



NATIONAL ENERGY TECHNOLOGY LABORATORY



Final Environmental Assessment for the Performance Verification Laboratory

January 2011

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National Environmental Policy Act (NEPA) Compliance Cover Sheet

Proposed Action:

U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) is proposing to construct and operate a Performance Verification Laboratory (PVL) facility to be located on the Morgantown NETL site in West Virginia. NETL would design, construct, and make operational a DOE PVL facility for verifying the energy performance of selected appliances and equipment to facilitate improved enforcement of DOE energy conservation standards and DOE/Environmental Protection Agency (EPA) ENERGY STAR[®] programs.

Type of Statement: Environmental Assessment

Lead Agency: U.S. Department of Energy; National Energy Technology Laboratory

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Abstract:

NETL would demolish Building 20, relocate the weather tower and rain gauge, and design, construct, and make operational a new 30,000 ft² Leadership in Energy and Environmental Design (LEED) certified facility. The PVL would build upon the capabilities of NETL's existing Appliance Technology Evaluation Center (ATEC). The new facility would house appliance testing rooms/chambers, storage area, warehouse area, staging area, offices, restrooms, and kitchen space. The PVL would be capable of conducting energy performance verification and enforcement testing on a broad range of DOE-regulated and ENERGY STAR-qualified appliances and equipment.

This analysis identified the resources most likely impacted by the proposed action as: vehicular traffic, greenhouse gases (GHGs), cumulative effects, and construction-related impacts.

Public Participation:

DOE encourages public participation in the National Environmental Policy Act (NEPA) process. The draft environmental assessment (EA) was released for public review and comment on December 9, 2010. A Notice of Availability was placed in *The Dominion Post* on December 9, 10, and 11, 2010. The draft EA was available for public review during the comment period at the Morgantown Public Library located at 373 Spruce Street, Morgantown, West Virginia. The draft EA was also posted on NETL's website (<http://www.netl.doe.gov/publications/others/nepa/ea.html>). The public was invited to provide oral, written, or e-mail comments on the draft EA to DOE by the close of the comment period on January 7, 2011. Copies of the draft EA were also distributed to interested federal and state agencies.

Three comments were received regarding construction contractor and bid process information. Responses were supplied at the time of receipt, with no changes necessary to the analysis of potential environmental impacts. All comments and responses are included in the Public Comments Addendum located at the end of the EA.

TABLE OF CONTENTS

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE	I
COVER SHEET	I
LIST OF APPENDICES	VI
LIST OF TABLES	VI
LIST OF ACRONYMS	VII
EXECUTIVE SUMMARY	VIII
1.0 INTRODUCTION.....	1
1.1. Background.....	1
1.2. Description of Proposed Action.....	1
2.0 PURPOSE AND NEED FOR AGENCY ACTION	3
2.1. Scoping Process.....	3
3.0 ALTERNATIVES, INCLUDING THE NO-ACTION ALTERNATIVE.....	4
3.1. No-Action Alternative	4
3.2. Lease a Private Structure (Off-site)	4
3.3. Renovate an Existing Structure (Onsite).....	4
3.4. Onsite Construction	5
3.5. Summary of Environmental Consequences.....	6
4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	7
4.1. Socio-Economics	7
4.1.1 Economics and Employment	7
4.1.1.1 No-Action Alternative	8
4.1.1.2 Construction.....	8
4.1.1.3 Operation	9
4.1.2 Population and Housing.....	9
4.1.2.1 No-Action Alternative	9
4.1.2.2 Construction.....	9
4.1.2.3 Operation	9
4.1.3 Residential and Commercial Displacements	10
4.1.3.1 No-Action Alternative	10
4.1.3.2 Construction.....	10
4.1.3.3 Operation	10
4.1.4 Environmental Justice.....	10
4.1.4.1 No-Action Alternative	10
4.1.4.2 Construction.....	10
4.1.4.3 Operation	11
4.2. Land Use	11
4.2.1 No-Action Alternative	11

4.2.2	Construction.....	11
4.2.3	Operation	11
4.3.	Parks, Recreation Areas.....	11
4.3.1	No-Action Alternative	12
4.3.2	Construction.....	12
4.3.3	Operation	12
4.4.	Vegetation and Wildlife.....	12
4.4.1	No-Action Alternative	12
4.4.2	Construction.....	12
4.4.3	Operation	13
4.5.	Threatened and Endangered Species	13
4.5.1	No-Action Alternative	13
4.5.2	Construction.....	13
4.5.3	Operation	13
4.6.	Water Quality/Streams	13
4.6.1	Permitted Discharge Areas	13
4.6.2	No-Action Alternative	14
4.6.3	Construction.....	14
4.6.4	Operation	14
4.7.	Flood Plains.....	14
4.7.1	No-Action Alternative	14
4.7.2	Construction.....	15
4.7.3	Operation	15
4.8.	Wetlands	15
4.8.1	No-Action Alternative	15
4.8.2	Construction.....	15
4.8.3	Operation	15
4.9.	Groundwater.....	15
4.9.1	No-Action Alternative	16
4.9.2	Construction.....	16
4.9.3	Operation	17
4.10.	Public Facilities and Services	17
4.10.1	No-Action Alternative	17
4.10.2	Construction.....	17
4.10.3	Operation	18
4.11.	Utilities.....	18
4.11.1	No-Action Alternative	19
4.11.2	Construction.....	19

4.11.3	Operation	19
4.12.	Traffic	19
4.12.1	No-Action Alternative	19
4.12.2	Construction.....	20
4.12.3	Operation	20
4.13.	Air Quality	20
4.13.1	Permitted Areas	21
4.13.2	No-Action Alternative	21
4.13.3	Construction.....	21
4.13.4	Operation	21
4.14.	Greenhouse Gases	22
4.14.1	No-Action Alternative	22
4.14.2	Construction.....	23
4.14.3	Operation	23
4.14.3.1	Transportation Associated with Operation	23
4.15.	Noise and Vibration	24
4.15.1	No-Action Alternative	24
4.15.2	Construction.....	24
4.15.3	Operation	25
4.16.	Waste Site Evaluation	25
4.16.1	No-Action Alternative	25
4.16.2	Construction.....	25
4.16.3	Operation	25
4.17.	Cultural Resources.....	25
4.17.1	Historic Resources	25
4.17.1.1	No-Action Alternative	26
4.17.1.2	Construction.....	26
4.17.1.3	Operation	26
4.17.2	Archaeological Resources	26
4.17.2.1	No-Action Alternative	26
4.17.2.2	Construction.....	26
4.17.2.3	Operation	26
4.17.3	Native American Resources	27
4.17.3.1	No-Action Alternative	27
4.17.3.2	Construction.....	27
4.17.3.3	Operation	27
4.18.	Visual Resources	27
4.18.1	No-Action Alternative	27

4.18.2	Construction.....	27
4.18.3	Operation	28
4.19.	Cumulative Impacts	28
4.19.1	Construction.....	28
4.19.2	Operation	28
4.20.	Temporary Construction Impacts.....	28
5.0	DISTRIBUTION LIST	30

List of Appendices

APPENDIX A: AGENCY CORRESPONDENCE/LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONSULTED	32
APPENDIX B: REFERENCES	34
APPENDIX C: CONSULTATION LETTERS	37
APPENDIX D: SITE LOCATION MAPS, DRAWINGS, AND PHOTOS	47
APPENDIX E: TRAFFIC DATA.....	55
APPENDIX F: GREENHOUSE GAS CALCULATIONS	64
ADDENDUM: PUBLIC COMMENTS	67

List of Tables

Table 1. Summary of Socioeconomic, Environmental, and Cultural Impacts.....	6
Table 2. Occupational Structure by Percent, Monongalia County, 2000	7
Table 3. Industry Sector by Percent of Nonfarm Payroll Employment, 2009	8

LIST OF ACRONYMS

ARRA	American Recovery and Reinvestment Act
ATEC	Appliance Technology Evaluation Center
BTP	Building Technologies Program
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalents
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CR	County Road
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EA	Environmental Assessment
ECD	Environmental Compliance Division
EERE	Energy Efficiency and Renewable Energy
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GHG	Greenhouse Gas
LEED	Leadership in Energy and Environmental Design
MUB	Morgantown Utility Board
NAAQS	National Ambient Air Quality Standards
NETL	National Energy Technology Laboratory
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PEP	Project Execution Plan
PVL	Performance Verification Laboratory
WVDEP	West Virginia Department of Environmental Protection
WVDOH	West Virginia Department of Transportation, Division of Highways
WVDOT	West Virginia Department of Transportation

EXECUTIVE SUMMARY

This environmental assessment (EA) addresses the potential environmental impacts of a proposed project located at the Morgantown, West Virginia, site of the National Energy Technology Laboratory (NETL).

The Performance Verification Laboratory (PVL) project was proposed in response to the American Recovery and Reinvestment Act (ARRA) Facilities and Equipment Upgrade Lab Call #09-002. NETL will design, construct, and make operational a U.S. Department of Energy (DOE) PVL facility for verifying the energy performance of selected appliances and equipment to facilitate improved enforcement of DOE energy conservation standards and DOE/Environmental Protection Agency (EPA) ENERGY STAR[®] programs. The PVL facility will build upon the capabilities of NETL's existing Appliance Technology Evaluation Center (ATEC). Currently, ATEC is used to help DOE improve its test procedures through experimental investigations (testing and other evaluations) of appliances/equipment. PVL will expand the current ATEC capabilities and add large-scale performance verification testing that will complement DOE's increasing focus on emerging equipment and appliance standards activities. The resulting data from this facility will enhance existing standards and test procedure development at NETL, as well as provide a valuable resource to support compliance and enforcement activities for the Energy Conservation Standards program within DOE.

Executive Order 13123, "Greening the Government Through Efficient Energy Management," requires federal agencies to improve their environmental and energy performance and to meet specified environmental performance goals. Constructing an energy efficient "green" building would allow NETL to reduce electricity use and meet environmental performance goals.

This EA has been prepared to satisfy requirements of the National Environmental Policy Act (NEPA) of 1969 (42 United States Code 4321 *et seq.*) and its implementing regulations found in Title 40, Code of Federal Regulations (CFR), Parts 1500-1508 (Council on Environmental Quality) and Title 10, CFR, Part 1021 (Department of Energy).

Results of this assessment indicate that the construction activities associated with the proposed project would potentially have minor impacts on permitted discharge areas, groundwater, and greenhouse gases (GHGs). An increase in the number of cars and trucks associated with the construction activities would negatively impact traffic and public facilities and services. Operation of heavy machinery during construction would also have an adverse effect on air quality (i.e., dust and exhaust particulate air emissions) and increase noise and vibration in the immediate vicinity of the work area. These effects would be controlled to the greatest extent possible to minimize their impact. The construction of the PVL facility would positively impact the local area through the creation of 24 jobs.

Operation of the PVL facility would result in the creation of approximately 14 permanent jobs at the Morgantown NETL site, most of which would be new hires. Traffic and public facilities and services would be negatively impacted by the increased flow of cars and delivery trucks to the new facility. Because the operation of this facility would support the increased penetration and acceptance of energy-efficient appliances and equipment in the marketplace, the work done at the PVL would ultimately contribute to a reduction in GHG production.

1.0 INTRODUCTION

This EA addresses the potential environmental impacts of a proposed project located at the Morgantown, West Virginia, site of NETL. This project includes the construction of an approximately 30,000 ft² one-story, steel building constructed on grade that will house the proposed PVL.

The information in this EA is based on the PVL Project Execution Plan (PEP); information assembled and presented in DOE/EA-1444, the EA for the Construction of New Office Building, Child-Care Facility, Parking Garage, and Storm Water Retention Pond (September 2002); personal interviews with NETL officials; correspondence with regulatory agencies; and a review of published literature.

1.1. Background

Since 1954, the federally owned and operated laboratory complex in Morgantown, West Virginia, has engaged in fossil energy-related research. In 1996, the fossil energy research centers in Pittsburgh, Pennsylvania, and Morgantown, West Virginia, merged under single management to become the Federal Energy Technology Center. In 1999, the center was elevated to national laboratory status and renamed the National Energy Technology Laboratory, becoming DOE's 15th national laboratory. NETL has sites in Morgantown, West Virginia; Pittsburgh, Pennsylvania; Houston, Texas; Albany, Oregon; and Fairbanks, Alaska. In total, these sites include 81 buildings and 14 major research facilities on nearly 200 acres. More than 1,100 employees work at NETL's five sites; roughly half are federal employees and half are site-support contractors.

1.2. Description of Proposed Action

NETL plans to design and construct a building to house the PVL, which will be part of NETL's Appliance Technology Evaluation Center (ATEC) and will support DOE, Energy Efficiency and Renewable Energy (EERE), Building Technologies Program's (BTP) Appliances and Commercial Equipment Standards, and DOE/Environmental Protection Agency (EPA) ENERGY STAR[®] Programs.

The proposed project includes the demolition of Building 20 (B-20) at the Morgantown NETL site in preparation for construction of the PVL facility. B-20 is a 2,200 ft² Quonset hut that sits on a concrete slab. It is currently used as a maintenance facility. All materials from the demolition of B-20 would be recycled to eliminate landfill deposits. The site would then be excavated to prepare for the PVL facility.

The PVL will be an advanced laboratory capable of conducting energy performance verification and enforcement testing on a broad range of DOE-regulated and ENERGY STAR-qualified appliances and equipment. The PVL will include an approximately 30,000 ft² building with testing facilities that will provide a variety of energy utility and environmental control capabilities necessary to perform current and future appliance and equipment verification and enforcement testing, including the flexibility to test equipment and appliances incorporating Smart Appliance technologies. The PVL would house appliance test rooms/chambers, offices, restrooms, and kitchen space for PVL employees. The test rooms/chambers would be procured and installed by a Design-Build contractor. The design would incorporate sustainable design features and meet or exceed Leadership in Energy and Environmental Design (LEED) Gold standards (not inclusive of test facilities).

A minimum of eight testing facilities will be included in the PVL, each providing the ability to test a specific type of product(s). NETL's facility planning and design also includes the ability to potentially reconfigure the testing facilities to accommodate increased and/or new products in consideration of future DOE programmatic needs. Therefore, the PVL is being designed to maximize flexibility to allow for potential reconfigurations and expansions of testing facilities capabilities. The eight testing facilities required for this project are:

- Water and Natural Gas Use Appliances and Equipment (two facilities)
- Heating Appliances and Equipment
- Lighting Products
- Display Products
- Multipurpose Electric Products
- Electric Motors
- Water Flow Products

In addition to the testing facilities, the project requires areas for receipt and storage of products for testing, as well as storage for test equipment and supplies.

Construction and operation of the ATEC PVL will help ensure that consumers and the nation achieve the energy savings intended by energy conservation standards and ENERGY STAR through the following:

- Verifying the accuracy of manufacturers' published energy-performance information.
- Motivating manufacturers to measure and report energy performance accurately.
- Identifying instances where test procedures need revision or clarification.
- Providing data to help DOE enforce energy conservation standards and the ENERGY STAR program.
- Providing rapid response capability to energy testing and compliance issues.

2.0 PURPOSE AND NEED FOR AGENCY ACTION

The PVL project was proposed in response to the American Recovery and Reinvestment Act (ARRA) Facilities and Equipment Upgrade Lab Call #09-002. DOE BTP focuses on research and development, design, and construction of energy efficient and net zero energy buildings. BTP has moved beyond component-driven research to holistically address the multiple interactions among building systems and components to develop and incorporate integrated, highly efficient energy use and performance. High performance buildings will apply technology to improve the internal-built environment, integrating various systems to manage energy use and improve comfort, safety, and environmental factors.

Ensuring industry compliance with energy efficiency standards is of vital importance, and the need for facilities to complete enforcement testing is critical. Testing of commercial equipment and appliances as well as residential appliances is a key element based on the vast number of products in the market. The goals are to increase energy efficiency and reduce energy costs to consumers. The PVL facility would play a major role in assuring that commercial and residential consumers are well informed, and thus can purchase energy efficient appliances with confidence. This project would provide a facility to conduct testing and verification, as well as develop new testing procedures for various appliances and equipment available in the market today.

The proposed action would satisfy DOE's mission. The PVL project would ensure that the program activities have adequate space and utilities, create synergy with ATEC, use existing security, and minimize material logistics issues.

2.1. Scoping Process

Internal scoping activities to identify potential issues associated with the proposed project included reviewing the proposed technology, equipment and operational requirements, the environmental setting for the proposed project, and other information available on the project.

Scoping activities to date have included: internal discussions of the project and its potential environmental implications; DOE review of preliminary environmental information; and preliminary characterization of background conditions.

NETL's Environmental Compliance Division (ECD) completed an initial National Environmental Policy Act (NEPA) review of this project and issued a Categorical Exclusion for the design phase of this project. Sufficient information is now available to begin the review of the construction and operation phase of the project. This EA will focus on the most likely potential environmental impacts associated with the proposed action.

3.0 ALTERNATIVES, INCLUDING THE NO-ACTION ALTERNATIVE

NETL has considered alternatives to address the needs identified within Section 2.0. Consideration was given to the lease of a private structure, renovation of an existing structure, and building a new structure. With regard to location, security, material logistics, synergy with the existing NETL ATEC, and costs, NETL has determined that onsite construction is a reasonable option.

3.1. No-Action Alternative

Under the No-Action Alternative, DOE would not proceed with the proposed project. As a result, this project would be delayed as DOE sought other locations and funding sources to meet the objectives. Therefore, the collection of data resulting from the testing and evaluation of appliances and equipment would be delayed, as would the significant reductions in greenhouse gases (GHGs) that would be realized from the PVL's support of compliance and enforcement activities for the Energy Conservation Standards Program within DOE.

3.2. Lease a Private Structure (Off-site)

NETL evaluated nearby vacant structures to house the proposed facility. It was determined that no existing structure was available or desirable due to distance from NETL Morgantown site, which includes the existing ATEC facilities. Off-site location of the PVL facility would greatly reduce operational efficiency, productivity, and staff interaction due to the introduction of a local commute to and from the onsite ATEC facilities. In addition, local traffic and associated air emissions, including GHGs, would be increased. Off-site security, utility access, and material logistics issues would also be associated with leasing a private structure for this project. As such, using an off-site structure was not considered a viable alternative for analysis.

3.3. Renovate an Existing Structure (Onsite)

NETL reviewed its building usage and determined that no existing structure is available for this project. NETL also determined that no other structure onsite is suitable for the testing and evaluation activities that would occur at the PVL facility. In addition, the size and scale of the proposed project is too large to be included within the buildings that currently house ATEC facilities at the Morgantown site. Evaluation of existing NETL buildings and structures was also heavily influenced by the substantial benefits to be gained from locating the facility in close proximity to the existing ATEC facilities, thereby heavily favoring the Morgantown campus. Other DOE facilities were not considered because the project was competitively awarded to NETL. Based on these factors, renovating an existing onsite structure was not considered a viable alternative for analysis.

3.4. Onsite Construction

NETL evaluated building a new structure onsite and determined that this alternative would successfully satisfy DOE mission. A new structure ensures that there would be adequate space and access to utilities, two criteria that are critical for testing purposes. The choice of location for onsite construction at NETL involves the consideration of two campuses, Pittsburgh and Morgantown. Both campuses would benefit from the use of existing onsite resources and security. However, selection of NETL Morgantown campus is strongly favored due to the potential for onsite synergy with the existing ATEC laboratories, facilities, and associated NETL personnel. Consideration of the logistics and overall efficiency of construction and operation of the PVL facility also favor Morgantown as the preferred NETL location. As such, the onsite construction of the PVL facility in Morgantown is analyzed herein as the preferred alternative.

3.5. Summary of Environmental Consequences

Table 1 provides a summary of the socioeconomic, environmental, and cultural impacts of the No-Action Alternative and the proposed project.

Table 1. Summary of Socioeconomic, Environmental, and Cultural Impacts

Impact Area	No-Action Alternative		Proposed Project	
	Construction	Operations	Construction	Operations
Economics and Employment	Negligible	Negligible	Minor (Beneficial)	Minor (Beneficial)
Population and Housing	Negligible	Negligible	Negligible	Negligible
Residential and Commercial Displacements	Negligible	Negligible	Negligible	Negligible
Environmental Justice	Negligible	Negligible	Negligible	Negligible
Land Use	Negligible	Negligible	Negligible	Negligible
Parks and Recreation Areas	Negligible	Negligible	Negligible	Negligible
Vegetation and Wildlife	Negligible	Negligible	Negligible	Negligible
Threatened and Endangered Species	Negligible	Negligible	Negligible	Negligible
Water Quality/Streams	Negligible	Negligible	Negligible	Negligible
Permitted Discharge Areas	Negligible	Negligible	Minimal (Mitigation)	Negligible
Floodplains	Negligible	Negligible	Negligible	Negligible
Wetlands	Negligible	Negligible	Negligible	Negligible
Groundwater	Negligible	Negligible	Minor	Negligible
Public Facilities and Services	Negligible	Negligible	Minor	Minor
Utilities	Negligible	Negligible	Negligible	Negligible
Traffic	Negligible	Negligible	Minor	Moderate
Air Quality	Negligible	Negligible	Negligible	Negligible
Permitted Areas	Negligible	Negligible	Minimal (Mitigation)	Negligible
Greenhouse Gases	Negligible	Moderate	Minor	Moderate (Beneficial)
Noise and Vibration	Negligible	Negligible	Minor	Negligible
Waste Site Evaluation	Negligible	Negligible	Negligible	Negligible
Historic Resources	Negligible	Negligible	Negligible	Negligible
Archaeological Resources	Negligible	Negligible	Negligible	Negligible
Visual Resources	Negligible	Negligible	Negligible	Minor (Beneficial)

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

In this section the term “Proposed Action” represents “Onsite Construction.” The Proposed Action is the preferred alternative and is the focus of the following analysis. The No-Action Alternative is also considered.

4.1. Socio-Economics

The existing and potential future social, economic, and land use conditions were evaluated through a review of the West Virginia Region VI – Planning and Development Council and the U.S. Census Bureau statistics.

Social and economic trends are influenced by several regional and community growth factors. The following sections review the proposed project’s influence on economics and employment, population and housing, residential and commercial displacements, and environmental justice.

4.1.1 Economics and Employment

The total civilian labor force in Monongalia County increased from 40,460 workers in 2000 to 48,180 workers in 2009. Monongalia County’s unemployment rate increased over the same time period from 2.4% to 4.9% (U.S. Department of Labor, Bureau of Labor Statistics, Website, 2010).

An examination of the occupational structure of the Monongalia County workforce in 2000 reveals that managerial/professional, service, and sales and office positions comprised more than 80% of all workers (Table 2; Reinke, 2010).

Table 2. Occupational Structure by Percent, Monongalia County, 2000

Occupation	% of Monongalia County Workforce
Managerial/Professional	39.1
Service	16.6
Sales and Office	25.7
Farming, Fishing, Forestry	0.4
Construction, Extraction, Maintenance	8.6
Production, Transportation, Materials Moving	9.6

The most recent employment statistics available from the U.S. Bureau of Labor Statistics and Workforce WV indicate that the leading industry sectors in Monongalia County in 2009 were government and education and healthcare (Table 3; Reinke 2010).

Table 3. Industry Sector by Percent of Nonfarm Payroll Employment, 2009

Industry Sector	Monongalia County Employment	Monongalia County Percent
Natural Resources and Mining	650	1.2
Construction	2,270	4.1
Manufacturing	3,250	5.8
Trade, Transportation, Utilities	7,520	13.5
Information	570	1.0
Financial Activities	1,370	2.5
Professional and Business Services	4,580	8.2
Education and Healthcare	11,920	21.4
Leisure and Hospitality	5,900	10.6
Other Services	2,410	4.3
Federal Government	1,310	2.4
State Government	10,970	19.7
Local Government	2,890	5.3
Total	55,590 ¹	100.0

4.1.1.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no impacts would occur to the area's economy and employment.

4.1.1.2 Construction

The construction activities associated with the Proposed Action have an estimated duration of 15 months, and are expected to create jobs for approximately 24 workers. Therefore, a temporary benefit to the local and regional economies is expected to result from the Proposed Action.

¹ Total includes both civilian and government workers.

4.1.1.3 Operation

Operation of the PVL facility would employ approximately 14 workers, with the majority being new hires. The operation of the facility on NETL property would therefore have a small positive effect on the local economy.

4.1.2 Population and Housing

The population of Monongalia County has increased over the last several decades. The county population grew from 63,714 persons in 1970 to 75,024 persons in 1980, to 75,509 persons in 1990, to 81,866 persons in 2000, and to an estimated 90,080 persons in 2009. However, the city of Morgantown experienced a population decline from 29,431 persons in 1970 to 26,809 persons in 2000 (-9.0%), followed by an increase to 30,330 in 2009 (13.1%). The population of Star City, an adjacent small community, has experienced an increase over that same time period, with the population growing from 1,312 persons in 1970 to 1,366 persons in 2000 (4.0%) to 1,695 in 2009 (24.1%)(www.city-data.com).

An estimated total of 38,087 occupied housing units exist in Monongalia County (an increase from 33,446 in 2000), comprised of 19,723 (a decrease from 20,391 in 2000) owner-occupied units and 11,350 rental-housing units. A total of 7,014 vacant housing units exist in Monongalia County. There are an estimated 8,251 total occupied housing units in the city of Morgantown. These units consist of 4,036 owned units and 4,215 rental-housing units. There are a total of 2,212 vacant housing units in the city of Morgantown. The 2000 census data lists 697 total occupied housing units in Star City, which consist of 407 owned units and 290 rental-housing units. There are a total of 56 vacant housing units in Star City (www.city-data.com).

4.1.2.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not take place, therefore no effect on the area's existing population and housing would result.

4.1.2.2 Construction

Construction of the Proposed Action would not affect the existing population and housing in the immediate project area, the surrounding communities, or Monongalia County.

4.1.2.3 Operation

Operation of the proposed facility on NETL property would not affect the existing population and housing in the immediate project area, surrounding communities, or Monongalia County.

4.1.3 Residential and Commercial Displacements

There would be no residential or commercial displacements associated with the Proposed Action.

4.1.3.1 No-Action Alternative

Under the No-Action Alternative, no residential or commercial displacements would occur.

4.1.3.2 Construction

Construction associated with the Proposed Action would result in no residential or commercial displacements.

4.1.3.3 Operation

Operation of the facility on NETL property due to the Proposed Action would result in no residential or commercial displacements. Therefore, no mitigation measures are needed or required.

4.1.4 Environmental Justice

Population data from the 2000 census were analyzed for the project area. These data indicate that Monongalia County is 92.2% white and 7.8% other minority races; the city of Morgantown is 89.5% white and 10.5% other minority races; and Star City is 93.6% white and 6.4% other minority races. The median household income for Star City in 2008 was \$39,667, with approximately 16% of residents with incomes at or below the poverty level (www.city-data.com). There are no identifiable pockets of minority or low-income populations in the residential developments and apartment complexes immediately adjacent to NETL facility. Therefore, no disproportionate adverse effects on minority or low-income populations would result from the Proposed Action.

4.1.4.1 No-Action Alternative

The No-Action Alternative would have no effect on environmental justice issues.

4.1.4.2 Construction

Construction associated with the Proposed Action would not affect the existing population with regard to environmental justice issues.

4.1.4.3 Operation

Operation of the facility on NETL property as a result of the Proposed Action would not have an effect on environmental justice issues in the project area, surrounding communities, or Monongalia County.

4.2. Land Use

The PVL project would be located at the North East end of NETL site in the area currently housing the B-20 Quonset hut, the weather tower, and rain gauge. The area of the proposed project is classified by the Anderson Land Use Classification system as: *Grasslands/Herbaceous - Areas dominated by upland grasses and forbs. In rare cases, herbaceous cover is less than 25%, but exceeds the combined cover of the woody species present. These areas are not subject to intensive management, but they are often utilized for grazing.*

4.2.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no changes in land use would occur.

4.2.2 Construction

Construction of the Proposed Action would not have an adverse effect on land use activities in the project area.

4.2.3 Operation

Operation of the facility on NETL property as a result of the Proposed Action would not have an adverse effect on land use activities within the project area.

4.3. Parks, Recreation Areas

There are no county or regional parks in the proximity of the project area. The only county/regional or state park in Monongalia County is Chestnut Ridge Park, which is located adjacent to Coopers Rock State Forest. Chestnut Ridge Park is located approximately eight miles from NETL site.

The city of Morgantown has 14 recreational facilities, none of which are located near the project area.

Star City leases the section of the Mon River Trail (MRT) that bisects Star City's corporate limits from the MRT Conservancy. The MRT extends upstream and downstream along the Monongahela River and at one point is approximately 900 feet from the project area. However, the project activities would not impact the MRT.

4.3.1 No-Action Alternative

The No-Action Alternative would also have no effects on local parks or recreation areas.

4.3.2 Construction

Construction associated with the Proposed Action would not affect local or regional parks and recreation areas.

4.3.3 Operation

Operation of the facilities on NETL property as a result of the Proposed Action would not impact local or regional parks and recreation areas.

4.4. Vegetation and Wildlife

Vegetation on the proposed project area is comprised mostly of grass species. The proposed area, which is maintained by mowing, is not home to any known wildlife species, although several have been observed in the vicinity. These include white-tailed deer (*Odocoileus virginianus*), wild turkeys (*Meleagris gallopavo*), raccoon (*Procyon lotor*), and eastern cottontail (*Sylvilagus floridanus*).

4.4.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no impacts would occur to vegetation and wildlife.

4.4.2 Construction

Construction activities would be confined to an area currently comprised of a maintained grassy field. Therefore, construction impacts on NETL site would be negligible due to the lack of important wildlife habitat. However, the potential exists for wildlife in the vicinity (e.g., white-tailed deer [*Odocoileus virginianus*], wild turkeys [*Meleagris gallopavo*], and Canada geese [*Branta canadensis*]) to be affected by construction noise, vibrations, and movement.

4.4.3 Operation

Operation of the proposed facility on NETL property would not impact vegetation or wildlife.

4.5. Threatened and Endangered Species

Requests for information concerning rare, threatened, and endangered species were made to the U.S. Department of Interior, Fish and Wildlife Service (USFWS) in a consultation letter dated September 29, 2010. Please see the attached letter (Appendix C). No response was received from USFWS.

4.5.1 No-Action Alternative

The No-Action Alternative would not impact any threatened or endangered species as no such species are known to occur in the area.

4.5.2 Construction

The Proposed Action would not impact any threatened or endangered species as no species of special concern are known to occur in the proposed project area.

4.5.3 Operation

Operation of the proposed facility on NETL property would not affect rare, threatened, or endangered species, as none of these species are known to occur in the proposed project area.

4.6. Water Quality/Streams

There are no streams located within the proposed project area; however, West Run is located 220 feet from the proposed project. The slope distance is 273 feet.

4.6.1 Permitted Discharge Areas

NETL would need to obtain a West Virginia Department of Environmental Protection (WVDEP) Stormwater Construction Permit before any soil disturbance may occur.

Additionally, a Morgantown Utility Board (MUB) Stormwater Permit Application (Article 929, Stormwater Management and Surface Water Discharge Control) would be required.

4.6.2 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no changes in water quality or streams would occur.

4.6.3 Construction

All permitting requirements involving the Clean Water Act § 404, West Virginia State 401 Water Quality Certification, and the West Virginia Public Land Corporation Stream Activity Permit would be reviewed and implemented. Additionally, a stormwater discharge permit (National Pollutant Discharge Elimination System [NPDES] permit) for construction activities would be required and must be applied for at least 30 days prior to groundbreaking activities. Silt fences and a retention pond would be used for sedimentation and erosion control during construction, thereby minimizing potential impacts from any run-off that would be generated. The actual Best Management Practices implemented during construction would be consistent with the stormwater permits listed above.

4.6.4 Operation

The operation of the proposed facility would have a negligible effect on discharge areas. The industrial wastewater generated at the PVL would flow into NETL site clarifier where approximately 90% of the water is recycled. The industrial wastewater would then be combined with the sanitary wastewater and flow to the MUB wastewater treatment facility (a Publicly Owned Treatment Works) for treatment and discharge to the Monongahela River. Stormwater run-off would be controlled via a gutter and downspout system to stormwater drains. A retention basin would then be used to further minimize potential adverse impacts from excessive stormwater runoff.

4.7. Flood Plains

The 100-year floodplain is the elevation that becomes inundated by rising waters and has a 1% chance of flooding every year. A review of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) was conducted on the north Morgantown area in order to determine any impacts to the floodplains and/or flood hazards. The FIRM community-panel number used was: 54041 0001D.

4.7.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no impacts would occur to floodplains.

4.7.2 Construction

NETL facility is located in Zone X on the FIRM. Zone X signifies areas that are determined to be outside the 500-year floodplain. For this reason, any construction on the site would not impact either the 100-year or the 500-year floodplain. Also, because NETL is located in Zone X, the property is not prone to flood hazards.

4.7.3 Operation

The operation of the proposed facility would not have an adverse effect on the floodplains.

4.8. Wetlands

A review of USFWS National Wetlands Inventory (NWI) maps revealed no wetlands located within the proposed project area. However, there are small areas located on NETL site that have been delineated as wetlands. The closest wetlands to the project area are located approximately 700 feet to the west and 1,000 feet to the northwest of the proposed site.

4.8.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore wetlands would not be impacted.

4.8.2 Construction

Proper sedimentation and erosion controls would be used during the construction phase to ensure no adverse effects on nearby wetlands. These controls would likely include silt fences and a retention pond, or Best Management Practices identified in permits obtained for the project.

4.8.3 Operation

Proper sedimentation and erosion controls would be used during the operations of the proposed facility to ensure no adverse effects on nearby wetlands. Controls would include a gutter and downspout system to stormwater drains, a retention basin, and an effective vegetative cover.

4.9. Groundwater

Bedrock beneath NETL is part of the Conemaugh Group. The Conemaugh Group consists of fractured shales, siltstones, and sandstones, with a few thin limestone and coalbeds. Two

aquifers of the Conemaugh Group, the Morgantown Sandstone and the Grafton Sandstone, outcrop around NETL site. These aquifers provide water supplies for any nearby homes that are not served by the municipal supply. Wells nearest NETL facilities have yields of 0.1 liters per second (1.6 gallons per minute) or less (NETL Groundwater Protection Plan, 2010). Immediately beneath the project site, and overlying the Morgantown Sandstone, is the Clarksburg Shale.

Overlying the bedrock and underlying most of NETL are alternating layers of unconsolidated Lake Monongahela sediments (clay, silt, and sand); including three water-bearing clayey sand layers (NETL Groundwater Protection Plan, 2010). Locally, water within these sand layers flows toward the surface streams.

In the past, groundwater monitoring focused on two areas at NETL. The first of these locations was near building B-1. This area formerly contained leaking underground chemical pipes that were removed in the late 1980s. The second location was near the reclaimed industrial wastewater holding pond. After the closure of the pond, the area was converted to a parking lot. Some contaminants were detected in both areas. Statistical analysis has shown that contaminant levels are within baseline levels at the industrial waste pond 005 (Site Assessment, 1992).

The West Virginia State Health Department has not labeled NETL as a wellhead protection area (Environmental Baseline Characterization). A wellhead protection area is defined by section 1428 of the Safe Drinking Water Act (42 U.S.C. 300f-300j-9) as “the surface and subsurface area surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field.”

4.9.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no changes in groundwater would occur.

4.9.2 Construction

The use of hazardous materials during construction (i.e., fuel, cement curing aids, sealants, and fill used from other areas) could, if not properly handled, cause direct impacts to groundwater sources. Because NETL site is not labeled as a wellhead protection area and does not provide an important recharge area for water wells, the risks of impact to humans using groundwater would be minimal.

The quantity of groundwater recharge at the project site would also be impacted. Groundwater recharge would decrease due to an increased impervious area over the project site soil.

Decreased infiltration could be caused by the compaction effect of heavy machinery and/or materials used during construction. This increase in impervious area would have a low impact on the quantity of groundwater being recharged onsite, because of the relatively small footprint of the site.

4.9.3 Operation

The operation of the proposed NETL facility would not affect groundwater within the project area. The new building would decrease the infiltration rate of rainwater. This impact would be considered low, however, because the new facility would cover a relatively small recharge area.

4.10. Public Facilities and Services

In consultation with the local municipal authorities, numerous public facilities and services were identified within the surrounding area of the project site in Monongalia County. Due to the suburban nature of the project area, these facilities are found within the proximity of the project area, but not directly adjacent to NETL facility. These facilities include recreation areas, fire departments, emergency services, schools, libraries, and municipal facilities.

The Morgantown Fire Department provides fire protection to NETL site. The Monongalia County Emergency and Transport Services provide emergency services to the project area via the 911 center in Morgantown.

NETL project area is serviced by the Monongalia County School District. Suncrest Elementary School (distance 0.8 miles), North Elementary School (1.6 miles), Suncrest Middle School (1.5 miles), and Morgantown High School (4.4 miles) serve students in the project area. The Morgantown Public Library, which services the project area, is located on Spruce Street in Morgantown, approximately 4.2 miles away.

4.10.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no impacts would occur to public facilities or services.

4.10.2 Construction

Construction associated with the Proposed Action would have an impact on local and regional public facilities and services, due to a slight increase in automobile (~2%) and truck (~4%) traffic (See full discussion in Section 4.12.1).

4.10.3 Operation

Operation of the proposed facility on NETL property would have a minor impact on local and regional public facilities and services, due to a slight increase in total vehicle traffic (~1%) which includes a small increase in truck traffic (~11%). A full discussion of traffic impacts is presented in Section 4.12.2.

4.11. Utilities

Utility companies that could be affected by construction of the PVL building are: Allegheny Power (electricity), Hope Gas (natural gas), and Verizon (telecommunications). NETL acquires water for domestic use from Morgantown Utility Board (MUB), which draws water from Cobun Creek during high water flows, and from the Monongahela River during dry low-flow periods (Site Assessment, 1992).

High-voltage 5-kilovolt (kV) electric service from the existing NETL site substation would be extended by NETL in existing and new underground ductbanks to a new 1,500 KVA pad-mounted transformer at the building. A 2,000-ampere, 480Y/277V, three-phase, four-wire underground electric service would be provided into the building.

Telephone services would be extended by NETL in existing and new underground ductbanks from the existing NETL site utility demarcation point in Building B-39 to the new building (Appendix D).

Television cable services from B-39 would be extended using overhead racks and existing and new underground ductbanks.

Natural gas would be extended from the existing NETL site via an overhead high-pressure natural gas piping system at Building B-33.

Water service would be extended from an existing NETL site 4-inch water system line near Building B-19.

Sanitary sewage would be discharged into an existing NETL sanitary system connection on the new building site.

Wastewater from all the building test labs would be discharged into an existing NETL site industrial wastewater system manhole near Building B-19, where approximately 90% of this wastewater is recycled.

Quantity and quality of stormwater from the new building site would be controlled by an onsite stormwater management facility and discharged to a stabilized existing NETL site drainage pathway.

4.11.1 No-Action Alternative

Under the No-Action Alternative, no impacts would occur to existing utilities.

4.11.2 Construction

All utility companies that service NETL would be notified before construction begins. Utility company facilities onsite should not be impacted by the construction because all utilities for the new building would be extended from or to existing NETL-owned utility distribution systems.

4.11.3 Operation

No impacts would be anticipated to local utility services during normal operation of the proposed facility. This includes local water supplies; machines and appliances to be tested in the PVL facility would be designed for efficient use of water as well as energy.

4.12. Traffic

The West Virginia Department of Transportation (WVDOT) conducted two traffic surveys near NETL facility (Appendix E); NETL is located on Collins Ferry Road (CR 57). The first was a 48-hour count of vehicles on CR 57, conducted midweek between Sept. 16 and Sept. 18, 2008. Results showed that the average 24-hour count was 1,686 vehicles for routine weekday traffic. A second survey was conducted at the intersection of Collins Ferry Road and University Avenue on Dec. 9, 2008, approximately one-half mile east of NETL site. The traffic flow at this four-way intersection was found to be 11,087 vehicles for an average 24-hour period. This survey supports the expectation of little or no impact on the normal traffic volume in the proposed project area.

4.12.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore local traffic would not be impacted.

4.12.2 Construction

Local traffic would be impacted by the addition of 24 construction workers per day traveling to and from the PVL site, as well as an estimated two deliveries per day to the construction site, for a total of 26 additional vehicles per day on Collins Ferry Road (CR 57). This would result in a 1.5% increase in the normal traffic volume on Collins Ferry Road attributable to the construction of the PVL facility. This increase would be for the proposed construction period of 15 months. The second survey conducted at the intersection of Collins Ferry Road and University Avenue (Dec. 9, 2008) recorded 54 commercial trucks on Collins Ferry Road. It is estimated that truck traffic from construction would therefore be increased by 3.7%. Isolated disruptions in traffic flow may occur during delivery of equipment or materials. If necessary, coordination would occur with WVDOT, Division of Highways (WVDOH), and city officials to maintain safe and effective traffic flow and conditions.

4.12.3 Operation

The new employees at the PVL facility would increase the number of vehicles commuting to and from NETL site by 14 vehicles per day. Deliveries would also increase local vehicular traffic. For planning purposes, approximately 30 deliveries per week, with two units per delivery, are estimated for the operation of the project, based on total capacity of the facility (1080 units). Operation of the PVL facility is expected to add 20 vehicles (14 cars and 6 trucks) per day which represents a 1.2% increase in the normal traffic volume on Collins Ferry Road (CR 57). Results of the second survey (Dec. 9, 2008), conducted at the intersection of Collins Ferry Road and University Avenue, show that the traffic flow at this four-way intersection was 11,087 vehicles for an average 24-hour period. These survey results also support the expectation of little or no impact on the normal traffic volume in the proposed project area. In addition, there were 54 commercial trucks counted on Collins Ferry Road during the Dec. 2008, 24-hour survey. The addition of six delivery trucks per day would represent an 11% increase in normal commercial truck traffic in the area.

4.13. Air Quality

A review of air quality for the general project site was completed utilizing the National Ambient Air Quality Standards (NAAQS) database, maintained by the U.S. Environmental Protection Agency (USEPA, 2010). The NAAQS database was created in August 1999 and lists whether a specific area is currently meeting or in attainment for air quality parameters. NETL facility located in Morgantown, West Virginia, was found to be in attainment for all air quality parameters, which include ozone, carbon monoxide, PM-10, sulfur dioxide, nitrous oxide, and lead.

4.13.1 Permitted Areas

NETL's air permits are individually based for specific projects. For the Proposed Action, a specific air quality permit would not be required.

4.13.2 No-Action Alternative

No impacts to air quality would occur as a result of the No-Action Alternative because no construction or operations would take place.

4.13.3 Construction

During construction, the project would have two major effects on air quality: an increase in emissions by heavy construction equipment and an increase in dust by construction activities. This project would require the use of material-handling and earth-moving equipment. Dust and exhaust particulate emissions from heavy equipment operations would temporarily degrade air quality in the immediate construction zone. The increase in air particulates would be minimized by the performance of the work in compliance with the requirements of the *Air Pollution Control Act* (Act 245-1972, as amended); *West Virginia Title 45 Legislative Rule, Series 17 – To Prevent and Control Particulate Matter, Air Pollution From Materials Handling, Preparation, Storage, and Other Sources of Fugitive Particulate Matter*; and all other applicable state and local regulations. Mitigation measures would include best management practices such as applying water to exposed surfaces or stockpiles of dirt when windy or dry conditions promote problematic fugitive dust emissions.

Particulate matter in the form of fugitive dust is not expected to have a significant effect offsite. The area averages 160 days per year of precipitation and the disturbed area would be limited to approximately one acre. There is a high probability that the disturbed area would receive natural moisture on a regular basis to help control emissions naturally. Areas such as cut slopes and fill zones would be re-vegetated, using seed and mulch. The size and scope of this construction project would not be expected to generate fugitive dust or particulate matter in amounts that would be noticed outside the construction zone itself. Construction traffic is expected to emit negligible amounts of particulate matter. A comparison of emission studies conducted on projects with higher vehicular traffic per day than that projected for construction of the PVL facility showed that the particulate matter emissions were well below the threshold emissions.

4.13.4 Operation

The operation of the proposed facility would not have an impact on air quality during normal operation.

4.14. Greenhouse Gases

Greenhouse Gases (GHGs) are pollutants of concern for air quality and climate change. GHGs include water vapor, carbon dioxide (CO₂), methane, nitrogen oxides, ozone, and several chlorofluorocarbons. Water vapor is a naturally occurring GHG and accounts for the largest percentage of the greenhouse effect. Next to water vapor, CO₂ is the second-most abundant GHG and is typically produced from human-related activities. The largest source of CO₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. Additionally, a number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO₂ emissions.

Although regulatory agencies are taking actions to address GHG effects, there are currently no state or federal standards or regulations limiting CO₂ emissions and concentrations in the ambient air. In response to the *FY2008 Consolidated Appropriations Act* (House Resolution 2764; Public Law 110–161), EPA issued the *Final Mandatory Reporting of Greenhouse Gases Rule* (GHG Reporting Rule), which became effective on Jan. 1, 2010. The GHG Reporting Rule requires annual reporting of GHG emissions to EPA from large sources and suppliers in the United States, including suppliers of fossil fuels or industrial GHGs; manufacturers of vehicles and engines; and facilities that emit greater than 25,000 metric tons per year (27,558 tons per year) each of CO₂ and other GHGs. The intent of the rule is to collect accurate and timely emissions data to inform future policy decisions and programs to reduce emissions, as well as fight against the effects of climate change.

Additionally, on Sep. 30, 2009, EPA proposed, under the Clean Air Act, new thresholds for GHGs that would require that facilities subjected to the New Source Review and Title V operating permit programs to obtain permits and would cover nearly 70% of the nation's largest stationary source GHG emitters – including power plants, refineries, and cement production facilities – while shielding small businesses and farms from permitting requirements. The proposed thresholds are currently being reviewed by Congress.

4.14.1 No-Action Alternative

Under the No-Action Alternative, the PVL facility would not be constructed and operated. Therefore, the beneficial reductions in GHG emissions that would be realized on a national level over the life of the facility through testing and verification for the Energy Conservation Standards Program would be delayed or eliminated.

4.14.2 Construction

The construction activities associated with the proposed facility would have a minor impact on GHG production at NETL site due to the use of heavy construction machinery and the increased traffic flow that is anticipated. The construction of the proposed PVL facility is estimated to produce 625,636 kilograms (kg) (25.6 metric Tons (mT)) of CO₂ by completion. This estimate was arrived at using a proposed construction period of 15 months and derived estimates for equipment, working days, and diesel consumption (including truck deliveries). The CO₂ emission associated with the transportation of 24 construction employees is estimated to be 82,909 kg (82.9 mT) of CO₂. All calculations are shown in Appendix F.

4.14.3 Operation

The quantity of GHG emissions generated during the operation of the PVL facility is estimated to be 1,222,830 kg (1222.8 mT) of CO₂-equivalents (CO₂e)² per year. This includes laboratory testing and office activities. The laboratory testing facilities are expected to account for 77% of total GHG emissions. Verification testing of machines, appliances, and electric motors are expected to use large quantities of natural gas and/or electricity. The research and testing would include operating or running appliances at maximum capacity in order to evaluate stated quality and efficiency values. In the long term, this testing facility would reduce GHG emissions nationwide through improved design and innovation that would result from independent test ratings for products at the PVL facility. The total amount of CO₂e/hr is based on the estimated peak load per hour for natural gas and electricity usage. These hourly amounts are expanded to an annual amount using 65% of peak gas and power estimates. The CO₂e annual amount is calculated in both kilograms and tons of CO₂e. Values for CO₂e per million British thermal units (MBtu) for natural gas and electricity are obtained from the EPA *Greenhouse Gas Inventory and Tracking in Portfolio Manager*, Aug. 31, 2009. All calculations can be found in Appendix F. NETL projects that a verification program of this magnitude will result in 800 trillion Btu (0.8 quads) of energy being saved. The reductions in GHG emissions are expected to exceed 100 million mT of CO₂e nationwide for the associated projected energy savings. It should be noted that if the reduction benefits are only one-tenth of the estimate, GHG reductions would still exceed the GHG emissions of the PVL facility by a factor of 10,000.

4.14.3.1 Transportation Associated with Operation

The operation of the PVL facility would be staffed by 14 new permanent employees. The average daily commute for those employees would be expected to consume 1 gallon of gasoline

² CO₂-equivalents (CO₂e) provide an estimate of total GHG emissions that includes the quantity of each GHG (including CO₂, methane, and nitrous oxide) multiplied by its global warming potential (US EPA, 2009).

per employee per day. This would result in the generation of 280 lbs of CO₂ per day. The annual amount of CO₂ to be emitted as a result of employee transportation is estimated to be 31.2 mT (31,189 kg), determined using a five-day work week and 49 weeks per year. A traffic count was conducted by WVDOH at the intersection of Collins Ferry Road and University Avenue (Appendix E), which is one-half mile east of NETL complex. A 24-hour traffic count tallied 11,000 vehicles in Sep. 2008. An increase of 14 vehicles would not significantly affect the traffic volume and therefore the associated increase in CO₂ emissions would also be considered to have an insignificant effect on GHG emissions. In addition, the operation of the proposed facility includes receiving approximately 30 truck deliveries per week. These deliveries would generate estimated annual GHG emissions of 157.4 mT (157,418 kg) of CO₂, based on a round-trip distance of 100 miles at 10 miles per gallon for a typical diesel-powered truck, which would generate 10 kg of CO₂ per trip (Appendix F).

4.15. Noise and Vibration

Noise and vibration levels are not typically an issue at NETL facility. However, on occasion there have been periods of higher noise and vibration levels due to specific onsite facility activities. Based on this previous experience, including the construction of B-39, construction-related vibrations could be expected to be transmitted for hundreds of feet through the bedrock from the point of origin (Appendix D).

4.15.1 No-Action Alternative

Under the No-Action Alternative, construction and operations would not occur; therefore no changes in noise or vibrations would result.

4.15.2 Construction

Construction activities would result in temporary and short duration increases in noise and vibration levels. To minimize these potential impacts, major construction activities would be scheduled during normal daylight working hours and would be implemented consistent with 23 CFR, Part 772.19, which requires construction contractors to minimize or eliminate adverse construction noise impacts to the community. Equipment noise levels are expected to be in the range of 65 to 70 decibels at a distance of 400 feet for each machine. This does not take into account any noise dampening caused by topography and adjacent buildings. Vibrations from these machines are expected to be below 0.031 inches/sec at the same distance of 400 feet. These vibrations would be well below the vibration damage threshold of 0.20 in/sec (US DOT website, visited Nov. 9, 2010). A map has been included that shows the nearest residential structure is 400 feet from the perimeter of the site (Appendix D).

4.15.3 Operation

No adverse impacts from noise and vibration would result from operation of the proposed facility.

4.16. Waste Site Evaluation

A waste site evaluation for the proposed project was deemed to be unnecessary. The proposed project area lies on top of a hill, which has been previously disturbed, with a vegetative cover comprised primarily of maintained grasses.

4.16.1 No-Action Alternative

Under the No-Action Alternative, no changes in site waste production would occur.

4.16.2 Construction

No major sources of contamination exist on or in the vicinity of the Proposed Action. The majority of the waste due to construction will be recycled. A dumpster located on the construction site will house waste until it can be removed and disposed in accordance with applicable local, state, and federal requirements.

4.16.3 Operation

The operation of the proposed facility is not expected to have any associated environmental contamination impacts.

4.17. Cultural Resources

4.17.1 Historic Resources

No previously recorded historic resources, or National Register of Historic Places (NRHP) listed or eligible properties are present within the project area.

The West Virginia Division of Culture and History – State Historic Preservation Office (SHPO) was notified of the project on September 29, 2010. Following a review of information provided by NETL, SHPO has determined that the project would have no adverse effect on buildings, sites or structures eligible for or listed on the NRHP. Documentation regarding the consultation and responses are provided in Appendix C.

4.17.1.1 No-Action Alternative

The No-Action Alternative would have no effect on any recorded historic resources as none exist in the area.

4.17.1.2 Construction

The construction activities associated with the Proposed Action would have no impacts on any recorded historic resources because none exist in or near the proposed project area.

4.17.1.3 Operation

There are no recorded historic resources located within the project area; therefore the operation of the proposed facility would have no effect on historic resources.

4.17.2 Archaeological Resources

Based on the findings of a prior archaeological assessment and Phase I archaeological survey, SHPO determined that portions of the project area have been impacted by prior construction activities and/or are situated on sloping terrain, thereby making it unlikely to have any intact archaeological deposits present. Therefore, SHPO concluded that there are likely no archaeological sites located within the proposed project (Appendix C).

4.17.2.1 No-Action Alternative

The No-Action Alternative would have no effect on any archaeological resources as none have been found in the area.

4.17.2.2 Construction

Construction of the proposed facility would not affect any archaeological resources as there are none known to exist in the area. In the event that any intact cultural materials are encountered during construction, all activity within the discovery area would cease and SHPO would be contacted immediately.

4.17.2.3 Operation

Operation of the proposed facility would not affect any archaeological resources as none have been found in the area.

4.17.3 Native American Resources

No Native American concerns regarding the proposed project have been identified. A review of the U.S. Department of Housing and Urban Development – Office of Community Planning and Development – Environmental Planning Division database indicated there are no federally recognized tribes with interests in Monongalia County, West Virginia (Tribal Directory Assessment Tool, Nov. 11, 2010).

4.17.3.1 No-Action Alternative

The No-Action Alternative would have no effect on any Native American resources as none exist in the area.

4.17.3.2 Construction

Construction of the proposed facility would not affect any Native American resources as there are none known to exist in the area.

4.17.3.3 Operation

Operation of the proposed facility would not affect any Native American resources as none have been found in the area.

4.18. Visual Resources

The Proposed Action would take place in an area that currently houses Building B-20, a Quonset hut that will be demolished as part of the construction activities. While the proposed facility would be taller than the Quonset hut that presently occupies the area, the hillside will be leveled and lowered approximately 10 feet, resulting in the line-of-site remaining unchanged.

4.18.1 No-Action Alternative

Under the No-Action Alternative, no changes would occur to existing visual resources.

4.18.2 Construction

Construction activities would occur in the location currently occupied by Building B-20, a Quonset hut that will be removed as part of the Proposed Action. The visual changes associated with the Proposed Action would be aesthetically pleasing and considered an improvement and positive impact (Appendix D – B-20 photos and PVL drawings).

4.18.3 Operation

Normal operation of the facility would include regular maintenance and landscaping activities, which will preserve the aesthetics of the facility and surrounding viewshed.

4.19. Cumulative Impacts

Guidelines prepared by the Council of Environmental Quality (CEQ) for implementing NEPA broadly define cumulative impacts as those “impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions” (40 CFR 1508.8). Cumulative impacts are past, present, and future impacts, which when considered as a whole and in concert with other foreseeable developments and projects, result in a combined effect which is greater than that expected from considering these components in isolation. Environmental impacts from development that may occur in the future combined with impacts from past development have cumulative effects on the environment. With respect to Morgantown or Monongalia County, the effect on the environment from the project-related impacts would be negligible.

4.19.1 Construction

No substantial cumulative impacts would be anticipated for the Proposed Action.

4.19.2 Operation

No substantial cumulative impacts would be anticipated for the Proposed Action.

4.20. Temporary Construction Impacts

Construction of the Proposed Action would have short-term effects and benefits on the surrounding community. Short-term effects associated with construction would include but are not limited to increased noise and dust. Short-term benefits would include increased construction employment. These temporary economic benefits would disappear when the construction is completed.

During construction, the project would impact air quality in the following ways: an increase in GHG emissions by heavy construction equipment, and an increase in dust by construction activities.

There would be an increase in GHG emissions (~625 mT CO₂) during construction of the facility due to the use of heavy construction machinery and an increase in heavy duty trucks used for transportation/delivery of supplies. There would also be a temporary minor increase (less than 1.6%) in traffic related to the increase in construction workers traveling onsite. This additional traffic would generate 82.9 mT CO₂.

Dust and exhaust particulate emissions from heavy equipment operations would also temporarily degrade air quality in the immediate construction zone. The minor increase in air particulates would be minimized by the performance of the work in compliance with requirements of the *Air Pollution Control Act* (Act 245-1972, as amended), and all applicable federal and state regulations.

Best management practices, such as silt fences and a retention pond, would be used for erosion and sedimentation control measures.

In addition, construction activities would result in increased noise levels during construction of the proposed project. This project would require the use of material-handling and earth-moving equipment. The equipment used would emit peak noise levels greater than normal traffic noise levels. These increased noise levels (in the range of 65 to 70 decibels at a distance of 400 feet for each machine) would be temporary and of short duration. To minimize these potential impacts, the contractor would schedule activities during normal daylight working hours. These specifications require contractors to use equipment which is adapted to operate with appropriate noise muffling devices resulting in the least possible noise.

Construction would be performed in compliance with all applicable federal and state laws regarding safety, health, and sanitation. All reasonable precautions would be implemented to protect the life and health of project employees, safety of the public, and the integrity of property adjacent to the work area.

5.0 Distribution List

The following is a list of persons and agencies who received a copy of this environmental assessment.

State and Local Offices

The Honorable Earl Ray Tomblin
Acting Governor of West Virginia
1900 Kanawha Boulevard, East
Charleston, WV 25305

Ms. Kelly A. Bragg
Program Coordinator
West Virginia Division of Energy
1900 Kanawha Boulevard
Building #6, Room 645
Charleston, WV 25305

Mayor William Byrne
City Hall
City of Morgantown
389 Spruce Street
Morgantown, WV 26505

Ms. Mary Schmezer
Reference Librarian
Morgantown Public Library
373 Spruce Street
Morgantown, WV 26505

Ms. Susan Pierce
Director and Deputy State Historic Preservation Officer
West Virginia Division of Culture and History
Historic Preservation
The Culture Center
Capitol Complex
1900 Kanawha Boulevard East
Charleston WV 25305-0300

Secretary Paul A. Mattox, Jr., P.E.
West Virginia Department of Transportation
Building 5
1900 Kanawha Boulevard E
Charleston, WV 25305

Federal Offices

Mr. David Boron
NEPA Compliance Officer
EE-3C/Forrestal Building
Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Ms. Deborah Carter
Project Leader
U.S. Fish and Wildlife Service
West Virginia Field Office
Ecological Services
694 Beverly Pike
Elkins, WV 26241

Mr. Kevin Haggerty
U.S. Department of Energy
Freedom of Information Act Reading Room
1000 Independence Avenue, SW, 1G-033
Washington, DC 20585

Ms. Barbara Rudnick
NEPA Program Team Leader
U.S. Environmental Protection Agency, Region III
1650 Arch Street, 3EA30
Philadelphia, PA 19103

Appendix A: Agency Correspondence/List of Agencies, Organizations, and Persons Consulted

List of Agencies, Organizations, and Persons Consulted

Deborah Carter
Project Leader
U.S. Fish and Wildlife Service
West Virginia Field Office
Ecological Services

Susan Pierce
Director and Deputy State Historic Preservation Officer
West Virginia Division of Culture and History
Historic Preservation

Gary Graley
Traffic Analysis
West Virginia Department of Transportation

Appendix B: References

References

Department of the Army; Corps of Engineers: Morgantown Energy Technology Center. *Site Assessment*. December 11, 1992.

Department of the Army; Corps of Engineers: Morgantown Energy Technology Center. *Sitewide Soil Surveillance Project*. March 1995.

Department of the Army; Corps of Engineers: National Energy Technology Laboratory. *Phase 1 Environmental Site Assessment (ESA)*. May 2002.

National Energy Technology Laboratory. *Groundwater Protection Plan for Morgantown and Pittsburgh*. NP001.0804.0271.0001.1.00.6, April 2010.

Reinke, Donald. *A Brief Community and Economic Profile – Morgantown and Monongalia County, West Virginia*. 2010.

United States Department of Energy: Morgantown Energy Technology Center. *Environmental Baseline Characterization*. June 1993.

United States Department of Energy: Morgantown Energy Technology Center. *Environmental Survey Preliminary Report*. June 1988.

United States Department of Housing and Urban Development, Office of Community Planning and Development – Environmental Planning Division, Tribal Directory Assessment Tool v1.0, <http://www.hud.gov/offices/cpd/environment/tribal/index.cfm> Site visited November 11, 2010.

United States Department of Labor, Bureau of Labor Statistics. <http://www.bls.gov/ro3/wvlaus.htm>. Site visited November 3, 2010.

United States Department of Transportation, Research and Innovative Technology Administration, National Transportation Library, Bureau of Transportation Statistics. Noise and Vibration During Construction. (<http://ntl.bts.gov/data/rail05/ch12.pdf>). Site visited November 9, 2010.

United States Environmental Protection Agency: Greenhouse Gas Inventory and Tracking in Portfolio Manager, August 31, 2009. (http://www.energystar.gov/ia/business/evaluate_performance/Emissions_Doc.pdf). Site visited November 9, 2010.

United States Environmental Protection Agency: National Ambient Air Quality Standards (NAAQS). 2010.

www.city-data.com. Site visited October 30, 2010.

Appendix C: Consultation Letters



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



September 29, 2010

Deborah Carter
Project Leader
U.S. Fish and Wildlife Service
West Virginia Field Office
Ecological Services
694 Beverly Pike
Elkins, WV 26241

Subject: Request for consultation under NEPA on proposed federal project in Monongalia County

Dear Ms. Carter,

The U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) is proposing to construct and operate a Performance Verification Laboratory (PVL) facility to be located on the Morgantown NETL site in West Virginia.

NETL will design, construct, and make operational a DOE PVL facility for verifying the energy performance of selected appliances and equipment to facilitate improved enforcement of DOE energy conservation standards and DOE/Environmental Protection Agency (EPA) Energy Star® programs. The PVL facility will build upon the capabilities of the NETL's existing Appliance Technology Evaluation Center (ATEC). A description of the proposed project and graphics showing its location are enclosed.

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

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA) in accordance with requirements of the National Environmental Policy Act (NEPA) of 1966 to analyze, document, and disseminate information on the potential environmental consequences of the project. If your initial review concludes that no endangered or threatened species (or their habitat) are present in the project area, and that neither protected species nor their habitat would be affected by the proposed action, a written acknowledgement of that conclusion would be appreciated. The information that you provide will be considered in preparing a draft EA, which will be provided to you for review upon availability.

Should you require additional information, or have any questions or comments about this project, please contact the DOE's National Energy Technology Laboratory as soon as possible at the following:

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
cliff.whyte@netl.doe.gov@netl.doe.gov • Voice (304) 285-2098 • Fax (304) 285-4403 • www.netl.doe.gov

Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
P. O. Box 880, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-2098
Email: Cliff.Whyte@netl.doe.gov

Thank you for your assistance.

Sincerely,

A handwritten signature in black ink that reads "Cliff D. Whyte". The signature is written in a cursive, flowing style.

Cliff Whyte
NEPA Compliance Officer

Enclosure



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



September 29, 2010

Susan Pierce
Director and Deputy State Historic Preservation Officer
West Virginia Division of Culture and History
Historic Preservation
The Culture Center
Capitol Complex
1900 Kanawha Boulevard East
Charleston WV 25305-0300

Subject: Request for consultation under NEPA on proposed federal project in Monongalia County

Dear Ms. Pierce,

The U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) is proposing to construct and operate a Performance Verification Laboratory (PVL) facility to be located on the Morgantown NETL site in West Virginia.

NETL will design, construct, and make operational a DOE PVL facility for verifying the energy performance of selected appliances and equipment to facilitate improved enforcement of DOE energy conservation standards and DOE/Environmental Protection Agency (EPA) Energy Star® programs. The PVL facility will build upon the capabilities of the NETL's existing Appliance Technology Evaluation Center (ATEC) and add large-scale performance verification testing that will complement DOE's increasing focus on emerging equipment and appliance standards activities. A description of the proposed project and graphics showing its location are enclosed.

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

Based on the scope of the proposed project, DOE plans to prepare an Environmental Assessment (EA) in accordance with requirements of NEPA to analyze, document, and disseminate information on the potential environmental consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. If your initial review concludes that no historic sites are present or affected by the proposed action, a written acknowledgement of that conclusion would be appreciated.

Should you require additional information, or have any questions or comments about this project, please contact the DOE's National Energy Technology Laboratory as soon as possible at the following:

Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
P. O. Box 880, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-2098
Email: Cliff.Whyte@netl.doe.gov

Thank you for your assistance.

Sincerely,

A handwritten signature in black ink that reads "Cliff D. Whyte". The signature is written in a cursive style with a long horizontal stroke at the end.

Cliff Whyte
NEPA Compliance Officer

Enclosure



The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300

Randall Reid-Smith, Commissioner

Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562

EEO/AA Employer

October 28, 2010

Mr. Cliff Whyte
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880, MS B07
Morgantown, WV 26507-0880

RE: Construction and operation of a Performance Verification Laboratory
Facility on the Morgantown National Energy Technology Laboratory site
FR#: 11-5-MG

Dear Mr. Whyte:

We have reviewed the above referenced project to determine potential effects to cultural resources. As required by Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

According to submitted information, the National Energy Technology Laboratory is proposing to construct a new 35,000 square foot building that will house eight testing facilities. It is our understanding that there is an existing metal Quonset hut (Building B20) and a paved parking area within the current project area. It is also our understanding that the proposed construction activities will not extend into the existing tree line that borders the site.

Architectural Resources:

We are unable to complete our review based on the information provided. It is our understanding that you are asking for our conclusions regarding any potential historic sites within the project's area of potential effect. Our office is a consulting party in Section 106 process and the law mandates that it is the lead agency's responsibility, in this case, the U.S. Department of Energy, to first, define the area of potential effect of the proposed project, second, to assess whether or not any buildings, sites or structures found to be within the area of potential effect may be eligible for or included in the National Register of Historic Places and third, to assess any direct or indirect effects to historic resources. Your current submission does not adequately comply with these requirements and it is our suggestion that a qualified professional, as defined by 36 CFR 61, be retained to assist in the completion of the Section 106 review. We will provide our

October 28, 2010
Mr. Whyte
Fr#: 11-5-MG
Page 2

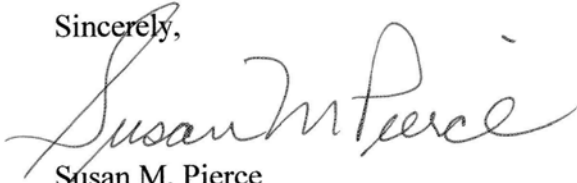
a consulting party to the Section 106 process, upon receipt of the requested information.

Archaeological Resources:

A search of office site files located no known archaeological sites within the proposed project area. Our files also indicate that prior archaeological assessment and Phase I archaeological survey have occurred within the proposed project area. Submitted information indicates that portions of the project area has been impacted by prior construction activities and/or is situated on sloping terrain, which in our opinion is unlikely to have any intact archaeological deposits present. In our opinion, there are no archaeological sites located within the proposed project area that are eligible for or listed in the National Register of Historic Places. If, however, intact cultural materials are encountered during construction, all activity within the discovery area shall cease and our office shall be contacted immediately.

We appreciate the opportunity to be of service. *If you have any questions regarding our comments or the Section 106 process, please contact Carolyn Kender, Archaeologist, or Aubrey Von Lindern, Historian in the Historic Preservation Office at (304) 558-0240.*

Sincerely,



Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/CMK/ACV

From: Adrian Larry
To: aubrey.c.vonlindern@wv.gov; carolyn.m.kender@wv.gov; susan.m.pierce@wv...
CC: Sholtis, Johnna
Date: 11/15/2010 3:30 PM
Subject: DOE/NETL requested information
Attachments: PVL SHPO Letter Mon Co 9-29-10.pdf; PVL SHPO Response.pdf; NETL_MGN2008HistoricalEvaluation.pdf; PVL SHPO Letter Mon Co 9-29-10.pdf; PVL SHPO Response.pdf; NETL_MGN2008HistoricalEvaluation.pdf; PVL SHPO Letter Mon Co 9-29-10.pdf; PVL SHPO Response.pdf; NETL_MGN2008HistoricalEvaluation.pdf

The US Department of Energy National Energy Technology Laboratory has recently been in touch with your office concerning a Performance Verification Testing Laboratory being constructed on DOE/NETL site located in Morgantown, WV. For the construction of the laboratory it will be necessary to demolish an existing building (Building 20)

In your office's response it was noted that NETL had not provided all of the necessary information for the Architectural Resources review process (National Register of Historic Places). I have included more information regarding the building in question.

The project area is approx 1/2 acre. It is located at the NW end of the site. The building sits alone atop a hill comprised mainly of bedrock and a thin layer of (previously disturbed) soil.

The building being demolished is Building 20. This is a metal, quonset hut structure built on a slab foundation and is approx 1200 sq. ft. It is currently being used as office space, a workshop, and for storage. The structure was built in 1964 by the US Navy and used for communications purposes. In 1995 the building was then turned over the US DOE/NETL. This building is not eligible for the National Register of Historic Places.

I have enclosed DOE/NETL consultation letter (maps and pictures included) and the WVSHPO response. I have also included a letter from WVSHPO dated May 9, 2008. This letter is a WVSHPO response to NETL concerning buildings located on NETL site being eligible for inclusion in the National Register of Historic Places. As you can see from the response letter no buildings were considered eligible.

If more information is needed please contact me via email or phone 304-265-2013.

Thank you for your time,

Adrian Larry

Adrian Larry
NISC, an IBM Company
Contractor to DOE
National Energy Technology Laboratory (NETL)
Morgantown, WV 26505
304-285-2013 (NETL)
304-413-0560 (IBM)
Email Adrian.Larry@TM.NETL.DOE.GOV
or alarry@us.ibm.com



WEST VIRGINIA
DIVISION OF
CULTURE & HISTORY

The Cultural Center
1900 Kanawha Blvd., E.
Charleston, WV
25305-0300

Phone 304.558.0220
Fax 304.558.2779
TDD 304.558.3562
www.wvculture.org
EEO/AA Employer

May 9, 2008

Mr. Richard A. Griffith
IPMS
Mailstop B-1/107
US Dept. of Energy
3610 Collins Ferry Rd.
PO Box 880
Morgantown, WV 26507

Re: Property validation
FR#: 08-677-MG

Dear Mr. Griffith:

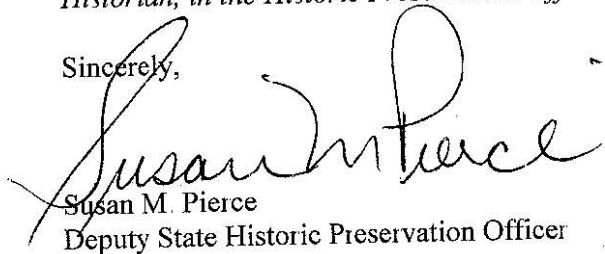
We have reviewed the public notice submitted for the above referenced project to determine its effects to cultural resources. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

It is our understanding that you are requesting an assessment of National Register eligibility for the buildings located at 3610 Collins Ferry Road, owned and operated by the United States Department of Energy.

It is our opinion that the buildings depicted on the CD-R are not eligible for inclusion in the National Register of Historic Places. However, as a courtesy, we request the completion and return of the West Virginia Historic Property Inventory (HPI) Forms for the buildings depicted in B-1 .jpg, B-25 .jpg, B-35 .jpg, and B-38 .jpg. The HPI form can be filled out by going to the following website:
<http://www.wvculture.org/shpo/wvhpif.doc>. Directions for the form can be accessed at the following site: <http://www.wvculture.org/shpo/hpifinst.pdf>. No further consultation is required.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Shirley Stewart Burns, Historian, in the Historic Preservation Office at (304) 558-0240*

Sincerely,


Susan M. Pierce

Deputy State Historic Preservation Officer

SMP/SSB



November 23, 2010

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300

Randall Reid-Smith, Commissioner

Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562

EEO/AA Employer

Mr. Adrian Larry
NISC, an IBM Company
National Energy Technology Lab
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507

Re: National Energy Technology Lab
New Laboratory Facility
FR#: 11-5-MO-1

Dear Mr. Larry:

We have reviewed the above referenced project to determine its effects to cultural resources. As required by Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

After a review of the information submitted and a search of our survey files, it is our opinion that the proposed project will have no adverse effect on buildings, sites or structures, eligible for or included in the National Register of Historic Places. No further consultation regarding architecture is necessary; however, we do ask that you contact our office if your project should change.

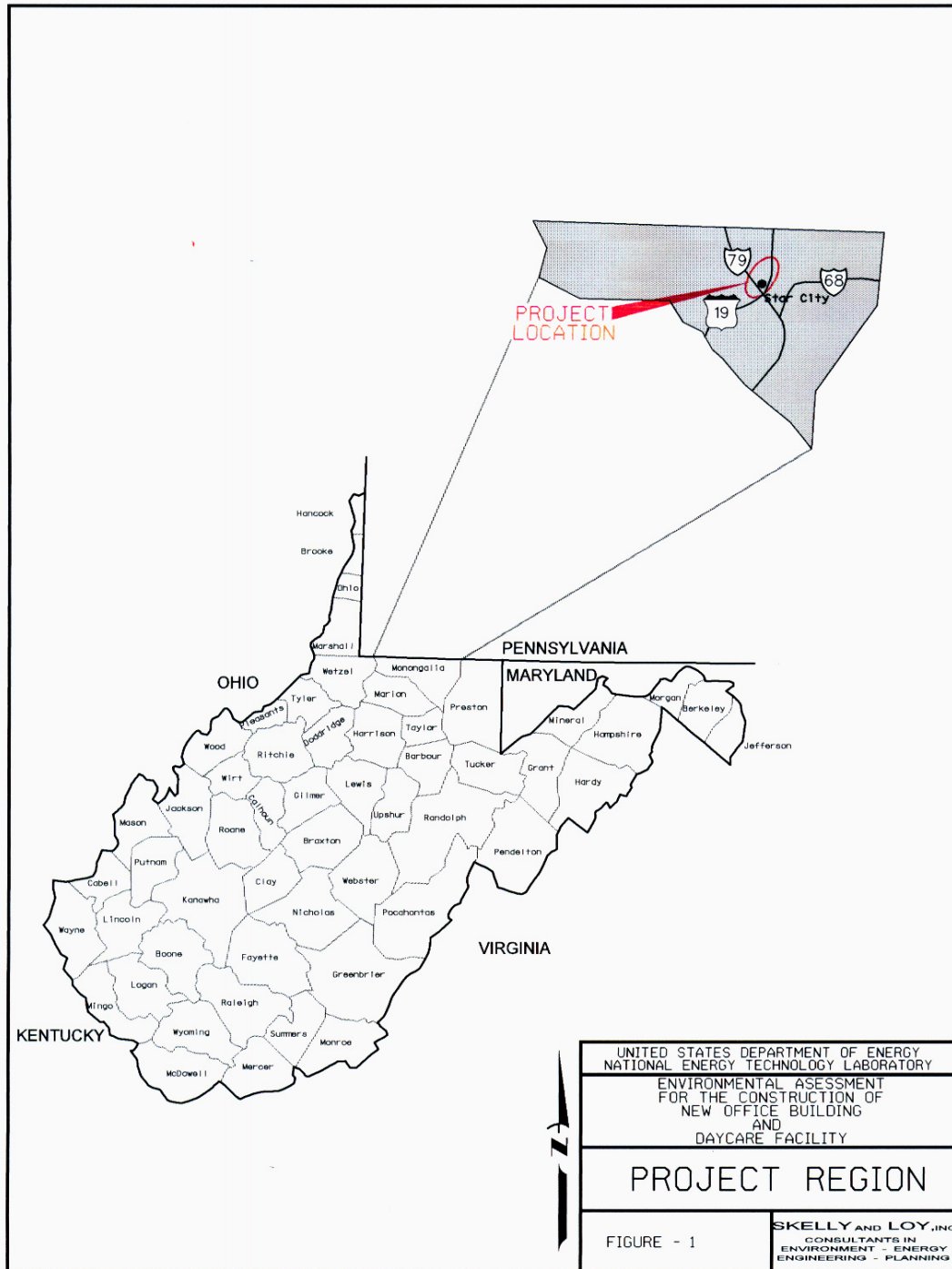
We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Aubrey Von Lindern, Historian, at (304) 558-0240.*

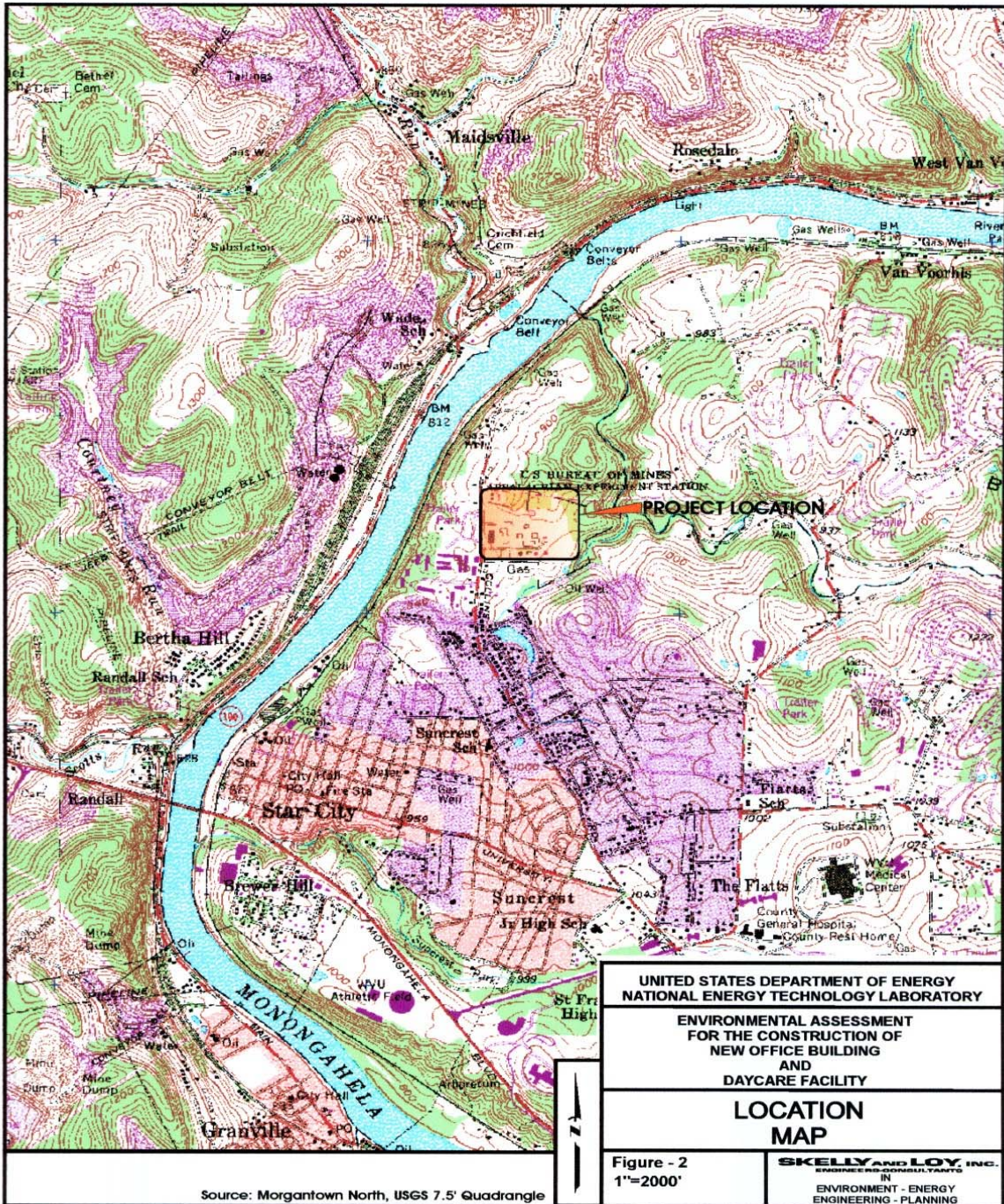
Sincerely,

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/ACV

Appendix D: Site Location Maps, Drawings, and Photos



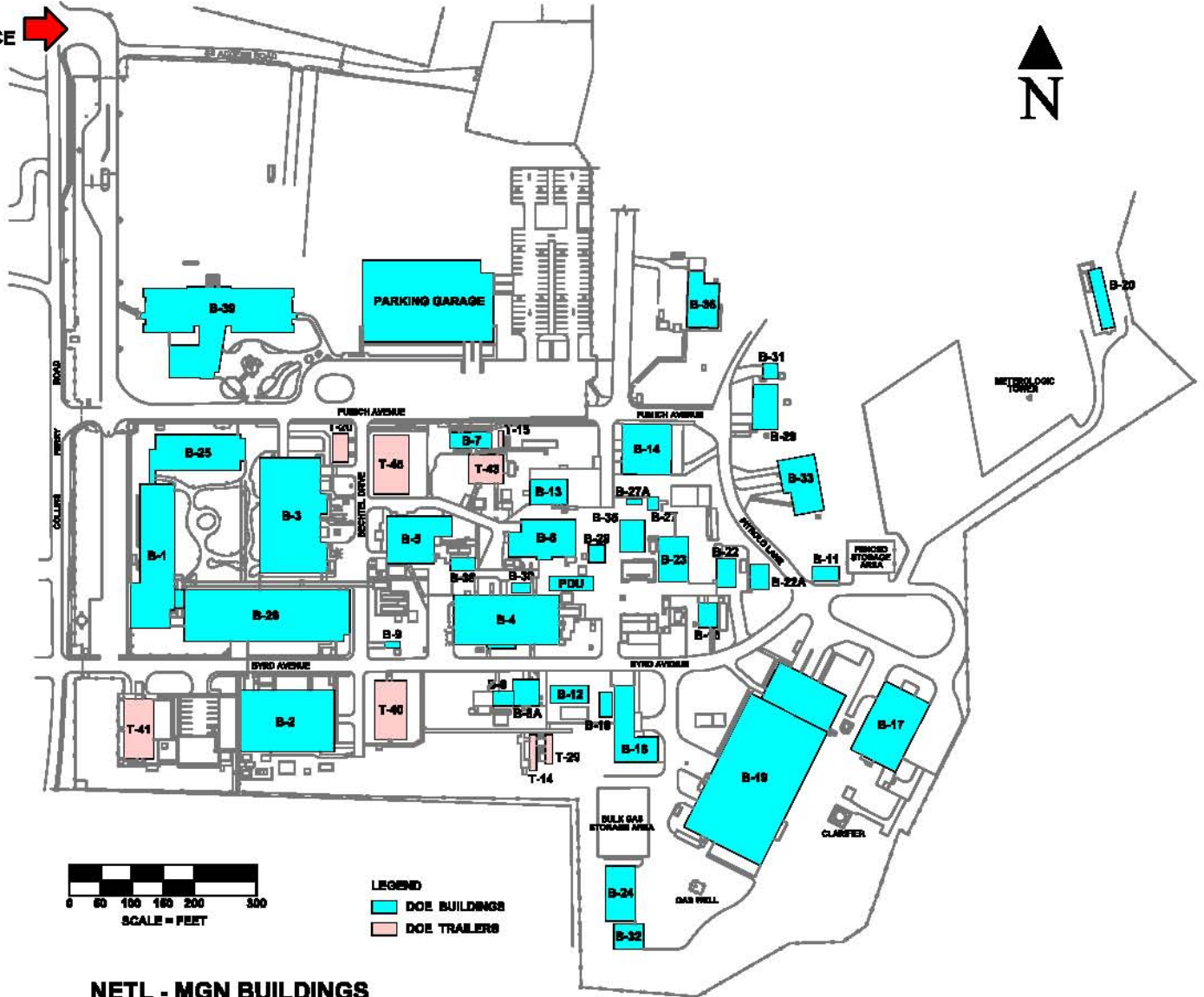


FACILITY MAP

Morgantown



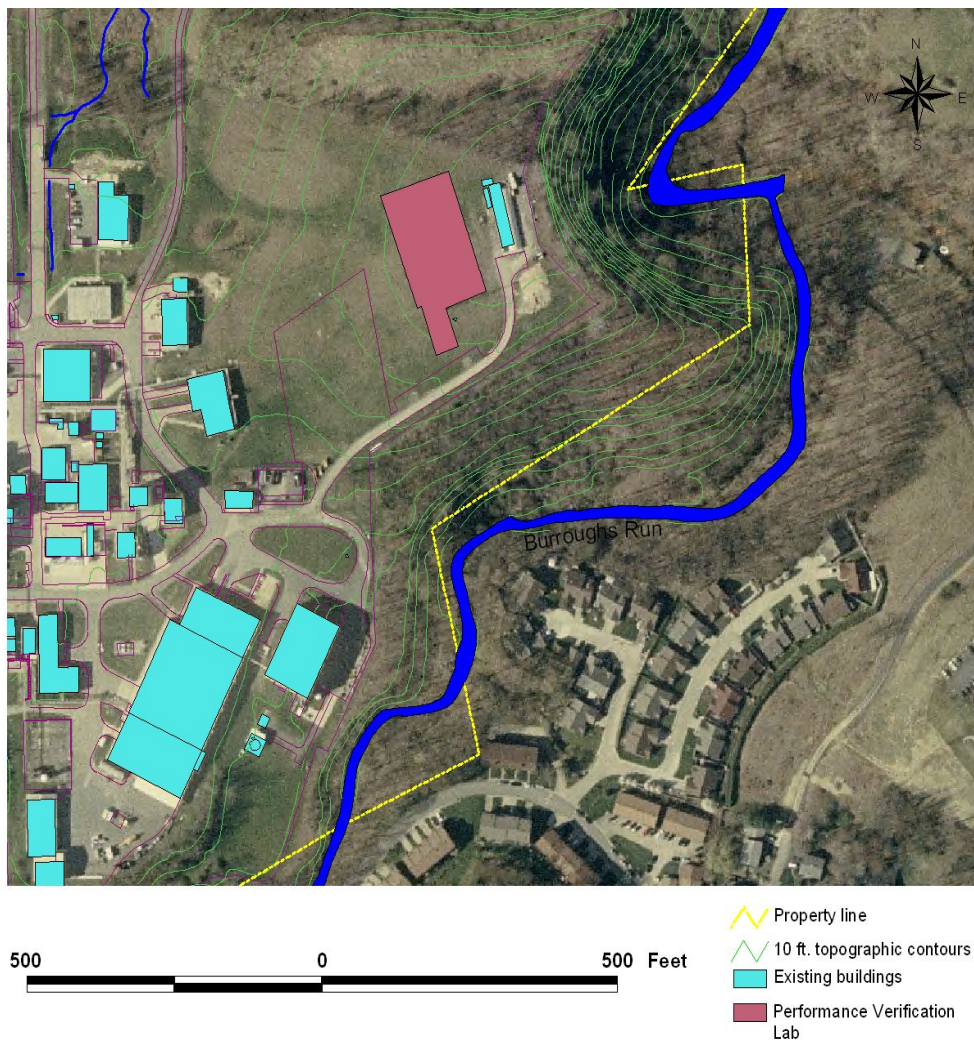
MAIN ENTRANCE



NETL - MGN BUILDINGS

- | | | | |
|-------|----------------------------------|-------|--|
| B-1 | ADMINISTRATIVE OFFICES | B-26 | ADMINISTRATIVE OFFICES / CAFETERIA / CONFERENCE CENTER |
| B-2 | MULTI-PURPOSE FACILITY | B-27 | R&D PROJECTS FACILITY |
| B-3 | MULTI-PURPOSE FACILITY | B-27A | R&D PROJECT FACILITY CONTROL ROOM |
| B-4 | R&D PROJECTS & OFFICES | B-28 | GPDU CONTROL ROOM |
| B-5 | BOILER / COMPRESSOR FACILITY | B-29 | FACILITY OFFICE MAINTENANCE AREA |
| B-6 | R&D PROJECTS FACILITY | B-30 | OFFICE & GAS SAMPLING |
| B-7 | SECURITY / EEOC | B-31 | PACE-TEC STORAGE BUILDING |
| B-8 | PUMP HOUSE | B-32 | NON-HAZARDOUS WASTE HOLDING FACILITY |
| B-8A | COMPRESSOR FACILITY | B-33 | NON-RADIOACTIVE SOLID HAZARDOUS WASTE FACILITY |
| B-9 | OHU AMBULANCE GARAGE | B-35 | R&D PROJECTS FACILITY |
| B-11 | STORAGE | B-36 | MOTOR POOL GARAGE / OFFICES |
| B-12 | R&D PROJECTS FACILITY | B-38 | REVERSE OSMOSIS FACILITY |
| B-13 | R&D PROJECTS FACILITY | B-39 | ADMINISTRATIVE OFFICES |
| B-14 | R&D PROJECTS FACILITY | T-14 | SMOKING TRAILER |
| B-15 | R&D PROJECTS COMPUTER SUPPORT | T-15 | OFFICES |
| B-16 | IH LABORATORY | T-20 | SMOKING TRAILER |
| B-17 | MULTI-PURPOSE LABORATORY | T-29 | MGCR CONTROL ROOM |
| B-18 | R&D PROJECTS FACILITY | T-40 | OFFICES |
| B-19 | WAREHOUSE / SHIPPING / SHOP | T-41 | CHILD CARE FACILITY |
| B-20 | FACILITY OFFICES | T-43 | OFFICES |
| B-22 | R&D PROJECTS FACILITY | T-45 | OFFICES |
| B-22A | R&D PROJECTS STORAGE FACILITY | | |
| B-23 | R&D PROJECTS STORAGE FACILITY | | |
| B-24 | EXCESS PROPERTY STORAGE BUILDING | | |
| B-25 | RESEARCH LABS | | |

Map Showing Nearest Residences to Proposed PVL Facility



Building B-20 – Quonset Hut





National Energy Technology Laboratory
 Performance Verification Laboratory
 Site Plan

BLRT HALL
 1 SEPT. 2010



National Energy Technology Laboratory
Performance Verification Laboratory
Isometric View

BURT HILL
1 SEPT. 2010

Appendix E: Traffic Data

WEST VIRGINIA DIVISION OF HIGHWAYS
 TRAFFIC ANALYSIS SECTION

Weekly Summary for the Week of September/16/2008

Data File:	D0916022.PRN		No. of Lane(s):					
Station:	531202067000		Direction:		North & South			
Identification:	531202067000		County:		MONONGALIA			
City/Town:	COVERAGE		Location:		CO 57 AT CORPORATION LINE			
Time:	Sun	Mon	16 Tue	17 Wed	18 Thu	Fri	Sat	Daily Avg
01:00				16	15			16
02:00				11	9			10
03:00				4	2			3
04:00				4	8			6
05:00				6	2			4
06:00				16	23			20
07:00				106	124			115
08:00				191	204			198
09:00				135	130			133
10:00				73	73			73
11:00				91	83			87
12:00				125	132			129
13:00				137	145			141
14:00				98	115			107
15:00				100	103			102
16:00				166	187			177
17:00				163	168			166
18:00			132	148				140
19:00			72	84				78
20:00			60	62				61
21:00			43	36				40
22:00			37	41				39
23:00			36	27				32
24:00			27	21				24
Totals:			407	1,861	1,523			1,896

Date				(WF)			
September 16	:	1,930	X	0.97	=	1,872	
September 17	:	1,861	X	0.96	=	1,787	
						3,659	
		3,659 / 2	=	1,829	X 0.97 (SF)	=	1,686 (ADT)

TRAFFIC ANALYSIS - 4-WAY TURNING MOVEMENT	
COUNTY =====>	<i>MONONGALIA</i>
LOCATION =====>	<i>UNIVERSITY AVE. & COLLINS FERRY RD.</i>
DATE =====>	<i>12/9/2008</i>
DAY OF WEEK =====>	<i>MONDAY</i>
PERIOD OF COUNT ==>	<i>7-10-11-1-2-6</i>
ROUTE 1(NORTH) =====>	<i>(N)COLLINS FERRY RD.</i>
ROUTE 2 (EAST) =====>	<i>(E)UNIVERSITY AVE.</i>
ROUTE 3 (SOUTH) =====>	<i>(S)BALDWIN ST.</i>
ROUTE 4 (WEST) =====>	<i>(W)UNIVERSITY AVE.</i>
24 HR. ATR COUNT =====>	<i>11087</i>
9 HR. ATR COUNT =====>	<i>7069</i>
MAN. ATR FACTOR ==>	
ATR FACTOR =====>	<i>1.57</i>
MONTHLY FACTOR =====>	<i>1.1</i>
DAILY FACTOR =====>	<i>0.97</i>
EXPANSION FACTOR ==>	<i>1.67</i>
FILE NAME =====>	<i>MGL012-08</i>
AFTER ENTERING THE ABOVE INFORMATION, CLICK ON THE "LEG1" TAB BELOW.	

LAST UPDATE 9/20/1999

TRAFFIC ANALYSIS - 4-WAY TURNING MOVEMENT

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 1): **(N)COLLINS FERRY I** TO (RTE 2): **(E)UNIVERSITY AVE.**

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER / COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS		
	C / PU		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES
																		0	0
7-8	117							1										2	120
8-9	124			2				2										1	129
9-10	77							1											78
																			0
11-12	140																		140
12-1	154		5	1						1								1	162
																			0
2-3	119		4															1	124
3-4	116																	1	117
4-5	135		4	1						1									141
5-6	131																		131
TOTAL	1113		13	4	0	0	0	4	0	2	0	0	0	0	0	0	0	6	1142

2298

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 1): **(N)COLLINS FERRY I** TO (RTE 3): **(S)BALDWIN ST.**

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER / COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS			
	C / PU		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES	
																			0	0
7-8	4																		0	4
8-9	12																		0	12
9-10	6																		0	6
																			0	0
11-12	7																		0	7
12-1	8																		0	8
																			0	0
2-3	10																		0	10
3-4	15																		0	15
4-5	10																		0	10
5-6	18																		0	18
TOTAL	90		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90

180

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 1): **(N)COLLINS FERRY I** TO (RTE 4): **(W)UNIVERSITY AVE.**

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER / COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS			
	C / PU		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES	
																			0	0
7-8	12																		0	12
8-9	6																		0	6
9-10	13																		0	13
																			0	0
11-12	18																		0	18
12-1	18									1									1	19
																			0	0
2-3	22																		0	22
3-4	31																		0	31
4-5	30																		0	30
5-6	24																		0	24
TOTAL	174		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	175

353

TOTAL VEHICLES FROM: (N)COLLINS FERRY RD.

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER / COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS			
	C / PU		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES	
																			0	0
7-8	133		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	136
8-9	142		0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	147
9-10	96		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	97
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-12	165		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165
12-1	180		5	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	189
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-3	151		4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	156
3-4	162		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	163
4-5	175		4	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	181
5-6	173		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173
TOTAL	1377		13	4	0	0	0	4	0	3	0	0	0	0	0	0	0	6	1	1407

2831

TRAFFIC ANALYSIS - 4-WAY TURNING MOVEMENT

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 2): **(E)UNIVERSITY AVE.** TO (RTE 3): **(S)BALDWIN ST.**

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS	
	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX			BUSES
7-8	4																0	0
8-9	5																0	5
9-10	5																0	5
11-12	6																0	6
12-1	11																0	11
2-3	11																0	11
3-4	23																0	23
4-5	13																0	13
5-6	15																0	15
TOTAL	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93

186

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 2): **(E)UNIVERSITY AVE.** TO (RTE 4): **(W)UNIVERSITY AVE.**

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS	
	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX			BUSES
7-8	187	5															0	0
8-9	103						1										5	192
9-10	140	5														2	7	147
11-12	193	5															0	0
12-1	221	3															5	198
2-3	200	1	1					2								2	6	206
3-4	227	3														1	4	231
4-5	280	4															4	284
5-6	252	2														1	3	255
TOTAL	1803	28	1	0	0	0	3	0	0	0	0	0	0	0	0	6	38	1841

3686

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 2): **(E)UNIVERSITY AVE.** TO (RTE 1): **(N)COLLINS FERRY RD.**

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS	
	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX			BUSES
7-8	101	2															0	0
8-9	83	5															2	103
9-10	92	4															4	96
11-12	134	3															0	0
12-1	156	4							2								6	162
2-3	125	2					1		1								0	0
3-4	124	1															4	129
4-5	190	2															1	125
5-6	193	1															2	192
5-6	193	1															1	194
TOTAL	1198	24	0	0	0	0	1	0	3	0	0	0	0	0	0	0	28	1226

2462

TOTAL VEHICLES FROM: (E)UNIVERSITY AVE.

HOUR	AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS	
	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX			BUSES
7-8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-9	292	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	299
9-10	191	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	197
11-12	237	9	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11	248
12-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-3	333	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	341
3-4	388	7	0	0	0	0	0	0	2	0	0	0	0	0	0	0	9	397
4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-6	336	3	1	0	0	0	3	0	1	0	0	0	0	0	0	2	10	346
5-6	374	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	379
5-6	483	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	489
5-6	460	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	464
TOTAL	3094	52	1	0	0	0	4	0	3	0	0	0	0	0	0	6	66	3160

6334

TRAFFIC ANALYSIS - 4-WAY TURNING MOVEMENT

COUNTY : MONONGALIA LOCATION: UNIVERSITY AVE. & COLLINS FERRY RD.
 FROM (RTE 3): (S)BALDWIN ST. TO (RTE 4): (W)UNIVERSITY AVE.

AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO		TOTAL	TOTAL			
HOURL	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX	BUSES	TKS	VEHS
																	0	0
7-8	2																0	2
8-9	2																0	2
9-10																	0	0
																	0	0
11-12	2																0	2
12-1	2																0	2
																	0	0
2-3	1																0	1
3-4																1	1	1
4-5																	0	0
5-6																	0	0
TOTAL	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	10

20

COUNTY : MONONGALIA LOCATION: UNIVERSITY AVE. & COLLINS FERRY RD.
 FROM (RTE 3): (S)BALDWIN ST. TO (RTE 1): (N)COLLINS FERRY RD.

AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO		TOTAL	TOTAL			
HOURL	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX	BUSES	TKS	VEHS
																	0	0
7-8	2															1	1	3
8-9	2																0	2
9-10																	0	0
																	0	0
11-12																	0	0
12-1																	0	0
																	0	0
2-3	2																0	2
3-4	1															4	4	5
4-5																	0	0
5-6	1																0	1
TOTAL	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	13

26

COUNTY : MONONGALIA LOCATION: UNIVERSITY AVE. & COLLINS FERRY RD.
 FROM (RTE 3): (S)BALDWIN ST. TO (RTE 2): (E)UNIVERSITY AVE.

AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO		TOTAL	TOTAL			
HOURL	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX	BUSES	TKS	VEHS
																	0	0
7-8	14																0	14
8-9	7																0	7
9-10	5																0	5
																	0	0
11-12	17																0	17
12-1	21																0	21
																	0	0
2-3	16																0	16
3-4	24															4	4	28
4-5	8																0	8
5-6	20																0	20
TOTAL	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	136

272

TOTAL VEHICLES FROM: (S)BALDWIN ST.

AUTOS		SINGLE UNIT TRUCKS				TRACTOR TRAILER COMBINATIONS						MULTI TR-COMBO		TOTAL	TOTAL			
HOURL	C / PU	2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX	6-AX	BUSES	TKS	VEHS
																	0	0
7-8	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	19
8-9	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
9-10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-12	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
12-1	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-3	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
3-4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	34
4-5	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5-6	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
TOTAL	149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	159

318

TRAFFIC ANALYSIS - 4-WAY TURNING MOVEMENT

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 4): **(W)UNIVERSITY AVE.** TO (RTE 1): **(N)COLLINS FERRY RD.**

HOUR	AUTOS C / PU	SINGLE UNIT TRUCKS					TRACTOR TRAILER COMBINATIONS					MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS		
		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES
7-8	83	1															1	84
8-9	99	2															2	101
9-10	84	1															1	85
11-12	82	4														1	5	87
12-1	128	3															3	131
2-3	140	1														1	2	142
3-4	94																0	94
4-5	109	4														1	5	114
5-6	137	1															1	138
TOTAL	956	17	0	0	0	0	0	0	0	0	0	0	0	0	0	3	20	976

1952

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 4): **(W)UNIVERSITY AVE.** TO (RTE 2): **(E)UNIVERSITY AVE.**

HOUR	AUTOS C / PU	SINGLE UNIT TRUCKS					TRACTOR TRAILER COMBINATIONS					MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS			
		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES	
7-8	235	9							1								1	11	246
8-9	252	3															1	4	256
9-10	183	8																8	191
11-12	278	2	1					1										4	282
12-1	274	6	1															7	281
2-3	241	4						2									1	7	248
3-4	236	2															2	4	240
4-5	220																	0	220
5-6	213	3																3	216
TOTAL	2132	37	2	0	0	0	3	0	1	0	0	0	0	0	0	5	48	2180	

4368

COUNTY : **MONONGALIA** LOCATION: **UNIVERSITY AVE. & COLLINS FERRY RD.**
 FROM (RTE 4): **(W)UNIVERSITY AVE.** TO (RTE 3): **(S)BALDWIN ST.**

HOUR	AUTOS C / PU	SINGLE UNIT TRUCKS					TRACTOR TRAILER COMBINATIONS					MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS			
		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES	
7-8	7																	0	7
8-9	9																	0	9
9-10	5																	0	5
11-12	10																	0	10
12-1	4																	0	4
2-3	6																	0	6
3-4	5																	0	5
4-5	2																	0	2
5-6	12																	0	12
TOTAL	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60

120

TOTAL VEHICLES FROM: (W)UNIVERSITY AVE.

HOUR	AUTOS C / PU	SINGLE UNIT TRUCKS					TRACTOR TRAILER COMBINATIONS					MULTI TR-COMBO			TOTAL TKS	TOTAL VEHS		
		2 AX	3 AX	4 AX	3-AX C	4-AX C	3-AX	4-AX	5-AX	3-AX C	4-AX C	5-AX C	6-AX C	5-AX			6-AX	BUSES
7-8	325	10	0	0	0	0	0	0	1	0	0	0	0	0	0	1	12	337
8-9	360	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	366
9-10	272	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	281
11-12	370	6	1	0	0	0	1	0	0	0	0	0	0	0	0	1	9	379
12-1	406	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10	416
2-3	387	5	0	0	0	0	2	0	0	0	0	0	0	0	0	2	9	396
3-4	335	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	339
4-5	331	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	336
5-6	362	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	366
TOTAL	3148	54	2	0	0	0	3	0	1	0	0	0	0	0	8	68	3216	

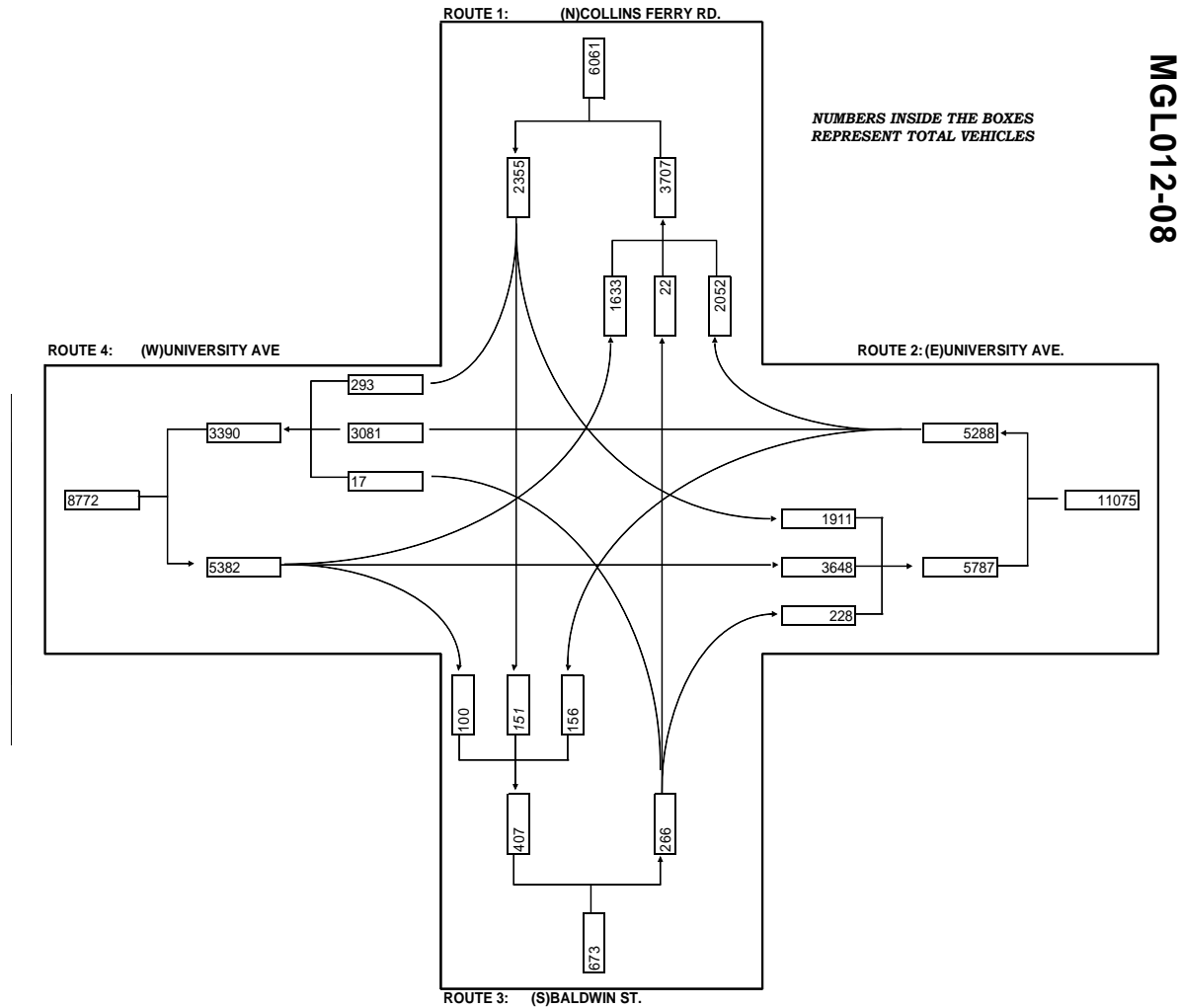
6440

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION - TRAFFIC ANALYSIS

DATE : 12/09/08
 DAY : MONDAY
 COUNTY : MONONGALIA

TYPE: 24 HOUR COUNT
 PERIOD: 7-10-11-1-2-6

DESCRIPTION: UNIVERSITY AVE. & COLLINS FERRY RD.



(24 HOUR COUNT / 9 HOUR COUNT) * MONTHLY FACTOR * DAILY FACTOR = EXPANSION FACTOR

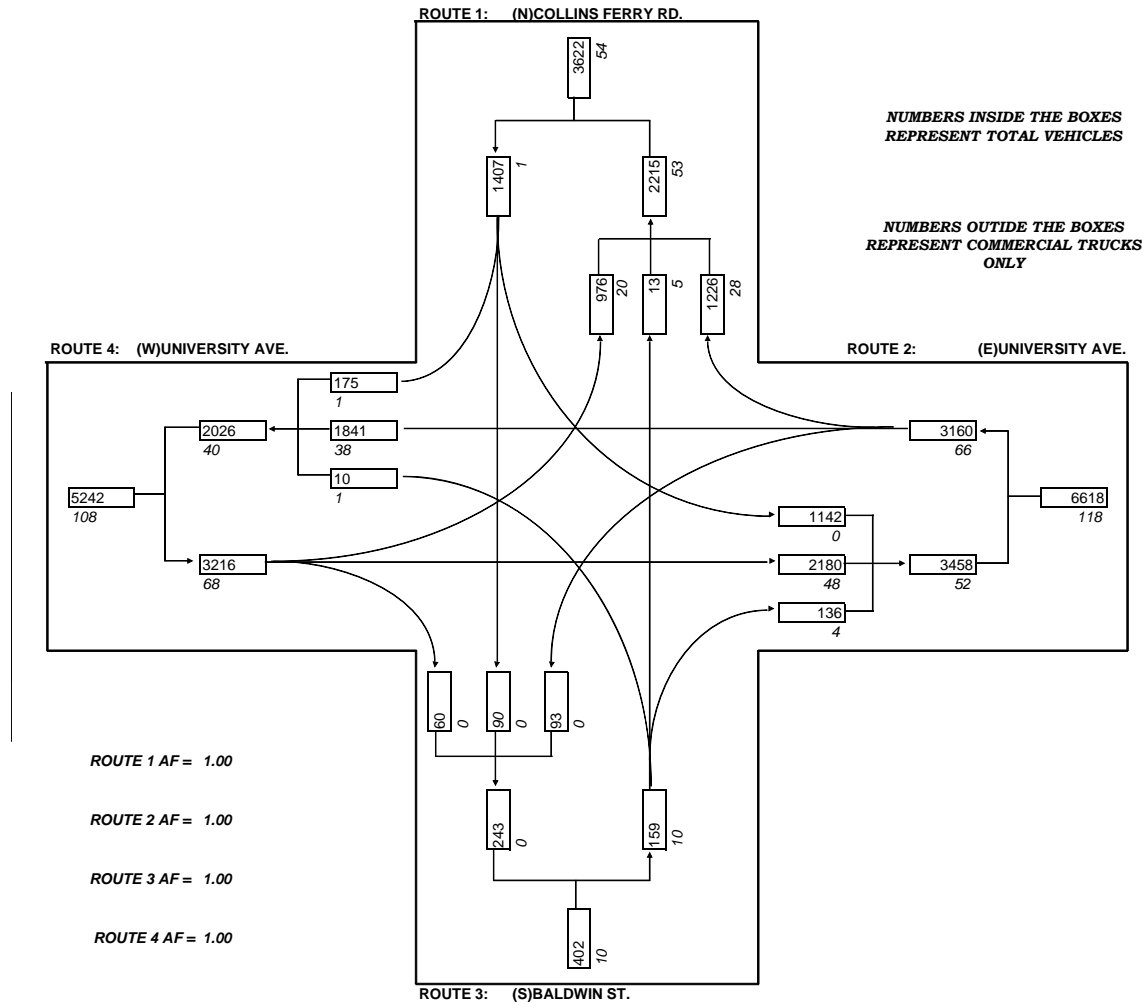
24 HOUR ATR COUNT =	11087	9 HOUR ATR COUNT =	7069	ATR FACTOR =	1.57
MONTHLY FACTOR =	1.10	DAILY FACTOR =	0.97	EXPANSION FACTOR =	1.67

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION - TRAFFIC ANALYSIS

DATE : 12/09/08
 DAY : MONDAY
 COUNTY : MONONGALIA

TYPE: MANUAL COUNT
 PERIOD: 7-10-11-1-2-6

DESCRIPTION: UNIVERSITY AVE. & COLLINS FERRY RD.



(24 HOUR COUNT / 9 HOUR COUNT) * MONTHLY FACTOR * DAILY FACTOR = EXPANSION FACTOR

24 HOUR COUNT =	11087	9 HOUR COUNT =	7069	ADT FACTOR =	1.57
MONTHLY FACTOR =	1.1	DAILY FACTOR =	0.97	EXPANSION FACTOR =	1.67

Appendix F: Greenhouse Gas Calculations

Calculation of Greenhouse Gas Emissions - PVL Facility Operation and Construction

Natural Gas:

Estimated Peak Demand is 4.8 MBtu/h. The GHG Emission factor is 53.20 kg CO₂e/MBtu. *
4.8 MBtu/hr X 53.20 kg/MBtu X 8 h/day X 5 days/wk X 52 wk/yr X .65 (65% of peak) = 345,247 kg
CO₂e/yr
345,247 kg CO₂e/yr X 2.2 lb/kg X 1Ton/ 2000 lbs = 379.8 Tons of CO₂e/ yr
345,247kg/yr X 1mT/1000kg = 345.2 mT CO₂e/yr

Electricity:

Estimated Peak Demand is 925.4 kWh. The GHG Emission factor is 205.54 kg CO₂e/MBtu.**
925.4 kWh X 3412 Btu/kWh = 3.158 MBtu/h;
3.158 MBtu/h X 205.54 kg CO₂e/MBtu= 649.1 kg CO₂e/hr
649.1 kg CO₂e/h X 8 h/day X 5 days/wk X 52 wk/yr X .65 (65% of peak)= 877,583 kg CO₂e/yr
877,583 kg CO₂e/yr X 1mT/1000kg = 877.6 mT CO₂e/yr
877,583 kg CO₂e/yr X 2.2 lb/kg X 1Ton/2000 lb = 965.3 Tons CO₂e/yr

Transportation:

14 Employees X 1 gal gasoline/day (20 mile round trip) = 14 gal gasoline/day
14 gal/day X 20 lb CO₂/gal gasoline X 1kg/2.2 lb = 127.3 kg CO₂ /day
127.3 kg/day X 5 days/wk X 49 wk/yr = 31189 kg CO₂ /yr X 1mT/1000kg = 31.2 mT CO₂e/yr
2.2 lb/kg X 1T/2000 lb X 31189 kg/yr = 34.3 Tons CO₂ /yr
30 Deliveries/wk X 10 gal diesel X 22.2 lb CO₂/gal diesel X 1kg/2.2lb X 52 wk/yr = 157418 kg CO₂/yr
157418 kg CO₂/yr X 1mT/1000kg = 157.4 mT CO₂/yr
157418 kg CO₂/yr X 2.2 lb/kg X 1T/2000 lb = 173.2 T CO₂/yr

Construction:

Earthwork, foundation, structure: 100 working days, 4 pc of equipment, 200 gal diesel/day
Interior of structure: 280 working days, 3 pc of equipment, 150 gal diesel/day
(100 days X 200 gal/day) + (280 days X 150 gal/day) = 62000 gal diesel/project
1 gal diesel = 22.2 lbs CO₂
62000 gal diesel X 22.2 lb CO₂ /gal diesel X 1kg/2.2 lb = 625636 kg CO₂/project
625636 kg CO₂/project X 1mT/1000kg = 625.6 mT CO₂/project
62000 gal diesel X 22.2 lb CO₂/gal diesel X 1 T/2000 lb = 688.2 T CO₂/project
Transportation: 24 employees X 1 gal gasoline/day X 20 lb CO₂/gal = 480 lb CO₂ /day
480 lb CO₂/day X 380 workdays X 1 kg/2.2 lb = 82909 kg CO₂/project
82909 kg CO₂/project X 1mT/1000kg = 82.9 mT/project
480 lb CO₂/day X 380 workdays X 1 Ton/2000 lb = 91.2 T CO₂/project

*From Table 1 Direct GHG Emission Factors, GHG Inventory and Tracking in Portfolio Manager. Aug. 31, 2008. http://www.energystar.gov/ia/business/evaluate_performance/Emissions_Supporting_Doc.pdf

**From Table 3 Indirect GHG Emissions Factors-Purchased Electricity, GHG Inventory and Tracking in Portfolio Manager. Aug. 31, 2008.

http://www.energystar.gov/ia/business/evaluate_performance/Emissions_Supporting_Doc.pdf

Addendum: Public Comments

From: "Craig E. Stevenson" <craig.stevenson@jamesco.com>
To: "cliff.whyte@netl.doe.gov" <cliff.whyte@netl.doe.gov>
Date: 12/22/2010 3:50 PM
Subject: DOE NETL - Test Facility at Morgantown WV
Attachments: Dept of Energy article.jpg

Mr. Whyte,

Please advise if the Test Facility project described in the article, as attached hereto, has been assigned a Solicitation Number. Any information you can offer on the project would be greatly appreciated.

Thank you and happy holiday.

Sincerely,
Craig E. Stevenson
Vice President of Operations
James Construction
243 East Main Street
Carnegie, PA 15106
Telephone (412) 278-3720
Facsimile (412) 278-3721
<http://www.jamesco.com><<http://www.jamesco.com/>>

From: Cliff Whyte
To: Stevenson, Craig E.
CC: Kanosky, Joseph
Date: 12/23/2010 11:38 AM
Subject: Re: DOE NETL - Test Facility at Morgantown WV

Mr. Stevenson,

Thank you for your inquiry. Since this was a design/build contract, there will be no solicitation. The contract was awarded as a non competitive contract to an Alaskan 8a contractor.

If I can be of any further assistance, please contact me at your convenience.

Thank you and have a happy holiday,
Cliff

Cliff Whyte, General Engineer
U.S. Department of Energy
National Energy Technology Laboratory

304-285-2098 Office
cliff.whyte@netl.doe.gov

>>> "Craig E. Stevenson" <craig.stevenson@jamesco.com> 12/22/2010 3:53 PM >>>

Mr. Whyte,

Please advise if the Test Facility project described in the article, as attached hereto, has been assigned a Solicitation Number. Any information you can offer on the project would be greatly appreciated.

Thank you and happy holiday.

Sincerely,
Craig E. Stevenson
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Carnegie, PA 15106
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From: "Michael Jenkins" <mjenkins@wvcarpenter.com>
To: <cliff.whyte@netl.doe.gov>
Date: 12/28/2010 9:29 AM
Subject: Test Facility Morgantown, WV

Cliff,

I am Mike Jenkins Sr. Organizer with Carpenters Union in Morgantown and I am interested in see if you would be able to give me the contact information on the general contractor you all have chosen to build your new testing facility. If you have any questions please feel feel to give me a call. cell 304-494-5353

Thank You,

Mike

--

Michael S. Jenkins
Sr. Organizer
M.A.R.C.C.-WV District

609 Broadway
Bridgeport, WV 26330
p.304-842-5431
f.304-842-5125
cell 304-494-5353

From: Cliff Whyte
To: Jenkins, Michael
CC: Kanosky, Joseph
Date: 1/3/2011 1:17 PM
Subject: Re: Test Facility Morgantown, WV

Mr. Jenkins:

Please find the following contact information for FSS, the design/build contractor:

Joseph T. LoCasale, P.E.
Vice President -Government Services, Goldbelt Inc.
& President, Facility Support Services, LLC
610-613-5460

If you need additional information, please do not hesitate to contact me.

Thank you,
Cliff

Cliff Whyte, General Engineer
U.S. Department of Energy
National Energy Technology Laboratory

304-285-2098 Office
cliff.whyte@netl.doe.gov

>>> "Michael Jenkins" <mjenkins@wvcarpenter.com> 12/28/2010 9:29 AM >>>

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Thank You,
Mike

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Michael S. Jenkins
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cell 304-494-5353

From: "Gregg Stawarz" <greg@marchwestin.com>
To: <cliff.whyte@netl.doe.gov>
Date: 1/3/2011 9:38 AM
Subject: NETL test facility

Mr. Whyte,

I was writing in reference to the article in the Dominion Post on 12.21.2010 about your proposed new construction and I was wondering when this project would be coming out for bid and if there would be any special conditions with said bid? Those being, is this a "set-aside" project, are you considering a PLA, anything like that. Please reply back at your convenience.

I appreciate your time.

Thanks.

GREGG

Gregg Stawarz

March-Westin Company, Inc.

360 Frontier Street

Morgantown, WV 26505

p 304.599.4880 x248

f 304.599.7509

From: Cliff Whyte
To: Stawarz, Gregg
CC: Kanosky, Joseph
Date: 1/3/2011 11:34 AM
Subject: Re: PVL Draft EA Comments

Mr. Stawarz:

Thank you for your inquiry. Since this was a design/build contract, there will be no solicitation. The contract was awarded as a non competitive contract to an Alaskan 8a contractor.

If I can be of any further assistance, please contact me at your convenience.

Thank you,
Cliff

Cliff Whyte, General Engineer
U.S. Department of Energy
National Energy Technology Laboratory

304-285-2098 Office
cliff.whyte@netl.doe.gov

>>> "Gregg Stawarz" <greg@marchwestin.com> 1/3/2011 9:39 AM >>>

Mr. Whyte,

I was writing in reference to the article in the Dominion Post on 12.21.2010 about your proposed new construction and I was wondering when this project would be coming out for bid and if there would be any special conditions with said bid? Those being, is this a "set-aside" project, are you considering a PLA, anything like that. Please reply back at your convenience.

I appreciate your time.
Thanks.

GREGG
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