FINAL
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

for the

NATIONAL INSTITUTE OF JUSTICE GRANTS PROGRAM

PREPARED FOR
THE DEPARTMENT OF JUSTICE
BY THE
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Executive Summary

This Programmatic Environmental Assessment (EA) has been prepared to address the effects of National Institute of Justice (NIJ) funded research, development, and evaluation relating to criminal justice nation-wide. The EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 CFR Parts 1500 1508, and the National Institute of Justice Draft Guidance for Preparing Environmental Assessments.

PURPOSE AND NEED OF THE PROPOSED ACTION

The purpose and need of the NIJ grants program is to disburse funding each year to educational institutions, States, units of local government, nonprofit organizations, faith-based organizations, individuals, and profit-making organizations for projects addressing criminal justice through competitive, formula based, and need based solicitations.

NIJ provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety. NIJ solicits applications to inform its search for the knowledge and tools to guide policy and practice.

PROPOSED ACTION

The proposed action for this Programmatic EA is for NIJ to continue funding projects as in the past. That is, there would be no change to the grants program, which is required by law. However, instead of preparing an EA and FONSI (Finding of No Significant Impact) for each project that requires NEPA documentation before funds are disbursed, projects that fall under the scope of this Programmatic EA would meet the requirements for NEPA compliance. Grantees would be required to submit a filled out checklist for OJP/NIJ review and approval. No NIJ grant funds would be disbursed to a grantee until determination of NEPA compliance can be made. Any projects deemed not to be covered for NEPA compliance by this Programmatic EA would need to have a separate EA and FONSI prepared.

ALTERNATIVES

The No Action Alternative is included as required by NEPA regulations to identify baseline conditions against which potential impacts of implementation alternatives are evaluated. The No Action Alternative represents the benchmark condition of the environment if the proposed action is not implemented. Under the No Action Alternative, no funds would be disbursed via grants to educational institutions, public agencies, nonprofit organizations, faith-based organizations, individuals, and profit-making organizations. These organizations would have to find alternative funding sources for criminal justice projects, or the projects would have to be cancelled. No other alternatives are analyzed.

ENVIRONMENTAL AND SOCIOECONOMIC CONSEQUENCES

Environmental resources may be affected by implementing the Proposed Action and these impacts are analyzed in this Programmatic EA. The environmental analysis is based upon the impacts of the activities in implementing project that receive NIJ grants, specifically projects involving the use of chemicals, fire testing, renovation, and construction. In the course of implementing such projects, there would be some impacts to environmental resources, but overall the impacts are considered less than significant. Most of the impacts are expected to be minimal, largely due to mitigation measures and federal, state and local requirements that would preemptively avoid potentially significant impacts. Mitigation measures are provided where applicable.

CONCLUSION

This Programmatic EA analyzes the environmental impacts of implementing projects funded by NIJ grants. The implementation of an NIJ granted project is not expected to result in significant adverse impacts on the environment; therefore, an Environmental Impact Statement is not required and a Finding of No Significant Impact (FONSI) is appropriate. By verifying the items from the checklist, grantees can further ensure that impacts are minimized.

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Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
dBA	a-weighted decibel
DNA	Deoxyribonucleic acid
DNL	day-night sound level
DOJ	Department of Justice
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FWS	Fish and Wildlife Service
ha	hectare
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIJ	National Institute of Justice
NMFS	National Marine Fisheries Service
NO_x	nitrous oxides
NRHP	National Register of Historic Places
Hz	hertz
O_3	ozone
OJP	Office of Justice Programs
Pb	lead
$PM_{2.5}$	particulate matter
PM_{10}	particulate matter
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
T&E	Threatened and Endangered
TSCA	Toxics Substances Control Act
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code

1.0 INTRODUCTION

This chapter provides background on the National Institute of Justice (NIJ), explains the purpose for the grants program, and identifies the types of projects that qualify for NIJ funding.

1.1 Background and NIJ Grants Program Overview

NIJ is the research, development and evaluation agency of the U.S. Department of Justice and a component of the Office of Justice Programs (OJP), and it is dedicated to researching crime control and justice issues. NIJ was created in 1969 and has been in the forefront of nearly every innovation in criminal justice research and policy ever since. NIJ provides objective, independent, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the state and local levels. NIJ has five operating offices:

- Office of Research and Evaluation
- Office of Science and Technology
- Office of Investigative and Forensic Sciences
- Office of Operations
- Office of Communications.

The Office of Research and Evaluation develops, conducts, directs, and supervises research and evaluation activities across a wide variety of issues. The Office of Science and Technology manages technology research and development, development of technical standards, testing, forensic sciences capacity building, and technology assistance to State and local law enforcement and corrections agencies. The Office of Communications disseminates information by integrating publishing, conferencing, marketing and outreach activities. The Office of Investigative and Forensic Sciences improves the quality and practice of forensic science through innovative solutions that support research and development, testing and evaluation, technology, information exchange, and the development of training resources for the criminal justice community. The Office of Operations manages NIJ's budget, planning and administrative activities.

NIJ funds research, development, and evaluation relating to criminal justice through competitive solicitations. Projects range from developing better safety equipment for police officers to providing funds that enable courts to free wrongfully convicted prisoners using modern DNA testing. The focus of the solicitations varies from year to year based on research priorities, available funding, and legislative mandates. NIJ provides funding to educational institutions, States, units of local government, nonprofit organizations, faith-based organizations, and individuals. In fiscal year 2009, NIJ made more than 508 awards for a total of approximately $284 million. Awards were made in response to 38 solicitations (DOJ, 2010).

Proposals received under a solicitation are reviewed by independent peer panels composed of one or more of the following: technologists from academia, industry, and government organizations, along with practitioners from federal, state, and local agencies. Formula and need

based awards are not peer-reviewed by external reviewers. Once reviewers have completed evaluations, NIJ Program Managers recommend individual proposals to the NIJ Director or other decision maker, who makes final award decisions.

Because the disbursement of NIJ funds is a federal action, NIJ must comply with all applicable Federal environmental laws, Executive Orders, and regulations. This Environmental Assessment (EA) evaluates at the programmatic level the likely environmental effects of NIJ funded projects involving the use of chemicals, building renovation or construction, and fire testing. Additionally, it proposes a mechanism for future use by NIJ to determine if applicant proposals are covered by this programmatic EA. This EA develops a checklist to provide to grantees which would be submitted to NIJ at the time they request funding for proposed projects. In the past, grant funds were awarded for a specific proposal in conjunction with the completion of an Environmental Assessment and issuance of a Finding of No Significant Impact (FONSI) for that particular project. This programmatic EA will supplant this procedure for projects that fall under its purview.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code (USC) 4321 et seq.), the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500 through 1508) for implementing NEPA, and NIJ Draft Guidance for Preparing Environmental Assessments.

1.2 Purpose and Need for Action

The purpose and need of the NIJ grants program is to disburse funding each year to educational institutions, States, units of local government, nonprofit organizations, faith-based organizations, individuals, and profit-making organizations for research, development, and evaluation about criminal justice through competitive, formula based, and need based solicitations.

NIJ provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety. NIJ solicits applications to inform its search for the knowledge and tools to guide policy and practice.

1.3 Types of Projects

Table 1-1 provides a list of examples of current programs whose funded projects would fall under the scope of this programmatic EA. New programs in the future that would include similar activities to those typically occurring in the programs described in this section would also be eligible for consideration for NEPA compliance under this programmatic EA. Brief descriptions of some of the programs are provided below.

The objective of the Convicted Offender/Arrestee DNA Backlog Reduction Program is to accelerate the analysis of convicted offender and/or arrestee DNA samples collected by States pursuant to applicable law for database purposes, in order to provide timely Combined DNA Index System compatible data for State and national DNA databases. Funds are used by a State's designated existing and accredited DNA database laboratory to reduce the number of DNA database samples pending DNA analysis.

Table 1-1. Types of programs with projects potentially covered by the Programmatic EA.

Program Title	Project Category
Convicted Offender/Arrestee DNA Backlog Reduction Program	Forensics, DNA, backlog reduction
Forensic DNA Backlog Reduction Program	Forensics, DNA, backlog reduction
Forensic DNA Research and Development	Forensics, DNA, research and development
Forensic Science Training Development and Delivery Program	Education and training, forensics, DNA
Paul Coverdell Forensic Science Improvement Grants Program	Forensics, laboratory improvement
Research and Development in the Forensic Analysis of Fire and Arson Evidence	Forensics, fire/arson
Research and Development in Forensic Anthropology and Forensic Odontology	Forensics, anthropology
Research and Development in Forensic Toxicology	Forensics, toxicology
Solving Cold Cases with DNA	Forensics, DNA, solving cold cases

Source: DOJ, 2010

The Forensic DNA Backlog Reduction Program is a combination of two programs: the DNA Capacity Enhancement Program and the Forensic Casework DNA Backlog Reduction Program. Its goal is to assist eligible States and units of local government to reduce forensic DNA sample turnaround time, increase the throughput of public DNA laboratories, and reduce DNA forensic casework backlogs. These improvements are critical to preventing future DNA backlogs and to helping the criminal justice system use the full potential of DNA technology.

The Forensic DNA Research and Development Program funds research and development that can enhance the forensic uses of DNA technology. For example, technologies that result in faster, more robust, more informative, less costly, or less labor-intensive identification, collection, preservation, and/or analysis of DNA evidence collected from crime scenes.

The Forensic Science Training Development and Delivery Program funds training providers and other relevant entities to develop and/or deliver knowledge-based forensic science curricula at the State and/or local level to train forensic scientists and to inform other criminal justice practitioners and policymakers.

The Paul Coverdell Forensic Science Improvement Grants Program (the Coverdell program) awards grants to States and units of local government to help improve the quality and timeliness of forensic science and medical examiner services. Among other things, funds may be used to eliminate a backlog in the analysis of forensic evidence and to train and employ forensic laboratory personnel, as needed, to eliminate such a backlog. States may apply for both “base” (formula) and competitive funds. Funds may be used for program expenses relating to facilities (i.e., renovation or construction), provided the expenses are directly attributable to improving the quality and/or timeliness of forensic science.

The Research and Development in the Forensic Analysis of Fire and Arson Evidence program funds research and development in fire and arson investigation for criminal justice purposes. The program is aimed at improving the ability of forensic analysts and investigators to locate and identify probative evidence from fire scenes and to enhance the ability of crime laboratories to analyze fire evidence. Areas of interest include new or improved tools and technologies to aid in interpreting a fire scene; improved understanding of chemical signatures found at fire scenes (e.g., burn pattern analysis); improvements in the laboratory analysis of fire debris.

The Research and Development in Forensic Anthropology and Forensic Odontology Program funds research and development that can enhance anthropological and odontological methods and/or tools for forensic applications. Priority areas include identification of remains in mass fatality events; age and sex determination; forensic artistry and facial/body reconstruction; methods for detection of human remains; identification of ethnicity and/or cultural origins; novel methods that can enhance forensic tools available for odontologists and dental anthropologists; biogeochemical markers that can provide information about the origins of skeletal remains.

The Solving Cold Cases with DNA program funds projects to identify, review, and investigate "violent crime cold cases" that have the potential to be solved using DNA analysis and to locate and analyze biological evidence associated with these cases. Experience has shown that cold case programs can solve a substantial number of violent crime cold cases, including homicides and sexual assaults. Advances in DNA technologies have substantially increased the successful DNA analysis of aged, degraded, limited, or otherwise compromised biological evidence. As a result, crime scene samples once thought to be unsuitable for testing may now yield DNA profiles. Additionally, samples that previously generated inconclusive DNA results may now be successfully analyzed using newer methods.

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and the No Action Alternative, as required by Council on Environmental Quality regulations implementing the National Environmental Policy Act. Alternatives that were considered and dismissed from further analysis are identified as well.

2.1 Proposed Action

As described in Section 1.1, above, NIJ funds research, development, and evaluation about criminal justice through competitive solicitations and formula and need based awards. The purpose for the NIJ grants program and the types of projects funded are summarized in Sections 1.2 and 1.3, respectively. Examples of actions undertaken by past funded projects for which NEPA compliance was conducted include:

- Reduction of the number of cold cases through the successful application of DNA testing in the identification of missing and unidentified persons and perpetrators of violent crimes. Chemicals are involved in DNA extraction and analysis
- Research involving fabrication and testing of microfluidic devices, which use the materials required for fabrication of the devices and the chemicals and biological materials used for separations and DNA extractions.
- Research and development of a device that enables more efficient and rapid initial preparation of rape kit samples for DNA analysis, involving the use of chemical reagents.
- DNA analysis from homicides, sexual assault and property crime cases using chemical reagents.
- Acquisition of a Genetic Analyzer and use of DNA analysis kits consisting of chemical reagents.
- Forensic DNA laboratory training, including the use of chemicals and reagents needed to train forensic scientists in the latest DNA technologies.
- Evaluate soil samples associated with human decomposition for microbial community structure, involving use of chemicals for DNA extraction, amplification, and sequencing of microorganisms.
- Installation of a modular structure for the purpose of evidence processing.
- Fire training exercises to test a set of fatal fire scene processing protocols and post-processing of burned animal carcasses.
- Laboratory small-scale fire tests conducted to characterize the ignition and burning behavior of common materials. These tests include fire reconstruction tests, bench scale spontaneous ignition tests of common materials, and bench scale flammability tests.

The proposed action for this Programmatic EA is for NIJ to continue funding projects as in the past. That is, there would be no change to the grants program, which is required by law. However, instead of preparing an EA and FONSI (Finding of No Significant Impact) for each project that requires NEPA documentation before funds are disbursed, projects that fall under the scope of this programmatic EA would meet the requirements for NEPA compliance.

To ensure the programmatic EA adequately addresses all issues for each proposed project, grantees would be required to complete and submit a checklist (see Appendix A) for OJP/NIJ review and approval for each proposal. The completed checklist would identify any issues that require additional analysis. No NIJ grant funds would be disbursed to a grantee until determination of NEPA compliance can be made. Any projects deemed not to be fully covered for NEPA compliance by this Programmatic EA would need to have a separate EA and FONSI prepared.

2.2 No Action Alternative

The No Action Alternative is included as required by NEPA regulations to identify baseline conditions against which potential impacts of implementation alternatives are evaluated. The No Action Alternative represents the benchmark condition of the environment if the proposed action is not implemented.

The no action would be that no funds would be disbursed via grants to educational institutions, public agencies, nonprofit organizations, faith-based organizations, individuals, and profit-making organizations. These organizations would have to find alternative funding sources for criminal justice projects, or the projects would have to be cancelled. However, NIJ is mandated by law to administer the grants program.

2.3 Alternatives Considered and Dismissed

There are no alternatives that have been considered and dismissed.

2.4 Comparison of Alternatives

Table 2-1 illustrates a summary of the impacts resulting from each of the alternatives. This table was constructed using broad, programmatic impacts and is subsequently very general in its assessment of the impacts. Site-specific details will determine the extent and severity of the localized impacts in each resource area.

Table 2-1. Comparison of Environmental Impacts of Alternatives.

Impact Topic	Proposed Action	No Action Alternative
Air Quality	Negligible emissions from fire testing activities; short-term emissions during construction projects; no impacts from use of chemicals	No impacts on air quality
Geology, Topography, Soils	Soil disturbance and compaction and possible erosion from construction projects; no impacts from use of chemicals or fire	No impacts on geology, topography, and soils

Impact Topic	Proposed Action	No Action Alternative
	testing activities	
Water Resources	Erosion leading to sedimentation from construction projects; possible water contamination from fuel spills from heavy equipment during construction; impacts to wetlands and floodplains should be avoided; no impacts from use of chemicals or fire testing due to proper disposal of wastes	No impacts on water resources
Natural Environment	Disturbance and clearing of vegetation, possible introduction of non-native plants, temporary disturbance and displacement of wildlife and habitat from construction projects; no impacts from use of chemicals or fire testing activities	No impacts on the natural environment
Endangered Species	Similar effects as for non-listed species from construction projects, but impacts could be avoided via consultation with FWS as to mitigation; no impacts from use of chemicals or fire testing activities	No impacts on endangered species
Historic Preservation	Ground disturbance during construction can impact cultural resources; no impacts from use of chemicals or fire testing activities	No impacts on historic preservation
Land Use	Potential for conflict with existing uses with new construction projects; no impacts from use of chemicals or fire testing activities	No impacts on land use
Human Population	Temporary new jobs during construction and renovation projects; possible new jobs with operation of new facilities; no impacts from use of chemicals or fire testing activities which would likely use an existing work force; no expected impacts on Environmental Justice	No impacts on the human population

Impact Topic	Proposed Action	No Action Alternative
Noise	Short-term noise increases during construction and renovation projects; no impacts from use of chemicals or fire testing activities	No noise impacts
Energy	Minimal increases in energy use and demand from construction and renovation projects; insignificant additional energy requirements from projects involving use of chemicals or fire testing activities	No impacts on energy
Solid Waste Management	Minimal increases in waste generation in projects involving chemicals, fire testing, construction, and renovation	No impacts on transportation
Transportation	Temporary traffic impacts during construction projects and possibly during operation of a new facility; no impacts from use of chemicals or fire testing activities	No impacts on transportation

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Methodology

This section will present the impacts associated with the Proposed Action, as well as those associated with the No Action Alternative. Projects to be funded under the Proposed Action may lead to some environmental impacts, specifically, those involving chemical use, those renovating or constructing facilities, and those conducting fire testing.

The descriptions of the environment in this chapter are intended to provide a broad overview of the natural and human environments of projects participating in the NIJ grants program. Detailed descriptions of the all resources and issues that could be affected by the many projects that could be funded are beyond the scope of this programmatic EA.

The impact analyses have been conducted by gathering data of the affected resource areas in relation to the implementation of the Proposed Action. Using this data, potential impacts and the significance levels have been assessed. Potential mitigation measures have also been identified to minimize impact levels.

Each resource section has the following structure:

3.1.1 Affected Environment

This section describes the relevant aspects of the current condition of that resource. Normally, this description provides a set of baseline conditions that help assess how and what impacts will occur as a result of the Proposed Action. However, given the programmatic nature of this analysis, site-specific information is not available. NIJ funded projects may be occur in a wide variety of environments: urban areas, rural areas, tribal lands, coastal areas, mountainous areas, and so forth. It is unnecessary to discuss the programmatic impacts in such detail, as this would greatly increase the volume of the document without adding an equivalent amount of detailed impact analysis.

Instead, the affected environment is portrayed as a general overview and in a programmatic checklist that summarizes the typical concerns that grantees can expect to encounter in implementing their projects, as exemplified below:

Checklist Items

- The checklist identifies the issues that are likely to surface in implementing a project and allows the grantee some flexibility in ensuring that the impacts are minimal or that proper mitigation is performed.

- As stated above, funded projects may be located in any type of environment, but by proceeding through the checklist, grantees can customize the information therein with the applicable details at the local level.
- Grantees can then systematically account for the environmental impacts of implementing a project.

This section also includes the significance criteria for each resource area, displayed as follows:

These criteria can be used to determine if the impacts of implementing a project are significant and merit further study under an environmental impact statement.

3.1.2 Environmental Consequences

This section provides a listing of potential impacts associated with the alternatives and the analytical conclusion as to the nature and intensity of these potential impacts. Generally, a project involving the use of chemicals, renovating or constructing facilities, and conducting fire testing would have some impacts and these impacts will be listed. However, by following the checklist and performing any necessary mitigation, grantees are likely to avoid significant impacts.

The analysis of these impacts will be divided into discussions regarding each alternative, clarifying which alternatives may lead to which impacts. The application process and funding allocation process have no direct environmental impacts, thus will not be considered.

3.1.3 Mitigation Measures

This section includes recommendations, as needed, to minimize potential impacts of the Proposed Action.

Mitigation Measures:
- Some mitigation may be required by law or applicable permits and regulations.
- Others may simply be recommended strategies to minimize environmental impacts.

3.2 Air Quality

3.2.1 Affected Environment

The Clean Air Act (42 USC 7401-7671q), as amended, gives the Environmental Protection Agency (EPA) the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: particulate matter with a diameter less than or equal to a nominal 10 micrometers (PM_{10}), particulate matter with a diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead (Pb) (EPA, 2009a). Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility,

damage to animals, crops, vegetation, and buildings. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, many states accept the federal standards.

Federal regulations designate regions in violation of the NAAQS as non-attainment areas. Federal regulations designate regions with levels below the NAAQS as attainment areas. Maintenance regions are areas that have previously been designated non-attainment and have been re-designated to attainment for a probationary period through the implementation of maintenance plans.

For this Proposed Action, the relevant regulatory requirement is that federal agencies are not allowed to take any action that would interfere with a state's implementation plan to maintain or to achieve compliance with those air quality standards. Federal action must be "in conformity" with whatever restrictions or limitations the State has established for air emissions necessary to attain compliance with NAAQS.

Since the Proposed Action does not fall within the categories of an advisory, emergency, or excluded activity, screening techniques are used to evaluate a project. EPA has established the protocols for a screening process to verify whether a conformity determination is necessary for both attainment and non-attainment areas.

The Clean Air Act contains the legislation that mandates the general conformity rule to ensure that federal actions in non-attainment and maintenance areas do not interfere with a state's timely attainment of the NAAQS. The general conformity process requires a determination of whether an action would increase emissions of criteria pollutants above preset threshold levels (40 CFR 93.153). The thresholds are referred to as *de minimis* criteria, and vary depending upon the pollutant. The term *de minimis* means "so small as to be negligible or insignificant." If an action is below the *de minimis* emission threshold, then a conformity determination is not required. The thresholds established are 100 tons per year or less for each pollutant in order to qualify for *de minimis*. If the *de minimis* criteria are exceeded, then a conformity determination must be made. In addition, the general conformity rule applies if the emissions are *regionally significant*. *Regionally significant* emissions are defined as the total direct and indirect emissions of a federal action that represents 10 percent or more of an area's total emissions for a criteria pollutant.

Checklist Items

- Does the project comply with state air quality standards for all criteria pollutants?
- Is the project located in an area designated by the EPA as in attainment for the seven criteria pollutants?
- Would the action produce minimal emissions (100 tons per year or less for each of the seven criteria pollutants and/or does not exceed 10% of an area's total emissions)?
- Would potential exposure to chemical emissions in a laboratory be controlled through the use of a biological hood?

- Would the project only produce emissions that do not impede the area's conformity with the State Implementation Plan under the Clean Air Act?

Significance Criteria:
An impact would be considered significant if pollutant emissions result in exposure of people, wildlife, or vegetation to ambient air that does not meet the standards established under the Clean Air Act, or interfere with state ambient air quality standards.

3.2.2 Environmental Consequences

Proposed Action Alternative

Each state has different ambient air quality standards for the various air pollutants, and EPA has determined the attainment or non-attainment designation for all areas in the United States. Research or other activities involving the use of chemicals would not be expected to have any impacts on air quality as there would not likely be any criteria pollutant emissions or they would be controlled with a biological hood inside a laboratory. The burn activities in projects involving fire tests are generally small scale and of short duration and emissions would also be controlled in a laboratory setting, thus air quality impacts would likely be negligible.

Construction or renovation activities normally involve heavy equipment use and a certain level of air emissions. Emissions generated during construction would be short-term only for the duration of the project. Operation of a new facility could produce some air emissions as well, the amount of which would depend on the size and uses of the facility. It is highly unlikely, however, that either construction or operation of new facilities would approach *de minimis* levels, thus resulting in minimal impacts to air quality.

No Action Alternative

Impacts on air quality under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, then there would be no impacts on air quality.

3.2.3 Mitigation Measures

All state, local, and tribal regulations pertaining to emissions would be followed, thus minimizing impacts to air quality.

3.3 Geology, Topography, Soils (includes Farmland Protection)

3.3.1 Affected Environment

Site topography, geology, and soils will vary among project locations. Topography is defined as the relief or terrain; the three-dimensional quality of the surface; specific landforms. Geology, the structure of a specific region of the earth's crust, is often described or mapped by geologic

formations. Geologic materials consist of rock (there are three major types of rock: igneous, sedimentary, and metamorphic) and unconsolidated material (such as sediments and soils).

Soil is a collective term for the inorganic and organic substrate covering bedrock in which vegetation grows and a multitude of organisms reside. Soils are surveyed nationwide by county. Soil resources provide a foundation for both plant and animal communities by establishing a substrate for plant growth and vegetative cover for animal habitat and feeding. These resources are equally important in both terrestrial and aquatic environments. Soils can be degraded through three processes: (1) physical degradation, such as wind and water erosion, and compaction; (2) chemical degradation such as toxification, salinization, and acidification; and (3) biological degradation, which includes declines in organic matter, carbon, and the activity and diversity of soil fauna. While there are few applicable regulations regarding soils, proper conservation principles can reduce erosion, decrease turbidity, and generally improve water quality.

In August 1980, the CEQ directed that Federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service as prime or unique. Prime or unique farmland, as stated in Title 7, Chapter 73, Section 4201 (c)(1) of the Farmland Protection Policy Act, is defined as soil that particularly produces general crops, such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops, such as fruits, vegetables, and nuts.

Checklist Items

- Would there be compliance with local soil erosion mitigation measures in construction and renovation projects?
- Would the project avoid erosion and deposition, compacting soils in fragile environments, or altering the character of soils over a large area?
- Would the project comply with the Farmland Protection Policy Act?

Significance Criteria

An action would cause a significant impact if soil erosion produced gullying, damage to vegetation, or a sustained increase in sedimentation in streams. This includes a substantial loss of soil, and/or a substantial decrease in soil stability and permeability. Also, significant impacts can occur when soils are substantially disrupted, displaced, compacted or covered over. An action would also constitute a significant impact if the action caused ground fracturing, folding, subsidence, or instability. Impacts associated with soil contamination would be significant if the affected area was no longer able to support its current function or vegetative cover.

3.3.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals would not be expected to have any impacts on geology, topography, or soils as there would not be any ground disturbance. The burn

activities in projects involving laboratory fire tests likewise would not disturb the ground or impact geology, topography, or soils.

Renovation projects would not likely result in any impacts to soils as activities would likely occur inside existing buildings. Construction projects, however, normally involve heavy equipment use and would likely entail disturbing and compacting soils from activities such as grading, excavating, and filling. Impacts to soils from erosion and compaction would vary between regions throughout the U.S., dependent largely upon the types of soils and rainfall amounts. Some regions are more susceptible to erosion due to soils with high clay content and large amounts of rain. Impacts can be mitigated through local regulations requiring measures such as sediment fencing, detention and retention ponds, and ground meshing cover. Thus, after employing local mitigation measures, impacts would be non-significant.

No Action Alternative

Impacts on geology, topography, and soils under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. If projects are cancelled, no ground disturbing activity would occur and the No Action Alternative would not impact the current geologic, topographic, or soil conditions at a project site or in the surrounding area.

3.3.3 Mitigation Measures

Adhering to federal, state, and local regulations, ordinances, and permitting systems is one way to minimize impacts to geology and soils using site-specific guidelines. Erosion prevention practices could include using silt screening around any disturbed areas, mulching all exposed slopes, placing staked hay bales in drainages, and sprinkling exposed soil to prevent wind erosion. In addition, limiting the area of disturbance, revegetating disturbed soils upon completion of construction, restoring areas to natural contours, and avoiding construction during periods of high erosion can reduce impacts.

3.4 Water Resources (Water Quality, Surface Water, Wetlands, Floodplains, Coastal Barrier Resources, Wild and Scenic Rivers)

3.4.1 Affected Environment

Water is a central component of any community for both the natural and human inhabitants. The availability of water, including surface water and groundwater, and the quality of those waters, play a critical role in determining the natural community structure and in supporting human activity. There are numerous laws and regulations that protect both hydrology and water quality on the Federal level and on the State and regional levels. On the Federal level, the primary law protecting the "chemical, physical, and biological integrity of the nation's waters" is the Clean Water Act (CWA). State-issued 401 Certifications under the CWA protect water quality, and the U.S. Army Corps of Engineers (USACE) issued Section 404 Permit under the CWA protects waters and wetlands of the United States. The Safe Drinking Water Act protects the quality of the nation's drinking water and provides limited protection of groundwater resources. The River

and Harbor Act and the Water Resources Development Act assign to the USACE the responsibility for ensuring the navigability of the nation's rivers and harbors and providing flood protection. The Water Resources Development Act also provides funding for various water resource development projects that meet those objectives as well as for coastal erosion and levee construction projects. The Resource Conservation and Recovery Act (RCRA), the Superfund Amendments and Reauthorization Act (SARA), the Coastal Zone Management Act (CZMA), and numerous fish and wildlife protection, federal land management, and energy laws, also protect water resources. Though the above mentioned laws and regulations are by no means exhaustive, they are some of the more commonly cited regulations protecting water resources. Projects that require consideration and/or permitting under any of the above mentioned laws and regulations could result in impacts to water resources.

Executive Order (E.O.) 11988 requires 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 and indirect support of floodplain development wherever there is a practicable alternative (EPA, 2009b). In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities" for the following actions:

- acquiring, managing, and disposing of federal lands and facilities;
- providing federally-undertaken, financed, or assisted construction and improvements;
- conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

E.O. 11990 directs federal agencies to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands" (EPA, 2009c). To meet these objectives, federal agencies, in planning their actions, must consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. The Order applies to:

- acquisition, management, and disposition of federal lands and facilities construction and improvement projects which are undertaken, financed or assisted by federal agencies;
- federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.

Checklist Items

- Would project activities avoid contamination, sedimentation, or otherwise significantly affecting the water quality or hydrology of a nearby surface water body?
- Would changes to surface water quality or hydrology be confined to the immediate project area?
- Does the project ensure that local and state regulations concerning stormwater runoff are followed?
- During construction activities, would all state, local, and tribal regulations concerning erosion controls, runoff abatement, and vegetation removal be followed?
- During construction activities, would proper hazardous spill procedures be in place to minimize impacts of spills on water quality?
- Would the project avoid affecting a designated Wild and Scenic River in any manner?
- Would the project avoid affecting any portion of a 100-year or 500-year floodplain or jurisdictional wetland?

Significance Criteria

Impacts on water resources would be considered significant if effluent or pollutant emissions result in exposure of people, wildlife, or vegetation to surface or ground waters that do not meet the standards established under the Clean Water Act, or interfere with state water quality standards.

An action would cause a significant impact on wetlands and floodplains if the soil structure, hydrology or the vegetation of more than ¼ acre (1/10 ha) of a wetland would be altered, or a floodplain area is altered enough to present a reasonable flood danger to the area, causes the degradation or loss of habitat for populations indigenous to the floodplain area, or prohibits farming activities.

3.4.2 Environmental Consequences

Proposed Action Alternative

Projects involving a research or testing action within an existing facility may generate wastes that have the potential to affect water resources. However, any wastes generated from research using chemicals or fire testing would be disposed of in accordance with all applicable state, federal, and local regulations and would not impact water resources.

Projects involving new construction, and to some extent renovation, should avoid sites where the activities may alter the function of an adjacent waterbody. For example, sites within the floodplain of a river would be avoided, so as to minimize impacts to natural floodplain function, as well as preventing flood damages to the facility. Similarly, sites should tend to avoid affecting wetlands, stream channels, stream banks, lakeshores, or other waterbodies, as construction and operation of the facility may inhibit natural flows and degrade water quality. While development of wetlands is certainly possible, grantees should avoid sites where filling or draining of wetlands or other activities would be required. The permitting process to fill a wetland could be lengthy and is best to be avoided assuming equivalent sites are readily available. Additionally,

some developments may require wetland mitigation banking, where constructed wetlands would be created in an alternate site.

Stormwater control measures can serve as additional planned erosion control measures. Rural areas would be likely to rely on gutters and downspouts to direct rainfall away from erodable areas, whereas urban areas would utilize storm sewer systems. Design and construction should include measures to properly handle excessive rainfall and stormwater flows.

Most localities would have requirements for mitigation activities during construction. The extent and type of mitigations would vary across the country, but most would be likely to contain provisions for preserving water quality. Clearing and vegetation removal makes soils more vulnerable to erosion, potentially affecting sediment levels in nearby water. Soil compaction from the use of heavy equipment reduces the rate of infiltration of rainwater, creating greater overland flows and increasing erosion. Construction activities such as building a foundation may involve substantial amounts of earth moving, digging, and storage of soil on-site, possibly leading to additional erosion, as natural vegetation and soil structure is disturbed. Generally, following mitigation measures as described below should minimize impacts to water quality.

Heavy equipment used in construction and renovation work often use materials that are classified as hazardous, such as petroleum, oils, and lubricants. Incidental spills during refueling or simple mechanical leaks may introduce hazardous materials to nearby water sources. Additional sources of hazardous materials may include portable restrooms and personal vehicles. Spill containment and cleanup procedures should be established to minimize these impacts. Readily available materials for cleanup and recovery would further minimize impacts.

No Action Alternative

Impacts on water resources under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on water resources.

3.4.3 Mitigation Measures

Avoidance of impacts to water resources should always be the chief goal of any project. When avoidance is not possible, mitigation measures should always be implemented in order to reduce impacts. Several standard mitigation measures that would be effective in avoiding or reducing impacts to water resources include strict adherence to all permit requirements for the project and implementation of Best Management Practices (BMPs). BMPs at construction sites typically consist of various erosion and sediment control measures. Silt fences, straw bales, and other temporary measures should be placed in ditches and along portions of site perimeters to control erosion during construction activities. These temporary erosion prevention measures should be maintained in place until the site vegetation is firmly established and soil has stabilized.

Any land disturbance should be planned according to seasonal and climactic characteristics of the region where the project is located in order to minimize impacts; for instance, whenever possible, disturbance should be planned during dry (low precipitation) seasons. Vegetation

removal during land disturbance activities should be minimized and all disturbed areas should be stabilized and revegetated with native plant vegetation immediately following commencement of land disturbance to reduce site outflows of stormwater. Any development of floodplains or wetlands should be mitigated in full either on site or as close to the project site as possible, to minimize regional effects of development. Pollution prevention and waste minimization should also be incorporated.

3.5 Natural Environment (Wildlife, Wildlife Habitat, and Vegetation)

3.5.1 Affected Environment

Vegetation and wildlife communities are an integral part of any ecosystem and vary greatly among project locations across the country. There can be numerous regulatory requirements involved when a proposed action has impacts upon vegetation, wildlife, and habitat including the Endangered Species Act (see Section 3.6 below), the Fishery Conservation and Management Act, the Marine Mammal Protection Act, and the Migratory Bird Treaty Act. These laws and others provide a framework for conservation of vegetation and wildlife resources and can be supplemented with sound conservation principles to minimize impacts to these communities.

Checklist Items

- Would the project avoid causing more than a short-term change in the composition, structure, or density of vegetation?
- Would the project avoid causing more than temporary disturbance or relocation of wildlife?
- Would the project avoid impacting current or future wildlife or vegetation biodiversity or species composition?
- Would the project insure that the potential for the establishment of non-native plant species within disturbed areas created by this project would be minimal?
- Would project construction occur in an area other than a unique or sensitive plant community?
- Would the project avoid extirpating any plants or animals from the project area?

Significance Criteria

An action would cause a significant impact if any changes to native vegetation extend beyond a small area and affect the viability of a plant species population or vegetation community. Full recovery would not occur in a reasonable time, considering the size of the project and the affected resource's natural state.

An action would cause a significant impact if any changes affect a large portion of a wildlife population and the viability of that population. Full recovery would not occur in a reasonable time, considering the size of the project and the affected species' natural state.

An action would cause a significant impact if the degradation or loss of habitat is sufficient to cause native wildlife populations to leave or avoid the area.

3.5.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would not be expected to have any impacts on vegetation or wildlife as they would occur within a research facility.

Renovation or construction projects involve noise, fugitive dust, waste materials, and impacts to water and air quality which may affect vegetation and wildlife at or near the site. Construction activities often necessitate removal of plants located at the project site, including possible removal of trees and ground cover for site preparation. Repeated disturbance of vegetation (i.e., due to vehicle passes or foot traffic) during construction in areas where plants are not cleared would cause damage to plants and destruction of the vegetation mat. Any changes to native vegetation would likely be limited to a small area and would not affect the viability of the resources, and full recovery would be expected to occur in a reasonable time.

Exotic plants or seeds could be brought to the site with fill material or topsoil. New introductions could allow for exotic plants to become established and spread, especially in areas where the ground is disturbed by construction activities. Exotic plants currently growing in the area can also become established and spread on newly disturbed substrates. However, mitigation to ensure that imported material does not contain exotic plant material should be implemented to reduce this impact.

Construction activities and human presence could cause temporary displacement and disturbance of resident wildlife for the duration of construction. Species, however, often return to the area after construction is completed. Some species may be prevented from using the resources on the project site due to habitat alteration or destruction. These impacts are expected to be localized and limited to the immediate area of the project site. Activities that affect wildlife habitat often impact component resources such as vegetation, soil, and water.

In urban settings, renovation and construction projects should have fewer impacts as wildlife and vegetation is already in a disturbed condition. Overall, construction and renovations projects would be expected to have less than significant impacts on the natural environment.

No Action Alternative

Impacts on vegetation and wildlife under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on vegetation and wildlife.

3.5.3 Mitigation Measures

The area of vegetation disturbance should be limited. For example, heavy construction equipment should be kept on road surfaces to the extent possible. Construction areas should be

identified by and fenced with construction tape, snow fencing, or some similar material prior to any construction activity. The fencing defines the construction zone and confines activity to the minimum area required for construction. Construction materials should be stored in previously disturbed areas. Disturbed areas should be restored to natural contours to the extent possible to reduce the potential for erosion and revegetated with native plant species, or with plants previously removed from the construction area whenever possible. Project sites would be surveyed prior to ground disturbance for the presence of rare plant species. Gravel and fill for construction or maintenance should be obtained from certified noxious weed-free sources. Subsequent to project completion, monitor for non-native plants and remove any invasive species observed.

Where wildlife habitat is lost, habitat enhancement or replacement measures should be taken, for example, facilitating understory growth to provide shelter for wildlife, establishing grassed meadows for foraging, or replacing roosting areas. Trees and other native vegetation could be planted to improve wildlife habitat and restore functionality. Measures could be developed to minimize any noise disturbance by heavy machinery during construction or, when possible, construction should be conducted to avoid sensitive periods for wildlife, such as during breeding season.

3.6 Endangered Species

3.6.1 Affected Environment

The Endangered Species Act (ESA) establishes a national program for the conservation of threatened and endangered species (T&E species) of fish, wildlife, and plants, and the ecosystems upon which they depend (EPA, 2009d). It is administered by the Interior Department's U.S. Fish and Wildlife Service (FWS) and the Commerce Department's National Marine Fisheries Service (NMFS). The FWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine species such as salmon and whales.

Under the ESA, species may be listed as either "endangered" or "threatened." Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The ESA makes it unlawful for a person to take a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The term "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." Listed plants are not protected from take, although it is illegal to collect or maliciously harm them on federal lands.

Section 7 of the ESA requires federal agencies to consult with the FWS or NMFS to ensure that actions they authorize, fund, or carry out will not jeopardize listed species or destroy or adversely modify the critical habitat of a listed species. Critical habitat includes geographic areas that contain the physical or biological features essential to the conservation of the species and

that may need special management or protection. Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Critical habitat may include areas not occupied by the species at the time of listing but that are essential to its conservation.

Most consultations are conducted informally with the Federal agency or a designated non-Federal representative. Informal consultations determine: (1) whether listed species and critical habitat are in the area, (2) whether they may be affected and, if so, how the action could be modified to avoid adverse effects, and (3) whether a formal consultation is required. As part of a formal consultation, FWS or NMFS provide a threshold examination and a biological opinion on the likelihood that the proposed activity will or will not jeopardize the continued existence of the resource and on the effect of the proposed activity on the endangered species. The biological opinion may include recommendations for modification of the proposed activity. The FWS or NMFS may require the Federal agency to provide additional information or conduct appropriate biological studies if there is insufficient information to conclude that the proposed activity is not likely to jeopardize the species or its habitat. In the relatively few cases where the FWS or NMFS determines that the proposed action will jeopardize the species, they must offer "reasonable and prudent alternatives" about how the proposed action could be modified to avoid jeopardy.

In addition to the ESA, individual states maintain their own lists of threatened and endangered species. Federal agencies are responsible for ensuring no adverse impacts to these species as well.

Checklist Items

- Would the project avoid impacts on T&E species or critical habitat?
- Is the project area free of any Federal or state listed T&E species or critical habitat, as determined by consultation with FWS or NMFS?
- Would the project avoid impacting any areas in or adjacent to habitat for rare, threatened, or endangered species?
- If the project is expected to adversely affect a listed species, would mitigation measures be employed that would successfully avoid such effects?

Significance Criteria

Any effect to a federally listed species or its critical habitat would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. This effect would equate to a "no effect" or "not likely to adversely affect" determination in U.S. Fish and Wildlife Service terms. Anything else would be considered significant.

3.6.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would not be expected to have any impacts on endangered species as these projects would occur within a research facility.

Renovation or construction projects involve noise, fugitive dust, waste materials, and impacts to water and air quality which may affect endangered species at or near the site. Threatened and endangered species would be subject to the same temporary displacement and disturbance as other wildlife species from activities associated with a proposed action, as discussed in Section 3.5; however, if any of these species are actually found in the vicinity of the project area, mitigation measures would be in place to minimize such disturbance. By consulting with the FWS (or a state fish and game department), grantees could develop mitigations that would minimize or avoid impacts to listed species. Therefore, adverse impacts on threatened or endangered species could occur, but would be minimized.

No Action Alternative

Impacts on endangered species under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on endangered species.

3.6.3 Mitigation Measures

Mitigation measures would be similar to those described for vegetation and wildlife in Section 3.5. Consultation with FWS and NMFS could also reveal mitigation or avoidance recommendations for specific plants or animals in the project area. Additionally, field reconnaissance surveys for protected species could be conducted in those areas where there is a reasonable probability of the occurrence of federal or state listed endangered and threatened species.

3.7 Historic Preservation

3.7.1 Affected Environment

Historic preservation of cultural resources includes archeological resources, paleontological resources, historic resources, and cultural landscapes. An archeological resource refers to any material remains or physical evidence of past human life or activities that are of archeological interest, including the record of the effects of human activities on the environment. An archeological resource is capable of revealing scientific or humanistic information through archeological research. A historic resource is a district, site, building, structure, or object significant in the history of American archeology, architecture, culture, engineering, or politics at the national, state, or local level. Historic resources may be included in or eligible for inclusion on the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource. Paleontological resources are fossilized plants, animals, or their traces, including both organic and mineralized remains in body or trace form. A cultural landscape is a geographic area, including cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or esthetic values.

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and as implemented in 36 CFR 800, requires federal agencies to: (1) consider the effects of federally funded, regulated, or licensed undertakings on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP); (2) consult with the State Historic Preservation Officer (SHPO) and other interested parties; and (3) afford the Advisory Council on Historic Preservation (ACHP) the opportunity to comment (ACHP, 2009). For the purposes of this EA, cultural resources are defined as either recorded or potential historic archaeological sites, prehistoric sites, and standing architectural structures or historic districts.

Checklist Items

- Is the project site free of any historic structures, archeological concerns, or other cultural resource issues, as determined by consultation with the SHPO?
- Would the project avoid affecting any NRHP listed properties, or properties that are eligible for listing?
- Would the project occur within an existing facility that is not considered historic, as determined by consultation with the SHPO?
- If project activities are determined to impact cultural resources as defined by Section 106, would mitigation steps as outlined in Section 106 be followed?
- Would renovation projects exclude historic buildings?

Significance Criteria

An impact would be significant if an effect occurs that may diminish the integrity of, cause a substantial adverse change in the significance of, or directly or indirectly destroy a cultural resource. This effect would equate to an "adverse effect" determination for purposes of Section 106.

3.7.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would not be expected to have any impacts on historic preservation as these projects would occur within a research facility.

Projects involving new construction, and to some extent renovation, would ideally avoid sites where cultural resources are known to occur or have the potential to occur. Construction and renovation projects involving ground disturbance in previously undisturbed areas can have the potential to result in impacts to cultural resources. During the renovation and/or construction process, buried cultural artifacts may be found. In urban settings, renovation and construction projects should have few if any impacts on historic preservation as sites would already occur in areas with disturbed conditions. Consultation with applicable agencies and other consulting parties is required under Section 106 of the NHPA. Consultation and evaluation of the project must take place prior to carrying out any proposed actions. Mitigation measures and contingency plans for halting activities in the event a cultural artifact is discovered would result in less than significant impacts on historic preservation.

No Action Alternative

Impacts on historic preservation under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on historic preservation.

3.7.3 Mitigation Measures

Common mitigation measures for all projects involving land disturbance include archaeological monitoring during initial excavation activities and implementation of a contingency plan in the event that any culturally or historically significant materials are unearthed, which would include such steps as halting all activities immediately upon discovery of the resource and initiating immediate consultation with the applicable SHPO office.

3.8 Land Use

3.8.1 Affected Environment

Land use patterns within communities form the structure of the built environment. The relationships of land uses to one another can result in community harmony or discord. Local, state, and tribal land use plans exist in many areas of the country, guiding future land use patterns based upon the vision of the local community and leaders.

Checklist Items

- Would the project comply with local zoning and development ordinances (apply for rezoning if needed)?
- Would the project comply with local comprehensive and development plans?
- Would the project obtain necessary building and occupancy permits from local authorities?

Significance Criteria
An impact would be significant if a proposed action conflicts with any federal, regional, state, or local land use plans. If land use patterns are changed in the immediate project area due to a proposed action, the impact would also be considered significant.

3.8.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would not be expected to have any impacts on land use as these projects would occur within an existing research facility.

It is possible that construction projects could have land use impacts that would occur on a localized level at each individual site. Compliance of the grantee with local regulations would ensure that many potential conflicts are solved through the site selection process. Potential impacts mitigated through the local planning process include non-permitted uses within a zone, proposed land use and comprehensive plan conflict, local historic ordinance conflicts, and building code discrepancies.

Most urban areas have established planning structures; however, some rural jurisdictions do not. The nature of land use decisions in areas without local planning tends to be based on individual decisions and motivations. In areas such as this, conflicts can arise between neighboring uses, and development of the community often lacks a guided vision. Construction in a location lacking a formal planning structure could lead to further expansion of a community into its surrounding open space, requiring the provision of utilities into areas formally undeveloped. The size and scale of the specific development would determine the exact level of impact. Renovations on existing buildings would not have any impacts on land use.

No Action Alternative

Impacts on land use under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on land use.

3.8.3 Mitigation Measures

None; all state, local, and tribal regulations regarding zoning and land use planning would be followed, thus minimizing or avoiding impacts to land use.

3.9 Human Population (Socioeconomics and Environmental Justice)

3.9.1 Affected Environment

Socioeconomics encompasses the areas of demographics, economic development, and housing. Demographics are the physical characteristics of a population such as age, sex, marital status, family size, education, geographic location, and occupation. Economic development encompasses the economic well-being and quality of life for a community, including employment, local spending, and economic sectors.

On 11 February 1994, President Clinton issued EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EPA, 2009e). EO 12898 directs agencies to address environmental and human health conditions in minority and low-income communities so as to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. The general purposes of this EO are as follows:

- To focus the attention of federal agencies on human health and environmental conditions in minority communities and low-income communities with the goal of achieving environmental justice.
- To foster nondiscrimination in federal programs that substantially affect human health or the environment.
- To give minority communities and low-income communities greater opportunities for public participation in, and access to, public information on matters relating to human health and the environment.

As defined by the "Environmental Justice Guidance Under NEPA" (CEQ, 1997), "minority populations" includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin), or Hispanic. Race refers to Census respondents' self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceed 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau's statistical poverty threshold, which is based on income and family size. The Census Bureau defines a "poverty area" as a census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level.

Checklist Items

- Would the project avoid appreciably changing the total population or demographics of the population, housing demand or employment levels, or property values?
- Would the project avoid increasing human infrastructure requirements (i.e., new workers need housing and consume additional community resources such as water, electricity, roadways, open space, etc.)?
- Would the project avoid displacing existing residents or workers from their homes and communities?
- Would the action avoid areas that have a high proportion of minority residents or residents living below the poverty level?
- If it does occur in such an area, would the grantee ensure that low-income households are not adversely impacted by the project?
- Would environmentally unsafe, unpleasant, or noxious conditions for nearby populations, including release of contaminants into air or water, increased levels of traffic or noise occur only during the period of construction?

Significance Criteria

A change of more than 2 percent of the previously projected level of local employment, population, or gross domestic product would be considered a significant impact on socioeconomics. Also, if school populations decrease by more than 2 percent, revenues decrease by more than 2 percent, and if vacancy rate increases by more than 2 percent, that would constitute a significant impact.

A significant impact on environmental justice would occur if a disproportionate amount of minority and/or low-income populations were adversely affected by the project.

3.9.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would be expected to employ an existing workforce in an existing organization and would not have any impacts on socioeconomics or environmental justice.

Construction and renovation projects could provide temporary new jobs for the duration of the project. These jobs would likely be filled by local citizens, thus there would not be any effects on demographics, local spending, or housing. Operation of new facilities may involve job opportunities for local or out-of-area employees. However, it is also possible that the new facilities would be operated by an existing workforce. Overall, there may be temporary to long-term changes in employment, but this change would be expected to be insignificant. Impacts on other socioeconomic factors would be minimal or non-existent. Renovation, or the construction of a new facility, although it may occur in a low-income or minority neighborhood, would be implemented and mitigated in such a way as not to have any environmental justice impacts.

No Action Alternative

Impacts on the human population under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on the human population.

3.9.3 Mitigation Measures

Mitigation for human population impacts such as those described above could include the following:

- Public outreach and education: a project communications strategy that aims to generate awareness and support for the action, understanding of the nature and timing of its impacts, and strategies for avoiding, minimizing or mitigating them.
- Direct compensation: funds to directly compensate individual entities who endure social and economic impacts that rise above a certain pre-defined level. Indirect compensation: programs that allow businesses or individuals to avoid, absorb or adapt to impacts. Examples would include providing alternate transportation routes to alleviate traffic disruptions, supporting temporary housing sites if appropriate, and low or no-interest loans.
- Project design that addresses:
    - Fairness – by spreading the impacts as fairly as possible, with any disproportionate impacts being unavoidable (and perceived as such).

- Limiting impacts – by building-in efforts to limit the magnitude, duration, intensity, and likelihood of impacts.

3.10 Noise

3.10.1 Affected Environment

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

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. A-weighing, described in a-weighted decibels (dBA), approximates this frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate levels in dBA are provided in Table 3-1.

Table 3-1. Common sounds and their levels

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

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

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations (EPA, 2007). In 1974, the EPA provided information suggesting that continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. Other “sensitive receptors” include retirement homes,

campgrounds, wilderness areas, hiking trails, and certain species of threatened or endangered wildlife.

Checklist Items

- Would project activities avoid noise impacts to sensitive receptors?
- If noise levels during construction projects exceed existing background sounds temporarily, would the project insure that they do not exceed applicable noise standards?
- Would operation of a newly constructed facility avoid producing noise levels that would disturb people or displace wildlife?

Significance Criteria

Sounds levels of 65 dBA are considered annoying to most individuals, while constant or repeated exposure to sounds of 90 dBA or higher can lead to significant impacts. Noise levels are significant if they exceed ambient noise level standards determined by the federal, state, and/or local governments. An impact would be considered significant if there is sustained exposure of sensitive receptors to a DNL of greater than 65 dBA.

3.10.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would not be expected to have any noise impacts as these projects would occur within an existing research facility.

Machinery and activities during construction and renovation can generate noise. Individual pieces of heavy equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. Such elevated noise levels would be likely to be of short duration. Heavy equipment use tends to be the noisiest phase of construction, but lasts only a short time. If there are sensitive receptors within several hundred feet of the construction site, they could be adversely affected temporarily during construction activities.

Under the Noise Control Act of 1972, urban areas may have drafted noise regulations, and grantees should ensure construction will follow these regulations, minimizing any impacts due to noise generation. In rural areas, these regulations likely do not exist. Zoning and land use plans may dictate what types of activities may be allowable in certain sites, indirectly controlling the noise generation levels. Similarly, state, local, and tribal regulations would be likely to govern noise levels for normal, day-to-day operations.

No Action Alternative

Noise impacts under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no noise impacts.

3.10.3 Mitigation Measures

Construction and renovation activities should be limited to occur only during normal weekday business hours. Noise restrictions are generally more stringent at night and on weekends. Properly maintain equipment mufflers. Noise effects on workers could be limited by ensuring that all personnel wear adequate personal hearing protection to limit exposure and ensuring compliance with federal health and safety regulations. Comply with state, local, and tribal noise regulations.

3.11 Energy Impacts

3.11.1 Affected Environment

Federal and state agencies regulate energy consumption through various policies and programs. Federal guidelines such as The Energy Policy and Conservation Act of 1975 and the Energy Independence and Security Act of 2007 require minimum fuels consumption efficiency standards for new automobiles sold in the United States. The Corporate Average Fuel Economy Program was created to help manufacturers adhere to the efficiency standards. The Safe, Accountable, Flexible, and Efficient Transportation Act: A Legacy for Users was passed in 2005 and promotes the reduction of traffic congestion, improving safety, and protecting air quality and the environment. The 1980 Energy Conservation by Recipients of Federal Financial Assistance sets forth the general policy requirements for energy analysis and conservation that are to be incorporated by the Federal Aid Highway System.

The CEQ has issued regulations implementing NEPA which specifically require the consideration of direct and indirect energy requirements of various projects and mitigation measures to conserve energy. Direct energy impacts refer to the impacts of operating a facility after it is constructed, and include the energy consumed by vehicles using the facility. Indirect energy impacts include the energy required to construct and maintain the facility, changes in energy consumption likely to result from project-induced land use changes, and any substantial changes associated with vehicle operation, manufacturing, or maintenance due to increased or decreased automobile use.

Checklist Items

- Would the demand on the region's energy supply be negligible (for projects occurring within existing facilities that may require additional energy)?
- Would the project comply with regulations for electricity and gas provisions?
- Would the project avoid the wasteful, inefficient and unnecessary consumption of energy?

Significance Criteria
Significant impacts to energy would occur if a proposed project were to create a substantial increase in the level of demand for energy supplies and/or use energy in a wasteful, inefficient, excessive or unnecessary manner.

3.11.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests could have some additional energy requirements, but as these projects would occur within an existing research facility, these requirements would likely be insignificant.

Projects involving renovation or construction would consume energy during the production of construction materials, by operating and maintaining construction equipment, and when transporting materials to the site. The incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials such as lumber and gas would not substantially increase demand for energy compared to overall local and regional demand for construction materials. Construction materials would not be used in a wasteful manner. Construction equipment and construction worker vehicles operated during construction would use fossil fuels. Fuel energy consumed by vehicles during construction or transporting materials would not be wasted through unnecessary idling or through the operation of poorly maintained equipment. Increases in fuel consumption would be temporary, would cease at the end of the construction activity, and would not have a residual requirement for additional energy input. The marginal increases in fossil fuel use resulting from project construction or renovation are not expected to have appreciable impacts on energy resources.

Energy used during operation of a new facility would have ongoing energy required for such functions as interior and exterior lighting, heating/ventilating/air conditioning, computers, laboratory equipment, and security systems. However, it is not likely that these energy requirements would substantially increase the level of demand for energy supplies, especially when compared to overall local and regional demand.

No Action Alternative

Energy impacts under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no new energy impacts.

3.11.3 Mitigation Measures

Design newly constructed or renovated buildings to meet or exceed the requirements of energy codes. Provide heating and cooling in an energy efficient manner and so that they conform to local and state energy codes. Reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, and maintenance.

3.12 Solid Waste Management

3.12.1 Affected Environment

Waste is generated by virtually all activities and is a standard consideration in managing resources. Waste is defined as any byproduct of an action, including chemicals and other hazardous materials and construction debris. Hazardous waste is defined as liquid, solid, contained gas, or sludge wastes that contain properties that are dangerous or potentially harmful to human health or the environment. Hazardous materials may be classified in a number of different categories based on laws and regulations that define their characteristics and use. Waste is considered hazardous if it is on a list of specific chemical substances developed by the EPA (EPA, 2009f). The lists include the F-list (wastes from common manufacturing and industrial processes), K-list (wastes from specific industries), and P- and U-lists (wastes from commercial chemical products). Wastes that do not meet any of the listings above but that exhibit ignitability, corrosivity, reactivity, or toxicity are also considered hazardous. Other universal wastes include batteries, pesticides, mercury-containing equipment (e.g., thermostats) and lamps (e.g., fluorescent bulbs). Appendix B contains a sample list of chemicals used by previous NIJ grantees.

Applicable laws and regulations include the following:

- Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (42 U.S.C. 9601, et seq.)
- Superfund Amendment and Reauthorization Act (SARA)
- Resource Conservation and Recovery Act of 1976 (RCRA), as amended (42 U.S.C. 6901, et seq.)
- Toxics Substances Control Act (TSCA) (15 U.S.C. 2601-2629)

Proper waste disposal may be conducted by a licensed hazardous waste contractor or other authorized waste pickups.

Checklist Items

- Would any solid (or liquid) waste that is created by the project, including hazardous waste and construction debris, be disposed of properly?
- Would laboratories maintain safe and adequate storage and disposal procedures for hazardous waste and chemicals?

Significance Criteria
An action would cause a significant impact if it would increase the generation of solid or hazardous waste beyond the capacity to safely handle and dispose of that waste.

3.12.2 Environmental Consequences

Proposed Action Alternative

Projects involving the use of chemicals would generate minimal hazardous waste. Such waste would be disposed of in biohazard containers, by a licensed hazardous waste contractor, by authorized waste pickups, or the equivalent. All hazardous waste generated within a laboratory would be stored in containers identified as hazardous waste. Waste management procedures would function in the same manner as those procedures currently in use by the laboratory. Projects involving fire testing may generate a minimal amount of burned remains which would be processed and disposed of properly at an existing facility if not hazardous, or by following approved existing hazard disposal procedures. Thus there would not be any impacts on waste management from either type of project.

Construction and renovation projects would generate minimal to moderate amount of waste depending on the size of the project. Wastes, ranging from hazardous materials such as paint and other wastes such as scrap wood, would be disposed of properly. Potential construction impacts could result from accidental release of hazardous substances (such as lubricants and fuels needed for heavy equipment), a hazard common to all construction projects. Spills of any size if not contained could harm water quality, vegetation, and wildlife in the immediate area and downstream; large spills could require emergency response. However, adhering to state, local, and tribal regulations regarding construction sites would likely minimizing any impacts.

Operations of a new facility would generate waste such as described above for laboratories and fire testing, as well as regular trash. New waste disposal procedures would need to be put in place, after which minimal impacts due to the generation of waste would be expected.

No Action Alternative

Impacts on solid waste management under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on solid waste management.

3.12.3 Mitigation Measures

Hazardous or dangerous substances should always be stored and used in accordance with all federal, State, and local regulations and policies. Where possible, wastes generated by projects should be managed in accordance with the waste hierarchy of minimisation, reuse, recycling, reprocessing and disposal. Proper procedures would be used to address the receipt, handling, transfer, storage, disposal, and use of chemicals and biohazardous materials. Hazardous materials utilized in laboratory testing activities would be purchased in the smallest quantities necessary in order to reduce the volume of hazardous chemical waste.

3.13 Transportation

3.13.1 Affected Environment

A local transportation network provides the means for moving throughout a community. This network includes major roads such as freeways and highways, as well as local roads in

neighborhoods. Analysis of transportation includes traffic and parking. Traffic is affected by the size, location, and type of construction project. Other factors that can be considered in an analysis are public transportation and pedestrian routes which often alleviate impacts on roads from automobiles through providing alternate means of moving around an area.

Checklist Items

- Would the project avoid generating new traffic over the long-term?
- Would the project avoid creating an additional need for parking?
- Would the project avoid short- or long-term decreases in the level of service of a roadway?
- Would the project ensure unrestrained movement of emergency vehicles?
- Would the project avoid conflicts with planned transportation projects or adopted public transportation policies?
- Would the project avoid causing noticeable deterioration of local roadway surfaces?

Significance Criteria
A significant impact to transportation would be a traffic increase which is predicted to upset the normal flow of traffic, create the need for major road repair as a result of the action, or generate traffic levels requiring the expansion of existing roadways or facilities.

3.13.2 Environmental Consequences

Proposed Action Alternative

Research or other activities involving the use of chemicals and burn activities in projects involving laboratory fire tests would not be expected to have any impacts on transportation as these projects would occur within an existing research facility and would not substantially increase the number of personnel commuting to the project location.

Renovation and construction projects could result in short-term transportation impacts. Local and state regulations would guide the transport of machinery and autos around the construction site. Temporary traffic impacts may occur on the local road network as large trucks transport materials to the site and machinery maneuvers into the roadway and around a site. Construction workers commuting to the project area could also cause localized traffic congestion. However, these would last only for the duration of the project, impacting the local roads to a negligible degree. Additional traffic and parking needs related to operation of a new facility might also occur on a localized basis. Depending on the magnitude of the renovation or construction project, the intensity and duration of transportation impacts could vary, but they are not expected to be significant.

No Action Alternative

Impacts on transportation under the No Action Alternative would be the same as under the Proposed Action Alternative if grantees obtain funding from other sources. However, if funds are not otherwise obtained and projects are cancelled, there would be no impacts on transportation.

3.13.3 Mitigation Measures

During construction activities, traffic flows would be maintained by keeping construction equipment as far off the road as possible and by providing flag bearers to assist traffic negotiating through construction areas.

3.14 State Environmental Policy Act

A number of states have laws patterned after NEPA. Just as NEPA requires federal agencies to prepare an environmental analysis document for actions that will affect the environment, state environmental policy acts (SEPAs) may impose similar obligations on state or local government agencies, and even private organizations. States, when passing their SEPAs, modeled their laws substantially after NEPA and CEQ regulations. State laws do have their differences, such as the California Environmental Quality Act, which has more detailed regulations than CEQ regulations, or the Michigan Environmental Quality Act, which emphasizes substantive rather than procedural requirements. Seventeen states, the District of Columbia, Guam, and Puerto Rico have environmental policy acts (CEQ, 2009).

Projects awarded grants from NIJ occurring in Arkansas, California, Connecticut, District of Columbia, Georgia, Guam, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Jersey, New York, North Carolina, Puerto Rico, South Dakota, Virginia, Washington, and Wisconsin are subject to and must comply with a state environmental policy act.

3.15 Intergovernmental Review and Other Federal Agency Reaction to the Project

Intergovernmental review has not been conducted for this Programmatic EA. However, grantees may initiate this process for specific projects with state, regional, or local agencies (if this review process is required for the project). Other federal agencies may participate in a project either through the provision of additional funds, a companion project, or a permit review authority. Grantees partnering with other federal agencies, or whose project may affect another federal agency should consult and coordinate with that entity.

3.16 Cumulative Impacts

The CEQ regulations (40 CFR 1500-1508) implementing the procedural provisions of NEPA of 1969, as amended (42 USC 4321) defines cumulative effects as:

“the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 CFR 1508.7)”

This section goes on to note “such impacts can result from individually minor but collectively significant actions taking place over a period of time.”

It was not feasible to evaluate cumulative impacts in every location where a project funded by NIJ may occur. It is difficult to ascertain potential impacts caused by past, present or future actions when the affected environment is not well defined, such as in this Programmatic EA. Grantees should consider the cumulative impacts specific to their projects and determine if such impacts would be significant for any resources.

3.17 Unavoidable Adverse Impacts

Examples of unavoidable effects that could occur as a result of NIJ granted projects would primarily be associated with construction and renovation activities, including:

- Removal of vegetation and wildlife habitat at upland sites during construction
- Temporary disturbance to wildlife during construction
- Short-term degradation of water quality during site grading and construction
- Possible long-term alteration of site drainage from facility construction or site restoration
- Short-term degradation of air quality from heavy equipment during construction
- Possible long-term increase in air emissions and/or water discharges from new facilities
- Short-term increase in employment during construction

Impacts from projects that involve the use of chemicals and fire testing activities could involve adverse effects from hazardous waste disposal and emission of air pollutants; however, these impacts are likely avoidable.

3.18 Conclusion

This Programmatic EA analyzes the environmental impacts of implementing projects funded by NIJ grants. The implementation of an NIJ granted project is not expected to result in significant adverse impacts on the environment; therefore, an Environmental Impact Statement is not required and a Finding of No Significant Impact (FONSI) is appropriate. By verifying the items from the checklist, grantees can further ensure that impacts are minimized.

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APPENDIX A: CHECKLIST

The following is a checklist that summarizes the typical concerns that grantees can expect to encounter, as introduced in Section 3.1. Each resource area is listed separately, with the significance criteria for that resource also shown for reference.

Other Federal, state, local, or tribal regulations may apply in any given case for any given resource. The grantee should ensure that the appropriate measures are taken to adhere with applicable regulations or policies.

National Institute of Justice Grants Program Checklist			
Resource	**Concern**	**Yes or No**	**Comments**
Air Quality	Does the project comply with state air quality standards for all criteria pollutants?		
	Is the project located in an area designated by the EPA as in attainment for the seven criteria pollutants?		
	Would the action produce minimal emissions (100 tons per year or less for each of the seven criteria pollutants and/or does not exceed 10% of an area's total emissions)?		
	Would potential exposure to chemical emissions in a laboratory be controlled through the use of a biological hood?		
	Would the project only produce emissions that do not impede the area's conformity with the State Implementation Plan under the Clean Air Act?		
Significance Criteria			
An impact would be considered significant if pollutant emissions result in exposure of people, wildlife, or vegetation to ambient air that does not meet the standards established under the Clean Air Act, or interfere with state ambient air quality standards.			
Resource	**Concern**	**Yes or No**	**Comments**
Geology, Topography, Soils (includes Farmland Protection)	Would there be compliance with local soil erosion mitigation measures in construction and renovation projects?		
	Would the project avoid erosion and deposition, compacting soils in fragile environments, or altering the character of soils over a large area?		
	Would the project comply with the Farmland Protection Policy Act?		
Significance Criteria			
An action would cause a significant impact if soil erosion produced gullying, damage to vegetation, or a sustained increase in sedimentation in streams. This includes a substantial loss of soil, and/or a substantial decrease in soil stability and permeability. Also, significant impacts can occur when soils are substantially disrupted, displaced, compacted or covered over. An action would also constitute a significant impact if the action caused ground fracturing, folding, subsidence, or instability. Impacts associated with soil contamination would be significant if the affected area was no longer able to support its current function or vegetative cover.			

Resource	Concern	Yes or No	Comments
Water Resources (Water Quality, Surface Water, Wetlands, Floodplains, Coastal Barrier Resources, Wild and Scenic Rivers)	Would project activities avoid contamination, sedimentation, or otherwise significantly affecting the water quality or hydrology of a nearby surface water body?		
	Would changes to surface water quality or hydrology be confined to the immediate project area?		
	Does the project ensure that local and state regulations concerning stormwater runoff are followed?		
	During construction activities, would all state, local, and tribal regulations concerning erosion controls, runoff abatement, and vegetation removal be followed?		
	During construction activities, would proper hazardous spill procedures be in place to minimize impacts of spills on water quality?		
	Would the project avoid affecting a designated Wild and Scenic River in any manner?		
	Would the project avoid affecting any portion of a 100-year or 500-year floodplain or jurisdictional wetland?		
Significance Criteria			
Impacts on water resources would be considered significant if effluent or pollutant emissions result in exposure of people, wildlife, or vegetation to surface or ground waters that do not meet the standards established under the Clean Water Act, or interfere with state water quality standards. *An action would cause a significant impact on wetlands and floodplains if the soil structure, hydrology or the vegetation of more than ¼ acre (1/10 ha) of a wetland would be altered, or a floodplain area is altered enough to present a reasonable flood danger to the area, causes the degradation or loss of habitat for populations indigenous to the floodplain area, or prohibits farming activities.*			
Resource	**Concern**	**Yes or No**	**Comments**
Natural Environment (Wildlife, Wildlife Habitat, and Vegetation)	Would the project avoid causing more than a short-term change in the composition, structure, or density of vegetation?		
	Would the project avoid causing more than temporary disturbance or relocation of wildlife?		
	Would the project avoid impacting current or future wildlife or vegetation biodiversity or species composition?		

	Would the project insure that the potential for the establishment of non-native plant species within disturbed areas created by this project would be minimal?		
	Would project construction occur in an area other than a unique or sensitive plant community?		
	Would the project avoid extirpating any plants or animals from the project area?		

Significance Criteria

An action would cause a significant impact if any changes to native vegetation extend beyond a small area and affect the viability of a plant species population or vegetation community. Full recovery would not occur in a reasonable time, considering the size of the project and the affected resource's natural state.

An action would cause a significant impact if any changes affect a large portion of a wildlife population and the viability of that population. Full recovery would not occur in a reasonable time, considering the size of the project and the affected species' natural state.

An action would cause a significant impact if the degradation or loss of habitat is sufficient to cause native wildlife populations to leave or avoid the area.

Resource	Concern	Yes or No	Comments
Endangered Species	Would the project avoid impacts on T&E species or critical habitat?		
	Is the project area free of any Federal or state listed T&E species or critical habitat, as determined by consultation with FWS or NMFS?		
	Would the project avoid impacting any areas in or adjacent to habitat for rare, threatened, or endangered species?		
	If the project is expected to adversely affect a listed species, would mitigation measures be employed that would successfully avoid such effects?		

Significance Criteria

Any effect to a federally listed species or its critical habitat would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. This effect would equate to a "no effect" or "not likely to adversely affect" determination in U.S. Fish and Wildlife Service terms. Anything else would be considered significant.

Resource	Concern	Yes or No	Comments
Historic Preservation	Is the project site free of any historic structures, archeological concerns, or other cultural resource issues, as determined by consultation with the SHPO?		
	Would the project avoid affecting any NRHP listed properties, or properties that are eligible for listing?		
	Would the project occur within an existing facility that is not considered historic, as determined by consultation with the SHPO?		
	If project activities are determined to impact cultural resources as defined by Section 106, would mitigation steps as outlined in Section 106 be followed?		
	Would renovation projects exclude historic buildings?		
Significance Criteria			
An impact would be significant if an effect occurs that may diminish the integrity of, cause a substantial adverse change in the significance of, or directly or indirectly destroy a cultural resource. This effect would equate to an "adverse effect" determination for purposes of Section 106.			
Resource	**Concern**	**Yes or No**	**Comments**
Land Use	Would the project comply with local zoning and development ordinances (apply for rezoning if needed)?		
	Would the project comply with local comprehensive and development plans?		
	Would the project obtain necessary building and occupancy permits from local authorities?		
Significance Criteria			
An impact would be significant if a proposed action conflicts with any Federal, regional, State, or local land use plans. If land use patterns are changed in the immediate project area due to a proposed action, the impact would also be considered significant.			
Resource	**Concern**	**Yes or No**	**Comments**
Human Population (Socioeconomics and Environmental Justice)	Would the project avoid appreciably changing the total population or demographics of the population, housing demand or employment levels, or property values?		
	Would the project avoid increasing human infrastructure requirements (i.e., new workers need housing and consume additional community resources such as water, electricity, roadways, open space, etc.)?		

	Would the project avoid displacing existing residents or workers from their homes and communities?		
	Would the action avoid areas that have a high proportion of minority residents or residents living below the poverty level?		
	If it does occur in such an area, would the grantee ensure that low-income households are not adversely impacted by the project?		
	Would environmentally unsafe, unpleasant, or noxious conditions for nearby populations, including release of contaminants into air or water, increased levels of traffic or noise occur only during the period of construction?		

Significance Criteria

A change of more than 2 percent of the previously projected level of local employment, population, or gross domestic product would be considered a significant impact on socioeconomics. Also, if school populations decrease by more than 2 percent, revenues decrease by more than 2 percent, and if vacancy rate increases by more than 2 percent, that would constitute a significant impact.

A significant impact on environmental justice would occur if a disproportionate amount of minority and/or low-income populations were adversely affected by the project.

Resource	Concern	Yes or No	Comments
Noise	Would project activities avoid noise impacts to sensitive receptors?		
	If noise levels during construction projects exceed existing background sounds temporarily, would the project insure that they do not exceed applicable noise standards?		
	Would operation of a newly constructed facility avoid producing noise levels that would disturb people or displace wildlife?		

Significance Criteria

Sounds levels of 65 dBA are considered annoying to most individuals, while constant or repeated exposure to sounds of 90 dBA or higher can lead to significant impacts. Noise levels are significant if they exceed ambient noise level standards determined by the federal, state, and/or local governments. An impact would be considered significant if there is sustained exposure of sensitive receptors to a DNL of greater than 65 dBA.

Resource	Concern	Yes or No	Comments
Energy	Would the demand on the region's energy supply be negligible (for projects occurring within existing facilities that may require additional energy)?		
	Would the project comply with regulations for electricity and gas provisions?		
	Would the project avoid the wasteful, inefficient and unnecessary consumption of energy?		
Significance Criteria			
Significant impacts to energy would occur if a proposed project were to create a substantial increase in the level of demand for energy supplies and/or use energy in a wasteful, inefficient, excessive or unnecessary manner.			
Resource	**Concern**	**Yes or No**	**Comments**
Solid Waste Management	Would any solid (or liquid) waste that is created by the project, including hazardous waste and construction debris, be disposed of properly?		
	Would laboratories maintain safe and adequate storage and disposal procedures for hazardous waste and chemicals?		
Significance Criteria			
An action would cause a significant impact if it would increase the generation of solid or hazardous waste beyond the capacity to safely handle and dispose of that waste.			
Resource	**Concern**	**Yes or No**	**Comments**
Transportation	Would the project avoid generating new traffic over the long-term?		
	Would the project avoid creating an additional need for parking?		
	Would the project avoid short- or long-term decreases in the level of service of a roadway?		
	Would the project ensure unrestrained movement of emergency vehicles?		
	Would the project avoid conflicts with planned transportation projects or adopted public transportation policies?		
	Would the project avoid causing noticeable deterioration of local roadway surfaces?		

Significance Criteria			
A significant impact to transportation would be a traffic increase which is predicted to upset the normal flow of traffic, create the need for major road repair as a result of the action, or generate traffic levels requiring the expansion of existing roadways or facilities.			
Resource	**Concern**	**Yes or No**	**Comments**
State Environmental Policy Act	Would the project occur in states other than Arkansas, California, Connecticut, District of Columbia, Georgia, Guam, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Jersey, New York, North Carolina, Puerto Rico, South Dakota, Virginia, Washington, or Wisconsin? If so, the project would not require compliance with a state environmental policy act.		
Intergovernmental Review and Other Federal Agency Reaction to the Project	Would grantees partnering with other federal agencies, or whose project may affect another federal agency consult and coordinate with that entity and conduct intergovernmental review as necessary?		
Cumulative Impacts	Would cumulative impacts be less than significant for all resources affected by the project?		

APPENDIX B: SAMPLE CHEMICAL LIST

The following table contains examples of chemicals that have been used in past NIJ funded projects.

Chemical	Health	Flammability	Reactivity	Disposal
acetic acid	3	2	0	c
aluminum sulfate	2	0	0	a
ammonium persulfate	1	3	0	c
bromophenol blue	1	0	0	a
butyl alcohol	2	3	1	c
dithiothreitol (DTT)	2	1	1	c
ethidium bromide	3	1	1	c
ethanol	1	3	0	a
ethyl alcohol	0	3	0	a
EDTA (ethylenediaminetetraacetic acid)	3	1	0	c
formamide	2	1	0	c
glycerol	1	1	0	c
guanidine HCl	2	1	0	d
hydrochloric acid	3	0	1	c
hydrofluoric acid	4	0	2	c
hydrogen peroxide, 30%	2	0	3	a
iodine	3	0	1	c
isopropyl alcohol	1	3	0	c
magnesium chloride	1	0	0	a
methanol	1	3	0	a
methyl alcohol	3	3	1	a
nitric acid	4	0	0	c
phenolphthalein	1	1	1	c
potassium iodide	2	0	1	c
proteinase K	1	1	0	c
sodium carbonate	2	0	1	c
sodium chloride	2	0	0	b
sodium hydroxide	4	0	2	c
sulfuric acid	3	0	2	c
Tetrahydrofuran	2	4	2	c

Codes: 0 = minimum hazard, 1 = slight hazard, 2 = moderate hazard, 3 = serious hazard, 4 = severe hazard
a = drain, b = garbage/trash, c = biohazard container, d = solid waste authority pickup

APPENDIX C: CHECKLIST GLOSSARY

100-year and 500-year Floodplain – A floodplain is the level area adjoining a river channel that is inundated during periods of high flow. A 100-year floodplain would have a 100-year recurrence interval of flooding. In other words, a flood of that magnitude has a 1 percent chance of happening in any year. Likewise, a 500-year flood would have a 500-year recurrence interval, or a 0.2 percent chance of happening in any year.

Ambient – Of the surrounding area or environment

Attainment Area – An attainment area is a zone within which the level of a pollutant is considered to meet United States National Ambient Air Quality Standards. It is an area considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

Biodiversity – The number and variety of organisms found within a specified geographic region; the variety of different habitats within an area; the variety of interactions that occur between different species in a habitat; and the range of genetic variation among individuals within a species.

Clean Air Act – The original Clean Air Act was signed in 1963. The law set emissions standards for stationary sources (e.g., factories, power plants). The Act was amended several times, most recently in 1990. The Amendments of 1970 introduced motor vehicle emission standards (e.g., automobiles, trucks). The Act authorized the establishment of federal and state regulations that limit emissions of air pollutants to protect our health and air from further damage, and to begin to reverse some of the damage caused by decades of air pollution.

Criteria Pollutants – Criteria air pollutants include the six most common air pollutants as identified by the Clean Air Act of 1970. The criteria pollutants list consists of ozone, carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter (PM_{10}), and lead. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.

Critical habitat – Critical habitat is a specific geographic area that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat for a listed species may be designated under the Endangered Species Act.

Cumulative Impacts – Impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Environmental Justice – Fair treatment of all races, cultures, incomes, and educational levels with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies, fair treatment implies that no population of people should be forced to shoulder a disproportionate share of the negative environmental impacts of pollution or environmental hazards due to a lack of political or economic strength levels.

EPA – Environmental Protection Agency is an agency of the federal government of the United States charged to protect human health and the environment. It has the primary responsibility for setting and enforcing national standards under a variety of environmental laws, in consultation with state, tribal, and local governments.

Erosion – The wearing down or washing away of soil and land surface by the action of water, wind, or ice.

Extirpate - To destroy completely; exterminate.

Farmland Protection Policy Act - A statute enacted in 1981 by the U.S. Department of Agriculture (USDA) to ensure that significant agricultural lands are protected from conversion to nonagricultural uses.

FWS – The United States Fish and Wildlife Service is a federal agency responsible for addressing the protection of fish and wildlife, including rare, threatened, or endangered species. The FWS has primary responsibility for terrestrial and freshwater organisms under the Endangered Species Act.

Hydrology – The applied science concerned with the waters of the earth, their occurrences, distribution, and circulation through the unending hydrologic cycle (precipitation, consequent runoff, infiltration, and storage; evaporation; and condensation). In the context of this document, it refers to the overland and subsurface movement of water.

Jurisdictional Wetland – Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and other similar areas. A jurisdicational wetland is an area that meets the criteria established by the U.S. Army Corps of Engineers for a wetland; such areas come under the jurisdiction of the Corps of Engineers for permitting certain actions such as dredge and fill operations.

Land Use – The way in which real property is utilized. Examples of land uses include commercial, industrial, residential, or wilderness designations.

Mitigation Measures – Specific measures that serve to moderate or lessen impacts deriving from a proposed action. Mitigation includes avoidance, minimization, rectification, reduction, and compensation of adverse impacts.

NMFS – National Marine Fisheries Service is a a division of the National Oceanic and Atmospheric Administration (NOAA) and the Department of Commerce. NMFS is responsible for the stewardship and management of the nation's living marine resources and their habitats. The NMFS has primary responsibility for marine species such as salmon and whales under the Endangered Species Act.

Non-native plant - An introduced, alien, exotic, non-indigenous, or non-native species is a species living outside its native distributional range, which has arrived there by human activity, either deliberate or accidental. Some introduced species are damaging to the ecosystem they are introduced into, others negatively affect agriculture and other human uses of natural resources, or impact the health of animals and humans.

NRHP – National Register of Historic Places is America's official list of cultural resources worthy of preservation. Listed properties generally fall into one of five categories, though there are special considerations for other types of properties which do not fit into these five broad categories or fit into more specialized subcategories. The five general categories for NRHP properties are: building, structure, object, site, and district.

Runoff abatement – Measures taken to reduce Reduce the amount of runoff. See definition for Stormwater Runoff below.

Section 106 – Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.

Sedimentation – The act or process of depositing sediment. Sediment consists of solid fragments of inorganic or organic material that come from the weathering of rock and are carried and deposited by wind, water, or ice. Sediment can be deposited in natural water bodies via erosion or stormwater runoff where it can cloud the water and make it difficult or impossible for aquatic plants to grown. Sediment also can destroy aquatic habitats.

Sensitive Receptors – Land uses and activities sensitive to noise. Common sensitive receptors include: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.

SHPO – The State Historic Preservation Office was created in 1966 under Section 101 of the National Historic Preservation Act (NHPA). The purposes of SHPO include surveying and recognizing historic properties, reviewing nominations for properties to be included in the National Register of Historic Places, reviewing undertakings for the impact on the properties as well as supporting federal organizations, state and local governments, and private sector.

State Environmental Policy Act – The State Environmental Policy Act (SEPA) requires that State and local governmental agencies determine the environmental impact of land use decisions. Government agencies are required to conduct an environmental review and determine if a proposal will cause a “probable significant adverse impact” to the environment. SEPA is designed to ensure that environmental values are considered during land use decisions; adequate

and timely environmental information is gathered and provided to decisionmakers; and public involvement is included in the decision-making process.

State Implementation Plan – A State Implementation Plan is a United States state plan for complying with the federal Clean Air Act. The Plan consists of narrative, rules, technical documentation, and agreements that an individual state will use to clean up polluted areas.

Stormwater Runoff - Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater runoff from naturally soaking into the ground. Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into waterbodies used for swimming, fishing and providing drinking water.

T&E species – Threatened and endangered species are defined by both state and federal law. Endangered species are listed on the state endangered species list under or determined to be an endangered species under the federal Endangered Species Act. The term generally refers to species whose continued existence as a viable component of the wild fauna or flora is in jeopardy. Threatened species are species whose numbers are significantly declining because of loss of habitat or human disturbance, and unless protected will become an endangered species.

Water quality – Water quality is the physical, chemical and biological characteristics of water. It is most frequently used by reference to a set of standards against which compliance can be assessed. The most common standards used to assess water quality relate to drinking water, safety of human contact and for the health of ecosystems.

Wild and Scenic River – The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development.