In 2000, there were 6,312 housing units in West Monroe, 9.2 percent of which were vacant (U.S. Census Bureau, 2009d).

Public utilities in the City of Monroe are typically not performing near full capacity. Gas, electricity, and telecommunication systems are readily available and almost all buildings are connected to the sanitary sewer system that has been going through upgrades in recent years. The exception is the city's water

supply. According to the Monroe City 2008 Comprehensive Plan, the city's water supply system was performing near capacity in 2007-2008 and would require upgrades to prevent low pressure or rationing in the case of future growth. A plan for upgrading has been prepared and at there is at least partial financing from 0.5 cent sales tax increase that started in 1990 to fund needed infrastructure improvements (Peter J. Smith & Company, Inc., 2008). According to the same Comprehensive Plan, Monroe's 20 public schools are also performing below full capacity and several large hospitals serve the city's population.

3.4.2 Effects of Project

Construction activities have taken place with respect to the relocation of the Bennett Bayou and remediation activities affecting both employment and housing. However, the influx of temporary construction workers did not create an excess burden on the current housing market. Moreover, because temporary workers often relocate without their families, excess pressure on public utilities and services was not incurred.

3.4.2.1 Construction

The Phase 2 and Phase 3 construction phases of the Proposed Action would require an average of 300 workers, and during the construction peak, 544 workers would be needed. Although the project would employ local construction workers to the extent possible, some construction workers would travel from outside the Cities of Monroe and West Monroe. Forty to fifty percent of those in-migrating workers would be expected to require temporary housing. Given the relatively large number of vacant housing units in Monroe and in other parts of the Monroe Urbanized Area, adverse impacts to the housing sector are not anticipated.

3.4.2.2 Operations

Next Autoworks Louisiana's facility operation would employ more than 1,400 workers once full capacity was reached. This includes Next Autoworks Louisiana employees and automotive supplier companies. Next Autoworks Louisiana would recruit the workforce locally to the extent possible. The likely presence of underemployed workers in the Monroe and West Monroe area – given the departure of several important employers from Monroe in the recent past – and an agreement between Next Autoworks Louisiana and the State of Louisiana (which has agreed to provide recruitment and employee training to Next Autoworks Louisiana through its FastStart[2] program), the need for in-migration of workers from outside the Monroe and West Monroe would be reduced.

Assuming that half of the needed 1,400 workers migrate from outside the Monroe and West Monroe area, and each had an average family size of 3.12 (average for Ouachita Parish; U.S. Census 2009d), the number of people migrating to the two-city area would be 2,184 and would bring the population of the two cities back to 2000 levels. This influx of residents would generate new demands on existing public utilities and services. The water supply system in the city of Monroe is currently operating at full capacity and additional investments are being made to reduce the risk of shortages and rationing. The City of Monroe plans to construct a new water treatment plant that will either substitute or work in conjunction with the existing plant. The new plant would more than double the water treatment capacity of the city by 2012 (City of Monroe, 2009a). These actions are being taken independent of the Next Autoworks Louisiana project and have been in the planning phase since 2005.

[2] The Louisiana FastStart program provides workforce recruitment, screening, and training to new and expanding Louisiana companies at no cost. The Louisiana Department of Economic Development administers the program.

Short-term construction jobs and long-term manufacturing jobs directly generated by the proposed manufacturing facility also would create additional indirect jobs (through suppliers) and induced jobs (to provide for the increased consumption demands of direct employees) not only in the Monroe urban area, but also in the broader Ouachita Parish and in other parts of the state. A Louisiana State University study using commercial software for regional input-output calculations (Implan) estimates that during construction, 1,800 jobs would be created in the State of Louisiana. Once operations reached full capacity, the manufacturing plant would support 3,200 jobs directly and indirectly in the State of Louisiana, 2,700 of which would be in Ouachita Parish (Terrell, 2009). The study also estimates that the manufacturing facility would generate $131 million in state tax revenues over a period of 15 years, $32 million of these in Ouachita Parish.

3.4.2.3 No-Action Alternative

Under the No-Action Alternative, Phase 1-related impacts pertaining to employment and housing have taken place, but have not taxed existing housing stocks or public utilities. The positive employment impacts sustained during Phase 1 construction activities will remain. Impacts of the No-Action Alternative would also potentially include a loss of 3200 jobs that could be created directly and indirectly in the state of Louisiana at the peak of the operations phase. Generation of $131 million in state tax revenues over a period of 15 years could also be could put into question.

3.5 GEOLOGY AND SOILS

This section describes the environmental setting and potential environmental impacts to geology and soils from the Proposed Action and the No-Action Alternative.

3.5.1 Affected Environment

The Proposed Action site is in Ouachita Parish, in the northeast corner of Louisiana. The most prominent geologic feature of Ouachita Parish is the Ouachita River and its deposits. The river cuts through the entire parish, adjacent to the City of West Monroe and approximately 7 miles west of the proposed site. According to Louisiana Geological Survey maps, the surface sediment of the Ouachita Parish east of the river is composed primarily of alluvium (soil or sediment deposited from a flowing body of water). The alluvium in this area consists of sandy and gravelly channel deposits covered by sandy to muddy natural levee deposits (LGS, 2008).

The 182-acre site is relatively flat, with elevations of 150 feet or less. The site is bordered by agricultural and industrial land to the north and east and forested land to the south (across Interstate 20) and west. A man-made channel, part of Bennett Bayou, bisects the western half of the site. Approximately 60 of the 182 acres are wetlands. The property designated as wetlands was used as farmland before it was converted to a car-part manufacturing facility approximately 30 years ago. Since its conversion to a manufacturing facility, the western portion of the property has remained vacant and been allowed to revegetate.

3.5.1.1 Soil Types

The property is bordered by Millhaven Road and the Kansas City Southern Railroad to the north, Russell Sage Road to the East, Interstate 20 to the south, and a forested area to the west. The analysis used these property boundaries to define the area of interest for the purpose of classifying soil types in the immediate vicinity of the proposed site. Soil survey data from the U.S. Department of Agriculture, Natural Resources Conservation Service indicate that the property is composed of three main types of soil (NRCS, 2009). Table 3-6 identifies the area of each soil type present in the area of interest.

Table 3-6. Soil Types Present at Proposed Site[a]

Soil Type	Number of Acres in Area of Interest	Percentage of Total Area of Interest
Herbert silt loam	98.8	58.1
Perry clay, occasionally flooded	66.6	39.2
Rilla silt loam, 0 to 1 percent slopes	4.6	2.7
Total	170.0[b]	100.0

a. Source: NRCS, 2009.

b. Acreage does not total 182.2 acres because perimeter boundaries were drawn by hand and do not correspond exactly to the actual footprint of the proposed site.

More than half the property is composed of Herbert silt loam, which covers a swath of land from the northeast and northwest corners of the property to within approximately 150 feet of the channel banks, and includes the existing facility and parking lot. These soils are composed of silt, clay, and sand, have a slope of 0 to 1 percent, and are somewhat poorly drained. The Perry clay soil, which encompasses 66.6 acres, covers the southwest corner of the property and is adjacent to both sides of the channel and Interstate 20. These soils have a slope of 0 to 1 percent and are poorly drained. The Rilla silt loam is found in a small area (approximately 300 feet wide and 500 feet long) just north of the facility and south of the railroad tracks. The Rilla silt has a slope of 0 to 1 percent and is well drained. Figure 3-1 is an aerial photograph showing the approximate soil locations.

3.5.1.2 Prime or Unique Farmlands

According to the Farmland Protection Policy Act (7 U.S.C. 4201-4209, 7 CFR Part 657), prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for use. It can sustain high crop yields when treated and managed according to acceptable farming practices. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, moderate sodium content, and few or no rocks. They are permeable to water and air and are not habitually eroded or saturated with water for a long period. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruit, and vegetables.

NRCS maintains an inventory within the National Soil Survey Center of prime and/or unique farmlands in each state. Prime or unique farmlands were identified at the proposed site using the approximate site boundaries as given in Figure 3-1. According to the NRCS, the project site is on 103.4 acres of prime farmland, 98.8 acres of which are Hebert silt loam and 4.6 acres are Rilla silt loam. There is no unique farmland in the project area.

Hb- Hebert silt loam, Pe- Perry clay, RIA-Rilla Silt loam
Source: NRCS, 2009

Figure 3-1. Soils Map of Proposed Site

Under Farmland Protection Policy Act regulations, any sites containing prime or unique farmland must be scored according to their importance based on both soil and site characteristics for a total score ranging from 0 to 260 points. If this total score is lower than 160 points, no further consideration for protection is necessary (40 CFR 658.4(c)(2)). If the total score exceeds 160 points, the site must be given increasingly higher levels of consideration for protection (40 CFR 658.4(c) (3)).

In evaluating the Proposed Action, site characteristics added 35 points to the NRCS soil characteristic rating, yielding a total score of 135 points for the Rilla silt loam and 120 points for the Hebert silt loam. The analysis also considered the site's non-farm use in the past 10 years, absence of state or local farmland protection policies affecting the area, lack of farm investments on the site, and absence of expected impacts on farming in surrounding areas or to farm support services. Because the soil scores were separately under the 160-point threshold, no further analysis of impacts to farmland was necessary (See Appendix A for NRCS consultation and completed Form AD-1006.)

3.5.2 Effects of Project

Phase 1 construction activities have been conducted that have resulted in changes to vegetation. However, best management erosion-control practices have been instituted, reestablishing vegetation to the disrupted areas.

3.5.2.1 Construction

For future construction activities under the Proposed Action, facility expansion would require additional removal of vegetation and surface grading. The soil excavation and other earthmoving activities required

could disrupt existing drainage channels for storm water runoff, and expose soil to wind and water erosion. However, it is anticipated that storm water runoff would be rerouted to and collected by drainage structures and pipes and conveyed to the reconfigured Bennett Bayou.

In addition, the relatively flat topography and the standard erosion-control practices that Next Autoworks Louisiana would implement would limit impacts to geology and soils in the project area. Further soil excavation would be avoided due to the fact that the abandoned waste treatment system on the north side of the property would be reconditioned.

3.5.2.2 No-Action Alternative

Under the No-Action Alternative, the vegetation and soil excavation impacts resulting from Phase 1 construction activities would be the same under the No-Action Alternative as for the Proposed Action. Under the No-Action Alternative, there would be no additional impacts to geology or soils as a result Phase 2 or Phase 3 construction activities or from the operation of the facility. However, because excavation and vegetation impacts have occurred thus far, measures have been put into effect to mitigate these effects.

3.6 WATER RESOURCES

This section describes potential impacts to water resources resulting from proposed Next Autoworks Louisiana facility construction and operations. This section addresses surface water quality, floodplains, groundwater, and wetlands and other waters of the United States. The presence of water resources was identified using U.S. Geological Survey 7.5-minute series quadrangle topographic maps, the Natural Resources Conservation Service (NRCS) soil survey, FEMA Flood Insurance Rate Maps, List of Impaired Waters for Louisiana prepared under Clean Water Act Section 303(d), publicly available aerial photographs, and a field delineation of wetlands and other waters of the United States.

3.6.1 Affected Environment

Project construction and operations activities that would have the potential to impact water resources can be regulated by several federal and state agencies, and are shown below. Relevant Executive Orders are also listed.

U.S. Army Corps of Engineers
Section 404 of the Clean Water Act, for discharge of dredge or fill material to waters of the United States, including adjacent wetlands. The Corps of Engineers determined that 46 acres would be needed to offset impacts to wetlands. The proposed mitigation plan for impacts to wetlands would consist of Corps of Engineers-approved in-lieu fee mitigation. Next Autoworks Louisiana will provide funds to the Pintail Brake Mitigation Property in Madison Parish to initiate compensatory mitigation. Stream mitigation would include relocating and constructing a new 2,450 foot channel along the west portion of the property. The new channel has the same carrying capacity as the Bennett Bayou channel had prior to Phase 1 construction.

Special conditions listed in the Department of the Army Section 404 permit to mitigate for impacts to wetlands include the following (see Appendix B for the full Department of the Army permit):

- A mitigation covenant between Next Autoworks Louisiana, GuideCo, and the Corps of Engineers was placed on the remaining 25.46 acres of undisturbed on-site wetlands, 11.48 acres of mowed wetlands along the southern portion of the property, the newly constructed 2,450 foot channel of Bennett Bayou (1.57 acres), and the 10.5 acres of replanted buffer around the new Bennett Bayou channel.

- As compensatory mitigation for the permanent fill of 10.8 acres of bottomland hardwood wetlands for the construction of the new portion of the plant, clearing of 10.5 acres of bottomland hardwood wetlands associated with the relocation of a new 2,450 foot channel of Bennett Bayou, the applicant has proposed to mitigate by restoring 46 acres of degraded wetlands at the Pintail Brake Mitigation Property in sections 3 and 10, T16N-R13E, Madison Parish, Louisiana. The proposed mitigation would consist of restoring degraded bottomland hardwood wetlands from use as farmland. The fee for this mitigation was paid on September 11, 2009, and Next Autoworks Louisiana has executed a mitigation covenant with Pintail's property owners.

Executive Orders

- Executive Order 1190, *Protection of Wetlands* (24 May 1977),
- Executive Order 11988, *Floodplain Management* (24 May 1977).

U.S. Department of Energy

- *Compliance with Floodplain and Wetland Environmental Review Requirements, Final Rule.* (10 C.F.R. Parts 1021 and 1022).

Federal Emergency Management Agency (FEMA)

- Emergency Management and Assistance, *Floodplain Management and Protection of Wetlands.*

U.S. Environmental Protection Agency

- Clean Water Act Section 404, the EPA reviews and comments on the Corps of Engineers Section 404 permit applications for compliance with Section 404(b)(1) guidelines and other statutes and authorities within its jurisdiction.
- Clean Water Act Section 402, NPDES program, authorizes stormwater discharge to waters of the United States.
- The Safe Drinking Water Act (42 U.S.C. 300f *et. seq.*), protects the quality of public drinking water and its sources.

Louisiana Department of Environmental Quality

- LPDES, Louisiana (LAC 33:IX. Chapters 23-29, authorizes discharge of pollutants from any point source into waters of the state. The LDEQ became a state entity delegated to administer the EPA NPDES program in August 1996.
- Clean Water Act Section 401 Water Quality Certification, implemented by the LDEQ, requires that states certify compliance of federal permits and licenses with state water quality requirements.

3.6.1.1 Surface Water Quality

The Clean Water Act requires states to protect the quality of its surface waters. Section 303(d) requires each state to develop a list of waterbodies for which beneficial uses, such as recreation, drinking water, and aquatic habitats, are impaired by pollutants, and therefore do not meet the state's water quality standards. Surface waters placed on the 303(d) list require the development of a Total Maximum Daily Load plan, which establishes limits on pollutants discharged into waterbodies so as to meet water quality standards. No waterbodies in the project area are listed on the Louisiana State 303(d) List of Impaired Water Bodies.

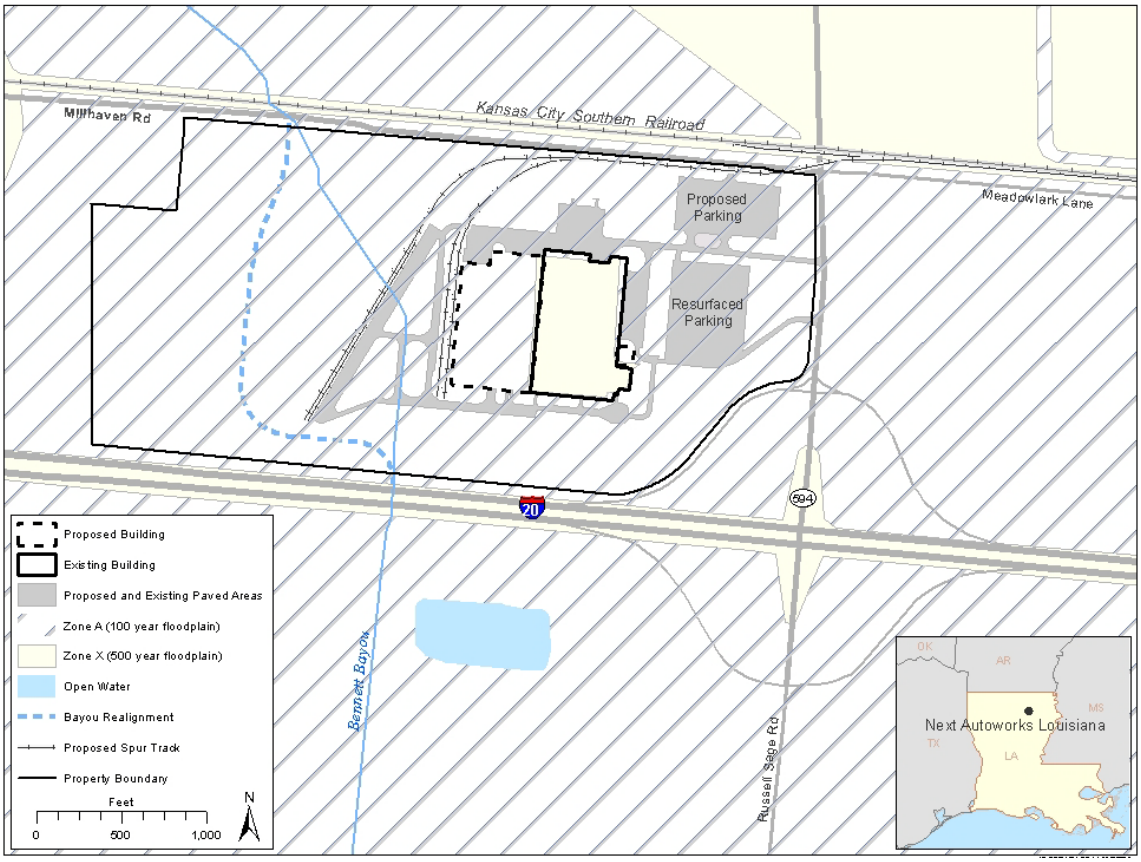
3.6.1.2 Floodplains

Floodplains are lowlands and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands that are subject to a one-percent or greater chance of flooding in any given

year. The 100-year floodplain may be present in low-lying regions, typically near rivers or drainages, or in coastal areas that are not well protected from sea swells. Executive Order 11988, *Floodplain Management and Protection*, directs federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Under DOE policy, a Floodplain Assessment is required for any action involving floodplains (10 CFR 1022).

FEMA identifies 100-year floodplains and 500-year floodplains. The 100-year floodplain has a 1-percent chance of flooding in any given year. Areas with a 0.2-percent chance of being flooded in any given year are identified as 500-year floodplains. Floodplains are important for attenuating floods, reducing storm water runoff into waterbodies, and filtering out sediment and other pollutants from surface runoff.

Figure 3-2 shows the project site in relation to the 100-year and 500-year floodplains, as adapted from FEMA Flood Insurance Rate Map numbers 22073C0075E and 22073C0080E. The 182.2-acre project property is within the FEMA-identified 100-year and 500-year floodplains, and part of the Lafourche Bayou floodplain. The 500-year floodplain is mapped where the existing 425,000-square-foot building sits, while the 100-year floodplain is mapped throughout the rest of the property.



Source: Adapted from FEMA Federal Insurance Rate Map numbers 22073C0075E and 22073C0080E.

Figure 3-2. Floodplains at the Project Site

3.6.1.3 Groundwater

There are no EPA-designated sole-source aquifers in the project area. The aquifer beneath the project area is the Sparta Aquifer, which serves as the principal groundwater source for nine parishes, including

Ouachita Parish. In 2005, the Louisiana State Commissioner of Conservation issued an order stating that the Monroe-West Monroe area was an area of groundwater concern because the sustainability of the aquifer was not being maintained. However, the Proposed Action would not draw on the groundwater source, and is not in the Sparta Aquifer's primary recharge area.

The aquifer consists of fine to medium sand with some clay and lignite. The LDEQ groundwater classification at the project site is Groundwater Three Non-Drinking Water (GW-3NDW) because of its low yield (less than 800 gallons per day) and high total dissolved solids (greater than 10,000 milligrams per liter).

Groundwater testing was performed at the proposed project site in 1998 at identified areas where contamination could have taken place from the Guide Plant. The assessment was part of a Phase I and II Environmental Site Assessment. The findings indicated that no impact was identified and no further action was required. LDEQ issued a "No Further Action" recommendation and Basis of Decision for No Further Action in 2005.

3.6.1.4 Wetlands and other Waters of the United States

Executive Order 11990, *Protection of Wetlands*, directs federal agencies to consider wetlands protection in decision-making and to evaluate the potential impacts of any new construction proposed in a wetland. Although wetland impacts are fully analyzed in this EA, under DOE policy, DOE is not required to prepare a Wetland Assessment for projects that involve DOE issuing permits, licenses, or allocations to private parties for activities involving a wetland that are located on non-federal property (10 CFR 1022.5(c)).

The proposed Next Autoworks Louisiana facility is within Geological Survey Hydrologic Unit Code 0805001 – Boeuf Watershed. Wetlands were identified at the project site through wetland delineation (see Figure 3-3). The delineation followed the routine guidelines outlined in the 1987 Corps of Engineers Wetlands Delineation Manual and 2008 supplemental regional guidelines for the Atlantic and Gulf Coastal Plain Region. A total of 59.81 acres of wetlands were delineated on the project property. A jurisdictional determination of the delineation was obtained from the Vicksburg Corps District on June 1, 2009, and the Corps issued a public notice of the Department of the Army permit application on July 2, 2009 (see Appendix B). The jurisdictional determination also identified that Bennett Bayou and the wetlands that abut to it are within Clean Water Act jurisdiction because Bennett Bayou is a relatively permanent waterbody that flows directly into a Traditional Navigable Water.

Bennett Bayou is considered to be a perennial stream, extends on a north to south basis through the proposed project area, and affects 1.57 acres of wetlands. The Bayou is 2,250 linear feet long, approximately 30 feet wide, and (10 feet) deep in the project area. Although it extends beyond the project area, at the proposed site, the Bayou is a man-made channel and has previously been straightened and dredged. It drains to Lafourche Bayou via Gourd and Youngs Bayous, and has an upstream drainage area equal to 8.37 square miles.

The Army Corps of Engineers issued a Clean Water Act Section 404 permit on September 11, 2009 (see Appendix B) to regulate the relocation of Bennett Bayou for the Proposed Action. Next Autoworks Louisiana initiated work on redirecting Bennett Bayou in accordance with the permit conditions. Figure 3-3 shows the relocation of Bennett Bayou and the wetlands that were affected by the creation of the new channel.

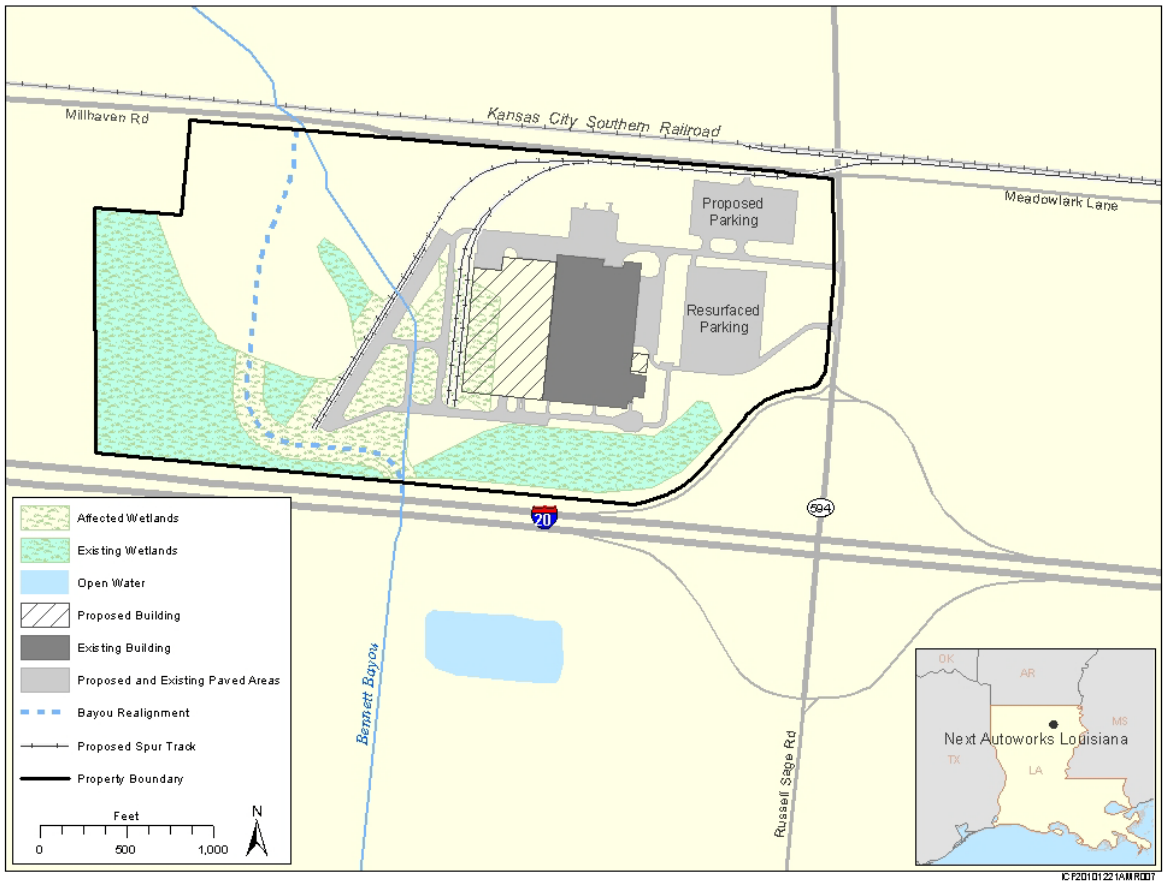


Figure 3-3. Changes to Wetland Delineations at the Project Site

Wetlands to the west of the existing facility consist of bottomland hardwood forested and scrub/shrub vegetation communities. This area was previously cleared of all vegetation at some time between 1961 and 1975 and the area might have been farmed. Subsequently, vegetation has regrown in this area. Dominant wetland vegetation includes green ash, American elm, sugarberry, red maple, eastern cottonwood, and black willow. Non-dominant wetland vegetation consists of eastern baccharis, common persimmon, blackberry, poison ivy, common rush, Alabama supplejack, wild grape, and trumpet creeper. Wetland hydrology consists of standing water, a high water table, and saturation to the surface. Wetlands to the south between the existing facility and Interstate 20 were previously disturbed and graded, and are currently maintained and mowed. Dominant vegetation includes bermuda grass and curly dock. Soils are native, with no apparent fill, and hydrology consists of saturation to the surface from late fall to late spring. Otherwise, the water table is 15 to 20 feet below the existing ground surface.

3.6.2 Effects of the Project

As described in Section 2.2.1.1, the Bennett Bayou relocation work began in October 2009, and is almost complete in accordance with the provisions of the U.S. Army Corps of Engineers Permit Number MVK - 2009-14. The Corps permit was issued in accordance with Clean Water Act Section 404 (33 USC 1344) on September 11, 2009. Activities required for this work included surveying and delineating construction limits, and delineating wetland areas to remain undisturbed with high-visibility fencing; clearing vegetation from the construction limits; excavating the new bayou channel; linking the new bayou to the

original bayou channel at the North and South property bounding boundaries; reestablishing vegetation along the new bayou channel; clearing vegetation from the previous bayou channel; and reestablishing vegetation at any remaining disturbed areas inside the construction limits.

3.6.2.1 Surface Water

Construction

There are no Section 303(d) listed waters associated with the Proposed Action. However, as part of the Bennett Bayou relocation, erosion control measures have been installed in accordance with the Storm Water Pollution Prevention Plan.

Operations

Operations impacts to water quality could include storm water runoff from new impervious surfaces and from wastewater generated by facility operations. Storm water from new impervious surfaces would be routed, detained, and treated in accordance with a stormwater treatment plan. Storm water runoff (including roof drainage) would be routed to and collected by drainage structures and pipes. The flows would then be directed to open channels and conveyed to Bennett Bayou. The general direction of flow is to the south-southwest. Storm water discharge to Bennett Bayou would be subject to water quality standards of the LPDES permit for the protection of water quality. The stormwater plan would follow the Ouachita Parish storm drainage and flood control ordinances for the design of the storm water treatment facilities and for the protection of surface water quality. Wastewater generated inside the facility would be conveyed and treated on the site and then discharged into the City of Monroe wastewater treatment facilities. There is an abandoned waste treatment system on the north side of the property. An existing 250,000 gallon waste holding tank would be reconditioned for reuse. The existing 4,250 gallon sulfuric acid holding tank, existing chemical injection piping, pumps, and aerator fans would be removed and replaced with new equipment to suit the new waste treatment process. The waste water would be pH adjusted and monitored for constituents prior to discharge to the City of Monroe outflow. The facility wastewater would be discharged at the existing Outfall 001: Lift Station serving the City of Monroe collection system near the intersection of Millhaven Road and Love Road. Most wastewater generated at the facility would be sanitary wastewater generated by the workers. No wastewater would be discharged into the adjacent wetlands or Bennett Bayou.

3.6.2.2 Floodplain Assessment

In accordance with Executive Order 11988, *Floodplain Management* and DOE's regulations at 10 CFR Part 1022.12, DOE published a Notice of Floodplain and Wetland Involvement in The News-Star on January 17, 2010 to give notice to the public that a summary of the floodplain impacts would be provided in this EA (see Appendix A). Also shown in Appendix A is a letter from the Louisiana Department of Environmental Quality which states that the Department has no comments or concerns regarding the floodplain designations. A notice of availability of the floodplain statement of findings, when issued, will be announced in The News-Star.

Given the extensive reach of the 100-year floodplain in Ouachita Parish, it would be difficult to find a practicable non-floodplain alternative location in the project area where a new facility could be built or with similar existing facility and infrastructure that could be expanded and utilized. According to floodplain maps, the eastern half of Ouachita Parish and large areas of western Ouachita Parish are within 100-year floodplains. As discussed previously in Section 2.5 of this EA, Next Autoworks Louisiana conducted an extensive search for an appropriate site for the manufacturing facility. After conducting this search, Next Autoworks Louisiana selected the facility in Monroe, Louisiana for development as its V

Car assembly plant. Section 2.5 provides the reasons for selecting the Monroe site. Next Autoworks Louisiana also looked at all expansion configuration options within the Monroe site. However, as shown on Figure 3-2 the entire undeveloped portions of the site are located within the 100-year floodplain. The 182.2-acre project property is within the FEMA-identified 100-year and 500-year floodplains, and part of the Lafourche Bayou floodplain. The 500-year floodplain is mapped where the existing 425,000-square-foot building sits, while the 100-year floodplain is mapped throughout the rest of the property. The site does not fall within a designated floodway area.

Denmon Engineering computed and certified the base flood elevation (BFE) for the site. Current 100-year flood elevation at the property is at approximately 66.75 feet above mean sea level. The lowest floor elevation of the existing building is 69 feet above sea level. The lowest adjacent grade to the structure is at 68 feet. Flood control ordinances of Ouachita Parish require a minimum building elevation of 67.25 feet.

Construction of the addition to the facility would require filling floodplain so that the floor slab of the proposed building would be at 69 feet elevation. The proposed rail spurs to access the site would be constructed with finished grade elevations at top of rail at 69 feet and the two parking lots for storing finished V Cars would be constructed with an elevation of 68 feet. Construction of these proposed facilities would require the placement of fill on the property to raise the ground that is below the BFE. The footprint of the expansion is estimated to include approximately 25 acres of 100-year floodplain. This would result in a loss of floodplain capacity.

However, as part of the Bennett Bayou relocation described above in Section 2.2.1.1, a new storm-water retention sump area has been excavated to replace 100-year floodplain capacity that would be lost as a result of the Proposed Action. A Drainage Impact Statement prepared by Lazenby and Associates, Inc. dated August 28, 2009 states that the sump area would compensate for the anticipated 88,250 cubic yards of fill material that would be required for the proposed building addition and the associated facilities, such as the rail spurs and parking lots. The Drainage Impact Statement notes that the sump area would also compensate for the estimated 9,300 cubic yards of additional storm water runoff volume generated by converting portions of the site from its existing use to impervious surface. The flood storage provided by the sump area will avoid aggravating existing upstream and downstream conditions.

The relocated Bennett Bayou channel has been sized to accommodate the 10-year storm event as required by Ouachita Parish Ordinances. Additional calculations made by Lazenby and Associates, Inc. indicate that the 100-year storm can also be conveyed without overtopping the channel during periods when there is no backwater flooding due to downstream drainage conditions. The Drainage Impact Statement concludes that no measurable impacts on flooding conditions upstream, downstream, or in adjacent areas are anticipated as a result of the project.

On January 6, 2010, the Director of Public Works for the Ouachita Parish Police Jury issued a Development Permit certifying that the proposed project would not adversely affect upstream, downstream, or adjacent properties.

Due to the restoration of the floodplain capacity resulting from the storm-water retention sump area, on January 21, 2010, FEMA issued a Conditional Letter of Map Revision based on a Fill Comment Document (see Appendix A). The letter indicated that, based on the plans submitted by Next Autoworks Louisiana concerning fill levels for the new construction, the proposed Next Autoworks Louisiana facility would not be located in the Special Flood Hazard Area. The Special Flood Hazard Area is defined by FEMA as "the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood)."

The Proposed Action represents a maximized re-use of an existing facility and infrastructure, with achievable mitigation of the 100-year floodplain.

3.6.2.3 Groundwater

Potential Proposed Action impacts to groundwater could include approximately 21 acres of new impervious surface that would reduce the area in which infiltration and recharge could occur. However, as mentioned previously, the proposed facility is not in the Sparta Aquifer's primary recharge area, and the affected area would be small compared to the total non-impervious surface in the area. In addition, the Proposed Action is not expected to generate impacts to groundwater quantity because the proposed Next Autoworks Louisiana facility would obtain all water for operations through the City of Monroe municipal water system. The municipal system has the capacity to supply water to the facility without affecting other water users.

There would be no impacts to groundwater quality because surface water runoff from impervious surfaces would be routed and treated through the storm water system described above in Section 3.6.1.2, Floodplains.

3.6.2.4 Wetlands and other Waters of the United States

Following Corps of Engineers issuance of the Clean Water Act Section 404 permit on September 11, 2009 (see Appendix B), Next Autoworks Louisiana initiated work on relocating Bennett Bayou in accordance with the permit conditions. The relocation of Bennett Bayou is largely complete. 10.5 acres have been cleared for the placement of the new 2,450 linear foot Bennett Bayou channel (see Figure 3-3). The new channel has been excavated out of upland and existing wetland, which has converted the wetland into another type of water body. The cleared wetland area on each side of the new channel (used for construction equipment) remains wetland but is temporarily disturbed until vegetation has reestablished. Construction of the new channel is not a complete loss of the wetland, but a conversion to a different type of water providing different functions. For comparison, at a water depth of 10 feet, the existing channel has an average cross-sectional area equal to 460 square feet. The new channel is 15 percent larger, with a cross-sectional area equal to 530 square feet. Next Autoworks Louisiana would restore the new channel with a vegetated riparian buffer for a distance of 75 feet on each side of the relocated channel. The LDEQ issued a Section 401 Water Quality Certification on August 13, 2009, certifying compliance of federal permits and licenses with state water quality requirements (see Appendix B).

Other wetland impacts include approximately 10.8 acres of forested and scrub/shrub wetland that would be permanently lost from fill for facility construction. Table 3-7 summarizes the types of wetland and stream impacts taking place in relation to the Proposed Action.

Table 3-7. Wetlands and Stream Impacts

Impact Type	Acres of Impact
Wetland fill (permanent)	10.80
Wetland vegetation cleared (temporary)	10.50
Bennett Bayou fill (permanent)	1.57
Total	22.87

No other loss of surface waters or withdrawals from surface waters would occur from proposed Next Autoworks Louisiana facility construction or operations.

Next Autoworks Louisiana considered several expansion alternatives to avoid or minimize impacts to wetlands. However, because Interstate 20 to the south and Millhaven Road to the north restrict expansion, all expansion alternatives on the Proposed Action site would have resulted in impacts to wetlands. Expansion to the east would require the removal and relocation of the existing parking lot. The only areas large enough for relocating the parking lot would be the wetlands to the south of the existing plant or the western portion of the property, both resulting in wetland impacts. In addition, the proposed rail spur could only be sited in the western portion of the property. Locating the spur farther east is constrained by the Millhaven Road and Highway 594 intersection, and applicable railroad safety regulations regarding intersections. Moving the spur to the east side of the facility would also require the removal and relocation of the existing parking lot, which would result in additional wetland impacts. Next Autoworks Louisiana examined expansion configuration options to minimize wetland impacts to the greatest extent possible while maximizing the re-use of an existing facility and infrastructure.

Prior to issuing the Department of the Army permit for the relocation of Bennett Bayou and the filling of the adjacent wetlands, the Corps of Engineers, as required by Section 404 of the Clean Water Act, determined there was no practicable alternative to discharging fill material into the waters of the U.S., including the adjacent wetlands.

3.6.2.5 No-Action Alternative

Phase 1 construction activities have been conducted that have resulted in changes to wetlands, the 100-year floodplain, and streams on the project property. These mitigated impacts remain, and would be the same under the No-Action Alternative as for the Proposed Action. Under the No-Action Alternative, no additional impacts would occur as a result of additional construction activities or from the operation of the facility.

3.7 BIOLOGICAL RESOURCES

This section describes the affected environment and potential impacts to vegetation, wildlife, and threatened and endangered species resulting from proposed facility construction and operations. Project construction and operations activities that have the potential to impact biological resources can be regulated by several federal and state agencies, including the following:

U.S. Fish and Wildlife Service

- Endangered Species Act (ESA), protects federally threatened or endangered species and their critical habitat.
- Migratory Bird Treaty Act, provides protection for migratory birds, eggs, and nests.

Louisiana Department of Wildlife and Fisheries

- LAC, Title 76, Wildlife and Fisheries, protects state-listed threatened or endangered species.

3.7.1 Affected Environment

Resources were identified using the Louisiana Department of Wildlife and Fisheries threatened and endangered species list, U.S. Fish and Wildlife Service threatened and endangered species list, aerial photographs, field surveys, and reports.

3.7.1.1 Vegetation

The Proposed Action is within the EPA designated Arkansas/Ouachita River Backswamps ecoregion (Daigle et al., 2006). This ecoregion consists of slackwater areas along the Arkansas and Ouachita rivers, where water often collects into swamps, oxbow lakes, ponds, and sloughs. Typical vegetation includes willow oak and water oak, which are considered hydrophytic vegetation and likely to grow in wetlands. Drainage canals and ditches are common throughout this ecoregion. Vegetation on the project property includes the wetland vegetation described in Section 3.6 and upland vegetation consisting of bermuda grass and curly dock associated with the maintained and mowed areas around the facility. The areas between the existing facility and Interstate 20 to the south, Millhaven Road to the north, and Russell Sage Road to the east were previously cleared and graded to construct the existing facility.

3.7.1.2 Wildlife

Prior usage and existence of the facility precludes most of the project property from providing natural habitat for wildlife. Areas around the existing facility and within the proposed footprint of the expansion consist mostly of maintained and mowed grass areas. The parcel has little connectivity with other natural, undisturbed habitat areas because it is bounded by Interstate 20 to the south, Millhaven Road and the Kansas City Southern rail line to the north, and Russell Sage Road to the east. To the west there is some natural habitat associated with the wetland and Bennett Bayou. However, this area is still bounded by Interstate 20 and Millhaven Road and the Kansas City Southern rail line, and farther to the west, any existing natural habitat becomes more isolated and disconnected due to increased development and clearing associated with the growth of the City of Monroe. In addition, a power line right-of-way borders the western parcel boundary. The disturbed nature and lack of connectivity with larger habitat areas limits this area to species that are tolerant to human behavior. These human-tolerant species would be expected to frequent or inhabit the area, particularly west of the existing facility. Typical species would include various songbirds, migratory birds, rodents, opossums, coyotes, armadillos, raccoons, nutria, beavers, bobcats, red foxes, minks, skunks, squirrels, box turtles, and bats. Other common species that would be expected to be found in Bennett Bayou include frogs, toads, turtles, and various small fish.

3.7.1.3 Threatened and Endangered Species

The U.S. Fish and Wildlife Service listed the red-cockaded woodpecker as endangered in Ouachita Parish under the ESA. However, the habitat requirements for this species include longleaf pine forests, and mixed pine-upland hardwood forests with little or no hardwood midstory, none of which exists on or around the project property. Thus, the U.S. Fish and Wildlife Service determined that the project would have no effect on this species (see Appendix A, Consultation).

Similarly, as reflected in a letter dated February 5, 2009 from the Louisiana Department of Wildlife and Fisheries, the Proposed Action will not affect state-listed rare, threatened, or endangered species, or critical habitats. See Appendix A, Consultation.

3.7.2 Effects of Project

As part of the Bennett Bayou relocation, vegetation removal has been required. Mitigation practices have been instituted, including the restriction of incidental vegetation clearing; reseeding disturbed areas with native seed mix as soon as construction is complete; and implementing an aggressive invasive species management plan to limit the introduction and spread of non-native plant species.

3.7.2.1 Vegetation

Construction

Future construction efforts would support the building expansion, and constructing a parking lot, access roads and other support facilities. For these facilities, it is anticipated that only minimal disruption will occur to undisturbed vegetation as the areas upon which these facilities will be built consist of maintained and mowed grasses.

Operations

Operations impacts to vegetation would include maintenance clearing. Continued vegetation-maintenance clearing would occur to ensure safe facility operations.

3.7.2.2 Wildlife

Construction

Permanent removal during construction activities of some natural habitat associated with the wetlands to the west could displace wildlife that might be using the area. However, as discussed below, no federal or state-listed endangered or threatened species have been identified at the Proposed Action area.

Operations

Ongoing facility use or maintenance could disturb wildlife, potentially leading to avoidance of the area. However, due to the fact that a large portion of the Proposed Action project area has already been built upon with existing facilities, or is comprised of previously graded and disturbed grass areas that would not be expected to provide wildlife habitat, only minimal impacts to wildlife habitat are anticipated from operations activities

Threatened and Endangered Species

There would be no impacts to federally or state-listed endangered or threatened species or critical habitat, because no such species or habitat has been identified in the project area. See Appendix A, Consultation.

3.7.2.3 No-Action Alternative

Although Phase 1 construction activities pertaining to Bennett Bayou have resulted in changes to vegetation, these changes have been mitigated to minimize their effects. No federal or state-listed endangered or threatened species were impacted. Under the No-Action Alternative, there would be no additional impacts as a result of additional construction activities or from operation of the facility.

3.8 AIR QUALITY AND CLIMATE

The air quality analysis addresses both construction and operations emissions. Construction activities include emissions from heavy construction machinery, tractor-trailer rigs, and emissions from employee personal vehicles.

3.8.1 Affected Environment

3.8.1.1 Meteorology and Climate

The Monroe area in northern Louisiana can be characterized as having a relatively semi-tropical climate with long, hot, humid summers and short, mild winters, but with cooler winter temperatures and slightly greater temperature variances. Temperatures are generally warm – with annual average high temperatures in the upper 70 degrees Fahrenheit (°F) range and annual average low temperatures in the low 50 °F range. Winter months (December through February) are generally cool, with average low temperatures in the low 30 °F range, but typically above freezing. Summer months (June through August) are the kind trotted and warmest, with average high temperatures in the low 90 °F range. Climate averages for a 30-year period (1971 through 2000) from meteorological monitoring at the University of Louisiana at Monroe (NOAA, 2009) show average January low temperatures of 33.5 °F and average July high temperatures of 94.1°F. Average annual precipitation is approximately 58 inches. August is the driest month, receiving 2.9 inches of precipitation, while December, January, and March are the wettest, each receiving about 6 inches of precipitation (National Weather Service, 2009).

The closest major meteorological station is the Shreveport Regional Airport National Weather Service Office in Shreveport, Louisiana, about 105 miles from the project site. In general, winds in Monroe are expected to be similar to those observed at the project site. The dominant wind direction is from the south. The average wind speed is about 3.5 meters per second (8 miles per hour), with calm winds observed about 10 percent of the time. Wind speed and direction data also are available from the Monroe Regional Airport for 2005. The airport is approximately 3 miles from the project site; therefore, these meteorological data are most representative. The average wind speed is about 2.5 meters per second (6 miles per hour) and shows a more frequent northerly and northeasterly component and significantly calmer winds (about one third of the time).

3.8.1.2 Air Quality

The Clean Air Act (CAA) established the principle framework for national, state, and local efforts to protect air quality in the United States (42 USC §§7401-7642). Under the CAA, the USEPA has set standards known as National Ambient Air Quality Standards (NAAQS) for six air pollutants considered to be indicators of air quality. These pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead (Pb), and two categories of particulate matter (PM_{10} and $PM_{2.5}$). Primary NAAQS defined levels of air quality, with an adequate margin of safety that sets limits to protect the public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary NAAQS define levels of air quality judged necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. NAAQS are codified by the USEPA in the Code of Federal regulations in 40 CFR 50. As delegated by the USEPA, the State of Louisiana is responsible for protecting Louisiana's air quality. State air quality standards are found within the Louisiana Administrative Code, LAC 30 Chapter 5, under the authority of the Louisiana Revised Statutes, RS 30:2011 and RS 30:2054.

Based on measured ambient air pollutant concentrations, the USEPA classifies areas of the United States according to whether they meet the NAAQS. Those areas demonstrating compliance with the NAAQS are considered “attainment” areas, while those that are not are known as “non-attainment” areas. Those areas that cannot be classified on the basis of available information for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise. Table 3-8 lists the NAAQS for each pollutant.

Table 3-9 lists the monitored values for Ouachita Parish for all criteria pollutants. The values shown in Table 3-9 are for the three most recent years according to the NAAQS monitoring periods. Several values are not monitored and are therefore shown as "N/A." All of the monitored values are below the national standards shown in Table 3-8.

Table 3-8. Current National Ambient Air Quality Standards
(In parts per million (ppm); milligrams per cubic meter (mg/ m3), or micrograms per cubic meter (µg/m3)

	Primary Standards		Secondary Standards	
Pollutant	**Level[b]**	**Averaging Time**	**Level**	**Averaging Time**
CO	9 ppm (10 mg /m^3)	8 hours[a]	None	
	35 ppm (40 mg /m^3)	1 hour[a]		
Pb	0.15 µg/$m^{3(b)}$	Rolling 3-month average	Same as Primary	
	1.5 µg/m^3	Quarterly average	Same as Primary	
NO_2	0.053[c]ppm	Annual (arithmetic mean)	Same as Primary	
	100 ppb	1 hour[d]	None	
PM_{10}	150 µg/m^3	24 hours[e]	Same as Primary	
$PM_{2.5}$	15.0 µg/m^3	Annual[f] (arithmetic mean)	Same as Primary	
	35 µg/m^3	24 hours[g]	Same as Primary	
O_3[h]	0.075 ppm (2008 std)	8 hours	Same as Primary	
	0.08 ppm (1997 std)	8 hours	Same as Primary	
SO_2[i]	0.03 ppm	Annual (arithmetic mean)	Same as Primary	
	0.14 ppm	24 hours[a]	Same as Primary	
	0.5 ppm	3 hours[a]	Same as Primary	

Source: USEPA, 2010

a. Not to be exceeded more than once per year.

b. Final rule signed October 15, 2008. Louisiana air quality regulations have not yet adopted this more stringent standard.

c. Louisiana standard is 0.05

d. USEPA published a final rule on February 9, 2010 that established a new 1-hour standard at a level of 100 ppb, based on the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations. This final rule is effective on April 12, 2010.

e. Not to be exceeded more than once per year on average over 3 years. (LA standard is not to exceed more than once per year.)

f. To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.

g. To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).

h. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. The 1997 standard and the implementation rules for that standard will remain in place for implementation purposes as the USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard. The USEPA has proposed to strengthen the 8-hour primary ozone standard to a level within the range of 0.060 to 0.070 ppm and to issue final standards by August 31, 2010.

i. The USEPA is proposing to revise the primary sulfur dioxide National Ambient Air Quality Standards to provide requisite protection of public health with an adequate margin of safety. The USEPA proposes to establish a new 1-hour sulfur dioxide standard within the range of 50 to 100 parts per billion, based on the 3-year average of the annual 99th percentile (or fourth highest) of 1-hour daily maximum concentrations. The USEPA proposes to issue a final rule by June 2, 2010, and proposes to revoke both the existing 24-hour and annual primary sulfur dioxide standards.

Table 3-9. Ouachita Parish Criteria Pollutant Monitor Values, 2006-2008
(In parts per million (ppm) and microgram per cubic meter (µg/m3)

Year	2nd Max 1-hr Value CO	2nd Max 8-hr Value CO	Annual Mean Value NO_2	2nd Max 1-hr Value O_3	4th Max 8-hr Value O_3	2nd Max 24-hr Value SO_2	Annual Mean Value SO_2	98th Percentile Value $PM_{2.5}$	Annual Mean Value $PM_{2.5}$	2nd Max 24-hr Value PM_{10}	Annual Mean Value PM_{10}	Quarterly Mean Value Pb
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)
2006	N/A	N/A	N/A	0.09	0.076	0.009	0.002	32.5	12.24	N/A	N/A	N/A
2007	N/A	N/A	N/A	0.071	0.065	0.01	0.003	25.7	11.21	N/A	N/A	N/A
2008	N/A	N/A	N/A	0.063	0.057	0.009	0.003	19.5	9.59	N/A	N/A	N/A

Source: EPA, 2010.

Conformity Review

Because the City of Monroe and Ouachita Parish are in attainment for all criteria pollutants, the provisions of the federal conformity rule do not apply. The federal conformity rule refers to Section 176(c) of the Clean Air Act, which requires federal actions to conform to the appropriate State Implementation Plan (SIP). A state develops a SIP to explain how the state will work to achieve compliance with the air quality standards and is enforceable by the EPA. The final rule for "Determining Conformity of Federal Actions to State or Federal Implementation Plans" was promulgated by the EPA on November 30, 1993 (58 *Federal Register* 63214) and took effect on January 31, 1994 (40 CFR Parts 6, 51, and 93). The rule established the conformity criteria and procedures necessary to ensure that federal actions conform to the SIP and meet the provisions of the Clean Air Act. In general, the rule ensures that all criteria air pollutant emissions and volatile organic compounds (VOCs) are specifically identified and accounted for in the SIP's attainment or maintenance demonstration and conform to the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. The rule has been adopted by the State of Louisiana in LAC Chapter 14, Subchapter A.

Prevention of Significant Deterioration

Per the Louisiana air quality regulations, Prevention of Significant Deterioration (PSD) regulations apply to the construction of any new major stationary source, or any project at an existing major stationary source in an area designated as non-attainment or unclassifiable under Sections 107(d)(1)(A)(ii) or (iii) of the CAA." [LAC 33 III §509 (A) 1] The provisions of the PSD regulations do not apply to the Proposed Action because: (1) the Proposed Action would take place in an attainment area; and (2) the Proposed Action is not a major source, as discussed in section 3.8.2.1.

3.8.1.3 Global Climate Change

Greenhouse gases are gases in Earth's atmosphere that are opaque to short-wave incoming solar radiation, but absorb long wave infrared radiation re-emitted from Earth's surface, or in simple terms they "trap heat." Gases exhibiting greenhouse properties come from both natural and human sources. Water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are examples of greenhouse gases (GHG) that have both natural and manmade sources, while other GHGs such as chlorofluorocarbons are exclusively manmade. In the United States, GHG emissions come mostly from fossil-fuel combustion. Energy-related CO_2 emissions resulting from combustion of petroleum, coal, and natural gas represent 80 percent of total U.S. manmade greenhouse gas emissions (EPA, 2009h).

In its Fourth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) stated that warming of Earth's climate system is unequivocal, and that warming is very likely due to manmade GHG concentrations (IPCC 2007). Although GHG concentrations are inherently a global phenomenon, and as such, will reflect the effects of the Proposed Action GHG emissions, DOE is not aware of any methodology to correlate the CO_2 emissions exclusively from the Proposed Action to any specific impact on climate change.

3.8.2 Effects of Project

Phase 1 construction activities have been conducted that have resulted in temporary and localized air quality impacts. Emission impacts include those from the clearing and grubbing of land associated with the Bennett Bayou channel relocation (1.57 acres); earth-moving activities from property developed for the new Next Autoworks Louisiana facility (14.16 acres); and the clearing and grubbing for the new Bennett Bayou channel (12.5 acres). Further detail is given below concerning the types of equipment and the months that the equipment has been in use. Impacts of PM_{10} from grading have been minimized by best management practices including dust control by water spraying, surface coagulants, vegetation, and speed control of on-site vehicles.

3.8.2.1 Air Quality

Construction

Emissions estimates showing maximum yearly emissions for each criteria pollutant associated with construction of the new facility were developed for the construction period. Operation of typical construction equipment such as backhoes, dozers, graders, dump trucks, cranes, and pick-up trucks was analyzed using an assumption of a 10-hour workday. The analysis identified the number of each piece of construction equipment and the periods of construction when they would be used. The analysis considered equipment size, load factor (as used in the EPA NONROAD2008a model), site-activity level, and the number of horse-power-hours for each piece of equipment. This information was used with the NONROAD2008b engine emission factors based on the conservative assumption that the construction equipment would only meet the Tier 0 emissions standards. The analysis produced emissions estimates for each month of the 18-month construction period.

Table 3-10 shows the maximum annual emissions that would occur during the Proposed Action's construction. In addition to criteria pollutants, the analysis also addressed the effects of volatile organic compounds (VOC). Construction activities would yield short-term, temporary, and localized impacts. Impacts of PM_{10} emissions from grading would be minimized by best management practices including dust control by water spraying, surface coagulants, vegetation, and speed control of on-site vehicles.

Table 3-10 Maximum On-Site Construction Emission Rates

Pollutant	Maximum Annual Emissions (tons per year)
CO	71.1
NO_2	90.4
SO_2	0.1
PM_{10}	8.9
$PM_{2.5}$	8.7
VOCs	10.0

Operations

Operating emissions of the Proposed Action would not reach the levels of a major source, thus requiring Next Autoworks Louisiana to obtain an air quality permit from the LDEQ Air Permits Division for a minor source before the start of construction. Next Autoworks Louisiana has acquired a minor source air permit (Permit Number 2160-00053-12). Operations air emissions would be associated with the manufacture and molding of composite panels for the V Car, assembly and subassembly of parts within the body shop, environmental coatings of the body structure, press room, assembly area and storage-tank farm. There would be a diesel generator at the facility, which Next Autoworks Louisiana would use during power outages and regular National Fire Protection Association testing.

As part of the minor source air permit approval process (see Appendix C), a detailed operations-related emissions inventory of both criteria pollutants and hazardous air pollutants has been prepared. Table 3-11 summarizes emissions of criteria pollutants associated with routine activities. Table 3-12 provides a similar summary for hazardous air pollutants.

Table 3-11. Summary of Operations Emissions from the Next Autoworks Louisiana Plant

Pollutant	Potential Emissions (tons per year)
PM_{10}	4.17
$PM_{2.5}$	3.65[a]
NOx	17.76
SO_2	0.25
CO	15.90
VOCs	80.12
Pb	0.00

a. Most of the particulate matter emissions would be associated with combustion. These emissions were all assumed to have a mean diameter less than 2.5 micrometers. Only 10 percent of the emissions from the cooling tower and loading of polypropylene pellets were assumed to have a mean mass diameter less than 2.5 micrometers.

Table 3-12. Hazardous Air Pollutant Emissions Profile

Hazardous Air Pollutant	Emissions (tons per year)	Limit under State Operating Permit (tons per year)
Methyl Ethyl Ketone	1.16	Not applicable
Toluene	0.46	Not applicable
Ethylbenzene	Less than 0.01	Not applicable
Methanol	0.320	Not applicable
Benzene	0.032	Not applicable
Xylene	0.014	Not applicable
Formaldehyde	0.002	Not applicable
n-Hexane	0.03	Not applicable
Manganese (and compounds)	Less than or equal to 0.01	Not applicable
Total	2.907	Less than 25
Maximum for any single pollutant	1.16	Less than 10

The Louisiana Air Quality regulations specify that a major source is "any stationary source that directly emits or has the potential to emit 100 tons per year or more of any regulated air pollutant…" (LAC 33:III.502 *Major Source*). The regulations refer to minor sources, as follows: "*Minor Source Permit Requirements*: Emissions below levels defining a *major source* …do not relieve the owner or operator the obligation to obtain a permit."(LAC 33 III. 503). Table 3-11 shows that the operating emissions of the Proposed Action do not reach the levels of a major source.

Table 3-12 shows the emissions in tons per year for each hazardous air pollutant that would be emitted in the Proposed Action. Because the Proposed Action would not emit more than 10 tons per year for any single hazardous air pollutant, nor more than 25 tons per year of total hazardous air pollutants, the Proposed Action would not be subject to the provisions of LAC Title 33, Part III, Chapter 5 (National Emission Standards for Hazardous Air Pollutants).

3.8.2.2 Greenhouse Gas Emissions

Direct Emissions – Vehicle Assembly Plant

The Next Autoworks Louisiana project would generate direct GHG at the Monroe facility through the on-site combustion of natural gas used for heating and drying for environmental coatings, the backup diesel generator (100 hours per year), and gasoline vehicle engine testing. Direct CO_2 emissions would be those attributable to combustion of carbon fuels at the Monroe facility. To estimate the direct emissions at the facility, the emissions factors used were based on EPA's "Emission Facts: Average CO_2 Emissions Resulting from Gasoline and Diesel Fuel" (EPA, 2005) and EPA's Emission Factor database, AP-42, Table 1.4-2 (EPA, 1998b).

CEQ recommends that agencies analyze emissions of GHGs in terms of carbon dioxide equivalent (CO_2e) emissions (CEQ, 2010). Table 3-13 lists total direct emissions at maximum vehicle production for three GHG, reported in CO_2e units. Emissions related to engine testing, heating and drying, and the backup diesel generator were included in the analysis. Total direct CO_2e emissions would approximate 28,255 metric tons per year.

Carbon dioxide equivalent (CO_2e)
A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.
Source: EPA 2010b

Table 3-13. Summary of Direct Greenhouse Gases (metric tons per year expressed as CO_2 e) for Next Autoworks Louisiana Facility Operated at Maximum Vehicle Production Rate

Greenhouse Gas	Heating and Drying	Engine Testing	Diesel Generator
CO_2	25,678	2,183	167
CH_4	10	3	13
N_2O	146	55	0
Totals	25,834	2,241	180

Indirect Emissions - Vehicle Assembly Plant

Indirect greenhouse gas emissions would be emissions attributable to the use of electricity provided by off-site public utilities and the emissions generated by workers commuting to and from the facility. Electricity supplied to the Monroe facility is produced and transmitted by public utilities and is derived from a number of different generation activities, including, solar, wind, hydro, nuclear, and conventional fossil-fuel fired power plants using a variety of fuels such as coal, natural gas, and oil). The variety of sources combined with the impact of transmission losses limits the precision to which indirect CO_2e emissions can be estimated.

Electrical energy to the Monroe facility would be supplied by the Entergy Corporation, which has an electrical energy mix of 50 percent nuclear, 30 percent natural gas, 19 percent coal, and 1 percent renewable. It was assumed that this same mix of energy would continue with the operation of the Monroe facility. Greenhouse gas emissions factors for natural gas and coal combustion were based on the default emission factor values as reported in the 2006 IPCC Guidelines for National GHG Inventories. The estimated annual indirect emissions from 77,748 megawatt-hour per year of electrical power for the

facility would be 30,996 metric tons of CO_2e. The commuting vehicles mobile source emissions estimate assumed an average commute distance of 20 miles each way with a fuel economy of 25 miles per gallon and that 1,000 commute trips 6 days a week 50 weeks per year. The indirect annual emissions associated with commute trips would total 4,759 metric tons of CO_2e. The total indirect CO_2e emissions would approximate 35,755 metric tons.

Greenhouse Gas Emissions Reductions from New V Car

The Model Year 2011 passenger car standard established by the National Highway Traffic Safety Administration standard is 30.2 miles per gallon (USDOT, 2009). Based on an emissions factor of 19.4 pounds of CO_2 per gallon of gasoline (EPA, 2005), it is expected that an annual production of 150,000 V Cars, with a fuel economy of 40 miles per gallon, driven an annual distance of 14,910 miles per vehicle per year, would yield an estimated savings of 18.1 million gallons of gasoline. This would result in an annual reduction of 162,600 metric tons per year of CO_2e emissions compared to the average new passenger car produced in Model Year 2011. Assuming a service life of 7 years, minimal fleet attrition, and continued production and operation of V Cars, a total reduction of 4.1 $MMTCO_2e$ would occur.

3.8.2.3 No-Action Alternative

Under the No-Action Alternative, criteria pollutant emissions resulting from Phase1 construction activities would be the same as they would be under the Proposed Action. Although air-quality impacts have occurred, they have been temporary and localized in nature. Under the No-Action Alternative, there would be no additional criteria pollutant emissions from further construction, or additional criteria pollutant or CO_2e emissions from operations.

3.9 NOISE

3.9.1 Affected Environment

Ambient noise: The sum of all noise (from human and naturally occurring sources) at a specific location over a specific time is called ambient noise.

The proposed Next Autoworks Louisiana facility would be in an industrial/agricultural area in Monroe, Louisiana. The nearest residential location is approximately 0.4 mile northeast of the proposed facility. The nearest commercial location (a gas station) is 0.2 mile east of the proposed facility. There are no residential locations in the immediate vicinity of the proposed site, and the surrounding area is sparsely populated.

Sound exposure level: The sum of acoustical energy associated with a noise event, normalized to 1 second.

Day-night average noise level (**DNL):** The energy average of A-weighted decibels (dBA) sound level over a 24-hour period; includes an adjustment factor for noise between 10 p.m. and 7 a.m. to account for the greater sensitivity of most people to noise during the night. The effect of nighttime adjustment is that one nighttime event, such as a train passing by between 10 p.m. and 7 a.m., is equivalent to 10 similar events during the daytime.

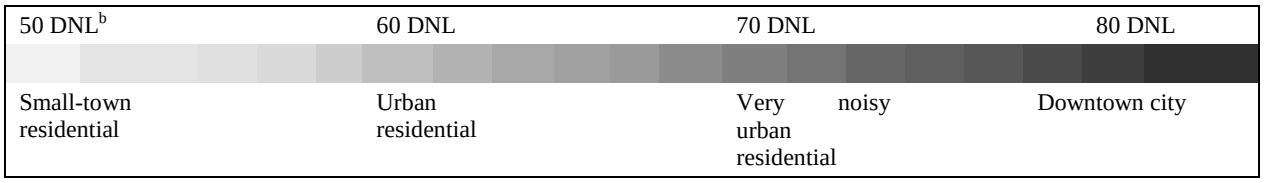
A-weighted decibels (dBA): A measure of noise level used to compare noise from various sources. A-weighting approximates the frequency response of the human ear.

No ambient noise monitoring data is available for this site. However, inspection of site mapping reveals major roadways (Interstate 20 and Millhaven Road) and the Kansas City Southern rail line adjacent to the site. Consequently, roadway traffic and freight railroad noise are major contributors to the noise environment at this site.

The existing train traffic volume on the Kansas City Southern rail line averages approximately 30 trains per day. Locomotive warning horns sound at an existing at-grade crossing to the northeast of the facility site. Using Federal Railroad Administration noise data (FRA, 1999),

the typical horn sounding noise event would result in a sound exposure level of 110 A-weighted decibels (dBA).

Based on this data, the existing noise levels in the vicinity of the Proposed Action are 66 dBA day-night average noise level (DNL) at the nearest residential location and 69 DNL at the gas station on Russell Sage Road. Figure 3-4 shows the typical DNL values for residential areas. According to the EPA (EPA, 1974), the ambient noise conditions in this area resulting from existing train noise correspond to a very noisy urban residential area.



a. Source: EPA 1974, p. 23.
b. DNL = day-night average noise level

Figure 3-4. Typical Day Night Average Sound Levels for Residential Areas[a]

The U.S. Department of Housing and Urban Development (HUD) has standards for community noise levels. HUD has developed land use compatibility guidelines (HUD, 2002) for acceptable noise levels versus specific land uses. Table 3-14 lists these guidelines. In this case, estimated ambient noise levels would be "normally unacceptable" at the residential location and "normally acceptable" at the commercial location.

Table 3-14. Department of Housing and Urban Development Land Use Compatibility Guidelines for Noise

Sound Pressure Level (day-night average noise level in A-weighted decibels)				
Land Use Category	**Clearly Acceptable**	**Normally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Residential	Less than 60	60 to 65	65 to 75	More than 75
Livestock farming	Less than 60	60 to 75	75 to 80	More than 80
Office buildings	Less than 65	65 to 75	75 to 80	More than 80
Wholesale, industrial, manufacturing and utilities	Less than 70	70 to 80	80 to 85	More than 85

Occupational Health and Safety Administration (OSHA) regulation 1910.95 establishes a maximum noise level of 90 dBA for continuous 8-hour exposure during a working day and higher levels for shorter exposure time in the workplace. The EPA has recommended an average equivalent noise level of 70 dBA for continuous 24-hour exposure to noise to protect hearing (EPA, 1974). Under OSHA regulation 1910.95, exposure to impulse (very short term) noise should not exceed 140 dBA. The 140-dBA threshold should be considered advisory rather than mandatory.

The American Conference of Governmental Industrial Hygienists (ACGIH) recommends workplace exposure limits to noise of 24 hours at 80 dBA, 16 hours at 82 dBA, 8 hours at 85 dBA, and half the preceding exposure time for each successive sound level increase of 3 dBA (ACGIH, 2005).

3.9.2 Effects of Project

Noise impacts resulting from Phase 1 construction activities have produced noise levels of approximately 80 to 88 TBA at 50 feet. These impacts have been temporary.

3.9.2.1 Construction

Erecting buildings and paving parking lots for the building expansion project would require the use of heavy equipment such as front-end loaders, trucks, and backhoes. This equipment would produce noise levels of approximately 80 to 88 dBA (FTA, 2006) at 50 feet. This temporary noise would be at 60 dBA at a distance of 1,200 feet, which would be at or below ambient noise levels of 66 DNL.[3] Because there are no noise-sensitive locations within this distance, there would be no adverse impacts from noise associated with construction.

3.9.2.2 Operations

The Proposed Action would replace a former automotive plant; therefore, the noise environment caused by the new plant would be similar to the noise environment associated with the former plant. Because actual noise measurements are not available, measured noise levels around another automotive assembly plant were used to estimate and conservatively bound any potential impacts from noise. These noise levels are 55 to 60 dBA at about 200 feet from the plant property (Cantor, 1996). Assuming continual 24-hour operations noise, weighting the noise levels for nighttime operation would lead to DNL values greater than those of the dBA. Thus, construction noise would lead to 61 to 66 DNL at 200 feet from the plant property. Because existing train locomotive horn noise levels in the plant area are approximately 66 DNL, plant noise would be at or lower than ambient noise levels in the general vicinity of the plant.

At the nearest residential location, plant noise would be approximately 40 dBA, leading to 46 DNL at approximately 0.4 mile from the facility, which would be below the HUD guidelines. At the nearest commercial location, plant noise would be approximately 44 dBA, leading to 50 DNL at 0.2 mile away from the facility, which would be below the HUD guidelines. Consequently, there would be no adverse impacts from noise associated with plant operations.

For workers at the facility, ACGIH and OSHA noise standards described in Section 3.9.1 would apply. The ACGIH 85-dBA noise level could be reached during construction activity or during certain plant operations. Workers exposed to these levels of noise would need hearing protection. To put these sound levels into perspective, the ACGIH and OSHA time Table 3-15 lists exposure limits to sound levels; the ACGIH limits are far more conservative than the OSHA limits. Persons who might exceed these limits would be provided hearing protection to avoid damage to hearing. As a result, workers would not experience adverse noise impacts associated with plant operations.

Table 3-15. Sound Exposure Limits[a]

Sound Exposure Level (dBA)	ACGIH TLV Exposure Time Limit	OSHA Exposure Time Limit
100	15 minutes	2 hours
103	7.5 minutes	1.3 hours
106	3.75 minutes	52.2 minutes
109	1.88 minutes	34.2 minutes
112	0.94 minutes	22.8 minutes
115	28 seconds	15 minutes

a. dBA = A-weighted decibels; ACGIH= American Conference of Governmental Industrial Hygienists; TLV = threshold limit values; OSHA = Occupational Safety and Health Administration.

[3] Assuming continual 24-hour construction noise, 6 decibels must be added to the dBA equivalent sound level value to obtain DNL.

Freight Railroad Operations

Freight to and from the proposed plant would be provided by freight railroad and trucking. Next Autoworks Louisiana would construct a railroad spur across the intersection of Millhaven Road and Russell Sage Road to the site that would carry two trains per day. Because the nearby Kansas City Southern rail line averages 30 trains per day, railroad spur train operations noise would be negligible (less than 1 decibel) in comparison. Therefore, there would be no adverse impacts from the noise of freight railroad operations.

Truck Operations

Approximately 50 trucks per day (a total of 100 trips) would service the proposed facility. Because existing truck volumes on nearby Interstate 20 and Millhaven Road are substantially greater than this, no significant increase in truck noise should occur along these roadways. Consequently, there would be no adverse impacts from noise associated with trucking.

3.9.2.3 No-Action Alternative

Under the No-Action Alternative, minimal noise related impacts from the relocation of the Bennett Bayou and remediation activities would be the same as those produced under the Proposed Action. Under the No-Action Alternative, there would be no additional impacts associated with further construction or operations of the proposed facility.

3.10 SAFETY AND RISK ASSESSMENT

3.10.1 Affected Environment

This section describes the affected environment for and potential impacts to worker and public safety from the Proposed Action. This section addresses site environmental contamination and potential for workplace exposure, workplace injuries, safe work practices, risks of accidents and spills, and potential impacts to public safety during site remediation and facility construction and operations.

Prior to Phase 1 remediation/demolition activities, the LDEQ had identified chromium, n-butyl acetate, total petroleum hydrocarbon, and PCBs as hazards of concern that required additional remediation and assessment. In addition, in accordance with the Risk Evaluation/Corrective Action Program, Appendix B, the need to sample groundwater and soil to analyze volatile organic compounds (VOCs), semi-VOCs, total petroleum hydrocarbons-oil range organics, total petroleum hydrocarbons-diesel range organics and PCBs was highlighted (PPM, 2009a). These contaminants would be potential hazards to workers involved in site remediation and demolition activities.

LDEQ also evaluated the asbestos-containing materials and indicated that each material identified was non-friable and that no additional suspect asbestos-containing materials were noted (PPM, 2009a). As a protective measure, Next Autoworks Louisiana removed and properly disposed of all materials and performed testing, monitoring, and certification actions (Gray Construction, 2009a). Next Autoworks Louisiana addressed possible hazards, including barium and lead, PCB-containing electrical equipment, PCB-containing capacitors, and light fixtures containing PCBs or mercury in accordance with all applicable federal, state, and local regulations (see Section 3.3 for more information).

The property is in a primarily rural area. Interstate 20 borders the project site to the south and has an interchange adjacent to the property. A Kansas City Southern main line rail track runs just north of the property and has an existing triple spur to the plant; and the current level of service on the rail line is

approximately 30 trains per day. The closest commercial business is a gas station on Russell Sage Road across the street from the Next Autoworks Louisiana facility entrance and the closest residence is about 0.4 mile northeast from the building at the proposed site (see Figure 3-5).

Figure 3-5. Location of Former Guide Plant

3.10.2 Effects of Project

As explained previously, Next Autoworks Louisiana has initiated and almost completed the demolition and remediation phase. Safeguards were put in place to address health and safety concerns for workers at hazardous waste remediation sites. Next Autoworks Louisiana engaged an independent environmental consultant to assist with all preventive and emergency preparedness measures necessary to properly deal with the hazardous waste listed in Table 3-16. Site remediation and demolition activities have involved removal and disposal of possible hazardous materials in accordance with applicable federal, state, and local regulations.

3.10.2.1 Demolition/Remediation

The Worker Protection Plan was tailored to address demolition and remediation activities where movement of contaminated materials was needed. Workers involved in these activities were required to wear personal protective equipment (PPE), which included all clothing and other work accessories designed to create a barrier against workplace hazards. Examples include chemical protective suits, safety goggles, blast shields, hard hats, hearing protectors, gloves, respirators, aprons, and work boots. Next Autoworks Louisiana used EPA Level A/B/C/D procedures and PPE for these activities and created an "exclusion zone," where both equipment and personnel were required to go through a decontamination area before leaving the exclusion area to prevent off-site transport of contaminants. Hazardous waste site remediation workers were provided with the Hazardous Waste Operations and Emergency Response (commonly called HAZWOPER) training because they could be exposed to

hazardous wastes during site remediation activities. Next Autoworks Louisiana complied with all applicable training and protective measures for workers found at 29 CFR Part 1910, Occupational Safety and Health Standards and 29 CFR Part 1926, Safety and Health Regulations for Construction, in addition to other applicable federal, state, and local laws. Table 3-16 lists the human health effects of the potential hazards.

Table 3-16. Human Health Effects of Possible Hazards

Possible Hazard	Human Health Effects
Hexavalent chromium	Inhalation exposure affects the respiratory tract, and chronic inhalation exposure could lead to perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness; inhalation exposure to very high concentrations has gastrointestinal and neurological effects; dermal exposure causes skin burns. Chronic exposure to high levels by inhalation or oral exposure can produce effects on the liver, kidney, gastrointestinal and immune systems, and possibly the blood. Hexavalent chromium is a human carcinogen by the inhalation route of exposure.
N-butyl acetate	Exposure through inhalation, ingestion, and eye or skin contact causes eye, skin, and respiratory irritation. Acute exposure symptoms include itchy or inflamed eyes and irritation of the nose and upper respiratory tract; exposure at high concentrations can cause headache, drowsiness, and other narcotic effects.
Asbestos	Exposure to asbestos increases the risk of lung disease; fibers embedded in lung tissue over time can cause asbestosis, lung cancer, or mesothelioma.
Polychlorinated biphenyls	Probable human carcinogen; exposure could cause immune, neurological, and reproductive effects.
Volatile organic compounds	Exposure symptoms could include respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment; exposure could cause damage to liver, kidney and central nervous system.
Semi-volatile organic compounds	Like some polycyclic aromatic hydrocarbons, semi-volatile organic compounds can reasonably be expected to be carcinogens according to the Department of Health and Human Services. Short-term exposure to semi-volatile organic compounds like phenols can cause respiratory irritation, headaches, and burning eyes; skin exposure to high amounts of phenol can cause skin burns, liver damage, dark urine, irregular heart beat, and even death.
Total petroleum hydrocarbons	Inhalation and/or oral exposure to total petroleum hydrocarbons such as benzene, toluene, and xylene could affect the central nervous system; n-hexane could cause peripheral neuropathy; ingestion of gasoline and kerosene causes irritation of the throat and stomach, central nervous system depression, difficulty breathing, and pneumonia from breathing liquid into the lungs; compounds in some total petroleum hydrocarbon fractions can affect the blood, immune system, liver, spleen, kidneys, developing fetus, and lungs; certain total petroleum hydrocarbon compounds can be irritating to the skin and eyes.
Barium	Exposure for a short period at levels greater than U.S. Environmental Protection Agency drinking water standards and background levels in food, barium could cause gastrointestinal disturbances, muscular weakness, diarrhea, difficulty breathing, and numbness around the face. Large amounts can cause changes in heart rhythm, paralysis, or death.
Lead	Exposure in adults could cause reproductive problems, hypertension, nerve disorders, memory and concentration problems, and muscle and joint pain.

Based on data compiled by the U.S. Bureau of Labor Statistics (BLS), in 2007 the incidence rate (total recordable cases) for waste management and remediation service workers was 6.4 incidents per 100 full-time workers (BLS, 2008) and the fatality rate was 22.53 fatalities per 100,000 workers (BLS, 2006, 2008, 2009a). This fatality rate is a conservative estimate compared to the 2007 Census of Fatal Occupational Injuries fatality rate of 10.5 for general construction (BLS, 2009b). The anticipated worker accident scenarios are reflected in the BLS Incident Rates for hazardous waste site remediation workers.

The average number of site remediation personnel was 67 over the 3-month remediation period. According to Bureau of Labor statistics, site remediation-related injuries would be expected to average one incident over the 3 months of site remediation activities. With the aforementioned safety planning, injuries did not exceed the industry average, and there were no site remediation-related fatalities.

3.10.2.2 Construction

Worker Health and Safety

Occupational health and safety rights for construction workers at the site would be protected through the Federal Occupational Safety and Health Act (29 U.S.C. 651 *et seq.*). Construction Phases 2 and 3 would be guided by a Worker Protection Plan to address worker health and safety issues on the site. This plan would implement the applicable Occupational Safety and Health Administration (OSHA) requirements at 29 CFR Part 1910, Occupational Safety and Health Standards, and 29 CFR Part 1926, Safety and Health Regulations for Construction, and would define policies, procedures, and practices implemented during the construction process to ensure protection of the workforce, environment, and the public.

The Worker Protection Plan would be tailored to address construction activities. Workers would be required to wear PPE, such as blast shields, hard hats, hearing protectors, and gloves. It is anticipated that EPA Level A/B/C/D procedures and PPE would be used for these activities and that an "exclusion zone" would be instituted, where both equipment and personnel would be required to go through a decontamination area before leaving the exclusion area to prevent off-site transport of contaminants.

Section 3.3.2.2 provides a detailed description of the kinds of aqueous effluents, solid wastes, and hazardous wastes that would be generated on the site during construction activities. Potential occupational health and safety risks during construction of new site facilities such as the new building and tank farm would be typical of the risks for any other industrial/commercial construction sites. Health and safety concerns would include the movement of heavy objects, including construction equipment; slips, trips, and falls; the risk of fire or explosion from general construction activities such as welding and filling of the fuel depot; spills during filling, maintaining, and cleaning the fuel depot; and exposures related to the storage and handling of chemicals and disposal of hazardous materials and wastes.

Based on data compiled by the Bureau of Labor Statistics (BLS), the 2007 incident rate (total recordable cases) for heavy and civil engineering construction workers was 4.9 incidents per 100 full-time workers (BLS, 2008) and the fatality rate was 25.37 (construction worker) fatalities per 100,000 workers (BLS 2006, 2008, 2009). This fatality rate is a conservative estimate compared to the 2007 Census of Fatal Occupational Injuries fatality rate of 10.5 for general construction (BLS, 2009b). The anticipated worker accident scenarios are reflected in the BLS Incident Rates for heavy and civil engineering construction workers.

The analysis indicates that the number of construction personnel would peak at 544. Construction-related injuries would be expected to peak at 27 to 28 per year. Estimated construction-related fatalities for construction Phases 1-3 would be well below one (0.08). This estimate of fatal incidents might be an over prediction considering the lower fatality rate for the general construction industry (BLS, 2006, 2008, 2009a, 2009b) and that the peak rather than the annual average number of workers were used to calculate the number of fatal incidents.

Risk Assessment

An on-site depot that would temporarily store diesel fuel in bulk would be maintained in accordance with all applicable federal, state, and local regulations. Weekly inspections, repairs, and replacements, as

needed, and removal of any contaminated soil in accordance with applicable regulations would minimize the risk of leaks, spills, fires, and explosions. At construction completion, each contractor would report that the site is "clear of fuel" as it pertains to their company. Next Autoworks Louisiana would handle all wastes (aqueous effluents, air emissions, solid wastes, and hazardous wastes) generated during construction activities in accordance with all applicable federal, state, and local regulations. Considering these strict and precautionary measures, risks to on-site workers the off-site public would be reduced. In the event of a spill, explosion, or a fire, appropriate emergency response measures would be immediately implemented to contain the incident and minimize harm to on-site personnel and the off-site public.

Intentional Destructive Acts

DOE considers the potential for intentional destructive acts at the Next Autoworks Louisiana facility to be low. Next Autoworks Louisiana anticipates having a 24-hour onsite security presence to dissuade any malicious behavior. Before it commenced operations, Next Autoworks Louisiana would develop a comprehensive security plan. Fencing or some form of protective barrier would be constructed around the project area for the safety of the public and the welfare of the facility. While the type of protective barrier has not yet been selected, it is anticipated that Next Autoworks Louisiana would select materials that are consistent with the surrounding landscape and that provide maximum visibility for security personnel. These measures would limit access and deter intruders. If destructive acts were to occur, the consequences would not exceed those set forth in this safety and risk analysis.

3.10.2.3 Operations

Worker Health and Safety

Site operations would require the use of some regulated and/or hazardous materials, such as hydraulic fluid, and minor amounts of cleaners, lubricants, and epoxies. A health and safety program would be followed and employees would be trained annually in the use of Material Safety Data Sheets, appropriate PPE, and procedures for safely storing, labeling, and disposing of these materials.

Site operations would be primarily limited to manufacturing; robotic welding; subassembly of the major modules of the vehicle such as instrument panel, doors, the hood, the lift-gate, and the power train and the like; final assembly of major sub-modules and numerous other discrete parts and components.

In the body shop, parts would be assembled using manual and robotic resistance spot and metal inert gas welding, and adhesives and sealers would be applied. Pressurized gas tanks would be located outside the building in a welding gas enclosure to make the weld shield gas mixture (argon and carbon dioxide), which would be piped to the metal inert gas welding areas. These operations would include the use of compressed gases and welding and robotic equipment. These activities would present the risk of injury from improper machine operations, heavy lifting, explosion of pressurized gas tanks, and gas leaks from transmission pipes.

Processes in the body shop would involve the use of hazardous materials such as alkaline detergents, acids, oxidizers, cleaners, and activators. Hot air heated using direct-fire natural gas burners also would be used and stage chemicals and additives would be stored in an adjacent containment area in tanks, totes, drums, and pails. These activities would present the risk of injury from chemical burns, chemical explosions, and exposure to chemicals via contact or inhalation, oven burns, heavy lifting, and boiler explosions.

Molding certain parts of the vehicle on the site would require the use of hydraulic presses. If a pressurized hydraulic line were to burst, there could be additional safety risks from a sudden release of

pressure, which could cause a burst line to strike a person or an object. In addition, leaks from damaged hydraulic lines could create a slipping hazard and a potential environmental hazard if the fluid made its way into floor drains or onto the exterior ground surface. To minimize impacts from releases of hydraulic fluid, secondary containment would be provided for all hydraulic fluid reserves. Hydraulic lines would be inspected routinely for leaks and any leaked material would be disposed of in accordance with applicable regulations. The building would not include floor drains in areas where hydraulic lines or hazardous materials were stored or used so that spills or leaks would be contained.

The assembly work would involve the use of adhesives and addition of vehicle fluids such as transmission fluid, brake fluid, ethylene glycol, refrigerant, windshield washer solvent (methanol), and fuel to the vehicle prior to completion. These hazardous materials would be handled in accordance with applicable OSHA and LDEQ regulations to minimize worker exposure and risk of workplace injury. Storage and transportation of these materials would be in a chemically compatible manner. The tanks located in a concrete containment structure at the tank farm would store the aforementioned fill fluids and they would be segregated and arranged according to chemical compatibility. A tanker truck containment pad would be located outside the building to facilitate off-loading of chemicals and fluids to the bulk storage tanks. These activities would present the risk of injury from tank rupture, line rupture, chemical explosions and chemical exposure via contact or inhalation due to leaks or spills during transportation and storage. The tank farm would have vents that could help dissipate fumes if an accident were to occur.

Maintenance and tool stores cribs would be located throughout the facility and would contain various cleaners, including heavy-duty cleaners, soaps, lubricants, paints, solvents, neutralizers, and other fluids in small, commercially available quantities and containers such as pails and cans. These would be needed to maintain, rebuild, and repair plant equipment. Some of these chemicals could be hazardous and would need to be labeled and handled in accordance with their Material Safety Data Sheets, which would be kept on the site. Risks from these chemicals include exposure via contact or inhalation of fumes from spills, accidental ingestion, and chemical burns.

The incident rate (total recordable cases) for automobile and light-duty motor vehicle manufacturing (operations workers) for calendar year 2007 was 9.3 incidents per 100 full-time workers (BLS, 2008) and the fatality rate was 2.52 (operations worker) fatalities per 100,000 workers (BLS 2006, 2008, 2009). This fatality rate is a slightly conservative estimate compared to the 2007 Census of Fatal Occupational Injuries fatality rate of 2.4 for general manufacturing (BLS, 2009b).

The maximum number of operations personnel would be 1,500, and operations-related injuries would be expected to peak at 139 to 140 per year, corresponding to a total of 2,092 to 2,093 over the assumed 15-year operating period. The maximum operations-related fatalities would be less than one per year (0.04), and would remain less than one (0.57) over the 15-year operating period. This estimate of fatal incidents is conservative considering the slightly lower fatality rate for the general manufacturing industry (BLS, 2006, 2008, 2009a, 2009b) and that the maximum rather than the annual average number of workers were used to calculate the number of fatal incidents. Considering the aforementioned safety planning, the analysis indicates that no greater than the industry average for injuries and fatalities would occur.

Risk Assessment

Hazardous materials stored on the site during operations activities would include flammables, compressed gases, VOCs, acids, and chemicals that are toxic to human health. These materials would be stored in tanks that would be located in a chemically compatible manner and would have secondary containment systems.

Trucks would deliver flammables and compressed gases to the site at different frequencies during the month. For instance, gasoline and automatic transmission fluid bulk aboveground storage tanks would be delivered once a week, engine oil and ethylene glycol bulk aboveground storage tanks would be delivered three times a month, and methanol would be delivered once every 3 weeks. Regarding compressed gases, argon would be delivered twice a month, while carbon dioxide would be delivered only once a month. Frequency of deliveries also affects the risks to on-site personnel and the off-site public posed by transportation of these hazardous materials. Next Autoworks Louisiana would ensure that all necessary protective measures were taken during transport and handling of these materials so that risks to on-site personnel and the off-site public from fires, explosions, and spills would be minimized.

The presence of these hazardous materials on the site would present risks to on-site personnel and the off-site public, even though the nearest residence is 0.4 mile northeast of the facility. On-site personnel could be exposed to contaminants through tailpipe exhaust, gasoline vapor, urethane vapor, dust, particulates, weld smoke, adhesive vapors, and other chemical vapors. Spills and accidental releases from the acid, alkali detergent, and chemical storage tanks, rupture of fill fluid tanks, and explosions of compressed gas tanks could pose risks of injury to workers and could cause harm to the off-site public through travel via air currents. Protective and preparatory measures such as the use of PPE, emergency preparedness plans and equipment; easily accessible fire-fighting equipment, first aid, updated material data safety sheets, and emergency phone numbers; regular inspections and maintenance of inspection reports; appropriate containment systems; and compliance with worker training and protection measures at 29 CFR Part 1910, Occupational Safety and Health Standards, and 29 CFR Part 1926, Safety and Health Regulations for Construction, would help diminish risks to on-site personnel and the off-site public. Fires, explosions, and spills on the site could also affect the air quality with the release of contaminants and fumes, thereby presenting a risk to the off-site public. As needed, Next Autoworks Louisiana would take appropriate emergency response steps to communicate risks and preparatory and protective measures to the off-site public to help minimize impacts. Secondary containment systems would be provided and maintained in accordance with all current federal, state, and local regulations. Fire extinguishers would be stationed as required.

3.10.2.4 No-Action Alternative

Under Phase 1, demolition and remediation activities have taken place on the existing building guided by a Worker Safety Plan. The beneficial effects of the remediation under the No- Action Alternative would be the same as those related to the Proposed Action. Under the No-Action Alternative, no additional impacts related to safety and risk assessment would take place from additional construction or plant operations.

3.11 INFRASTRUCTURE AND ENERGY RESOURCES

This section describes the environmental setting and potential environmental impacts to infrastructure and energy resources for the Proposed Action and the No-Action Alternative. Infrastructure and energy resources described in this section include water, wastewater, electricity, natural gas, and telecommunications.

3.11.1 Affected Environment

The City of Monroe provides water-supply and sewage-disposal services to the proposed facility location. There are two sources of water for the City – Bayou Desiard and the Ouachita River. Water drawn from these two sources is treated at the City of Monroe Water Treatment Plant and then distributed to consumers. The city supplies an average of 14.5 million gallons of water per day to consumers (City of Monroe, 2009b). The Water Pollution Control Center is responsible for the treatment of all sewage for the City of Monroe, Richwood, and Green Acres subdivision. This treatment plant processes

approximately 7 million gallons of sewage per day (Water Pollution Control Center, 2009). The facility contains an on-site, city-owned lift station with a 12-inch-diameter discharge line to the sanitary sewer. This lift station is connected to an on-site wastewater treatment facility with a 250,000 gallon retention capability.

Power would be supplied to the proposed facility through a 69-kilovolt feed and distributed within the facility via 7 substations and 11 transformers. Gas would be delivered through a 3-inch-diameter line and supplied by either Crosstex Energy or Atmos Energy. Electricity would be provided by Entergy Corporation. AT&T and CenturyTel would provide telecommunications services to the area.

3.11.2 Effects of Project

No impacts related to infrastructure and energy resources have taken place under Phase 1 because the existing facility already has water, sewer, electrical power, natural gas, and telecommunications lines. No additional capacity or extension of these services have been or are anticipated to be required.

3.11.2.1 Construction

Expansion of the existing facility would take approximately 18 months and use energy and water during that period.

3.11.2.2 Operations

The facility would be designed to meet LEED "Certified" or "Silver" status and would minimize water and energy use and sewage production to the greatest extent possible. The LEED for New Construction Rating System is designed to guide and distinguish high-performance commercial and institutional projects, including manufacturing plants and laboratories.

Natural gas and electrical load requirements under for the Proposed Action would easily be met by the existing gas and electric suppliers in the area. Natural gas would be used to fire the plant's hot water boiler, building air-makeup units, and plant and office heating, ventilation, and air conditioning systems. Electrical power would be used to meet the remainder of the facility's energy needs.

Backup power would be provided by would be a diesel generator on the exterior of the building. Next Autoworks Louisiana would use this generator during power outages and regular National Fire Protection Association testing.

3.11.2.3 No-Action Alternative

Under the No-Action Alternative, no impacts have occurred to energy and infrastructure resources as a result of Phase 1 construction activities because sufficient energy and infrastructure resources were available as part of the existing facility. Under the No-Action alternative, no further use of energy or infrastructure resources would take place.

3.12 CULTURAL RESOURCES

3.12.1 Affected Environment

This section describes the existing cultural resources setting in the project area and potential impacts to cultural resources from the Proposed Action and the No-Action Alternative. "Cultural resource" is a term used to describe several different types of resources, including archaeological, architectural, and

traditional cultural properties. Archaeological sites include both prehistoric and historic deposits. Architectural properties include buildings, bridges, and infrastructure. Traditional cultural properties are properties eligible for inclusion on the *National Register of Historic Places* because of their association with the cultural practices or beliefs of a living community that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community.

Under federal regulations, a project has an effect on an historic property when the undertaking could alter the characteristics of the property that might qualify the property for inclusion on the National Register, including alteration of location, setting, or use. An undertaking can be considered to have an adverse effect on an historic property when the effect could diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Potential adverse effects on historic properties include, but are not limited to (36 CFR 800.9):

- Physical destruction or alteration of all or part of the property
- Isolation of the property from or alteration of the property's setting when that character contributes to the property's qualifications for listing on the National Register
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting
- Neglect of a property resulting in its deterioration or destruction
- The transfer, lease, or sale of the property

Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CFR Part 800), require that federal agencies consider the effects of their undertakings on cultural resources that are eligible for listing on the *National Register of Historic Places*. In addition, under NEPA, federal agencies must "preserve important historic, cultural and natural aspects of our national heritage" (Section 101(b)(4)).

The Section 106 process has four basic steps, as follows:

- Identify and evaluate cultural resources.
- Assess effects of the project on historic properties.
- Resolve any adverse effects of the project on historic properties in consultation with the State Historic Preservation Office (SHPO), resulting in a Memorandum of Agreement or a Programmatic Agreement that spells out specific measures to avoid or mitigate impacts to the historic properties if any have been identified.
- Proceed in accordance with the Memorandum of Agreement or Programmatic Agreement.

Under Section 106, cultural resource significance is evaluated in terms of eligibility for listing on the National Register. National Register criteria for eligibility (36 CFR 60.4) are defined in terms of the quality of significance in American history, architecture, archaeology, and culture present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that meet any of the following criteria:

- Are associated with events that have made a contribution to the broad pattern of our history;
- Are associated with the lives of people significant in our past;

- That embody the distinct characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components might lack individual distinction;
- Have yielded or are likely to yield information important in prehistory or history.

Identified Cultural Resources

No cultural resources, including archaeological or historical resources or locations of importance to Native Americans have been identified in the vicinity of the Next Autoworks Louisiana facility. The existing facility at the project site was constructed in 1974, and is therefore not a potential historic resource under the significance criteria used for evaluating cultural resources under Section 106 (36 CFR 60.4).

The State of Louisiana SHPO has also determined that the Proposed Action would not impact known historic properties (See Appendix A, Agency Consultation). This SHPO determination concludes the DOE consultation requirements under Section 106.

3.12.2 Effects of Project

No cultural resources have been identified in the vicinity of the Next Autoworks Louisiana facility, and the State of Louisiana SHPO has determined that no known historic properties would be affected (see Appendix A). Therefore, there have not been impacts to cultural resources as a result of construction activities which have already occurred. In addition, the involved Tribe which maintains ancestral associations throughout the state of Louisiana has stated that the proposed location is beyond their scope of interest. Therefore, in their view, "no impacts to religious, cultural, or historical assets of the Alabama-Coushatta Tribe of Texas will occur in conjunction with this proposal." (See e-mail from Bryant J. Celestine dated March 10, 2010 in Appendix A.)

Although no impacts to cultural resources have been identified, it is possible that construction activities could inadvertently unearth and damage buried cultural resources that have not yet been identified. If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, were to be inadvertently discovered during ground-disturbing activities for the Proposed Action, all such work would cease in that area and within 100 feet of the find. Ground-disturbing activities would not resume until a qualified archaeologist assessed the significance of the find and, if necessary, developed appropriate treatment measures in consultation with DOE and the Louisiana SHPO. Such treatment measures typically include development of avoidance strategies or mitigation of impacts through data recovery programs such as excavation or detailed documentation.

3.12.3 No-Action Alternative

Under the No-Action Alternative, no impacts have occurred thus far, nor are any anticipated for construction Phases 2 and 3, or from the plant operations. The absence of impacts relating to cultural resources would be the same under the No-Action Alternative as for the Proposed Action.

3.13 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) directs federal agencies to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." CEQ has elaborated guidance to help federal agencies comply with Executive Order 12898 (CEQ, 1997), and DOE provides recommendations

on how to discuss potential impacts to minority and low-income populations in NEPA documents (DOE, 2004).

This section analyzes potential impacts of the Proposed Action and the No-Action Alternative on minority and low-income populations. Section 3.13.1 identifies minority and low-income populations where they exceed the percent of total population in the areas of comparison or where they exceed 50 percent of the total population. It also discusses whether there would be any pathways of unique exposure to adverse human health and environmental impacts, such as through greater reliance on particular environmental resources. Section 3.13.2 describes the extent to which any high and adverse impacts to human health and the environment would disproportionately affect minority and low-income populations.

3.13.1 Affected Environment

The Next Autoworks Louisiana manufacturing facility would be in a sparsely populated area. The nearest residence is approximately 0.4 mile northeast of the proposed facility, and there are no groups of houses within a 1.5-mile radius of the project site.

Table 3-17 lists the percentage of minority populations in the area surrounding the proposed site, and the areas of comparison – the State of Louisiana, Ouachita Parish, and the Monroe urban area. The area surrounding the proposed site was defined by three Census blocks – the Census block group where the Next Autoworks Louisiana facility would be constructed and two other neighboring Census block groups. Census block groups are subdivisions of Census tracts, typically designed to reflect homogeneous population characteristics, and in this case, represent a collection of city blocks.

Table 3-17. Demographics in the Project Area, 1999[a]

Geographic Unit Analyzed	Total Population	Percent of Total Population								
		White	Black or African American	Alaska Native or American Indian	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino[b]	Minority Population[c]
Louisiana	4,334,094	65.90	33.50	0.59	1.26	0.03	0.07	1.11	2.49	35.53
Ouachita Parish	147,250	64.48	33.63	0.23	0.64	0.03	0.33	0.67	1.19	36.15
Monroe Urban Area	113,818	57.25	40.82	0.19	0.73	0.03	0.32	0.65	1.17	43.34
Census Blocks in Project Area	2,986	22.30	76.39	0.13	0.10	0.07	0.54	0.80	0.84	78.20

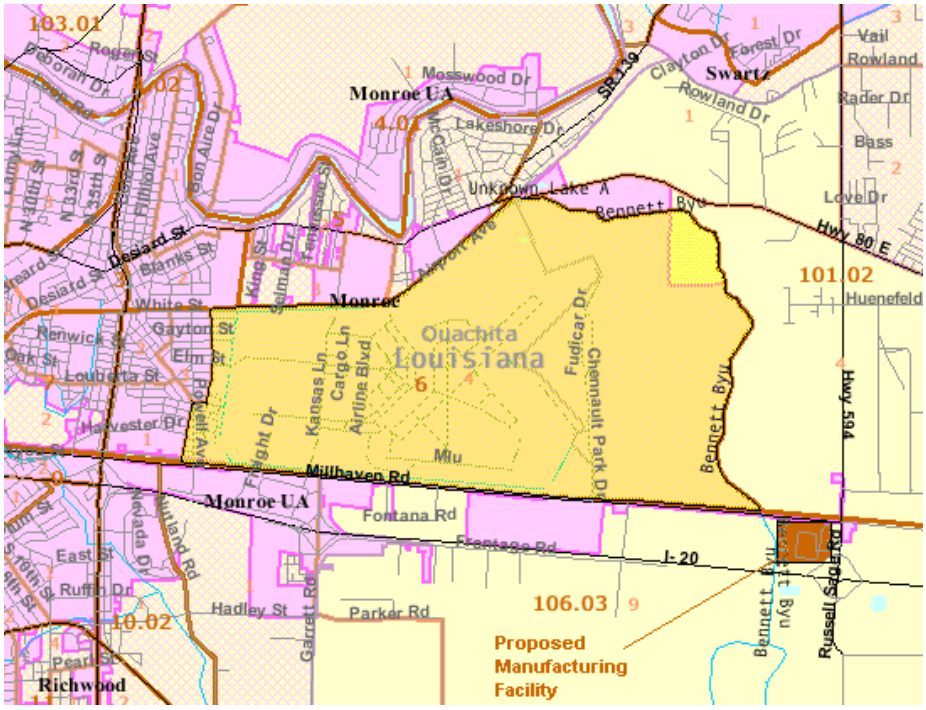
a. Source: U.S. Census Bureau, 2009.

b. Individuals who identify themselves as Hispanic, Latino, or Spanish might be of any race; the sum of the other percentages under the "Percent of Total Population" columns plus the "Hispanic or Latino" column therefore does not equal 100 percent.

c. A minority population, for the purposes of this analysis, is the total population for the U.S. Census-designated place minus the non-Latino/Spanish/Hispanic white population.

The three Census blocks in the area surrounding the proposed site have a higher percentage of Black or African American populations than the State of Louisiana, Ouachita Parish, or the Monroe Urban Area. The populations are concentrated in one of the three Census block groups; see the orange area in the middle of Figure 3-6. Most of the population is concentrated in the west end of the block group, roughly 4 miles from the proposed site, on the other side of the Monroe airport. In the other two Census blocks,

the presence of minority groups, including that of Black or African American, is not greater than in the areas of comparison (the State of Louisiana, Ouachita Parish, and Monroe Urban Area).



Source: U.S. Census Bureau, 2009.
Note: The patterned area corresponds to the Monroe Urban Area; the pink area is the City of Monroe; the orange area is Block Group 4 of Census Track 6; the little brown square in the bottom right-hand corner is the proposed Next Autoworks Louisiana facility site.

Figure 3-6. Map of Census Block Demographic Information

Table 3-18 lists the percentage of low-income populations in the area surrounding the proposed site, and the areas of comparison.

Table 3-18. Individuals and Families below the Poverty Level in the Project Area: Number and Percentage of Population by Location, 1999

	Families		Individuals	
	Number in Poverty	Percentage of Total Families	Number in Poverty	Percent of Total Population
Louisiana	183,448	15.77	851,113	19.64
Ouachita Parish	6,092	15.81	29,515	20.68
Monroe urban area	5,340	18.53	26,211	23.89
Census blocks in project area	261	33.94	1,219	40.15

a. U.S. Census Bureau, 2009.

The three Census blocks in the area surrounding the proposed site have a higher percentage of low-income populations than the State of Louisiana, Ouachita Parish, or the Monroe Urban Area. The low-

income population is concentrated in one of the three Census block groups; see the orange area in the middle of Figure 3-6.

3.13.2 Effects of Project

As a result of Phase 1 construction activities, there have not been disproportionately high or adverse environmental impacts to minority populations and low-income populations.

3.13.2.1 Construction and Operation

The analysis did not identify any pathways through which minority and low-income groups in the area could be uniquely exposed to adverse human health and environmental impacts due to construction or operation of the facility.

3.13.2.2 No-Action Alternative

Under the No-Action Alternative, the absence of impacts under the No-Action Alternative would be the same as those for the Proposed Action.

4. Cumulative Impacts

4.1 INTRODUCTION

CEQ regulations require a cumulative impact analysis and define it as "…the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7)."

This chapter describes the potential cumulative impacts of the Proposed Action. DOE based this cumulative impacts analysis on: (1) the findings of direct and indirect impacts reported in Chapter 3 of this EA; and (2) activities in the project area that could interact, or overlap, in time or space with the impacts of the Proposed Action. The geographic scope and time frame of the analysis varies depending on environmental resource category.

Cumulative impacts can stem from both construction and operations. This analysis differentiates, where appropriate, between cumulative impacts associated with short-term, overlapping construction impacts and longer-term impacts due to operations, considering all potential activities, including federal, state, local, and private actions.

4.2 METHODOLOGY

DOE collected and reviewed information and developed a preliminary list of relevant past, present, and reasonably foreseeable future projects and actions that could result in impacts in the same period and in the same area as the Proposed Action. DOE then reviewed available analyses and information about those projects to identify which projects were appropriate for inclusion in the cumulative impacts analysis. Section 4.3 lists the projects DOE considered for inclusion in the analysis.

4.3 PROJECTS CONSIDERED FOR THE CUMULATIVE IMPACTS ANALYSIS

4.3.1 Louisiana Delta Community College Campus Expansion

The new Louisiana Delta Community College (DCC) campus will be at 7500 Millhaven Road, approximately 1.3 miles west of the Next Autoworks Louisiana facility. It will offer day and evening classes to a student body totaling approximately 2,000 (Jordan, 2009).

It is anticipated that 64.5 percent of DCC students will come from Ouachita Parish, two-thirds of those from East Ouachita. The new campus will be roughly equidistant between the Interstate 20 Millhaven Road and Garrett Road exits. Students from East Ouachita would be likely to approach the new campus from the east and could use the Interstate 20 Millhaven Road exit that would also be used to access the Next Autoworks Louisiana plant site. Students from other parts of Ouachita Parish would be likely to approach the campus from the west, and would use the Interstate 20 Garrett Road exit, which is approximately 3.7 miles west of the Millhaven Road exit.

4.3.2 Road Projects

The Kansas/Garrett Connector overpass will provide access for Kansas Lane over the Kansas City Southern rail line, approximately 3 miles west of the Next Autoworks Louisiana plant. The Kansas-Garrett Interchange Project would upgrade and widen the Interstate 20 interchange to align with Kansas Lane and to provide access from outlying rural areas into the regional retail center. As recently as

September 2007, the State Bond Commission approved $2 million in funding for the Kansas-Garrett Interchange Project (Peter J. Smith & Company, 2008).

The Transportation Infrastructure Model for Economic Development (TIMED) Program includes an upgrade of the entire 175-mile length of U.S. Highway 165 within Louisiana, which intersects Interstate 20 approximately 5 miles west of the Next Autoworks Louisiana plant. The roadway is being widened to a four-lane highway to create an expanded link between Interstate 10 and Interstate 20. One of the segments under construction is the 5-mile-long Louisiana State Road 184 to Rilla segment, which is approximately 6 miles south of the intersection of Interstate 20 and U.S. Highway 165. This segment is almost complete (TIMED 2009).

Interstate 20 Pavement Reconstruction is a committed project included in the Monroe Metropolitan Transportation Plan Update. If constructed, this would affect approximately 4 miles of Interstate 20, from the Ouachita River to the Garrett Road/Kansas Lane Exit (Peter J. Smith & Company, 2008).

4.3.3 Monroe Regional Airport Terminal Expansion

In July 2009, officials in Monroe broke ground on a $35 million terminal at Monroe Regional Airport. The voters of Monroe earlier approved a property tax measure to fund the expansion. Another $10 million in funding was obtained through the American Recovery and Reinvestment Act of 2009, and the Federal Aviation Administration also contributed $5 million. This 60,000 square foot terminal will house four airline ticket offices; a gate lounge; baggage claims; automobile rental areas and office space; office space for airport, local, and federal officials; retail and dining area; and common space. The expansion is expected to be completed by 2011 (Monroe Regional Airport, 2009).

4.3.4 Greater Ouachita Port Intermodal Facility

In 2008, the Greater Ouachita Port Commission secured $8 million in federal and state funding to construct a container-handling dock that houses a 275-ton-capacity mobile crane used to load and unload barges (Peter J. Smith & Company, 2008). At present, the facilities have been completed and are operational. An operational rail spur became part of the dock facility in fall 2008. Construction on the Greater Ouachita Port's next major project, a $2 million access road, could begin soon (Rogers, 2009).

4.3.5 Industrial/Commercial Development

In April 2009, Gardner Dever Thomas, Inc., officials announced that the company would expand its Monroe facilities from 70 employees in 2009, to at least 301 by 2011. The Gardner Dever Thomas facility is in the Monroe Air Industrial Park, adjacent to the Monroe Airport, approximately 4.2 miles west-northwest of the proposed Next Autoworks Louisiana facility.

4.3.6 Parish Square Village Project

On June 9, 2009, the U.S. Army Corps of Engineers began considering a permit application filed under Clean Water Act Section 404. Holyfield, Inc. is applying for a Department of the Army permit to mechanically clear and place fill material into wetlands in conjunction with the construction of a 146,024 square foot residential, retail, and commercial development southeast of the intersection of Bienville Drive and Tower Drive in midtown Monroe. The project site consists of approximately 20 acres, of which almost 11 acres are mature forested wetlands. Holyfield has proposed to utilize 27.5 acres of the DeLoutre Wetland Mitigation Property for the restoration of degraded open-field wetlands to offset the unavoidable impacts associated with the Parish Square Village Project. The proposed plan will include restoration of the degraded open-field wetland habitat to its historic bottomland hardwood complex and

will provide additional riparian buffer along the north/east bank of Bayou DeLoutre along the western boundary of the restoration area (USACE, 2009).

4.4 CUMULATIVE ENVIRONMENTAL IMPACTS

This section builds on the results of the resource-specific analyses in Chapter 3 of this EA. This discussion is a compilation of potential impacts; that is, the cumulative result of the impacts of the project when added to the potential impacts of other actions. DOE analyzed the cumulative impacts for situations in which planned or reasonably foreseeable projects would overlap the Next Autoworks Louisiana project in geographic area and timeframe.

Sections 4.4.1 through 4.4.3 describe potential adverse and beneficial cumulative impacts for transportation, socioeconomics, and air quality and global climate change. The analysis did not identify the potential for incremental contributions to cumulative impacts to land use, geology and soils, biological resources, noise and vibration, safety and risk, infrastructure and energy resources, cultural resources, waste management, water resources or environmental justice. Therefore, those resource areas are not discussed.

4.4.1 Transportation

The Next Autoworks Louisiana project would result in an increase in traffic levels on Millhaven Road. The new DCC facility would be on Millhaven Road about 2 miles west of the Next Autoworks Louisiana facility. However, because the new college would be equidistant from two exits off Interstate 20 (Millhaven Road and Garrett Road), it is reasonable to expect that college-bound motorists using Interstate 20 West would use both exits. The cumulative impacts analysis did not identify any other projects that would increase the average daily traffic on Millhaven Road and hence, no cumulative impacts are expected.

4.4.2 Socioeconomics

Many of the workers employed for construction and operations at the Next Autoworks Louisiana plant would be recruited from outside the Monroe-West Monroe area. Employees recruited for construction would require temporary housing in the Monroe area. Out-of-area recruits for long-term positions associated with facility operations could be expected to relocate to Monroe along with their families, depending on the distance of their original residence in relation to the Next Autoworks Louisiana facility. If 80 percent of the workers relocated to the City of Monroe from outside the Monroe-West Monroe area, and if each had a family size of 3.12 (average for Ouachita Parish), the number of people migrating to the two-city area would be 3,494. To the extent that any of the projects listed in Section 4.3 would lead to in-migration to Monroe and West Monroe, this could generate pressure on public utilities currently performing near full capacity, such as the water supply system for the City of Monroe. However, the City of Monroe plans to construct a new water treatment plant that will either substitute or work in conjunction with the existing plant and will double the water treatment capacity of the city. This plant is expected to be constructed in 2012 (City of Monroe, 2009a).

Of the projects listed in Section 4.3, the DCC campus, the Gardner Dever Thomas expansion, and Parish Square Village Project would increase local employment, both temporarily and long term. Next Autoworks Louisiana facility construction and operations would create temporary and long-term employment opportunities. Therefore, the Next Autoworks Louisiana project in combination with other projects in the area could result in beneficial cumulative impacts to temporary and long-term employment opportunities in the Monroe-West Monroe area. A positive cumulative impact to state and local tax revenues from the Next Autoworks Louisiana plant and other projects would also occur.

4.4.3 Air Quality and Global Climate Change

The construction emissions could potentially coincide with construction emissions of the projects listed in Section 4.3. However, the Proposed Action's status as a minor air quality source; physical distance among the projects, and short dispersion distances for some pollutants, such as fugitive dust, would combine to potentially mitigate the criteria pollutant emission levels. Consequently, it is not expected that the combined effect of the analyzed projects would cumulatively alter the air quality attainment status for any criteria pollutant.

The release of anthropogenic greenhouse gases and their potential contribution to climate change are inherently cumulative phenomena. The annual direct and indirect CO_2e emissions from the Proposed Action are estimated to be 64,010 metric tons. These emissions would be compared to 7,282 million metric tons of CO_2e ($MMTCO_2e$) emitted in the United States in 2007 (EIA, 2007) and 49 billion metric tons of CO_2e emitted globally in 2004 (IPCC, 2007). Emissions from the Proposed Action, in combination with past and future emissions from all other sources, would contribute incrementally to the climate change impacts described above. However, at present there is no methodology that would allow DOE to estimate the specific impacts (if any) this increment of climate change would produce in the vicinity of the facility or elsewhere.

The Proposed Action would contribute to cumulative increases in GHG and related climate change when combined with other projects reviewed in this section and those occurring globally. However, because DOE expects that there would be an overall net reduction in CO_2e emissions resulting from the Proposed Action, the impact on cumulative GHG emissions would be minor. Chapter 3 estimates that the V Car reduces GHG emissions by 162,600 metric tons per year compared to an average Model Year 2011 passenger car. Assuming a service life of 7 years and an annual production level of 150,000 cars driven an annual distance of 14,910 miles per car, a total reduction of 4.1 $MMTCO_2e$ is estimated. The estimated annual GHG emissions generated by the Proposed Action are also noted in Chapter 3 --- 64,010 metric tons. Assuming a 7 year time frame, comparing the generated GHG emissions of 448,070 metric tons with 4.1 GHG savings $MMTCO_2e$, a net CO_2e savings of 3.7 $MMTCO_2e$ would be possible. GHG savings would continue to compound as the vehicle fleet grew.

4.4.4 No Action Alternative

Under the No-Action Alternative, the beneficial socioeconomic impacts of the proposed projects would not materialize. The beneficial aspects of the Next Autoworks Louisiana project from a global climate change perspective would also not materialize.

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