

## Exhibit 30 – Phosphorus Control

The Moosehead redevelopment project drains directly to a lake watershed, Mountain View Pond. The following describes the pre and post development phosphorus loading for this lake watershed. See the attached calculations following this Exhibit.

The phosphorus analysis is based on several assumptions listed in this narrative, the support calculations, and the specific analytical methods described in *Phosphorus Control in Lake Watersheds: A Technical Guide to Evaluating New Development* (MDEP, March 2016). Data on current water quality and allowable loading for Mountain View Pond was obtained from MDEP. See the attached phosphorous calculations for the phosphorous allocations, small watershed thresholds, and the phosphorous budget for the lake watershed.

The phosphorous budget for Mountain View Pond watershed within Big Moose Township was calculated using the MDEP provided P value and by selecting a development area of 58 acres within the watershed. Based on this, a Project Phosphorus Budget (PPB) of 1.8568 pounds/year was calculated. The post-development calculation on the attached spreadsheet was prepared using a new permanent impervious area of 2.71 acres and new landscaped area of 1 acre. The calculations reflect 1.9430 pounds/year of phosphorous export for this new developed area. The calculations also reflect treatment of existing impervious areas. This results in a phosphorous mitigation credit of 0.2026 pounds/year. Therefore further reducing the post development phosphorous export to 1.7404 pounds/year, which is below the allowable phosphorous budget of 1.8568 pounds/year.

Phosphorus treatment will be accomplished by forested and meadow roadside buffering. The road surface runoff will be treated either by sheet-flow roadside buffers or by buffers with stone bermed level spreaders. Typically, forested or meadow roadside buffers will be established wherever grading will permit sheet flow runoff from the roads. Where sheet flow is not possible, stormwater running off the roads will be collected in ditches on the downhill side of the roads. These ditches will then be periodically discharged downhill via buffers with stone bermed level spreaders. There is a buffer next to a small impervious area (the pool patio and pavilion roof) that will sheet flow into a vegetated meadow buffer without going through a level spreader first. Because of the grades in this area the runoff will not concentrate before reaching the buffer therefore the buffer should perform as designed. The village area will have a catch basin system that will collect the runoff from the village area and outlet to one of the two underdrain soil filters being proposed on the project.

Stormwater buffers will be protected through the execution and recording of a deed restriction. Declaration of Restrictions for both meadow and forested buffers are included in this exhibit.

In addition to stormwater buffer restrictions, future development will be prohibited in the phosphorous development area as depicted on the civil design plans unless the developments has prior approval from LUPC or the Maine Department of Environmental Protection.