# APPENDIX A: SITE SPECIFIC PROJECT PLAN (SSPP)

## SITE SPECIFIC PROJECT PLAN FOR:
## MOULTONBOROUGH BAY INLET WATERSHED RESTORATION PLAN DEVELOPMENT AND IMPLEMENTATION PHASE 1

(NHDES Project # RI-14-M-06)

Under the New Hampshire Section 319 Nonpoint Source Grant Program QAPP
RFA# 08262
August 23, 2013

(December 22, 2014)

**PREPARED BY:**

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**For Review:**
Project Manager:

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Patricia Tarpey, LWWA

Technical Project Manager/QA Officer:

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Forrest Bell, FB Environmental Associates

NHDES Project Manager:

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Stephen Landry, NHDES

Program Quality Assurance Coordinator:

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Jillian E. McCarthy, NHDES

NHDES Quality Assurance Manager:

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Vincent Perelli, NHDES

**For Receipt:**
EPA Nonpoint Source Program Coordinator:

_____
Erik Beck, NHDES

# 1-DISTRIBUTION LIST

Table 1 lists people who will receive copies of the approved Site Specific Project Plan (SSPP) for Moultonborough Bay Inlet Watershed Restoration Plan Development and Implementation Phase 1 under the *New Hampshire Section 319 Nonpoint Source Grant Program Quality Assurance Project Plan* dated **August 23, 2013**.

TABLE 1. SSPP Distribution List

| SSPP Recipient Name | Project Role | Organization | Telephone number and e-mail address |
|---|---|---|---|
| Patricia Tarpey | Project Manager | LWWA | 603-581-6632 ptarpey@winnipesaukee.org |
| Forrest Bell | Technical Project Manager/QA Officer | FB Environmental | 207-221-6699 info@fbenvironmental.com |
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| Jennifer Jespersen | Task Manager/QA-QC | FB Environmental | 207-221-6699 jenj@fbenvironmental.com |
| Kevin Ryan | Buildout Analysis | FB Environmental | 207-221-6699 kevinr@fbenvironmental.com |
| Laura Diemer | Water Quality Data Review/LLRM | FB Environmental | 603-828-1456 laurad@fbenvironmental.com |
| Tom Ballestero | BMP Design | UNH Stormwater Center | (603) 862-1405. tom.ballestero@unh.edu |
| Stephen Landry | NHDES Project Manager | NHDES, Watershed Management Bureau | 603-271-2969 Stephen.landry@des.nh.gov |
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| Erik Beck | USEPA Project Manager | USEPA New England | 617-918-1606 beck.erik@epa.gov |

# 2-PROJECT ORGANIZATION

Figure 1 (below) outlines the organization structure of the project personnel and Table 2 identifies the roles and responsibilities of those individuals involved in the project.

The principal data users include the Lake Winnipesaukee Watershed Association (LWWA), FB Environmental Associates (FBE), DK Water Resource Consulting, LLC, and NHDES, who will use the data to assist in the development of the watershed-based plan for Moultonborough Bay Inlet. Project personnel will present the data to the Moultonborough Bay Inlet Watershed Advisory Committee, who will be the principal decision makers. The Moultonborough Bay Inlet Watershed Advisory Committee will be comprised of representatives from the communities of Moultonborough and Sandwich, members of Lees Pond Association, members of two homeowner's associations; Balmoral Improvement Association and Suissevale, as well as staff from Plymouth State University and Granite Rural Water Association.

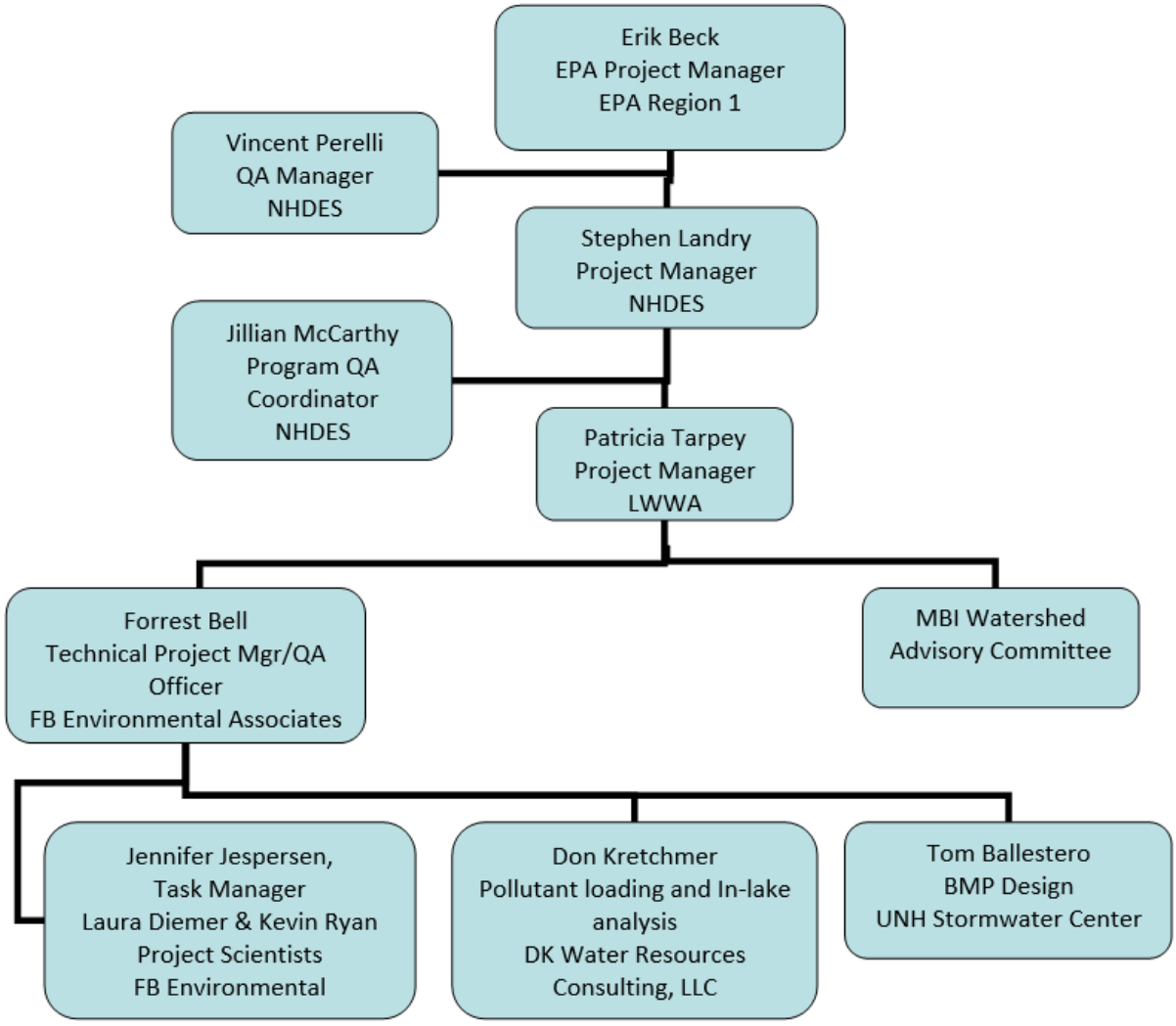


FIGURE 1. Project Organizational Chart

Patricia Tarpey, Project Manager, will have the responsibility of overseeing and communicating progress in the project to NHDES, partners and the stakeholders. Ms. Tarpey will also be responsible for documenting and notifying the partners and stakeholders of any changes made to the project.

TABLE 2. Personnel Responsibilities and Qualifications

| Name and Affiliation | Responsibilities | Qualifications |
|---|---|---|
| Patricia Tarpey, LWWA | Project Manager | On file |
| Forrest Bell, FBE | Technical Project Manager | On file |

| | | |
|---|---|---|
| | Project QA/QC Officer | |
| Don Kretchmer, DK Water Resources Consulting, LLC | Pollutant loading analysis, In-lake quality analysis, LLRM model specialist. | On file |
| Jennifer Jespersen, FBE | Task Manager | On file |
| Laura Diemer, FBE | Water Quality Data and LLRM calculations | On file |
| Kevin Ryan, FBE | Build-out Analysis, CommunityViz Software | On file |
| Tom Ballestero, UNH Stormwater Center | BMP Design | On file |
| Jillian McCarthy, NHDES, Watershed Management Bureau | Reviews QAPP preparation and other QA/QC activities | On file at NHDES |
| Stephen Landry, NHDES, Watershed Management Bureau | Reviews and oversees projects funded by NHDES 319 Restoration Grants in Merrimack basin. | On file at NHDES |
| Vincent Perelli, NHDES Planning, Prevention & Assistance Unit | Reviews and approves QAPPs | On file at NHDES |
| Erik Beck, USEPA Region 1 | EPA Project Manager | On file at EPA |

# 3-SITE INFORMATION

Moultonborough Bay Inlet (Figure 2), the northernmost feature of Lake Winnipesaukee, has a watershed area of 31,556 acres that extends through Moultonborough up into Sandwich. The Inlet, an area of approximately 1017 acres, receives the majority of its water from drainage via the many streams and ponds located throughout the sub-watershed. As part of Lake Winnipesaukee, it shares its assessment unit NHLAK700020110-02-19 and oligotrophic classification. However, the Inlet has historically exhibited excessive levels of in-lake total phosphorus (TP) compared to the seven other sub-basins, which comprises Lake Winnipesaukee. In addition to Lake Winnipesaukee's current impairment for cyanobacteria (hepatotoxic microcystins), several waterbodies within the Moultonborough Bay Inlet (MBI) sub-watershed are listed on the State's 305(b)/303(d) list for failure to fully support aquatic life use due to elevated concentrations of chlorophyll-*a*, insufficient dissolved oxygen, excessive total phosphorus (TP), and non-native aquatic plants (milfoil).

Development around the MBI consists of a mix of seasonal and year-round residential homes, which include numerous old cottages and summer camps, plus two densely-built residential communities of approximately 400 homes, each located on the southeastern shore of the basin. The watershed is characterized by steep slopes, a high watershed to lake area ratio, and miles of gravel and private roads.

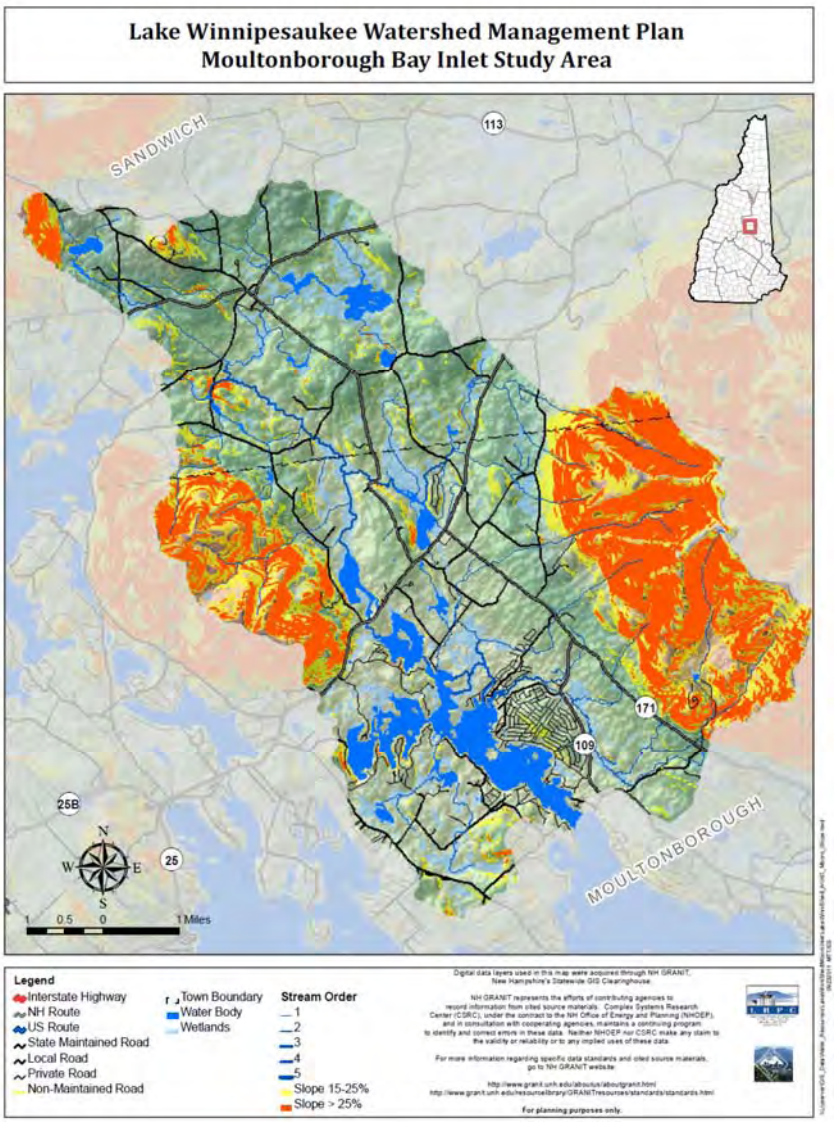


FIGURE 2. Moultonborough Bay Inlet sub-watershed

## 4-PROJECT RATIONALE

The Moultonborough Bay Inlet Watershed Restoration Plan Development and Implementation: Phase 1 project represents part of the long-term strategy designed to protect the water quality of Lake Winnipesaukee. The strategy was developed through the collaborative effort of several stakeholders, including the Lake Winnipesaukee Watershed Association, Lakes Region Planning Commission, and the Town of Moultonborough.

Current water quality impairments in the Moultonborough Bay Inlet (MBI) sub-watershed include cyanobacteria hepatotoxic microcystins impairment, source unknown for Lake Winnipesaukee, and *chlorophyll-dissolved* oxygen, TP impairments for Garland Pond, sources unknown. In addition to the 303(d) list, the draft 2012 watershed 305(b) assessment report lists Berry Pond as potentially not supporting

for chlorophyll-a and TP, and Lees Pond as potentially not supporting for dissolved oxygen saturation, and impaired for non-native aquatic plants (see map of the 2012 MBI 305(b) assessment and the Surface Water Quality Report Card).

Sources of pollutants within the watershed that have led to the existing impairments are assumed to be principally associated with stormwater runoff and aging or failing septic systems. Both of these nonpoint sources are identified as priorities within the New Hampshire Nonpoint Source Management Plan with stormwater ranked as the number one contributor of nonpoint source pollution to surface waters in New Hampshire.

Preliminary watershed and in-lake analysis of the MBI sub-watershed indicates the sub-basin has a low capacity to assimilate nutrients due to the small basin area, small volume, and shallow mean depth, making it sensitive to additional loading.

The Moultonborough community has made water quality protection a high priority, investing considerable resources (both financial and voluntary labor) over the past four years. Development of a watershed restoration plan will assist the community in focusing their efforts on nutrient reduction by identifying sources of pollutants within the Moultonborough Inlet sub-watershed that have led to the impairments.

# 5-PROJECT APPROACH/STUDY DESIGN

Preliminary analysis of the Lake Winnipesaukee watershed indicates that the morphology and hydrology of the Moultonborough Bay Inlet sub-watershed makes the sub-basin highly sensitive to development and therefore it plays a significant role in impacting the overall water quality of the entire lake, emphasizing the importance of management planning in this sub-watershed.

The scope of work for this phase of the project begins the development of an EPA, nine key element, Moultonborough Bay Inlet Watershed Restoration Plan that addresses the impairments in the Inlet and its contributing surface waters by identifying sources of pollutants and the actions necessary to improve water quality and overall aquatic life health in the watershed.

Near-term results and outcomes expected from this phase in development and implementation of the restoration plan include: 1) setting an in-lake threshold for phosphorus; 2) identification and prioritization of site specific BMPs to reduce sediment and nutrient loading; 3) improved septic system maintenance through education and outreach to property owners; 4) education on gravel road BMPs; and 5) sediment removal and nutrient reductions achieved through the implementation of stormwater improvements at States Landing, as well as small stormwater improvement projects on homeowner sites.

This stakeholder-driven process will assist the communities in understanding how land use and future development impacts their local water quality, and why development of a restoration plan is a necessary task for successful lake quality management planning and implementation.

To ensure successful development of the restoration plan, LWWA has contracted with FB Environmental Associates to perform the watershed assessment, pollutant load and in-lake modeling analyses, identification of mitigation actions and estimation of pollution reductions necessary for improving the water quality of Moultonborough Bay Inlet.

Completion of the following tasks will occur:

- *Evaluate existing water quality data for completeness and validity in the Moultonborough Bay Inlet sub-watershed from all available sources.* The NHDES OneStop data portal will be used to access data that has been pre-screened and quality checked by NHDES. The datasets include information from NHDES lake trophic surveys, data from the NH Volunteer Lake Assessment Program, and UNH's Lakes Lay Monitoring Program. The water quality data will be used to assess current water quality conditions, determine the assimilative capacity, and assist the Water Quality Advisory Committee in setting a water quality goal for phosphorus. Details of the source of the water quality data, the assimilative capacity analysis and water quality goal setting process are provided in Sections 6 and 7 of this plan. Pat Tarpey, LWWA, will complete this task with review provided by FB Environmental.

- *Complete phosphorus loading analysis for the MBI sub-watershed.* An estimation of internal P-loading, septic system P loading, future loading scenarios, and other potential sources will be determined. A threshold for phosphorus loading in the sub-watershed will be established using the Lake Loading Response Model (LLRM). Details of the LLRM are provided in Section 10 of this plan, and details regarding who will complete each task are provided in Section 8.

- *Verify watershed P load models using in-lake P prediction models*. Details of the prediction models are included in Section 10 of this plan, and Section 8 provides information on personnel conducting the task.

The results of the water quality and assimilative capacity analyses, pollutant load, in-lake analysis, and build-out analysis will be used to:

- *Formalize the water quality goal for Moultonborough Bay Inlet.* The water quality goal will be established by the Moultonborough Bay Inlet Watershed Advisory Committee with guidance provided by LWWA, FB Environmental and DK Water Resources Consulting, LLC.

- *Generate pollution reduction estimates* required to meet the water quality goal using approved land use/load reduction models and manufacturers' specification sheets on BMP performance.

It is anticipated that the water quality analyses, assimilative capacity analysis, and pollutant loading analysis will be completed by March 2015. The in-lake analysis and build-out analysis will be completed by June 2015.

# 6-HISTORICAL DATA INFORMATION

As mentioned previously, Moultonborough Bay Inlet has exhibited excessive levels of in-lake total phosphorus (TP) compared to the seven other sub-basins which comprise Lake Winnipesaukee. In addition to Lake Winnipesaukee's current impairment for cyanobacteria (hepatotoxic microcystins), several waterbodies within the Moultonborough Bay Inlet (MBI) sub-watershed are listed on the State's 305(b)/303(d) list for failure to fully support aquatic life use due to elevated concentrations of chlorophyll-*a*, insufficient dissolved oxygen, excessive total phosphorus (TP), and non-native aquatic plants (milfoil).

Water quality data collected from eight sites within MBI during the three-year period 2010-2012 show seasonal median TP concentrations ranging from 7.6 to 14.8 µg/L (58 samples) and seasonal mean chlorophyll-*a* concentrations ranging from 2.2 to 5.4 µg/L (41 samples). For all sites combined, the seasonal median is 10.6 ug/L TP, and mean 3.4 µg/L Chlorophyll-*a*. As Moultonborough Bay Inlet shares Lake Winnipesaukee's oligotrophic classification, the Inlet would fail to support the aquatic life use designation according to criteria established for both TP and Chlorophyll-*a*.

Limited historical data exists for the Inlet; however, water quality data collected in the mid-1970's as part of an area-wide wastewater management study, showed total phosphorus concentrations in Moultonborough Bay ranging from mean values of 25 to 30 µg/L. Numerous parameters were evaluated as part of the study, resulting in Moultonborough Bay being classified as mesotrophic, and the remainder of Lake Winnipesaukee classified as oligotrophic (Normandeau Associates, 1977).

The median TP concentration for the Inlet during the period of 2000 to 2006 was 13.2 µg/L based on 3 sampling locations and 15 data points. Consistent sampling in the Inlet has occurred since 2010 through the Moultonborough Conservation Commission. Water quality data is collected by volunteers in the UNH Lakes Lay Monitoring Program (LLMP). Water samples are transported to UNH Center for Freshwater Biology where QA/QC protocols are followed for processing and analysis. UNH submits the data annually to NHDES which also ensures QA/QC protocols have been met before the data is accepted and entered into the Environmental Monitoring Database (EMD) managed by NHDES.

# 7-ESTABLISHING WATER QUALITY GOALS

Potential pollution threats to the water quality include stormwater runoff, development pressure, recreation, septic systems, erosion, and land-use practices. The goal of this project is to protect the surface waters of the watershed from these threats by developing a Watershed Restoration Plan which will establish in-lake and watershed load reduction goals for phosphorus, the key limiting nutrient for this sub-watershed and Lake Winnipesaukee.

A water quality goal for total phosphorus (TP) will be established for Moultonborough Bay Inlet by the Advisory Committee. Water quality data analysis for the Inlet will be conducted on data available from the EMD and UNH by Patricia Tarpey, LWWA Project Manager. The data will be divided into two categories – historical data greater than 10 years old, and data collected within the last 10 years. The seasonal (May 24 - September 15) median for each sampling site will be determined for both TP and Chl-*a*, then the median of the medians will be calculated for the Inlet.

The assimilative capacity of a waterbody describes the amount of pollutant that can be added to that waterbody without causing a violation of the water quality criteria. The water quality nutrient criterion for phosphorus has been set at 8 µg/L for an oligotrophic waterbody (High Quality Water). The NHDES requires 10% of the state standard to be kept in reserve; therefore phosphorus levels must remain below 7.2 µg/L to be in the Tier 2 High Quality Water category.

**Assimilative Capacity (AC) for Total Phosphorus (TP)**

- Total AC = (Water Quality Standard (8µg/LTP) – Best Possible WQ (0 µg/L) = 8µg/L TP
- Reserve assimilative capacity = 0.10 x Total AC = 0.8 µg/L TP

- Remaining assimilative capacity = 7.2 µg/L– Existing WQ

An analysis of a waterbody's assimilative capacity is used to determine the total assimilative capacity, the reserve assimilative capacity, and the remaining assimilative capacity of each water quality parameter being considered. This information is then used to determine water quality goals and actions necessary to achieve those goals. The assimilative capacity analysis is conducted in accordance with the Standard Operating Procedure for Assimilative Capacity Analysis for New Hampshire Waters.

Currently, Lake Winnipesaukee is categorized as oligotrophic (NHDES, Environmental Monitoring Database). The process of establishing a water quality goal will be guided by the assimilative capacity analysis conducted by LWWA. LWWA will first determine whether the current median water quality of the Inlet is greater than the reserve assimilative capacity. If median water quality values for each waterbody are greater than the reserve assimilative capacity (Tier 2- exceeds standards), then the water quality goal will be considered based on the current median value and historic water quality data. If the median water quality values fall within the reserve capacity (Tier 1), then the water quality goal will be determined based on historical water quality and potential reductions needed to get water quality values back to the high quality range. Once the initial calculations have been completed and reviewed by FB Environmental and DK Water Resource Consulting, the Advisory Committee, consisting of municipal officials, conservation commission and planning board members, representatives of area lake associations, and NHDES staff will help finalize the water quality goals.

# 8-LOADING MODELS

*A. Watershed Phosphorus Loading*

The Lake Loading Response Model (LLRM; version "*Lake Loading Response Model_LLRM_ver2010*") (also called SHEDMOD or ENSR-LRM) will be used to assess current nutrient loads from the watershed, and the load reductions that would result from the implementation of best management practices (BMPs). This model was developed by AECOM for use in New England and modified for New Hampshire lakes by incorporating New Hampshire land use, total phosphorus (TP) export coefficients, and adding septic system loading into the model (AECOM, 2009). This model provides the best fit for the Moultonborough Bay Inlet sub-watershed, and has been used extensively for more than 30 recent Lake TMDLs in New Hampshire. A recently completed (and NHDES-approved) LLRM model version, such as the one used in Province Lake in 2013, will be used as the starting point. The LLRM User Guide contained in the *Total Maximum Daily Load for Robinson Pond, Hudson, NH* (AECOM and NHDES, 2011) will serve as the primary documentation on the model.

Data needed for input into the LLRM includes water quality monitoring data (total phosphorus, Chl-*a*, and transparency); physical characteristics such as lake surface area, volume and flushing rate; tributary monitoring data including discharge; corrected GIS land use data; sub-watershed land area; precipitation data; septic system data (typically available from the US Census Bureau). Weather data will be downloaded from the National Oceanic and Atmospheric Association (NOAA). Tributary discharge data will be used, where available, from USGS gauging stations in the watershed. Sub-watershed land area will be calculated using the most current data possible in GIS. In the absence of data that meets project standards for completeness and validity, LLRM default values will be used pending approval of the advisory committee.

Geographical Information Systems (GIS) data will be obtained by FB Environmental to assist with the land-use assessment and specifically for determining the total land use area by land use type (in acres) for input into the LLRM. GIS land use data are available from the State of New Hampshire GIS website (GRANIT). The NH Land Cover Assessment 2001 or NHLC01, consists of the most recent and detailed classification of land cover in New Hampshire based on satellite images acquired between 1990 and 1999, with further revisions in 2001 (GRANIT). These data will be used for the land-use loading analysis as described below in the section titled *Future Loading Model/Build-Out Analysis*. GIS land-use coverages will be ground-truthed by FB Environmental based on field observations, stakeholder input, and publicly available recent aerial photography to ensure the best coverages for input into the model.

Laura Diemer of FBE will be running the model. FBE staff have used watershed loading models for several years, and have successfully applied results from LLRM, AVGWLF, PREDICT, and the USEPA Region 5 Models to many watershed plans. FBE Senior Project Manager Jennifer Jespersen and Don Kretchmer will serve as Task Managers on the project, and will provide technical oversight and confirm that the information used for the model is correct. NHDES will provide technical assistance and review of modeling methods and results. Laura will make edits to the model based on feedback from Jennifer Jespersen, Don Kretchmer, NHDES, and the Advisory Committee members who will have input on the data and scientific methods used in the analysis.

*B. In-Lake Total Phosphorus Concentrations*

Results of the watershed total phosphorus modeling will be input into a series of empirical models that provide predictions of in-lake TP concentrations, Chl-*a* concentrations, algal bloom frequency and water clarity. Also referred to as total phosphorus retention modeling, the model estimates in-lake phosphorus concentrations based on physical and chemical lake characteristics including lake volume, mean depth, watershed area, flushing rate, and estimated watershed phosphorus loading. Because of the imperfect nature of any model to predict processes within natural systems, the model will compare six different in-lake phosphorus models including: Kirchner-Dillon (1975), Vollenweider (1975), Larsen-Mercier (1976), Jones-Bachman (1976), Reckhow General (1977), and Nürnberg (1998). The average of the six empirical models will be used as the predicted TP value for each of the lakes with some exceptions (it may be determined that one of the models is most representative, or a model could be eliminated as inapplicable, which will be documented both in the model spreadsheet and in all applicable reports). The predicted in-lake TP concentration will be compared to actual in-lake water quality data analysis (discussed above). Additional predictions (Chl-*a*, water clarity and bloom probability) will be determined based on the average in-lake TP concentration.

*C. Future Loading Model/Build-Out Analysis*

FB Environmental will conduct a buildout analysis which will analyze the effects of predicted future watershed development on the water quality of the Moultonborough Bay Inlet. The buildout analysis utilizes GIS-based zoning data and CommunityViz® software to estimate future development within the watershed. The analysis will combine projected population estimates, current zoning restrictions, and a host of additional development constraints (conservation lands, steep slopes, wetlands, existing buildings, soils with development suitability, unbuildable parcels) in order to determine the extent of buildable area in the watershed. Future phosphorus loading will be estimated under full or partial buildout (depending on the

timeline of full buildout) and an assessment of the potential effects of future development as it relates to water quality goals. The buildout analysis will be conducted by Kevin Ryan. Kevin is proficient in the use of CommunityViz®, having used it for several similar watershed-based planning projects. Task manager Jennifer Jespersen will provide QA/QC of the buildout data inputs and results of the analysis. This model has been used effectively for previous Watershed Management Plans including Province Lake and the Salmon Falls Headwaters Lakes.

*D. Pollutant Load Reduction Estimates*

The "Simple Method" load reduction model will be used to calculate load reduction estimates for areas of the watershed that are shown to contribute substantial amounts of phosphorus to the Moultonborough Bay Inlet. The Simple Method is an established empirical model that estimates nutrient or pollutant export amount from watershed sites based on drainage area, precipitation patterns, land use, and known concentrations of pollutants. This method has been used many times by FBE for Watershed Management Plans. It is described in detail by the Minnesota Pollution Control Agency[1].

Load reduction estimates will be calculated by Laura Diemer of FBE and reviewed by project staff for completeness and rationality. Data will be evaluated using the best professional judgment of qualified staff and comparisons to load reduction estimates generated from similar watershed analyses in New Hampshire. FBE Task Manager Jennifer Jespersen will be evaluating all loading estimates for the purpose of QA/QC.

The Advisory Committee will identify and prioritize areas of the watershed to install pollutant runoff controls using Best Management Practices (BMPs) based on the results of the load reduction estimate analysis. FBE will estimate load reductions for approximately fifty of the identified BMPs. BMPs will be prioritized based on specific load reduction estimates to select highest priority BMPs. FBE will provide recommendations for a post-construction monitoring and sampling program to confirm that the desired BMPs will produce the desired pollutant removal. These estimates and other estimates of pollutant loading reductions calculated in the pollutant load model will provide an analysis to guide future implementation efforts in the watershed to help reduce phosphorus levels in the Moultonborough Bay Inlet.

Any observations, trends, conclusions, and limitations in the data will be documented by LWWA in the final report and reported to the Advisory Committee.

# 9-QUALITY OBJECTIVES AND CRITERIA

The utility of model outputs, and the confidence in decisions made on those outputs, are only as strong as the data used to build and calculate the model. FBE will make certain that all data used to inform model outputs have gone through careful QA/QC analyses. The bulk of water quality and GIS data used in this project will be obtained through NHDES, and will therefore have been through a screening process for quality assurance and completeness.

Water quality data will be obtained from NHDES OneStop. The historical water quality data for Winnipesaukee and the Moultonborough Bay Inlet has been collected by volunteers in the UNH Lakes Lay

[1] Minnesota Pollution Control Agency, *Minnesota Stormwater Manual.* "The Simple Method for estimating phosphorus export," accessed December 20, 2013. http://stormwater.pca.state.mn.us/index.php/The_Simple_Method_for_estimating_phosphorus_export

Monitoring Program (LLMP). Each season's data is reviewed by UNH Center for Freshwater Biology to ensure QA/QC protocols have been met before it is transferred to NHDES for acceptance into the Environmental Monitoring Database (EMD) managed by NHDES.

Geographical Information Systems (GIS) spatial data will be obtained by FB Environmental to use in the LLRM. GIS land-use data will be obtained from the State of New Hampshire GIS website (GRANIT). The NH Land Cover Assessment 2001 (or NHLC01) consists of the most recent and detailed classification of land cover in New Hampshire based on satellite images acquired between 1990 and 1999, with further revisions in 2001 (GRANIT). GIS land use data will be ground-truthed by FB Environmental based on field observations and publicly available recent aerial photography to ensure the most accurate land use information is used for input into all models.

# 10-QUALITY CONTROL

Quality control checks will be performed by FBE Task Manager Jennifer Jespersen to ensure that information collected for the project is accurately entered into spreadsheets. QA/QC checks will be conducted on all spreadsheets for inconsistencies. If errors are identified, FBE Project Manager Forrest Bell will review the input values, identify and correct the error to ensure that no incorrect information is used in any model calculation. In addition, FBE Task Manager Jennifer Jespersen will review all modeling inputs, calculations, and outputs for the purpose of QA/QC. All QA/QC issues identified will be properly documented, along with the appropriate steps taken to resolve the issues.

# 11-FINAL PRODUCTS AND REPORTING/SCHEDULE

The following deliverables will be provided to NHDES by the Project Manager, Patricia Tarpey, during the project period:

- Summary of Water Quality Data and Assimilative Capacity Analysis – February 2015
- Documentation of the process followed to establish a water quality goal for Moultonborough Bay Inlet – July 2015
- Report detailing land-use breakdown, and the identification of the current and future pollution source loads by land use type and source group by sub-watershed for each parameter. – June 2015
- Report detailing the pollutant load and in-lake quality analysis – June 2015
- Modeling scenarios including natural background, build out under current zoning, near-term, planned future development, and others to meet water quality target. June 2015
- A description of the NPS management measures that will be used to achieve the load reduction estimates based on the target water quality goals (as well as to achieve other watershed goals identified in this watershed-based plan), and an identification (using a map or a description) of the critical areas in which those measures will be needed to implement this plan. – September 2015

Semi-annual reports documenting all work performed on the project at the appropriate intervals throughout the duration of the project will be submitted to NHDES by Patricia Tarpey, Project Manager, as required in the contract. The semi-annual reports shall comply with the NHDES and EPA requirements found in the

semi-annual report guidance document provided to grant recipients by NHDES. A comprehensive final report in both electronic and hard-copy will be submitted to NHDES on or before the project completion date by the Project Manager. The final report shall include a description of all tasks completed and shall comply with the NHDES and EPA requirements found in the final report guidance document provided to grant recipients by NHDES.