

**Alcoa Power Generating Inc.
Yadkin Division**

Yadkin Project Relicensing (FERC No. 2197)

**Uwharrie National Forest
Aesthetic Study**

Draft Report

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**Prepared by
ERM**

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EXECUTIVE SUMMARY

The Yadkin Hydroelectric Project consists of four developments (High Rock, Tuckertown, Narrows, and Falls) located along the Yadkin River in central North Carolina. Alcoa Power Generating Inc (APGI) is the licensee for the Project. The Project is currently licensed by the Federal Energy Regulatory Commission (FERC No. 2197) and the existing license expires on April 30, 2008. As part of the relicensing process, APGI must address the effects of the Project on a variety of resources, including aesthetics. The primary objective of this study is to evaluate the consistency of existing and proposed Project facilities and operations that are visible from the Uwharrie National Forest (UNF) with the Visual Quality Objectives (VQO) of the Uwharrie National Forest Management Plan. A secondary objective is to consider the potential auditory effects of Project use on the UNF.

The USFS has established methods for use in evaluating and managing the visual landscape. The aesthetic component of the UNF Management Plan was developed using the Forest Service's Visual Management System (VMS). The VMS establishes Visual Quality Objectives (VQO), which describes five different degrees of acceptable alteration of the natural landscape based upon the importance of aesthetics (USFS, 1974). The degree of alteration is measured in terms of visual contrast with the surrounding natural landscape. The five VQOs are:

- Preservation – provides for natural ecological changes only. This is a special designation that applies to wilderness areas and other similarly protected areas.
- Retention – provides for management activities that are not visually evident to the casual forest visitor.
- Partial Retention – provides for management activities that may be evident, but remain visually subordinate to the characteristic landscape
- Modification – provides for management activities that may visually dominate the original characteristic landscape, but must utilize naturally established form, line, color, and texture. These activities should appear as a natural occurrence when viewed in foreground or middleground.
- Maximum Modification – provides for management activities of vegetative and landform alterations that may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

The portion of the UNF near the Project area has a Partial Retention VQO.

Subsequent to the adoption of the UNF Management Plan, the USFS adopted an updated visual assessment methodology called the Scenic Management System (SMS), which is structured around the concept of scenic integrity. The SMS establishes five scenic integrity levels, which generally correspond with the VQO. The scenic integrity level of

moderate equates with the Partial Retention VQO.

Methodology

The geographic scope of this study is that portion of the Project that is within the viewshed of the UNF (i.e., portions of Narrows Reservoir and all of Falls Reservoir and associated Project facilities). This study uses both a technical analysis and a constituent analysis for evaluating consistency with the UNF Management Plan.

The technical analysis included an assessment of views from 14 Key Observation Points (KOPs) that included views from or of the UNF. Each KOP was assessed using standard descriptors and modifier ratings (i.e., spatial dominance, scale contrast, and compatibility). The constituent analysis included the evaluation of the results of two user surveys. A Visitor Preference Survey was used to assess user attitudes about the visual character and quality of the Project area and the effects of Project facilities and operations. Respondents rated photographs of typical views within the UNF on a scale of strongly positive (+3) to strongly negative (-3). This contact survey was administered at 9 locations within the UNF and 44 responses were collected. A Visitor Use Survey was used to assess user opinions regarding the scenic quality of the Project area and those elements that detracted from scenic quality.

Technical Analysis

Based on the KOP analysis only two of the Project facilities/operational effects received Low or Very Low scenic integrity ratings:

- Narrows Dam viewed from downstream, and
- Narrows Reservoir with an extreme drawdown (approximately 12 feet).

Narrows Dam, when viewed from downstream, is a large imposing structure with a maximum height of approximately 200 feet. The visual effect of the dam is complicated with a non-integral powerhouse and transmission lines, an access road, and a bridge all crossing the tailwaters downstream of the dam. These alterations tend to dominate the valued landscape character being viewed, resulting in a Low Scenic Integrity rating.

Narrows Reservoir was evaluated over a range of drawdowns. At full pool, Narrows Reservoir appears “intact” and is consistent with a High Scenic Integrity rating. At the normal maximum annual drawdown of approximately 3 feet, the reservoir “appears slightly altered” and is consistent with a Moderate Scenic Integrity rating. At an extreme drawdown of approximately 16 feet, like that which occurred during the winter of 2003 for purposes of relicensing studies, the reservoir “appears heavily altered” and is consistent with a Very Low Scenic Integrity rating. Falls Reservoir is operated as a run-of-river facility with relatively little daily fluctuation (approximately one foot). Under

current operations, Falls Reservoir appears “intact” and is consistent with a High Scenic Integrity rating.

Constituent Analysis

The primary findings of the constituent analysis were:

- 85 percent of respondents indicated that scenic quality was either a minor consideration or not a consideration in the user’s decision to go to the UNF, although in response to a separate question, “natural environment” and “scenery and/or setting” were cited by 61 and 52 percent of respondents, respectively, as a main reason for choosing to visit the UNF.
- 67 percent of respondents considered the scenic quality of the UNF as better than alternative recreation areas in the region.
- 89 percent of respondents rated the scenic quality of the UNF Project area as “somewhat attractive” or “very attractive”.
- Most respondents considered the reservoirs, forest, and trails as the most attractive features of the UNF.
- Campgrounds/picnic areas and the reservoirs were frequently noticed and generated primarily positive reactions.
- Most respondents considered the dirt roads and trash as the least attractive features of the UNF.
- Forest roads and timber harvests were frequently noticed and generated primarily negative reactions.
- The lowest rating of the 20 Visual Preference photographs was a +0.9 (i.e., the Narrows Dam tailrace and Falls Dam viewed from upstream), which reflects a slightly positive visual impression. No photographs received an overall negative rating.
- Floating debris/trash, eroding shorelines, and muddy water were identified as the most common detractors of scenic quality in the UNF Project area.
- Relatively few respondents indicated that they had “special ties” to the Project area (e.g., family traditionally visited the area). This conclusion is reinforced by the fact that only about 26 percent of respondents had been visiting the area prior to 1990.

In terms of Project facilities and operations, the responses to the constituent surveys are summarized below in Table ES-1.

Table ES-1 Summary of Constituent Responses Regarding Project Facilities

Project Feature	% Identified as a Scenic Quality Detractor	VPS Rating (+3 to -3)	% Who have Noticed Project Feature	Primary Reaction of those who Noticed Project Feature
Narrows Reservoir	5%	+1.7 to +2.3	80%	83% with strong positive reaction
Narrows Dam	8%		36%	50% positive, 25% neutral, and 25% negative reaction
upstream		+1.2		
downstream		+0.9		
Falls Reservoir	5%	+1.2 to +2.1	80%	83% with strong positive reaction
Falls Dam	8%		36%	50% positive, 25% neutral, and 25% negative reaction
upstream		+0.9 to +1.1		
downstream		+1.0		
Exposed Lake Bottom	8%			
Overhead Transmission Lines	11%		20%	8% positive, 54% neutral, and 38% negative reaction

In summary, most users primarily choose the UNF because of its proximity to their homes and the available recreational opportunities, although the natural environment and scenery of the area were also important factors. Most users consider the area to be visually attractive and more attractive than many alternative recreation areas in the region. Overall, most respondents identified Forest roads, timber harvests, floating debris/trash, eroding shorelines, and muddy water as the features that most adversely affected visual quality.

In terms of Project facilities, none were identified as a significant detractor of visual quality. In fact, the reservoirs were considered as one of the principal amenities of the Project area. Narrows Dam, as viewed from downstream, and Falls Dam, as viewed from upstream, received the lowest Visual Preference ratings, but these ratings were still slightly positive (+0.9).

Findings and Conclusions

Most existing Project facilities are compatible with the VQO of the UNF Management Plan. However, Narrows Dam as viewed from downstream received a low scenic integrity rating in the technical analysis but constituents rated the view as slightly positive. From a Project operations perspective, current operations (normal maximum drawdown of approximately 3 feet at Narrows and 1 foot at Falls reservoirs) are consistent with the VQO of the UNF Management Plan. More extreme drawdowns, such

as the approximately 16 foot drawdown that occurred in December 2003 at Narrows Reservoir for purposes of relicensing studies, would not be compatible with the VQO of the UNF Management Plan. The compatibility of Project facilities and operations with the UNF Management Plan is summarized in Table ES-2.

Auditory Effects

The constituent surveys also questioned users about the magnitude and source of noise problems encountered at the UNF. About 81 percent of respondents indicated that noise was not a problem, with only 1 percent indicating that noise was a big problem and 4 percent indicating that noise was a moderate problem. RV generators, rather than watercraft (boats and jet skis) were cited as the major source of noise problems.

Table ES-2 Summary of Compatibility of Project Facilities and Operations with the UNF Visual Quality Objectives

Project Feature	Technical Rating (Scenic Integrity ¹)	Constituent Rating	UNF VQO ¹	Compatibility	Comments
Narrows Reservoir (normal max drawdown ~ 3 ft)	Moderate	Moderately positive	Partial Retention	Yes	Both technical and constituent ratings indicate that Narrows Reservoir at near full pool is perceived as an aesthetic amenity.
Narrows Reservoir (extreme drawdown ~16 ft)	Very Low	not rated	Partial Retention	No	Technical analysis of KOPs indicates that the aesthetics of the UNF is adversely affected by extreme drawdowns (~16 feet)
Narrows Dam (viewed from upstream)	Moderate	Slightly positive	Partial Retention	Yes	Narrows Dam as viewed from upstream does not dominate the view and is compatible in scale with the surrounding landscape. It is actually perceived by users as slightly positive aesthetically.
Narrows Dam (view from downstream)	Low	Slightly positive	Partial Retention	Mixed Results	Narrows Dam as viewed from downstream is a large imposing structure. A non-integral powerhouse, access road and bridge, and overhead transmission lines further complicate the view. Overall, the technical analysis resulted in a Scenic Integrity Rating of Low. This is somewhat inconsistent with the results of the constituent surveys, which rated this view as slightly positive.
Falls Reservoir (Normal max drawdown ~1 ft)	High	Moderately positive	Partial Retention	Yes	Both the technical and constituent ratings indicate that Falls Reservoir is perceived as an aesthetic amenity and that current operations do not adversely affect aesthetics.
Falls Dam (view from upstream)	Moderate	Slightly positive	Partial Retention	Yes	Falls Dam as viewed from upstream does not dominate the view and is compatible in scale with the surrounding landscape. It is actually perceived by users as slightly positive aesthetically.
Falls Dam (view from downstream)	Moderate	Slightly positive	Partial Retention	Yes	Falls Dam as viewed from downstream does not dominate the view and is compatible in scale with the surrounding landscape.

¹ VQO of Partial Retention generally equates to a Scenic Integrity Rating of Moderate.

1.0 INTRODUCTION

The Yadkin Hydroelectric Project (Project) is located along a 38-mile stretch of the Yadkin-Pee Dee River, in Montgomery, Stanly, Davidson, Davie, and Rowan Counties, North Carolina. The Project consists of four developments: High Rock, Tuckertown, Narrows, and Falls. Alcoa Power Generating Inc. (APGI) is the licensee for the Yadkin Hydroelectric Project. The Project is currently licensed by the Federal Energy Regulatory Commission (FERC) as Project No. 2197 and the existing license expires on April 30, 2008. The Project generates electricity to support the power needs of Alcoa's Badin Works, to support its other aluminum operations, or is sold on the open market.

The purpose of this study is to collect, analyze, and provide information regarding aesthetics at the Uwharrie National Forest (UNF) as part of the Project's relicensing process. The primary objective of this study is to evaluate the consistency of existing and proposed Project facilities and operations that are visible from the UNF with the Visual Quality Objectives (VQO) of the Uwharrie National Forest Management Plan. A secondary objective will be to consider the potential auditory effects of Project use on the UNF.

The geographic scope of this study is that portion of the Project that is within the viewshed of the UNF (i.e., portions of Narrows Reservoir and all of Falls Reservoir and associated Project facilities). This study will include both views from the UNF and from key viewpoints toward the National Forest.

A three-part approach to meeting the study objectives was taken:

1. Describe the Project's regional setting and the Project facilities in the vicinity of the UNF as a framework for analysis.
2. Identify key observation points (KOP's) in common public use areas within the UNF and evaluate each KOP in terms of its visual character and the effect of the Project facilities on this character.
3. Conduct a constituent survey to obtain structured input on users' perception of the scenic quality of the UNF.

Section 2.0 provides a detailed description of this approach.

2.0 METHODOLOGY

This section describes the methodology used to collect and analyze aesthetics data and information for the Uwharrie National Forest (UNF).

2.1 Data Collection

This section describes the methodology used to collect and analyze aesthetics information for the Yadkin Hydroelectric Project. Three major collection methods were used to obtain aesthetic information:

- Photo documentation from 14 KOPs showing representative views of Project facilities and operations and the aesthetics of the area.
- Responses from the Visitor Preference Survey (VPS), which was conducted at several sites within the UNF.
- Responses from the Visitor Use Survey (VUS), which was conducted as part of the overall Yadkin recreation use study and was administered at several sites within the UNF.

2.1.1 Photo Documentation of Key Observation Points (KOP)

The purpose of establishing KOPs is to identify representative views in common public use areas within the UNF (e.g., campgrounds, shoreline recreation sites, trails, roads, fishing areas) in order to evaluate their aesthetic character.

The KOPs included viewpoints of the Project features from the UNF out to a maximum distance of four miles from the Project boundary. This four mile cutoff corresponds with the near background distance zone as defined within the Scenery Management System (SMS) process (VSFS, 1995). While it may be possible to see some large Project features beyond this distance, they would have little visual effect. These sites were identified based on field reconnaissance and input from the U.S. Forest Service (USFS).

At each KOP, the following information was collected:

- Photo-documentation of Project facilities
- Distance from the Project facility
- Estimated number of viewers annually from this location
- Context of the viewers (use association and setting)
- Context of the Project in the surrounding landscape
- Duration of the view
- Extent to which Project-related noise can be heard

A total of 42 KOPs were established for the overall aesthetics study of the entire Yadkin Hydroelectric Project. Of the 42 KOPs analyzed for the overall aesthetics study, 14

included views from and/or of the UNF. These KOPs were analyzed for the purposes of this study regarding the UNF. Table 2-1 summarizes the KOP's by reservoir.

Table 2-1 Number of KOP's by Reservoir

Reservoir	Number of KOP's
Narrows Reservoir	9
Falls Reservoir	5
Total	14

The methods used to identify and photograph KOPs are detailed in the “Aesthetic Study: Yadkin Hydroelectric Project” report.

The view from each KOP is first described using five standard descriptors: distance zone, orientation, field of view, duration of view, and number of viewers (Table 2-2). The view is then evaluated using three “modifier rating” criteria in order to assess the visual effect of the Project facilities in relation to the character of the landscape. These modifier ratings are for spatial dominance, scale contrast, and compatibility (Table 2-3).

Table 2-2 KOP Evaluation Criteria

View Description	Definition	Description/Rating
Distance Zone	The distance from the KOP to the project feature. Distance zones can be described as foreground, middleground, or background.	Foreground- 0 –1/2 mile
		Middleground- 1/2 –1 mile
		Background- >1 mile
Orientation	The degree to which the project feature is visible to the viewer. Orientation can be described as direct, indirect or peripheral.	Direct- clear, unobstructed, focused view of the features.
		Indirect- the feature is visible outside the line of focus.
		Peripheral- project features are visible in the outer fringes of the field of view.
Field of View	The degree of width of the view. The field of view can be described as wide, medium or narrow.	Wide- > 90 degrees of view
		Medium- 45 –90 degrees of view
		Narrow- <45 degrees of view
Duration of View	The length of time that the project element is visible to the primary viewer group. Duration can be described as long, moderate or short.	Long- >5 seconds
		Moderate- 3-5 seconds
		Short- 1-2 seconds
Number of Viewers	The estimated average annual daily number of viewers. Number of viewers is described as high, moderate or low.	High- >20 viewers
		Moderate- 5-20 viewers
		Low- 1- 5 viewers

Table 2-3 KOP Modifier Ratings

Modifier Rating	Definition	Description/Rating
Spatial Dominance	The prevalent occupation of a space in a landscape by an object(s) or landscape element. Spatial dominance can be described in terms of being Dominant, Co-dominant, or Subordinate.	Dominant – the feature is the major object or area in a confined setting and occupies a large part of the setting.
		Co-dominant – the feature is one of the major objects or areas in the confined setting, and its features are of equal visual importance.
		Subordinate – the feature is insignificant and occupies a minor part of the setting.
Scale Contrast	The difference in absolute or relative scale in relation to other distinct objects or areas in the landscape. Scale contrast can be described in terms of being Severe, Moderate, or Minimal.	Severe – the feature is much larger than the surrounding objects.
		Moderate – the feature is slightly larger than the surrounding objects.
		Minimal – the feature is much smaller than the surrounding objects.
Compatibility	The degree to which landscape elements and characteristics are still unified within their setting. Compatibility can be described in terms of being Compatible, Somewhat Compatible, or Not Compatible.	Compatible – The feature is harmonious within the setting.
		Somewhat Compatible – The feature is more or less harmonious within the setting.
		Not Compatible – The feature is not harmonious within the setting.

Note: Modifier ratings are adapted from USACE, 1988.

2.1.2 Constituents (Users) Responses to Questionnaires

Two surveys relevant to aesthetics in the UNF were conducted for the Yadkin Hydroelectric Project, a Visual Preference Survey (VPS) and a Visitor Use Survey (VUS). Together, these surveys were used to collect information on attitudes and opinion regarding aesthetics among users.

Visual Preference Survey

The purpose of the VPS was to assess user attitudes about the visual character and quality of the Project area and the effects of Project facilities and operations.

This contact survey was administered on-site by trained survey technicians at 9 public access recreation areas within the UNF and other nearby recreation areas. The survey technicians asked visitors to participate in the VUS and the surveys were self-administered (i.e., the recreational user filled out the survey themselves rather than responding to questions by the survey technician). Only one person per group was given the survey to avoid group bias and only adults (i.e., over 16 years of age) were asked to complete the survey. The survey was not given to visitors just arriving at the site because several questions on the survey asked about their experience at the site.

The majority of the surveys were collected between May and August of 2003. A total of 44 VPS were completed at the 9 sites within the UNF. Table 2-4 lists the number of VPS collected at each public access recreation area.

Table 2-4 Number of Visitor Preference Surveys at UNF Sites

Reservoir	Location	Surveys
Narrows	UNF Holt's Cabin Picnic Area	10
Narrows	UNF Walk-in Fishing Pier	7
Narrows	UNF Badin Lake Campground	7
Narrows	UNF Cove Boat Landing	5
Narrows	Badin Lake Group Camp	3
Narrows	Rifle Range	2
Narrows	Moccasin	1
Narrows	Horse Camp	4
Narrows	Arrowhead Campground	4
<i>NARROWS</i>	<i>TOTAL</i>	<i>43</i>
Falls	UNF Deep Water Trail Access	1
<i>FALLS</i>	<i>TOTAL</i>	<i>1</i>
	GRAND TOTAL	44

Visitor Use Surveys

The purpose of the VUS was to obtain information on recreational “visitor” characteristics, activities, concerns, and overall recreational and aesthetic experience. Although referred to as a Visitor Use Survey, this survey was intended to survey all users of the public access recreation areas, including non-locals (tourists), local residents who do not own waterfront property, and even some waterfront property owners who occasionally use the public access recreation areas for various reasons (e.g., to put their boats in or take their boats out of the reservoir at the beginning and end of the recreation season).

This contact survey was administered on-site by trained survey technicians at 6 public access recreation areas within the UNF. The survey technicians asked visitors to participate in the VUS and the surveys were self-administered (i.e., the recreational user filled out the survey themselves rather than responding to questions by the survey technician). Only one person per group was given the survey to avoid group bias and only adults (i.e., over 16 years of age) were asked to complete the survey. The survey was not given to visitors just arriving at the site because several questions on the survey asked about their experience at the site.

A standardized survey form was developed and used. The VUS was also available in Spanish because there is a significant Hispanic population that uses the reservoirs. The survey form had twelve questions with two of the questions addressing aesthetics. The first question asked how the users rated the scenic quality of the area and the second question asked users to identify elements they thought detracted from the scenic quality of the area. Other questions in the survey form were related to user profile and recreational activities.

The majority of the surveys were collected between May and August of 2003. A total of 104 VUS were completed at the 6 sites within the UNF. Table 2-5 lists the number of VUS collected at each public access recreation area.

Table 2-5 Number of Visitor Use Surveys at UNF Sites

Site #	Reservoir	Location	Surveys
39	Narrows	UNF Holt's Cabin Picnic Area	12
40	Narrows	UNF Walk-in Fishing Pier	24
41	Narrows	UNF Badin Lake Campground	24
42	Narrows	UNF Cove Boat Landing	33
47	Narrows	Badin Lake Group Camp	3
	<i>NARROWS</i>	<i>TOTAL</i>	96
48	Falls	UNF Deep Water Trail Access	8
	<i>FALLS</i>	<i>TOTAL</i>	8
		GRAND TOTAL	104

3.0 AESTHETIC SETTING

3.1 Regional Setting

This Section describes the regional setting of the Yadkin Project and the Project facilities and operations at each reservoir.

The Project is located in the Piedmont province of central North Carolina, along the Yadkin River, approximately 60 miles northeast of Charlotte. The Yadkin River and its tributaries are part of the Yadkin River Basin, which extends from the Blue Ridge Mountains to the Atlantic coast near Georgetown, South Carolina. Along the border between the Piedmont and the Coastal Plain, elevations range from 300 to 600 feet above sea level. To the west, elevations gradually rise to about 1,500 feet above sea level at the foot of the Blue Ridge Mountains. The Piedmont is characterized by gently rolling, well-rounded hills and long low ridges, and also includes some relatively low mountains including the South Mountains and the Uwharrie Mountains, with elevations up to approximately 900 feet above sea level.

The Yadkin River basin has a drainage area of 4,190 square miles above Falls Dam, the most downstream of the Project developments. A majority of the drainage area is located in the northern Piedmont of North Carolina, with a small portion extending into southern Virginia. Land use in the drainage basin is approximately 51 percent forested, 30 percent agricultural, 11 percent urban, and 2 percent federal. The remaining 5 percent is in pasture and in an “other” category, which includes rural transportation (roads, right land uses (NCDENR, 1997).

The area immediately surrounding the Project is predominately rural, although several small cities (populations ranging from 1,000 to 35,000), including Albemarle, Badin, Lexington, Mocksville, Salisbury, and Troy, are located within 30 miles of the Project. Some of North Carolina’s largest cities, with populations ranging from 200,000 to 540,000, such as Charlotte, Winston-Salem, and Greensboro, are located within a one-hour drive of the Project.

3.2 Project Area

The Project is located in the Yadkin River Basin in Stanly, Montgomery, Davidson Counties, North Carolina. The Project area is typical of the central North Carolina Piedmont Province and is characterized by gently rolling, well-rounded hills and long, low ridges. The Uwharrie Mountains, with elevations reaching approximately 1,000 feet, lie to the east of the Project area and the landscape surrounding Narrows and Falls Reservoirs is more rugged compared to the two upper reservoirs. Public lands near Narrows and Falls reservoirs include the Uwharrie National Forest, Morrow Mountain State Park, and Boone's Cave State Park. Elevations within the Project area decrease from a high point of approximately 500 feet at the headwaters of Narrows Reservoir to below 300 feet at the Falls Reservoir tailrace.

The gentle topography in the Project area results in views of Project facilities that are generally from the same elevation as the facilities. Slightly elevated views of facilities occur from bridges and scenic pull offs, but there are no overviews or overlooks of Project facilities except from Morrow Mountain State Park.

The predominant land use around the reservoirs was historically agricultural or forested. Farms and timberland are still common in this area, but residential development, particularly along the shoreline of Narrows Reservoir, has increased significantly in the past 10 years.

3.2.1 Narrows Reservoir Area

The land surrounding Narrows Reservoir is made up of gently rolling terrain with some steep slopes. Narrows Reservoir is relatively developed with over 40 percent of the shoreline classified as residential. Overhead transmission lines cross the reservoir near its upstream end just below Tuckertown Dam and near the City of Badin. A rail line also parallels much of the western shore of Narrows Reservoir and crosses the reservoir on a trestle near the upper end of the reservoir. Much of the eastern shoreline, however, is within the Uwharrie National Forest and is undeveloped other than for recreational facilities.

3.2.2 Falls Reservoir Area

Falls Reservoir is set within the Uwharrie Mountains and the surrounding area is characterized by steep, rugged terrain. Falls Reservoir is the least developed of the four Project reservoirs with nearly all (about 94 percent) of the shoreline forested. There is no residential or commercial development along the shoreline and no private piers or docks on the reservoir. The Uwharrie National Forest constitutes the eastern side of Falls Reservoir, and Morrow Mountain State Park is immediately downstream of the Project on the west side. The viewshed from the reservoir is completely natural other than for Narrows Dam on the upstream end and Falls Dam on the downstream end of the reservoir.

3.3 Existing Project Facilities and Operations

The Project facilities located at the two Project developments bordering the UNF and current Project operations are briefly described below.

3.3.1 Narrows Development

Project facilities at the Narrows development include Narrows Reservoir (Badin Lake), a dam, spillway, and powerhouse. Construction of Narrows Dam was completed in 1917. At full pool, the surface area of the reservoir is approximately 5,355 acres (8.4 square miles). The reservoir is approximately 6 miles long and is a narrow, winding water body, approximately 1 mile across, until the two large branches immediately upstream of the Narrows Dam where the reservoir expands to 2.9 miles across.



Narrows Dam consists of a main dam section and a bypass spillway section. The main dam section is a concrete gravity structure approximately 1,144 feet long with a maximum height of approximately 201 feet. The bypass spillway section is approximately 520 feet long. The main dam consists of a non-overflow gravity section, a gate-controlled spillway section, an intake section, a downstream powerhouse, and four steel penstocks. The non-overflow gravity section extends from the gated spillway section to the west river abutment. A training (wing) wall separates the non-overflow gravity section and the gate controlled spillway section. The gate-controlled spillway section is approximately 640 feet long with a trash gate at the northeast end.

The bypass spillway section is comprised of a non-overflow gravity section and a gate-controlled spillway section. The non-overflow gravity section extends from the bypass spillway to the east river abutment. The gate-controlled spillway section is approximately 430 feet long with a trash gate at the south end.

The powerhouse is a 213-foot-long, red-brick structure located immediately downstream of the intake section.

The Narrows Development is generally operated as a run-of-river facility. Narrows Reservoir (Badin Lake) has a normal daily water level fluctuation of less than one foot and a maximum daily fluctuation of 1 to 2 feet. Historically, the maximum annual drawdown at Narrows Reservoir has averaged approximately 3 feet. Narrows Reservoir

does have available storage, which may be used during periods of very low streamflow to maintain the required minimum downstream releases.

3.3.2 Falls Development

Project facilities at the Falls Development include a reservoir, dam, intake structures and powerhouse. Construction of Falls Dam was completed in 1919. The surface area of the reservoir at full pool is approximately 204 acres (0.3 square miles). The reservoir is a narrow riverine water body approximately 2.5 miles long with a maximum width of 1,000 feet.



Falls Dam is a concrete gravity structure approximately 750 feet long with a maximum height of approximately 112 feet. The dam consists of a non-overflow gravity section, a gate-controlled spillway section, and an integral intake/powerhouse section. The non-overflow gravity section extends from the north end of the spillway section to the northern river abutment. The spillway section is approximately 525 feet long with a single trash gate.

The intake structure includes trashracks and vertical lift headgates. The powerhouse is a 189-foot long, red-brick structure located immediately downstream of the intake structure between the gate-controlled spillway section and river abutment.

Falls Development is operated as a run-of-river facility. It has an average daily water level fluctuation of approximately one foot and a maximum daily fluctuation of 3 to 4 feet. There is no seasonal drawdown at Falls Reservoir.

4.0 AESTHETIC EVALUATION

4.1 Key Observation Points Analysis

KOP NR 4: UNF Holt's Cabin

Narrows Reservoir is directly visible from the foreground from this KOP. The view is attractive and pleasing across the reservoir where there is a lush cover of thick vegetation. A low number of boaters and anglers view this KOP with short to long duration views.

Due to the lake depths at this KOP the normal Project operations only expose a small amount of the reservoir bottom and do not severely impact the aesthetics of the view. The Project facilities viewed from this KOP are fully compatible with this setting. The Project facilities are an attractive, natural area that contributes to the landscape. A drawdown, similar to the 16-ft drawdown in December 2003 conducted as part of a fish and aquatics relicensing study, is not compatible with the Scenic Integrity of the area.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 4	Narrows Reservoir offshore of Holt's Cabin facing NE.	Narrows Reservoir and UNF Holt's Cabin recreation area	View of UNF Holt's Cabin and surrounding forests from the reservoir.	Anglers, boaters	Low	Short to long	Foreground	Direct	Wide	Subordinate	Minimal	Compatible, December drawdown is not compatible

Narrows Reservoir
KOP NR 4: UNF Holt's Cabin



February



April



August



December

KOP NR 5: UNF Fishing Pier

Narrows Reservoir is directly visible from the foreground to the middleground of this KOP if viewing from the UNF landward of the fishing pier and facing SSW. This KOP provides a narrow, short to long duration view of the reservoir to the recreational users, boaters and anglers. A view from this KOP shows the UNF fishing pier and Narrows Reservoir, with a heavily forested shoreline dominated by coniferous trees.

The Project facilities combined with the natural appearance of the shoreline creates an aesthetically pleasing view for most of the year. The Project facilities are well-managed and blend well with the area contributing to the aesthetic view. A drawdown, similar to the 16-ft drawdown in December 2003 conducted as part of a fish and aquatics relicensing study, is not compatible with the Scenic Integrity of the area.

View Description										Modifier Rating		
KOP	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 5	UNF landward of fishing pier facing SSW.	Narrows Reservoir and UNF Fishing Pier	View of UNF Fishing Pier, reservoir and distant forested shorelines.	Recreational users, boaters, anglers	Moderate	Short to long	Foreground to middleground	Direct	Narrow	Subordinate	Minimal	Compatible, December drawdown is not compatible

Narrows Reservoir
KOP NR 5: UNF Fishing Pier



February



April



August



December

KOP NR 6: UNF Fishing Pier from Water

The UNF fishing pier and Narrows Reservoir offshore are directly visible from this KOP. Boaters and anglers are the primary viewers with the view durations ranging from short to long depending on the length of stay. The number of viewers at this KOP is moderate with most visits occurring in the spring and summer during peak recreational periods. A wide, forested shoreline frames the UNF fishing pier. Water level fluctuations do occur and can expose the reservoir bottom. However, the steep drop-offs of the shoreline minimize the amount of lake bottom exposed during the drawdown.

The Project features are subordinate with the view from this KOP. For most of the year the Project features blend harmoniously with the setting to create an aesthetically pleasing view. A drawdown, similar to the 16-ft drawdown in December 2003 conducted as part of a fish and aquatics relicensing study, is not compatible with the Scenic Integrity of the area.

View Description										Modifier Rating		
KOP	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 6	Narrows Reservoir offshore of UNF Fishing Pier facing NE.	Narrows Reservoir and UNF Fishing Pier	View of UNF Fishing Pier and surrounding forest from Narrows Reservoir.	Boaters, anglers	Moderate	Short to long	Foreground	Direct	Wide	Subordinate	Minimal	Compatible, December drawdown is not compatible

Narrows Reservoir

KOP NR 6: UNF Fishing Pier from Water



February



April



August



December

KOP NR 7: UNF Badin Campground from Water

The Badin Campground can be directly seen in the foreground from the water. The campground is surrounded by a thick forested shoreline of the Narrows Reservoir. The primary viewers are boaters and anglers and duration of view ranges from short to long. The view is natural and for much of the year natural vegetation screens most of the campground from view.

The Project facilities from this KOP appear natural and are compatible with the surrounds for most of the year. The campground is almost entirely hidden from view by the densely forested shoreline and this creates a natural and aesthetically pleasing view. At a 16-ft drawdown a rocky beach and eroded shoreline are exposed. A drawdown, similar to the 16-ft drawdown in December 2003 conducted as part of a fish and aquatics relicensing study, is not compatible with the Scenic Integrity of the area.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 7	Narrows Reservoir offshore of Badin Campground facing E.	Narrows Reservoir and UNF Badin Campground	View of UNF Badin Campground and surrounding forest from Narrows Reservoir.	Boaters, anglers	Moderate	Short to long	Foreground	Direct	Wide	Subordinate	Minimal	Compatible, December drawdown is not compatible

Narrows Reservoir

KOP NR 7: UNF Badin Campground from Water



April



August



December

KOP NR 8: Cove Boat Landing from Water

Narrows Reservoir and the Cove Boat Landing are directly visible from the foreground to the middleground from this KOP. There is a wide view of the thick forested shorelines on either side of the reservoir with low, rolling hills in the distance. Boaters and anglers are the primary viewers from the KOP and view durations are short to long with a moderate number of viewers especially in peak recreational seasons.

The reservoir appears natural and is fully compatible with the surroundings for most of the year. The reservoir combines harmoniously with the setting to create an attractive view. At a 16-ft drawdown, the lake bottom is exposed along the shorelines. A drawdown, similar to the 16-ft drawdown in December 2003 conducted as part of a fish and aquatics relicensing study, is not compatible with the Scenic Integrity of the area.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 8	Narrows reservoir offshore of Cove Boat Landing facing SSE.	Narrows Reservoir and Cove Boat Landing	View of Cove Boat landing from Narrows Reservoir	Boaters, anglers	Moderate	Short to long	Foreground to middleground	Direct	Wide	Subordinate	Minimal	Compatible, December drawdown is not compatible

Narrows Reservoir

KOP NR 8: Cove Boat Landing from Water



February



April



August



December

KOP NR 9: Cove Boat Landing

The Cove Boat Landing is directly visible in the foreground from Narrows Reservoir. Boaters and anglers are the primary viewing group and the use at this KOP is moderate. The landscape shows distinct changes within the spring and winter months with the removal of trees along the shoreline and the upgrading of the boat landing facilities. The shoreline is lined with sparse trees, but thicker vegetation lies further inland. Under current Project operations, there is little fluctuation in lake water levels.

The Project facilities viewed from the KOP are subordinate and somewhat compatible within the setting. For most of the year the reservoir appears natural within the setting. A 16-ft drawdown reveals steep, rocky banks near the shoreline, the boat ramp, and mud flats further offshore. This creates a disturbed appearance that dramatically alters the setting and detracts from the aesthetic quality of the view from this KOP. The construction at the boat landing also had a temporary negative impact on the aesthetics of the view.

	View Description									Modifier Rating		
KOP	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 9	Narrows reservoir offshore of Cove Boat Landing facing SSE.	Narrows Reservoir and Cove Boat Landing	View of Cove Boat landing from Narrows Reservoir	Boaters, anglers	Moderate	Short to long	Foreground	Direct	Wide	Subordinate	Minimal	Somewhat Compatible, December drawdown is not compatible

Narrows Reservoir
KOP NR 9: Cove Boat Landing



February



April



August



December

KOP NR 10: Narrows Dam Tailrace from Water

The Narrows Dam Tailrace, Powerhouse and an access bridge are directly visible in the foreground from this KOP. Boaters and anglers are the primary viewers with view durations ranging from short to long depending on length of stay. The number of viewers at this KOP is low with most visits occurring in the spring and summer during peak recreational periods. Rocky shorelines and steep tree covered banks frame the view of the dam and powerhouse.

The Project features are co-dominant with the view from this KOP and are somewhat compatible with the setting, since they are at or below the height of the adjacent forested hillside and are of equal visual importance to the surrounding landscape.

View Description										Modifier Rating		
KOP	Viewer Location	Project Feature	Setting	Primary Viewer Groups	Number of Viewers	Duration of View	Distance zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
FR 2	Downstream of Narrows Dam facing upstream.	Narrows Dam Tailrace	View of Narrows Dam from downstream of Dam	Boaters, anglers	Low	Short to long	Foreground	Direct	Moderate	Co-Dominant	Moderate	Somewhat Compatible

Narrows Reservoir

KOP NR 10: Narrows Dam Tailrace from Water



February



April



August

KOP NR 11: Narrows Dam from Water

The Narrows Dam is directly visible in the foreground from this KOP. The dam is located in a setting of low, rolling, forested hillsides. Anglers and motorists have a wide and direct view of the dam from this KOP. View durations range from short to long, depending on the length of stay. The number of viewers is moderate, with most visits occurring in peak recreational seasons. Seasonal variations in the aesthetics of the Project facilities are limited to a slight increase in water turbidity.

The Project facilities viewed from this KOP are compatible and harmonious with the setting, since they are at or below the height of the adjacent forested hillsides and are of equal visual importance to the surrounding landscape. A drawdown, similar to the 16-ft drawdown in December 2003 conducted as part of a fish and aquatics relicensing study, has only a minor effect on the aesthetics viewed from this KOP because steep banks and quick drop-offs minimize the amount of shoreline exposed.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 11	Narrows Reservoir upstream of Narrows Dam facing S.	Narrows Dam and Reservoir	View of Narrows Dam	Boaters, Anglers	Moderate	Short to long	Foreground	Direct	Wide	Co-dominant	Moderate	Compatible

Narrows Reservoir

KOP NR 11: Narrows Dam from Water



February



April



August



December

KOP FR 1: Uwharrie National Forest Deep Water Cove Trail

This KOP provides an aesthetically pleasing view of Falls Reservoir and the surrounding forested shorelines. Anglers and recreational users are the primary viewers from this KOP with direct, long duration views. Falls Reservoir viewed from this KOP is fully compatible with the setting. The Project facility combines with the setting to create an attractive and natural scene that contributes to the pleasing aesthetics of the area.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Groups	Number of Viewers	Duration of View	Distance zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
FR 1	Deep Water Cove Trail facing across reservoir.	Falls Reservoir	View from shoreline of Falls Reservoir with surrounding forest.	Boaters, anglers, campers, recreational users.	Low	Long	Foreground to middleground	Direct	Moderate	Co-Dominant	Minimal	Compatible

Falls Reservoir

KOP FR 1: Uwharrie National Forest Deep Water Cove Trail



February



April



August

KOP FR 2: Narrows Dam Tailrace Downstream

The Narrows Dam Tailrace is visible downstream from this KOP site in a setting of low wooded hills and rocky shorelines. A steel overhead bridge, the red brick powerhouse, and the river are directly visible in the foreground from this KOP. A moderate number of boaters and anglers view the facilities from this KOP, with view durations ranging from short to long. Seasonal variations in the aesthetics of the Project facilities are limited to a slight increase in water turbidity in late winter.

The Project facilities viewed from this KOP are somewhat compatible and harmonious to the setting, since they are at or below the height of the adjacent forested hillsides and are of equal visual importance to the surrounding landscape.

	View Description									Modifier Rating		
KOP	Viewer Location	Project Feature	Setting	Primary Viewer Group	Number of Viewers	Duration of View	Distance Zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
NR 10B	Downstream of Narrows Dam Tailrace facing Downstream.	Narrows Dam Tailrace	View of River and Bridge.	Boaters, Anglers	Moderate	Short to long	Foreground	Direct	Narrow	Dominant	Moderate	Somewhat compatible

Falls Reservoir

KOP FR 2: Narrows Dam Tailrace Downstream



April



August

KOP FR 3: Uwharrie National Forest Deepwater Cove Trail from Water

The Deepwater Cove Trail is directly visible in the foreground from this KOP. The trail is a gravel road that ends at the waters edge and is surrounded by forested shorelines. The primary viewers are boaters and anglers and duration of view ranges from short to long. The view is natural and for much of the year natural vegetation screens most of the trail from view. The extent of disturbed land near the lakeshore is apparent and detracts from the otherwise natural view. There are no apparent seasonal variations in water levels or turbidity visible from this KOP.

The Deepwater Trail from this KOP appears disturbed and is somewhat compatible with the surroundings.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Groups	Number of Viewers	Duration of View	Distance zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
FR 3	Falls Reservoir facing toward Deepwater Cove Trail	Deepwater Cove Trail and Falls Reservoir	Forested Shoreline	Boaters, anglers	Low	Short to long	Foreground	Direct to indirect	Wide	Co-Dominant	Minimal	Somewhat compatible

Falls Reservoir

KOP FR 3: Uwharrie National Forest Deepwater Cove Trail from Water



February



April



August

KOP FR 4: Morrow Mountain State Park Trail

The Falls Dam Tailrace is directly visible in the foreground from Morrow Mountain State Park Trail. This KOP receives moderate use and viewers have long duration views of the Project facilities. Steep sloping forested hillsides dominate the opposite shoreline and make the dam appear relatively small in comparison to the surroundings. The color of the dam blends well with the surrounding rocks and boulders and gives a natural, harmonious appearance. Nevertheless, the dam does represent an engineered fixture in an otherwise natural setting.

The Project features are co-dominant to subordinate with the view and are somewhat compatible with the setting.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Groups	Number of Viewers	Duration of View	Distance zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
FR 4	Morrow Mountain State Park Trail	Falls Dam and Tailrace	Wooded hillsides	Hikers, Anglers, Boaters	Moderate	Long	Foreground	Direct	Moderate	Co-dominant to subordinate	Minimal	Somewhat compatible

Falls Reservoir
KOP FR 4: Morrow Mountain State Park Trail



February



August

KOP FR 5: Falls Reservoir Dispersed Camp site

Falls Reservoir is directly visible from the foreground to middleground from this KOP. There is a narrow upstream view of the reservoir with steep, rocky, forested shorelines on either side of the reservoir and low rolling hills in the background. Campers, anglers and boaters are the primary viewers from the KOP and view durations are long. This KOP receives little use and viewer numbers are low.

Falls Reservoir is natural and fully compatible with the surroundings. The reservoir combines harmoniously with the setting to create an attractive view.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Groups	Number of Viewers	Duration of View	Distance zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
FR 5	Falls Reservoir Dispersed Camp site	Falls Reservoir	Steep forested shorelines and low wooded hills	Campers, anglers, boaters	Low	Long	Foreground to middleground	Direct	Wide	Dominant	Minimal	Compatible

Falls Reservoir

KOP FR 5: Falls Reservoir Dispersed Camp site



February



April



August

KOP FR 6: Falls Reservoir Boat Access

Falls Reservoir and Falls Reservoir Boat Access are directly visible in the foreground from this KOP. Boaters and anglers are the primary viewers from the KOP and use is moderate. An asphalt boat ramp with a low concrete ramp is visible in the near foreground with the reservoir visible to the rear. Forested shorelines frame a narrow view to the reservoir from this location.

The Project facilities viewed from this KOP are co-dominant and somewhat compatible within the setting. The reservoir appears natural within the setting and the boat access does not significantly adversely impact the aesthetic quality of the view.

KOP	View Description									Modifier Rating		
	Viewer Location	Project Feature	Setting	Primary Viewer Groups	Number of Viewers	Duration of View	Distance zone	Orientation	Field of View	Spatial Dominance	Scale Contrast	Compatibility
FR 6	Falls Reservoir boat ramp and barge launch.	Falls Reservoir and Boat Access	Wooded shoreline and hillsides	Anglers, boaters	Moderate	Long	Foreground	Direct	Narrow	Co-Dominant	Moderate	Somewhat compatible

Falls Reservoir

KOP FR 6: Falls Reservoir Boat Access



February



August

4.2 Constituents (Users) Analyses

This section analyzes the users responses to the two surveys used to evaluate aesthetics in the UNF.

4.2.1 Visual Preference Survey

The Visual Preference Survey (VPS) consisted of twelve questions. Of the twelve questions, six questions directly related to scenic quality, one question focused on the effects of noise, and the other five questions elicited information regarding the user.

Scenic Quality

The first question directly related to scenic quality asked the user if scenic quality was an important factor in the user’s decision to go to the UNF. There were four options to choose from: “a major determining factor”; “an important consideration”; “a minor consideration”; and “not a consideration”.

A total of 39 respondents to the VPS rated the importance of the scenic quality of the UNF in determining their use of the area (Table 4-1). About 85 percent of the respondents indicated that scenic quality was either a “minor consideration” or “not a consideration” in their decision to visit the UNF.

Table 4-1 Importance of Scenic Quality in Users Decision to Visit the UNF

Total Respondents	Average Score	Importance of Scenic Quality							
		A		B		C		D	
		A major determining factor		An important consideration		A minor consideration		Not a consideration	
		#	%	#	%	#	%	#	%
39		0	0	6	15	24	62	9	23

The second question asked the user to rate the scenic quality of the specific study area relative to other similar areas the user uses for recreation. There were seven options to choose from, including: “worse”, “same”, “better”, “worse than most”, “better than most”, “worse than any”, and “better than any others”. A total of 45 respondents to the VPS rated the scenic quality of the UNF in comparison to other recreation areas (Table 4-2). Of these, 67 percent rated it as “better than other”, “better than most,” or “better than any area”.

Table 4-2 Comparison of Scenic Quality at the UNF Relative to Other Similar Areas Used for Recreation

Total Respondents	Ratings	Worse than any area		Worse than most areas		Worse than other areas		Same as other areas		Better than other areas		Better than most areas		Better than any area	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
		45		0	0	4	9	7	16	4	9	22	49	7	16

The third and fourth questions asked the user what the user considered to be the most and least attractive area or feature, respectively, with regard to the scenery of the UNF. A total of 42 responses were obtained and over 20 percent of the respondents indicated that the lake, the forest and wildlife, or the trails were the most attractive feature (Table 4-3).

Table 4-3 Most Attractive Area or Feature with Regard to the Scenery of the UNF

Area or Feature	Percent of Responses*
Lake	23%
Forest and Wildlife	23%
Trails	21%
Campsites	14%
Hunting/Fishing Opportunities	14%
Mountains	7%
No Response	5%

* Equals more than 100% because some responses included more than one feature

A total of 29 respondents to the VPS identified the least attractive feature or area of the UNF. Of these, 52 percent stated that the rough, dusty roads were the main detractor, while 28 percent said that trash or litter was the main detractor (Table 4-4).

Table 4-4 Least Attractive Feature with Regard to the Scenery of the UNF

Area or Feature	Percent of Responses
Rough, dusty roads	52%
Trash	28%
Nothing, everything is beautiful	10%
Erosion	3%
Lack of trails by lake	3%
Other	3%

The fifth question relating to scenic quality asked users if they have ever noticed specific landscape features (campground/picnic areas, Forest Service buildings, private

residences, transmission lines and towers, shoreline erosion, reservoirs, roads and related structures, timber harvests, and dam/power generation facilities), and, if so, whether their reaction was positive, negative, or neutral. If users had a positive or negative reaction to a specific landscape feature, they were asked if their reaction was moderately positive or negative or strongly positive or negative.

A total of 42 responded to whether or not they ever noticed specific landscape features and, if so, they gauged their reactions (Table 4-5). Most respondents indicated that they had noticed campgrounds and picnic areas with a moderate or strong positive reaction. Reservoirs adjacent to the UNF were noticed by 80 percent of the respondents and all of the reactions were moderate or strongly positive. Roads and related structures were noticed by over 90 percent of the respondents, most of which responded with a moderate or strong negative reaction to these features. Nearly half of the respondents noticed timber harvests at the UNF, and nearly 60 percent of them indicated they had a moderate or strong negative reaction. Only about one-third of the respondents indicated they had noticed power generation facilities at the UNF. One-quarter of the respondents indicated a neutral reaction to these facilities and one-half indicated a moderate or strong positive reaction. Few respondents (20 percent or less) indicated that they had noticed private residences, transmission lines and towers, shoreline erosion, or forest service buildings at the UNF. Over 50 percent of the respondents had a neutral reaction to private residences and transmission lines and towers at the UNF. Responses to shoreline erosion were evenly split between positive, neutral and negative reactions, and most respondents had either a neutral or moderately positive reaction toward Forest Service buildings.

The sixth question relating to scenic quality involved the rating of a series of 20 photographs that represent typical scenes from the UNF. Users were asked to indicate their likely overall visual impression of the scenes if they were to encounter them while visiting the area. These responses were scored on a scale of +3 to -3, with +3 = strongly positive, +2 = moderately positive, +1 = slightly positive, 0 = neutral, -1 = slightly negative, -2 = moderately negative, and -3 = strongly negative. The photographs used in the survey and the corresponding average ratings are provided in the following section (Table 4-6). The lowest rating of the 20 photographs was a +0.9 (i.e., Narrows Dam viewed from downstream and Falls Dam viewed from upstream), which reflects a slightly positive visual impression. No photographs received an overall negative rating.

Table 4-5 Users Reaction to the Visual Appearance of Landscape Features of the UNF

	Reaction					Noticed		
	Noticed w/ a strong positive reaction ¹	Noticed w/ a moderate positive reaction ¹	Noticed w/ a neutral reaction ¹	Noticed w/ a moderate negative reaction ¹	Noticed w/ a strong negative reaction ¹	Total Noticed	Never Noticed	No Response
Campground/ picnic areas	74%	19%	5%	0%	2%	98%	0%	2%
Forest service buildings	0%	42%	42%	8%	8%	18%	82%	0%
Private residences	0%	0%	58%	17%	25%	20%	75%	5%
Transmission lines & towers	0%	8%	54%	15%	23%	20%	77%	3%
Shoreline erosion	22%	11%	33%	11%	22%	16%	82%	2%
Reservoirs	83%	17%	0%	0%	0%	80%	18%	2%
Roads and related structures	2%	9%	9%	33%	47%	91%	9%	0%
Timber harvests	0%	14%	27%	23%	36%	48%	48%	4%
Power generation facilities	44%	6%	25%	6%	19%	36%	59%	5%

¹ Percentages of those respondents that noticed the feature. Respondents who did not notice the feature were not included.

Table 4-6 Visitors Overall Impression of Typical Scenes from the UNF

Scene	Positive			Neutral (0)	Negative			No Response	Average Rating
	Strongly Positive (+3)	Moderately Positive (+2)	Slightly Positive (+1)		Slightly Negative (-1)	Moderately Negative (-2)	Strongly Negative (-3)		
Photo 1	41%	36%	9%	7%	0%	2%	0%	5%	+2.1
Photo 2	41%	25%	11%	16%	0%	2%	0%	5%	+1.9
Photo 3	23%	36%	14%	16%	5%	2%	0%	5%	+1.5
Photo 4	27%	41%	14%	7%	5%	2%	0%	5%	+1.8
Photo 5	55%	23%	5%	7%	5%	2%	0%	5%	+2.1
Photo 6	9%	27%	16%	36%	2%	5%	0%	5%	+0.9
Photo 7	14%	32%	27%	5%	9%	7%	0%	7%	+1.2
Photo 8	45%	36%	7%	5%	0%	2%	0%	5%	+2.2
Photo 9	14%	36%	30%	5%	7%	5%	0%	5%	+1.3
Photo 10	32%	39%	9%	7%	2%	7%	0%	5%	+1.7
Photo 11	14%	27%	7%	36%	5%	7%	0%	5%	+0.9
Photo 12	11%	27%	14%	34%	2%	7%	0%	5%	+0.9
Photo 13	11%	27%	18%	32%	0%	7%	0%	5%	+1.0
Photo 14	27%	36%	20%	5%	2%	2%	2%	5%	+1.7
Photo 15	68%	11%	5%	7%	0%	5%	0%	7%	+2.3
Photo 16	18%	27%	7%	39%	2%	2%	0%	5%	+1.1
Photo 17	41%	34%	5%	9%	5%	2%	0%	5%	+2.0
Photo 18	32%	41%	5%	9%	9%	2%	0%	5%	+1.7
Photo 19	27%	48%	9%	11%	2%	5%	0%	5%	+1.8
Photo 20	7%	25%	9%	27%	0%	0%	0%	32%	+1.2



Photo 1: UNF Holts Cabin Picnic Area Sign-Average Rating= +2.1



Photo 2: UNF Walk-In Fishing Pier-Average Rating= +1.9



Photo 3: UNF Deepwater Cove Across to SW-Average Rating= +1.5



Photo 4: UNF Cove Boat Landing-Average Rating= +1.8



Photo 5: FR, Falls Dam SE to UNF Canoe Takeout-Average Rating= +2.1



Photo 6: FR, Narrows Tailrace to UNF to NE-Average Rating= +0.9



Photo 7: FR to Deepwater Cove Trail Access-Average Rating= +1.2



Photo 8: NR UNF Walk-In Fishing Pier from Water-Average Rating=+2.2



Photo 9: UNF Deepwater Cove Shore Erosion-Average Rating= +1.3



Photo 10: NR UNF Badin Campground-Average Rating= +1.7



Photo 11: Narrows Dam Tailrace Downstream-Average Rating= +0.9



Photo 12: FR Falls Dam to NE-Average Rating= +0.9



Photo 13: Falls Dam Tailrace to UNF-Average Rating= +1.0



Photo 14: NR UNF Cove Boat Landing-Average Rating= +1.7



Photo 15: NR UNF Mouth of Cove Landing-Average Rating= +2.3



Photo 16: FR Upstream of Falls Dam- Average Rating= +1.1



Photo 17: UNF Badin Campsite-Average Rating= +2.0



Photo 18: UNF Holts Cabin to SSW-Average Rating= +1.7



Photo 19: NR UNF Holts Cabin Picnic Area- Average Rating= +1.8



Photo 20: NR Downstream to Narrows Dam-Average Rating= +1.2

Noise

The question relating to noise asked users if they have encountered certain conditions (noise from boats on the reservoir, noise from vehicular traffic, noise from RV generators, noise from other recreation users, noise from hunting, or noise from other sources) while using the Narrows or Falls reservoirs (Table 4-7). Users were asked to indicate if these conditions have been a big problem, a moderate problem, a slight problem, or not a problem. Users were also asked to indicate which reservoir they were referring to regarding noise (Narrows and/or Falls).

For each specific noise source, 67 to 90 percent of the respondents to the survey indicated that noise at the UNF is not a problem. With the exception of RV generators, which were indicated by nearly one-quarter of the respondents as cause of a slight noise problem, no sources were indicated as significant noise problems. Eighty-eight percent of the respondents indicated that noise from boats on the reservoir is not a problem.

Table 4-7 Visitors Impression of Noise Sources Encountered at the UNF

	Big Problem	Moderate Problem	Slight Problem	Not a Problem	No Response
Boats on the reservoir	0%	6%	2%	88%	4%
Vehicular traffic	0%	5%	0%	90%	5%
RV generators	0%	5%	23%	67%	5%
Other recreational users	2%	2%	11%	78%	7%
Hunting	0%	5%	5%	85%	5%
Other sources	2%	2%	0%	78%	18%
Average	1%	4%	7%	81%	7%

Information about the User

Finally, the survey included a series of questions to elicit information about the user. First, the survey included a question asking users for their zip code (Table 4-8). About 34 percent of the respondents were from the five counties within the Project area, with most of the remaining visitors from elsewhere in North Carolina.

Table 4-8 Visitors Place of Residence

Location	# of Responses	% of Responses
From Within Five County Project Area	14	34%
From North Carolina, Outside of Project Area	25	61%
From outside North Carolina	2	5%

Users were then shown a list of reasons for choosing the UNF for their trip (Table 4-9).

Users were asked to indicate the three main reasons for choosing the UNF for their trip. The top three responses for visiting the UNF were “proximity to home”, “most suited to primary recreation”, and “natural environment”. Each one of these reasons was selected by over 60 percent of the respondents. Nearly half of the respondents also selected “scenery and/or setting (52 percent)” and “good facilities (45 percent)” as one of the main reasons for visiting the UNF. All other reasons for visiting the UNF were selected as main reasons for visiting the UNF by 36 percent of the respondents or less. The “other” category allowed respondents to write in a main reason for visiting the UNF. 18 percent of the respondents selected this category; however most of the responses were actually primary recreation activities. If these responses are then added to the “most suited to primary recreation” response, this category would receive 82 percent of the responses and would be the primary reason for choosing to visit the UNF.

Table 4-9 Main Reasons for Choosing to Visit the Uwharrie National Forest

Main Reason	Percent of Response*
Proximity to home	68%
Most suited to primary recreation	64%
Natural environment	61%
Scenery and/or setting	52%
Good facilities	45%
Undeveloped-low-key character	36%
Good place for family	29%
Inexpensive	20%
Convenient to accommodations	18%
Other**	18%
* Percentages total more than 100% because responders were allowed to choose the three main reasons for choosing the Uwharrie National Forest.	
** Most of the "other" responses described primary recreation activities, which would bring the "most suited to primary recreation" category to 82 percent of the responses.	

The third question provided a series of statements and asked if the statement applied to the user (Table 4-10).

Almost 60 percent of the respondents to the VPS did not respond to this question. Between 14 and 18 percent of those surveyed indicated that their family traditionally came to this area, that they visited this area as a child, or that this area is a special place to them. Only 7 percent indicated that they live or have lived in the area. No other statements were selected by respondents.

Table 4-10 Visitor Response to Profile Statements

Statement	Percentage of Response
No response	59%
Family traditionally came to this area	18%
Special place to me	16%
Visited this area as a child	14%
Live/ have lived in the area	7%
Parents/grandparents once lived in the area	0%
Family/ previous generations involved in early timber, hydro or farming/ranching operations in the area	0%
Work/ have worked in the area	0%

The final two questions asked the user how many times they have visited the UNF in the past twelve months (Table 4-11) and in what year they first visited the UNF (Table 4-12). Respondents to the survey averaged more than 4 visits to the UNF in the previous 12 months, with individual visitation rates ranging from no visits to more than 40 visits. Nearly three-quarters of the respondents indicated that their first visit to the UNF was from 1990 through 2004, with over half of those first visiting since 2000. Approximately 25 percent of the respondents first visited the UNF prior to 1990.

Table 4-11 Number of Visits to the UNF in Past 12 Months

Number of Visits	Percent of Response	Average Number of Visits
0	12%	4.6
1 to 2	31%	
3 to 4	26%	
5 or more	24%	
10 or more	2%	
20 or more	2%	
40 or more	2%	

Table 4-12 Approximate Year of First Visit to the UNF

Year	Percentage of Response
Before 1970	3%
1970-1979	8%
1980-1989	15%
1990-1999	33%
2000-2004	43%

4.2.2 Visitor Use Survey (VUS)

This section analyzes the user's responses to the two questions from the VUS relating to aesthetics. The first question asked how the user rated the scenic quality of the area. These responses were scored on a scale of 1 to 5, with 1 = very unattractive, 2 = somewhat unattractive, 3 = average, 4 = somewhat attractive, 5 = very attractive. Responses to the five scenic quality ratings were calculated in percentages based on each scenic quality response and on the total number of respondents to each survey. An average score for each survey was calculated based on the five response scores and their corresponding percentage ratings.

The second question asked users to identify elements they thought detracted from the scenic quality of the Project area. There were fifteen element options to choose from including a "none" option, and an "other" option, which allowed a respondent to name an element not on the list provided. Respondents could name or select as many elements as they wanted. Responses to the second question were calculated in percentages based on each identified element and on the total number of respondents. Among all the completed surveys, some recreationists did not respond to any of the questions on aesthetics.

A total of 104 VUS surveys were completed at the UNF sites. Of these, 101 users or 97 percent of the total respondents responded to the first question and 38 users or 37 percent of the total respondents responded to the second question.

For the first question addressing how the scenic quality of the reservoirs were rated, 66 percent of the 101 respondents rated it as very attractive, 23 percent rated it as somewhat attractive, 8 percent rated it as average, and only 3 percent rated it as somewhat unattractive or very unattractive (Table 4-13). The average score for all respondents was 4.5 out of 5.

Table 4-13 Responses to the Scenic Quality of the UNF

Survey	# of Respondents	Average Score	Ratings/Scores				
			1	2	3	4	5
			Very Unattractive	Somewhat Unattractive	Average	Somewhat Attractive	Very Attractive
Visitor Use Survey	101	4.5	2%	1%	8%	23%	66%

For the second question addressing elements the users thought detracted from the scenic quality of the reservoirs, floating debris, eroding shoreline, muddy water, and timber harvesting were identified as the major detractors (Table 4-14).

Table 4-14 Responses to the Elements thought to be Detractors from the Scenic Quality of the UNF (n=38)

Detractors	Visitor Use Survey	
	# of Responses	Response Rate
Floating Debris/Trash	19	50%
Eroding Shoreline	15	39%
Muddy Water	11	29%
Timber Harvesting	8	21%
Lack of Landscaping	5	13%
Roads	5	13%
Docks/Piers	4	11%
Waterfront Housing	4	11%
Electric Transmission Lines	4	11%
Exposed Lake Bottom	3	8%
Project Dams	3	8%
Reservoirs	2	5%
Other	1	3%
Bulkheads/Rip Rap	1	3%
None	1	3%

Notes: Respondents were able to select multiple detractors

5.0 Consistency with UNF Visual Quality Objectives

This section provides an overview of the USFS’s visual assessment methodologies and then evaluates the consistency of Project facilities and operations with the VQO.

5.1 Overview of USFS’s Visual Assessment Methodologies

The USFS has established methods for use in evaluating and managing the visual landscape. The aesthetic component of the UNF Management Plan was developed using the Forest Services’ Visual Management System (VMS). The VMS establishes Visual Quality Objectives (VQO), which describes five different degrees of acceptable alteration of the natural landscape based upon the importance of aesthetics (USFS, 1974). The degree of alteration is measured in terms of visual contrast with the surrounding natural landscape. The five VQO are:

- Preservation – provides for natural ecological changes only. This is a special designation that applies to wilderness areas and other similarly protected areas.
- Retention – provides for management activities that are not visually evident to the casual forest visitor.
- Partial Retention – provides for management activities that may be evident, but remain visually subordinate to the characteristic landscape
- Modification – provides for management activities that may visually dominate the original characteristic landscape, but must utilize naturally established form, line, color, and texture. These activities should appear as a natural occurrence when viewed in foreground or middleground.
- Maximum Modification – provides for management activities of vegetative and landform alterations that may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

VQO are designated in a matrix taking into consideration distance zones (i.e., foreground, middleground, background), sensitivity levels, and variety class. Table 5-1 presents the VQO by Management Area.

Table 5-1 Visual Quality Objectives by Management Area

Management Area	Foreground Sensitivity Level 1	Middle-ground Sensitivity Level 1	Foreground Sensitivity Level 2	Middle-ground Sensitivity Level 2	Sensitivity Level 3
1 Commercial Timber and Car-touring Areas	Preservation, Retention	Modification	Modification	Modification	Maximum Modification
7 Developed recreation, research and cultural resource areas	Modification to Retention VQO				

Subsequently, the USFS adopted the Scenery Management System (SMS) in 1995, which is structured around the concept of scenic integrity (USFS, 1995). Scenic integrity is a measure of the degree to which a landscape is visually perceived to be whole, intact, and complete. The highest scenery ratings are given to those landscapes that have little or no deviation from the character valued by constituents for its aesthetic appeal. Scenic integrity can be used to describe an existing situation, serve as a standard for management, or represent a desired future condition. As part of the U.S. Forest Service's SMS scenic integrity levels are established as a frame of reference for measuring achievement of scenic integrity. Scenic integrity is a continuum ranging over five levels of integrity from very high to very low (see box on next page).

Scenic Integrity Levels

The frame of reference for measuring achievement of scenic integrity levels is the valued attributes of the "EXISTING" landscape character "BEING VIEWED". In Natural or Natural Appearing character, this is limited to natural or natural appearing vegetative patterns and features, water, rock and landforms. Direct human alterations may be included if they have become accepted over time as positive landscape character attributes.

Scenic integrity is a continuum ranging over five levels of integrity from very high to very low. Corresponding levels of existing scenic conditions and visual quality levels from the Forest Service's original Visual Management System are shown to the right of each level.

VERY HIGH(*Unaltered*) **Preservation**

VERY HIGH scenic integrity refers to landscapes where the valued landscape character "is" intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level.

HIGH(*Appears Unaltered*) **Retention**

HIGH scenic integrity refers to landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

MODERATE(*Slightly Altered*) **Partial retention**

MODERATE scenic integrity refers to landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

LOW.....(*Moderately Altered*).....**Modification**

LOW scenic integrity refers to landscapes where the valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

VERY LOW.....(*Heavily Altered*)**Maximum modification**

VERY LOW scenic integrity refers to landscapes where the valued landscape character "appears heavily altered." Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles within or outside the landscape being viewed. However deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.

UNACCEPTABLY LOW scenic integrity refers to landscapes where the valued landscape character being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern or scale from the landscape character. Landscapes at this level of integrity need rehabilitation. This level should only be used to inventory existing integrity. It must not be used as a management objective.

Source: U.S. Forest Service, 1995.

- Very High – refers to landscapes where the valued landscape “is” intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level. Generally corresponds with the Preservation VQO.
- High – refers to landscapes where the valued landscape character “appears” intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident. Generally corresponds with the Retention VQO.
- Moderate – refers to landscape where the valued landscape character “appears slightly altered.” Noticeable deviations must remain visually subordinate to the landscape character being viewed. Generally corresponds with the Partial Retention VQO.
- Low – refers to landscapes where the valued landscape character “appears moderately altered.” Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within. Generally corresponds with the Modification VQO.
- Very Low – refers to landscapes where the valued landscape character “appears heavily altered.” Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition. Generally corresponds with the Maximum Modification VQO.

5.2 Uwharrie National Forest Management Plan

The National Forest Land and Resource Management Plan (Management Plan) for the Croatan and Uwharrie National Forests was adopted in 1986. The goal of the Management Plan was to provide a management program reflective of a mixture of management activities that allows the use and protection of National Forest resources; fulfills legislative requirements; and addresses local, regional, and national issues and concerns. The Management Plan establishes the management direction and goals for the UNF; specifies the standards, approximate timing, and location for practices necessary to manage the Forest; and establishes the monitoring and evaluation required to ensure that the direction is carried out.

Forest-wide Goals and Standards

In terms of aesthetics and visual quality, the UNF Management Plan was developed under the UUMS framework and establishes the following forest goal and desired future condition of the UNF:

“A high level of visual quality and a wide variety of recreational opportunities will be provided” (page III-1).

The UNF Management Plan also establishes the following general direction for visual resources:

“Design Forest management activities to meet Visual Quality Objectives as shown in respective Management Area standards” (page III-6)

The UNF Management Plan establishes general Forest-wide standards for areas that are visible from trails, public roads, recreation areas, lakes, or rivers. Most of these standards apply to various silvicultural practices, but does include the following standards for “Special Uses”:

- “Exclude from view, where practical, all special uses, borrow pits, transmission lines, mining, or oil and gas development.”
- “Secure landscape architecture expertise during environmental analysis.”

Management Area Goals and Standards

The UNF Management Plan also establishes specific management areas, each of which has unique goals and appropriate management practices and standards to achieve these goals. The portion of the UNF near the Project area is within Management Area 1.

The goal for Management Area 1 is to provide a continuous supply of commercial timber and opportunities for visitors to enjoy driving through the Forest (page III-18). Forest visitors may see evidence of timber harvesting and road building from the unpaved roads through the Forest. Opportunities for many dispersed activities such as hiking, backpacking, and nature study are provided.

The Management Area 1 standard for visual resources is:

“Meet the Partial Retention Visual Quality Objective in the foreground of Sensitivity Level 1 areas; meet the Modification VQO in Sensitivity Level 2 areas and other Sensitivity Level 1 areas; and meet the Maximum Modification VQO in Sensitivity Level 3 areas” (page III-19).

The Sensitivity Levels are not clearly identified within the UNF Management Plan. The USFS provided a more detailed map of the UNF in the vicinity of the Yadkin Project that indicates Scenic Concern Levels (USFS, 2005). The USFS has confirmed that the Scenic Concern Levels are essentially synonymous with Sensitivity Levels (personal communication with Dave Wright, USFS). All land within ¼ mile of the reservoir was designated as Concern Level (Sensitivity Level) 1.

Although not specifically mapped, portions of the Project area probably fall within

Management Area 7, which includes developed recreation, research, and cultural resource areas. The goal for Management Area 7 is to provide “visitor enjoyment of camping, picnicking, swimming, boating, and other developed recreational use, and for research and interpretation of significant cultural resource sites. Forest Service facilities provide a rustic setting for visitors to enjoy a forest environment” (page III-31).

The Management Area 7 standard for visual resources is:

“Meet VQO’s ranging from Retention to Modification that will maintain the recreational setting” (page III-32).

5.3 Project Consistency with the UNF Management Plan

In accordance with the SMS methodology (USFS, 1995), the consistency of Project facilities and operations with the UNF Management Plan is evaluated below. This assessment includes two primary steps:

- Technical Analysis – includes assessment of KOPs and a landscape character assessment to develop Scenic Integrity ratings for existing Project facilities and operations.
- Constituent Analysis – includes assessment of the Visitor Preference Survey and the Visitor Use Survey.

The results of these analyses are considered together in assessing Project effects and compatibility with VQO.

Summary of Technical Analysis

Based on the KOP analysis in Section 4.1, Scenic Integrity ratings were developed for Project facilities and operations within the UNF area. Table 5-2 summarizes these results.

Only two of the Project facilities/operational effects received Low or Very Low scenic integrity ratings:

- Narrows Dam viewed from downstream, and
- Narrows Reservoir with an extreme drawdown (approximately 12 feet).

Narrows Dam, when viewed from downstream, is a large imposing structure with a maximum height of approximately 200 feet. The visual effect of the dam is complicated with a non-integral powerhouse and transmission lines, an access road, and a bridge all crossing the tailwaters downstream of the dam. These alterations tend to dominate the valued landscape character being viewed, resulting in a Low Scenic Integrity rating.

Table 5-2 Technical Analysis Summary

Project Feature	Setting/Context of View	Character/ Description of Project Feature	Dominance	Scenic Integrity Rating	Comments/Rationale
Narrows Reservoir (normal max drawdown ~3 ft)	Low, forested shorelines surrounding large calm reservoir	Large, calm water body that appears slightly dewatered	Dominant	Moderate	Attractive and aesthetically pleasing, reservoir blends harmoniously with surroundings, slight drawdown has minor effect on visual interest
Narrows Reservoir (extreme drawdown ~16 ft)	Low, forested shorelines surrounding large calm reservoir	Reservoir appears very dewatered and large portions of lake bottom and shoreline are exposed	Dominant	Very Low	Reservoir detracts from aesthetics of the area when large amounts of lake bottom are exposed
Narrows Dam (as viewed from upstream)	Backdrop of low, forested hillsides surrounding the reservoir	Low concrete dam structure and powerhouse	Competes for Dominance	Moderate	The forested hillsides provide a strong visual interest but the dam begins to dominate
Narrows Dam (as viewed from downstream)	Narrow river bordered by steep tree-covered shoreline	Narrow view of concrete dam, overhead powerline, powerhouse, and metal bridge	Dominant	Low	Appears industrial. Visual interest due to architecture and overhead footbridge.
Falls Reservoir	Narrow reservoir bordered by steep, forested foothills	Calm, narrow water body with heavily forested shorelines	Dominant	High	Natural and scenic setting of a reservoir that appears little altered.
Falls Dam (as viewed from upstream)	Tall forested hillsides bordering a reservoir.	The dam is a low concrete structure bordered by tall forested hillsides	Competes for Dominance	Moderate	The tall forested hillsides provide a strong visual interest but the dam begins to dominate
Falls Dam (as viewed from downstream)	Tall forested hillsides bordering a reservoir	The dam is a concrete structure surrounded by forested shorelines with tall forested hillsides in the background	Competes for Dominance	Moderate	Has visual interest because of natural surroundings. Structures appear small in scale compared to the forested hillsides.

Narrows Reservoir was evaluated over a range of drawdowns. At full pool, Narrows Reservoir appears “intact” and is consistent with a High Scenic Integrity rating. At the normal maximum annual drawdown of approximately 3 feet, the reservoir “appears slightly altered” and is consistent with a Moderate Scenic Integrity rating. At an extreme drawdown of approximately 16 feet, like that which occurred during the winter of 2003 for purposes of relicensing studies, the reservoir “appears heavily altered” and is consistent with a Very Low Scenic Integrity rating. Falls Reservoir is operated as a run-of-river facility with relatively little daily fluctuation (approximately one foot). Under current operations, Falls Reservoir appears “intact” and is consistent with a High Scenic Integrity rating.

Summary of Constituent Analysis

The primary findings of the constituent surveys were:

- 85 percent of respondents indicated that scenic quality was either a minor consideration or not a consideration in the user’s decision to go to the UNF, although in response to a separate question, “natural environment” and “scenery and/or setting” were cited by 61 and 52 percent of respondents, respectively, as a main reason for choosing to visit the UNF.
- 67 percent of respondents considered the scenic quality of the UNF as better than alternative recreation areas in the region.
- 89 percent of respondents rated the scenic quality of the UNF Project area as “somewhat attractive” or “very attractive”.
- Most respondents considered the reservoirs, forest, and trails as the most attractive features of the UNF.
- Campgrounds/picnic areas and the reservoirs were frequently noticed and generated primarily positive reactions.
- Most respondents considered the dirt roads and trash as the least attractive features of the UNF.
- Forest roads and timber harvests were frequently noticed and generated primarily negative reactions.
- The lowest rating of the 20 Visual Preference photographs was a +0.9 (i.e., the Narrows Dam tailrace and Falls Dam viewed from upstream), which reflects a slightly positive visual impression. No photographs received an overall negative rating.
- Floating debris/trash, eroding shorelines, and muddy water were identified as the most common detractors of scenic quality in the UNF Project area.
- Relatively few respondents indicated that they had “special ties” to the Project area (e.g., family traditionally visited the area). This conclusion is reinforced by the fact that only about 26 percent of respondents had been visiting the area prior to 1990.

In terms of Project facilities and operations, the responses to the constituent surveys are summarized in Table 5-3.

Table 5-3 Summary of Constituent Responses Regarding Project Facilities

Project Feature	% Identified as a Scenic Quality Detractor	VPS Rating (+3 to -3)	% Who have Noticed Project Feature	Primary Reaction of those who Noticed Project Feature
Narrows Reservoir	5%	+1.7 to +2.3	80%	83% with strong positive reaction
Narrows Dam	8%		36%	50% positive, 25% neutral, and 25% negative reaction
upstream		+1.2		
downstream		+0.9		
Falls Reservoir	5%	+1.2 to +2.1	80%	83% with strong positive reaction
Falls Dam	8%		36%	50% positive, 25% neutral, and 25% negative reaction
upstream		+0.9 to +1.1		
downstream		+1.0		
Exposed Lake Bottom	8%			
Overhead Transmission Lines	11%		20%	8% positive, 54% neutral, and 38% negative reaction

In summary, most users primarily choose the UNF because of its proximity to their homes and the available recreational opportunities, although the natural environment and scenery of the area were also important factors. Most users consider the area as visually attractive and more attractive than many alternative recreation areas in the region. Overall, most respondents identified Forest roads, timber harvests, floating debris/trash, eroding shorelines, and muddy water as the features that most adversely affected visual quality.

In terms of Project facilities, none were identified as a significant detractor of visual quality. In fact, the reservoirs were considered as one of the principal amenities of the Project area. Narrows Dam, as viewed from downstream, and Falls Dam, as viewed from upstream, received the lowest Visual Preference ratings, but these ratings were still slightly positive (+0.9).

Overall Assessment of UNF Compatibility

Table 5-4 summarizes the results of the technical and constituent analyses and compares these results with the VQO of the UNF Management Plan.

Most existing Project facilities are compatible with the VQO of the UNF Management Plan. Narrows Dam however, as viewed from downstream, received a low scenic integrity rating in the technical analysis, but constituents rated the view as slightly positive. From a Project operations perspective, current operations (normal maximum drawdown of approximately 3 feet at Narrows and Falls reservoirs) are consistent with the VQO of the UNF Management Plan. More extreme drawdowns, such as the approximately 16 foot drawdown that occurred in December 2003 for purposes of relicensing studies, would not be compatible with the VQO of the UNF Management Plan.

Table 5-4 Summary of Compatibility of Project Facilities and Operations with the UNF Visual Quality Objectives

Project Feature	Technical Rating (Scenic Integrity ¹)	Constituent Rating	UNF VQO ¹	Compatibility	Comments
Narrows Reservoir (normal max drawdown ~ 3 ft)	Moderate	Moderately positive	Partial Retention	Yes	Both technical and constituent ratings indicate that Narrows Reservoir at near full pool is perceived as an aesthetic amenity.
Narrows Reservoir (extreme drawdown ~16 ft)	Very Low	not rated	Partial Retention	No	Technical analysis of KOPs indicates that the aesthetics of the UNF is adversely affected by extreme drawdowns (~16 feet)
Narrows Dam (viewed from upstream)	Moderate	Slightly positive	Partial Retention	Yes	Narrows Dam as viewed from upstream does not dominate the view and is compatible in scale with the surrounding landscape. It is actually perceived by users as slightly positive aesthetically.
Narrows Dam (view from downstream)	Low	Slightly positive	Partial Retention	Mixed Results	Narrows Dam as viewed from downstream is a large imposing structure. A non-integral powerhouse, access road and bridge, and overhead transmission lines further complicate the view. Overall, the technical analysis resulted in a Scenic Integrity Rating of Low. This is somewhat inconsistent with the results of the constituent surveys, which rated this view as slightly positive.
Falls Reservoir (Normal max drawdown ~1 ft)	High	Moderately positive	Partial Retention	Yes	Both the technical and constituent ratings indicate that Falls Reservoir is perceived as an aesthetic amenity and that current operations do not adversely affect aesthetics.
Falls Dam (view from upstream)	Moderate	Slightly positive	Partial Retention	Yes	Falls Dam as viewed from upstream does not dominate the view and is compatible in scale with the surrounding landscape. It is actually perceived by users as slightly positive aesthetically.
Falls Dam (view from downstream)	Moderate	Slightly positive	Partial Retention	Yes	Falls Dam as viewed from downstream does not dominate the view and is compatible in scale with the surrounding landscape.

¹ VQO of Partial Retention generally equates to a Scenic Integrity Rating of Moderate.

6.0 REFERENCES

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