

# **Relicensing Study 3.6.1**

## **Recreation Use/User Contact Survey**

### **Study Report**

**Northfield Mountain Pumped Storage Project (No. 2485)  
and Turners Falls Hydroelectric Project (No. 1889)**

*Prepared for:*



*Prepared by:*



**DECEMBER 2015**

## EXECUTIVE SUMMARY

### *Background*

FirstLight Hydro Generating Company (FirstLight), is the current licensee of the Northfield Mountain Pumped Storage Project (FERC No. 2485) and the Turners Falls Hydroelectric Project (FERC No. 1889). FirstLight has initiated with the Federal Energy Regulatory Commission (FERC, the Commission) the process of relicensing the two Projects. The current licenses for Northfield Mountain and Turners Falls Projects were issued on May 14, 1968 and May 5, 1980, respectively, with both set to expire on April 30, 2018.

As part of the relicensing process FirstLight prepared a Proposed Study Plan (PSP) followed by a Revised Study Plan (RSP) that incorporated changes recommended by FERC in its Study Plan Determination Letter (SPDL). Included in the RSP was Study 3.6.1, *Recreation Use/User Contact Survey*. The stated goals of the study were to: 1) Determine the amount of recreation use and demand at the Turners Falls and Northfield Mountain recreation sites; and 2) Interview the recreating public to determine user opinions and goals with regard to the recreation sites, including the perceived adequacy of recreation facilities and access at the Project.

The study area for this assessment included lands and waters located within the Project boundaries for the Northfield Mountain and Turners Falls projects that are utilized for public access and or recreation. In addition, the study was designed to examine recreational use at other public recreation and access areas that have a project nexus, including certain informal and formal recreation sites that are located partially outside or fully outside the Project boundary.

The focus of the use and user surveys were the primary public recreation sites located throughout the two Projects. Of these, ten are recreation sites that are owned and managed by FirstLight as Project Recreation Sites pursuant to FERC-approved Project recreation plans. The study also examined recreational use by residents whose properties abut the Project boundary and who may access the Turners Falls impoundment and other Project lands and waters directly, as opposed to through one of the available public sites.

The recreation use study occurred between January and December 2014. The study spanned four seasons to capture different types of recreational use that occurred in spring, summer, winter, and fall. A combination of spot counts, calibration counts, traffic counters, and Licensee records were used to estimate recreational use at the Project over the course of 2014. Several surveys were also conducted as part of this study including user surveys (Recreation User Survey and Northfield Mountain Trail Survey); a residential abutters mail survey; and telephone/email surveys of other regional recreation-related entities and law enforcement.

Data collected as part of the study were entered into Excel spreadsheets and sorted by recreation site and survey date. Recreation use estimates for each recreation site were developed based on use data obtained via spot counts, calibration counts, recreation user surveys, and the traffic counters. For some sites FirstLight registrations and use records were also used, as appropriate.

### *Recreation Use*

In total 1,273 spot counts and 1,226 calibration counts were made at 20 recreation and access sites located throughout the Projects, during the year 2014. Based on data collected, the total annual recreation use of surveyed recreation sites at both Projects in 2014 was estimated to be 152,769 recreation days. Half of the recreation use occurred during the summer (50%). Recreation use was lowest in winter (10%) with moderate use in spring (16%) and fall (23%).<sup>1</sup> The most popular recreation activity type observed at the

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<sup>1</sup> Percentages shown do not sum to 100% because of rounding.

Projects was walking/hiking/jogging, followed by motorized boating, fishing, bike riding, picnicking and non-motorized boating. Other popular recreation uses observed at the Projects included cross-country skiing, camping, and rock climbing.

Among the recreation sites surveyed, the Gatehouse Fishway Viewing Area (including the adjacent picnic area and a portion of the bike trail) received the most use, followed by the Northfield Mountain Tour and Trail Center (NMTTC), the Cabot Woods Fishing Area, the State Boat Launch, and the Boat Tour and Riverview Picnic Area.

#### *Recreation User Surveys*

User surveys were collected from 945 respondents, and provided an overall characterization of the recreationists using the Projects. Of those that responded, 63% were male and 37% female, and had an average age of 49. Ninety-one percent (91%) of respondents had visited the Project area before, and the average number of previous visits reported by the respondents was 62. Based on their reported place of residence, recreationists traveled an average of 23 miles to utilize recreation sites within the Northfield Project. The majority (69%) of the recreationists were from 10 or fewer miles away, while 2% of the people traveled 100 or more miles. Walking and dog-walking were the two most frequent activities reported by users; followed by shoreline fishing, nature observation, road bicycling, picnicking, and bird watching.

User surveys also provided information on user perceptions of the public recreation sites and opportunities available at the Projects. Survey respondents were asked to rate several aspects of the recreational sites, facilities and amenities provided at the Projects, including parking, facility condition, variety of amenities, toilets/restrooms, river access, and overall quality. The overall quality of the recreation sites/facilities and amenities were rated very highly, with 85% of respondents rating the facilities as Excellent or Fair-Excellent. Parking also received very positive responses, with 80% of respondents rating parking as Excellent or Fair-Excellent. Facility condition also received very positive responses, with 82% of respondents rating the facility conditions as Excellent or Fair-Excellent. The variety of amenities was rated highly with 63% of respondents rating the existing variety of amenities as Excellent or Fair-Excellent. River access too was highly rated, with 79% of respondents rating river access as Excellent or Fair-Excellent. Restrooms were the one area in which visitors had more mixed responses, with 37% rating the restrooms as Excellent or Fair-Excellent, 13% rating them as Fair, and the remaining 50% rating the restrooms as Poor or Fair-Poor.

Users were asked to rate several other aspects of recreation sites and opportunities available at the Projects. In terms of level of use, recreationists were asked to rate the site where they were interviewed on a scale of 1 (Not Crowded) to 5 (Extremely Crowded). More than half of the respondents perceived the amount of use at Project recreation sites to be Not Crowded (39%) or between Not Crowded and Somewhat Crowded (19%). Twenty-one percent (21%) rated the sites as Somewhat Crowded. Only 6% of respondents perceived the use at the Project sites to be Extremely Crowded. Survey respondents were asked to rate the number of facilities on a scale of 1 (Not Satisfied) to 5 (Extremely Satisfied). Ninety-six percent (96%) of respondents were Satisfied, Moderately Satisfied, or Extremely Satisfied with the number of recreation facilities at the Project. Finally, users were asked to rate their satisfaction with water levels on a scale of 1 (Not Satisfied) to 5 (Extremely Satisfied). The majority of recreationists (93%) responded that they were Satisfied (37%), Moderately Satisfied (43%), or Extremely Satisfied (13%) with water levels in the river.

In response to open-ended questions asking recreationists what they liked most and least about their recreation experiences at the Projects, the most common positive responses were peaceful/quiet, beauty/scenery, location/close to home, weather, nature/wildlife, not crowded, and fishing. The most common negative responses were weather, trash/litter, parking lot and road maintenance/plowing, crowded/noisy, no restrooms/restrooms closed, and goose droppings/goose feedings.

### *Residential Abutters Survey*

As part of the study, a mail survey of the 211 residential landowners abutting the Northfield Mountain and Turners Falls Project boundaries and within the Northfield Mountain and Turners Falls Project boundaries was also conducted. Of the 211 surveys mailed to residents, 95 surveys (45%) were completed and returned. The majority of the residential abutters who responded to the survey were year-round residents. Of those that responded, 65% indicated that their property was adjacent to the Connecticut River.

Residents were asked about their use of the Projects. When asked if they ever use the recreation sites associated with the Projects, 47% responded “yes”; and the majority of the respondents stated that they utilized the Connecticut River sites or amenities at Northfield Mountain for recreation purposes including Barton Cove Nature Area and Campground, the NMTTC, the Gatehouse Fishway Viewing Area, Boat Tour and Riverview Picnic Area, the State Boat Launch, and the bike paths. The most popular recreation activities reported by the residents were walking and nature observation, in all four seasons.

The residential abutter survey contained several open-ended questions designed to fully capture the opinions and perceptions of survey respondents. In response to the question “What do you like most about your recreational experiences on this area of the Connecticut River?” the most frequent responses were beauty/scenery, boating/being on water, peaceful/quiet/not crowded, cleanliness/maintenance, and nature/wildlife. In response to the question “What do you like least about your recreational experiences on this area of the Connecticut River?” the most frequent responses were water level fluctuations, power boats/jet skis/other boaters, and litter.

### *Future Recreation Demand*

An evaluation of future recreation demand and the ability of the existing recreation sites at the FirstLight Projects to meet that demand was also made as part of this study. To do this, regional population trends were combined with predicted increases in recreation use/demand for various types of recreation activities, to produce estimated growth in recreation use, by activity type, for the period 2014 - 2060. These growth projections were then applied to the different recreation activity types and recreation sites at the Projects to examine which of the existing recreation sites would be able to meet projected increases in use through the term of a new FERC license.

The results of this assessment showed that over the next few decades, walking/hiking/jogging is expected to continue to be the most popular recreation activity at the Projects, followed by motorized boating, fishing, biking, picnicking, rock climbing, and non-motorized boating. Projected growth in use of each of the primary recreation sites serving the two Projects was also estimated and showed that overall recreation use is projected to grow between 4%-8% at the various sites, between 2014 and 2060. Sites that are anticipated to see the greatest rate of growth (8%) include the NMTTC, the State Boat Launch, and the three parking areas that serve the Rose Ledge and Farley Ledge climbing areas.

In terms of site capacity, projected increases in recreation site use were applied to the current capacity of each of the recreation sites to determine if the existing sites are capable of meeting future demand. The results found that while there are anticipated increases in future recreation use, the existing capacity of all of the recreation sites serving the Projects will be sufficient to meet future recreation use and demand. Among the recreation sites analyzed, the highest utilization rates, (based on parking capacity) are predicted to occur at the State Boat Launch (70%), the Rose Ledge Climbing Area parking area (65%), the Farley Ledge Climbing Area Wells Street Parking (65%) and the Governor Hunt Boat Launch/Picnic Area (50%). None of the other recreation sites are expected to exceed 50% of capacity by the year 2060. The existing campgrounds too were found to be able to accommodate expected future growth in camping, with predicted 2060 capacities of 45% and 40%, respectively, for the Munn’s Ferry Boat Camping Recreation Area and the Barton Cove Campground.

*Other Recreation Studies*

Several other recreation studies conducted by FirstLight as part of the relicensing effort considered specific recreation resource interests that may have some relationship to the information on recreation use and users, gained through this study. Accordingly, this study included an evaluation of some of the key findings of studies 3.6.2 *Recreation Facilities Inventory*; 3.6.3 *Whitewater Boating Evaluation*; 3.6.4 *Assessment of Day Use and Overnight Facilities*; and 3.6.7 *Recreation Study of Northfield Mountain, including an Assessment of the Sufficiency of Trails for Shared Use*.

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## **LIST OF ABBREVIATIONS**

ATV	All-terrain vehicle
cfs	cubic feet per second
FERC	Federal Energy Regulatory Commission
FCRPT	Friends of the Connecticut River Paddlers' Trail
FirstLight	FirstLight Hydro Generating Company
ILP	Integrated Licensing Process
LWCF	Land and Water Conservation Fund
MA	Massachusetts
NGO	Non-governmental organization
NH	New Hampshire
NMTTC	Northfield Mountain Tour and Trail Center
PAD	Pre-Application Document
PSP	Proposed Study Plan
RSP	Revised Study Plan
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SD1	Scoping Document 1
SD2	Scoping Document 2
SPDL	Study Plan Determination Letter
US	United States
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VT	Vermont
VY	Vermont Yankee Nuclear Power Plant
WMA	Wildlife Management Area

## 1 INTRODUCTION

FirstLight Hydro Generating Company (FirstLight), is the current licensee of the Northfield Mountain Pumped Storage Project (FERC No. 2485) and the Turners Falls Hydroelectric Project (FERC No. 1889). FirstLight has initiated with the Federal Energy Regulatory Commission (FERC, the Commission) the process of relicensing the two Projects using the FERC's Integrated Licensing Process (ILP). The current licenses for Northfield Mountain and Turners Falls Projects were issued on May 14, 1968 and May 5, 1980, respectively, with both set to expire on April 30, 2018.

As part of the ILP, FERC conducted a public scoping process during which various resource issues were identified. On October 31, 2012, FirstLight filed its Pre-Application Document (PAD) and Notice of Intent with the FERC. The PAD included FirstLight's preliminary list of proposed studies. On December 21, 2012, FERC issued Scoping Document 1 (SD1) and preliminarily identified resource issues and concerns. On January 30 and 31, 2013, FERC held scoping meetings for the two Projects. FERC issued Scoping Document 2 (SD2) on April 15, 2013.

FirstLight filed its Proposed Study Plan (PSP) on April 15, 2013 and, per the Commission regulations, held a PSP meeting at the Northfield Visitors Center on May 14, 2013. Thereafter, FirstLight held ten resource-specific study plan meetings to allow for more detailed discussions on each PSP and on studies not being proposed. On June 28, 2013, FirstLight filed with the Commission an Updated PSP to reflect further changes to the PSP based on comments received at the meetings. On or before July 15, 2013, stakeholders filed written comments on the Updated PSP. FirstLight filed a Revised Study Plan (RSP) on August 14, 2013 with FERC addressing stakeholder comments.

On September 13, 2013, FERC issued its first Study Plan Determination Letter (SPDL) in which many of the studies were approved or approved with FERC modification. However, due to the impending closure of the Vermont Yankee Nuclear Power Plant (VY), FERC did not act on 19 proposed or requested studies pertaining to aquatic resources. The SPDL for these 19 studies was deferred until after FERC held a technical meeting with stakeholders on November 25, 2013 regarding any necessary adjustments to the proposed and requested study designs and/or schedules due to the impending VY closure. FERC issued its second SPDL on the remaining 19 studies on February 21, 2014, approving the RSP with certain modifications.

Included in the RSP was Study 3.6.1, *Recreation Use/User Contact Survey*. FERC's SPDL dated September 13, 2013, requested modifications be made to Study 3.6.1. The SPDL specified the following changes to Study 3.6.1.

- Incorporate population trends in the Project area to better understand how growth over a potential new license term could affect recreation needs to the year 2050. Combine population trends with recreation trend data, identified gaps between local and regional recreation needs and opportunities, and recreation opportunities provided by the Project, to provide a broad understanding of current recreation trends, current recreation needs, and possible changes or needs over a possible license term.
- Distribute on-site surveys to all of the sites listed in the existing recreation facilities inventory and assessment study plan (Study 3.6.2)
- Modify the on-site survey [Recreation User Survey] Question 15 list to include "toilets or restrooms" and "river access." Additionally, a Likert-type question about satisfaction with the number of recreation facilities at the Projects should be added. FirstLight should also add the qualifier "in the past five years" to Question 11 on the on-site survey to provide a temporal context to recreation use at the Project.
- Provide survey participants with an option of self-administered or orally administered surveys.

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

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As stated in the Revised Study Plan, the goal of the study was to compile existing data and develop additional information to support a new FERC license application for continued future operation of the Project. The objectives of the study were to:

- Determine the amount of recreation use and demand at the Turners Falls and Northfield Mountain recreation sites; and
- Interview the recreating public to determine user opinions and goals with regard to the recreation sites, including the perceived adequacy of recreation facilities and access at the Project.

## **2 STUDY AREA AND SURVEY SITE SELECTION**

The study area for this assessment included lands and waters located within the Project boundaries for the Northfield Mountain and Turners Falls Projects that are utilized for public access and or recreation. In addition, the study was designed to examine recreational use at other public recreation and access areas that have a Project nexus, including certain informal and formal recreation sites that are located partially outside or fully outside the Project boundary. The study area does not include areas upstream of the Turners Falls Project that lie fully within the Vernon Project (FERC No. 1904) boundary. Nor does the study area extend downstream below the Poplar Street put-in location, as FERC determined in its SPDL that “recreation access points below Poplar Street are not integrally connected to the Project because they are effected by other hydropower projects on the Deerfield River that are not associated with FirstLight or this relicensing process, and users of the Poplar Street Access Site would likely identify similar recreation issues for any portion of the river down to Sunderland Bridge.”

Accordingly, the study area includes the Connecticut River, including the Turners Falls Impoundment, from Vernon Dam to the Poplar Street Access Site, approximately 0.75 miles downstream of Cabot Station. In addition the study area includes the entirety of the Northfield Mountain Project boundary, including the Northfield Mountain Tour and Trail Center (NMTTC) as well as a viewing platform at the Upper Reservoir, which is accessed through the NMTTC.

The focus of the use and user surveys were the public use and recreation areas located throughout the two Projects, which are located partially or wholly within the FERC Project boundary for one or both of the Projects. Of these, 10 are recreation sites that are owned and managed by FirstLight as Project Recreation Sites pursuant to the Projects’ FERC-approved recreation plans. In addition, use counts and user surveys were made at several parking lots that are utilized by climbers accessing the Rose Ledge and Farley Ledges for rock climbing.

The study also examined recreational use by residents whose properties abut the Project boundary, and who may access Project lands and waters directly, as opposed to through one of the public sites. Abutting residences are located around the Turners Falls Impoundment.

[Figure 2.0-1](#) illustrates the study area within the Project boundaries, as well as the location of the formal recreation sites (and climbing area parking lots) that were surveyed for recreational use. [Table 2.0-1](#) lists the recreation sites and access areas where use and recreation surveys were conducted. Data collected on the use of the portion of Unity Park located on the north side of 1<sup>st</sup> Street have been reported as part of the Gatehouse Fishway Viewing area in accordance with the Exhibit R of the current FERC license for the Project.






## STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

**Table 2.0-1: Public Recreation Sites and Access Areas Where Recreation Use Counts and User Surveys Were Conducted**

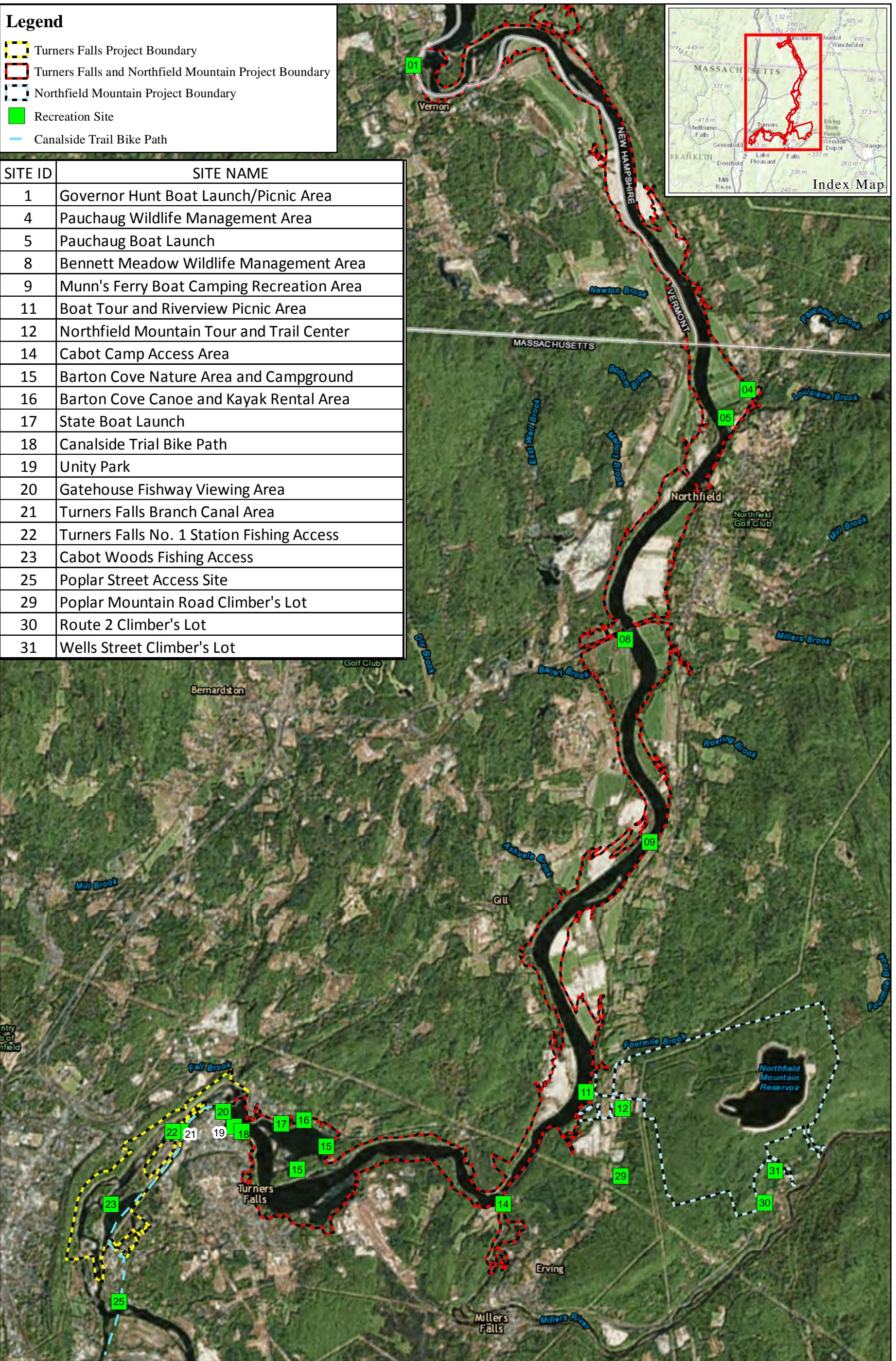
Site ID <sup>1</sup>	Site Name/Access Areas	Spot Counts	Calibration Counts	Traffic Counter	User Surveys
1	Governor Hunt Boat Launch/Picnic Area	✓	✓		✓
4	Pauchaug Wildlife Management Area	✓	✓		✓
5	Pauchaug Boat Launch	✓	✓	✓	✓
8	Bennett Meadow Wildlife Management Area	✓	✓	✓	✓
9	Munn's Ferry Boat Camping Recreation Area (campsites only)	✓	✓		✓
11	Boat Tour and Riverview Picnic Area	✓	✓	✓	✓
12	Northfield Mountain Tour and Trail Center	✓	✓	✓	✓
14	Cabot Camp Access Area	✓	✓	✓	✓
15	Barton Cove Nature Area (parking)	✓	✓	✓	✓
15	Barton Cove Campground (campground)	✓	✓	✓	✓
16	Barton Cove Canoe and Kayak Rental Area	✓	✓	✓	✓
17	State Boat Launch	✓	✓	✓	✓
18	Canalside Trail Bike Path	✓	✓		✓
19	Unity Park	✓	✓		✓
20	Gatehouse Fishway Viewing Area	✓	✓		✓
21	Turners Falls Branch Canal Area	✓	✓		✓
22	Turners Falls Station No. 1 Fishing Access	✓	✓		✓
23	Cabot Woods Fishing Access	✓	✓	✓	✓
25	Poplar Street Access Site	✓	✓	✓	✓
27	Rose Ledge Climbing Area (Parking)	✓	✓		✓
28	Farley Ledge Climbing Area (Wells St. parking)	✓	✓		✓
28	Farley Ledge Climbing Area (Route 2 parking)	✓	✓		✓

<sup>1</sup> Site numbers were assigned as part of Study 3.6.2 Recreation Facilities Inventory and Assessment

**Legend**

-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary
-  Recreation Site
-  Canalside Trail Bike Path

SITE ID	SITE NAME
1	Governor Hunt Boat Launch/Picnic Area
4	Pauchaug Wildlife Management Area
5	Pauchaug Boat Launch
8	Bennett Meadow Wildlife Management Area
9	Munn's Ferry Boat Camping Recreation Area
11	Boat Tour and Riverview Picnic Area
12	Northfield Mountain Tour and Trail Center
14	Cabot Camp Access Area
15	Barton Cove Nature Area and Campground
16	Barton Cove Canoe and Kayak Rental Area
17	State Boat Launch
18	Canalside Trial Bike Path
19	Unity Park
20	Gatehouse Fishway Viewing Area
21	Turners Falls Branch Canal Area
22	Turners Falls No. 1 Station Fishing Access
23	Cabot Woods Fishing Access
25	Poplar Street Access Site
29	Poplar Mountain Road Climber's Lot
30	Route 2 Climber's Lot
31	Wells Street Climber's Lot



Northfield Mountain Pumped Storage Project (No. 2485)  
and Turners Falls Hydroelectric Project (No. 1889)



Study 3.6.1  
Recreation Use/User Contact Survey

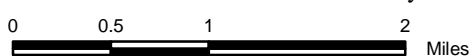


Figure 2.0-1: Recreation Use and User Survey Study Area

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## **3 METHODS**

### **3.1 Task 1: Study Preparation**

FirstLight undertook a number of activities in preparation for the numerous components of the study which included use counts (spot counts, calibration counts, and traffic counters); user surveys (Recreation User Survey and Northfield Mountain Trail Survey); a residential abutters mail survey; and telephone surveys of other regional recreation-related entities and law enforcement.

Recreation use survey (spot counts and calibration counts) dates and times were determined prior to initiation of field work. Sampling days included both weekdays and weekend days throughout all 12 months, as well as certain holidays. All sampling days were randomly selected and survey routes were completed on a rotating basis and at different times of day to account for time-of-day use patterns. Traffic counter deployment locations were also identified and counter site selections made based on site access and security considerations.

Drafts of the user surveys were provided in the initial and revised study plans. Surveys were finalized in late 2013, and survey implementation began in January 2014. In August 2014, it was discovered that one user preference-related question, and modifications to two other preference related questions that had been requested by FERC in its SPDL were inadvertently omitted from the Recreation User Survey and Northfield Mountain Trail User Survey. Upon noting the omission, First Light immediately revised the two surveys, and the revised surveys were administered from August 24, 2014 through the remainder of 2014.

With respect to the mail questionnaire/survey for residential abutters, a total of 211 residential abutters were identified, mailing addresses obtained, and a mail survey and reminder cards were sent to the residential abutters in the summer and fall of 2014. Details on the survey methods are provided in the Section 3.2.

FirstLight reviewed readily available municipal and non-governmental organization (NGO) recreation plans for information regarding recreation use within the Turners Falls and Northfield Mountain Project boundaries. On July 23, 2015, in an effort to collect further information about recreation use of the Project, FirstLight made contact with recreation departments in the towns that have them and recreation/open space committees and obtained the latest versions of any recreation or open space plans adopted by the towns. FirstLight also contacted local and state police authorities, including the Massachusetts (MA) Environmental Police and local police, about the various issues regarding recreational use that they observe in the Turners Falls Impoundment, bypassed reach, and the area immediately downstream of Cabot Station.

### **3.2 Task 2: Field Work**

The recreation use study occurred between January and December 2014. The study spanned four seasons to capture different types of recreational use that occurred in spring, summer, winter, and fall. A combination of spot counts, calibration counts and traffic counters, were used to estimate recreational use at the Project over the course of 2014. For some sites/activities, including primarily, use of the NMTTC facilities and programs, actual use figures collected by FirstLight were used as part of the use estimates for those facilities.

#### *3.2.1 Recreation Use*

##### *Spot Counts*

Spot counts are short duration counts, which provide a snapshot of use at each recreation site. They consist of travel to the site and counting the number of vehicles and users observed at the site and noting the recreational activity that was being pursued. These are used in estimating site use and site utilization (percent capacity). Spot counts were conducted on five (5) days per month, which included three (3)



STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

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randomly selected weekdays and two (2) randomly selected weekend days. If a month contained a holiday, one day per holiday weekend was included in addition to the standard calibration counts. [Table 3.2.1-1](#) provides a list of spot count dates conducted at each of the recreation sites.

Recreation sites were broken into two travel routes for spot counts. This allowed for minimization of travel time and greater study efficiency. Route 1 included the portion of Governor Hunt Boat Launch/Picnic Area that is located within the Project boundary, Pauchaug Wildlife Management Area, Pauchaug Boat Launch, Bennett Meadow Wildlife Management Area, Munn's Ferry Boat Camping Recreation Area, Boat Tour and Riverview Picnic Area, Northfield Mountain Tour and Trail Center, Wells Street Climbers parking lot, Route 2 Climbers parking lot, and Poplar Mountain Road Climbers Parking lot. Route 2 consisted of Cabot Camp Access Area, Barton Cove Nature Area and Campground, Barton Cove Canoe and Kayak Rental Area, State Boat Launch, Unity Park, Canalside Trail Bike Path, Turners Falls Station No. 1 Fishing Access, Turners Falls Branch Canal Area, Cabot Woods Fishing Access, and the Poplar Street Access Site. Spot counts for the Canalside Trail Bike Path were recorded while staff were at Unity Park and Migratory Way. The spot counts recorded the number of vehicles parked at a facility to determine the time-of-day use patterns at the sites. Spot count information was documented on a standard form which can be found in [Appendix A](#).

#### *Calibration Counts*

Calibration counts are used to calibrate traffic counter data, to estimate the average number of individuals per vehicle, and to determine the type of recreation use individuals were participating in. In contrast to a spot count, which is a snapshot, calibration counts consist of visiting a site for approximately a two-hour period to record use at the site. As shown in [Table 2.0-1](#), calibration counts were conducted at all of the surveyed recreation sites, even if a counter was not placed at the site. Calibration counts were broken down into four travel routes because each count averaged two hours per site. Route 1 was the area of Governor Hunt Boat Launch/Picnic Area located within the Project boundary, Pauchaug Wildlife Management Area, Pauchaug Boat Launch and Bennett Meadow Wildlife Management Area. Route 2 consisted of Munn's Ferry Boat Camping Recreation Area, Boat Tour and Riverview Picnic Area, Northfield Mountain Tour and Trail Center, and the State Boat Launch. Route 3 consisted of Cabot Camp Access Area, Barton Cove Nature Area and Campground, and the climber's lots. Route 4 included Unity Park and the Canalside Trail Bike Path, Turners Falls Station No. 1 Fishing Access and Turners Falls Branch Canal Area, Cabot Woods and the Canalside Trail Bike Path, and finally Poplar Street Access Site. Calibration routes were chosen based on the locations of the sites and the amount of drive time between the sites in order to minimize travel time and to account for length of day.

Calibration counts were conducted on five (5) days per month, which included three (3) randomly selected weekdays and two (2) randomly selected weekend days. If a month contained a holiday, one day per holiday weekend was included in addition to the standard calibration days. The time of day each site was visited varied. [Table 3.2.1-2](#) provides a list of dates that calibration counts were conducted. [Table 3.2.1-3](#) summarizes the total number of spot counts and calibrations conducted at each of the recreation sites. Calibration count data was recorded on a standardized sheet that can be found as part of [Appendix B](#). Upon arriving at locations containing traffic tube counters, staff recorded the number on the counter at the top of their form. This was repeated as staff left the site at the completion of the count.

#### *Traffic Counters*

Traffic counters were used at certain recreation sites to obtain information on how many vehicles visited those sites over the course of the recreation season. The traffic counters utilized were Diamond Traffic Tally 2 tube counters. As shown in [Table 2.0-1](#), traffic counters were placed at Pauchaug Boat Launch, Bennett Meadow Wildlife Management Area, Boat Tour and Riverview Picnic Area, Cabot Camp Access Area, Barton Cove Nature Area, Barton Cove Campground, Barton Cove Canoe and Kayak Rental Area, the State Boat Launch, Cabot Woods Fishing Access and Poplar Street Access Site. These sites were

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

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selected for counter use because the site is accessed via a single access road where all traffic use could be recorded. Counters were placed perpendicular to the roadbed and in areas where vehicles would be square with the tube when crossing if possible. The remaining recreation sites were not conducive to proper use of the traffic counters for a variety of reasons. These reason include lack of vehicular access, access road would not support proper placement of the counter or the vehicular access was located on private property.

Counters were checked twice each week, typically on Mondays and Fridays, to differentiate between weekday and weekend use. Traffic counters were deployed on May 22-23, 2014 and were individually removed after the closing of each site/facility in the fall of 2014. Counters at recreation sites that remained open through the fall and into winter were removed prior to the first snowfall in November, 2014. [Table 3.2.1-4](#) lists the locations where counters were deployed, the date that they were installed, and the date that they were removed.

#### *Actual Use Records*

Actual use records were utilized, where available, to aid in estimating and characterizing recreation use at certain recreation sites. FirstLight currently charges a fee for winter recreation use of the Northfield Mountain Trail System and for their interpretive riverboat cruises, resulting in readily available use records for those two amenities. These records allow for the identification of recreation activity participation levels associated with the amenities. In addition, FirstLight keeps records of camping reservations and registrations and the canoe portage service. Campground registration data assumed 3 persons per site, for individual campsites, to develop use estimates. Total use counts are also maintained for the Barton Cove area as a whole. [Table 3.2.1-5](#) summarizes the actual use records that were reviewed and utilized in this study.

#### *3.2.2 Recreation User Surveys*

##### *User Contact Survey*

Two separate user surveys were utilized as part of this study: Recreation User Survey and a Northfield Mountain Trail User Survey. Both surveys are provided in [Appendix C](#). Both surveys were used to gather information about who is using the sites, what recreation activities they are participating in at the site, and their views on existing Project recreation facilities and opportunities provided at the site. Both surveys were administered to visitors during spot counts and calibration counts. The Recreation User Survey was administered at the recreation sites and access areas listed in [Table 2.0-1](#), excluding the Northfield Mountain Tour and Trail Center. The Northfield Mountain Trail User Survey was administered at the Northfield Mountain Tour and Trail Center. One person per group was asked to respond to survey questions. If an individual had already participated in the survey, they were thanked and additional data was not collected.

Both user surveys were designed to gain information about who (gender and age) was using the recreation sites, whether they were participating as part of a group, whether they had visited the Projects before, how long they planned to stay, and how much they expected to spend on their visit. Visitors were asked about their participation in 38 different recreational activities, and were also asked to indicate their primary recreational activity that day. Visitors were also asked about their opinions regarding recreation site, facility, and amenity condition and availability.

Both surveys were developed and reviewed as part of the study plan development process, and draft surveys were included in the draft and revised study plans. The surveys were finalized in late 2013, prior to initiation of the 2014 field season. During finalization of the Recreation User Survey and the Northfield Mountain Trail User Surveys, one user preference related question, and modifications to two other preference related questions that had been requested by FERC in its SPDL, were inadvertently omitted. In August 2014, upon noting the omissions, both surveys were immediately revised, and the revised surveys were used starting August 24 through the remainder of 2014. This period covered the complete fall recreation season and

portions of the summer and winter seasons. Additionally, the Labor Day peak weekend was covered with the revised surveys.

For the Recreation User Survey, FERC requested that Question 15 of the survey be expanded to specifically ask respondents to rate “toilets or restrooms” and “river access,” and that a Likert-type question about satisfaction with the number of recreation facilities at the Projects be added to the survey. FERC also requested that the qualifier “in the past five years” be added to Question 11 to provide a temporal context to recreation use at the Project. Accordingly, the Recreation User Survey was revised in August, 2014 to include a revised Question 11, a revised Question 15 (revised as Question 16) and a new Likert-type question (new Question 15).

Revised Question 11: *Please indicate which of the following activities you participate or have participated in at the Northfield/Turners Falls Project by season in the past five years.*

Revised Question 16 (previously #15): *Please rate the following amenities at this location (1-5 rating): Parking, Facility Condition, Variety of Amenities, Toilets/Restrooms, River Access, Overall Quality.*

New Question 15: *Overall, how satisfied were you with the available number of recreation facilities? (1-5 rating)*

For the Northfield Mountain Trail User Survey FERC requested that Question 13 be modified to the variable of “Hours of Operation” and should conclude with an open-ended inquiry into how any rated variables could be improved. Accordingly the Northfield Mountain Trail User Survey was include revised in August 2014 to include a revised Question 13:

Revised Question 13: *Please provide your opinion on the Northfield Mountain trail system for the following variables [List, including “Hours of operation are adequate”]. How can any of the above variables be improved?*

The original recreation and trail user surveys were administered beginning in January 2014. The revised recreation and trail user surveys were administered beginning August 24, 2014 and were used through the last survey dates in December, 2014. In total 733 original and 211 modified Recreation User Surveys were collected at the Projects; and 84 original and 31 modified Northfield Mountain Trail User Surveys were collected at the Northfield Mountain Tour and Trail Center.

The revised surveys sample portions of the summer and winter season and cover the entire fall season. Labor Day weekend was also surveyed with the revised forms. The questions that were omitted or required revisions capture user perception or characterization of past use. The questions involved were not part of the effort to measure level of use or recreation activity levels. These measures of recreation were derived from spot counts, calibrations, traffic counters, and licensee records, with additional information on the length of time spent at the Projects from the User Surveys.

Throughout the year, recreationists surveyed for the Recreation User Survey had nine opportunities to address concerns through open-ended questions and explanations of ratings. In total, 2,960 comments were received and cataloged. One hundred and twenty (120) comments were received addressing bathrooms/restrooms. River access was addressed in 98 comments, with 63 comments being positive. Comments directly related to the number of facilities, which were often expressed in terms of “variety,” totaled 22. Other comments indicated the desire for additional facilities, such as skating and swimming areas. For the NMTTC Recreation User Survey, 234 comments were received and cataloged, eight of which addressed hours of operation.

### *Residential Abutters Survey*

The purpose of this survey was to capture the majority of recreational use that may not originate at formal and informal recreation sites. Of particular interest was recreational use by residents whose property abuts the Project boundary around the Turners Falls Impoundment, and who may access the impoundment directly from their property and not through one of the public recreation sites. The Residential Abutters Survey was conducted using a modified Dillman method. Names and addresses for residential abutters were obtained from a database search of those properties located abutting the Project waters or Projects. The survey was mailed on July 30, 2014 to 211 residential abutters of the Projects. Follow-up reminder cards were mailed on August 22, 2014 to 132 residential abutters that had not yet returned a survey. Replacement surveys were requested by 18 abutters. The replacement surveys were mailed on August 22, 2014 (7), September 4, 2014 (8) and September 10, 2014 (3). If a letter was returned an attempt was made to find a new address or land owner for that parcel. Surveys were assigned a number so that returned surveys could be tracked but once data was entered into the database, personal information about the respondent would be confidential. A copy of the Residential Abutters Survey is provided in [Appendix D](#).

### *Survey of Private Recreation Groups within the Projects*

In order to acquire additional information on recreational use of the Project, FirstLight identified certain organizations and user groups which it was aware managed recreational facilities located on or within the Projects, and/or routinely utilized one or both Projects for recreation purposes. Three groups were identified: the Franklin County Boat Club, Turners Falls Rod and Gun Club, and the Northfield Mount Hermon School. Each of these groups was sent an email on February 5, 2015, which included a questionnaire to inquire about the amount of recreation use at their facilities. The organizations were given the opportunity to respond via email or a phone interview. If the group did not respond to the email, the Licensee placed a follow-up phone call to the contact for that group. A second phone call was placed if a response was not received. A copy of the questionnaire sent to these organizations is provided in [Appendix E](#). Information gathered as part of this effort was considered when determining use information gained through the use counts and user surveys.

### *Survey of Law Enforcement*

In order to get additional information on any issues associated with recreational use of the Projects, particularly at the Project recreation sites, state and local policing entities were contacted via email and phone. The following law enforcement entities were contacted: Northfield, Montague, Gill, Erving, Hinsdale, Greenfield, and Vernon, as well as the Massachusetts Environmental Police.

Each of the police organizations was sent an email on July 23, 2015, which included a questionnaire to inquire about any issues consistently noted at any of the Project recreation sites or elsewhere at the Projects. The police organizations were given the opportunity to respond via email or a phone interview. A copy of the questionnaire sent to these police departments is provided in [Appendix F](#).

### *Open-Space Planning Information*

In order to get additional information on open-space and recreational planning initiatives in the Project area, FirstLight contacted the recreation department or recreation/open space committees in Gill, Northfield, Montague, Erving and Greenfield, MA as well as Hinsdale, NH and Vernon, VT. FirstLight initially obtained information on recreation and open space plans during preparation of the PSP and RSP. FirstLight emailed the towns or committees by email on July 23, 2015 to obtain the latest versions of any recreation or open space plans adopted by the towns.

## STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Table 3.2.1-1: Recreation Use Spot Count Survey Dates at Each Recreation Site in 2014

Site	Spot Count- Survey Dates for Each Month in 2014											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Governor Hunt Boat Launch/Picnic Area	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Pauchaug Wildlife Management Area	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Pauchaug Boat Launch	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Bennett Meadow Wildlife Management Area	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Munn's Ferry Boat Camping Recreation Area	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Boat Tour and Riverview Picnic Area	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Northfield Mountain Tour and Trail Center	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Cabot Camp Access Area	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 14, 18	16, 20, 24, 30	1, 11, 12, 13, 20
Barton Cove Nature Area and Campground	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 20, 24, 30	1, 11, 12, 13, 20
Barton Cove Canoe and Kayak Rental Area	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 20, 24, 30	1, 11, 12, 13, 20
State Boat Launch	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 20, 24, 30	1, 11, 12, 13, 20
Canalside Trail Bike Path	16, 17,	2, 8, 10,	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11,	17, 19,	6, 12, 17,	8, 9, 24,	3, 13, 14,	5, 7, 12,	16, 17, 20,	1, 11, 12,

Northfield Mountain Pumped Storage Project (No. 2485) and Turners Falls Hydroelectric Project (No. 1889)

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Site	Spot Count- Survey Dates for Each Month in 2014											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	18, 26, 28	12, 16, 19			14, 25, 27	21, 22, 26	22, 24, 27	27, 28	25, 29, 30	14, 18	24, 30	13, 20
Unity Park	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 17, 20, 24, 30	1, 11, 12, 13, 20
Gatehouse Fishway Viewing Area	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 17, 20, 24, 30	1, 11, 12, 13, 20
Turners Falls Branch Canal Area	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 17, 20, 24, 30	1, 11, 12, 13, 20
Turners Falls Station No. 1 Fishing Access	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 17, 20, 24, 30	1, 11, 12, 13, 20
Cabot Woods Fishing Access	16, 17, 18, 26, 28	2, 8, 10, 12, 16, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 17, 20, 24, 30	1, 11, 12, 13, 20
Poplar Street Access Site	16, 17, 18, 26, 28	2, 8, 10, 12, 15, 19	2, 4, 16, 20, 21	7, 12, 16, 21, 26	2, 3, 10, 11, 14, 25, 27	17, 19, 21, 22, 26	6, 12, 17, 22, 24, 27	8, 9, 24, 27, 28	3, 13, 14, 25, 29, 30	5, 7, 12, 14, 18	16, 17, 20, 24, 30	1, 11, 12, 13, 20
Rose Ledge Climbing Area (parking lots only)	16, 17, 18, 26, 28	2,8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21
Farley Ledge Climbing Area (parking lots only)	16, 17, 18, 26, 28	2,8, 10, 12, 15, 19	2, 3, 21, 23, 24	7, 12, 16, 21, 24	3, 11, 13, 23, 24	13, 17, 22, 26, 28	6, 12, 17, 22, 24	8, 9, 24, 27, 28	1, 3, 13, 14, 26, 29	5, 7, 12, 13, 18, 27	8, 15, 17, 20	1, 10, 12, 13, 21

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

**Table 3.2.1-2: Recreation Use Calibration Count Survey Dates at Each Recreation Site in 2014**

Site	Calibration Count Survey Dates for Each Month in 2014											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Governor Hunt Boat Launch/Picnic Area	13, 19, 20, 24, 25	3, 6, 19, 22	10, 13, 22, 28, 29	5, 17, 19, 22, 24	1, 10, 15, 17, 26, 30	4, 10, 16, 21, 28	4, 9, 13, 14, 19, 30	2, 4, 6, 16, 19, 31	10, 21, 27, 30	3, 4, 12, 15, 26	1, 9, 13, 18, 25, 29, 30	4, 6, 15, 30
Pauchaug Wildlife Management Area	13, 19, 20, 24, 25	3, 22	10, 13, 22, 28, 29	5, 17, 19, 22	1, 10, 15, 17, 26, 30	4, 16, 28	4, 9, 13, 14, 19, 30	2, 4, 6, 16, 19, 31	10, 12, 21, 27, 30	3, 4, 12, 15, 21, 26	1, 9, 13, 18, 25, 29, 30	4, 6, 15, 30
Pauchaug Boat Launch	13, 19, 20, 24, 25	3, 19, 22	10, 13, 22, 28, 29	5, 17, 19, 22, 24	1, 10, 15, 17, 26, 30	4, 16, 18, 28		4, 6, 16, 31	10, 21, 27, 30	3, 4, 12, 15, 21, 26	1, 9, 13, 18, 25, 29, 30	4, 6, 15, 30
Bennett Meadow Wildlife Management Area	13, 19, 20, 24, 25	3, 19, 22	10, 13, 22, 28, 29	5, 17, 19, 22	1, 10, 15, 17, 26, 30	4, 16, 18, 21, 28	4, 9, 13, 14, 19, 30	4, 6, 9, 16, 19, 31	12, 20, 21, 27, 30	3, 4, 12, 15, 21, 26	1, 9, 13, 18, 25, 29, 30	4, 6, 15, 30
Munn's Ferry Boat Camping Recreation Area	12, 19, 20, 24, 25	4, 9, 12, 20, 22, 28	12, 15, 27, 30	6, 17, 20, 23	2, 7, 10, 18, 22, 23, 25, 27	10, 15, 18, 21, 23	2, 13, 14, 19, 30	2, 4, 6, 17, 19, 30	10, 12, 27, 28	4, 7, 11, 17, 26	2, 9, 13, 18, 25, 29	6, 11, 14, 15
Boat Tour and Riverview Picnic Area	13, 19, 20, 24, 25	4, 9, 20, 22, 28	12, 15, 27, 30	6, 17, 20, 23	2, 7, 10, 18, 22, 23, 25	10, 15, 18, 21, 23	2, 13, 14, 19, 30	2, 4, 6, 17, 19, 30	10, 12, 27, 28	3, 4, 11, 17, 26	2, 9, 13, 18, 25, 29	6, 11, 14, 15
Northfield Mountain Tour and Trail Center	12, 19, 20, 24, 25	4, 9, 20, 22, 28	12, 15, 18, 27, 30	6, 17, 20, 23	2, 7, 10, 18, 22, 23, 25, 27	10, 15, 18, 21, 23	2, 13, 14, 19, 30	2, 4, 6, 17, 19, 30	10, 12, 27, 28	3, 4, 11, 17, 26	2, 9, 13, 18, 25, 29	6, 11, 14, 15
Cabot Camp Access Area	13, 18, 20	6, 7, 9, 17, 22	16, 19, 23, 27, 28, 29	5, 18, 23, 25, 26, 29	4, 11, 18, 26, 28	5, 14, 19	2, 5, 6, 15, 20, 26, 31	2, 4, 6, 10, 30	11, 23, 26, 27, 28	2, 4, 17, 22, 25	2, 9, 14, 19, 26, 30	3, 7, 14, 16, 31
Barton Cove Nature Area and Campground	13, 18, 20	3, 6, 7, 9, 17, 22	16, 19, 23, 27, 28, 29	5, 18, 23, 25, 26, 29	11, 18, 21, 26, 28	5, 14, 19, 24, 28	2, 5, 6, 15, 20, 27, 31	2, 4, 6, 10, 30	11, 23, 26, 27, 28	2, 4, 17, 22, 25	2, 9, 14, 19, 26, 30	3, 7, 14, 16, 31
Barton Cove Canoe and Kayak Rental Area	13, 18, 20	6, 7, 9, 17, 22	16, 19, 23, 27, 28, 29	5, 18, 23, 25, 26, 29	11, 18, 21, 26, 28	5, 14, 19, 24, 28	2, 5, 6, 15, 20, 27, 31	2, 4, 6, 10, 30	11, 23, 26, 27, 28	2, 4, 17, 22, 25	2, 9, 14, 19, 26, 30	3, 7, 14, 16, 31

Northfield Mountain Pumped Storage Project (No. 2485) and Turners Falls Hydroelectric Project (No. 1889)

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Site	Calibration Count Survey Dates for Each Month in 2014											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
State Boat Launch	12, 19, 20, 24, 25	4, 9, 20, 22, 28	12, 15, 18, 27, 30	6, 17, 20, 23	2, 7, 10, 18, 22, 23, 25	10, 15, 18, 21, 23	2, 13, 14, 19, 30	2, 4, 6, 17, 19, 30	10, 12, 27, 28	4, 7, 11, 17, 21, 26	2, 9, 18, 25, 29	6, 11, 14, 15
Canalside Trail Bike Path	19, 21, 24, 25	3, 4, 9, 17, 23	12, 13, 21, 22, 23	17, 23, 25	5, 11, 12, 16	11, 14, 17, 26, 28	2, 5, 15, 20	2, 4, 16, 20, 31	9, 11, 23, 28	2, 11, 16, 22, 23	2, 7, 19, 26, 29	7, 14, 16, 31
Unity Park	14, 19, 21, 24, 25	3, 4, 6, 9, 17, 23	12, 13, 21, 22, 23	5, 17, 23, 25, 27	5, 11, 12, 16, 19, 25	11, 14, 17, 28	2, 26, 31	2, 4, 7, 31	9, 11, 20, 23, 28	2, 5, 11, 16, 22, 23, 26	2, 7, 8, 19, 26, 29	7, 13, 14, 16, 31
Gatehouse Fishway Viewing Area	14, 19, 21, 24, 25	3, 4, 6, 9, 17, 23	12, 13, 21, 22, 23	5, 17, 23, 25, 27	5, 11, 12, 16, 19, 25	11, 14, 17, 28	2, 26, 31	2, 4, 7, 31	9, 11, 20, 23, 28	2, 5, 11, 16, 22, 23, 26	2, 7, 8, 19, 26, 29	7, 13, 14, 16, 31
Turners Falls Branch Canal Area	14, 19, 21, 24, 25	3, 7, 9, 17, 23	12, 13, 21, 22, 23	5, 17, 23, 25, 27	4, 11, 12, 16, 25	11, 14, 17, 28	2, 5, 15, 20, 26, 31	2, 4, 7, 16, 20, 31	9, 11, 20, 23, 28	2, 11, 16, 22, 23, 26	2, 7, 8, 19, 26, 29	7, 13, 14, 16, 31
Turners Falls Station No. 1 Station Fishing Access	14, 19, 21, 24, 25	3, 7, 9, 17, 23	12, 13, 21, 22, 23	5, 17, 23, 25, 27	4, 11, 12, 16, 25	11, 14, 17, 28	2, 5, 15, 20, 26, 31	2, 4, 7, 16, 20, 31	9, 11, 20, 23, 28	2, 11, 16, 22, 23, 26	2, 7, 8, 19, 26, 29	7, 13, 14, 16, 31
Cabot Woods Fishing Access	14, 19, 21, 24, 25	3, 4, 7, 9, 17, 23	12, 13, 21, 22, 23	5, 17, 23, 25, 27	4, 11, 12, 16, 25	11, 14, 17, 28	2, 15, 19, 20, 26, 31	2, 4, 7, 16, 20, 31	9, 11, 20, 23, 28	2, 5, 11, 16, 22, 23, 26	2, 7, 8, 19, 26, 29	7, 13, 14, 16, 31
Poplar Street Access Site	14, 19, 21, 24, 25	3, 4, 6, 9, 17, 23	12, 13, 21, 22, 23	11, 17, 23, 25, 27	5, 12, 16	11, 14, 17, 26, 28	2, 5, 15, 20, 26, 31	2, 7, 9, 16, 20, 31	9, 11, 20, 23, 28	2, 5, 11, 16, 22, 23, 26	2, 7, 8, 19, 26, 29	7, 13, 14, 16, 31
Rose Ledge Climbing Area (parking area only)	13, 18	3, 6, 7, 9, 17, 22	19, 23, 27, 28, 29	5, 18, 23, 25, 26, 29	11, 18, 21, 26, 29	5, 14, 19, 24	2, 6, 15, 20, 26, 31	2, 4, 6, 10, 16, 20, 30	11, 23, 26, 27, 28	2, 4, 17, 22, 25	2, 9, 14, 19, 26, 30	3, 5, 7, 14, 16, 31
Farley Ledge Climbing Area (parking areas only)	13, 18	3, 6, 7, 9, 17, 22	19, 23, 27, 28, 29	5, 18, 23, 25, 26, 29	11, 18, 21, 26, 29	5, 14, 19, 24	2, 6, 15, 20, 26, 31	2, 4, 6, 10, 16, 20, 30	11, 23, 26, 27, 28	2, 4, 17, 22, 25	2, 9, 14, 19, 26, 30	3, 5, 7, 14, 16, 31



STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

**Table 3.2.1-3: Recreation Use Spot and Calibration Count Totals at Each Recreation Site in 2014**

Site	Number of Spot Counts	Number of Calibrations
Governor Hunt Boat Launch/Picnic Area	62	62
Pauchaug Wildlife Management Area	62	59
Pauchaug Boat Launch	62	53
Bennett Meadow Wildlife Management Area	62	62
Munn's Ferry Boat Camping Recreation Area	62	62
Boat Tour and Riverview Picnic Area	62	62
Northfield Mountain Tour and Trail Center	62	62
Cabot Camp Access Area	65	59
Barton Cove Nature Area and Campground	65	63
Barton Cove Canoe and Kayak Rental Area	65	63
State Boat Launch	65	61
Canalside Trail Bike Path	65	53
Unity Park	65	61
Gatehouse Fishway Viewing Area	65	61
Turners Falls Branch Canal Area	65	64
Turners Falls Station No. 1 Fishing Access	65	64
Cabot Woods Fishing Access	65	66
Poplar Street Access Site	65	63
Rose Ledge Climbing Area (parking area only)	62	63
Farley Ledge Climbing Area (parking areas only)	62	63

**Table 3.2.1-4: Traffic Counter Locations, Installation Dates and Removal Dates**

Site	Counter Location Figure	Installation Date	Removal Date
Pauchaug Boat Launch	<a href="#">Figure 3.2.1-1</a>	05/22/14	11/14/14
Bennett Meadow Wildlife Management Area	<a href="#">Figure 3.2.1-2</a>	05/22/14	11/14/14
Boat Tour and Riverview Picnic Area	<a href="#">Figure 3.2.1-3</a>	05/22/14	10/20/14
Cabot Camp Access Area	<a href="#">Figure 3.2.1-4</a>	05/23/14	11/14/14
Barton Cove Nature Area (parking)	<a href="#">Figure 3.2.1-5</a>	05/23/14	11/14/14
Barton Cove Campground (campground) (two counters)	<a href="#">Figure 3.2.1-6</a>	05/23/14	10/17/14
Barton Cove Canoe and Kayak Rental Area	<a href="#">Figure 3.2.1-7</a>	05/23/14	09/05/14
State Boat Launch	<a href="#">Figure 3.2.1-8</a>	05/23/14	11/14/14
Cabot Woods Fishing Access (two counters)	<a href="#">Figure 3.2.1-9</a>	05/22/14	11/14/14
Poplar Street Access Site	<a href="#">Figure 3.2.1-10</a>	05/22/14	11/14/14





**Table 3.2.1-5: FirstLight Recreation Use and Registration Records Reviewed**

Recreation Site	Facility/Amenity	Use Record	Comments
Munn's Ferry Boat Camping Recreation Area	Campground	Registration/Reservation	Seasonal, 2014
Boat Tour and Riverview Picnic Area	Boat Tour	Registration/Fee	Seasonal, 2014
Northfield Mountain Tour and Trail Center	Northfield Mountain Trail System	Winter Trail Use Registration/Fee	Annual, 2014


STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

<b>Recreation Site</b>	<b>Facility/Amenity</b>	<b>Use Record</b>	<b>Comments</b>
Barton Cove Nature Area and Campground	Campground	Campground reservation/registration	Seasonal, 2014
Barton Cove Campground, Nature Area, and Canoe & Kayak Center	Barton Cove Day Use	Total use counts	Annual, 2014
	Canoe Portage	Portage registrations	Seasonal, 2014
Gatehouse Fishway Viewing Area	Fishway Viewing Area	Attendance Record	Seasonal, 2014



- Legend**
-  Traffic Counter
  -  Turners Falls Project Boundary
  -  Turners Falls and Northfield Mountain Project Boundary
  -  Northfield Mountain Project Boundary


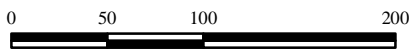
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
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**Northfield Mountain Pumped Storage Project (No. 2485)  
 and Turners Falls Hydroelectric Project (No. 1889)**

Study 3.6.1  
 Recreation Use/User Contact Survey





Figure 3.2.1-1  
 Traffic Counter Location at  
 Pauchaug Boat Launch

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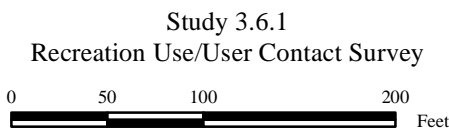
**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
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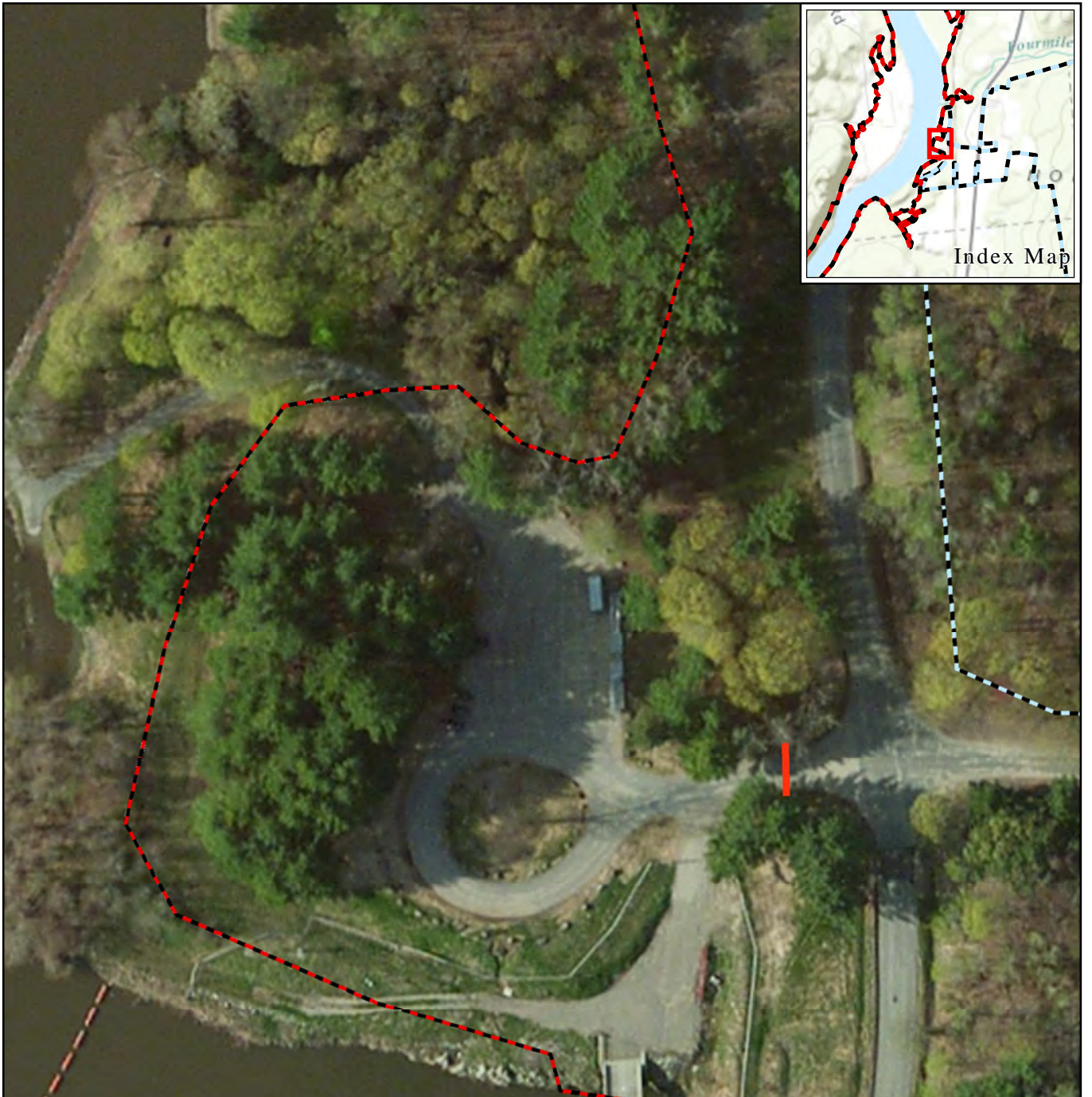


**Northfield Mountain Pumped Storage Project (No. 2485)  
 and Turners Falls Hydroelectric Project (No. 1889)**







**Figure 3.2.1-2  
 Traffic Counter Location at  
 Bennett Meadow Wildlife  
 Management Area**

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**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

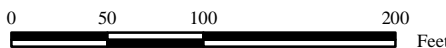
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 and Turners Falls Hydroelectric Project (No. 1889)**

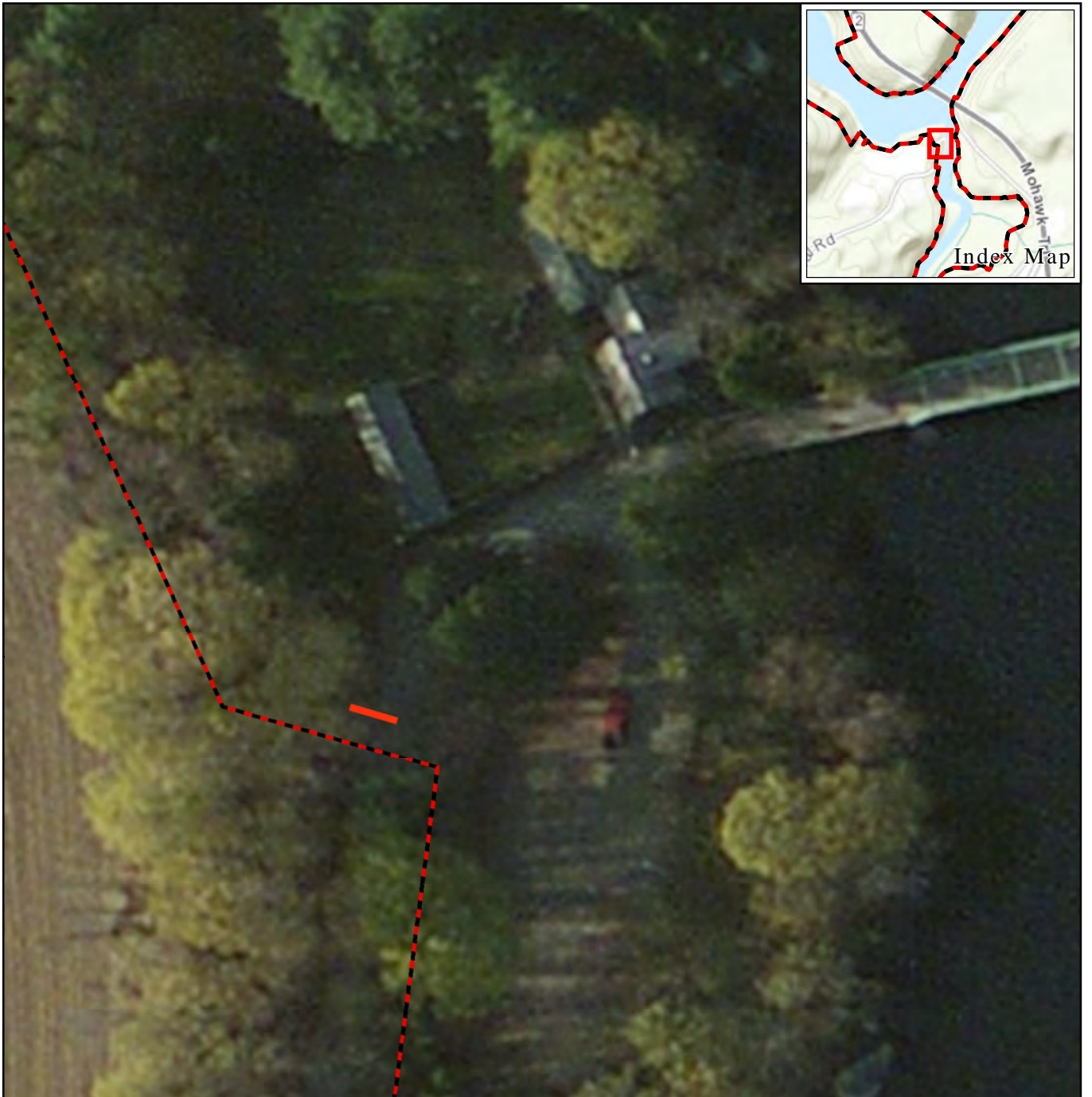


Study 3.6.1  
 Recreation Use/User Contact Survey







**Figure 3.2.1-3  
 Traffic Counter Location at  
 Boat Tour and Riverview  
 Picnic Area**

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**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

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Study 3.6.1  
 Recreation Use/User Contact Survey







Figure 3.2.1-4  
 Traffic Counter Location at  
 Cabot Camp Access Area

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**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

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**Northfield Mountain Pumped Storage Project (No. 2485)  
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Study 3.6.1  
 Recreation Use/User Contact Survey

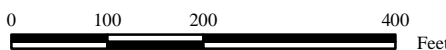






Figure 3.2.1-5  
 Traffic Counter Location at  
 Barton Cove Nature Area  
 (Parking)

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**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

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**Northfield Mountain Pumped Storage Project (No. 2485)  
 and Turners Falls Hydroelectric Project (No. 1889)**



Study 3.6.1  
 Recreation Use/User Contact Survey

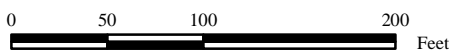






Figure 3.2.1-6  
 Traffic Counter Location at  
 Barton Cove Campground

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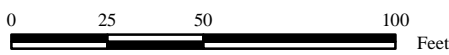


- Legend**
-  Traffic Counter
  -  Turners Falls Project Boundary
  -  Turners Falls and Northfield Mountain Project Boundary
  -  Northfield Mountain Project Boundary

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**Northfield Mountain Pumped Storage Project (No. 2485)  
 and Turners Falls Hydroelectric Project (No. 1889)**  
 Study 3.6.1  
 Recreation Use/User Contact Survey







**Figure 3.2.1-7**  
**Traffic Counter Location at**  
**Barton Cove Canoe and Kayak**  
**Rental Area**

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**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

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 and Turners Falls Hydroelectric Project (No. 1889)**

Study 3.6.1  
 Recreation Use/User Contact Survey

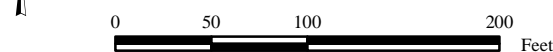
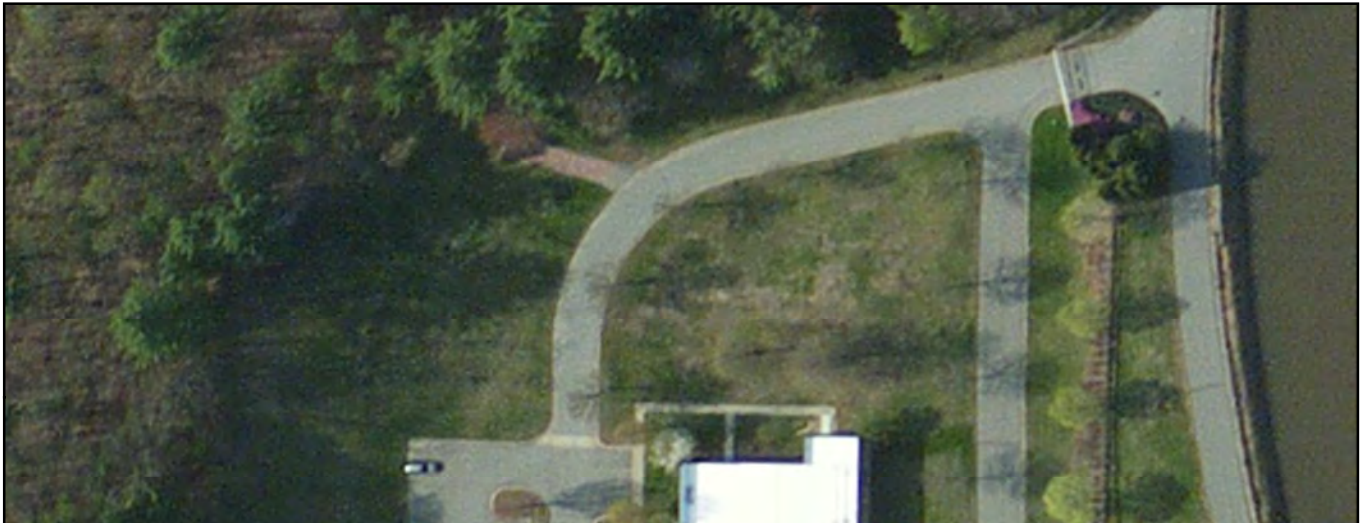






Figure 3.2.1-8  
 Traffic Counter Location at  
 State Boat Launch

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**Legend**

-  Traffic Counter
-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary

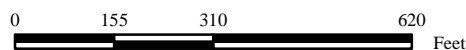
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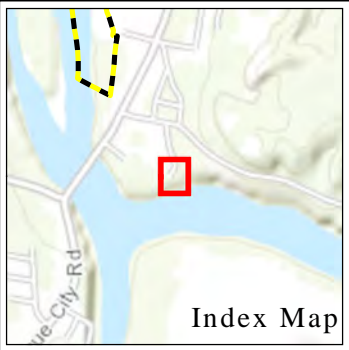






Study 3.6.1  
 Recreation Use/User Contact Survey



**Figure 3.2.1-9  
 Traffic Counter Location at  
 Cabot Woods Fishing Access**

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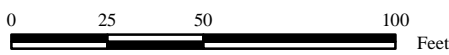
- Legend**
-  Traffic Counter
  -  Turners Falls Project Boundary
  -  Turners Falls and Northfield Mountain Project Boundary
  -  Northfield Mountain Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
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**Northfield Mountain Pumped Storage Project (No. 2485)  
 and Turners Falls Hydroelectric Project (No. 1889)**  
 Study 3.6.1  
 Recreation Use/User Contact Survey

Figure 3.2.1-10  
 Traffic Counter Location at  
 Poplar Street Access Site



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### **3.3 Task 3: Data Entry and Statistical Analysis**

#### *3.3.1 Data Entry and QA/QC*

Data collected as part of the study were entered into Excel spreadsheets and sorted by recreation site and survey date. Upon completion of data entry, all data was reviewed by a second individual to verify that data was entered correctly.

#### *3.3.2 Data Analysis*

##### *Project Recreation Use*

Project recreation use is derived from the recreation site use estimates that were developed for each recreation site, as described in the sub-section that follows. Overall Project use is presented in terms of the total number of recreation days spent at the Project. Consistent with FERC's definition, a recreation day was defined as each visit by a person to the Project for recreational purposes during any portion of a 24-hour period.

##### *Recreation Site Use*

Recreation use estimates for each recreation site were developed based on use data obtained via spot counts, calibration counts, recreation user surveys, and the traffic counters used for this study. Where applicable, recreation use estimates also incorporated FirstLight records of use and registrations. The count data included average persons per party by season, number of recreationists observed, number of vehicles observed, and any non-recreational use observed. For developing use estimates, key data utilized from the user surveys were the averages of the length of time at each site by season. Seasonal traffic counter data provided an estimate of the total number of vehicles (including both recreational and non-recreational) visiting the Project over set periods.

Use estimates, in terms of recreation days, were developed for each type of survey day (weekday and weekend day) during each season; when totaled the weekday and weekend use figures provided a total use estimate for each season and for the year, 2014. Seasonal use was calculated by multiplying each day type (for example, "summer weekday, closed NMTTC") by the number of that type of day per season. Recreation seasons were defined as follows:

- Winter: January, February, March, and December 2014,
- Spring: April 1 through May 22, 2014,<sup>2</sup>
- Summer: Memorial Day weekend (May 23) through Labor Day weekend (September 1), 2014, and
- Fall: September 2 through November 30, 2014.

FirstLight maintains records on recreation use associated with camping at Munn's Ferry Boat Camping Recreation Area and Barton Cove Nature Area and Campground, day use at Barton Cove, recreation and environmental programs, riverboat trips on the Quinnetukut II, and ticketed and observed trail use at the NMTTC. Site use estimates for the campsites, which include Barton Cove Nature Area and Campground and Munn's Ferry Boat Camping Recreation Area, are based on recorded campsite use combined with an assumption of 3 people per campsite, based on observed use. FirstLight also maintains records on the use of the Boat Tour and Riverview Picnic Area's picnic pavilion. Spot counts conducted in the parking lot at the Boat Tour and Riverview Picnic Area indicated a higher use level than the picnic pavilion and

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<sup>2</sup> The spring recreation season is considered to have begun when the NMTTC trails were re-opened to hiking on April 1.

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Quinnetukut II estimates show, likely reflecting use of the area for more than picnic activities. Therefore, to ensure use at the site was fully captured, use at the Boat Tour and Riverview Picnic Area was based on the higher use estimated from data obtained from spot counts, calibration counts, and user surveys. At the NMTTC, the recorded use was augmented with spot count, calibration count, and user survey data to incorporate the use that occurs at times when the Visitor Center is closed.

For the majority of the recreation sites, spot count data serve as the foundation for the use estimates. If non-recreational vehicles, such as FirstLight trucks, were noted at a site, these vehicles were removed from the count so that the calculations would provide a clear picture of recreational use. At each site, vehicle counts from each day surveyed were combined with seasonal, observed persons per vehicle counts from the calibrations to yield an estimated number of people per count. The spot counts also included counts of individuals observed. The larger of actual number of persons observed or the estimated number of persons based on vehicle counts was used for that day's estimate of use for the point-in-time estimates. The point-in-time estimate was combined with a seasonal turnover rate, based on the length of time at the site as obtained from the user surveys and the length of the recreation day, to provide an estimate of the site's total daily use.

Once daily use estimates were developed, an average daily use per season and day type (e.g., summer, weekday) was calculated. When combined with the number of days per season, an estimate of seasonal recreation use was obtained. For those sites, which had traffic counters, adjusted traffic counter data by season were averaged with the seasonal use estimated from spot counts. To arrive at the adjusted traffic counter figures, calibration counts were used to account for the variations in vehicle counts caused by certain types of vehicles, such as trucks with boat trailers. An additional adjustment was made to account for the level of non-recreation use that had been observed. [Table 3.3.2-1](#) presents the spot count totals by month for the entire Project.

#### *Recreation Site Capacity*

For the majority of the sites, site capacity (percent use) was determined based on the average level of use at a site's parking lot as compared to the capacity of that lot during summer weekends. For the camping facilities at Munn's Ferry Boat Camping Recreation Area and Barton Cove Nature Area and Campground, 2014 actual use records of the campsites served as the basis for the site capacity.

#### *Recreation Activity*

Recreation activity estimates for the majority of the sites were taken from direct observations of recreationists during spot counts. For activities for which FirstLight maintained records, such as fishway viewing, skiing, riverboat trips, and camping, those records provided the data on activity use levels. The activity types listed were taken from the spot count and calibration counts. At times, a visitor's recreation activity could not be clearly identified during spot counts and calibrations. Therefore, "unidentified recreation activity" is also listed.

#### *Recreation User Surveys*

The Recreation User Survey and the Northfield Mountain Trail User Survey were designed to gather information about user characteristics, use patterns, and user preferences. While the two surveys address different amenities and topics, the methods used to analyze the survey responses were the same. Analyses of user characteristics typically relied on either averages, as with age or distance traveled,<sup>3</sup> or percentages, as with male and female. For questions with multiple categories as responses, such as the range of spending, percentages were calculated for each range. For data related to use patterns, such as length of time at the

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<sup>3</sup> Distance traveled was calculated by using the respondent's ZIP code and Mapquest.com driving directions.

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site, averages were determined. Percentages were developed to measure the relative level of participation in various activities, as reported by respondents to the surveys.

Both the Recreation User Survey and the Northfield Mountain Trail User Survey include questions asking recreationists to provide ratings, on a scale from 1 to 5, of various facility attributes and amenities. For these questions, the percentage of responses for each rating (e.g., a “5”) was calculated to provide information on the full range of responses received.

**Table 3.3.2-1: Spot Count Totals by Month, Project-wide**

Month	Vehicles Observed during Spot Counts	Number of Spot Count Days	Average Daily Count	Calculated Monthly Count <sup>1</sup>	Percentage
January	83	5	16.6	514.6	3%
February	306	6	51.0	1,428.0	9%
March	145	5	28.9	895.9	6%
April	174	5	34.8	1,044.0	7%
May	343	7	49.0	1,518.1	10%
June	266	5	53.2	1,649.2	11%
July	448	6	74.6	2,238.0	14%
August	399	5	79.9	2,475.6	16%
September	198	6	32.9	987.5	6%
October	273	6	45.4	1,498.9	10%
November	109	5	21.8	852.8	5%
December	68	5	13.6	421.6	3%

<sup>1</sup> The calculated monthly count figure is an estimate of the number of vehicles that would be counted if spot counts were done daily throughout the month. The purpose of the calculated monthly count figure is to show the relative level of use across the months.

### 3.4 Study 3.1.2 Boat Count Data

As part of Study 3.1.2 Northfield Mountain/Turners Falls Operations Impact on Existing Erosion and Potential Bank Instability, FirstLight collected boat wave data from motorized boats to examine the potential effects of boat waves on shoreline erosion (FirstLight, 2015). As part of this effort, FirstLight also collected video images of boat traffic at three locations on the Turners Falls Impoundment. The video images were collected using digital cameras equipped with data acquisition and transmission systems, and also night vision flash to take night-time images. The collected data was analyzed using a custom-developed image processing tool to measure the speed, location and the passage time of the boat, as well as to estimate the type, shape size of it.

Boat (and wave) measurements were made at three locations within the Turners Falls Impoundment; near Schell Bridge; near the Route 10 Bridge, and near French King Bridge (2 monitoring stations). The cameras were secured to a fixed point, and pointed in a streamwise direction. The cameras were set to take a shot every 10-30 seconds, with the interval dependent on the boat speed, camera field of view, elevation and distance to the boat. Resulting video boat counts were tabulated by location over the course of the monitoring season (generally, May 21 through September 14, 2015). Details of the methods used to collect the boat and boat wave data, and the supporting technical references, are provided in the study report for Study 3.1.2 Northfield Mountain/Turners Falls Operations Impact on Existing Erosion and Potential Bank Instability study.

Although the boat count data collected as part of Study 3.1.2 was not in any way coordinated with or calibrated to the use data collected as part of this study, at the request of stakeholders during the USR

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Meeting ([FirstLight, 2015a](#)), FirstLight agreed to include basic boat count data collected via the video monitoring in this study report. Because the boat count data was developed independently for purposes of understanding and modeling the expected frequency and timing of boat waves, it is of limited value to understanding recreation use at the Projects. The results are nonetheless briefly discussed in Section 4.12 of this report.



## 4 RESULTS

### 4.1 Recreation Use

#### 4.1.1 Overall Recreation Use at the Turners Falls and Northfield Mountain Projects.

The recreation use and user survey results yielded a lot of data. In total 1,273 spot counts and 1,226 calibration counts were made at the 20 recreation and access sites included in the study throughout the course of the year. Recreation use was estimated based on use data collected via spot counts, calibration counts and traffic counters. Based on data collected between January 2014 and December 2014, the total annual recreation use of surveyed recreation and access sites in 2014 was estimated to be 152,769 recreation days. [Table 4.1.1-1](#) provides a breakdown of estimated use by season. As shown, approximately half of the recreation use occurred during the summer with 50% of recreation days. Approximately a quarter of the use was in the fall (23%). Recreation use was lowest in winter (10%). Use in spring was (16%).

The distribution of recreation use by month is best illustrated by spot count totals collected at all the surveyed recreation sites, as shown in [Table 4.1.1-2](#), which demonstrates that on a monthly basis, recreation use is highest in August, July and June, May and October. There is also notable use in February. Outside the summer season, increased use during October and February is largely due to use of the NMTTC in those months, and February use is reflective of winter trail use for skiing at the NMTTC.

#### 4.1.2 Recreation Use by Activity

Based on observations of recreation use made during spot counts and calibration counts, project-wide, the most popular recreation activity type at the Turners Falls and Northfield Mountain Projects is walking/hiking/jogging, followed by motorized boating, fishing, bike riding, picnicking and non-motorized boating. [Table 4.1.2-1](#) summarizes the estimated use in each activity type project-wide. As shown, an estimated 45,691 recreation days, or 30% of the total number of recreation days at the Project were spent participating in walking/hiking/jogging. As discussed in the following section, much of the use in this category was observed to occur at the Northfield Mountain Tour and Trail Center. However, walking/hiking/jogging was frequently observed at a number of the other recreation sites as well.

Motor boating accounted for the second most frequent recreational use with an additional 18,470 recreation days, or 12% of the total number of recreation days at the Project, spent participating in motor boating. The next most popular recreation uses of the Projects include fishing (7%), biking (6%), picnicking (5%), non-motorized boating (4%), and rock climbing (4%).

Estimates of non-motorized boating made as part of this study included FirstLight's records of use for the Barton Cove Canoe and Kayak Rental Area, Campground, and Nature Area. Based on FirstLight records and observed use during counts, it is estimated that non-motorized boating participants, accounted for 6,656 recreation days in 2014; of which 2,681 recreation days of non-motorized boating were generated from the Barton Cove Canoe and Kayak Rental Area. Estimated use of the Projects for rock climbing (based on use observed at the three climbing area parking lots) accounted for 4% of total Project use, and produced an estimated 6,703 recreation days. Public use of the recreation sites for activities that could not be identified accounted for 18% of total Project use.

Uses that accounted for more than 1% of total recreation use at the Projects include fishway viewing, cross-country skiing, camping, and riverboat touring. Cross-country skiing occurred primarily at the NMTTC (and is discussed in more detail in the report for *Relicensing Study 3.6.7 Recreation Study at Northfield Mountain, Including Assessment of Sufficiency of Trails for Share Use* ([FirstLight, 2015b](#))). Camping accounted for 2% of the Projects' recreational use, and generated an estimated 3,478 user days, most of which occurred at the Barton Cove Campground.

#### 4.1.3 Recreation Use by Site

[Table 4.1.3-1](#) shows a breakdown of recreation use by season, while [Table 4.1.3-2](#) shows a breakdown of recreation use by activity type per recreation site surveyed. In addition to determining the type and amount of use at each of the surveyed recreation sites, the degree to which each recreation site had the capacity to sustain the recreation activity occurring at a site was estimated. [Table 4.1.3-3](#) provides a breakdown of percent capacity utilized for each site. Percent capacity for sites where use was estimated based on parking lot usage was determined by the available amount of parking at each site versus the average number of parking spaces that were occupied during surveys during summer weekends. Percent capacity of the campgrounds (Barton Cove Nature Area and Campground and Munn's Ferry Boat Camping Recreation Area) was estimated based on 2014 campsite utilization.

##### ***Governor Hunt Boat Launch/Picnic Area***

While the majority of this site is within the project boundary for the upstream Vernon Hydroelectric Project (FERC No. 1904) and not within the Turners Falls and Northfield Mountain Projects, a portion of the site along the shoreline, including the boat launch and informal parking area, are within both the Vernon project boundary and the Turners Falls and Northfield Mountain Project boundaries. Use estimates for the Governor Hunt Boat Launch/Picnic Area were based on spot and calibration counts conducted at the site parking area, which primarily serves the boat launch. Estimated annual use of the boat launch site was 1,812 recreation days in 2014. The boat launch was estimated to be utilized at 50% of capacity, based on parking area usage. Motor boating (53%) was the most popular recreation use at the boat launch followed by non-motor boating (15% of the use) and fishing (12% of the use).

##### ***Pauchaug Wildlife Management Area***

There were a total 1,005 recreation days spent at the Pauchaug Wildlife Management Area (WMA). The site was estimated to be utilized at 1% of capacity, based on parking area usage. Forty-four percent (44%) of recreation use at the WMA was for hunting followed by walking/hiking/jogging, which accounted for 32% of use.

##### ***Pauchaug Boat Launch***

Annual recreation use of the boat launch was estimated to be 9,630 recreation days in 2014. Based on parking lot usage, the site was estimated to be utilized at 20% of capacity. Motor boating accounted for half of the recreation use at this site, followed by fishing at 12% of the use, and non-motorized boating at 10% of the use.

##### ***Bennett Meadow Wildlife Management Area***

It is estimated that there were a total 3,729 recreation days spent at the Bennett Meadow WMA in 2014. The site was utilized at 10% capacity, based on parking area usage. Walking/hiking/jogging accounted for 41% of the observed use. Hunting accounted for 25% of the use, occurring in the fall.

##### ***Munn's Ferry Boat Camping Recreation Area***

Annual recreation use at the Munn's Ferry Boat Camping Recreation Area was estimated to be 1,716 recreation days in 2014. Based on utilization of the existing campsites, the utilization for this site was estimated to be at 40% capacity. Motor boating and camping were the most popular uses of this boat access campground, and accounted for 39% and 30% of use, respectively. Non-motorized boating use of this site was estimated to be 9%. Additional detail about occupancy rates at the Munn's Ferry Boat Camping Recreation Area for the years 2010 – 2014 is discussed in the report for *Relicensing Study 3.6.4 Assessment of Day Use and Overnight Facilities Associated with Non-Motorized Boats* ([FirstLight, 2015c](#)). The report

notes that occupancy rates ranged from a low of 5.1% on week days in 2014 to a high of 14.3% on weekdays in 2010 and from a low of 28.4% on weekends in 2013 to a high of 56.4% in 2011.

#### ***Boat Tour and Riverview Picnic Area***

Annual recreation use at the area was estimated to be 13,651 recreation days in 2014. Based on parking lot capacity, the site was estimated to be utilized at 10% capacity. On an annual basis, 20% of the use was for riverboat trips on the Quinnetukut II (2,733 recreation days spent on riverboat trips). During the Quinnetukut II's operating period from (June 28 through October 19), it accounted for approximately 43% of use at the site. During the 2014 season, the Quinnetukut II operated on Fridays, Saturdays, and Sundays. Other popular recreation activities included walking/hiking/jogging at 29% of use followed by picnicking at 18%.

#### ***Northfield Mountain Tour and Trail Center***

The estimated total number of recreation days at the NMTTC during 2014 was 20,024. This estimate included use of the Visitor Center parking lot, as well as registered programs, and registered use of the Northfield Mountain Trail System. Trail use was the most popular recreation activity at the NMTTC, which includes the activities of walking/hiking/jogging, biking, horseback riding, snowshoeing and cross-country skiing. Based on parking lot usage, it is estimated that the NMTTC is utilized at 10% of its capacity. Use of the NMTTC is discussed in more detail in the Study 3.6.7 *Recreation Study at Northfield Mountain, including Assessment of Sufficiency of Trails for Shared Use* report ([FirstLight, 2015b](#)).

#### ***Cabot Camp Access Area***

Annual recreation use of the Cabot Camp Access Area was estimated to be 5,326 recreation days in 2014. Based on parking lot usage, the site was utilized at 15% capacity. The most popular recreational activities at this site were fishing (26%) and walking/hiking/jogging (19%).

#### ***Barton Cove Nature Area and Campground***

The total number of recreation days spent in 2014 at the Barton Cove Nature Area was estimated to be 7,842, while the Barton Cove Campground had an estimated 2,963 recreation days. The most popular recreation activities at the Nature Area were walking/hiking/jogging (31%) and fishing (23%). Camping was the most popular recreation activity observed at the campground and accounted for 100% of use. Based on parking area usage levels, the Nature Area was utilized at 20%.

Utilization of the campground was based on campsite use, and was estimated to be utilized at 40%. Additional detail about occupancy rates at the Barton Cove Campground for the years 2010 – 2014 is discussed in the report for Relicensing Study 3.6.4 *Assessment of Day Use and Overnight Facilities Associated with Non-Motorized Boats* (FirstLight, 2015c). The report notes that occupancy rates ranged from a low of 8.4% on week days in 2014 to a high of 15.0% on weekdays in 2010 and from a low of 37.6 % on weekends in 2014 to a high of 67.4% in 2010.

#### ***Barton Cove Canoe and Kayak Rental Area***

Annual recreation use during 2014 at the rental area was estimated to be 4,455 recreation days. Based on parking lot usage, the area was estimated to be utilized at 25% capacity. Sixty percent (60%) of the use at the site was by individuals who were participating in non-motorized boating. Twelve percent (12%) of the use was for picnicking.

### ***State Boat Launch***

The total number of recreation days during 2014 at the State Boat Launch was estimated to be 15,126. Based on parking area utilization, the area was estimated to be utilized at 65%, on average, during summer weekends. However, on certain days, the site was used above 100% capacity; typically related to special events such as fishing tournaments. Boating is the most popular recreation activity at this site with motorized boating accounting for 74% of use and non-motorized boating accounting for 11% of use.

### ***Gatehouse Fishway Viewing Area***

Data collected for the Gatehouse Fishway Viewing Area recreation site include the actual fishway viewing area, and the portion of Unity Park located north of 1<sup>st</sup> Street, which includes a picnic area, and associated parking area. In addition, the Canalside Trail Bike Path is adjacent to the site and use on the portion of the trail in the immediate vicinity of the fishway viewing area was also counted. Annual recreation use during 2014 at the fishway viewing area was estimated to be 27,345 recreation days. This includes individuals touring the fishway (5,061 recreation days), and those utilizing the picnic area and Canalside Trail Bike Path along the river (22,284 recreation days). During the fish passage season when the fishway viewing facility is open to the public (typically May-June), the visitor center associated with the fishway was utilized at 90% capacity. The parking lot serving the Gatehouse Fishway Viewing Area, which includes the picnic area was at 25% capacity.

Fishway viewing is the most popular activity at the site during the fish passage season, when the fishway viewing area is open. On an annual basis, walking/hiking/jogging accounted for 36% of use at the site, while seasonal fishway viewing accounted for 19% of use. Use of the Gatehouse Fishway Viewing Area for fishway viewing is discussed in more detail in the report for *Relicensing Study 3.6.7 Recreation Study at Northfield Mountain, Including Assessment of Sufficiency of Trails for Share Use* ([FirstLight, 2015b](#)).

### ***Turners Falls Branch Canal Area***

Use of the Turners Falls Branch Canal Area, including Turners Falls Station No. 1 Fishing Access was estimated based on spot and calibration counts made at the Turners Falls Station No. 1 parking area. The total number of recreation days spent at the Turners Falls Branch Canal Area and Turners Falls Station No. 1 Fishing Access, combined, in 2014 was estimated to be 1,264. Parking for the Turners Falls Branch Canal Area is available at Turners Falls Station No. 1 Fishing Access, and based on parking lot usage, percent capacity utilization at Turners Falls Station No. 1 Fishing Access was estimated to be 1%. The area was primarily utilized for walking/hiking/jogging (26% of use), fishing (21% of use), bike riding (21% of use), and cross-country skiing (14% of use).

### ***Cabot Woods Fishing Access***

There were an estimated total of 18,230 recreation days spent at the Cabot Woods Fishing Access during 2014. Based on usage of the two parking lots that serve this access area, it is estimated that the site was utilized at 25% capacity. Based on use observed at the parking lots, the fishing access and 3,100 feet of Migratory Way (which links the two parking areas), the most popular recreation activities at this site were walking/hiking/jogging (53%), fishing (11%) and bike riding (10%).

### ***Turners Falls Canoe Portage***

FirstLight provided a total of nine vehicle portages around the Turners Falls dam between May 17th, 2014 and September 3rd, 2014. Of these, three vehicle portages were related to camp groups totaling 39 boaters. The remaining six vehicle portages totaled 14 boaters.

***Poplar Street Access Site***

Annual recreation use during 2014 at the Poplar Street Access Site was estimated to be 1,877 recreation days. Based on use of the parking lot, the site was estimated to be utilized at 10% capacity. The most popular uses of the site were for fishing (41%), walking/hiking/jogging (23%), and non-motorized boating (21%). These use figures do not include use of the site as the put-in location for the vehicular canoe portage. Based on FirstLight's records, portage was provided to 53 individuals in 2014.

***Rose Ledge Climbing Area***

The Rose Ledge Climbing Area is an informal climbing site located within the Northfield Mountain Trail System, and therefore within the Northfield Mountain Project boundary. Parking for this site is provided at a private fee parking area outside the Project boundary. Some climbers may also park at the NMTTC and access the Rose Ledge area via the NMTTC trail system. Use of the Rose Ledge parking area was included in the use and user surveys. Annual use of the parking area was estimated to be 1,790 recreation days. Parking capacity was estimated to be 60%.

***Farley Ledge Climbing Area***

The Farley Ledge Climbing Area is an informal climbing site located partially within the Northfield Mountain Project boundary. Parking for this site is provided at two locations (Route 2 and Wells Street) outside the Project boundary. Use of the Farley Ledge parking areas was included in the use and user surveys, and annual of the Route 2 parking area was estimated to be 6,232 recreation days and the Wells Street parking area was estimated to be 2,390 recreation days. Parking capacity was estimated to be 60% at the Route 2 parking area, and 30% at the Wells Street parking area.

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**Table 4.1.1-1: Estimated Use at the Northfield Mountain and Turners Falls Project Recreation Sites; Annual Total Use for 2014 and by Season<sup>1</sup>**

Recreation Site	Estimated Annual Use (2014)	Estimated Winter Use	Estimated Spring Use	Estimated Summer Use	Estimated Fall Use
Governor Hunt Boat Launch/Picnic Area	1,812	13%	11%	67%	9%
Pauchaug Wildlife Management Area	1,005	15%	0%	23%	62%
Pauchaug Boat Launch	9,630	1%	7%	68%	23%
Bennett Meadow Wildlife Management Area	3,729	2%	14%	40%	44%
Munn's Ferry Boat Camping Recreation Area	1,716	0%	0%	84%	16%
Boat Tour and Riverview Picnic Area	13,651	17%	23%	39%	21%
Northfield Mountain Tour and Trail Center	20,024	24%	12%	33%	31%
Cabot Camp Access Area	5,326	4%	10%	62%	24%
Barton Cove Nature Area	7,842	15%	19%	45%	21%
Barton Cove Campground	2,963	0%	5%	92%	3%
Barton Cove Canoe and Kayak Rental Area	4,455	2%	0%	98%	0%
State Boat Launch	15,126	1%	2%	74%	23%
Canalside Trail Bike Path	6,362	1%	13%	54%	31%
Gatehouse Fishway Viewing Area	27,345	7%	28%	46%	20%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	1,264	27%	29%	20%	24%
Cabot Woods Fishing Access	18,230	17%	19%	38%	27%
Poplar Street Access Site	1,877	14%	5%	56%	25%
Rose Ledge Climbing Area Parking	1,790	2%	27%	54%	17%
Farley Ledge Climbing Area—Wells Street Parking	2,390	7%	51%	29%	13%
Farley Ledge Climbing Area—Route 2 Parking	6,232	4%	22%	48%	25%
<b>Total</b>	<b>152,769</b>	<b>10%</b>	<b>16%</b>	<b>50%</b>	<b>23%</b>

<sup>1</sup> Percentages shown may not sum to 100% due to rounding.

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**Table 4.1.1-2: Distribution of Recreation Use by Month Based on 2014 Spot Count Data**

Month	Percent Use
January	3%
February	9%
March	6%
April	7%
May	10%
June	11%
July	14%
August	16%
September	6%
October	10%
November	5%
December	3%

**Table 4.1.2-1: Recreation Use by Activity Type based on Spot Counts and Calibration Counts in 2014**

Recreation Activity	Estimated Use (Recreation Days)	Percent (%) of Recreation Use
Walking/Hiking/Jogging	45,691	30%
Motor boating	18,470	12%
Fishing	9,966	7%
Bike Riding	8,744	6%
Picnicking	8,362	5%
Rock Climbing	6,703	4%
Non-motor boating	6,656	4%
Fishway Viewing	5,061	3%
Cross-country Skiing	3,960	3%
Camping	3,478	2%
Riverboat touring	2,733	2%
Sightseeing	1,802	1%
Hunting	1,569	1%
Birding	847	1%
Ice Fishing	761	1%
Horseback Riding	746	<1%
Snowshoeing	188	<1%
Whitewater boating	171	<1%
Ice skating/ Ice boat	112	<1%
Unidentified Activity	26,750	18%
<b>Total</b>	<b>152,769</b>	<b>100%</b>

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

**Table 4.1.3-1: Estimated Use of Surveyed Recreation Sites by Season<sup>1</sup>**

Recreation Site	Estimated Annual Use (2014)	Estimated Winter Use	Estimated Spring Use	Estimated Summer Use	Estimated Fall Use
Governor Hunt Boat Launch/Picnic Area	1,812	13%	11%	67%	9%
Pauchaug WMA	1,005	15%	0%	23%	62%
Pauchaug Boat Launch	9,630	1%	7%	68%	23%
Bennett Meadow WMA	3,729	2%	14%	40%	44%
Munn's Ferry Boat Camping Recreation Area	1,716	0%	0%	84%	16%
Boat Tour and Riverview Picnic Area	13,651	17%	23%	39%	21%
Northfield Mountain Tour and Trail Center	20,024	24%	12%	33%	31%
Cabot Camp Access Area	5,326	4%	10%	62%	24%
Barton Cove Nature Area	7,842	15%	19%	45%	21%
Barton Cove Campground	2,963	0%	5%	92%	3%
Barton Cove Canoe and Kayak Rental Area	4,455	2%	0%	98%	0%
State Boat Launch	15,126	1%	2%	74%	23%
Canalside Trail Bike Path	6,362	1%	13%	54%	31%
Gatehouse Fishway Viewing Area <sup>2</sup>	27,345	7%	28%	46%	20%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	1,264	27%	29%	20%	24%
Cabot Woods Fishing Access	18,230	17%	19%	38%	27%
Poplar Street Access Site	1,877	14%	5%	56%	25%
Rose Ledge Climbing Area Parking	1,790	2%	27%	54%	17%
Farley Ledge Climbing Area—Wells Street Parking	2,390	7%	51%	29%	13%
Farley Ledge Climbing Area—Route 2 Parking	6,232	4%	22%	48%	25%
<b>Total Use of the above Recreation Sites</b>	<b>152,769</b>	<b>10%</b>	<b>16%</b>	<b>50%</b>	<b>23%</b>

<sup>1</sup> Percentages of estimated use by season at each recreation site may not sum to 100% due to rounding.

<sup>2</sup> Estimated Annual Use includes visitors to the Gatehouse Fishway Viewing Area, the associated picnic area, and the adjacent bike path.



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Table 4.1.3-2: Percent of Recreation Use by Activity at Each Site

Recreation Site	Walk/ Hike/ Jogging	Motor Boating	Fishing	Ride Bikes	Picnicking	Climbing	Non- motor boating	Fishway Viewing	Cross- country Ski	Camping	Riverboat	Sight see	Hunt	Birding	Ice Fish	Ride Horses	Snow Shoe	Whitewater boat (Bypass only)	Ice Skate/ Boat	Unidentified Recreation Activity
Governor Hunt Boat Launch/Picnic Area	0%	53%	12%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%
Pauchaug WMA	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	44%	0%	0%	0%	0%	0%	0%	23%
Pauchaug Boat Launch	4%	49%	12%	0%	1%	0%	10%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%	0%	20%
Bennett Meadow WMA	41%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	4%	25%	0%	0%	0%	0%	0%	0%	27%
Munn's Ferry Boat Camping Recreation Area	0%	39%	0%	0%	5%	0%	9%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%
Boat Tour and Riverview Picnic Area	29%	3%	2%	2%	18%	0%	1%	0%	0%	0%	20%	1%	0%	0%	0%	0%	0%	0%	0%	24%
Northfield Mountain Tour and Trail Center	49%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	1%	0%	0%	0%	3%	1%	0%	0%	29%
Cabot Camp Access Area	19%	1%	26%	2%	1%	0%	1%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	3%	0%	39%
Barton Cove Nature Area	31%	0%	23%	6%	5%	0%	4%	0%	0%	0%	0%	1%	0%	1%	9%	0%	0%	0%	1%	19%
Barton Cove Campground	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Barton Cove Canoe and Kayak Rental Area	0%	8%	4%	0%	12%	0%	60%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	14%
State Boat Launch	1%	74%	2%	0%	1%	0%	11%	0%	0%	0%	0%	1%	0%	2%	0%	0%	0%	0%	0%	8%
Canalside Trail Bike Path	41%	0%	0%	55%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Gatehouse Fishway Viewing Area <sup>2</sup>	36%	0%	6%	8%	14%	0%	0%	19%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	15%
Turners Falls Branch Canal/Station No. 1 Fishing Access	26%	0%	21%	21%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%
Cabot Woods Fishing Access	53%	0%	11%	10%	3%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	20%
Poplar Street Access Site	23%	0%	41%	3%	0%	0%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	11%
Rose Ledge Climbing Area Parking	19%	0%	0%	0%	0%	75%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	4%
Farley Ledge Climbing Area—Wells Street Parking	71%	0%	0%	0%	0%	25%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Farley Ledge Climbing Area—Route 2 Parking	20%	0%	0%	0%	0%	75%	0%	0%	2%	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	1%
<b>Total Project-Wide Use of the above Sites.</b>	<b>29%</b>	<b>12%</b>	<b>7%</b>	<b>6%</b>	<b>5%</b>	<b>4%</b>	<b>4%</b>	<b>3%</b>	<b>3%</b>	<b>2%</b>	<b>2%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>18%</b>

<sup>2</sup> Use includes visitors utilizing the Visitor Center and the associated picnic area, which includes a portion of the Canalside Trail Bike Path.

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**Table 4.1.3-3: Recreation Site Capacity Utilization by Site**

<b>Recreation Site</b>	<b>Recreation Days</b>	<b>Percent Capacity Utilized</b>
Governor Hunt Boat Launch/Picnic Area	1,812	50%
Pauchaug WMA	1,005	1%
Pauchaug Boat Launch	9,630	20%
Bennett Meadow WMA	3,729	10%
Munn's Ferry Boat Camping Recreation Area	1,716	40%
Boat Tour and Riverview Picnic Area	13,651	10%
Northfield Mountain Tour and Trail Center	20,024	10%
Cabot Camp Access Area	5,326	15%
Barton Cove Nature Area	7,842	20%
Barton Cove Campground	2,963	40%
Barton Cove Canoe and Kayak Rental Area	4,455	25%
State Boat Launch	15,126	65%
Canalside Trail Bike Path	6,362	N/A
Gatehouse Fishway Viewing Area	27,345	25%
Turners Falls Branch Canal/Station No. 1 Fishing Access	1,264	1%
Cabot Woods Fishing Access	18,230	25%
Poplar Street Access Site	1,877	10%
Rose Ledge Climbing Area Parking	1,790	60%
Farley Ledge Climbing Area—Wells Street Parking	2,390	30%
Farley Ledge Climbing Area—Route 2 Parking	6,232	60%
<b>Annual Total</b>	<b>152,769</b>	

## 4.2 Recreational User Survey Results

Two separate recreational user surveys were conducted as part of this study: a Recreation User Survey that was administered at the recreation sites and access areas where the spot and calibration counts were conducted; and a separate Northfield Mountain Trail User Survey for recreationists using the NMTTC. Results of the Northfield Mountain Trail User Survey are reported in detail in the Study 3.6.7 study report ([FirstLight, 2015b](#)). In the Recreation User Survey, recreationists were asked for some basic information about themselves and their visit to or use of the Projects. The survey also asked their opinions regarding a number of aspects of the recreational opportunities offered in connection with the Project. Basic information and opinion questions included in the survey are summarized in [Table 4.2-1](#). A copy of each survey form is included in [Appendix C](#).

### *Informational Question Responses*

Basic information on survey respondents was summarized from the survey results and is shown in [Table 4.2-2](#). A total of 945 user surveys were collected with responses to some or all of the questions. Of those that responded, 63% were male and 37% female. Collectively respondents had an average age of 49. The average size of the group that the respondent was visiting the Project with was 2.6; and the average number of vehicles used by the group to travel to the Projects was 1.2. Ninety-one percent (91%) of respondents had visited the Project area before, and the average number of previous visits reported by the respondents was 62. Based on their reported place of residence, recreationists traveled an average of 23 miles to recreate at the Projects. The majority (69%) of the recreationists were from 10 or fewer miles away, while 2% of the people traveled 100 or more miles. Ninety-six percent (96%) of recreationists estimated they spent “less than \$100” during their visit to the Project.

Recreationists were also asked to indicate what recreational activities they have participated in at the Projects, by season. Overall, 934 individuals responded to this question and the results of their responses are summarized in [Table 4.2-3](#).

### *Opinion Question Responses*

Survey respondents were asked to rate several aspects of the recreational sites, facilities and amenities provided at the Project on a scale of 1 (poor) to 5 (excellent). A summary of ratings and the number of responses given for each facility or amenity is provided in [Table 4.2-4](#). Not all of those surveyed responded to each question. The questions on toilets/restrooms and river quality were added as part of the modified survey.

As shown in the table, the overall quality of the recreation sites/facilities and amenities was rated well, with 41% of respondents rating the facilities as Excellent,(5) and 44% rating them as Fair-Excellent (4) . Twelve percent (12%) gave the facilities/amenities a Fair (3) rating, while two percent (2%) of respondents considered the overall quality to be less than Fair.

Parking also rated well. Eighty percent (80%) of respondents rated the parking as Excellent (5) (46%) or Fair-Excellent (4) (35%), while 14% rated the parking as Fair (3). Facility conditions also received positive responses, with 42% rating the facility conditions as Excellent (5) (the most common response), 40% rating the facility conditions Fair-Excellent (4), and 14% rating the conditions as Fair (3).

Regarding the variety of amenities, 63% of respondents rated the existing variety of amenities as Excellent (5) or Fair-Excellent, while 25% rated the variety of amenities as Fair (3). Only 11% of respondents felt that the variety was Poor (1) or Fair-Poor (2). With respect to river access, survey respondents had positive perceptions, with 43% of respondents rating the access to be Excellent (5), 36% Fair-Excellent (4), and 14% Fair (3). Visitors’ responses regarding restrooms were less positive, with 37% rating the restrooms as

Excellent (5) or Fair-Excellent (4), 13% as Fair (3), and the remaining 50% rating the restrooms as Poor (1) or Fair – Poor (2).<sup>4</sup>

Recreationists had an opportunity to provide an explanation to the open-ended request to “Please explain any low ratings” associated with the responses provided in [Table 4.2-4](#). A total of 249 topics were mentioned in the responses. Respondents could, and did, address more than one topic. The most common response topic was the lack of restrooms/limited restroom availability, which was mentioned by 65 respondents. Other frequently mentioned topics were: crowded/limited parking (35 responses), trash issues/trash cans (29 responses), river access (16 responses), lack of amenities/variety (15 responses), parking lot maintenance (14 responses), and boat ramp availability/boat ramp condition (12 responses). The responses are summarized in [Table 4.2-5](#).

In terms of level of use, recreationists rated the site where they were interviewed on a scale of 1 (Not Crowded) to 5 (Extremely Crowded). Survey respondents were also asked to rate the number of facilities on a scale of 1 (Not Satisfied) to 5 (Extremely Satisfied). Additionally, respondents had the opportunity to rate river water levels on a scale of 1 (Not Satisfied) to 5 (Extremely Satisfied). A summary of ratings and the number of responses given for each of these issues is provided in [Table 4.2-6](#). Not all of those surveyed responded to each question. The question on the number of facilities was added as part of the modified survey.

Most recreationists perceived the amount of use at Project recreation sites to be Not Crowded (39%), and Not Crowded to Somewhat Crowded” (19%), or Somewhat Crowded (21%). Only six (6) percent of respondents perceived the use at the Project sites to be Extremely Crowded.

Recreationists were also asked about their levels of satisfaction with the number of facilities at the Project. Ninety-six percent (96%) of recreationists surveyed were Satisfied (3), Moderately Satisfied (4), or Extremely Satisfied (5) with the number of recreation facilities at the Project. Extremely Satisfied (36% of responses) was the most frequently given rating for the number of recreation facilities available. Thirty-one percent (31%) reported being Moderately Satisfied, with 29% being Satisfied. Survey respondents were given the opportunity to provide an explanation of their response to this question. Three individuals provided responses, including 1 who reported being Moderately Satisfied with the number of facilities. The three responses are summarized in [Table 4.2-7](#).

The survey also asked: Overall, how satisfied were you with the river water level during your trip? In response to the question, 398 recreationists (93%) responded that they were Satisfied (37%), Moderately Satisfied (43%), or Extremely Satisfied (13%) with water levels in the river. A total of 29 recreationists (7%) were either slightly satisfied or not satisfied at all. Survey respondents could provide comments related to water levels if they wished to do so. A total of 19 responses were given, including 6 from those who had reported being Satisfied or Moderately Satisfied with water levels. The most common response topic was that the water level is too low (12 responses). [Table 4.2-8](#) summarizes the responses.

In addition to having an opportunity to provide additional feedback on the ratings, the recreation survey contained five general open-ended questions. In total, 2,674 comments were provided in response to the general open-ended questions, with some respondents giving multiple comments to a single question.

The first of the general open-ended questions on the survey asked: What did you like most about your recreational experience today? This question received the most comments with 1,030. Twenty-nine (29) different topics received two or more comments each, with an additional 18 topics being mentioned once. The response received most frequently was peaceful/quiet (178). Six other comment topics were mentioned

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<sup>4</sup> In total, 211 surveys were administered with this question regarding bathrooms/restrooms. Responses to this question were provided by 139 (66%) of the respondents.

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60 or more times: beauty/scenery (137), location/close to home (69), weather (67), nature/wildlife (67), not crowded (61), and fishing (61). [Table 4.2-9](#) summarizes the comments received.

As part of the survey, recreationists were asked: What did you like least about your recreational experience today? A total of 345 comments were received. The response received most frequently was weather (42), followed closely by trash/litter (41). Four other comment topics were mentioned more than 20 times: parking lot and road maintenance/plowing (28), crowded/noisy (27), no restrooms/restrooms closed (23), and goose droppings/goose feedings (23). [Table 4.2-10](#) summarizes the comments received.

Recreationists were asked: What, if anything, enhanced your recreational experience today? Six-hundred and ten (610) comments were received. Beauty/scenery was the response received most frequently, with 89 comments. Other comment topics mentioned frequently were: nature/wildlife (67), peaceful/quiet (59), and weather (41). The comments received are presented in [Table 4.2-11](#).

A total of 174 comments were provided in response to the question: What, if anything, detracted from your recreational experience today? The response received most frequently was trash/litter (31). The comments received are presented in [Table 4.2-12](#).

A total of 515 comments were provided in response to the question: Do you have any additional comments? The response received most frequently was great area/appreciate it (105). Other comment topics mentioned more than 20 times were: improve trash removal/problem with littering (39) and restrooms wanted (21). The comments received are presented in [Table 4.2-13](#).

**Table 4.2-1: Informational and Opinion Questions Included in the Recreational Users Survey**

Informational Questions	Opinion Questions
What is your age?	What is your perception of the amount of use occurring at this site, today?
What is your gender?	Did you experience water level fluctuations today?
How many in your group, including yourself?	How satisfied were you with the river water level during your trip?
Which of the following best describes your group: Alone, family, friends, multiple families, family & friends, organized outing group, educational group, other?	How satisfied were you with the available number of recreation facilities?
How many vehicles did your group use to come to the Project?	How would you rate the amenities at this location: Parking; Facility condition; Variety of amenities; Toilets/Restrooms; River access; Overall Quality?
Have you ever visited the Project area before?	What did you like most about your recreational experience today?
What is your zip code or county of residence?	What did you like least about your recreational experience today?
When did you arrive and plan to depart?	What, if anything, enhanced your recreational experience today?
How much do you think you will spend during this trip to the Project?	What, if anything, detracted from your recreational experience today?
What recreation activities, by season, have you participated in at the Project in the past 5 years?	Does this recreational facility serve your interests? If not, why?
What is your primary activity on this trip?	Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River?

**Table 4.2-2: Summary of Responses to Recreational User Survey Informational Questions**

Informational Question	Number of Responses	Response Summary
What is your age? <sup>1</sup>	947	Average Age = 48.8
What is your gender? <sup>2</sup>	959	Male = 63% Female = 37%
How many are in your group including yourself?	925	Average group size = 2.6
How many vehicles did your group use to come to the Project?	933	Average number of vehicles = 1.2
Have you ever visited the Projects before?	944	Yes = 91% No = 9%
What is your zip code or county of residence? (Calculated travel distance based on zip code)	875	Average distance traveled to Project recreation site = 23 miles
When did you arrive and plan to depart?	847	Average length of stay = 1.7 hours
How much do you think you will spend during this trip to the Project?	931	Less than \$100 = 96% \$101 to \$500 = 4% \$501 to \$1,000 = 0% Greater than \$1,000 < 1%

<sup>1</sup>The number of responses exceeds the number of surveys completed because some recreationists also provided a response for someone else in the recreation party.

<sup>2</sup>Ibid.

**Table 4.2-3: Total Number of Times a Recreational Survey Respondent indicated they had Participated in Certain Recreational Activities at the Northfield Mountain and Turners Falls Projects.**

Activity	Primary Activity This Trip	Spring (3/1 – 5/31)	Summer (6/1 – 8/31)	Fall (9/1 – 11/30)	Winter (12/1 – 2/28)	Total
Backpacking	2	7	8	7	5	27
Birding	66	90	84	82	54	310
Camping	7	5	17	6	0	28
Canoeing	18	28	40	27	6	101
Dog Walking	185	182	189	178	114	663
Driving for Pleasure	5	9	10	6	10	35
Educational Programs	5	8	7	8	2	25
Fishing from a Boat	29	66	86	63	12	227
Fishing from Shore	142	162	174	131	69	536
Fishway Viewing	6	11	11	2	0	24
Hiking	31	73	76	69	38	256
Horseback Riding	0	0	0	0	0	0
Hunting	7	3	3	10	8	24
Ice Fishing	34	1	0	0	45	46
Kayaking	41	59	71	49	24	203

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Activity	Primary Activity This Trip	Spring (3/1 – 5/31)	Summer (6/1 – 8/31)	Fall (9/1 – 11/30)	Winter (12/1 – 2/28)	Total
Mountain Biking	1	11	14	10	4	39
Multi-day Float Trip	5	1	5	2	1	9
Nature Observation	98	133	133	118	73	457
Orienteering	0	0	2	1	0	3
Other	55	42	50	39	7	138
Paddle Boarding	2	1	5	1	0	7
Photography	29	41	40	33	55	169
Picnicking	61	97	113	81	21	312
Power Boating	44	42	67	41	3	153
Riding Jet Ski	0	1	6	1	0	8
Road Bicycling	34	98	105	97	12	312
Rock Climbing	22	22	23	19	7	71
Rowing	1	3	4	3	0	10
Running	7	18	20	18	10	66
Sailing	2	0	1	0	1	2
Sightseeing	41	33	37	28	38	136
Skiing	2	1	0	0	14	15
Snowshoeing	2	0	0	0	11	11
Swimming	19	22	34	15	22	93
Tubing	6	6	10	2	5	23
Walking	304	337	335	322	183	1,177
Waterskiing	2	1	4	1	3	9
Whitewater Boating	3	3	3	1	8	15

**Table 4.2-4: Recreational User Ratings of Recreation Sites, Facilities and Amenities, Reported as Percent of Respondents<sup>1</sup>**

Site/Facility/Amenity	Number of Responses	5 Excellent	4	3 Fair	2	1 Poor
Parking	917	46%	35%	14%	4%	2%
Facility Condition	918	42%	40%	14%	4%	<1%
Variety of Amenities	905	28%	35%	25%	9%	3%
Toilets/Restrooms	139	17%	20%	13%	9%	41%
River Access	198	43%	36%	14%	4%	4%
Overall Quality	914	41%	44%	12%	2%	<1%

<sup>1</sup> Percentages shown may not sum to 100% due to rounding.

**Table 4.2-5: Summary of Open-ended Responses to: “Please explain any low ratings”**

Response	Number of Responses
Lack of restrooms/limited restroom availability	65
Crowded/limited parking	35
Trash issues/trash cans	29
River access	16
Lack of amenities/variety	15

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Response	Number of Responses
Parking lot maintenance	14
Boat ramp availability/Boat ramp condition	12
Picnic tables wanted/Picnic table condition	9
Restroom maintenance	7
Restrooms wanted year round	7
Not plowed	6
Benches wanted/Benches condition	5
Mud concerns	5
Trails and signage	5
Road/entrance condition	3
Docks in late	2
Gates closed	2
Other <sup>1</sup>	12
<b>Total</b>	<b>249</b>

<sup>1</sup> Other includes responses mentioned only once.

**Table 4.2-6: Recreational User Ratings of Number of the Facilities, Level of Use, and Water Levels, Reported as Percent of Respondents<sup>1</sup>**

Topic	Number of Responses	Respondents' Ratings				
		5 Extremely Crowded	4	3 Somewhat Crowded	2	1 Not Crowded
Level of Use	908	6%	16%	21%	19%	39%
		5 Extremely Satisfied	4 Moderately Satisfied	3 Satisfied	2 Slightly Satisfied	1 Not Satisfied at all
Number of Facilities	193	36%	31%	29%	4%	<1%
		5 Extremely Satisfied	4 Moderately Satisfied	3 Satisfied	2 Slightly Satisfied	1 Not Satisfied at all
Water Levels <sup>2</sup>	427	13%	43%	37%	5%	2%

<sup>1</sup> Percentages shown may not sum to 100% due to rounding.

<sup>2</sup> The question regarding water levels was included on surveys administered throughout the year. Less than half of the 945 recreationists answered this question.

**Table 4.2-7: Summary of Open-ended Responses to: Overall, how satisfied were you with the available number of recreation facilities? If less than satisfied, please explain.**

Response	Number of Comments
Additional access for canoes and small boats along river	1
Handicapped access needed	1
More campsites needed	1
<b>Total</b>	<b>3</b>



**Table 4.2-8: Summary of Open-ended Responses to: “Overall, how satisfied were you with the river water level during your trip? If less than satisfied, please explain.”**

<b>Response</b>	<b>Number of Comments</b>
Water level is too low	12
Water level is/was too high	2
Water level is inconsistent	2
Mud	1
Water level negatively impacts swan nests	1
Boat ramp flooded	1
<b>Total</b>	<b>19</b>

**Table 4.2-9: Summary of Open-ended Responses to: “What did you like most about your recreational experience today?”**

<b>Response</b>	<b>Number of Comments</b>
Peaceful/quiet	178
Beauty/scenery	137
Location/close to home	69
Weather	67
Nature/wildlife	67
Not crowded	61
Fishing	61
Walking	46
Water/River	44
Water access	42
Good for dogs	26
Eagles, geese, ducks, waterfowl	25
Cleanliness	24
Birding	23
Community feel/friendliness	19
Time with family and friends	17
Safety	15
Parking/plowed access	13
Climbing	12
Public access/free	12
Boating/being on water	11
Biking/bike path	9
Recreation/relaxation	8
Historic/geologic interest	6
Picnicking	6
Fishway	5
Hunting	4
Variety	3
Camping	2
Other	18
<b>Total</b>	<b>1,030</b>

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**Table 4.2-10: Summary of Open-ended Responses to: “What did you like least about your recreational experience today?”**

<b>Response</b>	<b>Number of Comments</b>
Weather	42
Trash/litter	41
Parking lot and road maintenance/plowing	28
Crowded/noisy	27
No restrooms/restrooms closed	23
Goose droppings/goose feedings	23
Dogs	23
Behavior of other recreationists	19
Insects	13
Poor fishing	12
Muddy	7
Access to water	7
Restrictions	6
Low water level	6
Boat access/ramp	6
Poison Ivy/Japanese Knotweed	6
Location	6
Motor boats/boaters	5
Poor/lack of amenities	4
Picnic tables	4
Dangerous drivers	4
Facilities/gate closed	3
Safety	3
Not in guidebook/on map	3
View of power lines	2
Flooding	2
Construction projects	2
Fishway	2
Lack of trees/trees cut	2
Handicapped accessibility	2
Other	12
<b>Total</b>	<b>345</b>

**Table 4.2-11: Summary of Open-ended Responses to: “What, if anything, enhanced your recreation experience today?”**

<b>Response</b>	<b>Number of Responses</b>
Beauty/scenery	89
Nature/wildlife	67
Peaceful/quiet	59
Weather	41
Location/close to home	39
Birding	37
Cleanliness	30
Not crowded	27
Fishing	25

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

<b>Response</b>	<b>Number of Responses</b>
Water access	21
Community feel/friendliness	20
Walking	19
Water/River	16
Eagles, geese, ducks, waterfowl	15
Accessibility	14
Good for dogs	10
Safety	10
Recreation/relaxation	9
Variety	9
Public access/free	5
Climbing	4
Time with family and friends	4
Parking/road access/plowed	6
Few motor boats	3
Information provided/kiosk	3
Biking/bike path	3
Fishway	2
On-site restrooms	2
Discovery Center	2
Picnicking	2
Not buggy	2
Everything	2
Other	13
<b>Total</b>	<b>610</b>

**Table 4.2-12: Summary of Open-ended Responses to: “What, if anything, detracted from your recreation experience today?”**

<b>Response</b>	<b>Number of Responses</b>
Trash/litter	31
Weather	13
Parking lot and road maintenance/plowing	13
Dogs	13
Behavior of other recreationists	13
Goose droppings/goose feedings	10
No restrooms/restrooms closed	9
Traffic/traffic noise	7
Over-grown vegetation	6
Muddy	6
Facilities/gate closed	5
Poor fishing	4
Insects	4
High water level	3
Motor boats/boaters	3
Lack of trees/trees cut	3
Safety	2
Trails	2

## STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

<b>Response</b>	<b>Number of Responses</b>
Picnic tables	2
Access to water	2
Debris in river	2
Low water level	2
Lack of benches	2
No swimming allowed	2
Fishway closed	2
Restrictions/signs	2
Other	11
<b>Total</b>	<b>174</b>

**Table 4.2-13: Summary of Open-ended Responses to: “Do you have any additional comments?”**

<b>Response</b>	<b>Number of Responses</b>
Great area/appreciate it	105
Improve trash removal/Problem with littering	39
Restrooms wanted	21
Good maintenance/well taken care of	18
Additional benches/picnic tables	16
Improve parking/access road	16
Water level concerns	16
Plow/clear paths in winter	15
Improve safety/patrol	13
Expand kiosks/maps	11
Create designated swimming areas	10
Expand trails and paths	10
Site safety good	10
Expand boat ramps	9
More signage	9
Issues with dogs	9
Expand dog areas	8
Improve fishing--stock fish/enforce regulations	8
Improve handicapped accessibility	8
Expand canoe/kayak put-ins	7
Access is good	6
Boat ramp maintenance/dredge/mud issues	5
Improve vegetation maintenance	5
Good for socialization	5
Excellent site for birding	4
Expand fishing access	4
Better river access	4
Expand hours gates are open	4
Good for dogs	4
Provide access to buildings/plant tours	4
Designated walking/cycling lanes	3
People shouldn't feed birds	3
Time vegetation cutting to not disrupt birds	3
Expand camping opportunities	3

## STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

<b>Response</b>	<b>Number of Responses</b>
Parking/plowing good	3
Peaceful/quiet	3
Restrict hunting	3
Expand boat rentals	3
Provide more information on website	3
Likes that road salting is limited	2
Do not clear trees	2
Allow feeding of birds	2
Trash receptacles for dog areas	2
Love the river	2
Boat rentals good	2
Add/repair climbing top anchors	2
Like the programming	2
Limit bathrooms/advertising to keep for locals	2
Add skating area	2
Other	65
<b>Total</b>	<b>515</b>

### 4.3 Residential Abutters Survey

As part of Study 3.6.1 Recreation Use/User Contact Survey, a mail survey of the 211 residential landowners abutting the Northfield Mountain and Turners Falls Project boundaries and within the Northfield Mountain and Turners Falls Project boundaries was conducted. While some of these properties directly abut the Connecticut River, there are residences that do not. The intent of the residential abutters survey was to capture recreation users who access the Projects through private lands, rather than through the formal public recreation sites.

Of the 211 surveys mailed to residents, 95 surveys (45%) were completed and returned. The majority of the residential abutters who responded to the survey were year-round residents. Fifty-eight percent (58%) of respondents access the Connecticut River from their property. Of those that responded to the survey, 65% indicated that their property was adjacent to the Connecticut River.<sup>5</sup> One-third (33%) of respondents indicated that others access the Connecticut River across their private property, with 87% reporting people accessing the Connecticut River with permission and 57% reporting people accessing without permission. Thirty-seven percent (37%) of respondents have a dock. Twenty-one (21) respondents own 1 or more boats, with 1.5 boats owned being the average.

Residents were also asked about their use of the Projects. When asked if they ever use the recreation sites associated with the Projects, 42 (47%) of the 89 respondents answering the question stated yes. The majority of the respondents (81) stated that they utilized the Connecticut River or amenities at Northfield Mountain for recreation purposes. Of these respondents, the majority (60%) use the Connecticut River or amenities at Northfield Mountain for recreation purposes approximately 1-25 days per year. Respondents utilized a variety of recreation sites within the Projects' boundaries including: Barton Cove Nature Area and Campground, the NMTTC, the Gatehouse Fishway Viewing Area, Boat Tour and Riverview Picnic Area, the State Boat Launch, and the bike paths. [Table 4.3-1](#) summarizes the responses to the residential survey.

As part of the Residential Abutter Survey, respondents were asked for each season: What recreational pursuits do you usually participate in on the Connecticut River from just above the bicycle trail bridge in Montague north to Stebbins Island? The most popular recreation activities reported by the residents include walking, dog walking, birding, hiking, photography, and nature observation, in all four seasons. Kayaking,

<sup>5</sup> Of the 95 surveys that were returned, 3 did not include an answer to the question about adjacent properties.

power boating, canoeing, fishing, and picnicking were popular in the spring, summer, and fall. In the summer, many residents also reported enjoying swimming, water skiing, and tubing. [Table 4.3-2](#) summarizes the responses.

The survey also asked: Overall, how satisfied are you with the river water levels on this area of the Connecticut River? The majority of respondents (58%) responded that they were Slightly Satisfied (19%) or Not Satisfied at all (39%) with water levels in the river. Survey respondents were also asked to explain if they reported being “less than Satisfied” with the river water levels. A total of 54 comments were given. The most common response topic was regarding water level fluctuations/water level too low or too high (23 responses). [Table 4.3-3](#) summarizes the ratings and comments.

The residential abutter survey contained five general, open-ended questions. In total, 302 comments were provided, with some respondents giving multiple comments to a single question. The first of the general open-ended questions on the survey asked: What do you like most about your recreational experiences on this area of the Connecticut River? This question received the most comments with 116. The response received most frequently was beauty/scenery (17). Other comment topics mentioned include: boating/being on water (15), peaceful/quiet/not crowded (14), cleanliness/maintenance (12), and nature/wildlife (12). [Table 4.3-4](#) summarizes the comments received.

Residential abutters were also asked: What do you like least about your recreational experiences on this area of the Connecticut River? A total of 64 comments were received. The response received most frequently was water level fluctuations (20). Power boats/jet skis/other boaters (13) and litter (9) were also common responses. [Table 4.3-5](#) summarizes the comments received.

Residential abutters were asked: What, if anything, enhances your recreational experiences on this area of the Connecticut River? Forty-four (44) comments were received. Nature/wildlife was the response received most frequently, with 9 comments. Other comment topics mentioned include: cleanliness/maintenance (6), beauty/scenery (4), stable water levels (3), and weather (3). The comments received are presented in [Table 4.3-6](#).

A total of 47 comments were provided in response to the question: What, if anything, detracts from your recreational experiences on this area of the Connecticut River? The response received most frequently was water fluctuations (19). Other comment topics mentioned frequently were: power boats/jet skis/other boaters (8), weeds/sediment/water quality (6), and litter (11). The comments received are presented in [Table 4.3-7](#).

A total of 31 comments were provided in response to the question: Do you have any additional comments? The comments covered a wide range of topics, from fences to bike paths to litter. The response received most frequently was that the recreational opportunities are appreciated (5). Other comment topics mentioned were: water level fluctuation concerns (3), expand river access (3), and clear silt/vegetation (2). The comments received are presented in [Table 4.3-8](#).

**Table 4.3-1: Summary of Responses to Residential Abutter Survey Questions**

Informational Question	Number of Responses	Response Summary
Please categorize your abutting property by type of residence.	91	Year round/resident=86% Seasonal=14%
Do you as an abutting resident access the Connecticut River from your property for recreation purposes?	95	Yes = 58% No = 42%
Is your property adjacent to the Connecticut River?	92	Yes = 65% No = 35%
Do others access the Connecticut River across your private property?	69	Yes = 33% No = 67%
With permission? <sup>1</sup>	23	Yes = 87%

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Informational Question	Number of Responses	Response Summary
		No = 13%
Without permission? <sup>2</sup>	23	Yes = 57% No = 43%
Do others utilizing the Connecticut River and abutting lands for recreational purposes affect your abutting property?	68	Yes = 19% No = 81%
Do you have a dock?	77	Yes = 31% No = 69% Average Number of Boats Docked: 1.5
Do you ever use the recreation sites associated with the Turners Falls and Northfield Mountain hydroelectric Projects (shown on map)?	89	Yes = 47% No = 53%
Do you ever use other sites in this area of the Connecticut River for recreational purposes, which are not shown on the map?	88	Yes = 23% No = 77%
Approximately how many days per year do you use the Connecticut River or the amenities at Northfield Mountain for recreation purposes?	81	1 to 25 = 60% 26 to 50 = 16% 51 to 100 = 10% 101 or more = 14%

<sup>1</sup> Percentages shown are for those who answered that others access the Connecticut River across their private property.

<sup>2</sup> Ibid.

**Table 4.3-2: Total Number Residential Abutter Survey Respondents indicating They had Participated in Certain Recreational Activities at the Northfield Mountain and Turners Falls Projects**

Activity	Spring (3/1 – 5/31)	Summer (6/1 – 8/31)	Fall (9/1 – 11/30)	Winter (12/1 – 2/28)
Backpacking	4	5	6	2
Birding	23	21	22	10
Camping	3	9	7	0
Canoeing	10	19	12	0
Dog Walking	25	25	26	16
Driving for Pleasure	18	20	17	13
Educational Programs	5	6	6	5
Fishing from a Boat	14	23	15	0
Fishing from Shore	16	25	17	0
Fishway Viewing	10	9	2	0
Hiking	23	24	24	16
Horseback Riding	0	1	0	0
Hunting	1	1	3	2
Ice Fishing	1	2	2	6
Kayaking	19	29	22	0
Mountain Biking	8	9	8	0
Multi-day Float Trip	1	5	1	0
Nature Observation	34	34	33	28
Orienteering	1	0	1	0

## STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Activity	Spring (3/1 – 5/31)	Summer (6/1 – 8/31)	Fall (9/1 – 11/30)	Winter (12/1 – 2/28)
Other	0	0	0	0
Paddle Boarding	1	3	2	0
Photography	28	29	29	23
Picnicking	13	22	15	1
Power Boating	14	27	18	0
Riding Jet Ski	3	8	5	0
Road Bicycling	15	19	17	1
Rock Climbing	0	3	1	0
Rowing	4	6	5	0
Running	7	7	6	2
Sailing	2	2	2	0
Sightseeing	18	21	19	14
Skiing	2	1	2	9
Snowshoeing	3	1	3	17
Swimming	8	32	13	0
Tubing	4	17	7	0
Walking	41	43	39	25
Waterskiing	5	15	6	0
Whitewater Boating	0	0	0	0

**Table 4.3-3: Summary of Open-ended Responses to: “Overall, how satisfied were you with the river water levels on this part of the Connecticut River? If less than satisfied, please explain.”**

Rating	Percent of Respondents <sup>1</sup>
Number of Responses	90
5 (Extremely Satisfied)	6%
4 (Moderately Satisfied)	16%
3 (Satisfied)	21%
2 (Slightly Satisfied)	19%
1 (Not Satisfied at All)	39%
Response	Number of Comments
Water level fluctuation/water too low or too high	23
Boating impacts from water level	10
Bank erosion	7
Concerns over ecological/wildlife impacts	6
Other	8
<b>Total</b>	<b>54</b>

<sup>1</sup> Percentages shown do not sum to 100% because of rounding.

**Table 4.3-4: Summary of Open-ended Responses to: “What do you like most about your recreational experiences on this area of the Connecticut River?”**

Response	Number of Comments
Beauty/scenery	17
Boating/being on water	15
Peaceful/quiet/not crowded	14
Cleanliness/maintenance	12
Nature/wildlife	12



STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Response	Number of Comments
Birding	9
Fishing	9
Ease of access	6
Swimming	4
Location/close to home	3
Walking/dog walking	2
Recreation opportunities	2
Other	11
<b>Total</b>	<b>116</b>

**Table 4.3-5: Summary of Open-ended Responses to: “What do you like least about your recreational experiences on this area of the Connecticut River?”**

Response	Number of Comments
Water level fluctuations	20
Power boats/jet skis/other boaters	13
Litter	9
Weeds/sediment	3
Restrictions	3
Mosquitoes	2
Poor swimming	2
Other	12
<b>Total</b>	<b>64</b>

**Table 4.3-6: Summary of Open-ended Responses to: “What, if anything, enhances your recreation experiences on this area of the Connecticut River?”**

Response	Number of Responses
Nature/Wildlife	9
Cleanliness/maintenance	6
Beauty/scenery	4
Stable water levels	3
Weather	3
Ease of access	2
Location/close to home	2
Parking	2
Quiet	2
Swimming	2
<b>Total</b>	<b>44</b>

**Table 4.3-7: Summary of Open-ended Responses to: “What, if anything, detracts from your recreation experiences on this area of the Connecticut River?”**

Response	Number of Responses
Water fluctuations	19
Power boats/jet skis/other boaters	8
Weeds/sediment/water quality	6
Litter	3
Other	11
<b>Total</b>	<b>47</b>

**Table 4.3-8: Summary of Open-ended Responses to: Do you have any additional comments?**

Response	Number of Responses
Appreciates recreational opportunities	5
Water level fluctuation concerns	3
Expand river access	3
Clear silt/vegetation	2
Other	18
<b>Total</b>	<b>31</b>

#### 4.4 Information from Local Recreation Departments and Police

In order to get additional information on any problems associated with recreational use of the Projects, particularly at the Project recreation sites, state and local policing entities were contacted via email and phone. [Table 4.4-1](#) summarizes the results of the survey. Of the eight police departments contacted, responses were received from five. None of the responding police departments reported any consistent problems or issues observed at any of the public recreation sites associated with the FirstLight Projects. Local police departments reported some occurrences of minor incidents. The Massachusetts Environmental Police reported some incidences of illegal camping, as well as some boating infractions.

**Table 4.4-1: Summary of Police Department Survey Results**

Police Department/Town Recreation Open Space Committee	Initial Date Contacted by Email	Call-Back Date or Date Responded	Summary of Issues/Information Reported/
Northfield Police Department	7/23/2015	7/28/2015	No issues with fishing. Minor incidents of theft on power company property. Underage drinking at Munn's Ferry Boat Camping Recreation Area.
Montague Police Department	7/23/2015	9/18/2015	No response
Gill Police Department	7/23/2015	7/27/2015	Minor excessive drinking. Failure to pay fees.
Erving Police Department	7/23/2015	7/27/2015	No issues reported
Hinsdale Police Department	7/23/2015	N/A	No response
Greenfield Police Department	7/23/2015	N/A	No response
Vernon Police Department	7/23/2015	7/31/2015	Minimal criminal complaints at Governor Hunt Boat Launch/Picnic Area.

STUDY 3.6.1: RECREATION USE/USER CONTACT SURVEY STUDY REPORT

Police Department/Town Recreation Open Space Committee	Initial Date Contacted by Email	Call-Back Date or Date Responded	Summary of Issues/Information Reported/
Massachusetts Environmental Police	7/23/2015	7/29/2015	Illegal camping on FirstLight property. Fishermen trespassing in restricted areas around Turners Falls Dam. Reckless power boat operation. Canoes/kayaks not carrying life jackets.
Gill Recreation Open Space Committee	7/23/2015	7/23/2015	Indicated the Open Space and Recreation Committee was inactive however the current plan on file was the most current one available
Northfield Recreation Open Space Committee	7/23/2015	N/A	No response
Montague Recreation Open Space Committee	7/23/2015	7/23/2015	The plan on file is the most current. Also suggested the 2013 Downtown Turners Falls Livability Plan may be useful as well.
Erving Recreation Open Space Committee	7/23/2015	N/A	No response
Hinsdale Recreation Open Space Committee	7/23/2015	N/A	No response
Vernon Recreation Open Space Committee	7/23/2015	N/A	No response
Greenfield Recreation Open Space Committee	7/23/2015	N/A	No response

#### 4.5 Private Clubs and Recreation Facility Survey Results

There are no privately operated commercial recreation sites or facilities located at the Projects. There are, however, two private recreation clubs located on the Turners Falls Impoundment that provide some recreational facilities and/or access to Project waters for their members. The private clubs include the Franklin County Boat Club and the Turners Falls Rod and Gun Club. In addition, the Northfield Mount Hermon School utilizes Project waters and shoreline areas for school outdoor recreation events. In order to gain a better understanding of the recreation facilities and opportunities provided by these entities, each was surveyed by email and/or phone. [Table 4.5-1](#) lists the entities contacted and summarizes the results of

the survey. Responses to the survey were obtained from the Turners Falls Rod and Gun Club and the Northfield Mount Hermon School. No response was received from the Franklin County Boat Club.

The Turners Falls Rod and Gun Club is a privately-owned, non-profit club that hosts some public events at their facility. The amenities include a covered porch with picnic tables and boat docks that hold approximately 24 boats. Parking is available for 100 cars, while approximately 40 individuals utilize the club property to access the Connecticut River. When asked how satisfied are your club members with the river water levels over the course of the summer on a scale of 1 to 5 (Not Satisfied at All to Extremely Satisfied), the response was Satisfied (3). The club noted changes in water level elevation and water clarity as an explanation of the response. When asked on the same scale how satisfied are your club members with the available number of recreation facilities within the Projects, they responded Extremely Satisfied (5).

The Northfield Mount Hermon School utilizes the Connecticut River for canoeing as part of the Outdoor Recreation program and for the boys and girls crew teams during the spring, summer and fall seasons. Though the public is not permitted river access over school property, approximately 200 members of the Northfield Mount Hermon School community utilize the river. The Northfield Mount Hermon School was asked Overall, how satisfied is the school with the river water levels on a scale of 1 to 5, where 1 is Not Satisfied at All and 5 is Extremely Satisfied, as well as how satisfied is the school with the available number of recreation facilities within the Projects? The Northfield Mount Hermon School responded Slightly Satisfied (2) to both questions. In response, the Northfield Mount Hermon School stated that they were concerned about the constant change in the level of the water and would like to be notified in advance when the activities of the hydroelectric projects are going to raise or lower the level of the river. They also noted a concern related to erosion of the shore.

**Table 4.5-1: Summary of Private Club and Recreation Facility Survey Results**

<b>Private Club/Entity</b>	<b>Date Contacted</b>	<b>Call-Back or Date of Response</b>	<b>Summary of Responses</b>
Franklin County Boat Club	2/5/15	2/6/15	No response
Turners Falls Rod and Gun Club	2/5/15	2/6/15	Private, non-profit, functions are open to the public for a fee. Approximately 24 boats docked at the facility. Satisfied with river water levels over the course of the summer.
Northfield Mount Hermon School	2/5/15	2/5/15	Utilize the Connecticut river for crew teams and canoeing during the spring, summer and fall. Concerned about water level changes.

#### **4.6 Statewide Comprehensive Outdoor Recreation Plans/Regional and Local Open Space and Recreation Plans**

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is a strategic planning document prepared by each state that is used over a five year period to determine eligibility for Land and Water Conservation Fund (LWCF) funding apportionment to fulfill the state’s recreational needs. The SCORP also allows states to fulfill National Park Service goals.

##### *4.6.1 Massachusetts Statewide Comprehensive Outdoor Recreation Plan*

Massachusetts’ Statewide Comprehensive Outdoor Recreation Plan serves as the state’s official five-year outdoor recreational plan. It identifies the current supply of recreational opportunities statewide, utilizing

data collected in a public official's survey, a land trust survey, and a phone survey. The 2012 MA SCORP, summarized below, identified four objectives and active steps to target resources to recreational facilities.

#### Massachusetts Demographics Overview

The MA SCORP identified key elements of the state geography, population, economics, outdoor recreation history and current state of outdoor recreation. According to the 2010 Census, and as stated in the MA SCORP, Massachusetts has over 6.5 million residents. Between 2000 and 2010, Massachusetts experienced an increase in population of 3.1 percent, primarily a result of migration, while nationwide the United States experienced an increase of 9.7 percent.

Tourism is the third largest employer in Massachusetts, and is responsible for \$15.5 billion in direct expenditures every year. Of the 20 million tourists annually, over 14 percent stated that one of the top five reasons they visited Massachusetts was for its outdoor recreation resources. According to the 2006 United States Fish and Wildlife Service (USFWS) National Survey on Hunting, Fishing, and Wildlife Viewing, and as described in the MA SCORP, nearly 500,000 people participated in fishing, generating a total economic output of approximately \$770 million ([Massachusetts 2012](#)).

#### Supply of Outdoor Recreation

The current supply of recreational opportunities identified in the MA SCORP includes 273 locations on coastal waters, great ponds, and rivers throughout the state managed by the Office of Fishing and Boating Access within the Department of Fish and Game, 171 recreational areas managed by the Division of Fisheries and Wildlife, and over 3500 recreation facilities managed by the Department of Conservation and Recreation. The MA SCORP provides a summary of state facilities, land trusts, and some municipal information, but the information is not provided at a regional or county level.

The top activities participated in statewide were running, jogging, and walking, followed by hiking, road biking, gardening, and swimming. It was noted that hiking is more popular in the central and western part of the state.

#### Demand for Outdoor Recreation

To determine demand for outdoor recreation, targeted surveys were administered to reach a broad range of state citizens. Public officials were surveyed regarding what activities they felt would show an increase in popularity in their communities of the next five years. When asked which facilities required more resources, 57.9 percent indicated trails and 49.5 percent indicated multi-use fields. Other popular answers included playgrounds, baseball fields, community gardens, picnic areas, and fresh water swimming areas. Lack of funding for construction and maintenance were listed as the biggest obstacles to building new recreational facilities. The top four issues identified by land trusts regarding outdoor recreation facilities were new land acquisition, trail maintenance, conservation restriction stewardship, and funding.

Trails were repeatedly mentioned in public meetings as a significant need across the state. Water-based recreation, including more water access for swimming and boating, and increased protection of land along waterways, were also frequently identified at the public meetings. It was also noted that many public meeting attendees wanted more websites and apps to help identify recreation areas.

Regional differences in results were found, given that Eastern Massachusetts is more densely developed than Western and Central Massachusetts. When asked what facilities respondents would like to see more of, Western and Central Massachusetts residents more often mentioned hiking trails than other residents.

#### Goals and Objectives

The 2012 MA SCORP identified four goals, along with action steps to meet each goal. The goals outlined are intended to meet the outdoor recreation needs of MA residents, as well as the goals of America's Great Outdoors. The four goals identified in the MA SCORP are as follows:

- **Increase the availability of all types of trails for recreation.**
  - Paved and unpaved trails that provide access and ability to participate in multiple different activities: running, jogging, and walking; hiking; biking; backpacking; and camping;
  - Increase access to existing trails by making it easier for more residents to use them by creating shorter, intracommunity loops and protecting land to lengthen existing trails;
  - Trails that provide corridors to wildlife and enable easier access to users for wildlife viewing.
- **Increase the availability of water-based recreation.**
  - Increasing access to the water by acquiring more waterfront property and developing put-ins for canoes, kayaks, and other boats;
  - Waterfront areas (rivers, ponds, lakes, and ocean) that are safe for recreational swimming and fishing;
  - Pools and spray parks that provide water access to communities that are limited by their available water resources or geographic location.
- **Invest in recreation and conservation areas that are close to home for short visits.**
  - Neighborhood parks and conservation areas that are within a short walk or bike ride to a large portion of a community's population;
  - Acquisition of small parcels of land that can be utilized for community agriculture;
  - Facilities that can be enjoyed in an hour's visit, such as a tot lot or community garden;
  - Parks and conservation areas that can be enjoyed with the mode of transportation that was used to access the site, such as skateboard parks, walking loops, or trails accessible to bicycles.
- **Invest in racially, economically, and age diverse neighborhoods given their projected increase in participation in outdoor recreation.**
  - Acquiring land in areas that are diverse from the standpoint of economics, age, and race;
  - Developing parks and playgrounds in diverse neighborhoods;
  - Renovating park facilities to reflect the needs of that community's demographics (MA SCORP, 2012).

#### 4.6.2 *Vermont Statewide Comprehensive Outdoor Recreation Plan*

Vermont's (VT) Statewide Comprehensive Outdoor Recreation Plan serves as the state's official five-year outdoor recreational plan. The purpose of the VT SCORP is to assess current statewide outdoor recreation demand and supply, to identify outdoor recreation issues using a statewide survey for Vermont residents, and to provide an Action Plan outlining Vermont's vision for outdoor recreation.

The VT SCORP identified some elements of the state's geography, population, and economic impacts of outdoor recreation. Vermont is a largely rural state, with over 60 percent of the population living in rural areas. More than a quarter of residents do not have to travel away from home to participate in their favorite outdoor recreation activity. Also, outdoor recreation plays an important role in Vermont's economy. The outdoor recreation economy supported 35,000 jobs across Vermont, generated \$187 million in annual state tax revenue, produced \$2.5 billion annually in retail sales and services across Vermont, and accounted for 12 percent of the gross state product, as estimated by the Outdoor Industry Foundation in 2006 ([State of Vermont, 2013](#)).

### Supply of Outdoor Recreation

Vermont has nearly 850,000 acres of public lands open to recreation, and thousands of miles of trails that serve hikers, mountain bikers, snowmobilers, all-terrain vehicle (ATV) riders, and other trail users. Parks, wildlife areas, recreation fields, boat launches, and other types of outdoor recreation facilities throughout the state are provided and managed by federal, state, municipal, and NGO entities.

Municipalities are the major providers of athletic facilities, fields, courts, and bike paths in the state. State and federal outdoor recreation providers provide the majority of public lands in the state. State departments provide the majority of boat ramp/launches and docks, fishing piers, and campsites, while the federal government provides the majority of public lands open to hunting. NGOs in Vermont provide the majority of mountain bike, snowmobile, and off-highway vehicle trails in the state.

The results of the 2011 survey indicated that hiking was rated as the favorite outdoor recreation activity by 16 percent of Vermonters. Walking, hunting, and fishing, were also rated as popular activities, each of which approximately 9 percent of residents favored. Other favored activities included skiing of all types, swimming, bicycling, camping, golf, and boating.

### Demand for Outdoor Recreation

Outdoor recreation priorities and issues were evaluated through the 2011 Outdoor Recreation Demand Survey, which assessed satisfaction with outdoor recreation facilities and resources, and the 2011 Outdoor Recreation Inventory, which determined state-wide municipal recreation priorities.

Demand for outdoor recreation in Vermont is highest for road and trail based activities, such as walking, sightseeing/driving for pleasure, hiking, snowshoeing, and bicycling; water-based activities such as swimming in lakes, pools, and rivers; and wildlife and bird watching activities. Picnicking, sledding, and visiting cultural/historic sites were also identified as having a relatively high demand. Activities such as ATV riding, soccer, baseball, and softball show lower participation rates, but relatively high frequency. The demand for hunting, fishing, and snowmobiling has declined over the past 10 years, while the demand for mountain biking, ATV riding, and trail-based recreation activities has increased.

With respect to outdoor recreation priorities, the top five municipal priorities identified in the 2011 Outdoor Recreation Inventory were parks and open space, bike/pedestrian trails, baseball/softball fields, hiking trails, and soccer fields. Responses to the 2011 Outdoor Recreation Demand Survey indicated that priority should be placed on facilities for people with physical disabilities, off-leash dog parks, OHV/ATV trails and roads, marinas, and fishing piers.

In general, an overall satisfaction with existing recreation facilities in the state was indicated in the 2011 survey. Over half of the survey respondents stated that the existing outdoor recreation facilities in Vermont were either “very good” or “excellent.” While the overall ratings indicated positive feedback on the quality of outdoor recreation facilities/resources in the state, specific areas with room for improvement were identified in the VT SCORP.

#### *4.6.3 New Hampshire Statewide Comprehensive Outdoor Recreation Plan*

The key points of the New Hampshire (NH) Statewide Comprehensive Outdoor Recreation Plan are summarized in the NH SCORP 2013 – 2018 Vision Statement: “Outdoor recreation in New Hampshire serves diverse populations throughout the state, has a strong, positive impact on the economy, and improves the quality of life for New Hampshire residents and visitors. Strong partnerships among community organizations, the business community and the public sector facilitate diverse outdoor recreation opportunities for a variety of users. A well-connected and maintained system of trails, expanded funding, and quality educational resources insure that outdoor recreation continues to be a vital part of New Hampshire ([State of New Hampshire, 2013](#)).”

New Hampshire residents are middle-aged, well educated, and less racially diverse when compared to the nation as a whole, and are most often born someplace else and migrate into the state. Demographic trends of the state indicate that since the high growth decade from 1970-1980, the state's population growth has fallen steadily. In the past decade, 2000 – 2010, New Hampshire's growth rate declined to 6.5 percent, which is the highest rate in the United States (US) Northeast, but lower than the national rate. The 2010 Census found that 37.8 percent of the state population resides in rural areas while 62.2 percent reside in urban areas.

Outdoor recreation participation supports the economy in New Hampshire through 53,000 jobs, \$261 million in annual state tax revenue, and \$4 billion annual revenue in retail sales and services.

#### Identified Supply and Surveyed Demand of Outdoor Resources in New Hampshire

The state of New Hampshire remains the second most forested state in the nation, with approximately 82 percent of the state being forestlands. The Office of Energy and Planning maintains a statewide inventory of outdoor recreation lands and facilities in New Hampshire, providing information about ownership, acreage, and types of recreational activities at the over 3,500 sites across the state. Northern New Hampshire has a few large individual recreational areas, while southern New Hampshire contains a larger number of smaller outdoor recreation sites. Of the recreation sites, the 2011 Office of Energy and Planning Recreation Inventory identified 352 campgrounds, 841 field sport areas, 112 golf courses, 86 historic areas, 1098 national/passive recreation areas, 425 parks, picnic, and playground areas, 463 water access sports areas, and 66 winter sports areas.

A summary of statewide participation in outdoor recreation shown in detail in the NH SCORP indicated that 42 percent of New Hampshire residents participate in wildlife viewing, 35 percent of the population utilizes trails, and approximately 25 percent participate in snow sports, bicycling, camping, or paddling. Other popular outdoor recreation activities include fishing and hunting.

Issues identified in the NH SCORP that potentially impact outdoor recreation participation include overcrowding/overuse, litter and proper upkeep, accessibility, water quality, speeding by boaters/jet skiers, and the health of fish and wildlife. Trends impacting outdoor recreation in New Hampshire included demographics, obesity concerns, and an emphasis on community connectivity and active transportation.

In order to identify the expressed demand for New Hampshire outdoor recreation, an approach was developed and applied involving two methods of obtaining information regarding recreation demand. The methods included "NH Listens" community conversations at seven sites throughout the state with 171 community members participating, University of New Hampshire Cooperative Extension facilitated planning sessions with key stakeholder groups, and a web-based Recreation and Conservation Leaders Survey.

The public engagement process for the 2013 – 2018 NH SCORP yielded the following key findings:

- **Health and Quality of Life:** There is a growing appreciation for the benefits of outdoor recreation, including reduced health care and transportation costs. Access for all children, senior citizens, and people with disabilities is important.
- **Economic Development and Funding:** Recreational opportunities contribute to economic vitality and attract business. Retailers should be enlisted to support the State's outdoor recreation initiatives.
- **Community Recreation, Children and Youth:** Opportunities for the underserved (including urban populations and immigrants) are important, as well as leadership opportunities for young people, and education on how and where to recreate close to home.
- **Connectivity – Places and People:** There is a high value placed on increasing connectivity among recreational sites and trails while addressing the environmental impact and safety concerns that come with multiple users.



- Communications and Outreach: Cultivating volunteerism and developing partnerships to combine resources and a centralized source of information were important. Addressing the risk aversion of parents letting children play outdoors, also identified as a “culture of fear” was a priority.
- Stewardship: It is important to implement sustainability practices in stewardship plans, including adequate funding and overall financial support for lands, facilities, and programs.

### Goals and Objectives

The stated goal of the 2013 – 2018 NH SCORP is to use contemporary planning resources to secure a future where New Hampshire residents and visitors live healthier lifestyles; wildlife, water, and natural resources are conserved; and the economic vitality of communities is sustained. Through a deliberative review of the findings from the public engagement process; analysis of existing state, regional, and national plans; and a study of trends impacting outdoor recreation, the NH SCORP identified four strategic priorities: promote health and livability for all through connection to the outdoors; practice wise stewardship and conservation of natural resources; contribute to New Hampshire’s economic vitality; and educate multiple users, partners, and agency leadership. New Hampshire designed priorities, goals, and actions to implement to improve the statewide outdoor recreational opportunities. The four priorities identified, each with its own set of goals and actions associated were: connecting people to the outdoors, consistent stewardship and conservation, economic vitality, and education ethics and benefits ([NH SCORP, 2013](#)).

#### *4.6.4 Project Recreation Opportunities Relative to SCORP Findings, Goals and Objectives*

Overall the recreation opportunities, sites, facilities and amenities currently provided at the Turners Falls and Northfield Mountain Projects are consistent with the findings of and goals/objectives established by the three state SCORPs. All three state SCORPs identified outdoor recreation as being of great importance to state residents. Among the more popular activities identified by the three SCORPs were hiking and walking, and the MA SCORP in particular noted that trails were of particular importance for meeting future recreation demand. This is generally consistent with the findings of FirstLight’s use and user survey which found that hiking/walking/jogging is the most popular recreation activity at the Project.

The existing formal recreation sites that are located within or provide access to the Projects provide significant opportunities for hiking, walking, and jogging. The approximately 25 mile trail system provided at the NMTTC, which provides year-round opportunities for walking, hiking, running, biking, horseback riding and skiing contribute to the state’s objective of providing and maintaining trails for public recreation use. Trails and opportunities for walking and biking are also provided at many of the other recreation sites including Barton Cove Nature Area and Campground, and both wildlife management areas (Bennett Meadow WMA, Pauchaug WMA).

Other popular outdoor recreation activities identified by the three state SCORPs include water-based sports including boating, paddling and fishing. Again, the use and user surveys conducted at the Projects’ recreation sites also found these activities to be popular and well supported by existing recreation sites, facilities and amenities. Boat launches located in three locations along the Turners Falls Impoundment (State Boat Launch, Pauchaug Boat Launch, and Governor Hunt Boat Launch/Picnic Area) provide boaters with excellent opportunities to utilize a variety of watercraft on the Turners Falls Impoundment. Carry-in boat access for non-motorized boats is also available at several other sites (e.g., Barton Cove, Boat Tour and Riverview Picnic Area).

#### *4.6.5 Local and Regional Open Space and Recreation Plans*

The Licensee reviewed existing land use controls, including local plans, ordinances, statutes, policies, and guidelines that may affect the use of and/or management of lands inside the Projects’ boundaries. [Table 4.6.5-1](#) lists the Open Space and Recreation Plans for the communities in the Project area. Details of the efforts made to contact open space planning committees, planning boards and regional planning entities

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responsible for producing and updating these plans are detailed in the study report. As part of Study 3.6.5 *Land Use Inventory*, the Licensee also contacted many of these entities to make sure the plans reviewed were the most recently published versions ([FirstLight, 2015f](#)).

As discussed in the report for Study 3.6.5, generally, the local plans reviewed recommend the protection of natural resources, farmland, and open space; and promoted additional recreation opportunities along the Connecticut River in the vicinity of the Projects. In addition, some of the plans provide specific acknowledgement or notations regarding public recreation use of the Projects. Some of the plans also provide general recommendations for public recreation in the Project vicinity, while others provide more specific recommendations regarding public recreation site/facility needs and improvements at the Projects. Acknowledgements and recommendations regarding Project-related public recreation needs and improvements that are included in the open space plans are summarized in [Table 4.6.5-2](#).

**Table 4.6.5-1: Open Space Plans and other Regional Plans Reviewed**

<b>Municipality</b>	<b>Open Space and Recreation Plans Reviewed</b>
Erving	Town of Erving 2010 Open Space and Recreation Plan ( <a href="#">Erving Open Space Planning Committee and the Franklin Regional Council of Governments Planning Department, 2010</a> )
Gill	Town of Gill 2011 Open Space and Recreation Plan ( <a href="#">Gill Open Space and Recreation Committee and Franklin Regional Council of Governments Planning Department, 2011</a> ) Community Development Plan for the Town of Gill ( <a href="#">Gill Community Development Planning Committee and the Franklin Regional Council of Governments, 2004</a> )
Greenfield	Town of Greenfield, MA 2012 Open Space and Recreation Plan ( <a href="#">Town of Greenfield Open Space and Recreation Committee, 2012</a> ) Sustainable Greenfield ( <a href="#">Vanasse Hangen Brustlin, Inc., 2014</a> )
Montague	Town of Montague 2010 Open Space and Recreation Plan ( <a href="#">Montague Open Space Planning Committee and Franklin Regional Council of Governments Planning Department, 2010</a> )
Northfield	Town of Northfield Open Space and Recreation Plan 2013 ( <a href="#">Northfield Open Space Committee, 2013</a> ) Master Plan for Northfield ( <a href="#">Martha Lyon Landscape Architecture, LLC with Community Circle, Community Preservation Associates, and AECOM, 2014</a> )
Turners Falls	Downtown Turners Falls Livability Plan ( <a href="#">Dodson &amp; Finker, Landscape Architects and Planners, and Howard/Stein-Hudson Associates, 2013</a> )
Franklin County	Sustainable Franklin County - A Regional Plan for Sustainable Development ( <a href="#">Franklin Regional Council of Governments, No Date</a> )
Hinsdale	Master Plan for the Town of Hinsdale, New Hampshire ( <a href="#">Hinsdale Planning Board in Conjunction with the Southwest Region Planning Commission, 2003</a> )
Vernon	Vernon, Vermont Town Plan ( <a href="#">Town of Vernon, 2013</a> )

**Table 4.6.5-2: Summary of Project-Related Recreation Acknowledgements and Recommendations from Open Space Plans and Regional Plans**

<b>Municipality</b>	<b>Project-Related Recreation Acknowledgements</b>	<b>Project-Related Recreation Recommendations</b>
Erving	Notes Connecticut River in Erving is one of the most scenic reaches of the River because of French King Gorge.	Recommends working closely with the Conservation Commission, private conservation land trusts, and state agencies to identify and facilitate the acquisition of

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Municipality	Project-Related Recreation Acknowledgements	Project-Related Recreation Recommendations
	<p>Acknowledges boat ramps are located in Barton’s Cove just south of Erving, in Northfield just north of town, and near the confluence of the Millers river.</p> <p>Notes Quinnetuket II has daily tours of the Gorge in the summer from Northfield Environmental and Recreation Center.</p> <p>Acknowledges recreational opportunities exist for all of the Connecticut River – wildlife viewing, boating, fishing, swimming and camping.</p> <p>Notes that Licensee owns, within the Town of Erving, approximately 1,758 acres and that the Northfield Mountain Environmental and Recreation Center includes roughly 800 acres of developed recreation areas with trails, signage and active maintenance of facilities, and roughly 600 acres of undeveloped recreation land used for activities including hiking, rock climbing, mountain biking, orienteering, horseback riding, skiing, snowshoeing, and hunting.</p> <p>Acknowledges Licensee-owned land surrounding the pumped storage facility will remain in recreational and forestry uses as mandated by FERC, but states that the land is not permanently protected from development.</p>	<p>land and easements for conservation areas and trails for walking, biking, hiking, rock climbing, bird watching, and other recreational activities.</p> <p>Recommends developing multi-user (walking, hiking, bicycling, cross country skiing) trail systems that tie into existing ones (i.e. the trail connecting Erving Center and Farley along the Millers River in Wendell), which can be safely accessed from publicly owned land or private lands with trail easements.</p>

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Municipality	Project-Related Recreation Acknowledgements	Project-Related Recreation Recommendations
Gill	<p>Notes that Barton Cove Campground, owned by the Licensee, offers a picnic area and tent camping, and canoe and kayak rentals. States that Barton Cove state boat ramp (State Boat Launch) is one of three state-managed public access points on the Connecticut River in Franklin County and that the other two include the Pauchaug Boat Launch in Northfield and the Sunderland Access.</p> <p>Notes Connecticut River is the focus for recreational activities for Gill residents.</p> <p>Acknowledges Connecticut River can be accessed via the public boat launch in the Riverside area and that an additional access point in town is the little-used Stacy's Ferry, a one-acre Town-owned property.</p>	<p>Notes that Stacy's Ferry is in need of improvement and notes that possible improvements include better non-power boat access to the river, a picnic area and a park.</p> <p>Recommends the reduction of human-influenced erosion along the mainstem of the Connecticut River and its tributaries and states that boat waves continue to be a significant problem on the Connecticut River in Gill. The Plan recommends the implementation of an education program for boaters.</p> <p>Recommends cooperation with private entities in town, including the Licensee, that provide recreational facilities used by Gill residents.</p> <p>Recommends supporting the development of multi-use and limited-use trail systems, which can be accessed from publicly owned land or private lands with permission.</p>
Greenfield	<p>States that limited access to the Connecticut River, which forms the eastern boundary of Greenfield, has meant that it is generally a less utilized fishing or boating destination.</p>	<p>Recommends the Town maintain and improve existing public parks, and create new parks to meet specific needs and demographics.</p> <p>Recommends the Town identify and maintain existing recreational facilities in Greenfield and create new recreational opportunities to meet unfulfilled needs.</p>
Montague	<p>Notes that Licensee is one of the largest landowners in the Town and that it owns most of the land along the Connecticut River and that, under the FERC license, the Licensee is required to provide recreational benefits to the communities bordering the river.</p> <p>Acknowledges that the Licensee maintains a public boating facility in Barton's Cove, a canoe launch at the end of Poplar Street in Montague City, and a park and picnic area along the river in Turners Falls.</p> <p>Acknowledges that the Licensee leases property to the Turners Falls Rod and Gun Club and leases land to DCR for the Canalside Trail Bike Path. The Plan</p>	<p>Recommends that the Town work with the Licensee to improve opportunities for non-motorized boating in appropriate areas along the Connecticut River in Montague.</p> <p>Recommends that Cabot Camp should be considered for acquisition by the Town or a state agency or non-profit conservation organization for its protection and maintenance for public use. The Plan states that Cabot Camp has special significance for open space and recreation in Montague but is used, without permission, by bicyclists, pedestrians, boaters, picnickers and fishermen.</p>

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Municipality	Project-Related Recreation Acknowledgements	Project-Related Recreation Recommendations
	<p>recommends that all of these facilities be maintained.</p> <p>Notes that the Poplar Street canoe launch has a very steep grade and limited parking, and is not accessible to older residents or people with disabilities.</p> <p>Acknowledges that the Towns residents believe the Town’s highest priority should be developing an outdoor swimming facility. The Plan acknowledges that the Licensee does not permit swimming on its property due to safety for swimmers.</p>	<p>Recommends that the Town work with the Licensee to develop an access point to the river close to downtown Turners Falls.</p> <p>Recommends ensuring free access to an adequate amount of well-maintained open space and recreational resources within walking distance of homes in Turners Falls because the village of Turners Falls qualifies as an Environmental Justice Population area.</p> <p>Recommends that the Town work with the Licensee to improve access to the Connecticut River for canoeing and fishing.</p> <p>Recommends the continued maintenance of all existing recreational facilities including trails.</p> <p>Recommends ongoing maintenance and expansion of recreational areas and programs provided by the Licensee under its FERC license, including but not limited to parks, the Canalside Rail Trail and boat access to the Connecticut River</p>
Northfield	<p>Acknowledges that the License owns approximately 876 acres of land within the Town of Northfield, which are considered unprotected and are considered of high conservation/recreation value.</p>	<p>Recommends the Town coordinate with the Recreation Commission to incorporate the Town’s recreation goals in the FERC relicensing negotiations with the Licensee.</p> <p>Recommends the Town facilitate the building of a canoe/kayak launch ramp at Bennett Brook Wildlife Management Area.</p> <p>Recommends the Town promote the use of new and existing trails in Northfield, and develop and/or improve trail systems throughout the Town. Northfield has considerable interest in developing trails along the riverbank of the Connecticut River.</p> <p>Recommend increasing the number of public access points on the Connecticut River, including boat and paddling launching areas.</p> <p>Recommends coordinating with MassDOT to construct a new pedestrian/bicycle bridge</p>

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Municipality	Project-Related Recreation Acknowledgements	Project-Related Recreation Recommendations
		<p>(Schell Bridge) across the Connecticut River to reconnect East and West Northfield.</p> <p>Recommends that any new facilities providing additional access to the river include adequate handicap-accessible parking and reasonable attempts to make the facilities, as appropriate, accessible to those with limited abilities.</p>
Turners Falls	<p>Acknowledges that behind the Discovery Center, a pedestrian bridge leads across the Power Canal to the power island and that an informal recreational area exists with views of the fish ladder and informal access to the river for fishing. Acknowledges that the Licensee does not allow swimming or condone boat launching from anywhere in Turners Falls.</p> <p>Notes that since the Licensee will go through a relicensing process in 2018, residents would like to see recreational access addressed as part of this process.</p>	<p>Recommends further study and collaboration with the Licensee to create a boat launch east of Unity Park near the old bridge abutments on the Turners Fall side of the river.</p> <p>Recommends strengthening the connection between the Discovery Center Park and the power island by creating a new Power Island Park at the tip of the island facing the falls. Previous planning studies have suggested that this area be used as a Native American cultural interpretive park, and this idea should be further explored.</p> <p>Recommends exploring adding facilities in Barton’s Cove Park such as more picnic benches and a shelter, a dog park, playground, fitness course, community garden, concession stand, a performance stage and other furnishings to attract residents and visitors.</p> <p>Recommends heavy promotion of the fish ladder, which could be a larger visitor attraction.</p> <p>Recommends the Town work with the Licensee to ensure that the Strathmore Pedestrian Bridge is properly repaired and returned to service.</p> <p>Recommends enhancing water-based recreation by constructing a formal cartop boat launch near Unity Park and expanding service of Quinnetuck between Northfield and Turners Falls.</p>
Franklin County		Recommends restoring and redeveloping the pedestrian bridge over the Power Canal to

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Municipality	Project-Related Recreation Acknowledgements	Project-Related Recreation Recommendations
		<p>Strathmore Mill in Turners Falls to help promote economic development.</p> <p>Recommends encouraging greater access to the Connecticut River for outdoor recreation purposes during the FERC relicensing process for the Licensee's hydropower facilities.</p>
Hinsdale	<p>Acknowledges that the State of New Hampshire has two boat landings along the Connecticut River, at the base of Sand Hill and between the bridges on Route 119 and that the recreational use of the Connecticut River has increased greatly.</p>	<p>Recommends the Town provide year round recreational opportunities for Hinsdale residents and protect the scenic elements of the Town's natural environment, including rivers.</p> <p>Recommends the Town preserve open space and plan to acquire land for future recreational purposes.</p>
Vernon	<p>Notes town policy is to require the location of energy generation facilities and transmission corridors to minimize impacts on the environment and on historic, recreational, and scenic facilities and sites.</p>	

## 4.7 Project Area Population Trends and Projected Recreation Demand

### 4.7.1 Projected Population Growth Using US Census

Consideration of future recreation demand relies on both expected population growth in the region, and on expected changes in recreation participation. Results of the user surveys suggest that most recreationists utilizing the Projects' recreation sites are local residents, or residents of the Project region. Population projections for the communities within which the Projects are located are provided in [Table 4.7.1-1](#). As shown, collectively the population of the towns (minor civil divisions) within which the Project is located is expected to grow 1.8% over the period 2010-2030.

Based on the ZIP code data collected as part of the User Recreation Survey, the large majority of the visitors to the Project live within 25 miles of the Project. Therefore, when evaluating future recreation demands, three counties were selected to serve as the basis of the population component of the recreation demand forecast. These counties are: Franklin County, Massachusetts; Cheshire County, New Hampshire; and Windham County, Vermont. [Table 4.7.1-2](#) presents the 2010 Census count ([US Census Bureau, 2015](#)), the 2014 Census estimate ([US Census Bureau, 2015](#)),<sup>6</sup> projected 2030 population ([UMASS Donahue Institute, 2015](#); [RLS Demographics, 2015](#); [Jones, et al, 2013](#)), as well as the percent. The three counties within which the Project are located are expected to grow by a total of 1.8% between 2014 and 2030.

<sup>6</sup> Census estimates for 2014 are not available for the Minor Civil Divisions presented in [Table 4.7.1-1](#)

**Table 4.7.1-1: Population Projections for the Minor Civil Divisions within which the Projects are Located**

Minor Civil Division Name	Census 2010	Projection 2020	Projection 2030	% Change, 2010 to 2030
Erving	1,800	2,138	2,579	43.2%
Gill	1,500	1,638	1,826	21.7%
Greenfield	17,456	17,107	17,047	-2.3%
Montague	8,437	8,472	8,546	1.3%
Northfield	3,032	2,997	2,957	-2.5%
Vernon	2,206	2,267	2,264	2.6%
Hinsdale	4,046	3,874	3,964	2.0%
<b>Town Total</b>	<b>38,477</b>	<b>38,493</b>	<b>39,183</b>	<b>1.8%</b>

**Table 4.7.1-2: Population Projections for the Project Region**

County	Census 2010	Census Estimate 2014	Projection 2030 <sup>1</sup>	% Change, 2014 to 2030
Franklin County, MA <sup>1</sup>	71,372	70,862	70,586	-0.4%
Cheshire County, NH <sup>2</sup>	77,117	76,115	79,861	4.9%
Windham County, VT <sup>3</sup>	44,513	43,714	43,609	-0.2%
<b>County Total</b>	<b>193,002</b>	<b>190,691</b>	<b>194,056</b>	<b>1.8%</b>

<sup>1</sup> Source: UMASS Donahue Institute, 2015. Projections are available in 5-year intervals through 2035.

<sup>2</sup> Source: RLS Demographics. Projections are available in 5-year intervals through 2040.

<sup>3</sup> Source: Jones, et al, 2013. Projections are available in 10-year intervals through 2030.

#### 4.7.2 Projection of Project Recreation Days

To evaluate the ability of the facilities at the Project to meet future recreation demands, projections of recreation days were made through 2060, which equates to approximately a maximum license term of 50 years, by activity at each location. The projections are based in part on growth coefficients developed as part of *Outdoor Recreation Trends and Futures: A Technical Document Supporting the Forest Service 2010 RPA Assessment. Projections of Outdoor Recreation Participation to 2060*, published by the United States Department of Agriculture (USDA) Forestry Service (Cordell, 2012), uses a combination of income, age, gender, and ethnicity to develop projected national participation rates (expressed as an index) for various recreational activities. Because these projections rely upon many different variables, the growth rates are more robust than simply using population projections to forecast growth in recreation demand. [Table 4.7.2-1](#) presents the USDA's growth rates for recreation participation for a scenario, which corresponds to mid-range population growth.

The recreation participation growth factors forecast changes in individual participation rates for various recreation activities. To obtain a full understanding of how recreation use is expected to change, population growth factors must be combined with the participation growth factors. [Table 4.7.2-2](#) shows the projected population growth for the Project region. Because the US Census population growth projections are only forecast through 2030, the period between 2030 and 2060 is extrapolated based on the growth forecast for the 2014 to 2030 period.

The Project area growth rate through 2060 is projected to be 5.2%. Therefore, the population growth factor of 1.052 will be multiplied by the activity-specific growth rates shown in [Table 4.7.2-1](#). These growth



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factors are shown in [Table 4.7.2-3](#), which includes the calculated recreation days growth factors (participation rate growth factor multiplied by the population growth factor).

All of the recreation activities, with the exception of hunting and fishing, are projected to increase faster than the population of the local area. The activities that are anticipated to have the greatest increases in demand are cross country skiing and related winter activities (35% growth), riding horses (23%), climbing (22%), and motor boating (20%). Hunting is expected to decline over the next several decades (-16%). The growth rate for the “unidentified recreation activity” category is calculated from the weighted average of the growth at each recreation site.

These growth coefficients were used to project recreation activity by site through 2060. The activity mix presented previously serves as the baseline 2014 numbers from which the projections were made. [Table 4.7.2-4](#) presents, for the year 2060, the projected number of recreation days by activity at the Project. With respect to whitewater boating, it should be noted that the projected use for this activity shown in the table is based on applying the expected growth rate for whitewater boating (3%) to the existing level of whitewater boating use that was observed to occur at the Project. However, whitewater boating use in the future at this Project is likely to be more dependent on the availability of information about boatable flows in the bypass reach than on the anticipated growth rate, per se.

**Table 4.7.2-1: Recreation Participation Index, through 2060, United States**

Recreation Resource Type	2010 Baseline <sup>1</sup>	2014 Indexed Participation Rate (interpolated)	2060 Indexed Participation Rate <sup>2</sup>	Growth Rate (percent), 2014 to 2060	Growth Factor 2014 to 2060
Walking/ Hiking/ Jogging	1.003	1.006	1.097	9%	1.09
Motor boating	1.007	1.004	1.154	14%	1.14
Fishing	1.000	0.995	0.970	-3%	0.97
Biking	1.003	1.006	1.097	9%	1.09
Picnicking	1.001	1.001	1.026	2%	1.02
Rock Climbing	1.005	1.006	1.176	16%	1.16
Non motor boat	0.997	0.992	1.031	3%	1.03
Interpretative—Fishway	1.004	1.006	1.089	8%	1.08
Cross-country Ski	1.012	1.014	1.309	28%	1.28
Camping	1.001	1.001	1.026	2%	1.02
Sight see—Riverboat	1.002	1.002	1.035	3%	1.03
Sight seeing	1.002	1.002	1.035	3%	1.03
Hunting	0.992	0.977	0.781	-20%	0.80
Birding	1.002	1.002	1.035	3%	1.03
Ice Fishing	1.000	0.995	0.970	-3%	0.97
Ride Horses	1.005	1.005	1.186	17%	1.17
Snow Shoeing	1.012	1.014	1.309	28%	1.28
Whitewater boating	0.997	0.992	1.031	3%	1.03
Ice Skating/ Boating	1.012	1.014	1.309	28%	1.28

<sup>1</sup>Source: Cordell, 2012.

<sup>2</sup>Ibid.

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Table 4.7.2-2: Population Projections, 2015 through 2060

	Estimated 2014 Population (Census)	Projected 2030 Population	Change, 2014 to 2030	Projected 2060 Population	Change 2014 to 2060
Franklin County, MA	70,862	70,586	-0.4%	69,798	-1.1%
Cheshire County, NH	76,115	79,861	4.9%	91,690	14.8%
Windham County, VT	43,714	43,609	-0.2%	43,309	-0.7%
<b>Total Local Area</b>	<b>190,691</b>	<b>194,056</b>	<b>1.8%</b>	<b>204,065</b>	<b>5.2%</b>

Table 4.7.2-3: Derivation of Recreation Projection Index, through 2060, Local Project Area

Recreation Resource Type	Recreation Participation Growth Factor (RPGF) 2014 to 2060 (varies by activity)	Population Growth Factor (PGF) 2014 to 2060 (constant for all activities)	Recreation Days Growth Factor, 2014 to 2060 (RPGF x PGF)
Walking/ Hiking/ Jogging	1.09	1.05	1.15
Motor boating	1.14	1.05	1.20
Fishing	0.97	1.05	1.02
Biking	1.09	1.05	1.15
Picnicking	1.02	1.05	1.08
Rock Climbing	1.16	1.05	1.22
Non motor boating	1.03	1.05	1.08
Interpretative—Fishway Viewing	1.08	1.05	1.14
Cross-country Ski	1.28	1.05	1.35
Camping	1.02	1.05	1.08
Sight seeing—Riverboat trips	1.03	1.05	1.09
Sight seeing	1.03	1.05	1.09
Hunting	0.80	1.05	0.84
Birding	1.03	1.05	1.09
Ice Fishing	0.97	1.05	1.02
Riding Horses	1.17	1.05	1.23
Snow Shoeing	1.28	1.05	1.35
Whitewater boating	1.03	1.05	1.08
Ice Skating/ Boating	1.28	1.05	1.35

Table 4.7.2-4: Projected Recreation Use by Activity Type, 2060

Recreation Activity	2014 Use (Recreation Days)	2060 Projected Use (Recreation Days)	Percent (%) of Recreation Use
Walking/Hiking/Jogging	45,691	52,320	30%
Motor Boating	18,470	22,158	13%
Fishing	9,966	10,190	6%
Bike Riding	8,744	10,013	6%
Picnicking	8,362	9,004	5%
Rock Climbing	6,703	8,182	5%
Non-motor Boating	6,656	7,199	4%

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Recreation Activity	2014 Use (Recreation Days)	2060 Projected Use (Recreation Days)	Percent (%) of Recreation Use
Interpretive—Fishway Viewing	5,061	5,756	3%
Cross-country Skiing	3,960	5,335	3%
Camping	3,478	3,745	2%
Riverboat Touring	2,733	2,966	2%
Sightseeing	1,802	1,956	1%
Hunting	1,569	1,314	1%
Birding	847	919	1%
Ice Fishing	761	778	0%
Horseback Riding	746	918	1%
Snowshoeing	188	253	0%
Whitewater boating	171	185	0%
Ice skating/ Ice boat	112	150	0%
Unidentified Recreation Activity	26,750	30,283	17%
<b>Projects Total</b>	<b>152,769</b>	<b>175,684</b>	

#### 4.7.3 Projection of Facility Demand and Capacity

The activity-specific growth rates are the basis for projecting future recreation days at each site, based on that facility's recreation mix. For example, there are three different recreation activities that take place at Pauchaug WMA. The number of recreation days in 2014 associated with each of the three activities is projected to increase by the growth factor for 2060. To forecast site-wide recreation use, the projected use for each of the activities observed at Pauchaug WMA is summed. [Table 4.7.3-1](#) presents the number of recreation days projected for 2060 at each site within the Project.

The growth rates for each recreation site serve as the basis for projecting future parking lot demand figures, and thereby capacity, in terms of average summer weekend use. [Table 4.7.3-2](#) presents the level of parking lot use projected for 2060 at each site within the Project. As shown, it is projected that all of the recreation sites at the Projects will be under-capacity on the average summer weekend in 2060, with the majority of the anticipated to be less than half-filled on those weekend days.

**Table 4.7.3-1: Projected 2060 Recreation Days by Site**

Season	2014 Estimated Recreation Days	2060 Projected Recreation Days	Percent Growth, 2014 to 2060
Governor Hunt Boat Launch/Picnic Area	1,812	2,086	15%
Pauchaug WMA	1,004	971	-3%
Pauchaug Boat Launch	9,630	10,999	14%
Bennett Meadow WMA	3,729	3,858	3%
Munn's Ferry Boat Camping Recreation Area	1,716	1,948	14%
Boat Tour and Riverview Picnic Area	13,651	15,203	11%
Northfield Mountain Tour and Trail Center	20,024	24,009	20%
Cabot Camp Access Area	5,326	5,750	8%
Barton Cove Nature Area	7,842	8,553	9%
Barton Cove Campground	2,963	3,190	8%
Barton Cove Canoe and Kayak Rental Area	4,455	4,847	9%

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Season	2014 Estimated Recreation Days	2060 Projected Recreation Days	Percent Growth, 2014 to 2060
State Boat Launch	15,126	17,792	18%
Canalside Trail Bike Path	6,362	7,272	14%
Gatehouse Fishway Viewing Area	27,345	30,679	12%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	1,264	1,449	15%
Cabot Woods Fishing Access	18,230	20,510	13%
Poplar Street Access Site	1,877	2,014	7%
Rose Ledge Climbing Area Parking	1,790	2,160	21%
Farley Ledge Climbing Area—Wells Street Parking	2,390	2,800	17%
Farley Ledge Climbing Area—Route 2 Parking	6,232	7,532	21%
<b>Annual Total</b>	<b>152,769</b>	<b>175,684</b>	<b>15%</b>

Table 4.7.3-2: Projected 2060 Average Summer Weekend Use by Site

Site	Available Spaces	2060 Projected Spaces in Use, summer weekend	Percent Capacity (rounded)
Governor Hunt Boat Launch/Picnic Area	4	2	50%
Pauchaug WMA	20	0.1	>5%
Pauchaug Boat Launch	32	7	25%
Bennett Meadow WMA	7	1	15%
Boat Tour and Riverview Picnic Area	27	3	15%
Northfield Mountain Tour and Trail Center	57	6	10%
Cabot Camp Access Area	20	3	15%
Barton Cove Nature Area	26	9	35%
Barton Cove Canoe and Kayak Rental Area	28	7	30%
State Boat Launch	46	31	70%
Canalside Trail Bike Path	N/A	N/A	N/A
Gatehouse Fishway Viewing Area	29	7	25%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	26	0.2	>5%
Cabot Woods Fishing Access	20	6	30%
Poplar Street Access Site	16	2	15%
Rose Ledge Climbing Area Parking	10	6	65%
Farley Ledge Climbing Area—Wells Street Parking	16	10	65%
Farley Ledge Climbing Area—Route 2 Parking	8	2	30%
<b>Total</b>	<b>392</b>	<b>103</b>	<b>30%</b>
Site	Available Sites	2060 Projected Sites in Use, summer weekend	Percent Capacity (rounded)
Munn's Ferry Boat Camping Recreation Area	5	2	45%

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Site	Available Sites	2060 Projected Sites in Use, summer weekend	Percent Capacity (rounded)
Barton Cove Campground	29	11	40%
<b>Total</b>	<b>34</b>	<b>13</b>	<b>40%</b>

**4.8 Summary of Findings of 3.6.2**

FirstLight conducted a *Recreation Facilities Inventory* (Study 3.6.2), which was conducted over the course of multiple field visits between October, 2011 and May 2015 (FirstLight, 2014). The purpose of the inventory was to identify the existing recreation sites and facilities within the Turners Falls and Northfield Mountain Project boundaries.

The initial inventory identified 19 formal recreation sites that are located partially or wholly within the FERC Project boundary for one or both of the Projects. Of these formal sites, 10 are recreation sites that are owned and managed by FirstLight as Project Recreation Sites pursuant to the Projects’ recreation plans. Five (5) of the formal recreation sites that provide access to the Projects are operated by the Commonwealth of Massachusetts. Of the 24 sites included in the original inventory, the remaining sites are either formal recreation sites, operated by others and open to the public, a portion of which lies within the Project boundaries, or informal recreation sites that receive significant use and that provide access to the Projects.

After completion of the original inventory, FERC required that FirstLight prepare an addendum and provide a full inventory and assessment of several additional recreation sites including all climbing areas within the Project boundaries; the put-in site downstream of Turners Falls Dam; separate descriptions of the Poplar Street Access Site and the Portage Route including take-out and put-in locations; and additional details about the Cabot Woods Fishing Access site.

Results of the original inventory and addendum identified 28 formal (improved) and informal (unimproved) recreation sites located at the Projects. These sites were found to provide a wide array of year-round recreational opportunities for the public, including boating, fishing, camping, picnicking, hiking, biking, walking, skiing, and sightseeing.

All of the formal recreation sites within the Project boundaries were found to be meeting their intended function. Most of the facilities at these sites were given a condition rating of 4, indicating the facilities were in good condition, and functioning as intended. A few facilities (Pauchaug Wildlife Management Area Boat Launch, Poplar Street Access Site) were given a rating of 3 indicating the facility was in need of some maintenance, but that the facility was functioning. Only one facility (Governor Hunt Boat Launch) was given a condition rating of less than 3, indicating the need for facility equipment repairs or replacement.

The user surveys collected as part of this study provide some additional insight into how the recreational users perceive the facilities and amenities provided at the surveyed recreation sites. Project-wide, the survey questions “what did you like least about your recreation experience” and “what detracted most from your recreational experience” generated some consistent responses with respect to site and facility condition and availability. Table 4.8-1 provides a summary of the number of times some of the more frequently mentioned concerns related to site condition and the availability of facilities and amenities.<sup>7</sup> Overall, trash removal and littering was the problem most consistently reported by users across all recreation sites. Parking lot and road maintenance (including winter plowing) was the second most frequently cited concern, followed by the need for or availability of restrooms. A few other consistently reported concerns included dogs, goose droppings, and the behavior of other recreationists.

Trash and litter were mentioned primarily at Cabot Woods Fishing Access, Pauchaug Boat Launch, and Poplar Street Access Site. Approximately 50% of the comments addressing parking lot and road

<sup>7</sup> Weather was consistently noted as a problem, but is not included in this table.

maintenance/plowing were received from Bennett Meadows WMA, Pauchaug Boat Launch, State Boat Launch, and Cabot Camp Access Area. 34% of comments on bathrooms/restrooms were made at the Gatehouse Fishway Viewing Area, with additional comments primarily from the Boat Tour and Riverview Picnic Area, the Bike Path, and Cabot Woods Fishing Access. Dogs were mentioned as negatively impacting recreationists at the Gatehouse Fishway Viewing Area, Cabot Woods Fishing Access, the Bike Path, and Poplar Street Access Site. 82% of the comments related to goose droppings/goose feedings came from two sites: the Gatehouse Fishway Viewing Area and the Bike Path. The behavior of other recreationists was mentioned at Gatehouse Fishway Viewing Area, Cabot Woods Fishing Access, the Bike Path, and Poplar Street Access Site. [Table 4.8-2](#) summarizes selected responses to User Survey questions by site.

An examination of user ratings of site specific conditions provides further information on user perceptions of recreation site and facility condition and availability. [Tables 4.8-3](#) through [4.8-7](#) show the ratings that users gave at each site with respect to facility condition, variety of amenities, parking, toilets/restrooms, and river access. As shown, facility condition was generally rated Excellent to Fair at almost all sites, and at no sites was facility condition consistently rated less than Fair.

The variety of amenities provided at the recreation sites was also generally rated high, with many of the sites receiving ratings of Excellent (5) or Fair-Excellent (4) ([Table 4.8-4](#)). Exceptions included a higher percentage of Poor ratings for Pauchaug WMA, Bennett Meadow WMA, Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access, and Poplar Street Access Site. It must be noted, however, that the number of survey responses (N) for the Pauchaug WMA and Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access sites is quite low (5 and 2, respectively), and so the results for these two sites must be viewed with caution. On the other hand, the number of responses for the Bennett Meadow WMA and the Poplar Street Access sites provides data to determine that the higher percentage (17% and 12%, respectively) of Poor ratings, suggests that users of these two sites find them lacking in amenities.

User ratings of parking at the recreation sites was also consistently high, with nearly all sites receiving a rating of Excellent (5) or Fair-Excellent (4) by a majority of users ([Table 4.8-5](#)). There were a few notable instances where a number of users rated parking less than fair (1 or 2) including the Governor Hunt Boat Launch/Picnic Area, the Poplar Street Access Site, and parking areas utilized for accessing the Farley Ledge Climbing Area. Again, ratings that are based on very few responses should be viewed with caution.

User ratings of toilets and restrooms was highly variable among the sites ([Table 4.8-6](#)). For the most part, sites with restroom facilities with flush toilets received relatively high ratings; including the Boat Tour and Riverview Picnic Area, Barton Cove Nature Area and Campground, and the NMTTC. Recreation sites with portable toilets generally received mixed ratings, including the Pauchaug Boat Launch and State Boat Launch, both of which received a notable percentage of Poor (1) and Fair-Poor (2) ratings. Restroom facilities at the State Boat Launch, in particular, received low ratings, with a majority of users (62%) rating those portable toilets as Poor (1) or Fair-Poor (2). While Munn's Ferry Boat Camping Recreation Area received less positive ratings, with 50% rating the portable toilets as Fair and 50% rating the facilities as Fair-Poor, there were only two responses and thus this rating should be viewed with caution. Sites that currently have no restroom facilities also received a variety of ratings. Sites with no restroom facilities that received notably low ratings included the Bennett Meadow WMA, Cabot Camp Access Area, Cabot Woods Fishing Access, and the Poplar Street Access Site. Because there are currently no restroom or toilet facilities at any of those sites, it is reasonable to assume that a low rating for toilets/restrooms was a result of the lack of such facilities, rather than the general condition of the site, per se.

User ratings of river access for sites where such access is available are provided in ([Table 4.8-7](#)). In general, the majority of ratings for river access were either Excellent (5) or Fair-Excellent (4), for nearly all sites. The one notable exception were the ratings for the Poplar Street Access Site, where the majority of respondents rated river access as Fair (13%), Fair-Poor (38%), or Poor (13%).

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Finally, the user survey asked respondents to rank the overall quality of the recreation site, facilities and amenities (Table 4.8-8). Overwhelmingly, survey respondents rated the overall quality very high, with all sites receiving a majority of ratings of either Excellent (5) or Fair-Excellent (4).

**Table 4.8-1: Summary of the Most Frequent Responses to User Survey Questions Regarding Factors that Respondents Liked Least or Detracted from their Visit**

Response	Number of Responses to What did you like least?	Number of Responses to What detracted from your visit?
Trash/litter	41	31
Parking lot and road maintenance/plowing	28	13
No restrooms/restrooms closed	23	9
Dogs	23	13
Goose droppings/goose feedings	23	10
Behavior of Other Recreationists	19	13

**Table 4.8-2: Selected Responses by Site to User Survey Questions Regarding Factors that Respondents Liked Least or Detracted from their Visit**

Site	Trash/litter (n=70)	Parking lot and road maintenance/plowing (n=41)	No restrooms/restrooms closed (n=32)	Dogs (n=36)	Goose droppings/goose feedings (n=33)	Behavior of Other Recreationists (n=31)
Governor Hunt Boat Launch/Picnic Area	1%	5%	0%	0%	0%	0%
Pauchaug WMA	0%	5%	0%	0%	0%	0%
Pauchaug Boat Launch	16%	12%	6%	0%	0%	6%
Bennett Meadow WMA	6%	15%	6%	3%	0%	6%
Munn's Ferry Boat Camping Recreation Area	0%	0%	0%	0%	0%	0%
Boat Tour and Riverview Picnic Area	1%	0%	13%	0%	0%	0%
Cabot Camp Access Area	9%	10%	6%	3%	0%	10%
Barton Cove Nature Area and Campground	9%	2%	3%	11%	0%	6%
Barton Cove Canoe and Kayak Rental Area	7%	5%	3%	3%	0%	0%
State Boat Launch	3%	12%	0%	0%	6%	3%
Canalside Trail Bike Path	6%	5%	13%	17%	27%	16%
Gatehouse Fishway Viewing Area	13%	7%	34%	28%	55%	26%

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Site	Trash/ litter (n=70)	Parking lot and road maintenance/ plowing (n=41)	No restrooms/ restrooms closed (n=32)	Dogs (n=36)	Goose droppings/ goose feedings (n=33)	Behavior of Other Recreationists (n=31)
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	0%	0%	0%	0%	3%	0%
Cabot Woods Fishing Access	16%	2%	13%	19%	6%	13%
Poplar Street Access Site	14%	7%	3%	17%	3%	13%
Rose Ledge Climbing Area Parking	0%	2%	0%	0%	0%	0%
Farley Ledge Climbing Area—Wells Street Parking	0%	5%	0%	0%	0%	0%
Farley Ledge Climbing Area—Route 2 Parking	0%	5%	0%	0%	0%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Table 4.8-3: User Ratings of Facility Condition

Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Governor Hunt Boat Launch/Picnic Area <sup>1</sup>	9	11%	56%	22%	11%	0%
Pauchaug WMA	6	17%	67%	0%	17%	0%
Pauchaug Boat Launch	62	34%	35%	23%	8%	0%
Bennett Meadow WMA	44	30%	43%	20%	5%	2%
Munn's Ferry Boat Camping Recreation Area	6	67%	33%	0%	0%	0%
Boat Tour and Riverview Picnic Area	53	72%	15%	11%	2%	0%
Northfield Mountain Tour and Trail Center	104	59%	34%	6%	2%	0%
Cabot Camp Access Area	63	52%	32%	14%	2%	0%
Barton Cove Nature Area and Campground	136	44%	43%	9%	4%	0%
Barton Cove Canoe and Kayak Rental Area	8	38%	50%	13%	0%	0%
State Boat Launch	83	23%	46%	28%	4%	0%
Canalside Trail Bike Path	4	50%	25%	25%	0%	0%
Gatehouse Fishway Viewing Area	197	46%	38%	13%	4%	0%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	2	0%	0%	100%	0%	0%
Cabot Woods Fishing Access	200	45%	44%	8%	3%	0%
Poplar Street Access Site	27	19%	33%	33%	11%	4%
Rose Ledge Climbing Area Parking	8	13%	88%	0%	0%	0%
Farley Ledge Climbing Area—Wells Street Parking	4	25%	50%	25%	0%	0%
Farley Ledge Climbing Area—Route 2 Parking	8	50%	25%	13%	0%	13%

<sup>1</sup>This site is also in the Vernon Project boundary and is owned and maintained by the Licensee of that project.



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**Table 4.8-4: User Ratings of Variety of Amenities**

Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Governor Hunt Boat Launch/Picnic Area	9	11%	44%	33%	11%	0%
Pauchaug WMA	5	0%	20%	40%	0%	40%
Pauchaug Boat Launch	62	13%	23%	47%	13%	5%
Bennett Meadow WMA	42	7%	29%	33%	14%	17%
Munn's Ferry Boat Camping Recreation Area	6	33%	33%	0%	33%	0%
Boat Tour and Riverview Picnic Area	51	49%	39%	12%	0%	0%
Northfield Mountain Tour and Trail Center	102	47%	34%	13%	6%	0%
Cabot Camp Access Area	62	21%	29%	39%	11%	0%
Barton Cove Nature Area and Campground	135	38%	44%	16%	2%	0%
Barton Cove Canoe and Kayak Rental Area	8	38%	50%	13%	0%	0%
State Boat Launch	82	9%	32%	45%	7%	7%
Canalside Trail Bike Path	4	75%	25%	0%	0%	0%
Gatehouse Fishway Viewing Area	195	37%	40%	19%	4%	0%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	2	0%	0%	50%	0%	50%
Cabot Woods Fishing Access	200	33%	35%	21%	11%	1%
Poplar Street Access Site	26	8%	15%	31%	35%	12%
Rose Ledge Climbing Area Parking	6	0%	17%	50%	33%	0%
Farley Ledge Climbing Area—Wells Street Parking	5	40%	20%	20%	20%	0%
Farley Ledge Climbing Area—Route 2 Parking	7	29%	43%	14%	14%	0%

**Table 4.8-5: User Ratings of Parking**

Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Governor Hunt Boat Launch/Picnic Area	9	11%	56%	11%	11%	11%
Pauchaug WMA	6	33%	17%	50%	0%	0%
Pauchaug Boat Launch	63	63%	19%	11%	0%	6%
Bennett Meadow WMA	44	30%	39%	23%	5%	5%
Munn's Ferry Boat Camping Recreation Area	2	0%	0%	100%	0%	0%
Boat Tour and Riverview Picnic Area	51	76%	16%	8%	0%	0%
Northfield Mountain Tour and Trail Center	109	62%	32%	3%	2%	1%
Cabot Camp Access Area	62	45%	35%	13%	3%	3%
Barton Cove Nature Area and Campground	135	46%	42%	10%	2%	0%
Barton Cove Canoe and Kayak Rental Area	8	38%	50%	0%	13%	0%
State Boat Launch	84	37%	32%	24%	5%	2%
Canalside Trail Bike Path	0	N/A	N/A	N/A	N/A	N/A
Gatehouse Fishway Viewing Area	200	48%	39%	12%	1%	1%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	2	100%	0%	0%	0%	0%
Cabot Woods Fishing Access	201	43%	39%	12%	6%	0%
Poplar Street Access Site	27	41%	22%	22%	11%	4%
Rose Ledge Climbing Area Parking	10	0%	30%	60%	10%	0%

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Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Farley Ledge Climbing Area—Wells Street Parking	5	20%	0%	20%	60%	0%
Farley Ledge Climbing Area—Route 2 Parking	8	25%	25%	38%	0%	13%

**Table 4.8-6: User Ratings of Toilets/Restrooms**

Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Governor Hunt Boat Launch/Picnic Area	1	0%	100%	0%	0%	0%
Pauchaug WMA	0	N/A	N/A	N/A	N/A	N/A
Pauchaug Boat Launch	8	13%	13%	38%	13%	25%
Bennett Meadow WMA	6	0%	0%	0%	0%	100%
Munn's Ferry Boat Camping Recreation Area	2	0%	0%	50%	50%	0%
Boat Tour and Riverview Picnic Area	12	67%	33%	0%	0%	0%
Northfield Mountain Tour and Trail Center	28	57%	36%	7%	0%	0%
Cabot Camp Access Area	13	0%	0%	8%	0%	92%
Barton Cove Nature Area and Campground	24	38%	50%	8%	4%	0%
Barton Cove Canoe and Kayak Rental Area	3	67%	0%	0%	33%	0%
State Boat Launch	13	0%	23%	15%	31%	31%
Canalside Trail Bike Path	0	N/A	N/A	N/A	N/A	N/A
Gatehouse Fishway Viewing Area	25	4%	24%	16%	8%	48%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	0	N/A	N/A	N/A	N/A	N/A
Cabot Woods Fishing Access	22	5%	9%	9%	5%	73%
Poplar Street Access Site	6	0%	0%	17%	17%	67%
Rose Ledge Climbing Area Parking	0	N/A	N/A	N/A	N/A	N/A
Farley Ledge Climbing Area—Wells Street Parking	3	0%	33%	33%	0%	33%
Farley Ledge Climbing Area—Route 2 Parking	3	33%	0%	33%	33%	0%

**Table 4.8-7: User Ratings of River Access**

Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Governor Hunt Boat Launch/Picnic Area	1	0%	100%	0%	0%	0%
Pauchaug WMA	1	0%	0%	0%	0%	100%
Pauchaug Boat Launch	8	50%	38%	13%	0%	0%
Bennett Meadow WMA	13	23%	8%	54%	0%	15%
Munn's Ferry Boat Camping Recreation Area	2	50%	50%	0%	0%	0%
Boat Tour and Riverview Picnic Area	12	58%	17%	17%	8%	0%
Cabot Camp Access Area	18	67%	28%	6%	0%	0%
Barton Cove Nature Area and Campground	29	45%	48%	0%	3%	3%
Barton Cove Canoe and Kayak Rental Area	3	100%	0%	0%	0%	0%
State Boat Launch	17	29%	53%	12%	6%	0%
Gatehouse Fishway Viewing Area	49	49%	33%	16%	0%	2%

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Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	0	N/A	N/A	N/A	N/A	N/A
Cabot Woods Fishing Access	36	33%	47%	14%	6%	0%
Poplar Street Access Site	8	13%	25%	13%	38%	13%

Table 4.8-8: User Ratings of Overall Quality

Recreation Site	(N)	Ratings				
		5 Excellent	4	3 Fair	2	1 Poor
Governor Hunt Boat Launch/Picnic Area	9	11%	56%	33%	0%	0%
Pauchaug WMA	6	17%	67%	17%	0%	0%
Pauchaug Boat Launch	63	30%	46%	21%	3%	0%
Bennett Meadow WMA	45	33%	38%	27%	2%	0%
Munn's Ferry Boat Camping Recreation Area	6	67%	33%	0%	0%	0%
Boat Tour and Riverview Picnic Area	53	70%	19%	11%	0%	0%
Northfield Mountain Tour and Trail Center	110	62%	30%	7%	1%	0%
Cabot Camp Access Area	62	47%	42%	10%	2%	0%
Barton Cove Nature Area and Campground	138	46%	43%	9%	2%	0%
Barton Cove Canoe and Kayak Rental Area	8	50%	38%	13%	0%	0%
State Boat Launch	83	24%	49%	24%	2%	0%
Canalside Trail Bike Path	4	75%	25%	0%	0%	0%
Gatehouse Fishway Viewing Area	196	45%	45%	9%	1%	0%
Turners Falls Branch Canal Area/Turners Falls Station No. 1 Fishing Access	2	0%	100%	0%	0%	0%
Cabot Woods Fishing Access	200	42%	49%	9%	1%	1%
Poplar Street Access Site	27	22%	41%	26%	11%	0%
Rose Ledge Climbing Area Parking	9	22%	67%	11%	0%	0%
Farley Ledge Climbing Area—Wells Street Parking	5	40%	60%	0%	0%	0%
Farley Ledge Climbing Area—Route 2 Parking	8	38%	38%	13%	13%	0%

#### 4.9 Summary of Findings of 3.6.3

FirstLight conducted Study 3.6.3, a Whitewater Boating Evaluation in the 2.7-mile long Turners Falls Dam bypass reach (from Turners Falls Dam to Cabot Station) (Firstlight, 2015d). The primary objectives of the study were to assess the effects of a range of bypass reach flows on whitewater conditions, to determine the range of flows needed to support various whitewater boating opportunities by watercraft, and to determine how frequently such opportunities are currently available. The study was also designed to examine current and future demand for whitewater boating in the bypass reach, and to identify the need for and define adequate access points along the bypass reach.

The study evaluated six flows (2,500, 3,500, 5,000, 8,000, 10,000 and 13,000 cfs) and found that all of the flows provided an acceptable boating experience for most watercraft type in the bypass reach, with overall optimal boating conditions for most watercraft type occurring in the 5,000-8,000 cfs range. Additionally, both lower and higher flows rated well with the boaters that participated in the study, although the ratings were dependent on the type of watercraft and skill level of the boater. A hydrologic assessment of the frequency of boatable flows (>2,500 cfs) found that boatable flows can be expected to occur approximately

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45 days between April and November, with most boating opportunities occurring in the spring; approximately 74% of the time in April and 38 % of the time in May. Boatable flows can also be expected to occasionally occur during the summer and fall.

Boaters participating in the study rated the bypass reach as a Class I to a Class IV whitewater run (depending on flows), but for most evaluation flows, the Class IV rating was attributed to a single feature, the Rock Dam, a natural bedrock vertical drop in the river gradient located close to the downstream end of the bypass reach.

Regarding potential future use and demand, based on information collected from the boaters that participated in the study, the level of interest for boating flows in the bypass reach was found to be dependent on the magnitude of the flow. Boaters participating in the study were asked to compare the bypass reach with the other regional boating opportunities. Most participating boaters indicated that they would return to the bypass reach although overall, boaters rated most of the other regional rivers as more desirable than the bypass reach. The study also examined other regional whitewater boating opportunities including both controlled releases and those dependent on natural flows.

The results of the 3.6.3 study found that whitewater boating opportunities are available in the Turners Falls bypass reach under current Project operations ([FirstLight, 2015d](#)). In addition, the study examined the put-in and take-out opportunities that currently exist that provide whitewater boaters with access to the bypass reach ([Table 4.9-1](#)). Use and utilization of these sites were evaluated as part of the 3.6.1 study report, as shown in the [Table 4.9-1](#).

From a use and utilization perspective the three sites that currently provide access to the bypass area are well below their capacity, based on parking lot usage. Another site that was identified in the 3.6.3 study that has the potential to provide additional access to the bypass reach is the Turners Falls Dam Downstream Put-in site. This site was used as a put-in location for the whitewater boating study of the bypass, but is a lightly used, informal site, that was not included in the initial inventory study (3.6.2) or this use and user survey study (3.6.1). However, an inventory of this put-in site was completed in 2015, after field work (2014) for the use and user survey was completed and is reported on in the 3.6.2 Addendum ([FirstLight, 2015e](#)).

**Table 4.9-1: Primary Observed Recreation Uses and Percent Utilization of Recreation Sites that Provide Access to the Turners Falls Bypass Reach**

Site ID	Recreation Site Name	Most Common Observed Uses	Percent Capacity Utilized
22	Turners Falls Station No. 1 Fishing Access	1) Walking/Hiking/Jogging 2) Fishing 3) Bike riding 4) Cross-country skiing	1%
23	Cabot Woods Fishing Access	1) Walking/Hiking/Jogging 2) Fishing 3) Bike riding	25%
25	Poplar Street Access Site	1) Fishing 2) Walking/Hiking/Jogging 3) Non-motorized boating	10%

#### 4.10 Summary of Findings of 3.6.4

FirstLight conducted Study 3.6.4, *Assessment of Day Use and Overnight Facilities Associated with Non-Motorized Boats* ([FirstLight, 2014c](#)). The primary purposes of the study were to determine the number and spacing of existing overnight facilities and access sites to support self-powered boating trips including the need for additional and future facilities. The study was also designed to examine some specific self-powered boating access questions including the feasibility of alternate walkable canoe portages, and possible

locations for future carry-in boat facilities. The study examined the Connecticut River from Vernon Dam to the Sunderland Bridge, a distance of about 32 miles. Both literature and a field survey were used to identify existing and potential access and campsites.

Background research identified three (3) formal existing campsites, ten (10) formal existing access sites, 21 possible locations for campsites, and four (4) possible locations for access sites in the study area, if additional sites were determined needed in the future. The field assessment identified eight (8) additional possible locations for campsites and seven (7) additional possible locations for access sites in the study area if additional campsites or access sites were determined needed in the future.

Regarding spacing, the study found that the distance between existing campsites within the Turners Falls Project boundary ranges from 6.8 and 10.4 miles, which is consistent with recreational planning guidelines for campsite spacing of between 3-15 miles used on other trails, and is also consistent with Friends of the Connecticut River Paddlers' Trail's (FCRPT) short term goal of 15 mile spacing between campsites. With respect to access, the study found the distance between existing access sites to range between 1.3 miles and 9 miles, which is also consistent with planning guidelines for other water trails and with the FCRPT's goal of access every 5 to 10 miles.

With respect to access to the bypass reach, the study found three (3) existing informal access points to the Turners Fall bypass reach for non-motorized boating access (assessed and discussed in the study report for Study 3.6.3 *Whitewater Boating Evaluation* ([FirstLight, 2015d](#))). Due to the nature of the bypass reach, use of these access sites would be limited to boaters skilled and experienced with whitewater boating, and would not be suitable for use by flatwater boaters.

The feasibility of developing a walkable portage trail around Turners Falls Dam was also assessed as part of the study. Potential portage routes assessed would utilize the Canalside Trail Bike Path, a nonmotorized paved multi-use trail that parallels Turner Falls Station No. 1 and Cabot Station power canal to Cabot Station, then follow public side streets to the lower section of the Canalside Trail Bike Path to the existing portage put-in site at Poplar Street. One alternative route downstream of Cabot Station to the Poplar Street Access Site was also assessed. The Canalside Trail Bike Path could be utilized as a hand carry portage route (approximately three miles) around Turners Falls Dam and the bypass reach; however, the existing vehicle portage provided by FirstLight also provides sufficient portage around the Turners Falls Dam.

When considered in the context of the use and user surveys, an assessment of existing access and campsite usage along the Connecticut River portion of the Project yields further insight. Of the access sites considered in the 3.6.4 study, several were also assessed as part of the use and user survey, as shown in [Table 4.10-1 \(FirstLight, 2015c\)](#).

As shown, the areas considered in the *Assessment of Day Use and Overnight Facilities Associated with Non-Motorized Boats* (Study 3.6.4) and surveyed as part of this study as providing river access and camping opportunities that would contribute to multi-day non-motorized boating trips along the Connecticut River in the vicinity of the Project, are well below their capacity ([FirstLight, 2015c](#)). Among the campgrounds available, the highest utilization rate occurs at the Barton Cove Nature Area and Campground (40%), while utilization at the Munn's Ferry Boat Camping Recreation Area is lower (30%). Similarly, utilization rates of the existing access sites identified in the 3.6.4 study are generally low. Of the seven access sites currently available for non-motorized boating access, only one, the State Boat Launch (65%) was found to have a percent of capacity utilization rate of greater than 50%. The Governor Hunt Boat Launch/Picnic Area has a utilization rate of 50%. All the remaining access sites were found to have utilization rates of 20% or less.

**Table 4.10-1: Percent Capacity Utilized for Access and Camping Site Locations Identified in the 3.6.4 Study Report and Included in the Use and User Surveys<sup>1</sup>**

Site Name/ Designation	Facilities/ Amenities	Location <sup>2</sup>	Access and/or Camping	Percent Capacity Utilized
Governor Hunt Boat Launch/ Picnic Area	Hard surface boat launch	RM 0.1 River right	Access	50%
<i>Stebbins Island<sup>3</sup></i>	<i>Water access camping</i>	<i>RM 1.1 island</i>	<i>Camping</i>	
Pauchaug Boat Launch	Hard surface boat launch	RM 6.5 River left	Access	20%
Munn's Ferry Boat Camping Recreation Area	5 water access campsites, dock	RM 11.5 River left	Camping	30%
Boat Tour and Riverview Picnic Area	Parking, picnic area, pavilion, tour boat dock	RM 14.7 River left	Access	10%
Cabot Camp Access Area	Parking	RM 16.2 River left	Access	15%
Barton Cove Nature Area and Campground	Carry-in access, campsites	RM 18.3 River right	Access & Camping	Access: 20% Camping: 40%
Barton Cove Canoe and Kayak Rental	Carry-in access	RM 19.6 River right	Access	20%
State Boat Launch	Hard surface boat ramp	RM 19.6 River right	Access	65%
Poplar Street Access Site	Parking, unimproved path to river	RM 23.5 River left	Access	10%
<i>Sunderland Bridge Boat Launch<sup>4</sup></i>	<i>Unimproved boat launch</i>	<i>RM 32.5 River left</i>	<i>Access</i>	
<i>Sunderland Bridge access<sup>4</sup></i>	<i>Parking and foot path to river</i>	<i>RM 32.5 River right</i>	<i>Access</i>	

<sup>1</sup> Note: Sites shown in italics were not included in the Use and User Survey.

<sup>2</sup> River miles (RM) measurements are distance downstream from Vernon Dam, with Vernon Dam being river mile 0.0.

<sup>3</sup> This site is also located within the project boundary for the upstream Vernon Hydroelectric Project and is managed by that Project's licensee.

<sup>4</sup> FERC's SPDL stated that it did not recommend surveying users in the stretch of river from below Poplar Street access site to the Sunderland Bridge because recreation access points below Poplar Street access site are not integrally connected to the Project.

#### 4.11 Summary of Findings of 3.6.7

FirstLight conducted Study 3.6.7, *Recreation Study at Northfield Mountain, Including Assessment of Sufficiency of Trails for Shared Use* (FirstLight, 2015b). The primary objectives of the study were to determine whether the Northfield Mountain Tour and Trail Center (NMTTC) is meeting recreation needs and if improvements or additions are necessary at the NMTTC; and to identify uses taking place on the current trail system and whether the current trail system is suitable and adequate for sustaining those uses. The study area included the land and facilities located within the Northfield Mountain Project boundary, which are associated with the NMTTC. This included the approximately 25 miles of trails associated with the NMTTC, a portion of the New England National Scenic Trail, the Blue Connector Trail, the Upper Reservoir Mountaintop Observation area, climbing areas (Rose Ledge and a portion of Farley Ledge) within the Project boundary, and the Visitor Center. The study utilized a combination of NMTTC program registration data, use and user surveys, and a field assessment of the existing Northfield Mountain Trail System and associated facilities.

Study results determined that the NMTTC is a well-utilized regional recreation resource that provides a wide variety of opportunities, programs and amenities. The study found that the NMTTC supported an estimated 20,024 recreation days in 2014 which included participation in environmental and recreation programs, as well as trail use. User surveys found that overall, visitors to the NMTTC were satisfied with the amenities and programs available.

With respect to use trends and potential future demand, a review of current and historic registration data found that participation in the programs provided at the Visitor Center and use of the NMTTC has remained relatively consistent in the near term (within the past 5-10 years), although there has been a downward trend over the long-term in the use of environmental programs, the Quinnetukut II riverboat cruises, and tours of the Turners Falls Fishway, despite the fact that the number of environmental programs offered has remained relatively constant.

The study found that the NMTTC trail system supported an estimated 16,123 recreation days in 2014. The trail assessment found the trail system to be well designed, well maintained, and in good condition. Although the trails were originally designed primarily for hiking and skiing, the study determined that the ski trail system can also support mountain biking and horseback riding. However, the hiking and snowshoe trails, were determined to be not as suitable for use by mountain bikes or horses. The evaluation of the condition of the NMTTC trails also identified a few areas where measures to address drainage and erosion issues could be implemented to improve the long-term sustainability of the trails. Responses by trail users to survey questions regarding the NMTTC Trail System were overwhelmingly positive, with respondents agreeing (or strongly agreeing) that the trails are in good condition, well-maintained and groomed (in winter) and are sufficient in number and mix of difficulty.

Capacity of the NMTTC site was examined in a variety of ways through both this study and through the 3.6.7 study ([FirstLight, 2015b](#)). Parking capacity and percent utilization of parking at the NMTTC provides one measure of the site utilization and capacity for this site. As shown in [Table 4.1-3](#) parking capacity at NMTTC is utilized at an average rate of 10%. Use of NMTTC facilities, trails and programs was examined in more detail in the 3.6.7 study report. In particular, the 3.6.7 study examined use of the NMTTC Trail System and found that the condition of the trail system is very good and well maintained, suggesting that current use levels do not exceed the capacity of the trail system. Nor did the 3.6.7 study determine that there are any notable conflicts among recreationists using the trails for different activities, such as hiking, biking or horseback riding. However, the 3.6.7 study report did note that the trails that are designed primarily for winter cross-country skiing use, are generally more suitable for mountain biking and horseback riding than are some of the narrower and steeper hiking trails.

#### **4.12 Review of Power Boat Use Findings from Study 3.1.2 Northfield Mountain/Turners Falls Operations Impact on Existing Erosion and Potential Bank Instability**

At the Updated Study Report Meeting (USR) (September 30, 2015) and in written comments filed on the USR, the Connecticut River Watershed Council suggested that power boat counts made via video imaging conducted as part of Study 3.1.2, be reviewed to see if the resulting boat count data would provide any additional useful information about recreational boating use of the Turners Falls Impoundment. As outlined in the Study 3.1.2 study plan (and the resulting study report) video imaging was used to log the number of power boats observed in the Turners Falls Impoundment at each of three locations over the summer 2015 recreation season ([FirstLight, 2015](#)). For Study 3.1.2, the boating data was collected along with wave data, and was used to consider the potential contribution of boat wakes/waves on impoundment shoreline erosion.

As requested, the boat count data collected from the four video stations was reviewed for possible inclusion in this report. Upon review, however, it was determined that the resulting boat counts were of minimal to no value to this recreation study, primarily because the boat counts made via video were simply counts of boats passing by a monitoring station and could not be correlated with the use estimates generated through this study based on the spot and calibration counts. Thus, in the absence of other information about the

boats observed on the video, such as the starting location of the trip, the number of recreationists in each craft, and the intended purpose of their boating trip (e.g., fishing, etc.), the Study 3.1.2 boat count data was found to produce no useful additional information about recreation use or the recreationists using the impoundment.



## 5 DISCUSSION

The results of the use and user survey study provide a comprehensive picture of recreation use at the Turners Falls and Northfield Mountain Projects, including use at both Project recreation sites, and other formal and informal recreation sites that are utilized by the public to access Project lands and waters for recreation.

The primary methods used to collect the study data were recreation use counts and user surveys. Recreational use at the Projects was determined primarily through spot counts and calibration counts, as well as the use of traffic counters at the primary recreation sites. In total, use data was collected on 212 days throughout 2014, with good representation across all months and seasons and between weekdays, weekend days, and holidays. This data was augmented in places with actual records of user registrations kept by FirstLight, for such amenities as the Northfield Mountain Trail System (winter only), campgrounds, the Gatehouse Fishway Viewing Area, and the Boat Tour and Riverview Picnic Area.

User surveys were utilized to gain information on what recreation activities users were participating in, as well as their perceptions of the recreation opportunities provided at the Project, and the quality of the recreation sites, facilities and amenities provided. Residents along the Turners Falls Impoundment were also surveyed to obtain information on residents' recreational use of the Projects, along with their perceptions of Project recreation opportunities. Finally, surveys of a few other key user groups, including private clubs and organizations were also conducted to get the most comprehensive picture of how the Projects are being utilized for recreation.

### 5.1 Recreation Use

Based on use counts and registrations, FirstLight estimated total recreational use of the Turners Falls and Northfield Mountain Projects to be 152,769 recreation days in 2014. Use was highest in the summer (50%), followed by the fall (23%), spring (16%), and winter (10%). On a monthly basis, recreation use was greatest in August (16%), followed by July (14%), June (11%), May (10%) and October (10%). The most popular recreation sites at the Project were the NMTTC (20,024), followed by the Cabot Woods Fishing Access (18,230), State Boat Launch (15,126), Boat Tour and Riverview Picnic Area (13,651), and Pauchaug Boat Launch (9,630).

The most popular recreation activity at the Projects was walking/hiking/jogging (30%), followed by motor boating (12%), fishing (7%), bike riding (6%), picnicking (5%), and non-motorized boating (4%). Among winter sports, cross-country skiing was the most popular (3%), followed by ice fishing (1%) and ice skating/boating (1%). Camping accounted for 2% of the Projects' recreation use, most of which occurred at the Barton Cove campground.

Recreation use at each of the recreation sites included in the survey was also analyzed. At the most popular recreation site, NMTTC, trail use was the most popular activity, including use for walking/hiking/jogging, biking, horseback riding, snowshoeing and cross-country skiing. At Cabot Woods, the most popular activities were walking/hiking/jogging, followed by fishing and bike riding. Not surprisingly, at the two popular boat launches (State Boat Launch and Pauchaug Boat Launch) the most popular uses were motorized boating, fishing and non-motorized boating.

Recreation site utilization was examined from both a current utilization perspective, and also from the perspective of future demand. Currently, recreation site utilization at all sites was found to be well below the design capacity of the site. The highest utilization rate, based on parking area capacity, was found to occur at the State Boat Launch, which had a 65% of capacity utilization rate. Two of the three climbing area parking lots (Rose Ledge Climbing Area Parking and Farley Ledge Climbing Area Route 2 Parking) were also found to have higher utilization rates, at 60% of capacity. All of the other recreation sites were found to have a utilization rate (based on parking) of 50% or less, and utilization of most sites was in the range of 10-25% of capacity.

Utilization of campgrounds that serve the Turners Falls Project was evaluated based on campsite capacity. On average, the utilization rate for the Munn's Ferry Boat Camping Recreation Area was 30% of capacity, while the utilization rate of the Barton Cove Nature Area and Campground was found to be 40% of capacity. Neither camping area was utilized at a rate approaching capacity, on a seasonal basis.

The results of the use and capacity portions of the study demonstrate that the recreation areas that serve the Turners Falls and Northfield Mountain Projects are well used, but that use levels are well within the existing capacity of the existing recreation areas. Of the three boat launches that serve the Turners Falls Impoundment, the State Boat Launch is the most heavily used, but total use does not exceed 50% of the parking capacity of the site, on average. Even on peak weekend days, observed use was within the existing capacity of the site. Use of the Pauchaug Boat Launch is more limited, and the utilization rate of this site, based on parking capacity is even lower than for the State Boat Launch. At the Governor Hunt Boat Launch/Picnic Area site, even though the parking area serving this site is small and unimproved, the estimated utilization rate was still only 50% of capacity, on average.

The most popular recreation activity at the Projects is walking/hiking/jogging. The trails that support this popular recreation use at the Projects appear to be adequate to meet current demand. Utilization of the NMTTC is estimated to be at 10% of capacity. Camping also appears to be well supported by existing sites and facilities. Of the two campgrounds serving the Projects, Munn's Ferry Boat Camping Recreation Area (30%) and Barton Cove Nature Area and Campground (40%), both have relatively low estimated utilization rates. Camping (individual sites) was found to have a combined utilization rate of 40%, while group camping had a utilization rate of 50% of capacity.

## **5.2 Recreation User Surveys**

Another important component of the study was the survey of recreational users to get their perspective on various aspects of the recreation sites, facilities, amenities and opportunities provided at the Projects. User surveys included both ratings and open-ended questions about the users' recreational experiences at the Projects. Survey questions that queried respondents about their backgrounds found that the average age of Project recreation users is 48.8 years old, and that the majority of recreationists are male (63%). The data also showed that most use is local, with an average distance traveled to the Projects of 23 miles, and of short duration, with an average length of stay of 1.7 hours. The majority of respondents were return users, with 91% of recreationists indicating they had visited the Projects before.

Based on the user surveys, the most popular recreation activities reported, by far, were walking and dog walking, which is consistent with the higher level of walking/hiking/jogging use observed as part of the use counts. User surveys also showed that fishing from shore was a frequently reported use. This differs somewhat from the results of the use counts which reported fishing as a relatively low observed activity type, suggesting that bank fishing may be occurring throughout the Project area.

User surveys asked respondents to rate several aspects of their recreation experience, on a scale of 1-5, with 1 being a "poor" rating, 3 being a "fair" rating, and 5 being an "excellent" rating. The vast majority of survey respondents gave an "excellent" or "fair-excellent" rating for parking (81%), facility condition (82%), river access (79%), and variety of amenities (63%). The "overall quality" of the sites and facilities were rated by 85% of respondents as "excellent" or "fair-excellent". Only restrooms/toilets received notably lower ratings, with 50% of respondents rating restrooms/toilets as between "excellent and fair", and the other 50% rating restrooms/toilets as "fair to poor" (9%) or "poor" (41%). Consistent with this result, when asked about any low ratings given the existing sites/facilities, a large number of survey respondents indicated a concern with the lack of restrooms or restroom availability.

Other user survey questions asked the respondents to rate additional recreation site and facility considerations including level of use, number of facilities and water levels. Regarding level of use, by far the largest percentage of respondents gave a rating of 1 ("not crowded") or 2 (between "not crowded" and "somewhat crowded"), while 21% of respondents indicated that the sites were "somewhat crowded" (rating

of 3). Only 6% indicated the sites were “extremely crowded”. Similarly, when asked about the number of recreation facilities provided at the Projects, 67% of respondents indicated that they were either “extremely satisfied” or “moderately satisfied” with the number of facilities provided. These findings corroborate the use and utilization assessment that found none of the recreation sites are exceeding their planned capacity, and that for the most part, the current utilization of the existing recreation sites are well below their capacity. Further support for the findings that demonstrate that existing recreation/sites and facilities are meeting current needs and demand was seen from the extremely limited number of survey respondents that mentioned the need for additional sites/facilities and amenities. Specifically, in response to an open-ended question about satisfaction with the available number of recreation facilities, only 3 respondents out of the 945 surveyed, suggested the need for any additional sites/facilities/amenities. Finally, when asked about Project water levels, survey 93% of respondents indicated that they were “extremely satisfied” to “satisfied” with water levels.

Additional questions allowed users to indicate the factors or issues that they liked best or least about their recreational experiences at the Project that day. While, not surprisingly, a host of different factors were indicated across the many surveys collected, in response to questions about what they liked “least” or what factors “detracted” from their experience, a few factors were more consistently mentioned than others, including most notably trash and litter, and parking lot and road maintenance. Other factors that were consistently cited but which are generally beyond the control of FirstLight were weather, goose droppings, dogs, and the behavior of other recreationists. Factors that were identified by survey respondents that they like the “best” or which “enhanced” their recreation experience included scenery/beauty, nature/wildlife and peaceful/quiet. Weather was also mentioned routinely as a contributing factor, as was location/close to home. Interestingly, one of the more commonly mentioned positive features was “cleanliness”; suggesting that there were mixed views among users regarding the trash/litter situation, or that trash/litter might be more of an occurrence at some sites than others.

### **5.3 State Comprehensive Recreation Plans and Regional Open Space Plans**

In addition to examining current recreational use of the Projects, this study also considered the potential for recreational use and demand. As a first step in examining future recreation needs, the study looked at two types of comprehensive plans that provide insight into state and local expectations for future recreation trends and needs in the Project area: State Comprehensive Outdoor Recreation Plans (SCORPs) and Open Space Plans.

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is a strategic planning document that is prepared by each state approximately every five years to examine state outdoor recreation trends and to consider recreation needs and priorities in the coming years. All three state SCORPs (Vermont, New Hampshire and Massachusetts) were reviewed as part of this study, and the findings and goals established by each were considered in relation to the public recreation opportunities and facilities provided at the Turners Falls and Northfield Mountain Projects.

Results of the SCORP review found that the recreation opportunities provided at the FirstLight Projects are very consistent with the near and long-term goals for recreation in all three states. The Massachusetts SCORP, for example, establishes four specific goals related to supporting and promoting future outdoor recreation use within the state including: 1) Increase the availability of all types of trails; 2) Increase the availability of water-based recreation; 3) Invest in recreation and conservation areas that are close to home for short visits; and 4) Invest in racially, economically, and age diverse neighborhoods given their projected increase in participation in outdoor activities. Existing recreation facilities and opportunities currently provided at the Projects are directly supportive of the first three of these goals. Trail use and water-based recreation activities (e.g., boating, fishing) are both primary recreation uses of the Project and are currently supported by a number of recreation sites and facilities provided by FirstLight, the state, and others. Trails are provided at several of the recreation sites that serve the Projects, and are a primary amenity provided at the NMTTC. Three boat launches, two campgrounds, and a variety of other recreation and access sites all

provide recreationists with access to the Project portion of the Connecticut River and make those waters available for water-based activities, including both motorized and non-motorized boating and fishing.

Similarly, the Vermont SCORP establishes 12 goals and objectives for outdoor recreation within that state that are supportive of anticipated future interest in and demand for trails and trail-based recreation (walking, hiking, jogging, biking, etc.), as well as water-based recreation activities including swimming, boating, picnicking, and wildlife viewing. Again, consistent with the recreation goals outlined in the Vermont SCORP, the recreation opportunities, sites and facilities currently provided at the Projects are highly supportive of both trail-based and water-based recreation use and activities.

The New Hampshire SCORP identified key recreation interests in the areas of wildlife viewing, trails and trail use, snow sports, bicycling, camping and paddling. Once again, all of these key interest areas are supported through existing recreation sites provided at the Northfield Mountain and Turners Falls Projects.

The open space and recreation plans for the towns in which the Project is located, as well as similar Franklin County plans acknowledge that the Project provides multiple recreation opportunities and facilities to the public, including access for water-based recreation. While the plans set forth a number of specific measures that they would like the Licensee to provide as part of the relicensing process, it should be noted that, as demonstrated in this study, the recreation opportunities, sites, and facilities provided at the Projects are fully supportive of the towns' and Franklin County's objectives to ensure ample public access to Project lands and waters for recreation.

#### **5.4 Residential Abutters Survey**

A separate survey of residents around the Turners Falls Impoundment was also conducted as part of the study. The resident's survey provided some useful information about the nature of the residents and how they use the Projects for recreation. Results of the survey found that the respondents are mostly year round (86%), rather than seasonal residents, and 65% of the respondents to the survey have property that is adjacent to the Connecticut River. With respect to their recreational use of the Project, most (60%) said they use the Projects for recreational use 1 to 25 times per year; and 47% said they use the recreational sites provided at the Projects. Several other questions on the survey focused on whether others were allowed to access the Connecticut River (in the Project boundary) across their private lands. Most land owners indicated that they would or do allow members of the public to access the Project waters across their lands, if permission is requested.

Residents were also asked to rate their satisfaction with water levels. Forty-three percent (43%) of the respondents indicated that they were "satisfied" to "extremely satisfied" with impoundment water levels; 19% indicated that they were slightly satisfied, while the remaining 39% gave water levels a rating of 1, indicating that they were "not satisfied at all".<sup>8</sup> Fifty four (54) of the 95 respondents took the opportunity to provide more explanation for their dissatisfaction with water levels. Among those, 23 indicated that water levels were too low or too high, while only 10 indicated a specific recreational impact, noting that there were boating impacts from water levels. Water levels were also mentioned by 20 respondents as one of the things they like least about their recreational experiences in the Project portion of the Connecticut River.

Overall, results of the residential abutters' survey suggest that there is probably some additional use of Project waters that occurs via access across private property, either by the residents themselves, or by others who have permission to cross the private lands. However, residents' responses to the question about how frequently they use the Projects for recreational purposes indicate that the level of recreation use that can be attributed to the residents does not appreciably add to the use of the Project area for water based recreation.

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<sup>8</sup> Figures shown do not sum to 100% because of rounding.

## **5.5 Other Recreational Use Surveys**

The study also included limited telephone and email surveys of certain other groups regarding how and who are using the Projects for recreation, and whether there are any notable problems with recreational use of the Projects. These survey included a survey of local police departments, and a survey of private clubs and organizations known to use the Projects for recreational purposes.

For the police survey, seven (7) local municipal police departments and the state of Massachusetts Environmental Police were contacted and phone surveys were completed by four (4) of the police departments. For the most part the law enforcement departments reported no significant issues related to recreation use of the Projects or the recreation sites serving the Projects.

Private clubs and organizations that are known to use the Projects for recreational purposes were also contacted and surveyed. In total, three entities (two clubs and a school) were surveyed, and the limited results of this survey found that members of these groups do utilize the Projects for recreation (primarily the Turners Falls Impoundment), but that their use does not appreciably add to the level of use of the recreation sites assessed in this study.

## **5.6 Projected Recreation Demand**

An evaluation of future recreation demand and the ability of the existing recreation sites at the FirstLight Projects to meet that demand was also made as part of this study. To do this, regional population trends were combined with predicted increases in recreation use/demand for various types of recreation activities, to produce estimated growth in recreation use, by activity type, for the period 2014 - 2060. These growth projections were then applied to the different recreation activity types and recreation sites at the Projects to examine which of the existing recreation sites would be able to meet projected increases in use through the term of a new FERC license.

The results of this assessment showed that over the next few decades, walking/hiking/jogging will continue to be the most popular recreation activity at the Projects, followed by motorized boating, fishing, biking, picnicking, rock climbing, and non-motorized boating. Projected growth in use of each of the primary recreation sites serving the two Projects was also estimated and showed that overall recreation use is projected to grow between 4%-8% at the various sites, between 2014 and 2060. Sites that are anticipated to see the greatest rate of growth (8%) include the NMTTC, the State Boat Launch, and the three parking areas that serve the Rose Ledge and Farley Ledge climbing areas.

In terms of site capacity, projected increases in recreation site use were applied to the current capacity of each of the recreation sites to determine if the existing sites are capable of meeting future demand. The results of the future capacity assessment found that while there are anticipated increases in future recreation use, the existing capacity of all of the recreation sites serving the Projects will be sufficient to meet future recreation use and demand. In fact, among all the recreation sites analyzed, the highest utilization rates, (based on parking capacity) are predicted to occur by 2060 are at the State Boat Launch (70%), the Rose Ledge Climbing Area parking area (65%), the Farley Ledge Climbing Area Wells Street Parking (65%) and the Governor Hunt Boat Launch/Picnic Area (50%). None of the other recreation sites are expected to exceed 50% of capacity by the year 2060. The existing campgrounds too were found to be able to accommodate expected future growth in camping, with predicted 2060 capacities of 45% and 40%, respectively, for the Munn's Ferry Boat Camping Recreation Area and the Barton Cove Nature Area and Campground.

## **5.7 Consideration of the Findings of Other FirstLight Recreation Studies**

Several other recreation studies conducted by FirstLight as part of the relicensing effort considered specific recreation resource interests that may have some relationship to the information on recreation use and users gained through this study. Consequently, this study included evaluation discussion of the some of the key

findings of studies 3.6.2 *Recreation Facilities Inventory*; 3.6.3 *Whitewater Boating Evaluation*; 3.6.4 *Assessment of Day Use and Overnight Facilities*; and 3.6.7 *Recreation Study of Northfield Mountain, including an Assessment of the Sufficiency of Trails for Shared Use* ([FirstLight, 2014, 2015d, 2015c, 2015b](#)). Consideration of the results of these other recreation studies underscores the connectedness of recreation use, sites and facilities throughout the two Project area. Taken as a whole, the recreation studies demonstrate that the existing recreation sites, facilities and amenities provide many opportunities for the recreating public to access and use both Project lands and waters for a diverse array of recreational activities.

Study 3.6.2 was an inventory of the existing formal, and more popular informal recreation sites serving the Projects ([FirstLight, 2014, 2015e](#)). The inventory covered catalogued the facilities and amenities offered at each site. The inventory also included a condition assessment of each site and its facilities. Information gathered as part of the inventory study was compared to user information collected through this study, particularly with respect to the recreation opportunities provided at each site and the condition of the sites and facilities. Overall, the inventory assessment found most sites to be in good to excellent condition, with minor suggestions noted for maintenance or repairs to certain facilities/amenities. This finding was supported by the results of the user survey, which found that the majority of the users were very satisfied with the availability and condition of the various recreation sites. Also consistent with the inventory condition assessment, at some sites, recreation users did identify certain conditions that detracted from their recreation experience, including most notably restrooms/toilets and trash/litter.

Study 3.6.3 was a whitewater study of the Turners Falls bypass reach ([FirstLight, 2015d](#)). The whitewater boating study found that an acceptable boating experience for most watercraft types is provided in the bypass reach under a range of flows (2,500 cfs to 10,000 cfs). A hydrologic assessment of the frequency of boatable flows (>2,500 cfs) found that boatable flows can be expected to occur in the bypass reach approximately 45 days between April and November. Elements of the whitewater boating study that are directly related to this use and user study include primarily an assessment of the current use of the bypass reach for whitewater boating, as well as the availability and use of existing recreation sites that provide put-in and take-out opportunities for whitewater boaters accessing the bypass reach.

The 3.6.3 study results demonstrate that boatable flows in the bypass reach do occur under existing Project operations, generally when river flows are high, which is typically in the spring and early summer. In addition, access to the bypass reach is currently available to whitewater boaters at several locations, including the put-in area just downstream of Turners Falls Dam, at the Cabot Woods Fishing Access, at Turners Falls Station No. 1 Fishing Access and at the Poplar Street Access. However, despite the availability of both boatable flows and access, the recreation use counts and user surveys conducted as part of this study identified very few whitewater boaters. This suggests that while boatable flows and access to the bypass are currently available, whitewater boaters are not taking advantage of this resource. Possible reasons for the limited utilization of the existing whitewater boating opportunity include lack of information about when boatable flows are available in the bypass reach, lack of information about the boatable nature and whitewater conditions found in the bypass reach, and lack of information about public access areas that are currently available as put-in and take-out locations. Any one or some combination of all three of these factors could be limiting current whitewater boating use of the bypass reach.

Study 3.6.4 was an assessment of day use and overnight facilities associated with non-motorized boating. The primary purposes of the study were to determine the number and spacing of existing overnight facilities and access sites to support self-powered boating trips including the need for additional and future facilities ([FirstLight 2015c](#)). The study was also designed to examine some specific self-powered boating access questions including the feasibility of alternate walkable canoe portages, and possible locations for future carry-in boat facilities.

The 3.6.4 study results identified both existing and potential future access and campsites along the reach of the Connecticut River from Vernon Dam to Sunderland Bridge. Regarding spacing, the study found that the distance between existing campsites within the Turners Falls Project boundary ranges from 6.8 and 10.4

miles, which is consistent with recreational planning guidelines for campsite spacing of between 3-15 miles used on other water trails. With respect to access, the study found that the distance between existing access sites to range between 1.3 miles and 9 miles, which is also consistent with planning objectives for other water trails.

When considered in the context of the use and user surveys, an assessment of existing access and campsite usage along the Connecticut River portion of the Project provides useful insight into the ability of existing campsite and access locations to support paddling trips and the potential formal expansion of a Connecticut River water trail through the Turners Falls Project area. The number and spacing of both existing camping and access sites is consistent with that considered acceptable for a water trail. In addition, none of the access and campsites that are currently providing these opportunities within the Turners Falls Project reach are at or near their design capacity. Moreover, while the predicted future demand for these types of facilities is expected to grow, this study estimates that even with the increased use/demand anticipated by the year 2060, use levels of these same camping and access sites would not exceed the existing site capacity.

Regarding the Turners Falls portage trail, the 3.6.4 study examined possible alternative portage trail routes that do not require the use of vehicular portage ([FirstLight, 2015c](#)). While the 3.6.4 study identified several possible trail routes, all of the alternative trail routes are relatively long based on the assumption that the portage trail would need to circumvent the bypass reach to below Rock Dam, because flatwater boaters and boats that would be expected to dominate use of a river water trail would not be capable of running the Class II-IV reach. Thus, while alternative carry portage routes are available and could be developed, the length of the carry could be a deterrent to many users. Moreover, while the representation of portage trail users in the user surveys was small, none of those that identified themselves as participating in non-power boating raised specific concerns about the existing portage trail.

The focus of Study 3.6.7 was the NMTTC ([FirstLight, 2015b](#)). The study examined NMTTC facility and program use and also included a survey of NMTTC users, as well as a detailed assessment of the Northfield Mountain Trail System. The results of the study demonstrated that the NMTTC is a unique Project resource that provides the region with outstanding environmental and educational programs, as well as access to a well constructed and maintained trail system that provides ample opportunity for recreationists to utilize the trails for walking, hiking, jogging, biking, and horseback riding; and in the winter for cross-country skiing and snowshoeing. The trail system also provide climbers with access to Rose Ledge Climbing Area. The 3.6.7 study determined that use of the NMTTC is moderate, but that current use of the site is well within the site's planned capacity. This is consistent with the findings of this study, which reiterated the finding that current use of the NMTTC is well below the capacity of the site, and also that the projected increase in use by 2060 could also be accommodated by the existing site and facilities.

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# **APPENDIX A – SAMPLE SPOT COUNT FORM**

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# **APPENDIX B – SAMPLE CALIBRATION COUNT FORM**



**APPENDIX C – RECREATION USER  
SURVEY AND NORTHFIELD MOUNTIAN  
TRAIL USER SURVEY**

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**Figure 3.6.1-1: Recreation User Survey**

Interviewer: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Location: \_\_\_\_\_  
 Weather: \_\_\_\_\_ Air Temp: \_\_\_\_\_ Declined Survey: \_\_\_\_\_

To be determined Post Survey: Pond Elevation: \_\_\_\_\_ Flow (cfs): \_\_\_\_\_

Good Afternoon. My name is \_\_\_\_\_ and I am conducting a recreation use survey of visitors to the Turners Falls and Northfield Mountain hydroelectric project areas for FirstLight. We are surveying areas on the Connecticut River from just above the bicycle trail bridge in Montague north to Stebbins Island. Collected information will assist FirstLight in understanding more about land and water based recreation in this area of the Connecticut River. Responses from the survey will remain anonymous. Would you mind answering a few questions?

1. Have you participated in this survey effort before?

Yes \_\_\_\_\_ Thank you for your time. We are only interviewing each person once with this survey.  
 No \_\_\_\_\_ Continue with Survey

2. What is your age? \_\_\_\_\_ Gender: \_\_\_\_\_

3. How many in your group, including yourself? \_\_\_\_\_

4. Which of the following best describes your group? (Check One)

- |                                  |  |   |
|----------------------------------|--|---|
| <input type="checkbox"/> Alone   | <input type="checkbox"/> Multiple Families | <input type="checkbox"/> Organized Outing Group |
| <input type="checkbox"/> Family  | <input type="checkbox"/> Family & Friends  | <input type="checkbox"/> Educational Group      |
| <input type="checkbox"/> Friends |  | <input type="checkbox"/> Other _____            |

5. How many vehicles did your group use to come here? \_\_\_\_\_

6. Have you ever visited the Turners Falls/Northfield Mountain project area before? Yes\_\_ No\_\_

7. If yes, typically, how many times a year do you visit the project area for Recreation? \_\_\_\_\_

8. What is your Zip Code? \_\_\_\_\_ or Country of Residency? \_\_\_\_\_

9. When did you arrive and plan to depart?

Arrived: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

Estimated Depart: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

10. How much do you think that you will spend during your trip to this section of the Connecticut River?

\_\_\_\_\_ less than \$100      \_\_\_\_\_ \$101 to \$500      \_\_\_\_\_ \$501-\$1,000      \_\_\_\_\_ greater than \$1000

11. During your visit today what is your perception of the amount of use occurring at this site?

1	2	3	4	5
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Not Crowded		Somewhat Crowded		Extremely Crowded
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12. Please indicate which of the following activities you participate in at the Northfield/Turners Falls Project by season. (Mark all that apply)

Activity	This Trip	Spring (Mar. 1 – May 31)	Summer (June 1 – Aug. 31)	Fall (Sept. 1 - Nov. 30)	Winter (Dec. 1 – Feb. 28)
Backpacking					
Birding					
Camping					
Canoeing					
Dog Walking					
Driving for Pleasure					
Educational Programs					
Fishing from a Boat					
Fishing from Shore					
Fishway Viewing					
Hiking					
Horseback Riding					
Hunting					
Ice Fishing					
Kayaking					
Mountain Biking					
Multi-day Float Trip					
Nature Observation					
Orienteering					
Other: _____					
Paddle Boarding					
Photography					
Picnicking					
Power Boating					
Riding Jet Skis					
Road Bicycling					
Rock Climbing					
Rowing					
Running					
Sailing					
Sightseeing					
Skiing					
Snowshoeing					
Swimming					
Tubing					
Walking					
Waterskiing					
Whitewater Boating					

13. Of the activities listed above, which is your PRIMARY activity on this trip? \_\_\_\_\_

14. Did you experience water level fluctuations today? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please circle one: Rising Water      Stable Water      Dropping Water      Don't Know

15. Overall, how satisfied were you with the river water level during your trip? (circle number)

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

If less than satisfied could you explain why? \_\_\_\_\_

16. Please rate the following amenities at this location.

	Poor		Fair		Excellent
Parking	1	2	3	4	5
Facility Condition	1	2	3	4	5
Variety of Amenities	1	2	3	4	5
Overall Quality	1	2	3	4	5

Please explain any poor ratings.

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17. What did you like most about your recreational experience today? \_\_\_\_\_

18. What did you like least about your recreational experience today? \_\_\_\_\_

19. What, if anything, enhanced your recreation experience today? \_\_\_\_\_

20. What, if anything, detracted from your recreation experience today? \_\_\_\_\_

21. Does this recreation facility serve your interests? Yes \_\_\_\_ No \_\_\_\_

If not why? \_\_\_\_\_

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22. Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River? \_\_\_\_\_

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Thank you for your time and input.

**Figure 3.6.1-1: Recreation User Survey**

Interviewer: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Location: \_\_\_\_\_

Weather: \_\_\_\_\_ Air Temp: \_\_\_\_\_ Declined Survey: \_\_\_\_\_

To be determined Post Survey: Pond Elevation: \_\_\_\_\_ Flow (cfs): \_\_\_\_\_

Good Afternoon. My name is \_\_\_\_\_ and I am conducting a recreation use survey of visitors to the Turners Falls and Northfield Mountain hydroelectric project areas for FirstLight. We are surveying areas on the Connecticut River from just above the bicycle trail bridge in Montague north to Stebbins Island. Collected information will assist FirstLight in understanding more about land and water based recreation in this area of the Connecticut River. Responses from the survey will remain anonymous. Would you mind answering a few questions?

1. Have you participated in this survey effort before?

Yes \_\_\_\_\_ Thank you for your time. We are only interviewing each person once with this survey.

No \_\_\_\_\_ Continue with Survey

2. What is your age? \_\_\_\_\_ Gender: \_\_\_\_\_

3. How many in your group, including yourself? \_\_\_\_\_

4. Which of the following best describes your group? (Check One)

- Alone  Multiple Families  Organized Outing Group
- Family  Family & Friends  Educational Group
- Friends  Other \_\_\_\_\_

5. How many vehicles did your group use to come here? \_\_\_\_\_

6. Have you ever visited the Turners Falls/Northfield Mountain project area before? Yes\_\_ No\_\_

If yes, typically, how many times a year do you visit the project area for Recreation? \_\_\_\_\_

7. What is your Zip Code? \_\_\_\_\_ or Country of Residency? \_\_\_\_\_

8. When did you arrive and plan to depart?

Arrived: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

Estimated Depart: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

9. How much do you think that you will spend during your trip to this section of the Connecticut River?

\_\_\_\_\_ less than \$100      \_\_\_\_\_ \$101 to \$500      \_\_\_\_\_ \$501-\$1,000      \_\_\_\_\_ greater than \$1000

10. During your visit today what is your perception of the amount of use occurring at this site?

1	2	3	4	5
Not Crowded		Somewhat Crowded		Extremely Crowded

11. Please indicate which of the following activities you participate or have participated in at the Northfield/Turners Falls Project by season in the past five years. (Mark all that apply)

Activity	This Trip	Spring (Mar. 1 – May 31)	Summer (June 1 – Aug. 31)	Fall (Sept. 1 - Nov. 30)	Winter (Dec. 1 – Feb. 28)
Backpacking					
Birding					
Camping					
Canoeing					
Dog Walking					
Driving for Pleasure					
Educational Programs					
Fishing from a Boat					
Fishing from Shore					
Fishway Viewing					
Hiking					
Horseback Riding					
Hunting					
Ice Fishing					
Kayaking					
Mountain Biking					
Multi-day Float Trip					
Nature Observation					
Orienteering					
Other: _____					
Paddle Boarding					
Photography					
Picnicking					
Power Boating					
Riding Jet Skis					
Road Bicycling					
Rock Climbing					
Rowing					
Running					
Sailing					
Sightseeing					
Skiing					
Snowshoeing					
Swimming					
Tubing					
Walking					
Waterskiing					
Whitewater Boating					

12. Of the activities listed above, which is your PRIMARY activity on this trip? \_\_\_\_\_

13. Did you experience water level fluctuations today? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please circle one: Rising Water    Stable Water    Dropping Water    Don't Know

14. Overall, how satisfied were you with the river water level during your trip? (circle number)

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

If less than satisfied could you explain why? \_\_\_\_\_

15. Overall, how satisfied were you with the available number of recreation facilities? (circle number)

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

If less than satisfied could you explain why? \_\_\_\_\_

16. Please rate the following amenities at this location

	Poor		Fair		Excellent
Parking	1	2	3	4	5
Facility Condition	1	2	3	4	5
Variety of Amenities	1	2	3	4	5
Toilets/Restrooms	1	2	3	4	5
River Access	1	2	3	4	5
Overall Quality	1	2	3	4	5

Please explain any poor ratings. \_\_\_\_\_

\_\_\_\_\_

17. What did you like most about your recreational experience today? \_\_\_\_\_

18. What did you like least about your recreational experience today? \_\_\_\_\_

19. What, if anything, enhanced your recreation experience today? \_\_\_\_\_

20. What, if anything, detracted from your recreation experience today? \_\_\_\_\_

21. Does this recreation facility serve your interests? Yes \_\_\_ No \_\_\_

If not why? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

22. Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Thank you for your time and input.

**Figure 3.6.1-2: Northfield Mountain Trail User Survey**

Interviewer: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Location: \_\_\_\_\_

Weather: \_\_\_\_\_ Air Temperature: \_\_\_\_\_ Declined Survey: \_\_\_\_\_

Good Afternoon. My name is \_\_\_\_\_ and I am conducting a recreation use survey of visitors of the Northfield Mountain trail system and Visitors' Center for FirstLight. Collected information will assist FirstLight in understanding more about land-based recreation at Northfield Mountain. Responses from the survey will remain anonymous. Would you mind answering a few questions?

1. Have you participated in this survey effort before?

Yes\_\_ Thank you for your time. We are only interviewing each person once with this survey.  
No\_\_ Continue with survey.

2. What is your age? \_\_\_\_\_ Gender: \_\_\_\_\_

3. How many in your group, including yourself? \_\_\_\_\_

4. Which of the following best describes your group? (Check One)

- |                                  |  |   |
|----------------------------------|--|---|
| <input type="checkbox"/> Alone   | <input type="checkbox"/> Multiple Families | <input type="checkbox"/> Organized Outing Group |
| <input type="checkbox"/> Family  | <input type="checkbox"/> Family & Friends  | <input type="checkbox"/> Educational Group      |
| <input type="checkbox"/> Friends |  | <input type="checkbox"/> Other _____            |

5. How many vehicles did your group use to come here? \_\_\_\_\_

Have you ever visited Northfield Mountain before? Yes\_\_ No\_\_

If yes, typically, how many times a year do you visit Northfield Mountain for recreation? \_\_\_\_\_

6. What is your zip code? \_\_\_\_\_ Country of residency? \_\_\_\_\_

7. How often, on average, do you use the Northfield Mt. trail system? (circle one response)

- |                           |                              |                     |                 |
|---------------------------|------------------------------|---------------------|-----------------|
| Daily                     | Between 3 and 5 times a week | 1 or 2 times a week | Once a week     |
| A couple of times a month | Once a month                 | A few times a year  | First time user |

8. When did you arrive and plan to depart?

Arrived: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

Estimated Depart: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

9. How much do you think that you will spend during your trip to this area of the Connecticut River?

\_\_\_ less than \$100     \_\_\_ \$101 to \$500     \_\_\_ \$501-\$1,000     \_\_\_ greater than \$1000

10. During your visit today what is your perception of the amount of use occurring at this site?

1	2	3	4	5
Not Crowded		Somewhat Crowded		Extremely Crowded

11. Please indicate which of the following activities you participate in at the Northfield Mountain by season. (Mark all that apply)

Activity	This Trip	Spring (Mar. 1 – May 31)	Summer (June 1 – Aug. 31)	Fall (Sept. 1 - Nov. 30)	Winter (Dec. 1 – Feb. 28)
Backpacking					
Birding					
Dog Walking					
Educational Programs					
Hiking					
Horseback Riding					
Hunting					
Mountain Biking					
Nature Observation					
Orienteering					
Other: _____					
Photography					
Picnicking					
Rock Climbing					
Running					
Sightseeing					
Skiing					
Snowshoeing					
Walking					

12. Of the activities listed above, which is your PRIMARY activity on this trip? \_\_\_\_\_

13. Please provide your opinion on the Northfield Mountain trail system for the following variables.

(check appropriate box for each variable)

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Trails are in good condition					
Trails are well maintained					
Trails are too steep					
Trails are too flat					
More trails are needed					
There is an appropriate mix of easy, moderate, difficult trails					
Winter trail grooming is sufficient					
Trail signage/markings are adequate					
Trailhead parking is sufficient					
Trail surface material is adequate					

14. Generally, when do you use the trail system? (circle one response)

Weekdays                      Weekends                      Both

15. How much time do you generally spend on the trail each visit? (circle one response)

Less than 30 minutes      30 minutes to 1 hour      1 to 2 hours      More than 2 hours

16. How did you learn about the Northfield Mountain trails? (circle all that apply)

Local Resident                      Word of mouth                      Roadside signage                      Driving past  
Internet web site                      Other \_\_\_\_\_

17. Do you also use facilities or amenities at the Northfield Mountain Visitors' Center during your trip to use the trail system? Yes \_\_\_ No \_\_\_

If yes, what other facilities or amenities do you use? \_\_\_\_\_  
\_\_\_\_\_

18. Please rate the following amenities at the Visitors' Center.

	Poor		Fair		Excellent
Parking	1	2	3	4	5
Facility Condition	1	2	3	4	5
Variety of Amenities	1	2	3	4	5
Overall Quality	1	2	3	4	5

Please explain any poor ratings. \_\_\_\_\_  
\_\_\_\_\_

19. Do the amenities at the Visitors' Center serve your interests? Yes \_\_\_ No \_\_\_

If no, why? \_\_\_\_\_

20. What did you like most about your recreational experience today? \_\_\_\_\_

21. What did you like least about your recreational experience today? \_\_\_\_\_

22. What, if anything, enhanced your recreation experience today? \_\_\_\_\_

23. What, if anything, detracted from your recreation experience today? \_\_\_\_\_

**Questions require a map of the trail system with numbered sections and access points.**

24. What portions of the trail system do you use most often? (Sections \_\_\_\_\_)

25. Which trail access point do you generally use when you visit the trail? (Access Point \_\_\_\_\_)

26. Where did you park when accessing the trail system? \_\_\_\_\_

27. Does the Northfield trail system serve your interests? Yes \_\_\_ No \_\_\_

28. If no, why? \_\_\_\_\_

29. Do you have any additional comments regarding recreation opportunities at Northfield Mountain?

\_\_\_\_\_  
\_\_\_\_\_

Thank you for your time and input.



**Figure 3.6.1-2: Northfield Mountain Trail User Survey**

Interviewer: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Location: \_\_\_\_\_

Weather: \_\_\_\_\_ Air Temperature: \_\_\_\_\_ Declined Survey: \_\_\_\_\_

Good Afternoon. My name is \_\_\_\_\_ and I am conducting a recreation use survey of visitors of the Northfield Mountain trail system and Visitors' Center for FirstLight. Collected information will assist FirstLight in understanding more about land-based recreation at Northfield Mountain. Responses from the survey will remain anonymous. Would you mind answering a few questions?

1. Have you participated in this survey effort before?

Yes\_\_ Thank you for your time. We are only interviewing each person once with this survey.

No\_\_ Continue with survey.

2. What is your age? \_\_\_\_\_ Gender: \_\_\_\_\_

3. How many in your group, including yourself? \_\_\_\_\_

4. Which of the following best describes your group? (Check One)

- |                                  |  |   |
|----------------------------------|--|---|
| <input type="checkbox"/> Alone   | <input type="checkbox"/> Multiple Families | <input type="checkbox"/> Organized Outing Group |
| <input type="checkbox"/> Family  | <input type="checkbox"/> Family & Friends  | <input type="checkbox"/> Educational Group      |
| <input type="checkbox"/> Friends |  | <input type="checkbox"/> Other_____             |

5. How many vehicles did your group use to come here? \_\_\_\_\_

Have you ever visited Northfield Mountain before? Yes\_\_ No\_\_

If yes, typically, how many times a year do you visit Northfield Mountain for recreation? \_\_\_\_\_

6. What is your zip code? \_\_\_\_\_ Country of residency? \_\_\_\_\_

7. How often, on average, do you use the Northfield Mt. trail system? (circle one response)

- |                           |                              |                     |                 |
|---------------------------|------------------------------|---------------------|-----------------|
| Daily                     | Between 3 and 5 times a week | 1 or 2 times a week | Once a week     |
| A couple of times a month | Once a month                 | A few times a year  | First time user |

8. When did you arrive and plan to depart?

Arrived: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

Estimated Depart: Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM PM

9. How much do you think that you will spend during your trip to this area of the Connecticut River?

- \_\_\_ less than \$100      \_\_\_ \$101 to \$500      \_\_\_ \$501-\$1,000      \_\_\_ greater than \$1000

10. During your visit today what is your perception of the amount of use occurring at this site?

1	2	3	4	5
Not Crowded		Somewhat Crowded		Extremely Crowded

11. Please indicate which of the following activities you participate or have participated in at the Northfield Mountain by season in the past five years. (Mark all that apply)

Activity	This Trip	Spring (Mar. 1 – May 31)	Summer (June 1 – Aug. 31)	Fall (Sept. 1 - Nov. 30)	Winter (Dec. 1 – Feb. 28)
Backpacking					
Birding					
Dog Walking					
Educational Programs					
Hiking					
Horseback Riding					
Hunting					
Mountain Biking					
Nature Observation					
Orienteering					
Other: _____					
Photography					
Picnicking					
Rock Climbing					
Running					
Sightseeing					
Skiing					
Snowshoeing					
Walking					

12. Of the activities listed above, which is your PRIMARY activity on this trip? \_\_\_\_\_

13. Please provide your opinion on the Northfield Mountain trail system for the following variables. (check appropriate box for each variable)

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Trails are in good condition					
Trails are well maintained					
Trails are too steep					
Trails are too flat					
More trails are needed					
There is an appropriate mix of easy, moderate, difficult trails					
Winter trail grooming is sufficient					
Trail signage/markings are adequate					
Trailhead parking is sufficient					
Trail surface material is adequate					
Hours of operation are adequate					

How can any of the above variables be improved? \_\_\_\_\_

14. Generally, when do you use the trail system? (circle one response)

Weekdays                      Weekends                      Both

15. How much time do you generally spend on the trail each visit? (circle one response)

Less than 30 minutes      30 minutes to 1 hour      1 to 2 hours      More than 2 hours

16. How did you learn about the Northfield Mountain trails? (circle all that apply)

Local Resident              Word of mouth              Roadside signage              Driving past  
Internet web site              Other \_\_\_\_\_

17. Do you also use facilities or amenities at the Northfield Mountain Visitors' Center during your trip to use the trail system?      Yes \_\_\_\_      No \_\_\_\_

If yes, what other facilities or amenities do you use? \_\_\_\_\_

18. Overall, how satisfied were you with the available number of recreation facilities? (circle number)

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

If less than satisfied could you explain why? \_\_\_\_\_

19. Please rate the following amenities at the Visitors' Center

	Poor		Fair		Excellent
Parking	1	2	3	4	5
Facility Condition	1	2	3	4	5
Toilets/Restrooms	1	2	3	4	5
Variety of Amenities	1	2	3	4	5
Overall Quality	1	2	3	4	5

Please explain any poor ratings. \_\_\_\_\_

20. Do the amenities at the Visitors' Center serve your interests? Yes \_\_\_\_      No \_\_\_\_

If no, why? \_\_\_\_\_

20. What did you like most about your recreational experience today? \_\_\_\_\_

21. What did you like least about your recreational experience today? \_\_\_\_\_

22. What, if anything, enhanced your recreation experience today? \_\_\_\_\_

23. What, if anything, detracted from your recreation experience today? \_\_\_\_\_

**Questions require a map of the trail system with numbered sections and access points.**

24. What portions of the trail system do you use most often? (Sections \_\_\_\_\_)

25. Which trail access point do you generally use when you visit the trail? (Access Point\_\_\_\_\_)

26. Where did you park when accessing the trail system? \_\_\_\_\_

27. Does the Northfield trail system serve your interests? Yes\_\_\_\_ No\_\_\_\_\_

If no, why? \_\_\_\_\_

28. Do you have any additional comments regarding recreation opportunities at Northfield Mountain ?

---

---

Thank you for your time and input.

# **APPENDIX D – RESIDENTIAL ABUTTERS SURVEY**

**Turners Falls/Northfield Mountain Recreation Survey**

1. Please categorize your abutting property by type of residence and land use by circling below

Residence:      Seasonal              Year Round

2. Current Use of Land (Please circle all that apply):

Residential, Landscape, Cropland, Livestock, Tree Growth, Future Residential, Conservation Land, Other\_\_\_\_\_

3. Do you as an abutting resident access the Connecticut River from your property for recreational purposes?

Yes\_\_\_\_ No\_\_\_\_

4. Is your property adjacent to the Connecticut River? Yes \_\_\_\_ No\_\_\_\_\_ (If no, Skip to Question 8)

5. Do others access the Connecticut River across your private property? Yes\_\_\_\_ No\_\_\_\_

With your permission? \_\_\_\_\_ Without your permission? \_\_\_\_\_

Comments\_\_\_\_\_

6. Do others utilizing the Connecticut River and abutting lands for recreational purposes affect your abutting property?

Yes\_\_\_\_ No\_\_\_\_ If yes, explain\_\_\_\_\_

7. Do you have a dock? Yes\_\_\_\_\_ No\_\_\_\_

If yes, how many boats are docked at it? \_\_\_\_\_

What types of boats? \_\_\_\_\_

8. Approximately how many days per year do you use the Connecticut River or the amenities at Northfield Mountain for recreation purposes?

1-25

26-50

51-100

Over 100

9. Do you ever use the recreation sites associated with the Turners Falls and Northfield Mountain hydroelectric projects (see provided map)? No \_\_\_\_\_ Yes \_\_\_\_\_

If yes, which ones? \_\_\_\_\_

10. Do you ever use other sites in this area of the Connecticut River for recreational purposes, which are not shown on the map? No \_\_\_\_\_ Yes \_\_\_\_\_

If yes, for what purposes do you use the site? \_\_\_\_\_

Also, please identify the location of the site on the provided map.

11 What do you like most about your recreational experiences on this area of the Connecticut River?

\_\_\_\_\_

12. What do you like least about your recreational experiences on this area of the Connecticut River?

\_\_\_\_\_

13. What, if anything, enhances your recreation experience on this area of the Connecticut River?

\_\_\_\_\_

14. What, if anything, detracts from your recreation experience on this area of the Connecticut River?

\_\_\_\_\_

15. Overall, how satisfied are you with the river water levels on this area of the Connecticut River? (circle number)

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

If less than satisfied could you explain why? \_\_\_\_\_

Please continue on next page.



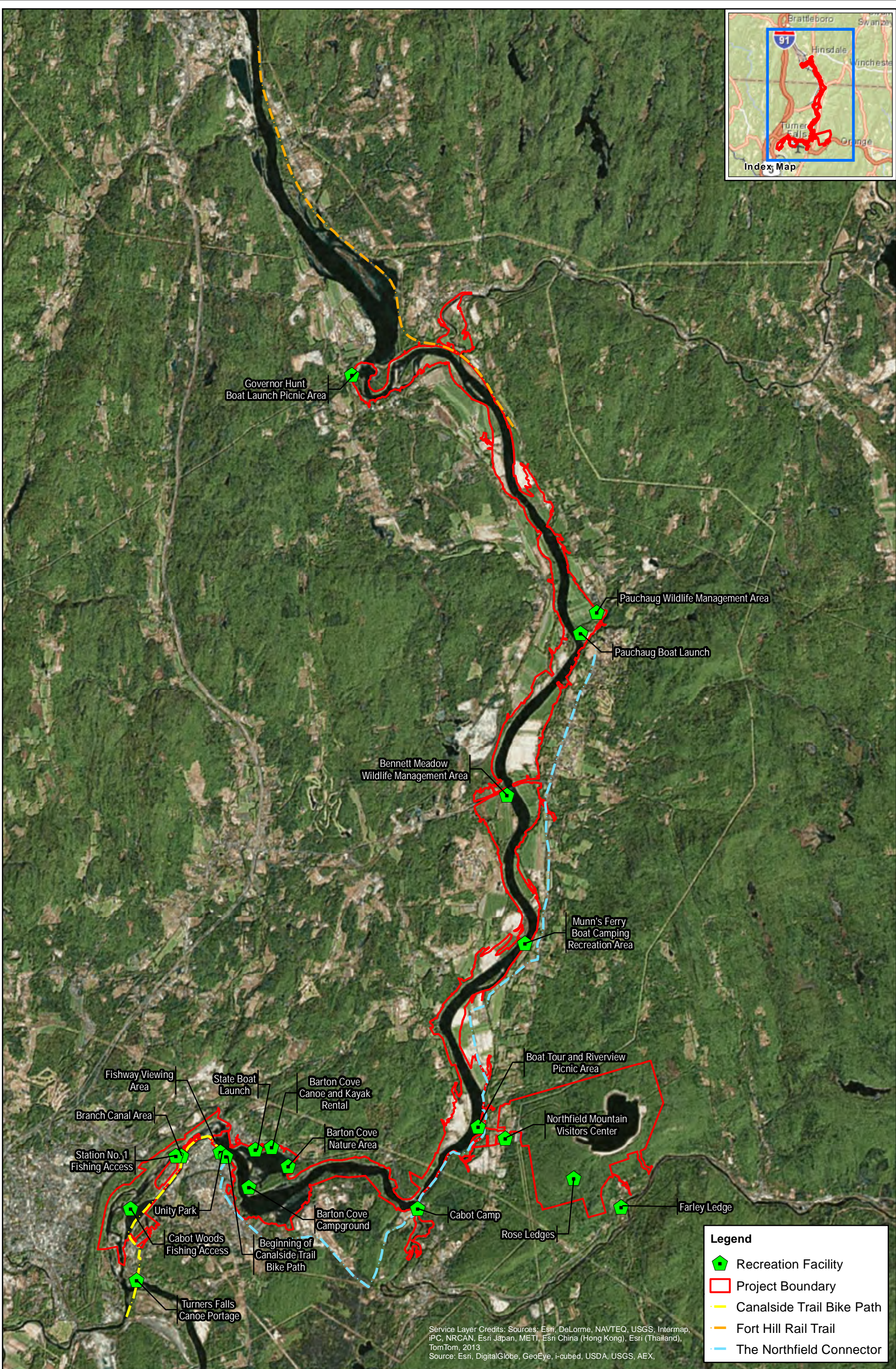
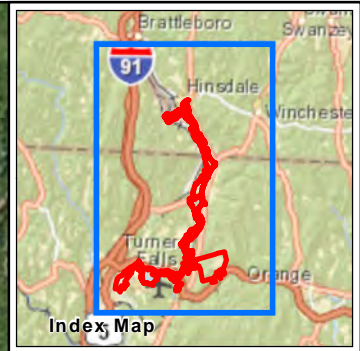
16. What recreational pursuits do you usually participate in on the Connecticut River from just above the bicycle trail bridge in Montague north to Stebbins Island (see map)?

Activity	Spring (Mar. 1 – May 31)	Summer (June 1 – Aug. 31)	Fall (Sept. 1 - Nov. 30)	Winter (Dec. 1 – Feb. 28)
Backpacking				
Birding				
Camping				
Canoeing				
Dog Walking				
Driving for Pleasure				
Educational Programs				
Fishing from a Boat				
Fishing from Shore				
Fishway Viewing				
Hiking				
Horseback Riding				
Hunting				
Ice Fishing				
Kayaking				
Mountain Biking				
Multi-day Float Trip				
Nature Observation				
Orienteering				
Other: _____				
Paddle Boarding				
Photography				
Picnicking				
Power Boating				
Riding Jet Skis				
Road Bicycling				
Rock Climbing				
Rowing				
Running				
Sailing				
Sightseeing				
Skiing				
Snowshoeing				
Swimming				
Tubing				
Walking				
Waterskiing				
Whitewater Boating				

17. Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River?

---

Thank you very much for your time and participation in this study.



Governor Hunt Boat Launch Picnic Area

Pauchaug Wildlife Management Area

Pauchaug Boat Launch

Bennett Meadow Wildlife Management Area

Munn's Ferry Boat Camping Recreation Area

Fishway Viewing Area

State Boat Launch

Barton Cove Canoe and Kayak Rental

Boat Tour and Riverview Picnic Area

Branch Canal Area

Barton Cove Nature Area

Northfield Mountain Visitors Center

Station No. 1 Fishing Access

Unity Park

Barton Cove Campground

Cabot Camp

Farley Ledge

Cabot Woods Fishing Access

Beginning of Canalside Trail Bike Path

Rose Ledges

Turners Falls Canoe Portage

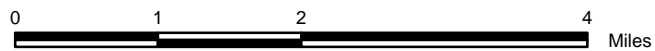
**Legend**

- Recreation Facility
- Project Boundary
- Canalside Trail Bike Path
- Fort Hill Rail Trail
- The Northfield Connector

Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013  
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX,



**FIRSTLIGHT POWER RESOURCES  
RECREATION FACILITIES**



**Public Recreation Facilities**

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# **APPENDIX E – QUESTIONNAIRE SENT TO PRIVATE RECREATION GROUPS**

## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, February 05, 2015 11:21 AM  
**To:** jreum@comcast.net  
**Cc:** Seiders, Heather; Newell, Arthur (Bud) E.; Verville, Sarah; John.Howard@gdfsuezna.com; 'Mark Wamser' (mwamser@gomezandsullivan.com); Mike Hoover (mhoover@gomezandsullivan.com) (mhoover@gomezandsullivan.com)  
**Subject:** Assistance with Connecticut River Use the Franklin County Boat Club

Good Morning Chuck,

As you may know, FirstLight is currently conducting studies as part of the FERC relicensing process for the Turners Falls and Northfield Mountain Hydroelectric Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use that occurs within the project areas, as well as recreational user perceptions regarding project recreation. As your facility provides recreational access to the project, we are contacting you to see if you would consider talking with us regarding the use of your facility. If so, I would like to schedule a call to discuss the following questions.

1. Is your facility operated year-round? If not, what seasons are you open?
2. What are your hours of operation?
3. How many members do you have?
4. Can any member of the public join your club?
5. Is your facility only available to members or do you allow others to use your facility? For a fee?
6. What amenities does your club offer?
7. How many boats are seasonally docked, moored, stored at your facility?
8. How many parking spaces are there at your facility?
9. Approximately how many individuals a year utilize the club property to access the Connecticut River?
10. Are there any other water-based activities at your facility?
11. On an average day what percent of capacity of your facility is utilized? For example if you have 10 parking spaces and on an average day 2 are used, it would be 20 percent capacity.
12. On a holiday weekend what percent of your capacity is utilized?
13. How many events (and what type of events) do you hold at your facility in an average year?
14. Overall, how satisfied are your club members with the river water levels over the course of the summer on a scale of 1 to 5?

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

15. Overall, how satisfied are your club members with the available number of recreation facilities within the Projects?

1	2	3	4	5
---	---	---	---	---

Not Satisfied at all | Slightly Satisfied | Satisfied | Moderately Satisfied | Extremely Satisfied

16. Please tell us if you have recently upgraded or expanded your facility or if you have plans to make upgrades in the next five years. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

17. Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

We are available during the next week to discuss the above questions. Please let myself or Heather Seiders know if mornings or afternoons work best for you. We look forward to hearing from you.

Take care.

Angela Whelpley  
Environmental Specialist  
Civil Designer



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3830 | F: 207.621.8226 | C: 207.215.0308  
[awhelpley@trcsolutions.com](mailto:awhelpley@trcsolutions.com)

Follow us on [LinkedIn](#) or [Twitter](#) | [www.trcsolutions.com](http://www.trcsolutions.com)

Heather Seiders  
Environmental Specialist



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3839 | F: 207.621.8226 | C: 207.215.5147

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## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, February 05, 2015 11:19 AM  
**To:** jthorpe@nwigroup.com  
**Cc:** Seiders, Heather; Newell, Arthur (Bud) E.; Verville, Sarah; John.Howard@gdfsuezna.com; 'Mark Wamser' (mwamser@gomezandsullivan.com); Mike Hoover (mhoover@gomezandsullivan.com) (mhoover@gomezandsullivan.com)  
**Subject:** Assistance with Connecticut River Use at the Turners Falls Rod and Gun Club

Good Morning Jay,

As you may know, FirstLight is currently conducting studies as part of the FERC relicensing process for the Turners Falls and Northfield Mountain Hydroelectric Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use that occurs within the project areas, as well as recreational user perceptions regarding project recreation. As your facility provides recreational access to the project, we are contacting you to see if you would consider talking with us regarding the use of your facility. If so, I would like to schedule a call to discuss the following questions.

1. Is your facility operated year-round? If not, what seasons are you open?
2. What are your hours of operation?
3. How many members do you have?
4. Can any member of the public join your club?
5. Is your facility only available to members or do you allow others to use your facility? For a fee?
6. What amenities does your club offer?
7. How many boats are seasonally docked, moored, stored at your facility?
8. How many parking spaces are there at your facility?
9. Approximately how many individuals a year utilize the club property to access the Connecticut River?
10. Are there any other water-based activities at your facility?
11. On an average day what percent of capacity of your facility is utilized? For example if you have 10 parking spaces and on an average day 2 are used, it would be 20 percent capacity.
12. On a holiday weekend what percent of your capacity is utilized?
13. How many events (and what type of events) do you hold at your facility in an average year?
14. Overall, how satisfied are your club members with the river water levels over the course of the summer on a scale of 1 to 5?

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

15. Overall, how satisfied are your club members with the available number of recreation facilities within the Projects?

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

16. Please tell us if you have recently upgraded or expanded your facility or if you have plans to make upgrades in the next five years. \_\_\_\_\_

---

---

17. Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River?

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We are available during the next week to discuss the above questions. Please let myself or Heather Seiders know if mornings or afternoons work best for you. We look forward to hearing from you.

Take care.

Angela Whelpley  
Environmental Specialist  
Civil Designer



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3830 | F: 207.621.8226 | C: 207.215.0308  
[awhelpley@trcsolutions.com](mailto:awhelpley@trcsolutions.com)

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Heather Seiders  
Environmental Specialist



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3839 | F: 207.621.8226 | C: 207.215.5147

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**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, February 05, 2015 10:22 AM  
**To:** pfayroian@nmhschool.org  
**Cc:** Seiders, Heather; Newell, Arthur (Bud) E.; Verville, Sarah; John.Howard@gdfsuezna.com  
**Subject:** Assistance with Connecticut River Use at Northfield Mount Hermon School

Good Morning Peter,

As you may know, FirstLight is currently conducting studies as part of the FERC relicensing process for the Turners Falls and Northfield Mountain Hydroelectric Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use that occurs within the project areas, as well as recreational user perceptions regarding project recreation. As your facility provides recreational access to the project, we are contacting you to see if you would consider talking with us regarding the use of your facility. If so, I would like to schedule a call to discuss the following questions.

1. What types of activities does the school utilize the Connecticut River for?
2. Do you utilize the river year round? If not, during which seasons do you utilize the river?
3. Approximately how many individuals a year utilize the school's property for access to the Connecticut River?
4. Do you have planned recreation improvements or activity changes related to the waterfront?
5. Is the public allowed to access the river over school property? If so, where and for what?
6. Overall, how satisfied is the school with the river water levels on a scale of 1 to 5?

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

7. Overall, how satisfied is the school with the available number of recreation facilities within the Projects?

1	2	3	4	5
Not Satisfied at all	Slightly Satisfied	Satisfied	Moderately Satisfied	Extremely Satisfied

8. Do you have any additional comments regarding recreation opportunities in this area of the Connecticut River?

---

---

---

We are available during the next week to discuss the above questions. Please let myself or Heather Seiders know if mornings or afternoons work best for you. We look forward to hearing from you.

Take care.  
Angela Whelpley  
Environmental Specialist  
Civil Designer



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3830 | F: 207.621.8226 | C: 207.215.0308  
[awhelpley@trcsolutions.com](mailto:awhelpley@trcsolutions.com)

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Heather Seiders  
Environmental Specialist



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3839 | F: 207.621.8226 | C: 207.215.5147

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# **APPENDIX F – QUESTIONNAIRES SENT TO LAW ENFORCEMENT AND OPEN SPACE COMMITTEES**

## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'police@erving-ma.org'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Afternoon Chief Blair~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

1. While on patrol, has your department noted any issues regarding recreational use, such as public safety issues, user conflicts, misuse of facilities, trespassing, vagrancy, or vandalism at recreation sites located within your community? (See attached map)

If so, please explain any issues

---

2. Do you have any additional comments regarding public recreation use and demand in this area of the Connecticut River? \_\_\_\_\_
- 

I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~

**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'policedept@gillmass.org'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Morning Chief Hastings~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

1. While on patrol, has your department noted any issues regarding recreational use, such as public safety issues, user conflicts, misuse of facilities, trespassing, vagrancy, or vandalism at recreation sites located within your community? (See attached map)

If so, please explain any issues

- 
2. Do you have any additional comments regarding public recreation use and demand in this area of the Connecticut River? \_\_\_\_\_

I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~

**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'haighr@greenfieldpd.org'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Afternoon Chief Haigh Jr.~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

1. While on patrol, has your department noted any issues regarding recreational use, such as public safety issues, user conflicts, misuse of facilities, trespassing, vagrancy, or vandalism at recreation sites located within your community? (See attached map)

If so, please explain any issues

- 
2. Do you have any additional comments regarding public recreation use and demand in this area of the Connecticut River? \_\_\_\_\_

I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~

**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'hinsdalepolice@pd.hinsdale.nh.gov'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Afternoon Chief Faulkner~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

1. While on patrol, has your department noted any issues regarding recreational use, such as public safety issues, user conflicts, misuse of facilities, trespassing, vagrancy, or vandalism at recreation sites located within your community? (See attached map)

If so, please explain any issues

---

2. Do you have any additional comments regarding public recreation use and demand in this area of the Connecticut River? \_\_\_\_\_
- 

I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~

**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'wilton.gray@state.ma.us'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Afternoon Major Gray~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

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I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~



**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'cdodge@montague.net'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Afternoon Chief Dodge III~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

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Thank you~

**Seiders, Heather**

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 1:02 PM  
**To:** 'police@townnfld.com'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Good Afternoon Chief Leighton~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

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I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~

## Seiders, Heather

---

**From:** Whelpley, Angela  
**Sent:** Tuesday, November 24, 2015 10:19 AM  
**To:** Seiders, Heather  
**Subject:** FW: FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study  
**Attachments:** FirstLight Recreation Site Map.pdf

Angela M. Whelpley

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 3:20 PM  
**To:** 'manderso@windhamcountyvt.gov' <manderso@windhamcountyvt.gov>  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Afternoon Lieutenant Anderson~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and is conducting various recreation-related studies in connection with the relicensing. We are conducting a study to determine the amount of recreational use and demand that occurs at the Turners Falls and Northfield Mountain recreation sites. The study specifies that we contact your department to discuss issues regarding recreational use that you have observed within the Project boundaries. I have attached a map showing the recreation sites that have been identified and the Project boundary. We are contacting you to see if you would consider talking with us regarding your knowledge of the recreation sites shown on the attached map. If so, I would like to schedule a call to discuss the following questions.

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If so, please explain any issues

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2. Do you have any additional comments regarding public recreation use and demand in this area of the Connecticut River? \_\_\_\_\_

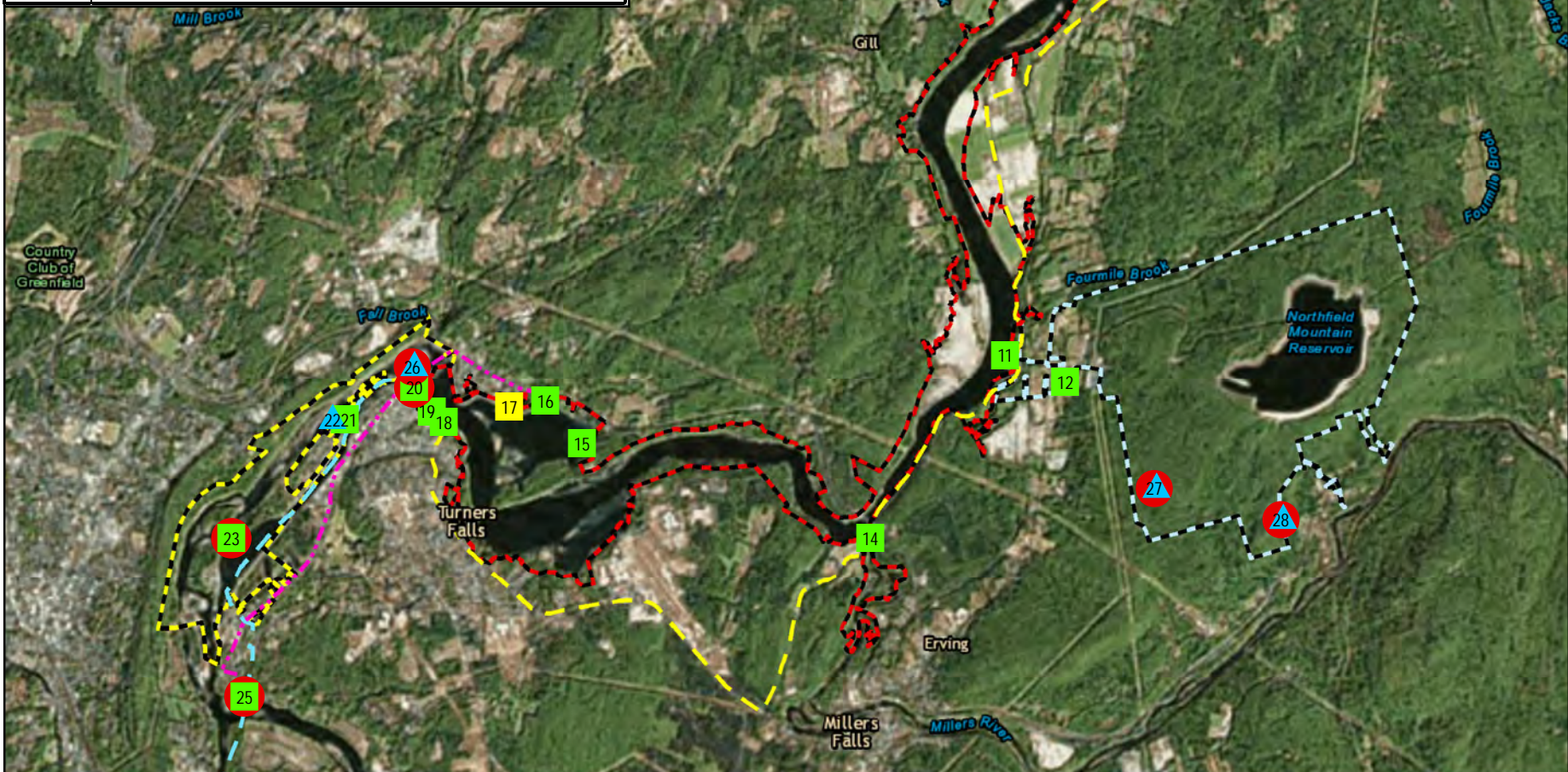
I am available during the next week to discuss the above questions. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

### Legend

-  Turners Falls Project Boundary
-  Turners Falls and Northfield Mountain Project Boundary
-  Northfield Mountain Project Boundary
-  Recreation Site Owned by FirstLight (Addendum Update)
-  Informal Recreation Site (Addendum Addition)
-  Recreation Site Owned by FirstLight
-  Recreation Site Owned by Others
-  Informal Recreation Site
-  Canalside Trail Bike Path
-  Fort Hill Rail Trail
-  The Northfield Connector (Site 13)
-  Canoe Portage (Site 24)



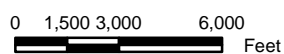
SITE ID	SITE NAME
1	Governor Hunt Boat Launch/Picnic Area
2	Ashuelot River Informal Campsite
3	Fort Hill Rail Trail Parking
4	Pauchaug Wildlife Management Area
5	Pauchaug Boat Launch
6	Schell Bridge Informal Site
7	Informal Multi-Use Site
8	Bennett Meadow Wildlife Management Area
9	Munn's Ferry Boat Camping Recreation Area
10	Informal Munn's Ferry
11	Boat Tour and Riverview Picnic Area
12	Northfield Mountain Tour and Trail Center
13	Northfield Connector Bikeway
14	Cabot Camp Access Area
15	Barton Cove Nature Area and Campground
16	Barton Cove Canoe and Kayak Rental Area
17	State Boat Launch
18	Canalside Trial Bike Path
19	Unity Park
20	Gatehouse Fishway Viewing Area
21	Turners Falls Branch Canal Area
22	Turners Falls No. 1 Station Fishing Access
23	Cabot Woods Fishing Access
24	Turners Falls Canoe Portage
25	Poplar Street Access Site
26	Turners Falls Dam Downstream Put-in
27	Rose Ledge Climbing Area
28	Farley Ledge Climbing Area



**Northfield Mountain Pumped Storage Project (No. 2485)  
and Turners Falls Hydroelectric Project (No. 1889)**

Study 3.6.2  
Recreation Facilities Inventory  
and Assessment Addendum

Turners Falls and Northfield  
Mountain Project Recreation Sites



## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 10:59 AM  
**To:** 'recreation.mark.burnett@erving-ma.org'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Morning~

As you may know, FirstLight is currently conducting studies as part of the FERC relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and we are conducting a study to identify the amount of recreational use at the Turners Falls and Northfield Mountain Projects. We would like to confirm with your department and/or committee that we are utilizing your current recreation and open space plans to help guide us in understanding the use and demand of recreation within the two Projects. The plan that we have is the Town of Erving Open Space and Recreation Plan, 2010.

I am available during the next week to discuss the current plans you have on file. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~

Angela M. Whelpley  
Environmental Specialist  
Civil Designer



14 Gabriel Drive, Augusta, ME 04330  
T: 207.620.3830 | F: 207.621.8226 | C: 207.215.0308  
[awhelpley@trcsolutions.com](mailto:awhelpley@trcsolutions.com)

Follow us on [LinkedIn](#) or [Twitter](#) | [www.trcsolutions.com](http://www.trcsolutions.com)

## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 10:59 AM  
**To:** 'info@gillmass.org'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Morning~

As you may know, FirstLight is currently conducting studies as part of the FERC relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and we are conducting a study to identify the amount of recreational use at the Turners Falls and Northfield Mountain Projects. We would like to confirm with your department and/or committee that we are utilizing your current recreation and open space plans to help guide us in understanding the use and demand of recreation within the two Projects. The plan that we have is the Town of Gill 2011 Open Space and Recreation Plan.

I am available during the next week to discuss the current plans you have on file. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~  
Angela M. Whelpley  
Environmental Specialist  
Civil Designer



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## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 10:58 AM  
**To:** 'christym@greenfield-ma.gov'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Morning~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and we are conducting a study to identify the amount of recreational use at the Turners Falls and Northfield Mountain Projects. We currently do not have a recreation or open space plan on file for your department. If you have a plan that we could use to help guide us in understanding the use and demand of recreation within the two Projects, we would greatly appreciate talking with you about it.

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Thank you~  
Angela M. Whelpley  
Environmental Specialist  
Civil Designer



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## Seiders, Heather

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**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 10:57 AM  
**To:** 'recdir@montague-ma.gov'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Morning~

As you may know, FirstLight is currently conducting studies as part of the Federal Energy Regulatory Commission relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and we are conducting a study to identify the amount of recreational use at the Turners Falls and Northfield Mountain Projects. We currently do not have a recreation or open space plan on file for your department. If you have a plan that we could use to help guide us in understanding the use and demand of recreation within the two Projects, we would greatly appreciate talking with you about it.

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Thank you~  
Angela M. Whelpley  
Environmental Specialist  
Civil Designer



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## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 11:00 AM  
**To:** 'Jerry@Wagener.com'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Morning~

As you may know, FirstLight is currently conducting studies as part of the FERC relicensing process for the Turners Falls and Northfield Mountain Projects. TRC is the recreation consultant for FirstLight, and we are conducting a study to identify the amount of recreational use at the Turners Falls and Northfield Mountain Projects. We would like to confirm with your department and/or committee that we are utilizing your current recreation and open space plans to help guide us in understanding the use and demand of recreation within the two Projects. The plan that we have is the Town of Northfield Open Space and Recreation Plan 2013.

I am available during the next week to discuss the current plans you have on file. Please let me know if mornings or afternoons work best for you. I look forward to hearing from you.

Thank you~  
Angela M. Whelpley  
Environmental Specialist  
Civil Designer



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## Seiders, Heather

---

**From:** Whelpley, Angela M.  
**Sent:** Thursday, July 23, 2015 10:58 AM  
**To:** 'northfieldrecomm@yahoo.com'  
**Subject:** FirstLight Northfield Mountain Pumped Storage and Turners Falls Projects - FERC Relicensing - Recreation Study

Good Morning~

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