STATE OF MAINE
LAND USE PLANNING COMMISSION

IN THE MATTER OF	**)**	
FISH RIVER CHAIN OF LAKES	**)**	**Pre-Filed Direct Testimony of**
CONCEPT PLAN	**)**	**Terrence J. DeWan**
ZONING PETITION ZP 768	**)**	

On behalf of Aroostook Timberlands LP, Allagash Timberlands LLC, and Maine Woodlands Realty Company and their operating affiliate Irving Woodlands LLC, Terrence J. DeWan is submitting this pre-filed direct testimony in support of Zoning Petition ZP 768, the Fish River Chain of Lakes Concept Plan in northern Aroostook County.

I. QUALIFICATIONS AND BACKGROUND

My name is Terrence J. DeWan. I am self-employed as a landscape architect with Terrence J. DeWan & Associates in Yarmouth, Maine (TJD&A). I received a Bachelors in Landscape Architecture (BLA) in 1968 from the State University of New York College of Environmental Sciences and Forestry in Syracuse, New York. I am licensed by, and currently serve as the chair of, the Maine State Board of Licensure for Architects, Landscape Architects, and Interior Designers (License #6).

I have been involved in landscape architecture and land planning in Maine since the mid-1970s. Since that time my firm and I have worked on numerous land planning and visual impact assessment projects in Maine, New England, and elsewhere for a wide variety of clients, including the forest products industry, commercial developers, state agencies (e.g., Maine Department of Environmental Protection (DEP), Maine Department of Transportation (DOT), federal agencies (National Park Service, U.S. Department of Agriculture (USDA) Forest Service), municipal governments, and utility companies. Our experience includes work with hydroelectric facility licensing and relicensing, electrical power generation facilities, transmission lines, natural gas storage facilities, liquefied natural gas terminals, industrial buildings, sanitary landfills, wind energy facilities, hydroelectric projects, and new community development.

I served as a consultant to the DEP in the development of Scenic Impact Rules and also served on a DEP Task Force for the Development of Chapter 315 (Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses). I also served on a state-sponsored study group to develop an assessment of cumulative visual impacts from wind power development. TJD&A is one of three firms, and the only one in Maine, who is pre-qualified to perform peer reviews of visual impact assessments for the DEP. Over the past decade I have been invited to deliver presentations on visual assessment procedures and related topics at several national conferences (e.g., American Society of Landscape Architects, American Planning Association, National Association of Environmental Professionals). I authored the Scenic Assessment Handbook for the Maine State Planning Office, which was recognized with the Project of the Year award from the Maine Association of Planners. In 2011, I was elected to become a Fellow of the American Society of Landscape Architects, the first person from Maine ever to achieve that honor.

My current work includes collaboration with The Musson Group and others on the Management Plan for the Katahdin Woods & Waters National Monument, a downtown plan for Greenville, Maine (also with The Musson Group), and the Visual Impact Assessment for the Aqua Ventus floating wind turbines off the coast of Monhegan Island. My resume is attached.

II. INVOLVEMENT WITH THE FISH RIVER CHAIN OF LAKES PROJECT

I have been involved with the development of the Fish River Chain of Lakes Concept Plan since 2011. My work has focused on the designation of potential use areas for residential and community/economic development. Over the course of this time I worked closely with Noel Musson and representatives from Irving Woodlands to identify sensitive habitats and natural areas, select and evaluate areas for potential development, and draft maps and other application materials for LUPC review.

III. ANTICIPATED USE OF LAKES AND LAKE CHARACTER

Summary. The Concept Plan for the Fish River Chain of Lakes provides the Petitioners with a roadmap for the future that allows them to designate areas for possible future development while maintaining their core objective of sound forest management. In designating these areas, the Concept Plan pays particular attention to the recreational and aesthetic values of the unique system of lakes and thoroughfares that define this region. The Plan addresses potential changes to the character of the lakes in several ways: the establishment of a 14,750±-acre conservation easement that will permanently protect approximately 17 miles of shoreline; aesthetic harvesting techniques in visually sensitive areas; hillside development standards for those sloping sites overlooking Long, Cross, and Square Lakes; and the use of Outcome Based Forestry, with its significant consideration of the aesthetics of forest management operations.

There will be changes to the recreational use of the area, primarily resulting from additional dwellings and greater access to the lakes. In thinking about lake use, we were guided by the Department of Inland Fisheries and Wildlife's (IF&W) principle of 'equitable access,' i.e., providing opportunities for the general population to use the waterways, and not limit it to those who may own or lease camps on the lakes. Our research into recreational use has determined that the increase in boating on the lakes (one of the most highly visible forms of recreation in the Plan area), would be well within the limits of acceptable change, due to the size of the waterbodies, the current level of boating activity, and a conservative estimate of the potential increase in boating traffic.

Overview. The Fish River Chain of Lakes offers a wide spectrum of physical settings and recreational experiences to its lease/license holders and visitors. In general, the density of development decreases as the visitor starts at Long Lake and heads downstream (west) toward Square Lake.

The implementation of the Concept Plan will likely increase the pressure on boating, fishing, and other recreational pursuits on each of the lakes in the Plan area by virtue of additional home sites, increases in the number and quality of water access points, and improved opportunities for tourism. To address the potential effect that the Concept Plan may

have on recreational resources and lake character within the Plan area, I researched and prepared Appendix C, Evaluation of Impacts to Recreation (Evaluation), which was submitted as part of the amended Petition on May 26, 2017, and supplemented with Addendum Materials filed on April 12, 2018. The Evaluation provides a detailed analysis of existing conditions and possible changes to each of the four lakes (Long, Mud, Cross, and Square Lakes) and thoroughfares if the Concept Plan were fully implemented. See Exhibit 19 Addendum to Appendix C: Evaluation of Impacts to Recreation.

In addition, I also developed standards to address possible visual impacts from development on hillsides overlooking the lakes. The Concept Plan includes provisions requiring aesthetic harvesting practices in visually sensitive areas. The Concept Plan also requires that the principles underlying Outcome Based Forestry (OBF) be applied throughout the Plan area. One of the nine Criteria for OBF addresses the aesthetic impacts of timber harvesting to minimize adverse visual impacts from harvests, roads, landing, and other management activities.

Recreation Opportunity Spectrum. The analysis in the Evaluation is based upon the Recreation Opportunity Spectrum (ROS), a recreation inventory and management tool that was developed by the USDA Forest Service in the late 1970s for use on public lands in the western United States. ROS is based upon the notion that recreational users expect certain types of social experiences on the lands they visit, and that it is possible to provide recreational opportunities across a broad spectrum of land use classes. ROS has been and is being used in Maine for similar analyses (e.g., Concept Plan for the Moosehead Lakes Region; visual impact assessments for numerous wind energy facilities; management planning for Katahdin Woods & Waters National Monument).

In 2003, a team of Vermont researchers developed a revision of ROS aimed at recreational land holdings in the Northeastern United States. This program, called the ROS Northeast Guide (Guide), was aimed at lands similar to the Petitioners' holdings in Aroostook County, i.e., smaller land holdings (smaller than those found in the Western US), and greater number of roads. In 2004, the Forest Service issued a refinement to the original ROS for water-based recreation planning called the Water Recreation Opportunity Spectrum (WALROS). I

used both the Guide and WALROS to evaluate potential impacts of the Concept Plan on the recreation experience found at each of the lakes in the Plan area.

The Guide identifies different ROS Classes (WALROS identifies WALROS Classes), based upon physical setting (remoteness, relative size, and evidence of human activity); social setting (amount and type of contact with others); and the managerial setting (the amount and kind of restrictions the landowner places on user activities). The Guide also characterizes the expected experience for each of the ROS classes, based upon the probability of encounters with other people, the type of equipment used, and the quality of the experience.

I developed Appendix C, An Evaluation of Recreation Resources (submitted on May 26, 2017 and revised in the Amendment of April 12, 2018) to determine the effect that an assumed increase in boating use would have on the recreational experience of those currently using the lakes. In determining the potential effect on recreational uses and experiences, I relied upon WALROS, which provides a boating carrying capacity range to evaluate the number of boats that would be expected within each of the WALROS Classes. WALROS presents a range of "reasonable boating capacity coefficients," which are defined as the number of water surface acres adequate for each recreational boat in a particular class. Lake users in any particular class have an expectation of the number of boats that might be on the lake; once that number is exceeded, their perception of the lake may change, and with it their experience of being on that particular waterbody. (For example, if a boater was on a lake in a Rural Natural WALROS Class and the number of boats exceeded 50 acres/boat on a regular basis, it would start to take on the characteristics of a lake in a Rural Developed WALROS Class.)

Lake Management Program. In developing the Concept Plan and evaluating potential effects on existing lake character, we took into consideration the Lake Management Program that is presented in the Commission's Comprehensive Land Use Plan (CLUP). One of the Program's major planning policies is to "guide lake development based on identified land use characteristics and natural resource values, conserving important values and directing development toward those lakes or lake areas most capable of absorbing new development."[1] The four lakes in the Concept Plan area are either in Management Class 5, Heavily Developed

[1] Land Use Regulation Commission, Department of Conservation. Comprehensive Land Use Plan. 2010. p. 288.

Lakes (Long Lake and Square Lake) or Management Class 7, Lakes Not Otherwise Classified (Mud Lake and Square Lake). Square Lake is also considered to be potentially a Class 3, Lakes Potentially Suitable for Development.

Hillside Development. As part of the amendments that were filed on April 12, 2018, we have developed a series of standards to minimize visual impacts on public viewpoints and the lake (See 2. Hillside Development, April 2018). These include requirements for design standards for new construction, minimization of site clearing and regrading, the use of professionals trained in visual quality management and hillside development, preservation of ridgelines, and avoidance of slopes >20%. Design standards will include measures to address color contrasts; lighting; windows and other reflective surfaces; clearings for buildings, lawns, driveways, and septic systems; limits on view openings; building orientation; and preservation of existing vegetation. Exhibit 20 illustrates the effectiveness of these types of standards in minimizing visual impacts on hillside development.

In addition, forest management activities within the residential development areas will be required to use aesthetic management practices in the most highly visible areas, i.e., hillsides and viewsheds of the lakes and thoroughfares. Prior to any harvesting activity, Petitioners will identify those areas that are considered of moderate or high scenic value. Within these identified areas, Petitioners must use selective harvesting techniques exclusively, which will remove approximately only 30% of the standing timber on an individual tree basis, retaining the majority of the forest cover. The outcome is a harvesting operation that will retain its aesthetic appeal when seen from public viewpoints and provide sufficient buffering to minimize visual impacts, thus assuring that the potential effect on the character of the lakes will be minimized. See Exhibit 21 for examples of selective harvesting operations.

IV. LONG LAKE

Types and locations of public access. Three public boat landings are available around the Lake, in Sinclair, St. Agatha, and Van Buren Cove in T17 R3. The St. Agatha boat landing, which also includes a picnic area, has recently been upgraded by the State to accommodate

additional boaters. The facility in Sinclair Village is open to the public, but located on private property.

There is no deep-water access into Long Lake within the Plan area. The beach at Van Buren Cove is not a permitted boat launch; however, people use it to gain boat access to this end of the lake. Even if Van Buren Cove were improved, it could not provide access for larger boats due to the relatively shallow waters immediately offshore.

The primary swimming beach in the Plan area is at Van Buren Cove, where a quarter-mile sand beach is located between the heavily developed east and west sides of the Lake. There are no formal recreational facilities at the beach, other than a picnic table near the point where Mud Brook enters the lake. Wide shoulders along East Side Road provide room for informal parking.

Public expectations regarding the use and experience of Long Lake. The public's expectation regarding the use and experience of a waterbody is a product of many factors, including the density and type of development, the presence of roads, the amount of vegetation preserved along the shoreline, the presence of water access facilities, and the amount and type of contact with others. In the case of Long Lake the waterfront owned by the Petitioners is almost fully developed with seasonal and year-round residences.

As part of the ROS analysis I determined that Long Lake met the criteria for the Developed Natural ROS Class. The ROS describes the Physical Setting of this class as a "natural appearing setting (that) has been culturally modified so that the modifications are dominant. Pedestrian or other slow moving observers are constantly within view of culturally changed landscape. Designed roads and/or highways are present." The Setting Characterization indicates the area is a "substantially modified natural environment. Sights and sounds of people are readily evident. Interaction between users often is moderate to high." The ROS experience characterization describes the probability of encounters with other individuals and groups as "common. The physical setting is not as important as the activity opportunity."

The ROS Class is consistent with the LUPC Lake Management Classification, which assigns Long Lake to Management Class 5, Heavily Developed. The Management Objective for Class 5 is to "Maintain natural qualities associated with these lakes, enhance scenic values, and

retain some undeveloped shoreline by requiring cluster development on these lakes except where clearly inappropriate due to site characteristics." See Exhibit 23 for a selection of photographs illustrating existing conditions at Long Lake.

Anticipated change in intensity and types of use. The types of recreation activities and opportunities on and adjacent to Long Lake are diverse, and include swimming, boating, water skiing, fishing, ice fishing, fishing derbies, smelt dipping, ATV riding, and snowmobiling. The focal point for the Plan area is the sand beach at Van Buren Cove.

The Concept Plan is proposing up to three residential development areas near Long Lake. Long Lake A is an upland development area encompassing 129 acres on the east side of Van Buren Cove, with an upper limit of no more than 50 units. Common areas may provide access to the waterfront for the residents of this development area. Long Lake B is a development area encompassing 75 acres on the west side of Van Buren Cove with an upper limit of no more than 15 units. Common areas may provide access to the waterfront for the residents of this development area. Long Lake C is a development area encompassing 120 acres above Barn Brook Road east of the Village of Sinclair overlooking Long Lake. This parcel has an upper limit of no more than 25 units and does not have water frontage.

The beach at Van Buren Cove will remain a public access point. The Petitioners have committed to develop a site improvement plan for the beach within two years of the effective date of the Concept Plan, in cooperation and coordination with the current leaseholder (Town of Van Buren). The plan will be designed to support public access, address water quality, and improve the aesthetics of the beach area.

The types of residential uses being proposed already exist on the Petitioners' land and on other lands surrounding Long Lake. Irving has approximately 150 licensed/leased camp lots on Van Buren Cove, most of which have seasonal or year-round residences directly on the water. Long Lake as a whole is heavily developed, with approximately 775 structures on the shoreline. The Concept Plan establishes an upper limit of no more than 75 units for all three residential development areas proposed for Long Lake. See Exhibits 10 and 22 for location of proposed development areas.

Anticipated effect on recreational uses and experiences. Additional development opportunities at Long Lake A and B may bring more people and waterfront activity to Van Buren Cove and the rest of Long Lake. The Plan allows water access sites for Long Lake A (one site) and Long Lake B (up to two sites). These would be private facilities for the residents of those residential areas and developed in accordance with the standards in Chapter 10, as amended by the Plan. The hillside development at Long Lake C, east of the Village of Sinclair, will not have direct water access in the Plan area. Water access will be limited to possible common facilities and/or use of the beach. Given the relatively dense existing development in the immediate area, the effect of the additional residential units on recreational use of the lake and the beach is anticipated to be minimal. The ROS class for this portion of Long Lake should remain as Developed Natural.

The site improvement plan for the beach should anticipate the potential for additional visitor use from development at Long Lake A and B. Improvements to public access, water quality, and beach aesthetics should increase the attractiveness of the beach and result in a more enjoyable experience for residents and visitors.

Effect on the character of Long Lake and user experience. Given the number and density of existing housing units visible on Long Lake, and specifically in Van Buren Cove, potential future development at Long Lake A and B should not have an appreciable effect on the character of the lake or the user experience found in the cove and the surrounding lands. The majority of the Long Lake A development area is located on a moderately sloping hillside above the southern end of East Van Buren Cove Road. Established logging roads provide access to the site and would be the likely location of new frontage roads for potential subdivisions. The combination of aesthetic management practices for harvesting prior to development and the requirement for design standards for new construction should minimize adverse visual effects on the lake. (See the Amendments to the application, 2. Hillside Development, filed on April 12, 2018.) Any new development that may be visible would be seen in the context of the heavily developed eastern shoreline of Van Buren Cove that is owned by the Petitioners. The boundaries of Long Lake A have been laid out to avoid potential impacts on the prominent ridgelines that define the east side of the cove.

The boundaries of Long Lake B were established to avoid the steep slopes that characterize the western edge of Van Buren Cove (and are identified in Irving's Unique Areas Program). Two areas of potential development have been considered in Long Lake B: a) an area at the southern end of Long Lake B of moderate slopes set back from the West Van Buren Cove Road, and b) an area in the middle of Long Lake B where a few house lots might be developed above the road. The aesthetic management practices and design standards required for Long Lake A will also apply here. Any new development that may be visible would be seen in the context of the heavily developed western shoreline of Van Buren Cove, which is owned by the Petitioners.

Long Lake C is different than Long Lake A or B in that it does not offer access to the lake and is outside of Van Buren Cove. It may also have the ability to utilize the Sinclair Sanitary District's line in Barn Brook Road for sewage treatment. Due to its elevated location above Barn Brook Road, hillside development at Long Lake C has the potential to have an effect on the character of Long Lake. The aesthetic management practices and design standards required for Long Lake A and B (and presented in the April 12, 2018 amendment in 2. Hillside Development) will also apply here. Any new development that may be visible from the western arm of Long Lake or from the roads in the Village of Sinclair would be seen in the context of the shorefront cottages on the north side of Barn Brook Road (not owned by the Petitioners).

V. MUD LAKE

Types and locations of public access. There is currently no public access available on Mud Lake. Boating access is possible from the informal put-in on private property at the western end of Long Lake in Sinclair, which provides access to 1.9-miles long of the Mud Lake/Cross Lake thoroughfare. The Northern Aroostook Regional Management Plan[2] recognized the need for boat access to Mud Lake. The Lake is listed by the State as the #1

[2] Northern Aroostook Regional Management Plan. Maine Department of Conservation Bureau of Parks and Lands. Augusta, Maine. June, 2007.

Priority Lake for access in the Strategic Plan for Providing Public Access to Maine Waters for Boating and Fishing, 1995 and 2000.[3]

Public expectations regarding the use and experience of Mud Lake. There is currently no public access available on Mud Lake; the most direct way to access the lake is through the Long Lake/Mud Lake thoroughfare. The majority of the northern shoreline, with the exception of a Maine Public Reserve Lot, is developed with seasonal camps, a campground, and year-round residences. The remaining shoreline is undeveloped. Route 162 is located within 0.5 mile of the lake on both the north and west side. The Village of Sinclair is within 0.5 mile of the lake.

Since there is no public access the lake is not stocked, which may have a negative effect on recreational use and expectation. Unlike the other lakes in the chain that have notable topographic features and therefore considerable visual interest, there are no significant landforms visible from Mud Lake.

As part of the ROS analysis, I determined that Mud Lake met the criteria for the Semi-Developed Natural ROS Class. The ROS describes the Physical Setting of this class as a "natural appearing environment. Evidence of the sights and sounds of people are moderate and usually harmonize with the natural environment. Interaction between users may be low to moderate, but evidence of other users is prevalent." The ROS experience characterization predicts there to be about equal probability of encountering other user groups and isolation from sights and sounds of people. See Exhibit 24 for a selection of photographs illustrating existing conditions at Mud Lake.

Anticipated change in intensity and types of use. The only changes projected for Mud Lake as part of the Concept Plan are allowances for a) a potential remote campsite on the southeastern shoreline and b) a remote campsite or remote rental cabin on the southwestern shore where the thoroughfare exits the lake. No other development is anticipated under the Concept Plan for the shoreline. Current land uses (primarily forest management) on Irving's

[3] Strategic Plan for Providing Public Access to Maine Waters for Boating and Fishing, 1995 and 2000. Boating Facilities Program of the Maine Dept. of Agriculture, Conservation, & Forestry, Maine Department of Inland Fisheries and Wildlife.

land are expected to continue. The shoreline of the lake in Cross Lake TWP will be preserved under the terms of the proposed conservation easement.

Two development areas on the north side of Route 162, CD-1 and CD-2, are designated for potential community and economic development. These locations are separated from the lake by Route 162 and the existing development along the shoreline. The development anticipated for these areas would not be visible from the lake.

Anticipated effect on recreational uses and experiences. The introduction of a potential remote campsite on the southeastern shoreline and a remote campsite or remote rental cabin on the southwestern shore should have minimal impact on existing recreational uses and experiences on Mud Lake. These two sites will add two facilities for overnight accommodations, which may slightly increase boating traffic on the lake. The sites will be well screened in accordance with Chapter 10 rules, and will not be obvious to the occasional passing boater or people fishing on the lake.

The Conservation Easement will provide permanent protection for 1.7± miles of the Mud Lake shoreline and both sides of the thoroughfare from Mud Lake south to the transmission line at Guerette (approximately 1.0 mile). The Easement will protect the scenic qualities of these waterbodies that are an inherent part of the recreational experience.

The slight increase in boating traffic (approximately 1 to 2 additional boats per day during peak summer conditions) should have minimal to no effect on the recreational experience of those now using Mud Lake. The ROS class for the lake should remain as Semi-Developed Natural.

Effect on the character of Mud Lake and user experience. The two Community/Economic development areas on the north side of Route 162, CD-1 and CD-2 are separated from the lake by the highway and existing development along the shoreline. The development anticipated for these areas would not be visible from the lake. By adherence to Chapter 10 regulations in the Chapter 10 Addendum for site development, there should be no impact on the recreation experience or water quality of Mud Lake.

VI. CROSS LAKE

Types and locations of public access. A boat landing, picnic area, and beach is located on the southeast corner of Cross Lake on Irving property and is currently leased to a local sportsmen's club. Vehicle access to this site is from Route 161 over an improved gravel road. The Cross Lake boat launch is also one of the main access points into Square Lake.

Public expectations regarding the use and experience of Cross Lake. The Petitioners own approximately 9 miles of the 13-mile Cross Lake shoreline. They also own 237 licensed/leased lots of the approximately 275-300 camps that line the shore, plus the boat launch, beach, and picnic area on the eastern shore in the southern part of the lake. Irving owns approximately 4 miles of undeveloped shoreline; 1.4± miles of shoreline are owned by others. With the exception of the 0.8-mile undeveloped northern end of the lake, seasonal and year-round residences line the shore almost continuously for 7.3 miles from the boat launch to Matrimony Point. See Exhibit 25 for a selection of photographs illustrating existing conditions at Cross Lake.

As part of the ROS analysis that was submitted on May 26, 2017, I determined that the northern 80%± of Cross Lake met the criteria for the Developed Natural ROS Class (Suburban in WALROS), the same as Van Buren Cove on Long Lake. The ROS describes the Physical Setting of this class as a "natural appearing setting (that) has been culturally modified so that the modifications are dominant. Pedestrian or other slow moving observers are constantly within view of culturally changed landscape. Designed roads and/or highways are present." The Setting Characterization indicates the area is a "substantially modified natural environment. Sights and sounds of people are readily evident. Interaction between users often is moderate to high." The ROS experience characterization describes the probability of encounters with other individuals and groups as "common. The physical setting is not as important as the activity opportunity." Like Long Lake, the ROS Class for the majority of Cross Lake is consistent with the LUPC Lake Management Classification, which assigns all of Cross Lake to Management Class 5, Heavily Developed.

I determined the remaining 20% of the lake (south of the boat launch) to meet the criteria for a Semi-Primitive Motorized ROS Class (Rural Natural in WALROS). The ROS Setting

Characteristics describe this type of area as “appears to be a predominantly medium-to-large size natural or natural appearing environment. Interaction between users is low, but there is often evidence of other users.” The ROS experience characterization describes a moderate probability of experiencing isolation from human development, use, and impact.”

Anticipated change in intensity and types of use. The types of recreation activities and opportunities on and adjacent to Cross Lake are diverse and similar to those at Long Lake: swimming, boating, water skiing, fishing, ice fishing, ATV riding, and snowmobiling. The focal point for the Plan area is the Cross Lake boat launch, which also features a picnic area and sand beach. See Exhibits 10 and 22 for location of proposed development areas.

The Concept Plan is proposing up to five residential development areas on or near Cross Lake. Cross Lake A is an upland development area encompassing 110 acres on the northwest end of the lake with an upper limit of no more than 30 units. None of the potential lots would have water frontage. A common area may provide access to the lake for the residents of this development area.

Cross Lake B is primarily an infill residential development area on 91 acres at the northeastern end of the lake area between Route 161 and the waterfront. The area has an upper limit of no more than 30 development units. Most of the shore frontage is already occupied with camp lots. A few areas of shorefront that have not been licensed offer the potential for common water access to serve potential lots.

Cross Lake C is a 57-acre development area just south of the Mud/Cross Lake thoroughfare, adjacent to the heavily developed Cyr Road. This area has an upper limit of no more than 30 units. None of these lots would have water frontage or would be visible from the lake. A common area or the thoroughfare may provide a point of access to the lake for the residents of Cross Lake C.

Cross Lake D is a development area on 187 acres of land in the vicinity of the boat launch on the east side of the lake. Cross Lake D has an upper limit of no more than 35 development units. There is an opportunity for several lots to have water frontage; many of the lots may have filtered views of the lake. The existing boat launch and picnic area may become the focal point for new residential development.

Cross Lake E is a 229-acre development area at the southern end of the lake with an upper limit of no more than 60 units. Many of the lots would be near the water or have filtered views of the lake. A common area could provide a point of access to the waterfront.

The Cross Lake boat launch, picnic area, parking lot, and beach will become a permanent public access point via a deed restriction or other suitable mechanism within 14 months of the effective date of the Plan. The Petitioners, either on their own initiative or working with a third party, plan to a) improve the public restrooms on site within 1 year of the effective date of the Concept Plan, b) develop a maintenance plan for the license holder or, in the absence of a license holder, maintenance commitments from Petitioner; and c) within 1 year of the effective date, renew and/or potentially revise the license agreement with a qualified holder and/or seek a qualified entity for fee ownership of the property.

The types of residential uses that are being proposed are already found on the Petitioners' land and on other lands surrounding Cross Lake. Irving has approximately 237 licensed/leased camp lots on or near Cross Lake, most of which have seasonal or year-round residences directly on the water. The northern 80%± of Cross Lake is heavily developed, with over 300 seasonal camps and year-round homes, most of which are on the eastern shoreline. The Concept Plan establishes a cumulative cap of 125 units for all five residential development areas proposed for Cross Lake. The Plan allows one water access site for Cross Lake A, B, C, and D, and two water access sites for Cross Lake E. These would all be private facilities for the residents of those residential areas and developed in accordance with the standards in Chapter 10, as amended by the Plan.

Anticipated effect on recreational uses and experiences. The additional residential development on Cross Lake may add up to 125 new units on or adjacent to the lake, which represent a 41% increase in the number of existing residences on or near the shoreline. While very few of these new units would have separate water frontage, a limited number of water access sites and docking facilities would be available.

Using a very conservative ratio of one boat per camp and a 15% use rate, I determined that there may be as many as 51 boats on the lake at peak times (warm sunny weekends or

holidays).[4] Over the 2,000-acre northern part of the lake, where most of the boating occurs, this translates into a boating density of 39 acres/boat. With the additional development allowed under the Concept Plan, the number of boats on the water during peak times may rise to 70, bringing the boating density up to 28 acres/boat. Both of these boating densities are within the acceptable range of boating coefficients established by WALROS for lakes in the Rural Developed Class (20 to 50 acres/boat), and well below the boating coefficients for the Suburban Class (10 to 20 acres/boat).

Approximately 20% of the lake (465± acres) south of the boat launch (the location of the Cross Lake E development area) is considered in the Semi-Primitive Motorized ROS Class (Rural Natural in WALROS). Local residents report that there are typically between 1 and 5 boats on this part of the lake at any one time during the boating season. Residential development at Cross Lake E may result in an increase in the number of boats at this end of the lake. Using the same assumptions regarding boating use on the rest of the lake, approximately 9 additional boats would be expected at peak times (15% of 60 units at Cross Lake E using a boat). Added to the 1 to 5 existing boats reported, this area may expect to see a total of 10 to 14 boats at peak times if Cross Lake E were fully developed and those boats were to stay south of the boat launch. The additional boats at peak time, plus the presence of development on the hillside above the lake may cause the classification to move from a Rural Natural to a Rural Developed WALROS Class. Users who may be affected by this change are the occasional beach-goer at the southern end of the lake and those who enjoy boating in a more naturally appearing landscape.

Effect on the character of Cross Lake and user experience. Given the number and density of existing camps on Cross Lake, and the relative lack of visibility of Cross Lake A, B, and C, the potential development of these three areas should have negligible or no effect on an existing woods road with no views of the water. Cross Lake B is primarily an infill area, where

[4] This assumes that all 275 existing residences have boats and that 15% of them would be on the lake at peak times. This also assumed that there would be 10 boats on the lake from the boat launch. The estimates of maximum use are very conservative. Year-round residents report that on a busy July Fourth, there may be as many as 30 motorized boats (including jet skis) on the lake, plus another 5 canoes/kayaks. On a "typical" day during the summer, there may be as many as a dozen motorized boats on the lake. Cheryl St. Peter, Cross Lake Resident. Personal Communication.

new lots would be developed between Route 161 and the waterfront. Very few, if any, would have direct views of the lake. Cross Lake C is on the east side of the heavily developed Cyr Road, with no water views. The only evidence of development at these three areas would be private waterfront facilities that could provide water access to the residents of each of these areas.

Cross Lake D and E are both located on sloping sites at the southeastern end of Cross Lake. The boundaries of both of these areas have been laid out to avoid potential impacts on the prominent ridgelines that define the east side of the lake.

The combination of aesthetic management practices for harvesting prior to development and the requirement for design standards for new construction should minimize potential visual effects on the lake from these areas. (See the Amendments to the application, 2. Hillside Development, filed on April 12, 2018.) Cross Lake D is already served by three roads that could provide frontage for new residential lots, thus minimizing the need for additional clearing for new roads.

One of the distinguishing features of Cross Lake E is an area of severe slopes running parallel to the waterfront. The design standards presented in Amendment 2. Hillside Development specifically address this situation by requiring that "Homes shall be sited to avoid extensive areas of steep slopes immediately below the homesite where clearing may expose significant portions of the building."

Any development on Cross Lake D that may be visible from the lake would be seen in the context of existing homes (non-Irving properties) on Mifs Lane. Both Cross Lake D and E are located at the southern end of the lake where there are no residences or public viewpoints on the opposite shoreline.

VII. SQUARE LAKE

Types and locations of public access. There are three primary ways for boaters to gain access to Square Lake: a) put in at the public Cross Lake boat launch on Irving property and enter the lake from the east via the Cross Lake thoroughfare, b) enter the lake from the west via the Eagle Lake thoroughfare, or c) put in at the private Moscovic Landing at the northern end of the lake. Of the three, the Cross Lake boat launch is the only one in the Plan area.

Bigger boats may be used in the spring when water levels are high to access Square Lake through the thoroughfare. However, during the summer and fall months, the water levels in the thoroughfares drop, exposing large boulders and sandbars that effectively prevent access into Square Lake for most motorized boats.

The Moscovic Landing at the northern end of the lake provides a privately-owned access into the lake. However, shoreline gradients at this end of the lake are relatively shallow, which limits the size of the boats that can be launched. Vehicle access to the landing is over 7.5 miles of unimproved, privately-owned gravel road from Route 161.

The Northern Aroostook Regional Management Plan[5] recognized the need for boat access to Square Lake, since the Moscovic Landing is on private property. Square Lake is listed by the State as the #2 priority lake for access in the Strategic Plan for Providing Public Access to Maine Waters for Boating and Fishing, 1995 and 2000.[6]

Public expectations regarding the use and experience of Square Lake. Square Lake, at 8,150 acres, is the largest of the Fish River chain of lakes and the second largest lake in Aroostook County. The lake is predominantly undeveloped, with the exception of a cluster of 19 Irving licensed/leased camp lots on the western shore, about 36 seasonal and year-round homes on the northern shoreline near the Moscovic Boat Landing (outside of Irving land), and one private residence (Fraser Camp) where the thoroughfare enters Square Lake. Irving owns approximately 13.9 miles of the roughly 19.4-mile shoreline of Square Lake. Irving also owns Yerxas Camps (also known over the years as Gorfinkle and Square Lake Camps), which was a traditional Maine sporting camp dating back to the early 1900s. The Camps occupy approximately 0.15 mile of shoreline, which includes an extensive sandy beach. See Exhibit 26 for a selection of photographs illustrating existing conditions at Square Lake.

Unlike the other lakes in the Fish River Chain, Square Lake is notable for its lack of development and almost continuous unbroken shoreline. Many of the camps that are present

5 Northern Aroostook Regional Management Plan. Maine Department of Conservation Bureau of Parks and Lands. Augusta, Maine. June, 2007.

[6] Strategic Plan for Providing Public Access to Maine Waters for Boating and Fishing, 1995 and 2000. Boating Facilities Program of the Maine Dept. of Agriculture, Conservation, & Forestry, Maine Department of Inland Fisheries and Wildlife.

are set back from the water, leaving a visual buffer that contributes to the undeveloped feeling on the lake. In general, boating traffic on Square Lake is relatively low due in part to the low number of residential units, the difficulty in access, and the unpredictable nature of weather conditions, which can result in large waves and whitecaps.

Square Lake is currently in Management Class 7, Lakes Not Otherwise Classified, but is potentially a Management Class 3, which would mean "potentially suitable for development" – the classification that provides the most leeway for lake-oriented development.

As part of the ROS analysis that was submitted on May 26, 2017, I determined that the northern half of Square Lake met the criteria for the Semi-Developed Natural ROS Class (Rural Developed in WALROS). The ROS describes the Physical Setting of this class as a "natural appearing environment. Evidence of the sights and sounds of people are moderate and usually harmonize with the natural environment. Interaction between users may be low to moderate, but evidence of other users is prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment." The Setting Characterization indicates the area is a "natural appearing setting (that) may have obvious modifications, ranging from easily noticed to strongly dominant. However, these alterations remain unnoticed or subordinate from visually scenic and heavily traveled routes and use areas. Designed roads and/or highways are present. Structures generally are scattered, remaining subordinate or unnoticed by observers on visually scenic or heavily traveled routes." The ROS experience characterization predicts that there is "About equal probability of encountering other user groups and isolation from sights and sounds of people."

I determined that the southern half of the lake met the criteria for the Semi-Primitive Motorized ROS Class (Rural Natural in WALROS), similar to the southern portion of Cross Lake. The ROS Setting Characteristics describe this type of area as "appears to be a predominantly medium-to-large size natural or natural appearing environment. Interaction between users is low, but there is often evidence of other users." The ROS experience characterization describes a moderate probability of experiencing isolation from human development, use, and impact."

Anticipated change in intensity and types of use. Square Lake is the least developed of the four lakes in the Concept Plan area. Petitioners own approximately 13.9 miles of the

roughly 19.4-mile shoreline of the 8,150-acre Square Lake. Of this, approximately 12.8 miles of their land are undeveloped. Recreation activities on or near the lake include boating, fishing, ice fishing, snowmobiling, and ATV riding. The Yerxas Camps on the eastern shoreline may have been a focus of activity years ago, but is now abandoned (and owned by the Petitioners).

The Concept Plan is proposing up to three residential development areas on or near Square Lake. See Exhibits 10 and 22 for location of proposed development areas.

Square Lake W is a development zone of approximately 169 acres on the west side of the lake in the vicinity of Irving's 19 existing licensed lots south of Limestone Point. While some of the development area has water frontage, the majority of the new units would likely be located on the hillside overlooking the lake. The existing camps are off the grid, relying upon wood, solar panels, and propane for basic energy needs. Any future development would likely be similarly self-reliant. A common area may provide access to the waterfront for any proposed residential development.

Square Lake E is a residential development zone of approximately 278 acres of land abutting a shallow cove on the eastern shoreline, surrounding Square Lake Yerxas. The area has an upper limit of no more than 85 development units. Common areas may provide up to two points of access to the lake for the residents. The Concept Plan provides for the creation of a parking area for residents of Square Lake W who may access to their lots by boat.

Square Lake Yerxas is the site of the former Yerxas (Gorfinkle) sporting camps. The concept plan allows up to 50 units of recreational lodging or up to 17 units of residential development on approximately 51 acres of land surrounded on three sides by Square Lake E. The concept for this area (in conjunction with Square Lake E) is to designate an area that can support a mixture of complementary uses that are compatible with the recreational nature of Square Lake and that support future residential development by creating a focal point for recreational and limited community services. Prior to development at Square Lake Yerxas, a Schematic Design Plan will be required to illustrate how the land will be developed, including reserved areas for residential use, commercial activity, recreation facilities, public water access, parking for Square Lake W, and other facilities. This zone is intended to encourage, but does

not require, development of a recreational lodging facility, as well as a public or commercial trailered ramp to provide public access into Square Lake.

Residential uses already exist on the Petitioners' land on the west side of Square Lake (19 licensed/leased lots) and on other lands at the north end of the lake (approximately three dozen). The majority of the existing camp lots are seasonal dwellings located on the shoreline. The southern half of Square Lake is almost completely undeveloped, with the exception of woods roads, several informal campsites, and the remnants of the Yerxas Sporting Camp. The Concept Plan establishes a cumulative cap of 130 units for all three residential development areas proposed for Square Lake.

The Concept Plan will zone Square Lake Yerxas and Square Lake E to allow development of up to three water access sites between them. Only one of these may be a trailered ramp. Further, to promote development of a public or commercial trailered ramp (which would be open to the public), any recreational lodging facility developed in Square Lake Yerxas would have to include a trailered ramp, unless such a ramp has already been permitted in the adjacent Square Lake E development area.

Anticipated effect on recreational uses and experiences. Additional residential development on Square Lake may add up to 130 new units on or adjacent to the lake, concentrated in two main areas: Square Lake W could have new residences on a hillside overlooking the lake; Square Lake W and Yerxas would be the focal point of new activity, with the possibility of new homes, recreational lodging, a public boat launch, a marina, private water access facilities, and related commercial and recreational facilities.

I projected the potential of 67 boats at peak times, assuming full allowable build-out of 130 units, applying the same assumptions used for Cross Lake[7]. The 8,000-acre Square Lake is divided into the northern and southern half, due to their different WALROS characteristics. The northern half is considered Rural Developed WALROS Class, where boating coefficients are expected to range from 20 to 50 acres per boat, which translates into a capacity of 80 to 200

[7] The determination assumed all waterfront properties have a boat; 15% of the existing boats would be on the water during peak times; 5 boats would be launched from the existing Moscovic boat launch; 15 boats would be launched from a new public trailered facility; 15% of the 130 new units would have boats on the lake; and 15 boats may be available for lease at the Yerxas facility.

boats. The southern half of the lake is classified as Rural Natural WALROS Class, which has a boating coefficient range from 50 to 110 acres per boat, or 36–80 boats. Based upon these assumptions, the combined totals for the entire lake for these ROS Classes would be 116 to 280 boats over the 8,000-acre lake.

At 67 boats, based upon the assumptions for boat ownership and use, this is well within or below the acceptable range for both the Rural Developed and Rural Natural WALROS classes (20 to 50 acres/boat and 50 to 110 acres/boat, respectively). However, it is highly unlikely that these numbers would ever be achieved, or that the boats would concentrate in either the northern or southern end.

The Amendment filed on April 25, 2018 included a revision to Appendix C, based upon a LUPC staff observation that the lake may have characteristics of less intense WALROS classes, i.e., portions of the northern half could be considered Rural Natural, while portions of the southern half could be considered Semi-Primitive. The boating coefficients for these classes range from 36 to 80 boats for the northern half, and 8 to 36 for the southern half. Combined totals under this scenario range from 44 to 116 boats. At 67 boats, assuming they were split evenly between the northern and southern halves of the lake, this is still within or below the acceptable range for Square Lake.

There are several other factors that should be taken into consideration relative to the effect on the recreational experience of Square Lake. 1. A public boat launch at Square Lake will address one of the State's major water priorities, as outlined in the Strategic Plan for Providing Public Access to Maine Waters for Boating and Fishing. 2. One of IF&W's objectives in requesting a public boat launch is to provide equitable access to the lake. Under current conditions, boat size is limited by lack of proper facilities and navigational hazards in the Cross Lake/Square Lake thoroughfare. 3. The Concept Plan extends over 30 years. It is highly unlikely that any one development will take place immediately, or would be built out to the maximum in a single phase. Any change to boating and other recreational activity, will be incremental, if it happens at all. 4. The assumptions used to project boating use are very conservative and most likely exaggerate the actual numbers that would actually be seen on the lake. 5. Partially due to its size, Square Lake tends to be very windy, with rough waves being

commonplace. Weather conditions will be a factor in determining the actual number of boaters using the lake.

Effect on the character of Square Lake and user experience. Square Lake W is located on sloping sites on the western side of the lake. The boundary was laid out to avoid potential impacts on the low ridge that defines the west side of the lake. The development area is already served by established logging roads, which could provide frontage for new residential lots, thus minimizing the need for additional clearing for roads. The combination of aesthetic management practices for harvesting prior to development and the requirement for design standards for new construction should minimize potential visual effects on the lake from this area. (See the Amendments to the application, 2. Hillside Development, filed on April 12, 2018.)

Square Lake E occupies an indentation in the shoreline, which will limit its visibility from certain parts of the lake. Like Square Lake W, the boundary for Square Lake E was laid out to avoid potential impacts on the low ridge that defines the eastern side of the lake. The development area is already served by established logging roads, which could provide the base for a north-south road system as well as frontage for new residential lots, thus minimizing the need for additional clearing for roads. The combination of aesthetic management practices for harvesting prior to development and the requirement for design standards for new construction should minimize potential visual effects on the lake from this area.

Square Lake Yerxas is the site of a traditional Maine sporting camp, with remnants of the old camps and other buildings, a gravel beach, a waterfront lawn area, and other features that make this a unique setting, both on Square Lake and within the Concept Plan area. The proposed zone is designed to encourage the development of a recreational lodging facility with up to 50 units that will be a nature-based attraction for Northern Aroostook County.

Prior to development in this zone, a Schematic Design Plan will be required to illustrate how the zone will be developed, including reserved areas for residential use, commercial activity, recreation facilities, public water access, parking for Square Lake W, and other facilities. As part of the schematic design plan, the applicant will be required to demonstrate how natural resources will be properly integrated into the planning and development of the area.

A marina may be allowed as a special exception within the Yerxas zone. The concept plan established several conditions to assure that such a facility will not have an unreasonable effect on the lake character. A marina will be limited to up to 50 boats; the applicant must demonstrate that the planned facility will not have an unreasonable visual or aesthetic impact on Square Lake. If proposed, the marina must be included in the schematic Design Plan, showing how it would fit into the orderly development of the waterfront and the site as a whole.

There are several other factors that should be taken into consideration relative to the effect on the character of Square Lake. 1. Over 10.6 miles of the Square Lake shoreline will be included in the permanent conservation easement, assuring that the woodland character of the majority of the lake will be preserved. 2. Under OBF, Forest management operations within the viewshed of the lake will follow sustainable forestry principles to minimize potential visual impacts. 3. Access for hunting, fishing, ice fishing, snowmobiling, ATV use, and other traditional recreational activities will be guaranteed under the terms of the conservation easement. 4. Square Lake is approximately 2.5 miles in width at Yerxas, and approximately 7.5 miles in length, north to south. The amount of land proposed for potential development is a small fraction of the total shoreline. With proper buffering and adherence to Chapter 10 rules, the future development on Square Lake should not have an unreasonable effect on the character of the lake.

Terrence J. DeWan
Date: May 2, 2018

STATE OF MAINE
COUNTY OF CUMBERLAND

Personally appeared before me the above-named Terrence J. DeWan and made oath that the foregoing is true and accurate to the best of his knowledge and belief.

Dated: May 2 2018

Notary Public DIANE M. KLAGES
Notary Public, Maine
My Commission Expires October 12, 2019

My commission expires: Oct 12 2019

PROFESSIONAL LICENSURE

Maine Licensed Landscape Architect #6

EDUCATION

BSLA State University of New York
Environmental Sciences and Forestry
Cum Laude

PROFESSIONAL EMPLOYMENT

1988 - present	Terrence J DeWan & Associates Landscape Architects & Planners Yarmouth, ME
1977 - 1988	Mitchell-DeWan Associates Landscape Architects & Planners Portland, ME
1976 - 1977	Center for Natural Areas South Gardiner, Maine
1973 - 1976	Moriece and Gary of Maine Portland, ME
1971 - 1973	The Architects Workshop Philadelphia, PA
1970 - 1971	Peter G. Rolland and Associates Rye, NY

PROFESSIONAL AFFILIATIONS

Maine State Board for Licensure of Architects, Landscape Architects and Interior Designers

American Society of Landscape Architects

Boston Society of Landscape Architects

American Planning Association

Maine Association of Planners

Council of Landscape Architects Registration Boards

Royal River Conservation Trust, Board of Directors

TERRENCE J. DEWAN FASLA

PRINCIPAL

Terry DeWan has over 45 years of professional experience in landscape architecture, visual resource assessment, site planning, design guidelines and community development. His experience includes work with communities, state agencies, private developers, utility companies, and the forest products industry in New England. He has written numerous studies on visual impacts, community planning, recreation planning, water access and highway corridor redevelopment.

SELECTED PROJECT EXPERIENCE

Visual Impact Assessments

NEW ENGLAND AQUA VENTUS, ***Off Monhegan Island, ME.*** Visual Impact Assessment (VIA) for a 12 MW floating wind pilot project to produce renewable energy off Maine's shore. The project will deploy two 6 MW turbines on semi-submersible hulls designed by the University of Maine and partners.

NORTHERN PASS TRANSMISSION PROJECT, ***Northern and Central NH.*** VIA for a 192-mile transmission line that will bring 1,090 MW of energy from Hydro-Quebec to NH and the rest of New England. Eversource.

BULL HILL AND HANCOCK WIND PROJECTS, ***Hancock County, ME.*** VIA for adjacent wind projects with a total of 37 turbines with a capacity of 89 MW. Blue Sky East LLC

SPRUCE MOUNTAIN WIND PROJECT, ***Woodstock, ME.*** VIA for a 10-turbine wind project with a capacity of 20 MW. Patriot Renewables.

SADDLEBACK MOUNTAIN WIND PROJECT, ***Carthage, ME.*** VIA for a 12-turbine wind project with a capacity of 34 MW. Patriot Renewables.

MAINE POWER RELIABILITY PROGRAM. VIA for 352 miles of new 115 kV and 345 kV transmission line corridor system upgrades in 82 Maine towns, for Central Maine Power.

STETSON I & II WIND PROJECT, ***Washington County, ME.*** VIAs for two adjacent projects with a total of 55 turbines with a capacity of 82 MW. Evergreen Wind V, LLC.

PINNACLE WIND FARM AT NEWPAGE, ***Keyser, West Virginia.*** Visual impact assessment in support of state permitting applications for a 23-turbine wind project with a capacity of 55 MW. US Wind Force / Edison Mission Energy.

MAINE GOVERNOR'S TASK FORCE ON WIND POWER DEVELOPMENT. Consultant on aesthetics and visual resources to the Governor's Task Force.

MAINE DEP / VISUAL ASSESSMENT RULES. Consultant to DEP in the formulation of Chapter 315 Regulations: Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses. Served on DEP Task Force for the development of the rules.

HUDSON LANDING, ***Kingston, NY.*** A review of the VIA and Development Guidelines for a 1,750-unit community on the Hudson River. Redesign of the site to incorporate sustainable development principles in recognition of its proximity to Scenic Areas of Statewide Significance. Hudson River Heritage.

AWARDS AND EXHIBITIONS

Fellow, American Society of Landscape Architects

Council of Landscape Architects Registration Boards. Presidents Awards.

Boston Society of Landscape Architects Excellence Award for Outstanding Professional Practitioner.

Boston Society of Landscape Architects Merit Award for Planning: From the River to the Bay: a Parks, Recreation and Open Space Plan for Brunswick, Maine.

American Society of Landscape Architects Merit Awards for Communications:
- Los Angeles River Greenway.
- Chattahoochee River Greenway, Atlanta GA

Maine Association of Planners
- Scenic Assessment Handbook
- Scenic Inventory of Penobscot Bay
- A Guide to Livable Design
- Portland Shoreway Access Plan

SELECTED PUBLICATIONS

Design Guidelines, Salem, NH. Adopted by Planning Board March 2010.

Scenic Assessment Handbook. Maine State Planning Office. 2008.

Royal River Corridor Study. Town of Yarmouth, Maine. With Stantec. 2008.

A Vision for the Moosehead Lake Region. Natural Resources Council of Maine. 2006.

Kittery Design Handbook. Kittery Planning Board. 2004

The Great American Neighborhood, A Guide to Livable Design. ME SPO. 2004.

Scenic Inventory, Mainland Sites of Penobscot Bay. Maine State Planning Office. 1990.

Scenic Assessment, Lincolnville, Maine.

ST. LAWRENCE CEMENT, *Hudson, NY.* Led a team of visual and cultural specialists to evaluate potential scenic impacts from a proposed cement plant for groups concerned about the future of nearby historic Hudson Valley communities. Project was ultimately rejected by the NY Department of State. Scenic Hudson and Friends of Olana.

DOWNEAST LNG, *Robbinston, ME.* VIA for LNG terminal on the shores of Passamaquoddy Bay. Project would have included an LNG storage tank, an import/export pier, and various shorefront facilities. Downeast LNG, Inc.

BANGOR HYDRO-ELECTRIC. SECOND 345 KV TIE LINE. VIA for a new 345 kV transmission line along the Stud Mill Road from Orrington, ME to New Brunswick, Canada.

Scenic Inventories + Conservation Plans

FISH RIVER LAKES CONCEPT PLAN, *Northern Arrostook County, ME.* A long-range conservation and limited development plan for 50,000 Ac of woodlands in Northern Maine. Irving Woodlands.

SCENIC INVENTORIES: MAINLAND SITES OF PENOBSCOT BAY, ISLESBORO, VINALHAVEN, NORTH HAVEN, Maine State Planning Office

ROUTE 27 SCENIC INVENTORY AND SCENIC BYWAY CORRIDOR MANAGEMENT PLAN. Long-term plan for Route 27 between Kingfield and Canada. Maine Department of Transportation.

PRELIMINARY FACILITIES AND INTERPRETIVE MEDIA PLAN, KANCAMAGUS SCENIC BYWAY, *White Mountain National Forest, New Hampshire.* Demonstration forest, hiking trails, interpretive exhibits, overlooks, outdoor amphitheater.

Peer Reviews

ARGONNE NATIONAL LABORATORY
Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands
National Park Service Visual Impact Assessment Guidance Document.

CAPE WIND ENERGY PROJECT, *Nantucket Sound, MA.* Peer review of DEIS prepared by Minerals Management Service.

Selected Presentations

THE MAINE WIND ENERGY ACT IN A TIME OF CHANGE. Visual Resource Stewardship Conference, Argonne National Laboratory, Lemont IL November 2017

THE MAINE WIND ENERGY ACT, VISUAL ASSESSMENT PROCEDURES FOR GRID SCALE WIND PROJECTS, National Association of Environmental Professional Meeting, Portland, OR 2012

SOCIAL ACCEPTANCE OF WIND ENERGY- ADDRESSING VISUAL IMPACT IN SKEPTICAL COMMUNITIES. ASLA Annual Meeting San Diego, CA. 2011.

SCENIC INVENTORY TRAINING. Washington and Hancock Counties, Maine State Planning Office. 2009.