

R D BAILEY LAKE WEST VIRGINIA

MASTER PLAN UPDATE PROGRAMMATIC ENVIRONMENTAL ASSESSMENT



August 2011 Draft



**US Army Corps
of Engineers**
Huntington District
Huntington, West Virginia

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List of Acronyms

BLM	Bureau of Land Management
BMP	Best Management Practice
CFS/cfs	Cubic Feet per Second
DM	Design Memorandum
DMR	Division of Mining and Reclamation
DWWM	Division of Water and Waste Management
EA	Environmental Assessment
EM	Engineering Manual
EO	Executive Order
EP	Engineering Pamphlet
ER	Engineering Regulation
ERGO	Environmental Review Guide for Operations
GIS	Geographic Information System
HPMP	Historic Properties Management Plan
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NRRS	National Recreation Reservation Service
NWI	National Wetlands Inventory
MGD	Million Gallons per Day
MOU	Memorandum of Understanding
MP and MPU	Master Plan and Master Plan Update
NAAQS	National Ambient Air Quality Standards
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
OMP	Operational Management Plan
PEA	Programmatic Environmental Assessment
PL	Public Law
RMSPSD	Ravencliff-McGraws-Saulsville Public Service District

RUO	Resource Use Objective
RV	Recreational Vehicle
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SMCRA	Surface Mining Control Reclamation Act
TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
U. S. C.	United States Code
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WMA	Wildlife Management Area
WV	West Virginia
WVDEP	West Virginia Department of Environmental Protection
WVDNR	West Virginia Division of Natural Resources
WVGES	West Virginia Geological and Economic Survey

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1.0 INTRODUCTION

1.1 Scope of the Programmatic Environmental Assessment

The United States Army Corps of Engineers (USACE) periodically updates master plans for its projects to support each site's authorized purposes. The previous Master Plan Update for R.D. Bailey Lake, prepared in 1972, has been updated in 2011 to include recommendations for improvements to support the authorized purposes of flood risk management, recreation, water quality, and wildlife management. This Programmatic Environmental Assessment (PEA) is intended to provide a broad evaluation of the potential environmental consequences of the program of improvements proposed by the USACE (the Proposed Action), as well as the consequences of not proceeding with this program (the No Action Alternative). The PEA has been prepared in coordination with federal and state of West Virginia resource agencies to satisfy the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] §§ 4321- 4327) and other applicable regulatory requirements. The PEA will also assist USACE decision-makers in implementing the recommended measures identified in the 2011 Master Plan Update. In the future, after design details and specifications are developed for specific actions additional supplementary environmental documentation will be prepared as needed. Depending on the nature of expected impacts resulting from individual or a combination of improvements, this documentation may take the form of measure-specific environmental assessments or categorical exclusions, as determined necessary for compliance with federal and state laws and regulations.

1.2 Project Background

R.D. Bailey Lake (hereafter referred to as the “Project”) is located in Mingo and Wyoming Counties, West Virginia, on the Guyandotte River which is a tributary to the Ohio River in the heart of the southern West Virginia coal mining region. The majority of the Project lies within Wyoming County. Figure 1-1 shows the location of the Project as well as major highways in the Project area. The Project consists of 19,000 acres owned by the federal government and either managed by the USACE or leased or licensed and managed by another entity (with USACE oversight) as an outgrant. An outgrant is a written interest granted to an individual, organization, or agency allowing use of government property. The instrument conveying the interest typically contains conditions and restrictions on the use of the property. The managing entities of an outgrant must comply with all applicable restrictions and requirements of the Master Plan Update and USACE regulations. The primary recreation and outgrant areas, acreages, existing amenities, and managing entities are listed in Table 1-1 and shown in Figure 1-2.

Table 1-1: Federal Recreation and Outgrant Areas

Name of Area	Acreage	Managed By	Type(s) of Facility
Below Dam Recreational Area	5	USACE	Fishing, picnicking
Visitor Center and Dam Overlook	1	USACE	Visitor Center, picnicking, hiking, scenic overlook, playground
Guyandotte Point	5	USACE	Boat launch, courtesy dock, picnicking, playground
Big Branch Day Use Area	13	USACE	Picnicking, playground, fishing
Long Branch Overlook	1	USACE	Scenic overlook
Guyandotte Campground (includes Smith Bend, Locust Branch, Reedy Creek, Sugar, and Primitive Camping Areas)	46	USACE	Camping, picnicking, fishing, playground, launch ramp
Wyoming County Board of Education Area	7	Wyoming County Board of Education	Ball field (Little League) and parking
Wildlife Management Area (WMA) (includes R.D. Bailey Shooting Range and garden leases)	17,188	West Virginia Division of Natural Resources (WVDNR)	Hunting, fishing, wildlife conservation, trails, shooting range, and garden leases

The original R.D. Bailey Lake Preliminary Master Plan was approved in March 1968 as DM 9A (USACE, 1968). The Master Plan was subsequently updated in 1972. This PEA addresses the broad program-level impacts of the 2011 Master Plan Update to the previous 1972 Master Plan Update. The 2011 Master Plan Update is presented in Appendix A of this PEA.

1.3 Project Authorization

The Project was originally authorized by the Flood Control Act of 1962 (H.R. 13273, Public Law [PL] 87-874, 87th Congress, Second Session) for flood risk management, general recreation, and water quality control purposes (USACE, 1992). By PL 90-46 dated 4 July 1967, the 90th Congress changed the Project name from Justice Reservoir to R.D. Bailey Lake.

1.4 Project Purpose and Need

The purpose of the 2011 Master Plan Update is to provide guidance for the preservation, conservation, restoration, maintenance, management, and development of Project lands, waters, and associated resources. The Master Plan Update is intended to aid responsible stewardship of Project resources for the benefit of present and future generations.

The Master Plan Update evaluates the present use and future potential of Project resources and recommends strategies for the future management and development of Project resources. Because

the Master Plan Update is conceptual in nature, it identifies conceptual types and levels of activities, not designs and exact locations.

The Master Plan Update is based on responses to regional and local needs, resource capabilities and suitability, and expressed public interests that are consistent with authorized Project purposes and pertinent legislation and regulations. The Master Plan Update provides a USACE District-level policy consistent with national objectives and other state and regional goals and programs. Future actions by the USACE and by the agencies and individuals granted leases or licenses for use of Project lands must be consistent with the Master Plan Update. The Master Plan Update is distinct from the project-level implementation emphasis of the OMP. Policies in the Master Plan Update are guidelines that will be implemented through provisions of the OMP, specific design memoranda, and other planning mechanisms.

The broad intent of the Master Plan Update is to:

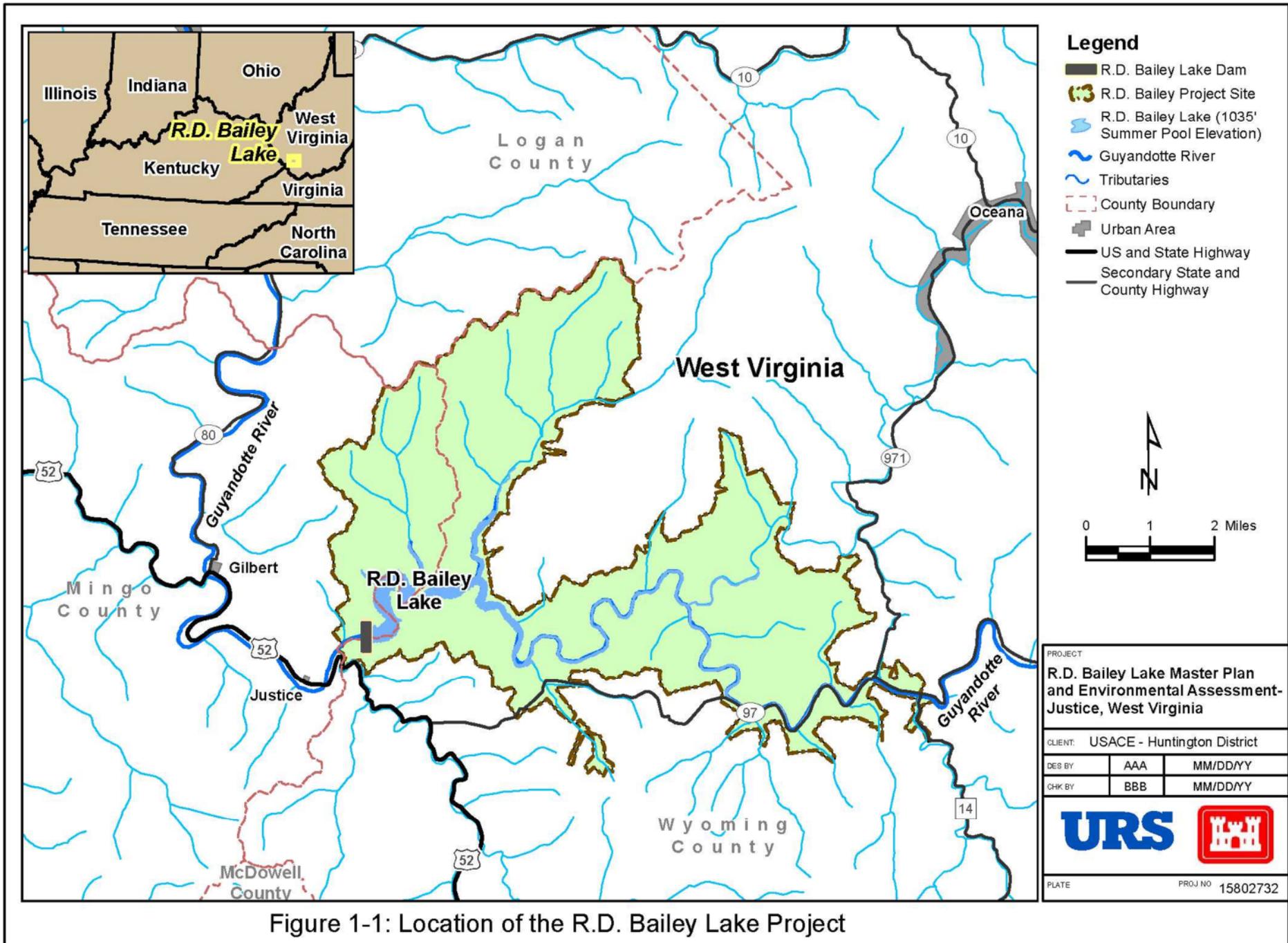
- Determine appropriate uses and levels of development for Project resources;
- Provide a framework within which the OMP and other planning mechanisms can be developed and implemented; and
- Establish a basis on which outgrants and recreational development proposals can be evaluated.

The purpose of this PEA is to evaluate, on a broad level, the impacts of the recommended resource plan measures proposed in the 2011 R.D. Bailey Lake Master Plan Update. Master plans are periodically updated to maintain focus on three primary components: regional and ecosystem needs, resource capabilities and sustainability, and public interests and desires. An updated Master Plan is essential in fostering efficient and cost-effective projects for natural resources, cultural resource management, and recreational programs by ensuring that current environmental mandates and considerations are taken into account as part of project planning (USACE, 1996a).

Additionally, the Master Plan Update describes specific recommendations (e.g., boat slips, picnic tables, and informational signage) to accommodate increased or new demands that may affect project resources in the future.

The 2011 Master Plan Update addresses the resources and issues in the Project area, consisting of, but not limited to: fish, wildlife, vegetation, cultural, aesthetic, interpretive, recreational, mineral, commercial, outgrant lands, easements, and water. Through the implementation of an updated Master Plan, the USACE can provide responsible and timely protection, conservation, and enhancement of Project resources. The PEA is needed to assist the USACE in their decision-making process regarding implementation of the Master Plan Update measures and to comply with NEPA and other applicable laws and regulations.

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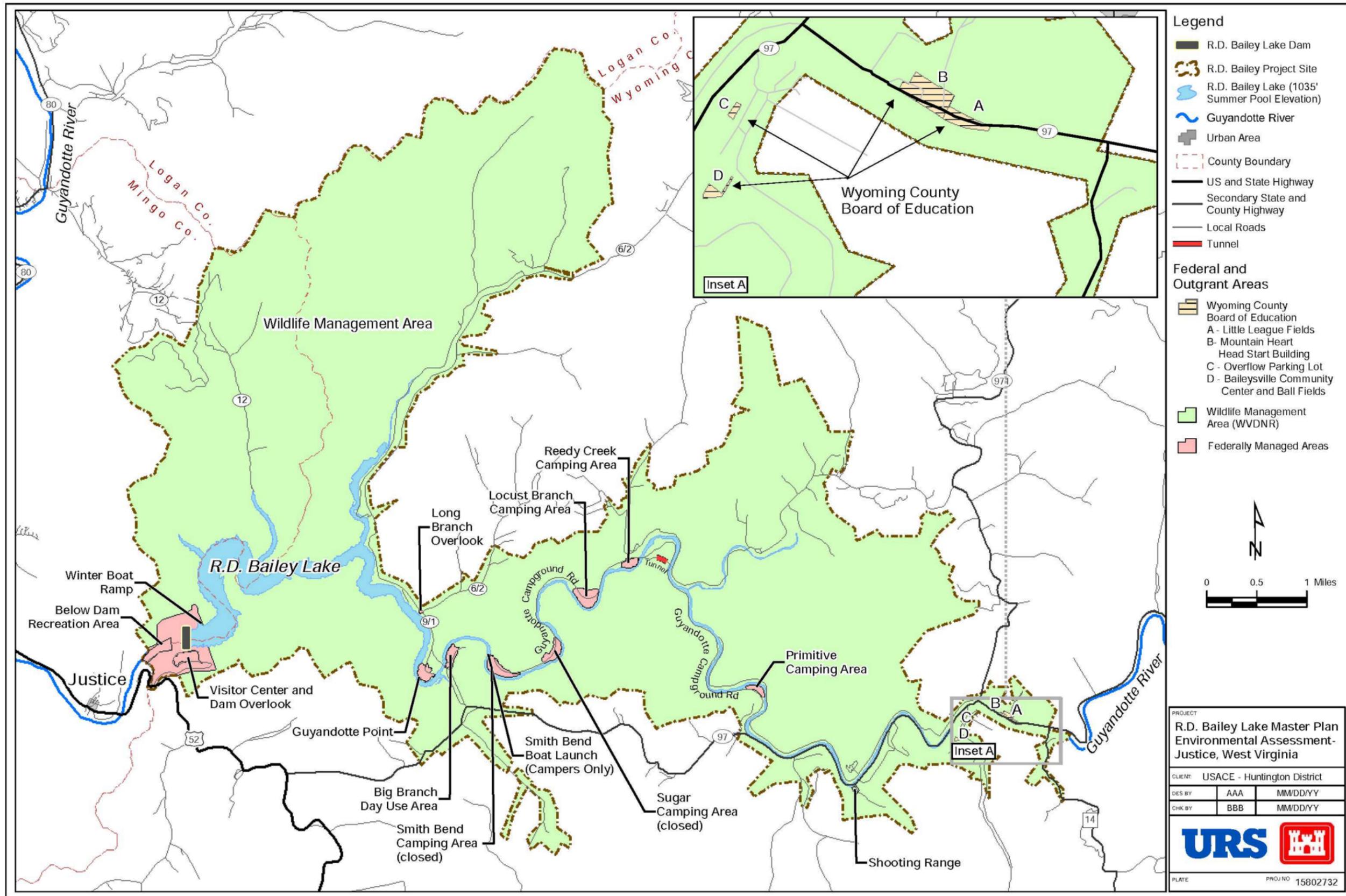


Figure 1-2: Recreational Areas and Outgrants in the R.D Bailey Lake Project

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2.0 NO ACTION AND PROPOSED ACTION ALTERNATIVES

2.1 No Action Alternative

Under the No Action Alternative, no new actions outlined in the 2011 Master Plan Update would be undertaken. Operation and management of R.D. Bailey Lake would continue as described in the 1972 Master Plan Update. Existing facility maintenance, wildlife and vegetation enhancement, erosion control, flood risk management, and management of recreation areas and activities would continue. In addition, new facilities and/or activities not identified in the 1972 Master Plan Update may be constructed or implemented on a case-by-case basis.

2.2 Proposed Action

The Proposed Action consists of the measures and actions that are listed in Table 2-1. The Proposed Action would address the projected demands that are identified in the Master Plan Update. More information about the elements of the Proposed Action is provided in Section 7.0 of the R.D. Bailey Lake Project Master Plan Update, included as Appendix A to this PEA. Full implementation of the Master Plan Update would allow updated management and development of the R.D. Bailey Lake Project lands and waters, thus reflecting environmental stewardship and conservation best management practices while meeting current and future public, social, and economic demands.

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Table 2-1 Resource Plan for the R.D. Bailey Lake Project

Project Area	Land Classification	Management Agency	Issue	Recommendations
Visitor Center and Dam Overlook	Project Operations	USACE	The Visitor Center provides interpretive and educational opportunities to enhance awareness of Project features, purposes, and benefits, but the information is outdated. (RUO 4)	<ul style="list-style-type: none"> Update visitor displays in the Visitor Center. Displays should include Project description, site ecology, area history, cultural resources, and other management objectives. Provide interpretive signage along approximately the first 1,000 feet of the Salt River Trail as an outdoor extension of the interpretive displays in the Visitor Center. Information regarding native vegetation, wildlife, and geologic features could be highlighted.
			Group picnic shelters are popular at the Project and the group picnic shelter at the Visitor Center is the only one not subject to inundation from fluctuations in lake pool level. It does not have electrical service. (RUO 6)	<ul style="list-style-type: none"> Provide electrical service to the group picnic shelter located across the parking lot from the Visitor Center.
Below Dam Recreation Area	Project Operations	USACE	The USACE cannot implement recreational improvements within the Below Dam Area without a non-federal sponsor. This area is one of the only recreational areas within the Project that does not flood due to fluctuations in the lake pool level during flood events. (RUO 6)	<ul style="list-style-type: none"> Actively seek a non-federal cost-sharing partner to develop and manage this area. Potential sponsors may include the state, local municipalities, and public-private partnerships with industry.
			The Below Dam Area has high intensity use during trout stocking in the Spring and Fall and is a popular fishing area. (ROU 1). Group picnic shelters are in demand at the Project; however, no group picnic shelters exist in the Below Dam Area. This is one of the few recreation areas that is not subject to flooding from fluctuations in lake levels. This area is also in relative close proximity to population centers compared to other day use recreation areas. (RUO6)	<ul style="list-style-type: none"> Develop recreation-related facilities, such as a group picnic shelter, associated parking, and playground in the Below Dam Area. The group picnic shelter should have electrical service, a grill, trash receptacles, and be available for reservations.
Winter Boat Ramp Area	Project Operations	USACE	<p>The marina at Guyandotte Point was closed in 2008. The closure has left an unmet demand for boat slips, fuel, and concessions at the Project. It has also resulted in a reduction in utilization of the lake for boating and fishing. Night-time fishing was popular and is now very limited due to the closure of the marina.</p> <p>Substantial fluctuations in lake levels, accumulation of debris, sedimentation, and swift currents due to flood events are impediments to marina development at Guyandotte Point and contributed to the closure of the marina. Based upon these issues, sustainability of marina development is limited at Guyandotte Point.</p> <p>The Winter Boat Ramp site is not subject to significant sedimentation issues and rapid current associated with flood events relative to marina development compared to Guyandotte Point. The site is also on a much wider expanse of the lake providing a more desirable location for boating activities. This site provides a more sustainable location for marina development. This area is also in closer proximity to population centers compared to Guyandotte Point. (RUO 1)</p>	<ul style="list-style-type: none"> Seek a non-federal partner or private developer to develop a marina at the Winter Boat Ramp site. Improvements should include approximately 30-35 seasonal boat slips for privately owned boats, 2-3 additional boat slips for transient use, and 2-3 boat slips for rental boats. Supporting marina services should include fuel sales, concessions, and/or a possible restaurant. Develop parking for vehicles and trailers and provide adequate boat ramp capacity with supporting courtesy docks. Utilities including potable water, sanitary sewer service, and electrical service will also need to be provided.
Guyandotte Point	Recreation (Intensive Use)	USACE	<p>The marina at Guyandotte Point was closed in 2008. The closure has left an unmet demand for boat slips, fuel, and concessions at the Project. It has also resulted in a reduction in utilization of the lake for boating and fishing. Night-time fishing was popular and is now very limited due to the closure of the marina.</p> <p>Substantial fluctuations in lake levels, accumulation of debris, sedimentation, and swift currents due to flood events are impediments to marina development at Guyandotte Point and contributed to the closure of the marina. Based upon these issues, sustainability of marina development is limited at this site. (RUO 1)</p>	<ul style="list-style-type: none"> Pursue development of a marina at the Winter Boat Ramp Site. (See Winter Boat Ramp Area) Maintain current facilities at Guyandotte Point in the interim. However, if a new marina is developed at the Winter Boat Ramp Area, the boat ramp should be maintained, but parking could be reduced to approved levels.

Table 2-1 Resource Plan for the R.D. Bailey Lake Project

Project Area	Land Classification	Management Agency	Issue	Recommendations
Big Branch Day Use Area	Recreation (Intensive Use)	USACE	<p>The Big Branch Day Use Area has relatively high use on weekends during the recreation season. The large group picnic shelter is the most popular shelter and is rented basically every weekend. During this time period, the two smaller shelters are also popular, but lack electrical service, which is desirable for group events. (RUO 6)</p>	<ul style="list-style-type: none"> • Develop an additional group picnic shelter. • Provide electrical service to the two smaller group picnic shelters.
			<p>Fishing is one of the most popular activities at the Project. The steep rocky shoreline of the lake significantly limits the opportunities for bank fishing and no specific areas have been designated for accessible shoreline fishing. The area near the entrance to the Big Branch Day Use Area provides a gently sloping site on the lake for accessible shoreline fishing opportunities. (RUO 1)</p>	<ul style="list-style-type: none"> • Develop a universally accessible fishing pier near the entrance to the Big Branch Day Use Area with associated accessible parking.
Guyandotte Campground	Recreation (Intensive Use)	USACE	<p>The Sugar Camp and Smith Bend campgrounds have been closed due to frequent inundation, are overgrown, and in poor condition. Providing sewer and water connections to these two campground areas would require a three mile water line extension and new restrooms.</p> <p>Open campgrounds including Locust Branch and Reedy Creek have had adequate capacity to meet demand for camping however, they do operate near capacity on holiday weekends during the recreation season.</p> <p>The Primitive Camping Area near the campground entrance is not subject to frequent inundation, is closer to potable water service and a more sustainable location for camping use than the Sugar Camp and Smith Bend Campgrounds. (RUO2)</p>	<ul style="list-style-type: none"> • Permanently close Sugar Camp and Smith Bend campgrounds and use the primitive campground for overflow camping.
			<p>There is a national shift toward RV camping versus tent camping, and an associated demand for upgraded facilities to support RV camping. Demographics within the area of influence also indicate an aging population who desire upgraded RV camping facilities. (RUO 2)</p> <p>The RV campsites at Guyandotte Campground currently do not provide water and sanitary sewer connections or internet service, which many RV campers desire.</p> <p>There is no current process in place to reserve campsites in advance at R. D. Bailey Lake campgrounds. The remoteness of the area appears to be a deterrent during peak recreation season without the ability to reserve camping sites. (RUO 2)</p>	<ul style="list-style-type: none"> • Provide water and sanitary sewer connections at individual campsites at Locust Branch Campground and Reedy Creek Campground. • Provide wireless internet service throughout the campground. Wireless internet is an amenity that has been growing in popularity and would be used by a wide variety of visitors. • Implement a process to accept campsite reservations especially for the peak recreation season utilizing the Federal website www.recreation.gov.
Long Branch Overlook	Multiple Resource Management (Low Density Recreation)	USACE	<p>Sightseeing is the most popular activity at the Project. The Long Branch Overlook provides a scenic vista of the lake and Guyandotte Point, but overgrown vegetation partially obstructs the view. (ROU 4)</p>	<ul style="list-style-type: none"> • Establish a vegetative management plan to enhance and maintain the views from this existing overlook. • Provide educational or interpretive signage regarding the lake and surrounding ecosystem for sightseers.

Table 2-1 Resource Plan for the R.D. Bailey Lake Project

Project Area	Land Classification	Management Agency	Issue	Recommendations
Wildlife Management Area	Multiple Resource Management, Wildlife Management General	WVDNR	The Project area has a high percent of forested land, but no timber management program has been in place, limiting diversity of habitat and successional growth areas. (RUO 3)	<ul style="list-style-type: none"> Implement a timber management program to aid in creating diversity of habitat and age classes; potentially including clear cuts, thinning, successional habitats, and wildlife clearings. Also promote regeneration of oak forest.
			The Project includes steep topography and rough terrain making access to some areas of the WMA difficult. Many current access roads are gated due to lack of maintenance and are in poor condition. (RUO 3)	<ul style="list-style-type: none"> Where possible, coordinate development of timber management and gas well access roads to support improved hunting access to remote areas of the WMA and select ridge tops.
			The locations and extent of unique and sensitive ecosystems are not well defined, which hinders the ability to provide effective management. (RUO 3)	<ul style="list-style-type: none"> Conduct a baseline study that identifies the location and size of old growth forest, wetlands, bottomland hardwoods, and hemlock stands throughout the Project and develop a monitoring program. Knowing the amount and range of the habitats would allow losses or gains to be tracked.
			The Project area includes unique habitats that are in regional decline such as old growth forest, wetlands, and bottomland hardwoods, some of which support neo-tropical migratory birds. (RUO 3 and RUO 5)	<ul style="list-style-type: none"> Adapt management activities to conserve and protect unique habitats at the Project.
			Entrance signage and boundary markers for the Wildlife Management Area are in poor condition. (RUO 3)	<ul style="list-style-type: none"> Replace and upgrade entrance signs to the Wildlife Management Area and provide informational kiosks with hunting regulations.
			There is currently no designated area for non-motorized small boat access in the headwaters area on the Guyandotte River within the Wildlife Management Area. (RUO 1)	<ul style="list-style-type: none"> Develop a non-motorized small boat access point in the headwaters area of the Guyandotte River within the Wildlife Management Area. .
Wyoming County Board of Education	Recreation (Intensive Use)	Wyoming County Board of Education	No issues were identified for this outgrant area.	<ul style="list-style-type: none"> Maintain existing facilities at this location.
Project Wide	Not Applicable	Multiple Agencies	Invasive species are present on site and may potentially threaten existing natural ecosystems. (RUO 3)	<ul style="list-style-type: none"> Implement an invasive species plan to prevent the introduction of invasive species and control and monitor invasive species already present at the Project area in a cost effective and environmentally sound manner.
			<p>There are significant gas reserves within the Project area with substantial ongoing production and planned new exploration. The federal government does not own oil and gas mineral rights on a large segment of the Project. Impacts associated with development of new gas well sites and associated access impacts are major concerns.</p> <p>The USACE has not had adequate input on well site location and access road alternatives to be able to define the least damaging alternative and techniques utilized. (RUO 7)</p>	<ul style="list-style-type: none"> Develop guidance from lessons learned and on BMPs specific to R.D. Bailey Lake for oil and gas exploration and production activities. Implement on-site field meetings to review alternatives and strategies to avoid and minimize impacts to resources. Develop desired protocol for communication between the oil and gas/mining concerns, the USACE, and the WVDNR. Investigate and promote the use of new drilling technologies to minimize impacts to sensitive environmental, natural, and recreational resources. Promote utilization of existing access roads or disturbed corridors when possible or reasonable. When new access roads are necessary, promote designs and construction techniques so as to minimize impacts to natural, cultural, and recreational resources, while providing for timber management and wildlife management access.

WVDNR = West Virginia Division of Natural Resources
 USACE = U.S. Army Corps of Engineers

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3.0 ENVIRONMENTAL SETTING

3.1 Physical Environment

3.1.1 Topography

The R.D. Bailey Lake Project is located in the Upper Guyandotte River Basin near the Kanawha Section of the Appalachian Plateau Province. The sedimentary strata are made from the Kanawha and New River Formations, part of the Pottsville Group, which includes sandstone, shale, clay, coal, and limestone. The Appalachian Plateau is known for its abundance of mineable coal and natural gas (USACE, 1974; Kleinschmidt, 2008).

The terrain around R.D. Bailey Lake is rugged. The land is characterized by narrow valleys and steep slopes. Elevations around the lake vary from 1,080 feet to 2,200 feet. About 92 percent of the land in Wyoming County has slopes of 25 percent or greater. Streams have dissected the plateaus in the Project vicinity, resulting in the formation of the rugged topography. Stream banks rise abruptly with gradients of eight percent to vertical and are very rugged. The hills along the river and tributaries also rise abruptly in steep slopes from narrow floodplains. The Guyandotte River in the reservoir area flows on bedrock from the Kanawha and New River Formations, and has an average gradient of 12.2 feet per mile (USACE, 1975).

A large portion of the Project has limited development potential based on criteria in USACE *Engineering Manual 1110-1-400* (2004), which recommends avoiding development in areas with slopes exceeding 15 percent (See Figure 3-1). Areas with slopes less than 15 percent have the highest development potential relative to topography and provide opportunities for higher intensity recreational development. In particular, narrow areas along the Guyandotte River and its tributaries may offer development potential, but seasonal inundation in many of these areas may present constraints. Slopes between 15 percent and 30 percent have more limited project development potential, but can provide interesting and challenging opportunities for hiking, mountain biking, hunting, and wildlife or scenic viewing, as well as other opportunities if properly integrated with site topography. Areas with slopes in excess of 30 percent typically have very limited Project development potential, but do provide wildlife habitat and visual buffers and add scenic quality to the Project. While the topography surrounding R.D. Bailey Lake poses severe limitations for development, it offers significant scenic qualities that enhance many of the recreational experiences of Project visitors.

3.1.2 Geology and Mineral Resources

The Upper Guyandotte River basin is formed from sedimentary strata of the Pennsylvanian period, which were created about 280 to 310 million years ago. The western two-thirds of the state is located in this geological area and consists of flat-lying rock strata (USACE, 1974; Kleinschmidt, 2008).

Weathering of the Kanawha Formation created most of the soils in Logan, Mingo, and Wyoming counties. In small areas, the Guyandotte River and the Tug Fork River have eroded structural highs, exposing the New River Formation. In the central and northwestern parts of these counties, high ridges over low areas are capped by soils weathered from the Allegheny and Conemaugh Formations. The bedrock is made of interbedded sandstone, siltstone, shale, and coal.

The R.D. Bailey Lake Project area is located in a productive coal and natural gas field that contains valuable reserves of these resources. Gas wells are presented on Figure 3-2. Gas well locations and status data were obtained from the USACE and the West Virginia Geological and Economic Survey (WVGES). Based on the USACE obtained database as of May 2010, there were 77 active natural gas wells and one inactive well under license. Additionally, there are three active natural gas wells that are not under license because they were drilled prior to the USACE acquisition of Project land. There are currently no active coal mines within the R.D. Bailey Lake Project area. A portion of an abandoned strip mine site is located on the west side of the Project north of the lake. In 2006, the Guyandotte River Basin, comprised of portions of Logan, Mingo, Raleigh, and Wyoming Counties, was estimated to have more than 10 billion tons of recoverable coal reserves by the West Virginia Office of Miners' Health Safety and Training (Region 1 Planning and Development Council, 2008; WVGS, 2006).

Coal, oil, and gas are leasable minerals governed by the Mineral Leasing Acts of 1920 and 1947. There are significant mineral resources at the Project; however, the federal government does not own all of the mineral rights for the Project lands. Figure 3-2 indicates the mineral ownership on Project lands. In order to lease minerals where the federal government owns all mineral rights on the Project, an expression of interest must be submitted by private interest to the Bureau of Land Management (BLM) and a NEPA evaluation with the USACE, as a cooperating agency, must be performed. Based on the evaluation, the USACE either gives consent to proceed or does not give consent. If the USACE gives consent, all restrictions are incorporated into the lease, which is generally for 10 years.

Where the federal government does not own the mineral rights, the USACE must allow access to minerals. Based on Figure 3-2, there are substantial Project lands for which the federal government does not own all or some of the mineral rights. Many of the recreation areas are located in close proximity to the Project lands for which the federal government does not own the mineral rights. In locations where the federal government does not own all minerals, estate acquisition documents must be reviewed on an individual basis to understand the rights of private mineral ownership and government rights. The Project is also unique in the fact that a MOU exists regarding private mineral ownership rights and government rights. Both documents must be fully reviewed to understand mineral development issues.

3.1.3 Soils

Twenty-five different groupings of soils occur at the Project. Fourteen of these soil groupings occupy less than one percent of the Project area. Due to the limited presence of these groupings, they were not evaluated in detail for development potential and limitations as part of the Master Plan Update preparation. The remaining eleven soil groupings are listed in Table 3-1, which also indicates suitability and limitations of these soil types and slopes for recreational development. Material weathered from the Pennsylvanian-age rock created Berks, Matewan, Highsplint, Guyandotte, and Pineville soils. Surface mining coal created Fiveblock soils from disturbed materials. Figure 3-3 categorizes the soil types identified in Table 3-1 into two groups: 1) limited development potential and 2) least suitable for development. Based on the information in Table 3-1, the Chagrin Loam and Sandy Loam, Gilpin and Lilly, and Monongahela Loam soil units provide the best opportunity for development because they are the only units classified as “limited suitability.” These soil units occur in narrow strips along the Guyandotte River and several of its tributaries. Areas classified as prime or unique agricultural soils comprise less than two percent of the Project area and are located primarily along the Guyandotte River (United States Department of Agriculture [USDA], 1988 and 2003).

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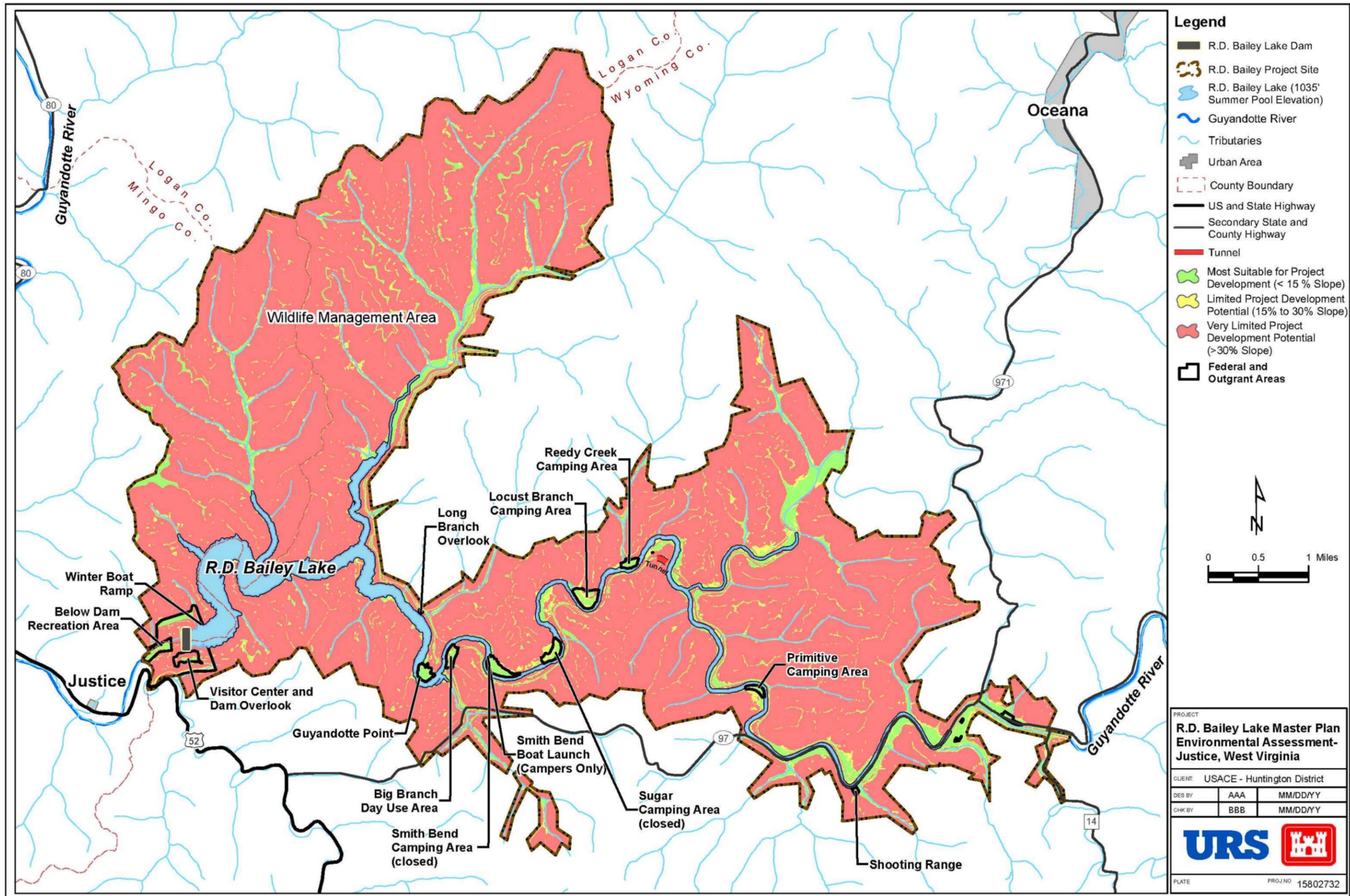


Figure 3-1: Topography Suitability for Project Development

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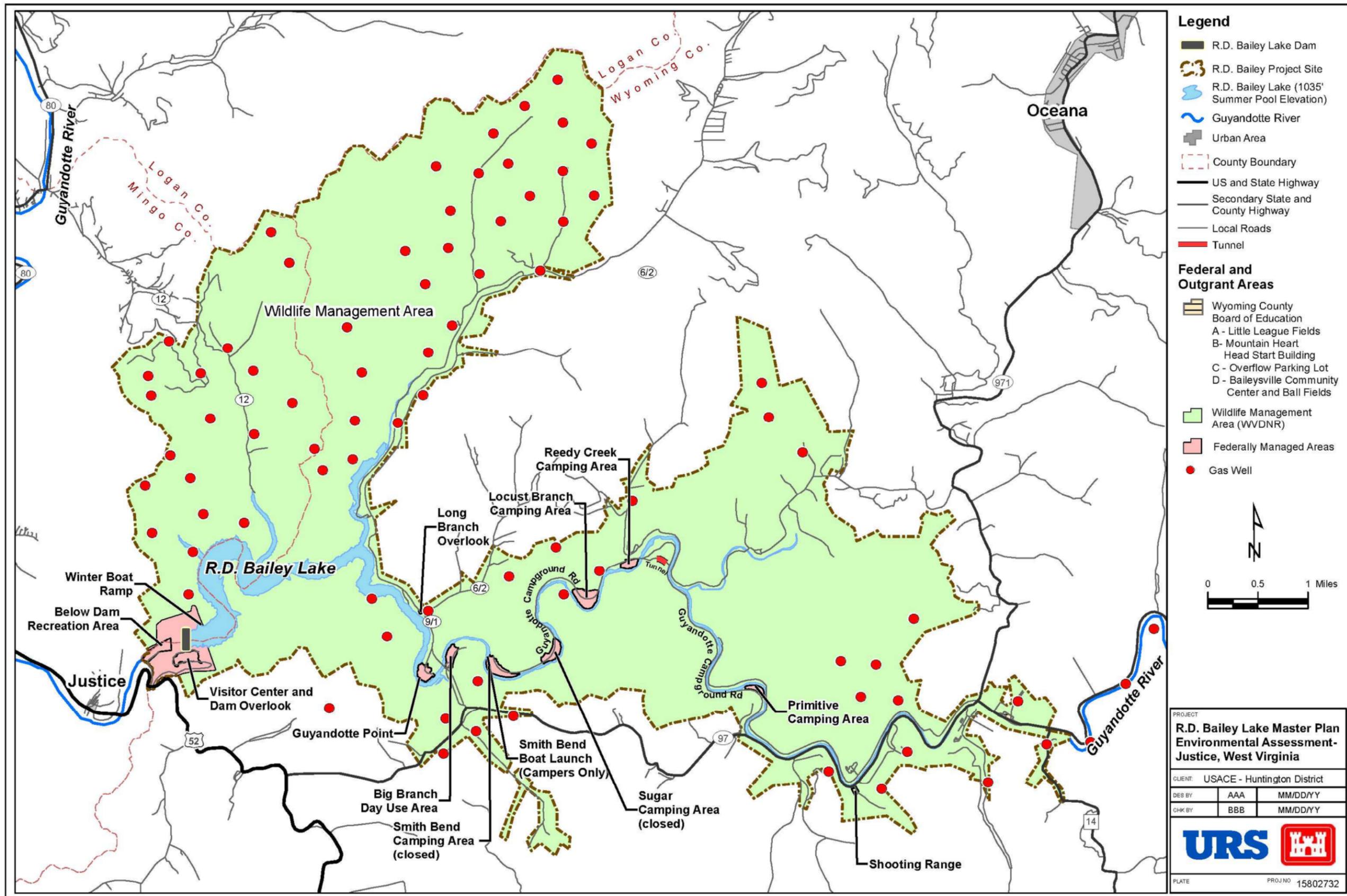


Figure 3-2: Gas Well Locations

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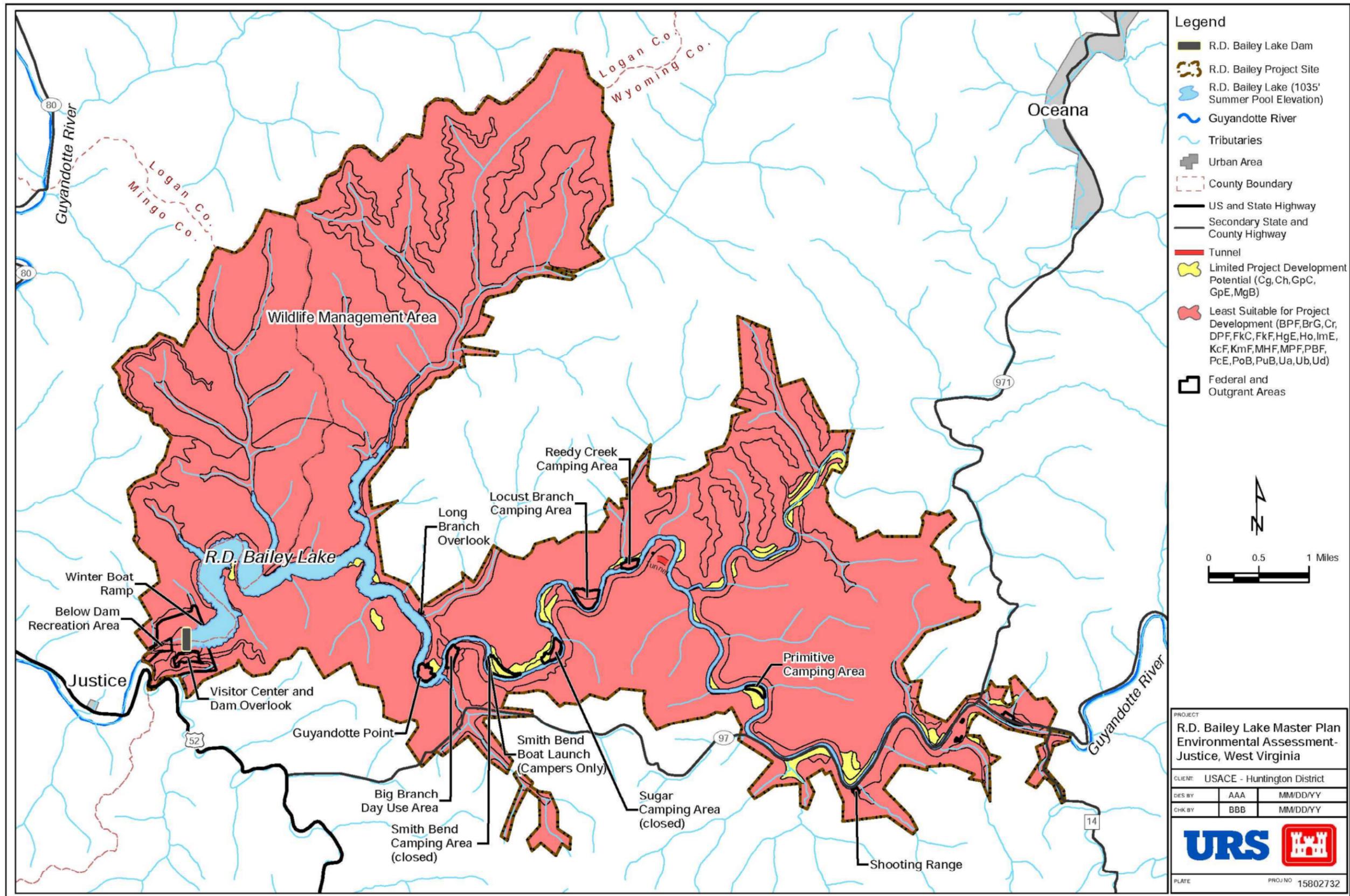


Figure 3-3: Soils Suitability for Project Development

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Table 3-1: Soils in Order of Predominance

Symbol	Soil Type	Typical Slopes (%)	Description	Suitability Based on Slope and Soil Type
MHF	Matewan-Highsplint-Guyandotte	35-80%	Occurs on narrow ridge tops and on side slopes. Soils are well drained. Soils are derived from sandstone and colluvium. Depth to bedrock is about 40 to 60 inches. Areas covered in this soil unit are mostly woodlands.	Least suitable for Project Development. Unsuitable (too steep) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to slope and severe potential for erosion.
MPF	Matewan-Pineville-Guyandotte	35-80%	Occurs on narrow ridge tops and on side slopes. Soils are well drained. Soils are derived from sandstone and colluvium. Rocky outcrops and stones cover 15 to 50 percent of soil surface. Depth to bedrock is about 40 to 60 inches. Areas covered in this soil unit are mostly woodlands.	Least suitable for Project Development. Unsuitable (too steep) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to slope and severe potential for erosion.
PBF/ BpF	Pineville-Berks / Berks-Pineville	35-80%	Occurs on mountains. Soils are well drained. Depth to bedrock is about 40 to 60 inches.	Least suitable for Project Development. Unsuitable (too steep) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to slope and severe potential for erosion.
HMF	Highsplint-Matewan-Cloverlick	35-65%	Occurs on narrow ridge tops and on side slopes. Soils are well drained. Soils are derived from sandstone and colluvium. Rocky outcrops and stones cover 15 to 50 percent of soil surface. Depth to bedrock is about 40 to 60 inches. Areas covered in this soil unit are mostly woodlands.	Least suitable for Project Development. Unsuitable (too steep) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to slope and severe potential for erosion.
DpF	Dekalb-Pineville-Guyandotte	25-80%	Occurs on ridge tops and on side slopes. Soils are well drained. Channery sandy loam forms the surface layers. Rocky outcrops are on ridge tops and upper side slopes. Depth to bedrock is 20 to 60 inches. Areas covered in this soil unit are mostly woodlands.	Least suitable for Project Development. Unsuitable (too steep) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to slope and severe potential for erosion.
KcF	Kaymine-Cedarcreek-Dekalb	35-80%	Occurs on mountain side slopes. Soils are well drained. Channery sandy loam and channery loam form the surface layers. Soil formed in material from surface mining coal. Depth to bedrock is 30 to 60 inches. Areas covered in this soil unit are mostly woodlands.	Least suitable for Project Development. Unsuitable (too steep) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to slope and severe potential for erosion.

Symbol	Soil Type	Typical Slopes (%)	Description	Suitability Based on Slope and Soil Type
Cg/Ch	Chagrin Loam/ Chagrin Sandy Loam	0-3%	Occurs in low and high floodplains along the Guyandotte River and tributaries. Soils well drained. Soil formed from sandstone and shale. Depth to bedrock is greater than 60 inches.	Limited Project Development Potential. Limited suitability (frequent flooding) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Limited suitability for roads due to flooding.
GpC/GpE	Gilpin and Lily	3-15% / 15-35%	Occurs on terraces or ridge tops. Soils are well drained. Soil formed from shale, siltstone, and sandstone. Depth to bedrock is 20 to 40 inches.	Limited Project Development Potential. Limited suitability (moderate slope) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Limited suitability for roads due to slope and depth to bedrock.
MgB	Monongahela Loam	3-8%	Occurs on terraces along the Guyandotte River and tributaries. Soils are moderately well drained. Soil formed from sandstone and shale. Depth to bedrock is greater than 60 inches.	Limited Project Development Potential. Limited suitability (wetness) for lawn or landscaping; for trails or golf fairways; for camping, picnicking, or playground areas; for small buildings; or for septic tank absorption field. Unsuitable for roads due to wetness and severe potential for erosion.

3.1.4 Land Use/Land Cover

As a whole, West Virginia is rural and extensively forested, with 12 million acres (approximately 76 percent of the state) in forest cover. About 90 percent of the Project area is forested (NatureServe, 2007). Land cover in Project area includes forest, grasslands, herbaceous vegetation, and open water (See Figure 3-4). Table 3-2 identifies land cover types and the percentage of the Project land in each land cover type.

Table 3-2: Land Cover in the R.D. Bailey Lake Project

Land Cover	Percent of Project Area
Allegheny-Cumberland Dry Oak Forest and Woodland	85.8%
South-Central Interior Mesophytic Forest	3.7%
Open Water	3.4%
Successional Shrub/Scrub	2.5%
Developed open space	2.4%
Developed other	1.2%
Southern and Central Appalachian Cove Forest	0.3%
Appalachian (Hemlock)-Northern Hardwood Forest	0.2%
South-Central Interior Small Stream and Riparian	0.2%
Pasture/Hay	0.2%
Cultivated Crops	0.1%
Cumberland Acidic Cliff and Rockhouse	0.1%
Southern Appalachian Montane Pine Forest and Woodland	0.1%

Source: NatureServe, 2007

Fish and wildlife management at R.D. Bailey Lake is provided by WVDNR who has a license to manage 17,188 acres at the Project. This area is known as the R.D. Bailey WMA. The license allows WVDNR to manage forest, fish, and wildlife within the area. The license also provides the WVDNR with the authority to utilize their expertise to provide protection and improvement of the natural resources of the R.D. Bailey Lake Project lands.

The WMA contains a system of fire access roads and gas well access roads that also serve as multi-use access for hunting and hiking. There are no facilities at any of the access points. The WVDNR also manages a shooting range, located south of State Route 97 in the eastern portion of the Project (See Figure 1-2).

3.1.5 Water Resources and Quality

3.1.5.1 Surface Water Resources and Quality

As previously described, the approximate 19,000 acre R.D. Bailey Lake Project is located in Mingo and Wyoming Counties in West Virginia on the Guyandotte River, which is a tributary of the Ohio River. The Guyandotte River, formed from Stonecoal Creek and Winding Gulf near the Raleigh-Wyoming county line, generally flows in a northwesterly direction through southwest West Virginia for approximately 167 miles.

Eventually, the Guyandotte River drains into the Ohio River near Huntington, WV. The Project area is approximately 113 miles upstream from the confluence of the Guyandotte River and the Ohio River (See Figure 3-5)

The R.D. Bailey Dam is the only USACE dam on the Guyandotte River which provides flood risk management and controls downstream flow. The dam is located in Mingo County, but the majority of the lake lies within Wyoming County. The entire Guyandotte River basin includes approximately 1,680 square miles. The lake receives runoff from a 540 square mile drainage basin. The drainage areas of the Guyandotte River and its principal tributaries are presented in Table 3-3.

Table 3-3: Drainage Areas of the Guyandotte River and Principal Tributaries

Stream	Location	River Mile	Area (square miles)
Slab Fork	Mouth	157.7	35.4
Guyandotte River	Below mouth of Slab Fork	157.7	131.0
Pinnacle Creek	Mouth	143.6	57.2
Guyandotte River	Below mouth of Pinnacle Creek	143.6	260.0
Guyandotte River	Baileysville gage	130.8	306.0
Indian Creek	Mouth	129.4	42.7
Guyandotte River	Below mouth of Indian Creek	129.4	352.0
Clear Fork	Mouth	122.8	129.0
Guyandotte River	Below mouth of Clear Fork	122.8	498.0
Guyandotte River	R.D. Bailey Dam	113.1	540.0
Buffalo Creek	Mouth	93.3	45.3
Guyandotte River	Man gage	93.0	762.0
Guyandotte River	Logan, WV	81.0	833.0
Island River	Mouth	79.7	105.0
Guyandotte River	Branchland, WV	35.3	1,224.0
Mud River	Mouth	7.1	359.0
Guyandotte River	Below mouth of Mud River	7.1	1,667.0
Guyandotte River	Mouth	0	1,679.0

Source: USACE, 2008

R.D. Bailey Lake is formed by the dam, the topographical features of the area, and the tributaries, creeks and streams that discharge into the Guyandotte River. The surface of R.D. Bailey Lake measures approximately 630 acres and is approximately 7.1 miles long with a mean width of 732 feet in the main portion of the lake during the normal summer pool elevation of 1,035 feet NGVD. The lake also has two shorter arms that extend 1.7 miles up Cub Creek and 1.0 mile up Leatherwood Creek.

The lake shoreline generally consists of steep rocky slopes that are well vegetated above the summer pool elevation. The lake possesses many coves at junctions with tributaries, resulting in a shoreline that is nearly 16 miles long during summer months. The average depth of the lake is about 54 feet with a maximum depth of approximately 145 feet. Figure 3-6 identifies the surface waters within the Project area.

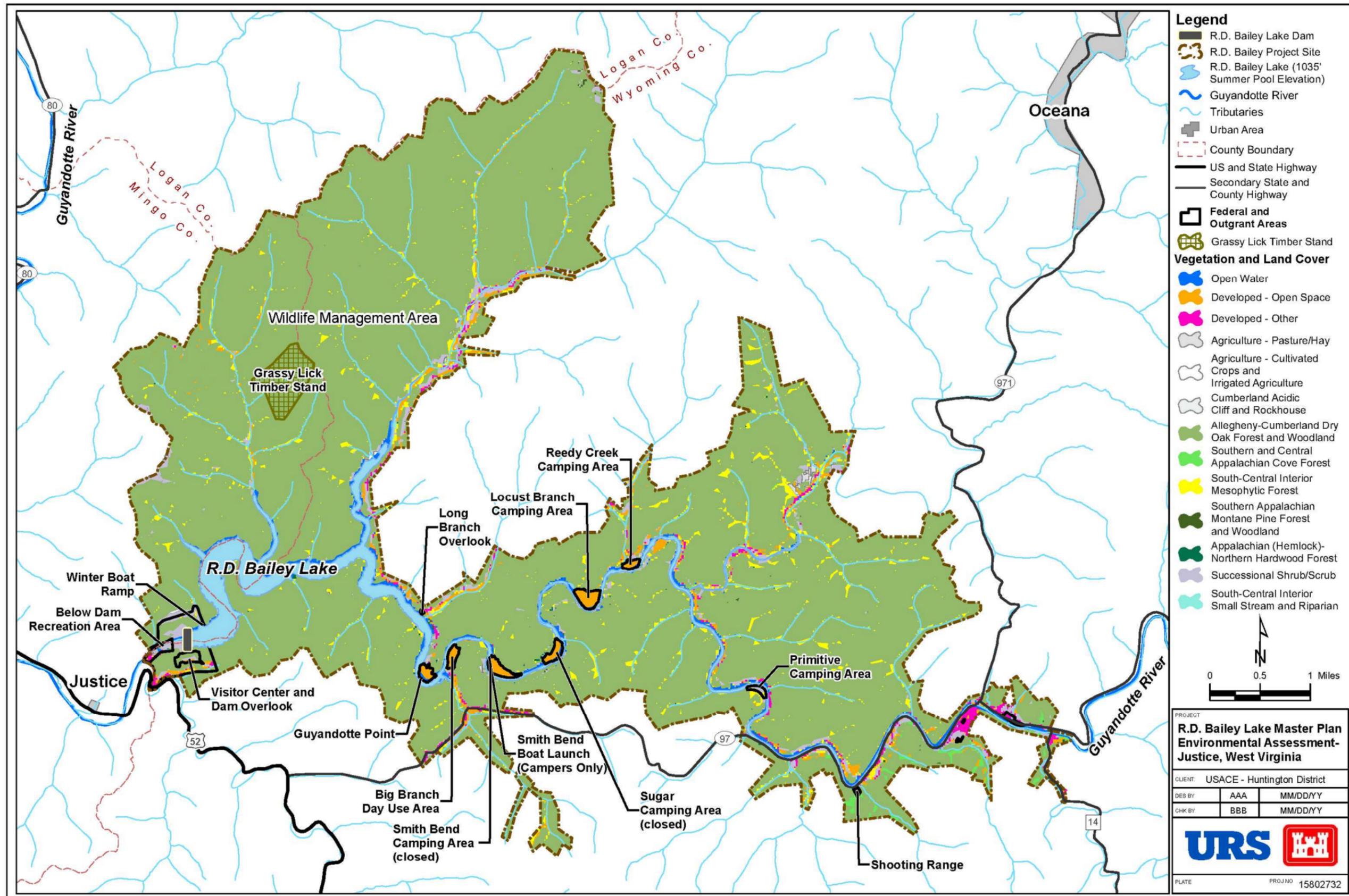


Figure 3-4: Vegetation and Land Cover

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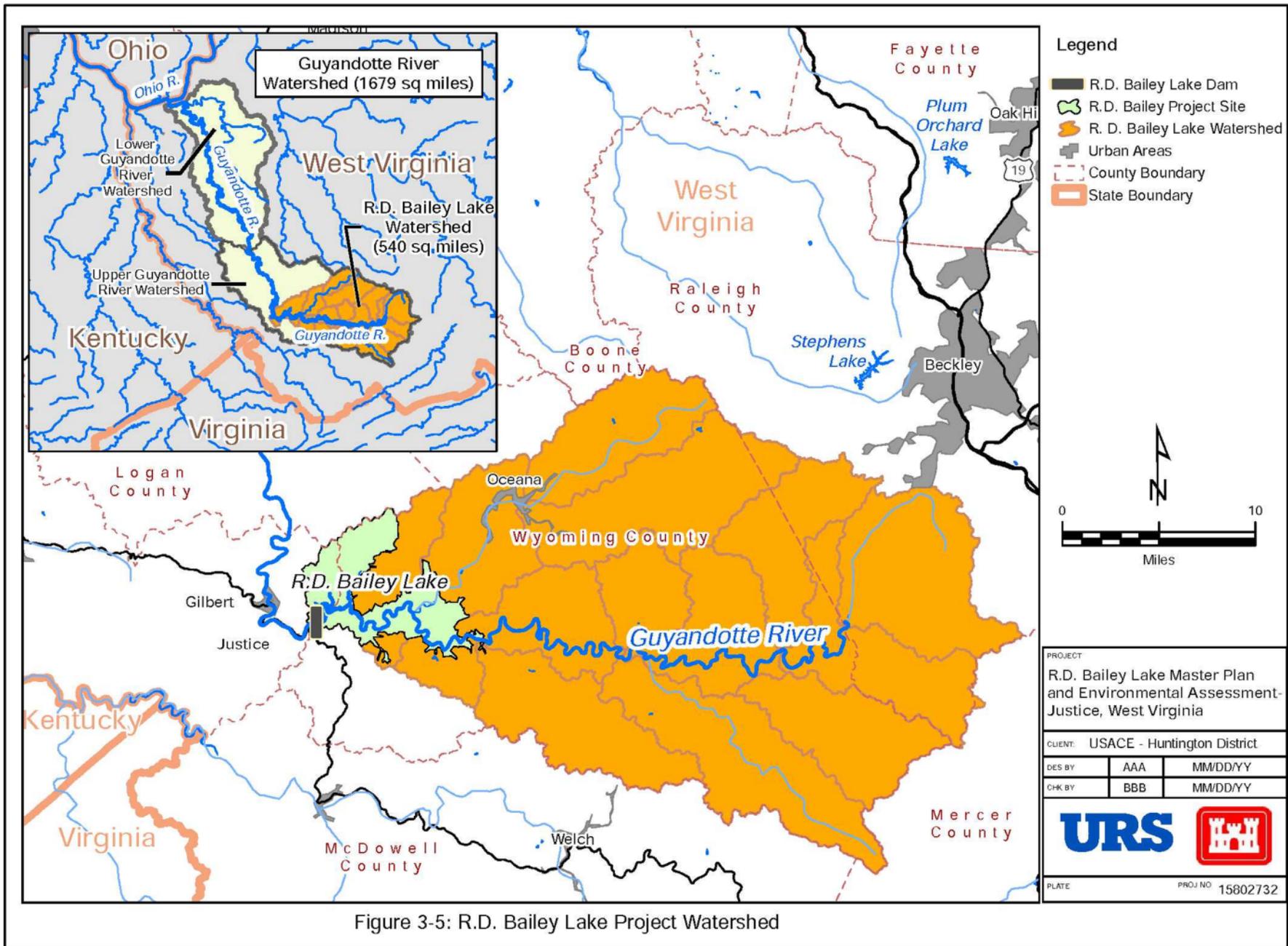


Figure 3-5: R.D. Bailey Lake Project Watershed

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Water is released from the dam for the purpose of augmenting the downstream flow of the Guyandotte River so that the desired total flow is maintained to safeguard downstream aquatic habitat conditions with regard to temperature, dissolved oxygen, and suspended sediments. The dam system allows withdrawal from various water depths and offers choices over a considerable range of outflow rates and water parameters, including temperature. The flow rate that provides benefits to the downstream area while not exceeding the maximum acceptable drawdown was determined to be 45 cubic feet per second (cfs). This rate is maintained at all times, even during a flood event, except during winter, when the rate is reduced by approximately 36 percent. Additionally, allowable ranges in temperature for the outflow have been developed through coordination between the USACE and the WVDNR, Wildlife Resource Section (USACE, 2008).

West Virginia water quality standards include the parameters of fecal coliform, pH, iron, aluminum, manganese, and biological impairment. Rivers and streams that do not meet the state standards are identified on the statewide 303(d) list. Section 303(d) of the Clean Water Act requires a list of waters, deemed impaired, for which effluent limitations or other controls are not sufficient to meet water quality standards. Data collected to determine water quality are obtained from various sources including the United States Environmental Protection Agency (USEPA) STORET database, West Virginia Department of Environmental Protection (WVDEP) Division of Water and Waste Management (DWWM), WVDEP Division of Mining and Reclamation (DMR), and sampling efforts (USEPA, 2004). According to the *2010 Draft West Virginia 303(d) List*, which identifies previously listed waters, the Upper Guyandotte River was identified in 2004 for contamination with aluminum, fecal coliform, and iron (USEPA, 2010). R.D. Bailey Lake was identified as an impaired water body on the *2010 Draft West Virginia 303(d) List of impaired streams* for contamination with polychlorinated bi-phenols /PCBs (Kleinschmidt, 2008). The conditions recorded at the lake are within a range that triggered listing with regards to the amount of fish that can be safely consumed on a monthly basis. However, the levels are relatively low and do not impact the lake for suitability for swimming and other water recreation activities.

Failing septic systems and illicit discharges of untreated household wastewater are the primary contributors to the high fecal coliform levels in the Guyandotte River. Previous coal mining operations and forestry/logging practices in the Project area have also contributed to the presence of iron, aluminum, and manganese in the Guyandotte River (Upper Guyandotte Watershed Association, 2006). Additionally, non-point source pollution issues and migration of those pollutants into the R.D. Bailey Lake system contribute to water quality impairment. Upstream land use activities, such as coal mining, logging, agriculture, and land development, led to

sedimentation, which has diminished the clarity of streams within the Guyandotte River watershed. Erosion and destabilized stream banks also release sediment into downstream waters.

A Total Maximum Daily Load (TMDL) is a plan of action developed to clean water bodies that are not meeting water quality standards. The plan of action also includes identifying the source of contamination and developing strategies for reduction or elimination of the contamination. TMDLs are developed for water bodies that have been identified on the 303(d) list. In 2004, the *Metals, Fecal Coliform and pH TMDLs for the Guyandotte River Watershed* were developed by the USEPA. The projected TMDL year for R.D. Bailey Lake is 2018, which indicates the latest year in which the WVDEP plans to develop a TMDL for the lake (WVDEP, 2007).

3.1.5.2 Groundwater Resources and Quality

According to the *Water Resources Protection Act Water Use Survey* of 2006, Mingo County's groundwater withdrawal averages 25 million gallons a month, while Wyoming County withdraws an average of 45 million gallons a month (WVDEP, 2006a). Within the Upper Guyandotte watershed, there is one groundwater well in Mingo County north of Gilbert and many intakes throughout Wyoming County. Within the Project area in Wyoming County, there is one groundwater well west of the R.D. Bailey Dam and four groundwater wells east of R.D. Bailey Lake; however, not all of these groundwater wells are in use. The approximate location of the groundwater wells within the Project area is presented on Figure 3-7.

Groundwater resources are currently used at the Project with the water processed at a water plant on the Project site. There are three groundwater wells currently in use at the Project, each with a water plant that treats the water and pumps it to a storage holding tank for use. The three wells are located at the Visitor Center, the Big Branch Day Use area, and in the Guyandotte Campground area.

Groundwater can be affected by industrial waste disposal, coal mining, oil and gas drilling, agriculture, domestic and municipal waste disposal, transportation, and rural development. The groundwater in the Upper Guyandotte River Basin was analyzed in 2006 and contained background levels of pesticides, hydrocarbons, volatile organic compounds, and other chemicals but at concentrations far below action levels set by groundwater quality standards (WVDEP, 2006b).

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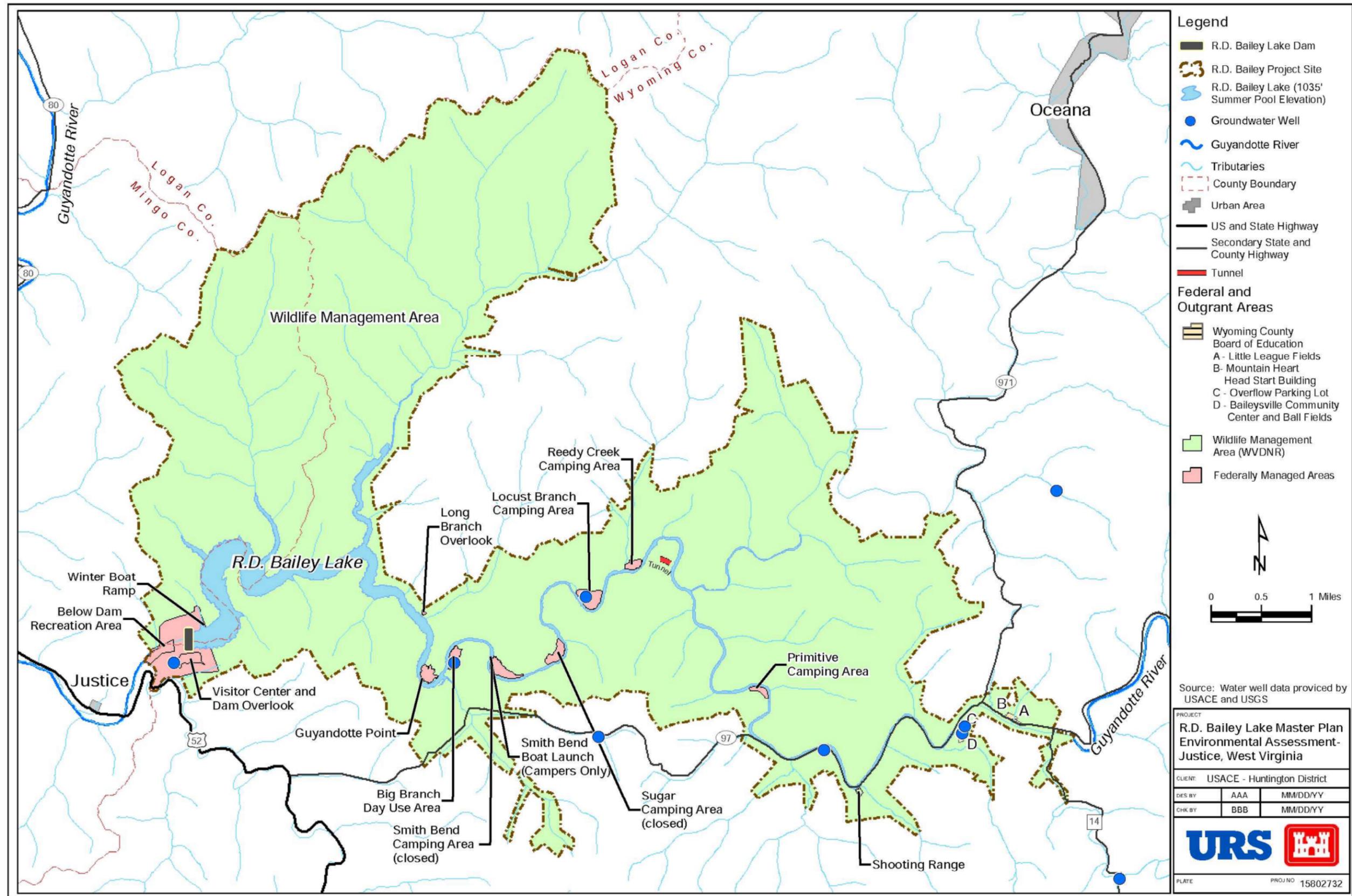


Figure 3-7: Groundwater Well Locations

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3.1.6 Floodplains and Flooding

One of the primary authorized purposes of the R.D. Bailey Lake Project is flood risk management. The Project area around the lake is designed to store floodwaters to reduce flood risk downstream. Consequently, inundation by flooding is largely artificially controlled. Figure 3-8 shows inundation areas between the summer pool elevation of 1,035 feet NGVD and the maximum flood control pool elevation of 1,155 feet NGVD. Flooding of the land above the recreational summer pool elevation of 1,035 feet NGVD does occur, but the majority of flooding instances occur during the winter and spring months. The five-year flood frequency elevation is estimated at 1,100 feet NGVD. Based on Figure 3-8, the majority of the recreation areas are subject to inundation with the exception of the Dam Site Recreation Area and the Below Dam Recreation Area. As indicated in Table 3-4, impacts occur to recreation areas when flood elevations reach five feet above the summer pool elevation of 1,035 feet NGVD. At elevation 1,040 feet NGVD, R.D. Bailey Lake is closed for public use.

Table 3-4. Project Recreational Facility Impacts Related to Changes in Lake Elevation

Lake Elevation	Recreational Facility	Impacts
1,030 (below)	R.D. Bailey Marina	Boat launch unusable/dry docked
1,033 (below)	Guyandotte Campground Smith Bend Boat Launch	Ramp unusable
1,035 NGVD	Summer Pool Elevation	
1,040 (above)	R.D. Bailey Lake	Closed for public use
1,048	Guyandotte Point	Parking Lot Inundated
1,052	Big Branch Day Use Area	Access road inundated
1,055	Smith Bend and Sugar Camping Areas ¹	Areas evacuated
1,059	Smith Bend Boat Launch	Ramp inundated
1,060	Smith Bend ¹	Access road inundated
1,070	Sugar Camping Area	Comfort station inundated
1,072	Smith Bend	Comfort station inundated
1,075	Guyandotte Campground	Evacuated
1,080	Big Branch Day Use Area	Comfort station inundated
	Sugar Camping Area ¹	Access road inundated
	Locust Branch Camping Area	Access road inundated
1,085	Reedy Creek Camping Area	Area inundated
1,099	Locust Branch Camping Area	Comfort station inundated
1,105	Reedy Creek Camping Area	Comfort station inundated
1,115	Railroad Tunnel	Begins to flood
1,120	Primitive Camping Area	Floods
1,139	Sewage Treatment Plant at Locust Branch	Begins to flood
1,155	Water Treatment Plant at Locust Branch	Begins to flood

¹Smith Bend and Sugar Camping Areas are currently closed.

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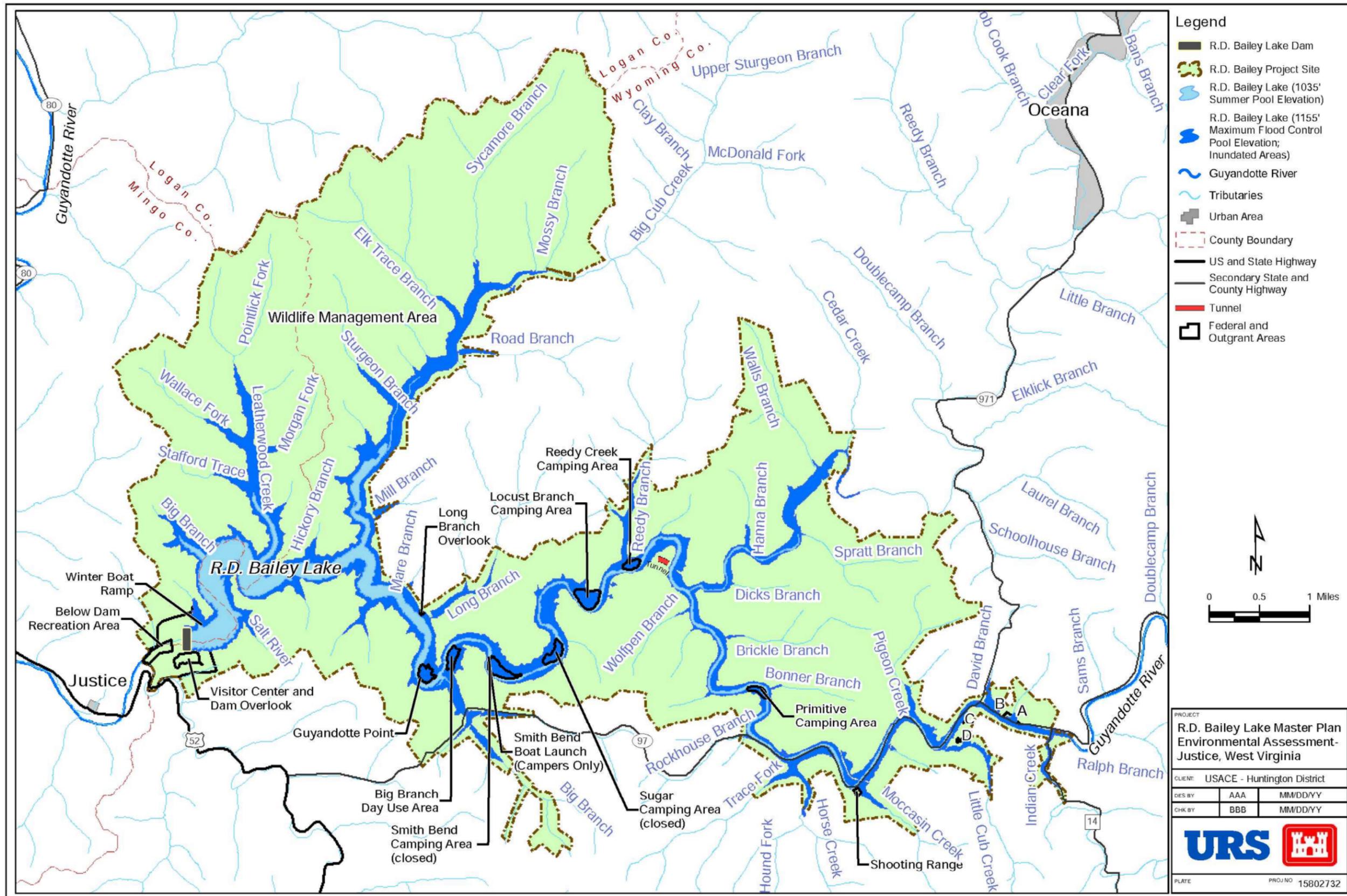


Figure 3-8: Inundation Areas between Summer Pool Elevation and Flood Control Pool Elevation

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3.1.7 Air Quality

The USEPA has set National Ambient Air Quality Standards (NAAQS) for six principal air pollutants (also referred to as criteria pollutants): carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide. The State of West Virginia has adopted the federal standards for these criteria pollutants. Both Mingo and Wyoming Counties are in attainment for all NAAQS (USEPA, 2011).

3.1.8 Climate

West Virginia's varying topography results in corresponding variability in long-term climate conditions. In the southwestern portion of the state, including the Project area and the vicinity of Charleston and Huntington, the climate is classified as humid subtropical. Most of the remainder of the state is classified as humid continental. In the Charleston vicinity, average daily high temperatures range from 85°F in July to 43°F in January, while average daily low temperatures range from 63°F in July to 24°F in January. Average annual precipitation in the Charleston locale and statewide is approximately 44 inches. Prevailing winds are from the southwest (National Oceanic and Atmospheric Administration, 2004).

3.1.9 Noise

Noise is generally defined as unwanted sound. The rural, undeveloped nature of the Project area and surrounding environments have few manmade noise sources that regularly contribute to the ambient noise level at most locations within the Project. The lack of significant levels of human activity in this area results in ambient noise levels that are usually dominated by natural sources. The major sources of manmade noise include sporadic traffic on local roadways and motorized boats on the lake. Noise from these sources dissipate with distance from the source, so boat and motor vehicle traffic noise do not contribute to ambient noise levels in areas of the Project that are far removed from the lake, river, and roadways. Except for days when recreational traffic is heavier (e.g., holiday weekends), manmade sources of noise are generally so infrequent and dispersed that ambient noise levels approach background noise levels emanating from natural sources such as wind and birds.

3.2 Biological Environment

3.2.1 Vegetation

As described previously in Section 3.1.4, 90 percent of the Project is forested. The two major forest classifications that dominate the Project landscape consist of the following:

- **Allegheny-Cumberland Dry Oak Forests and Pine Woodlands:** This forest type is typically dominated by white oak (*Quercus alba*), southern red oak (*Quercus falcata*), chestnut oak (*Quercus prinus*), and scarlet oak (*Quercus coccinea*), with lesser amounts of red maple (*Acer rubrum*), pignut hickory (*Carya glabra*), and mockernut hickory (*Carya alba*). Small stands of shortleaf pine (*Pinus echinata*) or Virginia pine (*Pinus virginiana*) may occur, particularly adjacent to escarpments or following fire. In the absence of fire, eastern white pine (*Pinus strobus*) may be prominent, occurring in a variety of situations, including on nutrient-poor or acidic soils (NatureServe, 2007).
- **South-Central Interior Mesophytic Forests:** This is a highly diverse and predominantly deciduous forest type. They occur on deep and enriched soils enhanced by the presence of limestone or related base-rich geology, in non-mountainous settings, and usually in somewhat protected landscape positions such as coves or lower slopes. Dominant species include sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), yellow poplar (*Liriodendron tulipifera*), American basswood (*Tilia americana*), red oak (*Quercus rubra*), cucumber tree (*Magnolia acuminata*), and black walnut (*Juglans nigra*). Eastern hemlock (*Tsuga canadensis*) may be present in some stands. Trees may grow very large in undisturbed areas and many examples of this type of forest are bisected by small streams (NatureServe, 2007).

The next vegetative cover classification with reasonable coverage includes:

- **Shrubland and Pasture:** This vegetative cover type is characterized by laurels (*Lauraceae*), rhododendrons (*Rhododendron* spp.), blueberries and huckleberries (*Vaccinium*), pin cherry (*Prunus pensylvanica*), and heath (*Erica*, *Cassiope*, *Daboecia*, *Calluna vulgaris* etc). The reverting fields are characterized by blackberries (*Rubus*), hawthorn (*Crataegus*), sumacs (*Rhus*), greenbrier (*Smilax*), and various seedling trees. Pasture classification includes pastureland, hayfields, fields, abandoned farms, and other herbaceous land cover.

There is an ‘old growth’ timber stand near the Grassy Lick branch that comprises approximately 150 acres (See Figure 3-4). There is some correspondence and a timber cruise that was conducted in the 1970s that suggests a relatively old stand of mature timber with no evidence of harvesting; however, it has not been positively proven the stand is ‘old growth’ timber. The stand is definitely a unique feature and should be protected from any type of development or activity. No known timber management activities have taken place at the Project site since the WVDNR took over management of the area. WVDNR is currently considering instituting some timber management initiatives for wildlife management purposes. This management would

involve the removal of some timber to introduce diversity of habitats and successional areas for wildlife use. However, at this time, no definitive plan has yet to be developed. Key initiatives of WVDNR include oak regeneration and creating diversity.

In West Virginia, 28 percent, or 633 species, of vascular plants outside of cultivation are non-native. By definition, invasive species are species that are foreign to a particular region that out-compete native species for the same resources. Often, non-native plants are introduced into environments disturbed by human activities, such as road and trail building, timbering, mining, and other activities that disturb the soil or change the amount of moisture and sunlight the ground receives. Typically, these invasive species dominate the edge of the disturbed area and quickly reproduce to inhibit the growth of native species, potentially adversely affecting local ecological conditions. Often, the undesirable species can be managed chemically, mechanically, and/or physically.

WVDNR sampled vegetation plots in the R.D. Bailey WMA and documented the following invasive species: Japanese stiltgrass (*Microstegium vimineum*), Morrow's honeysuckle (*Lonicera morrowii*), tall fescue (*Lolium arundinaceum*), small carpgrass (*Arthraxon hispidus*), ground Ivy (*Glechoma hederacea*), common velvet grass (*Holcus lanatus*), and tall buttercup (*Ranunculus acris*). Four of these species (Japanese stilt grass, Morrow's honeysuckle, tall fescue, and small carpgrass) have been identified by WVDNR as being of particular concern in the state.

3.2.2 Wetlands

The USACE and USEPA jointly define wetlands as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. In general terms, wetlands can be described as the transition zone between upland and aquatic ecosystems. The USACE requires that a site must have suitable hydrology and must contain hydric soils and predominantly hydrophytic vegetation to be classified as a wetland. Functionally, wetlands are important landscape features because they hold and slowly release floodwater and snow melt. Another function of wetlands is to act as filters to cleanse surface water of impurities, recycle nutrients, and trap sediment. Because these areas tend to be wet, have exposure to sunlight, and are highly fertile, wetlands support a diverse composition of flora and fauna.

According to the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, approximately six acres of wetlands exist within the R.D. Bailey Lake Project area

(See Figure 3-9). The NWI maps are a generalized series of maps that give approximate locations of wetland areas using existing sources of information such as soil surveys, previous wetland recordings, and site observations. NWI mapping shows that wetlands in the Project area occur mainly in proximity to streams and the lake, are isolated or scattered, and consist of relatively small areas that typically average less than three acres in size (USFWS 2010a). Information about the different types of wetlands, including the number of such sites and the approximate acreage, is provided in Table 3-5. Based on NWI data, wetlands in the Project are small, uncommon, and scattered. Identification on the NWI mapping, however, does not represent an accurate record. There is a great deal of uncertainty related to these records and field verification must be conducted.

Table 3-5. Wetlands in Project Area

Wetland Type	Classification ¹	No. of Sites	Approx. Acreage
Palustrine, emergent, persistent, seasonally flooded wetland (diked/impounded)	PEM1Eh	3	1.44
Palustrine, forested, broad-leaved deciduous, seasonally flooded wetland (diked/impounded)	PFO1Ch	3	3.72
Palustrine, scrub-shrub, broad-leaved deciduous, temporarily flooded wetland	PSS1A	1	1.06

¹Source: USFWS, 1979

3.2.3 Terrestrial Wildlife

The R.D. Bailey WMA provides habitat for a variety of upland wildlife species. Common wildlife species that are found in the forested habitats typical of the Project area include a variety of reptiles and amphibians; small woodland mammal species such as mice, shrews, eastern chipmunk (*Tamias striatus*), eastern cottontail (*Sylvilagus floridanus*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), woodchuck (*Marmota monax*), beaver (*Castor canadensis*), raccoon (*Procyon lotor*), mink (*Neovison vison*), muskrat (*Ondatra zibethicus*), otter (*Lontra Canadensis*), various bat species, gray fox (*Urocyon cinereoargenteus*) and red fox (*Vulpes vulpes*); and larger game species including white-tailed deer (*Odocoileus virginianus*) and black bear (*Ursus americanus*). The WMA is designated and well used as a seasonal hunting area. The WMA provides opportunities for hunting small game such as squirrels, rabbits, grouse, and turkey. Trapping is also permitted for fox, bobcat, skunk, opossum, mink, and muskrat. River otters were introduced to the Project in 1996 and have thrived. Trapping river otters will be permitted in Fall 2011. The WMA at R.D. Bailey Lake is located in part of Wyoming and Mingo Counties, which offers archery only hunting for white-tailed deer.

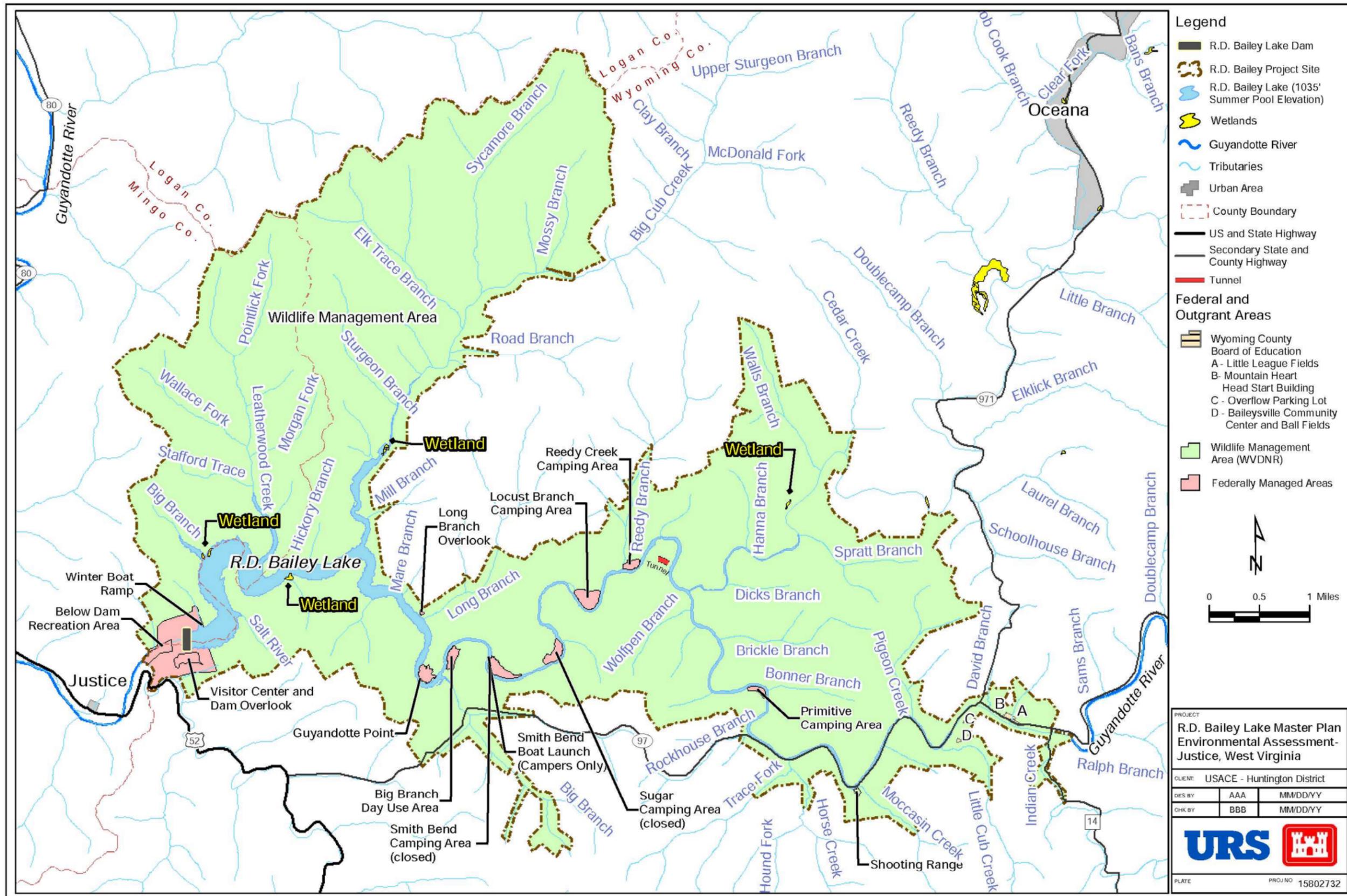


Figure 3-9: NWI-Delineated Wetlands

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White-tailed deer and wild turkey (*Meleagris gallopavo*) are the most popular game species, but dove, waterfowl, and various small game species also provide opportunities for hunters at the Project.

A great variety of birds utilize the Project area. Commonly observed birds include ruffed grouse (*Bonasa umbellus*), blue jay (*Cyanocitta cristata*), hairy woodpecker (*Picoides villosus*), common crow (*Corvus brachyrhynchos*), wild turkey (*Meleagris gallopavo*), ovenbird (*Seiurus aurocapillus*), red-bellied woodpecker (*Melanerpes carolinus*), hairy woodpecker (*Picoides villosus*), white-breasted nuthatch (*Sitta carolinensis*), tufted titmouse (*Baeolophus bicolor*), Carolina chickadee (*Poecile carolinensis*), eastern phoebe (*Sayornis phoebe*), eastern wood-pewee (*Contopus virens*), Acadian flycatcher (*Empidonax virens*), and numerous species of warbler, vireo, and other songbirds. A number of raptors are also known to occur in the Project vicinity including red-tail hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), broad-winged hawks (*Buteo platypterus*), barred owl (*Strix varia*), and great horned owl (*Bubo virginianus*). Neo-tropical birds such as the oriole (*Icterus galbula*), the tangers (*Piranga* spp.), the purple martin (*Progne subis*), and the wood thrush (*Hylocichla mustelina*) are common visitors during the breeding season.

The lake shore area provides ideal habitat for fur-bearing mammals such as mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*), as well as resident and migratory waterfowl. Shore areas also provide potential breeding habitat for northern dusky salamander (*Desmognathus fuscus fuscus*), northern slimy salamander (*Plethodon glutinosus*), box turtles (*Terrapene carolina carolina*), fence lizards, frogs, and several species of snakes such as copperhead (*Agkistrodon contortrix mokasen*), timber rattlesnake (*Crotalus adamanteus*), eastern ribbon snake (*Thamnophis sauritus sauritus*), eastern hognose snake (*Heterodon platirhinos*), northern ringneck snake (*Diadophis punctatus edwardsii*), and black rat snake (*Elaphe obsoleta obsoleta*) (Kleinschmidt, 2008; WVDNR, 2005).

3.2.4 Aquatic Life

The Guyandotte River and R.D. Bailey Lake support an extensive warm-water fishery. Native species include largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), spotted bass (*Micropterus punctulatus*), crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), gizzard shad (*Dorosoma cepedianum*), bluegill (*Lepomis macrochirus*), redbreast sunfish (*Lepomis auritus*), redear sunfish (*Lepomis microlophus*), and assorted sucker and minnow species. The WVDNR stocks hybrid striped bass (*Morone saxatilis*) and walleye (*Stizostedion vitreum*) semiannually in the reservoir. The WVDNR also

stocks brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*) in the tailwaters below the dam (Kleinshchmidt, 2008; WVDNR, 2005).

The lake provides habitat for many species. Aquatic species, including fish, reptiles, amphibians, and other animals that rely on this resource prefer a fairly stable pool level. There are naturally occurring submerged brush sites that provide habitat for spawning, foraging, and cover for many aquatic species. The adjacent wetlands and shallow water areas provide additional spawning areas and hunting areas for predator birds and other wildlife. Submerged brush piles and cover also provide places for fish to hide from predators. Existing structure like rocky bottoms, sandy bottoms, pooling areas, rock outcrops, and grassy areas all work together to provide habitat for aquatic life.

3.2.5 Rare, Threatened, and Endangered Species

Threatened or endangered species that may occur within the locale of the R.D. Bailey Lake Project are listed in Table 3-6 below along with their state and federal status. USFWS maintains lists of rare plants and wildlife known to occur in each county of the United States. Because West Virginia does not have state threatened and endangered species legislation, the species listed as either threatened or endangered in the state are found on the USFWS list of federally threatened and endangered species. This list is based on historical site records and existing preferred habitats.

Table 3-6. Listed Rare, Threatened and Endangered Species Potentially Occurring in Mingo and Wyoming Counties, WV

Taxonomic Group	Scientific Name	Common Name	Federal Status	State Status
Freshwater Mussels	<i>Cyprogenia stegaria</i>	Fanshell	Endangered	Endangered
Birds	<i>Falco peregrinus</i>	Peregrine Falcon	Delisted	Rare
Birds	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Delisted	Rare
Vascular Plants	<i>Epioblasma torulosa torulosa</i>	Tubercled Blossom	Endangered	Believed extirpated
Mammals	<i>Puma concolor cougar</i>	Eastern Cougar	Endangered	Endangered
Mammals	<i>Neotoma magister</i>	Allegheny Woodrat	None	Concern
Mammals	<i>Synaptomys cooperi</i>	Southern Bog Lemming	None	Rare
Mammals	<i>Ochrotomys nuttalli</i>	Golden Mouse	None	Rare
Mammals	<i>Myotis sodalis</i>	Indiana Bat	Endangered	Endangered

Source: USFWS, 2010b

There are no known federally-protected species in Mingo and Wyoming Counties, although threatened and endangered species may occur in the Project area. There is no designated critical habitat under Section 7 of the Endangered Species Act present within the Project area.

Threatened or endangered species that may occur in the R.D. Bailey Lake Project area are shown in Table 3-6, along with their federal and state status (USFWS, 2010b; WVDNR, 2007).

Correspondence from the WVDNR, Wildlife Resources Section, regarding endangered and threatened species is included within Appendix B.

Three federally-listed endangered species that may potentially inhabit the Project area include the fanshell mussel (*Cryptogenic stegaria*), the eastern cougar (*Puma concolor cougar*), and the Indiana bat (*Myotis sodalis*). which are discussed below:

The fanshell mussel is a freshwater mussel found in medium to large streams and rivers with moderate to strong current, in coarse sand and gravel, and at a depth ranging from shallow to deep. The fanshell mussel is rounded, with numerous pustules, elevated growth lines, and broken green rays. The fanshell mussel has been found in the Kanawha River and Ohio River, but has not been confirmed in the Project area.

Eastern Cougar are presumed extinct in the wild but remain protected. The eastern cougar's primary prey was white-tail deer, porcupines, and other small animals. With no enemies, humans hunted and trapped the eastern cougar and their habitat was eliminated through deforestation (USFWS, 2010b).

The Indiana bat is a mammal found in the eastern United States, from Oklahoma to New Hampshire to northern Florida (USFW, 2010b). The species hibernate in caves, with the most important hibernating caves, including one cave in Pendleton County, well north of the Project area. There are no known potential caves in close proximity to R.D. Bailey Lake. However, the habitat in the Project area is potentially suitable for the Indiana bat.

In response to Section 7 of the ESA coordination conducted in connection with a 2006 PEA by the Federal Energy Regulatory Commission (FERC) in similar habitats in the region, the USFWS recommended that tree clearing be restricted from April 1 to November 15 to avoid affecting summer roosting of Indiana bats. With implementation of this mitigation, the FERC determined that the project may affect but is not likely to adversely affect Indian bats.

WVDNR defines rare species as “species at the edge of their global ranges, species that appear to be declining on a regional basis, and species that require unique habitats, such as shale barrens, wetlands, or high-elevation spruce forests. Due to changes in global and state rarity, the rare,

threatened, and endangered species lists are dynamic.” The West Virginia Natural Heritage Program lists three rare species that may occur in the two-county Project area. All are small mammal species: the southern bog lemming (*Synaptomys cooperi*), the golden mouse (*Ochrotomys nuttalli*), and the Allegheny woodrat (*Neotoma magister*), and are described below.

The southern bog lemming is a small, grey-brown North American lemming. These lemmings are found in mixed forests, wetlands, and grasslands. They are nocturnal, active year round, and feed on grasses, fungi, mosses, and other green vegetation.

The golden mouse is golden-brownish in color and five to eight inches long. The golden mouse is nocturnal, active year round, live in woodland, swampy areas within small trees and shrubs, and eat mostly seeds and acorns.

The Allegheny woodrat is a brownish-gray, medium-sized rodent with a long, hairy tail. Allegheny woodrats live almost exclusively in rocky areas such as caves, deep crevices, and large boulder fields. Most woodrat dwellings are located in or around hardwood forests that have an abundance of oaks and other mast-bearing trees. Woodrats are primarily nocturnal and rely almost exclusively on plant materials for their food.

While no longer listed as a threatened species, the bald eagle (*Haliaeetus leucocephalus*) is protected under the Bald and Golden Eagle Protection Act of 1940, the Migratory Bird Treaty Act of 1918, and the Lacey Act of 1900. The Bald and Golden Eagle Protection Act provides protection for the bald and golden eagles by prohibiting the take, possession, sale, purchase, barter, offer to sell, transport, and export or import of any bald or golden eagle, alive or dead, including any part, nest, or egg. The Migratory Bird Treaty Act protects birds that migrate across international borders. The Lacey Act protects bald eagles by making it a federal offense to take, possess, transport, sell, import, or export their nests, eggs, and parts that are taken in violation of any state, tribal, or U.S. law. Bald eagles have been sighted and have the potential to inhabit the Project area as it provides desirable high rock walls and trees for nesting, as well as fish in the lake for food. Areas in the WMA and areas downstream of the wildlife refuge provide excellent examples of this type of habitat.

3.3 Socioeconomic Environment

3.3.1 Population and Employment

The Master Plan Update defined the area of influence for Project recreation users as the area where the majority of the visitors to the Project live. Based on the nature of the recreational

activities provided at the Project, the vast majority of the visitors will reside within a two-hour driving distance (See Figure 3-10). Therefore, this distance was used to define the overall area of influence; this distance is also consistent with the area of influence identified in the 1972 Master Plan.

This area of influence was divided into three subareas as follows:

- **Primary Area of Influence:** The area within a 30-minute drive of the Project. Due to their proximity, residents in the primary area of influence are expected to make the Project a destination for all of the recreational opportunities available at the Project.
- **Secondary Area of Influence:** The area between a 30- and 60-minute drive of the Project. Residents in the secondary area of influence are expected to visit the Project for specific reasons (e.g., golf); however, they are not expected to make the Project a destination solely for general day-use activities (such as picnicking) that are also available in their local area.
- **Tertiary Area of Influence:** The area between a one- and two-hour drive of the Project. Residents in the tertiary area of influence are expected to make the Project a destination for activities that are unique, provide a high-quality recreational experience, or are significantly different from those available in their local area (e.g., boating and fishing) or for overnight activities (e.g., camping).

There are two counties within the primary area of influence, two counties within the secondary area of influence, and eight counties are in the tertiary area of influence. The primary area of influence consists of Wyoming and Mingo Counties in West Virginia. The secondary area of influence includes portions of Logan and McDowell Counties in West Virginia. The tertiary area of influence includes portions of eight counties located in three different states. Four of these counties are in West Virginia, two are in Kentucky, and two are in Virginia.

Demographic data (population and age) were compiled from data reported by the U.S. Census Bureau and regional and state data centers. These data were analyzed to determine the population within the areas of influence and how that population is projected to change by 2020. The populations of the counties in the area of influence are projected to decrease at different rates. The projected percentage change was determined for each area of influence based on the change in the estimated population in each county.

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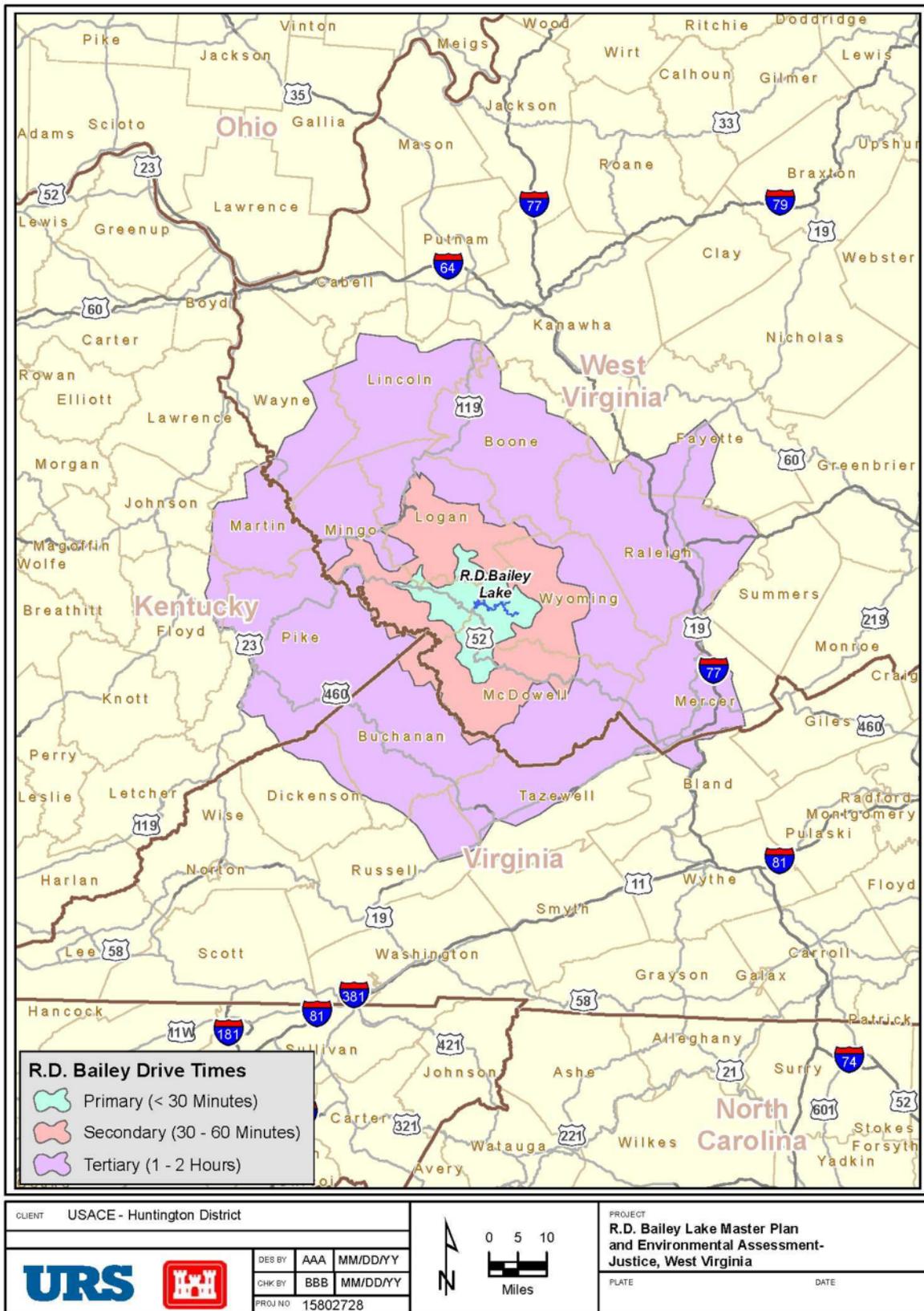


Figure 3-10: Area of Influence

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The estimated populations for the primary, secondary, and tertiary areas of influence are displayed in Table 3-7. The population in the primary area of influence is projected to decrease by 7.5 percent by 2020. The population in the secondary area of influence is projected to decrease by 6.7 percent by 2020. Finally, the population in the tertiary area of influence is projected to decrease by 1.4 percent by 2020.

Table 3-7. Existing and Projected Population in Areas of Influence

Area of Influence	2000 Population	2010 Population Estimate	2020 Projection	Projected Growth 2010–2020
Primary	53,961	49,246	45,558	-7.5%
Secondary	65,039	57,721	53,830	-6.7%
Tertiary	342,733	335,908	331,118	-1.4%

Source: West Virginia University, 2009

Changes in the percentage of the population in each age group were based on projected changes at the county level. The analysis estimated the percent change in each age group for each area of influence, as shown in Table 3-8. Within the primary area of influence, the percentage of people 19 years of age and under will decrease from 26.1 percent in 2000 to 25.0 percent by 2020. The percentage of people over 65 is projected to increase from 13.2 percent in 2000 to 14.4 percent by 2020. Age distribution across other age groups in the primary area of influence is projected to remain fairly constant. Within the secondary area of influence, the percentage of people 19 and under will decrease from 24.9 percent in 2000 to 23.4 percent by 2020. The percentage of people over 65 is projected to increase from 13.5 percent in 2000 to 14.9 percent by 2020. Age distribution across other age groups in the secondary area of influence is projected to remain fairly constant. In the tertiary area of influence, age distribution across age groups is also projected to remain fairly constant.

Table 3-8. Age Distribution of Population by Area of Influence

Age Group	Primary			Secondary			Tertiary		
	2000	2010	2020	2000	2010	2020	2000	2010	2020
<5	5.8%	5.5%	5.7%	6.2%	6.0%	5.7%	5.3%	5.3%	5.3%
5-19	20.3%	19.7%	19.3%	18.7%	18.0%	17.7%	18.0%	17.7%	17.5%
20-44	34.7%	33.6%	34.9%	31.3%	31.2%	32.0%	28.7%	29.9%	30.1%
45-64	26.1%	26.1%	25.8%	30.3%	29.9%	29.3%	28.3%	27.3%	27.1%
≥65	13.2%	15.1%	14.4%	13.5%	14.9%	15.3%	19.6%	19.8%	20.0%

Source: West Virginia University, 2009

The median incomes of the households in the areas of influence were estimated using a weighted average of the average 2008 median incomes of the counties in the area of influence. The median household income in the primary, secondary, and tertiary areas of influence was \$29,418, \$28,690, and \$31,848, respectively, in 2008. These compare to the median household income for the entire State of West Virginia of \$37,528 and to the United States of \$52,029.

Employment by industry category in Mingo and Wyoming Counties as of 2009 is summarized in Table 3-9. Top ten employers in both counties as of 2010 are listed in Table 3-10. The data in the tables highlight the importance of the energy industry and local, state, and federal government to the Project area economy. In 2010, the mining and natural resource extraction industry accounted for 26.1 percent and 21.6 percent of the total employment in Mingo and Wyoming Counties, respectively. Next in order of importance, total government employment accounted for 16.6 percent and 22.5 percent of the total employment in Mingo and Wyoming Counties, respectively. Finally, educational and health services employed 9.6 percent of the Mingo County labor force and 12.7 percent of the labor force in Wyoming County in 2010, ranking third in order of importance.

Table 3-9. 2009 Employment by Industry Category

Industry Category	Mingo County Employment	Wyoming County Employment
Total, All Industries	8,174	5,028
Total, Private Sector	6,800	3,813
Natural Resources & Mining	2,380	1,090
Construction	657	198
Manufacturing	352	121
Trade, Transportation & Utilities	1,145	961
Wholesale Trade	133	77
Retail Trade	493	629
Information	78	23
Financial Activities	215	1358
Professional & Business Services	584	148
Education & Health Services	892	768
Leisure & Hospitality	318	301
Government	1,373	1,215
Federal Government	77	88
State Government	226	195
Local Government	1,071	932

Source: WorkForce West Virginia, 2011

Table 3-10. Top Ten Employers in Mingo and Wyoming Counties, March 2010.

Order of Importance	Mingo County Employers	Wyoming County Employers
1	Mingo County Board of Education	Wyoming County Board of Education
2	West Virginia Mine Power, Inc.	Pinnacle Mining Co., LLC
3	Mingo Logan Coal Co.	Mountainheart Community Services, Inc.
4	Brody Mining, LLC	Brooks Run Mining Co., LLC
5	Coal Mac, Inc. (Phoenix Coal Mac)	Council on Aging, Inc.
6	Williamson Memorial Hospital	Integrated Resources, Inc.
7	Rockhouse Creek Development, LLC	Spartan Mining Co.
8	Unilin Flooring NC, LLC	Dynamic Energy, Inc.
9	Consol of Kentucky, Inc.	Wyoming County Commission
10	Spartan Mining Company	Simmons Fork Mining, Inc.

Source: WorkForce West Virginia, 2011

3.3.2 Environmental Justice

Executive Order (EO) 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low Income Populations*, and the February 11, 1994 Presidential Memorandum providing guidance for this EO, require federal agencies to develop strategies for protecting minority and low-income populations from disproportionate and adverse effects of federal programs and activities. The EO is “intended to promote non-discrimination in federal programs substantially affecting human health and the environment.” An environmental justice evaluation is performed to evaluate the impact of a project on the potentially affected population and to ascertain whether target populations would be affected more adversely than other residents.

As of May 2011, only limited data from the 2010 Census were available from the U.S. Census Bureau. These data were reviewed to determine total population and racial composition of West Virginia as a whole and Wyoming and Mingo Counties, which are the areas that would be most affected by the Proposed Action. The total 2010 population of West Virginia was 1,852,994. Minorities accounted for only 6.1 percent of the total population for the State as a whole. The total 2010 population of Mingo and Wyoming Counties was 26,839 and 23,796, respectively. Minorities accounted for approximately 2.9 percent and 1.8 percent of the total population of Mingo and Wyoming Counties, respectively. Statistics about income and poverty have not yet been released for the 2010 Census (U.S. Census Bureau, 2010).

Generally, as part of an environmental justice analysis, the percentages of low income and minority persons are calculated to estimate the likelihood that such populations may exist in areas potentially affected by the proposed actions and be disproportionately impacted by these actions. Because 2010 Census block level and block group data are not yet available, 2000

Census data were reviewed. In 2000, minorities represented approximately 4.9 percent of the population of the state as a whole, while minorities represented roughly 3.6 percent and 1.4 percent of the total population of Mingo and Wyoming Counties, respectively. Also in 2000, 17.9 percent of the total state population was below the poverty level, while the portions of the populations of Mingo and Wyoming Counties below the poverty level were 29.7 percent and 25.1 percent, respectively. Based on these statistics, there is a high probability that low income populations may exist in areas that may be affected by the proposed action.

3.3.3 Transportation and Traffic

R.D. Bailey Lake is located in a remote, rugged area of West Virginia. The Project locale is generally served by two-lane roadways with frequent sharp curves and steep grades. US Highway 52 is the principal highway through this area along with State Route 97 (See Figure 1-1). Traffic volumes are low, reflecting the remoteness of the Project site and the small resident population. Traffic flow is often constrained by the combination of steep, twisting alignments and slow-moving heavy trucks transporting coal and supplies needed by the coal industry.

3.3.4 Recreation

The Project provides a wide range of recreational activities. Table 3-11 lists the recreational activities that are available at the Project, locations, and the available facilities. The recreational activities are grouped by major type of recreational pursuit. Figure 3-11 shows the locations of the recreation areas at the Project.

Table 3-11. Recreational Facilities at the Project

Recreational Activity	Location	Facilities
Boating	Below Dam Area	<ul style="list-style-type: none"> • Winter launch (single-lane) • Parking area for vehicles and trailers
	Guyandotte Point	<ul style="list-style-type: none"> • Boat launch with three lanes • Courtesy loading dock • Parking for vehicles and trailers
	Guyandotte Campground	<ul style="list-style-type: none"> • Single-lane boat ramp at Smith Bend • Parking for vehicles and trailers
	R.D. Bailey Lake	<ul style="list-style-type: none"> • 600 acres for boating
Camping/Overnight	Guyandotte Campground	<ul style="list-style-type: none"> • 94 RV campsites with electricity, at two camping areas • Bath house for each camping area • 12 Tent camping sites • Playground equipment

Table 3-11. Recreational Facilities at the Project

Recreational Activity	Location	Facilities
Fishing	Below Dam Area	<ul style="list-style-type: none"> • Fishing platforms and benches along river • Access to the winter boat ramp • The dam tailwaters are stocked for fishing
	Guyandotte Campground	<ul style="list-style-type: none"> • Shore fishing • Access to Smith Bend boat ramp
	Guyandotte Point	<ul style="list-style-type: none"> • Shore fishing • Boat launch with three lanes
	R.D. Bailey Lake	<ul style="list-style-type: none"> • Access available from shore, docks, or boat
Hunting	Wildlife Management Area	<ul style="list-style-type: none"> • 17,188 acres of designated hunting
Other Activities (hiking, horseback riding, etc)	Wildlife Management Area	<ul style="list-style-type: none"> • Multi-use access roads (hunting access, hiking, and horseback riding)
	Below Dam Area	<ul style="list-style-type: none"> • Justice Trail located in Below Dam Area
	Visitor Center and Dam Overlook Area	<ul style="list-style-type: none"> • Salt River Trail located near Visitor Center (2-mile) • Visitor Center offers exhibits that focus on R.D. Bailey, dam design and construction, and local wildlife
Picnicking	Below Dam Area	<ul style="list-style-type: none"> • Multiple picnic tables located throughout area
	Big Branch Day Use Area	<ul style="list-style-type: none"> • Three picnic shelters • Multiple picnic tables located throughout the area • Playground equipment
	Guyandotte Point	<ul style="list-style-type: none"> • Picnic shelter • Multiple picnic tables located throughout the area • Playground equipment
	Visitor Center and Dam Overlook Area	<ul style="list-style-type: none"> • One picnic shelter • Playground equipment
Sightseeing	Visitor Center and Dam Overlook Area	<ul style="list-style-type: none"> • Viewing area
	Long Branch Overlook	<ul style="list-style-type: none"> • Viewing area of lake
	Wildlife Management Area	<ul style="list-style-type: none"> • Viewing areas adjacent to access roads
Swimming/ Waterskiing	R.D. Bailey Lake	<ul style="list-style-type: none"> • Approximately 530 acres suitable for waterskiing

A description of the major recreational areas and facilities at the Project is presented below.

- **Below Dam Recreational Area:** This recreation area is a popular area of the Project and offers opportunities for hiking, fishing, and picnicking and is highly utilized during fish stocking periods. Amenities include an informational bulletin board, wooden picnic tables,

three-foot wide sidewalks leading to both sides of the outlet water for fishing, three aluminum benches for fisherman, two small charcoal grills, parking in a gravel lot for 40 vehicles, and the Justice hiking trail, which begins in the Below Dam Area and follows an old railroad for 0.5 mile. The Below Dam Recreation Area also provides access to the winter boat launch, which is accessed via a one-mile long gravel road through the emergency spillway.

- **Visitor Center and Dam Overlook Area:** US Highway 52 provides access to the Visitor Center. The Visitor Center provides public restrooms, exhibits, and the R.D. Bailey Lake Project offices. Exhibits include information about Judge R.D. Bailey (dam and lake namesake), the dam design and construction, and the local wildlife and attractions. The back deck of the Visitor Center is cantilevered over the slope leading down to the dam and provides panoramic views of the dam and lake, supported by two permanently mounted long distance viewing scopes for visitor's use. The area around the Visitor Center includes a picnic shelter with picnic tables and grills, a horseshoe pit, a children's playground with various pieces of equipment, and access to a two-mile hiking path (the Salt River Trail).
- **Long Branch Overlook:** Long Branch Overlook is a small turn-out area that provides a scenic view of R.D. Bailey Lake and former marina area. It is approximately one mile from the junction of Coal Mountain Road and State Route 97.
- **Big Branch Day Use Area:** Located off of Coal Mountain Road, the Big Branch Day Use Area is serviced with electricity and water and includes three picnic shelters with tables and grills, restrooms, parking for 120 vehicles, a children's playground with various pieces of equipment, three horse shoe pits, a basketball court with one goal, and a mulched volleyball court. The area is easily accessible and frequently used by Project visitors. The Day Use Area provides a scenic setting along the Guyandotte River and is located below a tall railroad bridge.
- **Guyandotte Point:** Guyandotte Point is divided into an upper and lower area based on the terrain and various activities. The lower area has restrooms, a three-lane boat ramp, a small picnic shelter with tables and a grill, 100 parking spaces for trailers and vehicles, and 76

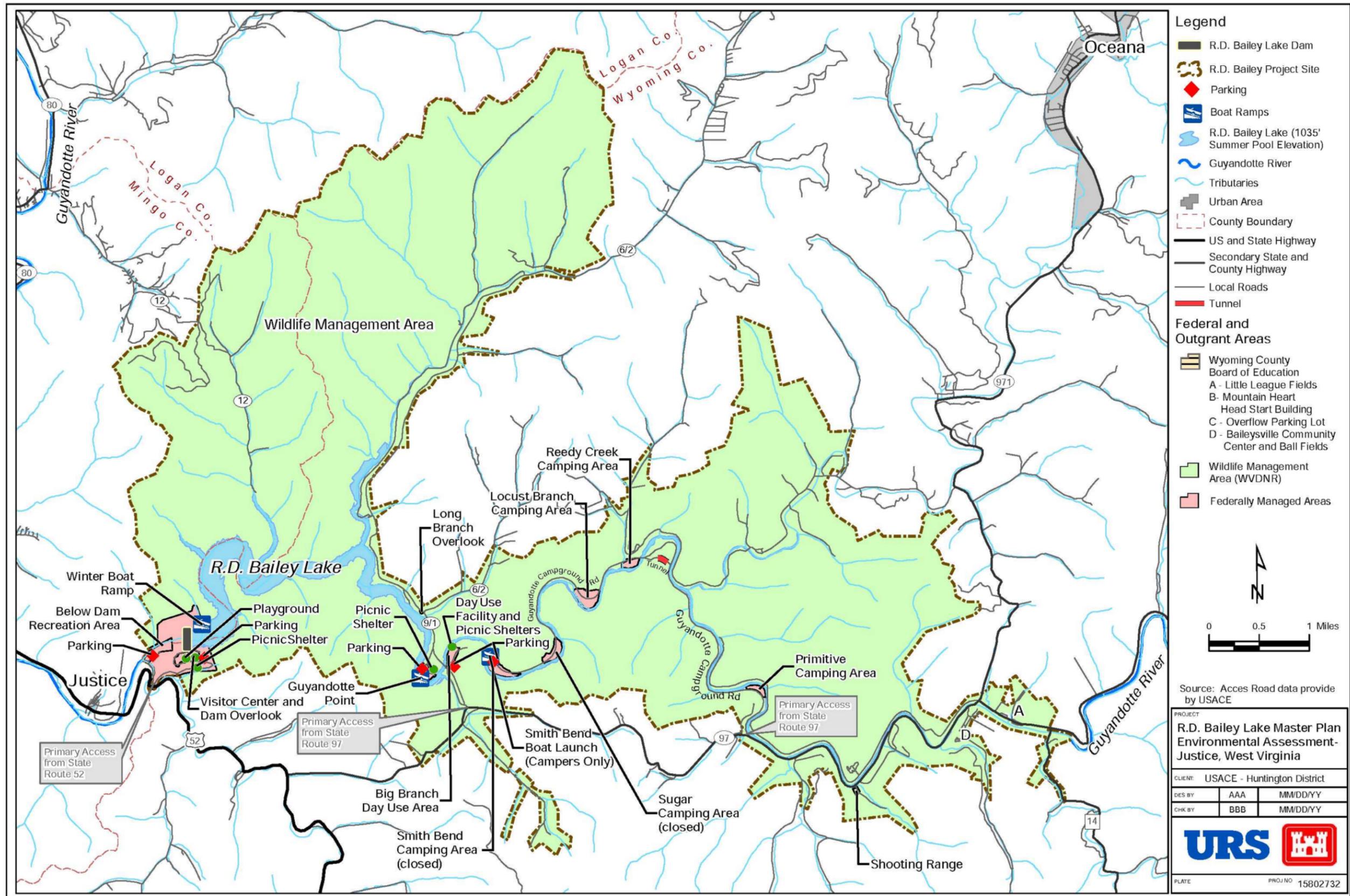


Figure 3-11: Existing Recreational Areas and Major Facilities

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parking spaces for vehicles only. The upper area has a playground, picnic shelter, and associated parking. The boat launch area is designed with a three lane ramp at the summer pool elevation of 1,035 feet NGVD. The ramp tapers down to a single lane at elevation 1,028 feet NGVD. During the winter pool, only one ramp is available. The upper area has a children's playground with various pieces of equipment, parking, a picnic shelter, and a boardwalk to an overlook area.

- **Guyandotte Campground:** The R.D. Bailey Lake campgrounds are spread along a scenic six-mile stretch of the Guyandotte River. The camping grounds are divided into five segments. The Reedy Creek Camping Area, the Locust Branch Camping Area, and the Primitive Camping Area are the three areas open for use, while the Smith Bend Camping Area and the Sugar Camping Area are closed due to frequent flooding. The Reedy Creek Camping Area has 31 improved campsites situated along the river along with a bathhouse with showers and restrooms, children's play equipment, and a horseshoe pit. The Locust Branch Camping Area has 63 improved campsites situated along the Guyandotte River along with a bathhouse, children's play equipment, and a horseshoe pit. The Primitive Camping Area has 12 camping sites that are open during the spring and fall hunting seasons, each with a picnic table and fire ring/grill.
- **Wildlife Management Area (WMA):** The WVDNR has a license to manage 17,188 acres at the Project to improve forest, fish and wildlife resources. This area is known as the R.D. Bailey WMA. The WMA provides opportunities for hunting small game such as squirrel, rabbit, grouse, and turkey, as well as bow hunting for white-tailed deer. Trapping is also permitted for fox, bobcat, skunk, opossum, mink, and muskrat. The river otter was introduced to the Project in 1996 and has thrived in the habitat. Trapping river otters will be permitted in fall 2011. The WVDNR also manages a shooting range located south of State Route 97 in the eastern portion of the Project.
- **R.D. Bailey Lake:** R.D. Bailey Lake is used for boating, fishing, and swimming. The summer pool of the lake is approximately 630 acres, decreasing to 440 acres during the winter. With many winding channels, the lake is a popular boating destination. The lake is used primarily by motorized boats, with relatively few non-motorized boats. Boat access is provided by two boat launch areas in the summer and one boat launch in the winter. The two summer launches are located at Guyandotte Point, which has a three lane ramp, and at Smith

Bend, which has a single ramp available to campers only. The winter launch includes a single lane ramp in the Below Dam Area.

- **Wyoming County Board of Education:** The Wyoming County Board of Education has a lease with the USACE for four tracks of land. The lands are used for educational and recreational purposes and are located in the far eastern portion of the Project. The four areas include little league ball fields, Mountain Heart Head Start, an overflow parking area, and the old Baileysville High School football and baseball fields. These lands are currently utilized and leased through 2030.

3.3.5 Historic and Prehistoric Resources

A historic property, as defined by the Advisory Council on Historic Preservation, is a prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). A historic property includes artifacts, records, and remains that are related to, and located within, these National Register properties.

A Historic Properties Management Plan (HPMP) was completed for the Project area in 1994 (USACE, 1994). The HPMP provides a summary of six archeological sites that have been identified within the reservoir between 1971 and 1994. Sites were mainly identified through surveys completed for the USACE as part of the initial reservoir studies. Previous surveys are mainly limited to salvage excavations and account for a very small percentage of the reservoir. Identified sites are all prehistoric with dates ranging from the Early Archaic (4000- 1000 B.C.) through the Late Prehistoric (A.D. 1000-1750) temporal periods.

The Project area has been evaluated on a very limited basis. In 1971, the WVGES examined areas that were to be impacted by reservoir construction and subsequent road and railroad relocations. This survey identified five prehistoric sites within the Project area. The sites include one petroglyph (46Wm15), two rock shelters (46Wm7 and 46Wm14) and two campsites (46Wm13 and 46Wm20).

In 1973, the five sites were subject to salvage excavations. It was determined that Site 46Wm14 had been destroyed and Site 46Wm15 did not require further study. Fieldwork at Site 46Wm7 resulted in the excavation of twelve cultural features and the recovery of numerous lithic materials, including projectile points, and ceramics. Fieldwork at Sites 46Wm13 and 46Wm20 resulted in very limited cultural materials. The 1973 salvage excavations recommended no further work for any of the five recorded sites. None of the sites are considered eligible for the NRHP.

Only two additional known surveys have been conducted within the Project area since 1973. The first survey is a 2008 bridge replacement survey (WV Division of Highways, 2008). This survey did not encounter any cultural resources aside from the bridge, which has since been replaced. The second survey is a 2010 USACE survey of proposed upgrades at the Reedy Creek and Locust Branch Campsites within the Guyandotte Campground (USACE, 2010). This survey encompassed the entire campsite boundaries and did not encounter cultural resources.

The only additional cultural resources that have been identified within the Project area are three grist mills. One is located at David Branch and two at Clear Fork. All three were included in the 1989 Master Plan (a working document for USACE internal use only), but none have been evaluated.

3.3.6 Aesthetics

As described previously, the topography of the Project area is characterized by hilly and mountainous terrain separated by steep V-shaped valleys. These attributes, in combination with the lake and forested landscape, create an overall scenic environment with opportunities for panoramic vistas and viewsheds. Sight distances range from relatively confined views to panoramic vistas that fade out of sight. The forests have a combination of mature growth trees and understory trees (such as redbud and dogwood), creating a visually appealing environment. The vegetation of the Project offers changes in color, texture, and size that vary with topography, vegetation type, and season. Fall foliage forms a variegated collage that enhances sightseeing. River birch, willow, and sycamore trees flourish in lowlands adjacent to streams and the lake, providing an attractive contrast in color to that of the vegetation on adjacent slopes, ridges, and ravines such as white oak, Virginia pine, red oak, hemlock, and hickory trees.

The Project affords excellent views of the lake at the Visitor Center and the Long Branch Overlook. The shorelines on both banks of the Guyandotte River rise abruptly with gradients of eight percent to vertical and are very rugged. With a shoreline of about 16 miles and the nature of the terrain, there are panoramic views of the lake from numerous locations throughout the Project site.

The Visitor Center and Dam Overlook area is 200 feet above the crest of the dam. It provides a 155-degree panoramic view of the tailwater area, the dam and intake structure, the spillway, and the lake. The Visitor Center has a deck that overlooks the dam and lake. Photograph 3-1 illustrates the panoramic view from the Visitor Center.



Photograph 3-1: View from Visitor Center

4.0 ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

4.1 Physical Environment

4.1.1 Topography

4.1.1.1 No Action

The No Action Alternative would generate no impacts on Project area topography.

4.1.1.2 Proposed Action

Similar to the No Action Alternative, the Proposed Action Alternative would have no adverse effects on topography.

4.1.2 Geology and Mineral Resources

4.1.2.1 No Action

Under the No Action Alternative, no new proposed facilities or measures recommended in the 2011 Master Plan Update would be implemented. Leasing of minerals owned by the federal government would continue under the control of the BLM. In some situations, depending on ownership of minerals, private mineral owners would be required to obtain easements from the USACE for access to parcels where mineral extraction is planned, and the USACE would be able to exert some control over impacts of access road construction. However, in other situations, where access to privately owned minerals is through tracts that the federal government does not own the minerals, the USACE has few rights to influence access road construction and mining operations. These actions would continue to be primarily under the control of State of West Virginia agencies and mining concerns would continue to be subject to state regulations.

4.1.2.2 Proposed Action

No impacts on geology or mineral resources would occur under the Proposed Action. Geotechnical evaluations would be performed to determine any risks associated with the construction of recommended actions in areas of geologic concern, such as highly erodible or unstable slopes. However, it does not appear that the proposed recommendations in the Master Plan Update would have any adverse effects on areas where geological concerns may exist and, consequently, would pose no risk of impact on geological resources.

The Resource Plan includes recommendations calling for closer coordination among USACE, WVDNR, and mining interests to find ways to provide greater input on mining proposals so as to minimize potential adverse impacts on natural resources from access road construction and mining operations. If feasible, a protocol for communication among the parties would allow natural resource managers within the USACE to provide input and additional guidance to insure that mineral extraction would be accomplished with minimal disturbance to the natural systems within the Project; and with minimal impacts on recreation, wildlife, habitat, water quality, and sensitive environmental resources.

4.1.3 Soils

4.1.3.1 No Action

Under the No Action Alternative, no new proposed facilities or measures recommended in the 2011 Master Plan Update would be implemented. Although total Project visitation is expected to remain stagnant or slightly decrease, certain facilities within the Project may see increased usage due to improvements implemented by the USACE that are not part of the Master Plan Update. The USACE and other agencies responsible for outgrants would monitor any areas that are susceptible to erosion from higher recreational usage as well as from users accessing new or less congested areas of the Project (potentially resulting in the development of social trails, trampling of vegetation on the edges of existing campgrounds, or overuse of existing trails). As a result, the potential for increased erosion would be minimized. To minimize potential adverse impacts on soils, the USACE and other agencies responsible for outgrants would implement protective measures such as closing off eroded areas and erosion controls as needed.

4.1.3.2 Proposed Action

Soils in the Project area on steep sloping terrain are generally prone to severe erosion. Maintaining steep slopes (i.e., greater than 15 percent slope) in a forested condition would minimize erosion potential. Areas where slopes are less than 15 percent and have less potential for erosion than steeper areas are more suitable for recreational development. The areas proposed for the construction of facilities (i.e., picnic shelters and restroom facilities) would occur primarily on slopes less than 15 percent and close to existing development. The Master Plan Update recommendations would not involve major new construction in areas of steep slope that could result in high erosion potential.

Implementation of temporary erosion and sediment control BMPs during construction (e.g., mulching bare areas and installing silt fence) along with permanent BMPs post-construction (e.g., managing the flow of stormwater runoff from impervious areas such as buildings and parking lots and establishing permanent vegetation) would occur for all proposed activities that would disturb the ground surface. For construction activities that would disturb more than one acre, the USACE would obtain coverage under the NPDES by applying for a General Permit for Stormwater Discharges Associated with Construction Activities from the WVDEP and would develop construction site erosion control and stormwater management plans as required.

To more thoroughly evaluate impacts possibly associated with any recommendation planned for implementation, the USACE would consider soil suitability, slope, and potential for geologic instability during site-specific project planning. Site-specific mitigation measures would be determined prior to construction and implemented as needed.

4.1.4 Land Use/Land Cover

4.1.4.1 No Action

Under the No Action Alternative, the only changes in existing land use would be the result of continued development of mineral rights within the Project by outside interests that the USACE currently has little control over. Such development would convert existing undeveloped lands into lands used for mineral extraction and for access roads to mining or drilling sites. The USACE would coordinate, to the extent possible, any new mineral extraction project with the state in an effort to avoid or minimize impacts to recreational, natural, and sensitive resources associated with access road and extraction site development.

4.1.4.2 Proposed Action

The effects of site development for mineral extraction that would occur under the No Action Alternative would also likely occur with implementation of the Proposed Action. However, as previously mentioned, recommendations in the Resource Plan would involve investigating and promoting new mining techniques that could minimize adverse impacts of mining and road construction in combination with enhanced communications and coordination among the USACE, WVDNR, and mining companies. These recommendations may lead to better planned operations that could reduce land disturbance and impacts on environmental amenities. None of the remaining recommendations in the Resource Plan would involve construction of major new facilities that could have substantial effects on land use.

4.1.5 Water Resources and Quality

4.1.5.1 No Action

Under the No Action Alternative, no new proposed facilities or measures recommended in the 2011 Master Plan Update would be implemented. Although total Project visitation is expected to remain stagnant or slightly decrease, certain facilities within the Project may see increased usage due to improvements implemented by the USACE that are not part of the Master Plan Update. The USACE would monitor any areas that are susceptible to erosion from higher recreational usage, as well as from users accessing new or less congested areas of the Project (potentially resulting in the development of social trails, trampling of vegetation on the edges of existing campgrounds, or overuse of existing trails); therefore, the potential for increased sedimentation of the lake would be minimal. The USACE would mitigate any adverse impacts by closing off eroded areas and implementing erosion and sediment controls as needed.

Environmental impacts of operations at USACE facilities and projects are monitored through annual assessments performed as part of the Environmental Review Guide for Operations (ERGO) system. The comprehensive assessments provide an evaluation of compliance with all applicable federal, state, and local environmental laws and regulations by identifying environmental problems and rating these problems as minor, major, or significant, with associated levels of corrective action. Issues related to solid waste handling, erosion control, toxic and hazardous waste handling and management, and other considerations affecting water resources and quality are evaluated. Under the No Action Alternative, the ERGO system would continue to insure that impacts of Project operations on water resources and quality would be identified early and corrected.

4.1.5.2 Proposed Action

Under the Proposed Action, there would be minimal increases in impervious surface area associated with the recommended actions, so additional stormwater runoff that could potentially affect erosion and increased sedimentation of waterways would be negligible. The risk of water pollution from spilled or water-transported materials would be similarly minimal.

Adverse short-term impacts on surface water quality could occur from sedimentation resulting from ground disturbances during construction activities, especially in construction areas close to the shoreline or water bodies (e.g. construction of a new marina and associated facilities). Implementing erosion and sediment control BMPs during construction and implementing

permanent stormwater runoff controls would minimize potential adverse impacts. For example, disturbed or bare areas remaining after construction would be vegetated to reduce the potential for erosion.

Adverse short- and long-term impacts on water quality may also impact other resources such as recreation (fishing and swimming), water treatment systems, aquatic biological resources, and terrestrial wildlife. Impacts on water quality may occur from trash/debris entering water bodies, sewage, spills, and leaks of contaminants from both land- and water-based vehicles. Mitigation such as setting limits for motorboat carrying capacity, providing adequate trash collection and sewage treatment facilities for the amount of use, and including stormwater runoff measures during the design of redeveloped or new facilities would not only minimize adverse water quality impacts but potentially improve water quality compared to existing conditions. As described above for the No Action Alternative, the USACE ERGO system provides an annual assessment of Project compliance with environmental requirements. Through this system, environmental issues at the Project are identified and corrective actions planned. As a result, ERGO assessments will minimize any potential adverse environmental effects of the Master Plan Update recommendations on water resources and quality. The recommendations in the Master Plan Update for adding new or upgraded sewage facilities at major campgrounds would have positive impacts on both surface water and groundwater quality by providing upgraded treatment of waste.

Localized turbidity in the near shore lake environment, associated with the construction of a new marina in the lake near the winter boat ramp and a universally accessible fishing pier near the entrance to the Big Branch Day Use Area, may create temporary impacts on water quality. Impacts would be limited to the vicinity of the work with implementation of mitigation measures to minimize turbidity. These measures may include utilizing construction techniques that minimize disturbance to submerged vegetation, limiting construction equipment to the banks of the shore to the extent practicable, using a sediment/silt curtain if warranted, and implementing spill prevention and control measures for vehicles operating in or near the water. Other mitigation measures may include limiting the types of wood preservatives that are used. Wood preservatives such as creosote, pentachlorophenol, and chromated-copper-arsenate treated materials may result in pollutants leaching into the water over time.

4.1.6 Floodplains

4.1.6.1 No Action

Under the No Action Alternative, new construction not stemming directly from the Master Plan Update could occur within areas subject to inundation from fluctuation in lake levels. The USACE would follow existing guidance regarding development within flood prone areas. The USACE publication, EM 1110-1-400 (USACE, 2004) Sections 2.2.1 and 5.2.2 regarding seasonal fluctuations, state that seasonal fluctuations in water levels shall be taken into consideration when designing and developing lake and riverside facilities to avoid the placement of facilities in hazardous or high maintenance areas, and that a five-year flood frequency is a good general guideline when planning lakeside development.

4.1.6.2 Proposed Action

Because flat areas are conducive to development, existing facilities are located in stream valleys and adjacent to the lake shoreline, and new facilities are proposed for some of those same areas. Additionally, many activities require direct access to the lake. Due to this, many of the existing recreation areas are in flood-prone areas and Master Plan Update recommended improvements in these areas would be subject to inundation from fluctuations in lake levels. Examples would be the possible construction of a new marina with associated facilities on the lake and the sewer and water connection improvements at the camping ground. The USACE would follow existing agency guidance described under the No Action Alternative regarding development within a floodplain or flood-prone areas.

The functionality of the floodplain would not be reduced by Project activities. The USACE would ensure that its actions comply with USACE guidance on development within a floodplain (EM 1110-1-400 [USACE, 2004]), EO 11988 (Floodplain Management), and USACE guidance on implementation of EO 11988 (ER 1165-2-26 [USACE, 1984]); and would implement BMPs such as secondary containment and/or elevation of hazardous materials above base flood elevations to the maximum extent possible. Additionally, the USACE and the state would ensure the safety of visitors by monitoring flood levels at areas and facilities used by the public and taking actions such as closing facilities as necessary. All USACE actions would be in compliance with the provisions of EO 11988.

4.1.7 Air Quality

4.1.7.1 No Action

Under the No Action Alternative, construction of projects not directly associated with the recommendations of the Master Plan Update could result in short-term, highly localized, but still minor, impacts on air quality from fugitive dust and construction vehicle emissions. To reduce temporary impacts on air quality from fugitive dust, the construction areas would be watered down when necessary to minimize airborne particulate matter. Emissions from fuel-burning internal combustion engines (e.g. heavy equipment and earthmoving machinery) could temporarily increase the levels of some pollutants, but these increases would be negligible.

4.1.7.2 Proposed Action

Impacts on air quality and mitigation measures to reduce potential impacts would be the same as described under the No Action Alternative. None of the recommendations in the Master Plan Update would generate any substantial impacts on ambient air quality during or following construction, nor generate any violations of state and National Ambient Air Quality Standards.

4.1.8 Climate

4.1.8.1 No Action

The No Action Alternative would have no effects of any kind on existing climate conditions.

4.1.8.2 Proposed Action

Similar to the No Action Alternative, implementation of the Proposed Action would not result in any impacts on climate.

4.1.9 Noise

4.1.9.1 No Action

Construction noise resulting from capital improvements such as campground construction, vegetation management, and other development activities not associated with the 2011 Master Plan Update could generate temporary noise impacts on visitors, employees, and wildlife. In most cases, noise would result in temporary nuisance impacts, potentially affecting the overall recreation experience of Project visitors. To reduce noise impacts, construction activities should

be confined to daylight hours during the normal work week. Work may also be scheduled in the off-season. If deemed appropriate, construction specifications can require contractors to provide muffling of construction equipment. In general, increased use of certain areas, due to improvements, would create additional noise above existing conditions due to the associated increase in human activities. Seasonal noise from boats on the lake could have a negative impact on wildlife, day users, and lakeside campers. However, boating-related noise is a consequence of the recreational purpose of the Project and would be expected to result in only minor impacts on wildlife and visitors.

4.1.9.2 Proposed Action

Impacts from noise and mitigation measures to reduce potential impacts would be the same for the Proposed Action as described under the No Action Alternative. Implementation of the Master Plan Update recommendations may increase use of certain areas of the Project with a commensurate increase in vehicular and motorboat noise; however, as described above, such noise would be experienced by Project users primarily as a temporary and intermittent nuisance, given the rural nature of the area and the existing low ambient noise level. No major adverse noise impacts would result from implementation of any or all of the Master Plan Update recommendations.

4.2 Biological Environment

4.2.1 Vegetation

4.2.1.1 No Action

Under the No Action Alternative, WNDNR and the USACE would continue to monitor, manage, and protect vegetative resources in the R.D. Bailey Lake Project area on an as-needed basis. Littering and trampling of vegetation could occur in informal use areas, especially as a result of higher recreational usage that may result from site-specific improvements that are undertaken separately by the USACE and not part of the 2011 Master Plan Update. The USACE would monitor for impacts on vegetation and implement restrictions or restoration as needed while continuing regular maintenance activities for vegetation control.

An area of concern is the introduction and spread of invasive species, which are already evident in parts of the Project. Under the No Action Alternative, there would be no coordinated plan to control invasive species, increasing the possibility over time that such species would adversely impact existing habitat conditions by out-competing native species.

In addition, under No Action, the baseline study of significant vegetative resources would not be performed. Without this study, information on the location, size, and condition of resources such as bottomland hardwoods and wetlands would not be obtained, and no active plan would be implemented to monitor conditions of these resources and manage threats that could jeopardize their long-term health and continued existence within the Project area.

4.2.1.2 Proposed Action

Several recommendations in the 2011 Master Plan Update would affect Project area vegetation, including the creation of a timber management plan and invasive species management plan as well as completion of a baseline study to identify sensitive or rare habitats within the Project. All of these recommendations would generate major positive impacts on vegetation resources in the Project.

The timber management plan would form the core of a program to create new habitat and increase habitat variety to enhance wildlife resources. The plan could include selective clear-cutting and thinning of trees to provide open habitat and enhance edge effects. Proactive management of open areas, such as meadows and clearings, and more densely vegetated areas, would be initiated to achieve the optimal balance for wildlife and recreational use. Systematic harvesting of timber could be considered in some areas to yield a more balanced forest in terms of desirable habitat to support target game and non-game species, as well as a diversity of wildlife, all of which would enhance recreational value of the Project.

The invasive species management plan would provide the basis for a concerted effort to control intrusion and spread of unwanted plant species and limit their impacts on native vegetation throughout the Project. An active invasive species management plan would support the long-term health of the existing ecosystems occurring in the Project.

Finally, a baseline study of significant vegetative communities is recommended to locate such sensitive habitats as Grassy Lick timber stand, bottomland hardwoods, and wetlands. Bottomland hardwood habitats are becoming increasingly scarce and more valuable from an ecological perspective. Because bottomland hardwood habitats support a variety of plant and animal species that can adapt to both flood conditions and dry periods, and also support wildlife that does not thrive in other environments, this habitat warrants protection. Management of these areas would yield a high-quality habitat for wildlife that would also be beneficial for many recreational activities, including hunting and wildlife viewing. The study would also include acquiring data on the suspected old growth forest stand, as well as wetlands, throughout the

Project. Completing a baseline study of these resources would be a first step to providing enhanced protection for rare and valuable habitat and for providing the basis for long-term monitoring of changes in resource conditions to guide proactive management of these resources.

4.2.2 Wetlands

4.2.2.1 No Action

Under the No Action Alternative, the USACE and WVDNR would continue to preserve and enhance wetland resources within the R.D. Bailey Lake Project area as mandated by EO 11990 and the 1972 Master Plan.

4.2.2.2 Proposed Action

As discussed previously in Section 3.2.2, there are very limited wetland resources within the Project based on currently available data. One of the recommendations in the 2011 Master Plan Update would involve conducting a baseline survey of significant natural resources, habitats, and communities in the Project, as mentioned above in Section 4.2.1.2. This survey would enhance data on the location, size, and characteristics of wetlands in the Project, providing more reliable data than currently exists. This would support future conservation and management efforts to protect and enhance wetland resources, which would enhance wildlife resources, as well as long-term recreational opportunities for wildlife viewing, nature education, nature photography, and hunting. The remaining recommendations in the Master Plan Update would not generate any adverse impacts on wetlands based on existing data presented in this PEA.

The USACE would obtain all appropriate permits as required by Section 401 of the CWA for construction that would impact any waters of the US. The USACE would require other agencies and developers to obtain CWA Section 404 permits prior to implementation of projects that would result in impacts on wetlands.

4.2.3 Terrestrial Wildlife

4.2.3.1 No Action

Under the No Action Alternative, WVDNR and the USACE would continue to monitor and manage wildlife in accordance with the 1972 Master Plan and applicable conditions of the WMA lease. Wildlife viewing, birding, and opportunities to hunt game in portions of the Project area would continue.

4.2.3.2 Proposed Action

The recommended actions proposed in the 2011 Master Plan Update would generate negligible adverse impacts on terrestrial wildlife.

The recommendation for a timber management plan under the Proposed Action would increase the diversity of habitats in the Project to support a wide variety of wildlife species. Terrestrial wildlife resources that enhance hunting opportunities (e.g., white-tailed deer, wild turkey, doves, waterfowl, and various small game species) would benefit over the long-term from habitat improvements resulting from this plan.

4.2.4 Aquatic Life

4.2.4.1 No Action

The No Action Alternative would have no adverse effect on fisheries and other aquatic wildlife resources. WVDNR and the USACE would continue to monitor and manage aquatic resources in accordance with the 1972 Master Plan and current programs. WVDNR would continue to annually stock the lake and the Below Dam Recreation Area with recreationally valuable fish species.

4.2.4.2 Proposed Action

Construction activities in the water (e.g., new courtesy docks and docks for a new marina) could result in short-term adverse impacts on the aquatic environment. Additionally, excess deposition of sediment as a result of stormwater runoff during land-based construction could adversely affect aquatic life including the food chain, spawning and rearing habitat, in-stream cover, water temperature extremes, and other structural and functional components. Sedimentation from construction in areas adjacent to water bodies would be minimized by implementing erosion and sediment control measures. With the controls available for erosion and sediment control, impacts on water quality would be minor, short-term, and localized.

Increased recreational use of some areas or facilities within the Project resulting from improvements in these areas or upgraded facilities could also generate additional impacts. For example, higher motorboat traffic on the lake could increase noise disturbances, as well as the potential for spills and/or leaks of pollutants. Higher numbers of recreational users in certain areas of the Project could also increase the volume of trash or sewage entering water bodies, and stream bank or lakeside habitat destruction from overuse of some areas that could result in

sedimentation or loss of riparian habitat. These consequences would increase the responsibilities of the USACE as resource managers to limit and control the adverse effects resulting from increased usage of specific areas of the Project on nearby aquatic resources to the extent possible.

4.2.5 Threatened, Endangered and Protected Species

4.2.5.1 No Action

Under the No Action Alternatives, USACE actions would continue to be controlled by federal and state endangered species regulations and internal USACE program requirements.

4.2.5.2 Proposed Action

At the time that any of the Resource Plan recommendations are planned for implementation, the USACE will take actions, in compliance with federal and state regulations, to insure that the recommendations will not adversely affect any threatened and endangered species or any critical habitat that may have been established in or near areas potentially affected by the proposed undertakings. Such actions may include surveys of the potential area of impact to determine whether endangered or threatened species may occur in these areas, either seasonally or throughout the year. If found, alternatives to the proposed undertakings that would avoid adverse impacts on these species would be evaluated, and management requirements for these species, including ecological requirements and life histories, would be evaluated to identify possible mitigation measures. These actions would be described in supplementary NEPA documentation prepared subsequent to this PEA that would address the impacts of the specific Master Plan Update recommendations and would be made available for public and jurisdictional agency review and comment prior to implementation and in Section 7 coordination with the USFWS.

4.3 Socioeconomic Environment

4.3.1 Population and Employment

4.3.1.1 No Action

The No Action Alternative is not anticipated to generate any consequential impacts, either positive or negative, on local or regional population, employment, or income.

4.3.1.2 Proposed Action

The Proposed Action is not expected to have any effect on population. The potential construction of a new marina on the lake could produce short-term economic benefits from temporary construction employment and longer-term benefits resulting from a small number of additional jobs created; however, these effects are not expected to be substantial.

4.3.2 Environmental Justice

4.3.2.1 No Action

Existing programs and operation and maintenance activities that would continue under the No Action Alternative, as well as new facilities and/or activities not identified in the 1972 Master Plan Update that may be constructed or implemented on a case-by-case basis, would likely generate no disproportionate impacts on environmental justice populations. The majority of these actions would be implemented within the boundaries of the Project and at a distance from local population centers. As a result, any environmental justice populations that may occur in the Project vicinity would not be directly impacted by these actions, and indirect impacts would be inconsequential.

4.3.2.2 Proposed Action

As discussed previously in Section 3.3.2, based on 2000 Census data, there appears to be a high probability of low income populations residing in areas of Mingo and Wyoming Counties that may be affected by proposed actions recommended in the Master Plan Update; however, it is unclear whether the same likelihood exists for minority populations in these areas. For purposes of this PEA, generalizations about potential environmental justice populations using 2000 Census data are acceptable, but more specific evaluations that will be required as part of any future supplementary project-specific NEPA documentation should be based on the more accurate data from the 2010 Census. At the time that specific actions are planned for implementation and it is determined that additional NEPA documentation will be needed for these actions, 2010 Census block data should be available for use in determining whether potential minority and low income populations may exist in areas that could be impacted by the proposed actions. These data can be used to determine if the proposed actions are likely to generate adverse impacts on these populations and whether these impacts are disproportionate.

The locations within the Project where Resource Plan recommendations would be implemented are generally far removed from populated areas. As a result, local residents would be unlikely to experience direct impacts from implementing these recommendations, whether disproportionate or otherwise. However, if these recommendations result in increased visitation to the Project, local residents may be indirectly impacted, negatively by increased traffic and positively by increased revenue, from the greater number of Project recreational users who may buy supplies or accommodations locally. The direct and indirect impacts resulting from the proposed Resource Plan recommendations on local communities are not expected to be substantial, and it is unlikely that such impacts could likely be considered as disproportionate if environmental justice populations were determined to exist in any affected community. Final determination will be made when the impacts of individual recommendations planned for implementation are analyzed as part of any supplementary NEPA evaluations that may be required for these actions.

4.3.3 Transportation and Traffic

4.3.3.1 No Action

The No Action Alternative would have no adverse impacts on the local transportation network or traffic volumes.

4.3.3.2 Proposed Action

Project visitation is expected to be stagnant or decrease over the planning horizon evaluated in the 2011 Master Plan Update. As a result, none of the recommendations would generate adverse impacts on traffic volumes and the local transportation network in the Project

4.3.4 Recreation

4.3.4.1 No Action

The provision of recreational facilities and services would continue under the No Action Alternative, but the 1972 Master Plan would not accurately reflect the current status of Project facilities. New improvements to recreational and support facilities could be developed on a project-by-project basis, but these improvements would represent a piecemeal and potentially inefficient approach to fulfilling the authorized purposes of the Project in the long term.

4.3.4.2 Proposed Action

Recreational needs of the public would be better accommodated through implementation of a comprehensive plan over the long term as represented by the 2011 Master Plan Update. The Proposed Action is based on a review of the existing facilities, resource suitability, trends and forecasts of future demand, and discussions with stakeholders. There would be beneficial impacts on recreation not only from modernizing and upgrading existing facilities (e.g. expanding facilities for fishing and boating, including a possible new marina), but also from increasing the management of natural resources through some of the Resource Plan recommendations. Such recommendations include baseline studies of significant natural resources and development of timber management and invasive species control plans, all of which could improve the health of local habitats and encourage wildlife diversity. Expanding the camping experience with modern, upgraded facilities would also complement the existing campsites presently available.

4.3.5 Historic and Prehistoric Resources

4.3.5.1 No Action

Under this alternative, actions by the USACE that are not associated with the 2011 Master Plan Update recommendations would be guided by the 1994 HPMP as well as the other historic/archaeological resource investigations previously discussed in Section 3.3.5. Considerable information is thus available to minimize adverse impacts on cultural resources of any USACE activities. The District Archaeologist would determine the need to avoid, minimize, or mitigate impacts on cultural resources in keeping with the determinations of NRHP eligibility or the need for further investigation. The District Archaeologist would also determine the need for cultural resource surveys for any unsurveyed areas of the Project where actions are proposed and recommend appropriate courses of action. Activities that may affect cultural resources would be coordinated with the West Virginia Historic Preservation Officer under the requirements of the Advisory Council on Historic Preservation.

4.3.5.2 Proposed Action

The Project area has been subjected to very limited study. Site distribution tendencies have not been ascertained. It is assumed that since the Project area is an upland reservoir with comparatively narrow floodplains and steeply sloping terrain, that few NRHP eligible sites

would be expected. Sites should be limited to rock shelter occupations, small camp sites, and possibly small mounds.

Proposed development actions in areas not previously surveyed will require coordination with the District archeologist to determine if a cultural resource survey is required. The District is currently unsure of the number and boundary limits of previously evaluated real estate actions that have been cleared at the District level (e.g., pipelines, etc.). These smaller projects need to be catalogued and mapped to insure areas are not subject to repeated surveys. In the absence of mapping, coordination with the District archeologist will ensure that real estate actions are not subject to unnecessary resurveying. Cultural resource research, evaluation, and reporting must comply with all applicable federal laws and regulations.

District priorities for cultural resources within the Project area are as follows: 1) To conduct a systematic survey of the Project area for prehistoric and historic archeological sites, the most pressing need being a shoreline survey at winter pool when sites may become uncovered by bank erosion, as well as a survey of the three documented grist mills; 2) to assess artifact collections recovered from the Project area according to the guidelines established in 36 CFR 79; 3) to improve consultation and education efforts, including outreach to Native American tribes, coordination with the West Virginia State Historic Preservation Office, training of project personnel, and site interpretation; 4) to update the HPMP to include the geographic information systems (GIS) georeferenced boundary delineations and metadata for all surveyed areas, as well as locations of identified resources within the Project area; and 5) to produce GIS boundary delineations for previously cleared, as well as all future, real estate actions.

4.3.6 Aesthetics

4.3.6.1 No Action

Under the No Action Alternative, aesthetics in the Project area would remain essentially unaffected. Panoramic views of the lake and surrounding mountainous terrain would remain available to visitors from the Visitor Center and Long Branch Overlook. Under the No Action Alternative, views from the Long Branch Overlook may be partially obscured periodically by vegetation that is not regularly controlled under a formal vegetative management plan.

4.3.6.2 Proposed Action

Implementation of the Proposed Action would have no substantial effects on aesthetic conditions within the Project.

4.4 Cumulative Impacts

4.4.1 Past and Present Actions

Cumulative impacts would result from the incremental impact of the Proposed Action added to impacts from other past, present, or reasonably foreseeable future actions in the local area. These actions include major undertakings that are sponsored by governmental agencies as well as private businesses and individuals. The potential environmental consequences of greatest concern that could be affected by the cumulative effects of these actions include reduced water quality due to increased erosion and loss of vegetation from land clearing, loss of aquatic habitat and attendant impacts on aquatic fauna, loss of terrestrial habitat and associated impacts on terrestrial wildlife due to land clearing, and increased possibility of groundwater contamination due to mineral extraction operations (including oil and gas drilling). Adverse cumulative impacts on cultural resources and threatened and endangered species are expected to be minimized by state and federal regulatory controls and restrictions already in place. Geographical boundaries for this discussion of cumulative impacts are the Project area and Wyoming and Mingo Counties. Temporal boundaries are the reservoir impoundment operational date (1980) to 50 years into the future (2030).

4.4.2 Reasonably Foreseeable Future Actions

- **Gas Well Drilling** - At the time of the scoping meeting for the Master Plan Update in August 2009, two natural gas drilling companies attended to discuss their (then) current and future drilling plans for the Project. At that time, it was expected that natural gas drilling would be a major activity occurring on the Project for the foreseeable future, and the comments by these companies supported that assumption (see Scoping Meeting minutes in Appendix B). However, both companies have been contacted as part of the preparation of this PEA to update the previous information from the scoping meeting. Since 2009, the natural gas industry has been concentrating drilling operations on the Marcellus shale formation, which extends across several states including the northern portion of West Virginia. Using the new hydrofracturing technique, drilling in this formation has proven to be extremely productive. EQT Corporation and North Coast Energy, Inc. (now EXCO Resources (PA), LLC) have shifted their drilling resources and plans to areas of the Marcellus shale and are not pursuing drilling in the vicinity of R.D. Bailey Lake. The 4-8 new wells that EQT indicated were planned for the Project in 2010 were never drilled, and the 50-60 new wells considered for the next 10-20 years are no longer being planned (EQT, personal communication, August 16, 2011). The time horizon may extend beyond 20 years before drilling is pursued in the

Project locale. Similarly, EXCO is not pursuing the 2-5 new wells indicated at the scoping meeting, although a well may still be pursued at Elk Creek using horizontal drilling. With this possible exception, EXCO has no plans to drill at the Project in the foreseeable future (EXCO Resources, personal communication, August 16, 2011). With the focus of the natural gas industry on the Marcellus shale throughout the region, it appears that drilling activities in the reasonably foreseeable future may be reduced significantly in the Project vicinity, and that potential impacts from drilling and access road construction may be limited.

Consequently, the potential future impacts of natural gas drilling are expected to be limited and were not considered further in the analysis of the cumulative effects of the proposed Master Plan Update recommendations.

- **Proposed Regional Public Water System** - The Region 1 Planning and Development Council of West Virginia, acting on behalf of its project sponsor, Ravencliff-McGraws-Saulsville Public Service District (RMSPSD), is pursuing the planning, design, and construction of a proposed regional public water system using water from R.D. Bailey Lake (Region I Planning and Development Council, 2009). The proposed regional public water system would provide a safe and reliable source of water for several communities and existing public service districts located in the western portions of Wyoming and McDowell Counties, and in the eastern portion of Mingo County, West Virginia. In the long-term future, the proposed regional public water system would serve approximately 13,000 users, with an estimated population of 30,000. These users represent residential connections for domestic water supply, so the population to be served is approximately 2.4 times the number of users. The Region 1 Planning and Development Council of West Virginia has requested that the USACE provide the necessary amount of water to meet the future demands of the tri-county water service expansion area proposed under the R.D. Bailey Regional Water Project. The proposed regional public water system is forecasted to require a maximum of 6.0 million gallons per day (MGD). USACE is considering adding municipal and industrial water supply as an authorized use for the R.D. Bailey Lake Project (USACE, 2011).
- **Proposed Hydroelectric Generating Station and Transmission Lines** - Three Guys Hydroelectric Company, LLC of Fairlawn, Ohio is proposing to install a powerhouse in the Below Dam Area of the R.D. Bailey Lake Project. The proposed hydroelectric project would include a powerhouse that would be located on USACE property and either a 2.5-mile long or 3.5-mile long 46-kilovolt transmission line that would be located on privately owned property. The proposed powerhouse, located on federal land on the west bank of the

Guyandotte River and approximately 50 feet downstream of the dam outlet, would contain two turbines with hydraulic capacities of 300 cubic feet per second (cfs), which would operate under higher flow conditions, and 700 cfs, which would operate under lower flow conditions. The proposed transmission line would connect the powerhouse to a sub-station in Gilbert, West Virginia. There are two proposed alternative routes for the transmission line right-of-way. One alternative would follow the Guyandotte River downstream to Gilbert for 3.5 miles while the other alternative would traverse 2.5 miles of undeveloped land (Kleinschmidt, 2008). The generated electricity would be sold at wholesale prices to public or municipal utility companies, aggregators, or other wholesale purchasers of electric generation. Construction is intended to start in 2012 and would take nine months to complete.

The sub-station would not be located on federal government land. The right of access to transmission line easements and structures that are constructed on government property would have to be granted to the non-federal sponsor by the USACE. Additional details are presented in Chapter 8.0 of the Master Plan Update (Appendix A).

According to ER 1110-2-1454, the construction and development of hydroelectric power facilities on federal government property must be compatible with the authorized project purposes. The USACE has the authority to allow the development of hydropower projects if the development does not adversely impact the original project authorizations.

As discussed in the 2008 *Pre-Application Document*, the proposed hydroelectric project would not affect water quality as mandated by the low-flow control or the downstream flow augmentation. Additionally, the proposed hydroelectric project would not affect the storage capacity of R.D. Bailey Lake as mandated by the flood risk management authorization. Changes to water temperature would not be expected because the water flows quickly through the turbine and, consequently, there is little contact time for the transfer of heat to the water. Significant impacts to the existing recreation activities in the Below Dam Area are also not expected, per the project applicants (Kleinschmidt, 2008).

Aesthetic impacts may be generated by the turbine equipment and the transmission line. The transmission lines may be visible from the Visitor Center, affecting the quality of the existing scenic vista.

- **Major Utility Corridors** – The 2011 Master Plan Update discusses the possibility of establishing major utility corridors through the Project to accommodate future development

of linear infrastructure such as gas and oil pipelines, electrical transmission and distribution lines. However, there are no specific plans or proposals for such developments across Project lands. The discussion in the Master Plan Update is intended to address planning-level considerations to anticipate possible future actions in regard to establishing corridors of this type. At this time, there are no reasonably foreseeable projects of this type that are planned for the time period of this cumulative impacts analysis and, consequently, the establishment of specific, defined utility alignments across Project lands was not considered as part of this analysis.

4.4.3 Effects

The potential adverse cumulative impacts of the 2011 Master Plan Update Resource Plan recommendations, considered in combination with the expected impacts of the reasonably foreseeable projects described above (based on the information provided independently by each non-federal sponsor), would not be substantially different than the impacts of these actions considered separately. These include the effects on surface water and groundwater quality, terrestrial habitat and wildlife, and aquatic habitat and wildlife. The mineral extraction industry, particularly natural gas drilling, has impacted these environmental resources in the past as a result of drill rig setup and the construction of access roads. Future impacts from these operations may be reduced due to scaled-back activity in the Project locale and a shift in drilling operations to other areas of the state. The incremental impacts of the proposed Project recommendations on water quality and the potential loss of terrestrial and aquatic habitat would be inconsequential. In addition, the combined impacts of future water system and energy project development on habitat loss due to ground clearing and construction would be minor, and the incremental impacts of the Master Plan Update recommendations would not be substantially greater than the expected combined impacts from all of these project proposals. It should be noted that, while the incremental adverse effects of the Master Plan Update Resource Plan recommendations would be negligible, the incremental positive effects may be significant to the long-term management of the natural resources of the Project.

5.0 SUMMARY OF MITIGATION MEASURES AND AGENCY CONSULTATION REQUIREMENTS

The following measures would be implemented, as appropriate, to avoid or minimize adverse impacts on resources:

- Instituting erosion and sediment control BMPs for all projects involving ground disturbance and obtaining an NPDES General Permit for Stormwater Discharges Associated with Construction Activities from the WVDEP for any project that would disturb greater than one acre of ground;
- Obtaining Section 401 Water Quality Certification from the West Virginia Department of Environmental Protection for work in waters of the U.S. including the near shore environment of the lake;
- Avoiding lakeside development in hazardous or high maintenance areas of the floodplain and areas subject to the 5-year flood frequency when planning lakeside development, and notifying the public for construction within the storage capacity area up to the maximum pool;
- Coordination with the USFWS under Section 7 of the Endangered Species Act where there is potential to adversely affect listed species; and
- Compliance with Section 106 of the National Historic Preservation Act prior to construction.

In addition to the measures stated above, the USACE would consult with the following agencies prior to implementation of Resource Plan recommendations:

- USFWS under Section 7 of the Endangered Species Act; and
- West Virginia State Historic Preservation Officer under Section 106 of the National Historic Preservation Act as well as other consulting parties, including Native American Tribes, as appropriate.

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6.0 PUBLIC INVOLVEMENT

A public meeting and two stakeholder meetings were held on 4 August 2009 during the scoping phase of the Master Plan. The scoping process is used to invite public participation, identify issues, and obtain public comment in the Master Plan formulation process. The public meeting conducted at the Larry Joe Harless Community Center (202 Larry Joe Harless Drive, Gilbert, West Virginia) contributed to understanding of key project issues and needs as well as formulating the resource objectives presented in the Master Plan Update. Two stakeholder meetings were also held on 4 August 2009 at the Larry Joe Harless Community Center. The results of the three meetings are summarized in Chapter 2.0 of the Master Plan Update and a detailed summary of comments provided by the public and stakeholders is presented in Appendix C of the Master Plan Update.

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7.0 REFERENCES

- Bureau of Business and Economic Research, College of Business and Economics. West Virginia *Population Projection by Age-Group, Sex, and County* West Virginia University, 2009
- Kleinschmidt Energy and Water Resource Consultants. December 2008. *R.D. Bailey Hydroelectric Project, FERC Project No. 12683, Pre-Application Document*. Prepared for Three Guys Hydroelectric Company, LLC. Fairlawn, Ohio.
- National Oceanic and Atmospheric Administration, National Climatic Data Center. February 2004. *The Climate of West Virginia*. http://cdo.ncdc.noaa.gov/climatenormals/clim60/states/Clim_WV_01.pdf. Asheville, North Carolina.
- NatureServe. 2007. *International Ecological Classification Standard: Terrestrial Ecological Classifications*. NatureServe Central Databases, Arlington, VA, U.S.A. data current as of 06 October 2007.
- Pentree, Incorporated. December 2009. *Environmental Report for Ravencliff-McGraws-Saulsville Public Service District for the R.D. Bailey Regional Water Project, Wyoming, McDowell, and Mingo Counties, West Virginia*. Princeton, West Virginia.
- Region 1 Planning and Development Council. 2008. *Comprehensive Economic Development Strategy for Region 1 Planning and Development Council 2009-2013*. Princeton, West Virginia.
- Region I Planning & Development Council. August 2009. *Western Wyoming--Hanover--R.D. Bailey Water System Extension 2009 IJDC Preliminary Application*. Prepared for Ravencliff-McGraws-Saulsville PSD and the Wyoming County Commission. Princeton, West Virginia.
- Upper Guyandotte Watershed Association. February 2006. *Upper Guyandotte River Watershed Based Plan*. Mullins, West Virginia.
- U.S. Army Corps of Engineers. 1968. *Design Memorandum No. 9A Preliminary Master Plan – A Part of the Master Plan for Justice Reservoir, Guyandot River, West Virginia*. Washington, D.C.
- U.S. Army Corps of Engineers. 1974. *Final Environmental Impact Statement - R.D. Bailey Lake, Guyandotte River, Wyoming County and Mingo County, West Virginia*. Huntington District, Charleston, West Virginia.
- U.S. Army Corps of Engineers. June 1975. *R.D. Bailey Lake Project, West Virginia - Final Report: Environmental Assessment*. Huntington District, Charleston, West Virginia.

- U.S. Army Corps of Engineers. March 30, 1984. Water Resources Policies and Authorities - Implementation of Executive Order 11988 on Flood Plain Management. Publication Number ER 1165-2-26,. Available at <http://140.194.76.129/publications/eng-regs/er1165-2-26/toc.htm>. Accessed May 2011.
- U.S. Army Corps of Engineers, Hydrologic Engineering Center. July 1992 (revised November 1994). *Authorized and Operating Purposes of Corps of Engineers Reservoirs*. Project Report 19. Prepared for Hydraulics and Hydrology Branch (CECW-EH-W), U.S. Army Corps of Engineers, Washington, D.C.
- U.S. Army Corps of Engineers. 1994. *Historic Properties Management Plan for R.D. Bailey Lake, Mingo and Wyoming Counties, West Virginia*. Huntington District, Charleston, West Virginia.
- U.S. Army Corps of Engineers. 1996a. Engineering Regulation (ER) 1130-2-550, Recreation Operations and Maintenance Policies. Chapter 3: Project Master Plans and Operational Management Plans. Washington, DC.
- U.S. Army Corps of Engineers. 2004. *Engineering Manual (EM) 1110-1-400, Engineering and Design – Recreation Facility and Customer Services Standards*. Washington, DC.
- U.S. Army Corps of Engineers. 2008. *Project Manual for Water Control Management R.D. Bailey Lake – Guyandotte River*. Huntington District, Charleston, West Virginia.
- U.S. Army Corps of Engineers. 2010. *Proposed Electrical Upgrades at Guyandotte Campground, R.D. Bailey Lake, Wyoming County, West Virginia*. Huntington District, Charleston, West Virginia.
- U.S. Army Corps of Engineers. January 2011. *R.D. Bailey Lake Water Reallocation Study*. Draft Report. Prepared for the Huntington District, Charleston, West Virginia.
- U.S. Census Bureau. 2010. *American FactFinder*. <http://factfinder2.census.gov/main.html>. Accessed May 2011.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 1988. *Soil Survey of Wyoming County, West Virginia*. Washington, D.C.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2003. *Soil Survey of Logan and Mingo Counties, West Virginia*. Washington, D.C.
- U.S. Environmental Protection Agency, Region III. March 2004. *Metals, pH, and Fecal Coliform TMDLs for the Guyandotte River Watershed, West Virginia*. Final Report. Philadelphia, Pennsylvania.
- U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. 2011. *Green Book*. <http://www.epa.gov/oar/oaqps/greenbk/>. Washington, D.C.

- U.S. Fish and Wildlife Service. December 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Biological Services Program Publication FWS/OBS-79/31. Washington, D.C.
- U.S. Fish and Wildlife Service. 2010a. *National Wetlands Inventory*. <http://www.fws.gov/wetlands/>. Accessed March 2010.
- U.S. Fish and Wildlife Service. 2010b. *Threatened and Endangered Species in West Virginia*. http://www.fws.gov/ecos/ajax/tess_public/pub/stateOccurrenceIndividual.jsp?state=WV. Accessed June 2010.
- West Virginia Department of Environmental Protection. December 2006a. *Final Report: Water Resources Protection Act Water Use Survey*. Charleston, West Virginia.
- West Virginia Department of Environmental Protection, Division of Water and Waste Management Ground Water Program. 2006b. *Groundwater Programs and Activities: Biennial Report to the West Virginia 2006 Legislature*. Charleston, West Virginia.
- West Virginia Department of Environmental Protection, Division of Water and Waste Management. 2010. *2010 West Virginia Integrated Water Quality Monitoring and Assessment Report*. Charleston, West Virginia.
- West Virginia Department of Natural Resources. 2005. *West Virginia Wildlife Conservation Action Plan*. Charleston, West Virginia.
- West Virginia Department of Natural Resources, Natural Heritage Program. February 2007. *Rare, Threatened and Endangered Animals*. Charleston, West Virginia.
- West Virginia Division of Highways. 2008. *A Cultural Resources Management Report, Clear Fork Arch Bridge #1, Wyoming County, West Virginia*. State Project #S355-6-5.95, Federal Project #ACBR-0006(041)D. Charleston, West Virginia.
- WorkForce West Virginia. 2011. *West Virginia County Profiles*. <http://www.workforcewv.org/LMI/CNTYPROF/DEFAULT.HTM> Accessed May 2011. Charleston, West Virginia.

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Appendix A:
R.D. Bailey Lake Master Plan Update

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See *R.D. Bailey Master Plan Update May 2011*

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**Appendix B:
Project Correspondence
and
Agency Coordination**

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July 1, 2010

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

**RE: Notification of Preparation of Environmental Assessment and Request for Initial Project Review
Master Plan Update for R.D. Bailey Lake
U.S. Army Corps of Engineers, Huntington District**

Dear Ms. Carter:

The U.S. Army Corps of Engineers (USACE) Huntington District has retained URS Corporation to update the Master Plan for R.D. Bailey Lake near Justice, West Virginia. As part of the Master Plan Update, a programmatic Environmental Assessment (EA) will be prepared to evaluate the potential environmental impacts from the proposed actions. The EA is being prepared to satisfy USACE's obligations under the National Environmental Policy Act of 1969 and will also serve as a means for ensuring compliance with a variety of other Federal statutes, including, but not limited to, the Endangered Species Act, National Historic Preservation Act, Fish and Wildlife Coordination Act, and the Clean Water Act. The last Master Plan Update for R.D. Bailey Lake was prepared more than twenty years ago.

The study objectives for the R.D. Bailey Lake Master Plan Update include formulation of programs and measures to accomplish the following:

- Enhance the recreational experience of park visitors;
- Minimize impacts of recreational use on project resources;
- Enhance and conserve wildlife habitat and promote conservation education;
- Identify significant and/or environmentally sensitive resources for preservation;
- Delineate and map culturally and historically important site resources;
- Develop natural resource inventories;
- Identify acceptable easement alignments through USACE property;
- Identify ownership and delineate boundaries of mineral resources on USACE property;
- Evaluate potential impacts of invasive species on project resources;
- Evaluate effects of recreational all terrain vehicle use on site resources, recreational activities, and recreational facilities; and
- Evaluate the feasibility of a marina facility on R.D. Bailey Lake.
- Management of habitat type for sensitive species or areas on-site (i.e., wetland areas)

To accomplish these objectives, the Master Plan Update will provide recommendations for modifying existing facilities and/or developing new facilities to best meet current and future requirements given

URS Corporation
Executive Tower
3500 North Causeway Boulevard
Suite 900
Metairie, LA 70002-3527
Tel: 504.837.6326
Fax: 504.831.8880



project constraints. The need for possible changes in management plans for wildlife resources and habitat will also be examined. Based on conceptual layouts, potential land re-classifications required for future implementation will be identified. A map depicting the R.D. Bailey Lake project area and surrounding environs is enclosed for reference purposes.

The USACE plans to make the Draft EA available for public review in September 2010. You will be notified of the availability of the Draft EA and your comments on the EA will be requested at that time. In the interim, we request that your agency provide a list of endangered and/or threatened species and critical habitats under Federal jurisdiction that have been identified within the R.D. Bailey Lake project area. We would also appreciate your identification of other significant fish, wildlife, and plant resources in areas that may be affected by this project, any preliminary resource concerns, as well as potential issues that should be taken into account during development of the Master Plan Update and EA.

Thank you for your assistance in this regard. If you have any questions or require additional information, please contact me at your earliest convenience at allen_muhic@urscorp.com.

Sincerely,

Allen R. Muhic, CEP
Senior Environmental Planner

Enclosure

Cc: Dan Bock, USACE, Huntington District
Tom Hunter, URS Corporation



August 6, 2010

Mr. Randy Huffman, Cabinet Secretary
West Virginia Department of Environmental Protection
601 57th Street East
Charleston, WV 25304

**RE: Notification of Preparation of Environmental Assessment and Request for Initial Project Review
Master Plan Update for R.D. Bailey Lake
U.S. Army Corps of Engineers, Huntington District**

Dear Mr. Huffman:

The U.S. Army Corps of Engineers (USACE) Huntington District has retained URS Corporation to update the Master Plan for R.D. Bailey Lake near Justice, West Virginia. As part of the Master Plan Update, a programmatic Environmental Assessment (EA) will be prepared to evaluate the potential environmental impacts from the proposed actions. The EA is being prepared to satisfy USACE's obligations under the National Environmental Policy Act of 1969 and will also serve as a means for ensuring compliance with a variety of other Federal statutes, including, but not limited to, the Endangered Species Act, the National Historic Preservation Act, the Fish and Wildlife Coordination Act, and the Clean Water Act. The last Master Plan Update for R.D. Bailey Lake was prepared more than twenty years ago. A map depicting the R.D. Bailey Lake project area and surrounding environs is enclosed for reference purposes.

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- Evaluate the feasibility of a marina facility on R.D. Bailey Lake; and
- Management of habitat type for sensitive species or areas on-site (i.e., wetland areas).

URS Corporation
3500 North Causeway Boulevard
Suite 900
Metairie, LA 70002-3563
Tel: 504.837.6326
Fax: 504.831.8860
www.urscorp.com



To accomplish these objectives, the Master Plan Update will provide recommendations for modifying existing facilities and/or developing new facilities to best meet current and future requirements given project constraints. Based on conceptual layouts, potential land re-classifications required for future implementation will be identified. The need for possible changes in management plans for wildlife resources and habitat will also be examined.

The USACE plans to make the Draft EA available for public review within the next two to three months. You will be notified of the availability of the Draft EA and your comments on the EA will be requested at that time. In the interim, we would like to request the views of your agency and any preliminary comments on the proposed project, including potential issues that should be taken into account during development of the Master Plan Update and EA.

Thank you for your assistance in this regard. If you have any questions or require additional information, please contact me at your earliest convenience at allen_muhic@urscorp.com.

Sincerely,

Allen R. Muhic, CEP
Senior Environmental Planner

Enclosure

cc: Mr. Lyle Bennett, 401 Certification Program Manager
Dan Bock, USACE, Huntington District
Tom Hunter, URS Corporation



August 6, 2010

Mr. Frank Jezioro, Director
West Virginia Division of Natural Resources
324 Fourth Avenue
South Charleston, WV 25303

**RE: Notification of Preparation of Environmental Assessment and Request for Initial Project Review
Master Plan Update for R.D. Bailey Lake
U.S. Army Corps of Engineers, Huntington District**

Dear Mr. Jezioro:

The U.S. Army Corps of Engineers (USACE) Huntington District has retained URS Corporation to update the Master Plan for R.D. Bailey Lake near Justice, West Virginia. As part of the Master Plan Update, a programmatic Environmental Assessment (EA) will be prepared to evaluate the potential environmental impacts from the proposed actions. The EA is being prepared to satisfy USACE's obligations under the National Environmental Policy Act of 1969 and will also serve as a means for ensuring compliance with a variety of other Federal statutes, including, but not limited to, the Endangered Species Act, the National Historic Preservation Act, the Fish and Wildlife Coordination Act, and the Clean Water Act. The last Master Plan Update for R.D. Bailey Lake was prepared more than twenty years ago. A map depicting the R.D. Bailey Lake project area and surrounding environs is enclosed for reference purposes.

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- Management of habitat type for sensitive species or areas on-site (i.e., wetland areas).

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Suite 900
Metairie, LA 70002-3563
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The USACE plans to make the Draft EA available for public review within the next two to three months. You will be notified of the availability of the Draft EA and your comments on the EA will be requested at that time. In the interim, we would like to request the views of your agency and any preliminary comments on the proposed project, including potential issues that should be taken into account during development of the Master Plan Update and EA.

Thank you for your assistance in this regard. If you have any questions or require additional information, please contact me at your earliest convenience at allen_muhic@urscorp.com.

Sincerely,

Allen R. Muhic, CEP
Senior Environmental Planner

Enclosure

cc: Dan Bock, USACE, Huntington District
Tom Hunter, URS Corporation



August 6, 2010

Mr. Ken Ashton, Geologist
West Virginia Geological and Economic Survey
1 Mont Chateau Rd.
Morgantown, WV 26508

**RE: Notification of Preparation of Environmental Assessment and Request for Initial Project Review
Master Plan Update for R.D. Bailey Lake
U.S. Army Corps of Engineers, Huntington District**

Dear Mr. Ashton:

The U.S. Army Corps of Engineers (USACE) Huntington District has retained URS Corporation to update the Master Plan for R.D. Bailey Lake near Justice, West Virginia. As part of the Master Plan Update, a programmatic Environmental Assessment (EA) will be prepared to evaluate the potential environmental impacts from the proposed actions. The EA is being prepared to satisfy USACE's obligations under the National Environmental Policy Act of 1969 and will also serve as a means for ensuring compliance with a variety of other Federal statutes, including, but not limited to, the Endangered Species Act, the National Historic Preservation Act, the Fish and Wildlife Coordination Act, and the Clean Water Act. The last Master Plan Update for R.D. Bailey Lake was prepared more than twenty years ago. A map depicting the R.D. Bailey Lake project area and surrounding environs is enclosed for reference purposes.

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- Evaluate potential impacts of invasive species on project resources;
- Evaluate effects of recreational all terrain vehicle use on site resources, recreational activities, and recreational facilities;
- Evaluate the feasibility of a marina facility on R.D. Bailey Lake; and
- Management of habitat type for sensitive species or areas on-site (i.e., wetland areas).

URS Corporation
3500 North Causeway Boulevard
Suite 900
Metairie, LA 70002-3563
Tel: 504.837.6326
Fax: 504.831.8860
www.urscorp.com



To accomplish these objectives, the Master Plan Update will provide recommendations for modifying existing facilities and/or developing new facilities to best meet current and future requirements given project constraints. Based on conceptual layouts, potential land re-classifications required for future implementation will be identified. The need for possible changes in management plans for wildlife resources and habitat will also be examined.

The USACE plans to make the Draft EA available for public review within the next two to three months. You will be notified of the availability of the Draft EA and your comments on the EA will be requested at that time. In the interim, we would like to request the views of your agency and any preliminary comments on the proposed project, including potential issues that should be taken into account during development of the Master Plan Update and EA.

Thank you for your assistance in this regard. If you have any questions or require additional information, please contact me at your earliest convenience at allen_muhic@urscorp.com.

Sincerely,

Allen R. Muhic, CEP
Senior Environmental Planner

Enclosure

cc: Dan Bock, USACE, Huntington District
Tom Hunter, URS Corporation

**Appendix C:
Document Distribution
and
Notification of Availability of Draft R.D. Bailey Lake
Programmatic Environmental Assessment**

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Project:	Notice of Availability of Draft PEA and MPU Legal Advertised in following Newspapers :	
RD Bailey Lake	Regional market – Advertised first week August 30, 2011 <i>Charleston Gazette</i>	Local market – Advertised Weekly August 30, September 6,13,20, 2011 <i>Gilbert Times</i>
Project:	MPU and Draft PEA Documents distributed for comment to:	
RD Bailey Lake	USACE R.D. Bailey Lake Project Office Toby Woods P. O. Box 70 Justice, WV 24851 304-664-3229	Wyoming County Public Library P.O. Box 130 Pineville, WV 24874 (304)732-6899
Project:	Notification of Availability letter to be sent to:	
R. D. Bailey	West Virginia Geological and Economic Survey Mr. Ken Ashton, Geologist 1 Mont Chateau Road Morgantown, WV 26508	West Virginia Division of Natural Resources Mr. Frank Jezioro, Director 324 Fourth Ave. South Charleston, WV 25303
	West Virginia Department of Environmental Protection Mr. Randy Huffman, Cabinet Secretary 601 57 th Street East Charleston, WV 25304	U. S. Fish and Wildlife Service West Virginia Ecological Services Field Office Ms. Deborah Carter, Supervisor 694 Beverly Pike Elkins, WV 26241
	Mingo County Commission John Mark Hubbard, President 75 East 2nd. Ave, Williamson , WV 25661	Wyoming County Commission Silas Mullins, President fbcoach@verizon.com

Text of the legal advertisement:

Notice of Availability

The U.S. Army Corps of Engineers, Huntington District, has prepared a **Master Plan Update** and a **Draft Programmatic Environmental Assessment** for **R. D. Bailey Lake Project**.

Master Plans are used by the Corps to address issues such as outgrants, public use, and appropriate use of Project lands. The Master Plan Updates include recommendations for improvements to support the authorized Project purposes. Programmatic Environmental Assessments provide a broad evaluation of potential environmental consequences of proposed Project improvements.

The documents will be available August 31, 2011 for public review at:

- USACE Project Offices at R. D. Bailey Lake,
- The Wyoming County Library,
- Website: <http://www.lrh.usace.army.mil/projects/review/>.

Comments pertaining to the documents will be accepted until September 30, 2011.

Comments may be submitted on the website above,

by e-mail to: LRHPublicComments@usace.army.mil;

or by letter to: Mr. Jonathan J. Aya-ay, Chief Environmental Analysis Section,
Planning Branch Huntington District Corps of Engineers
502 Eighth Street
Huntington, West Virginia 25701-2070

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