### ESS Group: Water Crossing

**Potential Effects:**
- Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams;
- Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of Road
designed

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate NH Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No instream works or fording from April 1 - July 15

### ESS Group: Permafrost

**Potential Effects:**
- Melting or loss of permafrost due to disturbance of the active layer

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan
<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S12</td>
<td>N2-S134</td>
<td>Permafrost</td>
<td>Site: 217 to 218</td>
<td>E-564904</td>
<td>E-564922</td>
<td>14N</td>
<td>696m</td>
</tr>
</tbody>
</table>

Potential Effects:

Melting or loss of permafrost due to disturbance of the active layer

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes.
- Maintain shrub and herbaceous vegetation to the extent possible.
- Remove trees by low-disturbance methods.
- Confine vehicle traffic to established trails to the extent possible.
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan.
**ESS Group:** Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S11</td>
<td>N2-Aqua-145</td>
<td>Unnamed Tributary into Wintering Lake</td>
<td>562137</td>
<td>6132888</td>
<td>14N</td>
<td>33.5m</td>
<td>33.5m</td>
<td>Moderate</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion.
- Use existing trails, roads or cut lines whenever possible as access routes.
- Identify and flag buffer areas prior to start of work.
- Riparian buffers shall be a minimum of 1m and increase in size based on slope or area entering waterway, within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No infield works or cutting from April 1 – July 15

**ESS Group:** Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S12</td>
<td>N2-Solls-134</td>
<td>Permafrost</td>
<td>Site: 219 to 220</td>
<td>E-564209 N-6134793</td>
<td>E-563992 N-6134594</td>
<td>14N</td>
<td>294m</td>
</tr>
<tr>
<td>N2-S12</td>
<td>N2-Solls-134</td>
<td>Permafrost</td>
<td>Site: 221 to 222</td>
<td>E-563699 N-6134315</td>
<td>E-563181 N-6133848</td>
<td>14N</td>
<td>690m</td>
</tr>
<tr>
<td>N2-S12</td>
<td>N2-Solls-134</td>
<td>Permafrost</td>
<td>Site: 223 to 224</td>
<td>E-562173 N-6132920</td>
<td>E-562092 N-6132846</td>
<td>14N</td>
<td>109m</td>
</tr>
<tr>
<td>N2-S12</td>
<td>N2-Solls-134</td>
<td>Permafrost</td>
<td>Site: 225 to 226</td>
<td>E-561683 N-6132471</td>
<td>E-561159 N-6131988</td>
<td>14N</td>
<td>713m</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Melting or loss of permafrost due to disturbance of the active layer

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes.
- Maintain shrub and herbaceous vegetation to the extent possible.
- Remove trees by low-disturbance methods.
- Confine vehicle traffic to established trails to the extent possible.
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan.
ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S16</td>
<td>N2-Aqua-146</td>
<td>Unnamed Tributary into Wintering Lake</td>
<td>561332</td>
<td>6132147</td>
<td>14N</td>
<td>225.6m</td>
<td>N/A</td>
<td>Moderate</td>
<td>Marginal</td>
</tr>
<tr>
<td>N2-S13</td>
<td>N2-Aqua-147</td>
<td>Unnamed Tributary into Wintering Lake</td>
<td>559187</td>
<td>6129698</td>
<td>14N</td>
<td>110.1m</td>
<td>N/A</td>
<td>Moderate</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams;
- Damage to stream banks; Loss of riparian vegetation; Non-habitat disturbance; Impacted fish movement; Flooding of floodplain

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing roads, trails or cut lines wherever feasible instead of building roads
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No instream works or fording from April 1 - July 15

ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S12</td>
<td>N2-Soils-134</td>
<td>Permafrost</td>
<td>Site: 225 to 226</td>
<td>E-561159</td>
<td>N-6131966</td>
<td>14N</td>
<td>713 m</td>
</tr>
<tr>
<td>N2-S13</td>
<td>N2-Soils-134</td>
<td>Permafrost</td>
<td>Site: 227 to 228</td>
<td>E-561159</td>
<td>N-6131966</td>
<td>14N</td>
<td>28 m</td>
</tr>
<tr>
<td>N2-S13</td>
<td>N2-Soils-135</td>
<td>Permafrost</td>
<td>Site: 229 to 230</td>
<td>E-560200</td>
<td>N-6130609</td>
<td>14N</td>
<td>118 m</td>
</tr>
<tr>
<td>N2-S13</td>
<td>N2-Soils-135</td>
<td>Permafrost</td>
<td>Site: 231 to 232</td>
<td>E-559835</td>
<td>N-6130609</td>
<td>14N</td>
<td>132 m</td>
</tr>
<tr>
<td>N2-S13</td>
<td>N2-Soils-135</td>
<td>Permafrost</td>
<td>Site: 233 to 234</td>
<td>E-559835</td>
<td>N-6129545</td>
<td>14N</td>
<td>228 m</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Melting or loss of permafrost due to disturbance of the above layer

**Specific Mitigation:**
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove tree stumps by low disturbance methods
- Confini vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan
ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S13</td>
<td>N2-Aqua-148</td>
<td>Unnamed Tributary into Wintering Lake</td>
<td>558358</td>
<td>6128722</td>
<td>14N</td>
<td>N/A</td>
<td>N/A</td>
<td>Low</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian buffers shall be a minimum of 50m and increase in size based on slope or ano entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate NH Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No instream works or felling from April 1 - July 15

ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S13</td>
<td>N2-Solls-137</td>
<td>Permafrost</td>
<td>Site: 237 to 238</td>
<td>E-558402 N-6128763</td>
<td>E-558334 N-6128663</td>
<td>14N</td>
<td>104 m</td>
</tr>
<tr>
<td>N2-S13</td>
<td>N2-Solls-138</td>
<td>Permafrost</td>
<td>Site: 239 to 240</td>
<td>E-557176 N-61227563</td>
<td>E-556983 N-61227103</td>
<td>14N</td>
<td>605 m</td>
</tr>
<tr>
<td>N2-S14</td>
<td>N2-Solls-138</td>
<td>Permafrost</td>
<td>Site: 241 to 242</td>
<td>E-556520 N-6126576</td>
<td>E-556381 N-6126432</td>
<td>14N</td>
<td>199 m</td>
</tr>
<tr>
<td>N2-S14</td>
<td>N2-Solls-138</td>
<td>Permafrost</td>
<td>Site: 243 to 244</td>
<td>E-556211 N-6126359</td>
<td>E-556274 N-6126321</td>
<td>14N</td>
<td>53 m</td>
</tr>
</tbody>
</table>

Potential Effects:

Melting or loss of permafrost due to disturbance of the active layer

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage and rutting
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confinve vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

MAP NUMBER: 87
ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
<th>Channel Width</th>
<th>Wet Width</th>
<th>Fish Habitat Class</th>
<th>Habitat Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-214</td>
<td>N2-W-1</td>
<td>Stoney Creek</td>
<td>853671</td>
<td>5144937</td>
<td>14N</td>
<td>18m</td>
<td>18m</td>
<td>Moderate</td>
<td>Important</td>
</tr>
<tr>
<td>N2-S15</td>
<td>N2-Aqua-150</td>
<td>Halfway River</td>
<td>553549</td>
<td>6124053</td>
<td>14N</td>
<td>18m</td>
<td>18m</td>
<td>Low</td>
<td>Important</td>
</tr>
</tbody>
</table>

Potential Effects:
Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of crossings.

Specific Mitigation:
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion.
- Use existing trails, roads or cut lines whenever possible as access routes.
- Identify and flag buffer areas prior to start of work.
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements.
- No in-stream works or fording from April 1 - July 15.

ESS Group: Species of Concern

<table>
<thead>
<tr>
<th>Sec-Seg ID ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Easting</th>
<th>Northing</th>
<th>UTM Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S15</td>
<td>N2-Eco-300</td>
<td>Plant species of concern</td>
<td>553581</td>
<td>6124010</td>
<td>14N</td>
</tr>
</tbody>
</table>

Potential Effects:
Plant species of concern.

Specific Mitigation:
- Identify and flag prior to start of work.
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion.
- Provide 5m vegetated (shrub and herbaceous) buffer around site.
- Remove trees by low-disturbance methods.
- Confinde vehicle traffic to established trails to the extent possible.

ESS Group: Permafrost

<table>
<thead>
<tr>
<th>Sec-Seg ID</th>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Start</th>
<th>Stop</th>
<th>UTM Zone</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2-S14</td>
<td>N2-Sol-138</td>
<td>Permafrost</td>
<td>Site: 245 to 246</td>
<td>E-556014</td>
<td>E-559963</td>
<td>14N</td>
<td>73 m</td>
</tr>
<tr>
<td>N2-S14</td>
<td>N2-Sol-138</td>
<td>Permafrost</td>
<td>Site: 247 to 248</td>
<td>E-555346</td>
<td>E-555269</td>
<td>14N</td>
<td>110 m</td>
</tr>
<tr>
<td>N2-S15</td>
<td>N2-Sol-139</td>
<td>Permafrost</td>
<td>Site: 249 to 250</td>
<td>E-554101</td>
<td>E-553792</td>
<td>14N</td>
<td>332 m</td>
</tr>
<tr>
<td>N2-S15</td>
<td>N2-Sol-140</td>
<td>Permafrost</td>
<td>Site: 251 to 252</td>
<td>E-553497</td>
<td>E-553135</td>
<td>14N</td>
<td>388 m</td>
</tr>
<tr>
<td>N2-S16</td>
<td>N2-Sol-140</td>
<td>Permafrost</td>
<td>Site: 253 to 254</td>
<td>E-553135</td>
<td>E-552987</td>
<td>14N</td>
<td>228 m</td>
</tr>
</tbody>
</table>

Potential Effects:
Melting or loss of permafrost due to disturbance of the active layer.

Specific Mitigation:
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes.
- Maintain shrub and herbaceous vegetation to the extent possible.
- Remove trees by low-disturbance methods.
- Confinde vehicle traffic to established trails to the extent possible.
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan.

MAP NUMBER: 88
ESS Group: Archaeological

Potential Effects:
- Potential disturbance to heritage Resources

Specific Mitigation:
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Identify and flag prior to start of work
- Conduct site investigation with Archaeologist post clearing and prior to construction
- Minimize surface disturbance around the site to the extent possible
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation

ESS Group: Water Crossing

Potential Effects:
- Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams;
- Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of flow paths

Specific Mitigation:
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate HL Veg Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- No in-stream works or fording from April 1 – July 15

ESS Group: Permafrost

Potential Effects:
- Melting or loss of permafrost due to disturbance of the active layer

Specific Mitigation:
- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confini vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

MAP NUMBER: 89