JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
106 HOGAN ROAD, SUITE 8
BANGOR, MAINE 04401

AMANDA E. BEAL
COMMISSIONER

JUDY C. EAST
EXECUTIVE DIRECTOR

April 14, 2021

Via Email Only

Black Diamond Consultants, Inc.
Attn: Mr. Jim Hebert
312 Water Street
PO Box 57
Gardner, Maine 04345

jrhebert@blackdiamond.net

RE: Data Request on pending Development Permit application DP 5050-B, Dallas Plantation, Franklin County, Maine

Dear Mr. Hebert:

Your application for Amendment B to Development Permit DP 5050 was received by the Maine Land Use Planning Commission on March 18, 2020. Planning and permitting staff have completed an initial review of the application materials and have found that it is missing critical information. Some of the missing information is the same information requested in Amendment A to Development Permit DP 5050 application deficiency letter dated December 23, 2020. To that end, staff placed your permit application on hold on March 18, 2020 relative to the timeframe. Please provide the missing information.

1. Technical Capability: Summarize the professional qualifications and experience of the individual(s) that conducted the wetland delineation. Indicate the technical capacity of the consultant that performed the wetland delineation.

2. Electricity: The electricity will be provided by a utility company. Submit a letter confirming the company's capacity to provide the electricity. The letter must indication that the company has sufficient knowledge of the proposed development to make an accurate assessment of the project's demand for electricity.

3. Soil Suitability and Mapping: Staff attached a copy of Chapter 10 § 10.25,G to help with this exhibit.
   - Page 4 of the soils report is missing from the application, please submit this page.
   - Indicate the date of the onsite soil inspection.

- Provide a scaled soil survey map for the Class A and the Class L soil surveys. The soils survey map must be according to the "Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping" Maine Association of Professional Soil Scientists, 2009. Among other items, the map must include the soils types with boundaries and soils test pit locations. Additionally, hydric soil map units, and map units with a low or very low development potential rating for low density development must be clearly identified on the soil survey map.
- The tower site soils have a very low development potential rating for low density development; the access road has low and very low development potential rating for low density development. Determination of soil suitability shall be based on the NRCS soils potential ratings for low density development. Explain the corrective measure that will be used to overcome limitations that resulted in a low or very low rating.

4. Erosion, Sedimentation, and Drainage Control Measures: Indicate the construction sequence/dated timeline sequence. The timeline must include construction of the development site, including stripping and clearing; rough grading; construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing must identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, size of areas to be cleared, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.

5. Roadway Construction and Upgrades: Staff attached a copy of Chapter 10 § 10.25,D and Chapter 10 § 10.27,D to help with these questions. Provide turnout information for a Class 2 roadway as outlined in Chapter 10 § 10.25,D,4,c. Provide a construction access management plan for the ATV/Snowmobile trail as indicated by Chapter 10 § 10.25,D,1. Wetland erosion control devices on the road do not appear to be present, see 10 § 10.27,D,1,a. Filter strips on the road do not appear to meet the requirements for the slopes encountered. Submit explanatory information in reference to 10 § 10.27,D,1,e.

6. Phosphorus Control: The tower creates a disturbed area of over one acre in the direct watershed of Haley Pond. Staff confirmed with the Maine Department of Environmental Protection that the tower is in the direct watershed of Haley Pond. Please provide the appropriate phosphorus control plan, phosphorus impact analysis, design and maintenance for the proposal as outlined in Chapter 10 § 10.25,L, a copy of which is attached.

7. Wetlands: The site work for the wetland delineation was completed January 28, 2021. Among other items, the onsite wetlands must be delineated on the ground, and presented in a site plan, using methods described in the "Corps of Engineers Wetlands Delineation Manual." U.S. Army Corps of Engineers (ACOE). (1987) and the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region." U.S. Army Corps of Engineers. (Version 2.0, January 2012). The data submitted indicates only one plant species was observed and the seasonally saturated/flooded Palustrine Forested Needle Leaved Evergreen classification stated in the application does not appear to match up with the labeling of "PSS4Etn" in the document; no other information for the delineation was provided. To that end, please submit the ACOE data forms for each delineated wetland, indicate on a map the sampling sites, indicate which data forms correspond with each

wetland, and clarify the classification of each wetland. Also, complete Supplement S-3 attached, and complete the requirements outlined in Supplement S-3 for the appropriate Tier review.

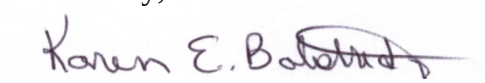
8. Tower Failure Evaluation: Please indicate the lease area and tower base setback from the D-RS3 subdistrict.

9. Harmonious Fit and Natural Character: See attached Memorandum concerning "Staff Comments on the Visual Impacts Assessment for the Proposed Communications Tower in Dallas Plantation" dated April 14, 2021 for additional submittal requirements in reference to harmonious fit and natural character.

Please note: Once the additional application data is received, staff may have additional questions on that data. Also, once the application data is completed, staff will submit a copy of the completed application data to review agencies and surrounding towns and plantations for comments.

Thank you for your patience and cooperation through this process. If you have any questions regarding this data request or the Commission's *Land Use Districts and Standards*, or if I may be of any other assistance, please do not hesitate to contact me at 207-215-4685 or via e-mail at: karen.bolstridge@maine.gov.

Sincerely,



Karen E. Bolstridge, Environmental Specialist III
Maine Land Use Planning Commission
Permitting and Compliance Division

Enclosure(s): Memorandum concerning "Staff Comments on the Visual Impacts Assessment for the Proposed Communications Tower in Dallas Plantation" dated April 14, 2021; Chapter 10 § 10.25,G; Chapter 10 § 10.25,L; Chapter 10 § 10.25,D; Chapter 10 § 10.27,D; Supplement S-3;

xc: dp5050b File

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
22 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0022

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

JUDY C. EAST
EXECUTIVE DIRECTOR

Memorandum

To: Administrative Record for Development Permit DP 5050 Amendment B

From: Commission Staff

Date: April 14, 2021

Re: Staff Comments on the Visual Impacts Assessment for the Proposed Communications Tower in Dallas Plantation

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Staff comments were requested for DP 5050-b, an application to construct a 300' Communications Tower in Dallas Plantation, Franklin County. Specifically, you asked whether the visual assessment, as presented, provided adequate information to determine whether the application would meet the requirements of 10.24,C with respect to scenic character; and 10.25,E,1 (Scenic Character).

Staff have reviewed the application materials, including the visual impact assessment (VIA). Staff have not reviewed the materials for any issues other than compliance with 10.24,C with respect to scenic resources and 10.25,E.

Relevant criteria:

10.24,C

Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to assure there will be no undue adverse effect on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal....

10.25,E

1. Scenic Character.

    a. The design of proposed development shall take into account the scenic character of the surrounding area. Structures shall be located, designed and landscaped to reasonably minimize their visual impact on the surrounding area, particularly when viewed from existing roadways,

with attention to designated scenic byway, major waterbodies, coastal wetlands, permanent trails, or public property.

b. To the extent practicable, proposed structures and other visually intrusive development shall be placed in locations least likely to block or interrupt scenic views as seen from existing roadways, with attention to designated scenic byway; major waterbodies; coastal wetlands; permanent trails; or public property.

Staff comments:

1. Proposed Location and Design

The proposal is for a telecommunications facility in Dallas Plantation, which would include a 300' Above Ground Level (AGL) self-supporting lattice tower with aviation lights in accordance with FAA requirements. While the lattice structure of the tower itself may only be visible as part of the background beyond three miles, the lighting required for such a tower would be visible from farther away. Because of the height and design of the tower (required lighting), and the presence of sensitive scenic resources like Rangeley Lake, Rangeley Lake State Park, the Appalachian Trail, and the Rangeley Lakes National Scenic Byway, it is appropriate to conduct a robust Visual Impacts Assessment (VIA).

The applicant completed a survey of sensitive scenic resources within an eight-mile Area of Potential Effect (APE) of the proposed location for the tower. In addition to a survey of scenic resources within the eight-mile APE, the applicant also provided viewshed mapping to determine where views of the proposed tower may occur, completed a balloon test, and provided accompanying photo simulations to illustrate what each view would look like at different times of day.

Commission staff also asked for an alternatives analysis related to the proposed location itself, and for the applicant to demonstrate why a 300' tower is required to address the gap in coverage in Dallas Plantation.

2. Telecommunications Needs Analysis

The materials submitted under 'Telecommunications Needs Analysis' (starting on page 151) provide helpful information about the FirstNet program, and about the role of Rising Tide LLC and AT&T in building out telecommunications infrastructure in the Commission's service area. The materials submitted also clearly describe how Radio Frequency (RF) maps are created, and what they depict.

The applicant contends that the proposed tower design, which would be 300' above ground level (AGL) and include flashing lights (medium intensity white during the day and high intensity red lights at night) is necessary because there are no other locations reasonably available for a tower, and which would close the FirstNet coverage gap in Dallas Plantation and along portions of Routes 4 & 16. The RF maps on pages 162-167 of the application illustrate potential differences in coverage needed to support the FirstNet program and indicate a 190' AGL tower in the same location proposed for the 300' AGL tower would not adequately address the existing gap in FirstNet coverage in Dallas Plantation.

The applicant stated that they looked for alternative locations but did not find any because all prospective parcels were: (i) landlocked or only accessible by a private road; (ii) not available because the landowner was not willing to lease space for the project; (iii) not available because they could not be obtained with a clean title; or (iv) too low in elevation and therefore require a much higher tower to achieve the same objectives.

Additionally, the applicant stated that other sites at higher elevations on Dallas Hill, which potentially could be suitable for a 190' tower, are within the D-RS2 Subdistrict. The Commission recently denied a proposal to construct a tower in a D-RS2 subdistrict because the use would not be consistent with the purpose of the subdistrict (See DP 5050 decision document). At the proposed elevation of 1,853' (downhill and outside of the D-RS2 subdistrict), the FirstNet program and AT&T have confirmed that to achieve acceptable coverage the tower must be at a minimum 300' AGL. The applicant also notes that it is not practical to build a tower at Saddleback Mountain Resort because it is too far away from the existing tower in Rangeley and so would not adequately address the gap in coverage.

The analysis submitted in the Telecommunications Needs Assessment assumes that the best solution to address the gap in FirstNet coverage in Dallas Plantation is to build one tall tower. The Comprehensive Land Use Plan (CLUP) includes a policy encouraging that "communication towers be made available for other users where feasible in order to limit the number of such towers," (2010 CLUP, pg. 8). This policy applies across the Commission's jurisdiction and generally serves to minimize the overall impact created by the construction of new communication towers. The applicant has designed the proposed tower to accommodate co-location of additional service providers in the future, which may reduce the need for more towers in this location and is consistent with the Commission's policy regarding co-location. However, because of the range of scenic resources in this location, multiple smaller towers carefully designed and sited to minimize visibility (and which do not require night-time lighting), would likely result in less visual impact overall than one 300' lighted tower.

The applicant should expand the alternatives analysis to evaluate the possibility of locating multiple shorter towers to achieve the goals of the project.

3. Specific Comments and Remaining questions about the VIA:

a. It is difficult to understand the basis for the level of significance (high, moderate, or low) assigned to each scenic resource surveyed in the VIA.

Excerpt from the methodology section on page 198 of the application:

> "*Each of the identified scenic resources was given a significance rating. A rating of 'High" means that a scenic resource is largely known by the public for its scenic value, rather than its historic or geologic value for example…. Rating of 'moderate' means that a scenic resource is partially known for its scenic value but also known or appreciated by the public for other reasons like its historic or recreational significance…. Rating of 'low' means that a scenic resource is not known for its scenic*

value, and is usually an internally significant space like a theater or museum, for example."

This description in the methodology only gives the reader a general idea of why a certain resource may have received a level of significance. It does not provide any detail about the basis for each assignment. For example, is a rating of "high significance" based on review of planning documents, tourist information, internet research, asking knowledgeable people in the area, etc.?

While some significance ratings in the VIA made intuitive sense, others were confusing after reviewing publicly available information, such as the Town of Rangeley Comprehensive Plan or the Wildlands Lakes Assessment Findings in Chapter 10, Appendix C. Of most importance to the Commission is knowing how the applicant assigned a given level of significance to resources likely to have a view of the proposed tower, and how that relates to the resources listed in Section 10.25,E,1,b: "…*roadways with attention to designated scenic byways, major waterbodies, coastal wetlands, permanent trails, or public property."*

Please clarify the basis for rating the level of significance for the following:

i. Rangeley Lake – Rated as moderate in the VIA – The Wildland Lakes Assessment values the scenic quality of Rangeley Lake as 'outstanding.' (See Chapter 10, Appendix C.). Also, the VIA indicates there would be views from Rangeley Lake. The VIA also rates the Northern Forest Canoe Trail as having high significance, but the waterbodies it traverses (e.g., Rangeley Lake) are only rated as having moderate significance.
ii. Rangeley Lake State Park– Rated as moderate in the VIA – See comments above about Rangeley Lake. It would be helpful to know why you consider Rangeley Lake State Park to be of moderate significance. The VIA indicates there would be views of the proposed tower from different locations within Rangeley Lake State Park, and specifically from campsites and the public beach area (discussed on page 205) both of which may have night-time use.

b. The table starting on page 228 summarizing potential visibility of the balloon from certain resources during the balloon test is inconsistent with analysis in other parts of the VIA and with the presumptive viewshed maps in a few places. Staff have some remaining questions about specific resources:

i. Appalachian Trail – the table on page 231 indicates there would be no views of the tower and then lists topography as a mitigating factor. This is inconsistent with the presumptive viewshed maps, which show views are possible from the summits of Saddleback and The Horn and the exposed ridge connecting them (based on line of site between the summit area and the top of the tower). The captions to photograph #'s 21-23 also indicate that the balloon was not visible due to the height of the ridge along Dallas Hill Road. While a balloon test can be a good indicator of potential views of a proposed tower, from a distance balloons can be hard to pick out of the landscape, particularly when viewed from a higher elevation. This fact suggests these views of the proposed lattice structure itself may not be salient, but it does not mean that a 300' AGL tower with flashing white lights at the top, which intentionally contrast with the background to make the tower more visible to pilots, would be

invisible due to topography. The applicant should explain in more detail how topography, distance, and/or vegetation combine to mitigate likely views from the Appalachian Trail.

ii. Loon Lake – The table on page 231 indicates there would be no views of the proposed tower from Loon Lake and lists topography and tree cover as mitigating features. This is inconsistent with the presumptive viewshed maps, which show portions of Loon Lake may have views of the tower. The applicant should provide photos if possible, or a narrative description of conditions on the ground supporting their assertions.

iii. Saddleback Lake – The table on page 228 indicates there would be no views of the proposed tower from Saddleback Lake and lists topography as a mitigating feature. This is inconsistent with the presumptive viewshed maps, which show portions of Saddleback Lake may have views of the tower. If vegetation is the mitigating factor, the applicant should provide photos if possible, or a narrative description of conditions on the ground.

c. Night-time visibility analysis and photo simulations:

i. The night-time photo simulations and accompanying analysis submitted with the VIA illustrate 'dusk conditions' and convey how large the light is anticipated to be from particular distances. However, the photo simulations do not address brightness of the proposed lighting, or brightness of reflections off a waterbody. For example, in the photo simulations the size of the red dot meant to represent light at a given distance decreases with distance from the point of origin; however, the brightness stays the same. The LUPC staff recognize that it may be too difficult to simulate a change in brightness for each photo simulation. However, it would be helpful for the applicant to provide a general explanation of how bright the nighttime lighting would be in the fore-ground, mid-ground, and back-ground (described on pages 222-223). If possible, include comparative examples that help the reader visualize how bright the proposed lighting would be from different vantage points/distances. Also, if possible, describe how the proposed lighting would differ or be similar to existing lighting also visible at night from different vantage points (e.g., where would the proposed light be relative to downtown Rangeley or other likely sources of lighting in a given viewshed?).

ii. The VIA indicates the proposed tower would be visible from campsites and the public beach area at Rangeley Lake State Park (see presumptive viewshed maps and discussion on page 205). Therefore, it is appropriate to complete night-time photo simulations for these locations in addition to the daytime photos taken during the balloon test. While the beach may be closed after sunset, campsites are intended for use after dark and so tower lighting may be visible from these locations. Additionally, waterbodies reflect nighttime lighting under certain conditions (see the simulated reflection in the photo simulations illustrating potential views from Haley Pond Municipal Park), and so it seems likely that visibility of the tower from these vantage points would be magnified by reflection from Rangeley Lake.

d. To help evaluate the potential for undue adverse impacts on nearby scenic byways and public lands, the Commission staff request additional information about public use of each of the following resources:

i. Rangeley Lakes National Scenic Byway:
   1. Describe the overall level of use/traffic on scenic byway segments based on recent MDOT traffic counts in the areas where the tower may be visible according to the presumptive viewshed maps.
   2. Provide information about the scenic byway segments likely to have views of the proposed tower according to the presumptive viewshed maps. For example, how important are these views to the overall integrity of the byway and how would introducing a 300' AGL lighted tower affect the experience of people using the scenic byway? A good source for this information may be the Rangeley Lakes Scenic Byway Management Plan, and/or consulting with the scenic byway coordinator charged with implementing the plan (employed by the Rangeley Lakes Heritage Trust).

ii. Rangeley Lake State Park:
   1. Describe the overall level of use at Rangeley Lake State Park and the types of use that occur in places likely to have views of the proposed tower based on the presumptive viewshed maps (e.g., the boat launch, beach area, and any campsites likely to have views). Describe levels and types of use occurring both during the day and at night.
   2. A good source for this information would be staff at Rangeley Lake State Park or Maine Bureau of Parks and Lands (BPL).

iii. Haley Pond Municipal Park:
   1. Describe the overall level of use at the park, whether it is open after sunset, and how it is used (e.g., events, use by pedestrians walking around town, recreation, etc.).
   2. A good source for this information would be staff or local officials for the Town of Rangeley (e.g., the recreation department staff).

iv. Waterbodies – Haley Pond, Gull Pond, Loon Lake, Saddleback Lake:
   1. For each of these waterbodies, describe the overall level of use and the type of use that occurs. For example, are typical users fishing, canoe/kayaking, water skiing, etc.
   2. A good source for this information could be a knowledgeable local person like a Maine guide, game warden, state agency staff (e.g., BPL or IF&W), or a local official in the Town of Rangeley or Dallas Plantation.

(CONTINUE ON NEXT PAGE)

Summary of Information Requests Related to the Visual Impacts Assessment

The applicant should provide the following additional information (references to specific comments about each item are provided in parenthesis):

1. Expand the alternatives analysis to evaluate the possibility of locating multiple shorter towers to achieve the goals of the project (see comment 2);

2. Clarify the basis for rating the level of significance for Rangeley Lake and Rangeley Lake State Park (see comment 3,a,i-ii);

3. Explain in more detail how topography, distance, and/or vegetation combine to mitigate likely views from the Appalachian Trail (see comment 3,b,i);

4. Analyze potential visual impacts from Saddleback Lake and Loon Lake – providing photos or a narrative description of conditions on the ground supporting any assertions about potential visual impact (see comment 3,b,ii-iii);

5. Explain how bright the nighttime lighting would be in the fore-ground, mid-ground, and back-ground (consider including comparative examples and describing existing lighting that may also be visible from a given vantage point) (see comment 3,c,i);

6. Provide nighttime photo simulations for views from campsites and the public beach area at Rangeley Lake State Park (see comment 3,b,ii);

7. Describe the overall level of use/traffic on relevant scenic byway segments where viewshed mapping indicates the tower would be visible, based on recent MDOT traffic counts (see comment 3,d,i,1).

8. Consult the Rangeley Lakes Scenic Byway Management Plan, and/or contact the coordinator charged with implementing the plan to provide more information about scenic byway segments likely to have views of the proposed tower according to the presumptive viewshed maps (see comment 3,d,i,2);

9. Consult staff at Maine Bureau of Parks and Lands, or at Rangeley Lake State Park about levels and types of use occurring both during the day and at night (see comment 3,d,ii);

10. Consult staff or local officials in the Town of Rangeley about levels and types of use at Haley Pond Municipal Park (see comment 3,d,iii); and

11. Consult knowledgeable local sources a such as a game warden, Maine guide, state agency staff (e.g., BPL or IF&W), or a local official in Rangeley or Dallas Plantation, about overall levels and types of use on Haley Pond, Gull Pond, Loon Lake, and Saddleback Lake (see comment 3,d,iv).

G. SOIL SUITABILITY

The standards set forth below must be met for all subdivisions and commercial, industrial and other non-residential development.

1. Soil types are determined by a site-specific soil survey, according to the "Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping" Maine Association of Professional Soil Scientists, 2009. The soil survey class must be determined as follows, unless the Commission finds that a lower intensity soil survey will provide the information necessary or a higher intensity soil survey class is needed for the Commission's review:

a. For all subdivisions, a Class B high intensity soil survey must be used to identify soils within the proposed building envelopes and other disturbed areas, aside from proposed access roads, driveway locations, and utility lines. The Class B survey for this purpose must be completed with a minimum delineation of one acre for similar soils and one-quarter acre for dissimilar soils. For proposed access roads, driveway locations and utility lines, a Class L soil survey must be used. A Class C soil survey may be used to identify soils elsewhere within the project area.

b. For new commercial, industrial and other non-residential development, a Class A high intensity soil survey shall be used to identify soils within any proposed disturbed area. A Class C soil survey may be used to identify soils elsewhere within the project area.

c. For linear projects or project components that involve soil disturbance, such as road construction, fairway construction or trail construction and that have little or no adjacent development, a Class L soil survey shall be used.

d. **Hydric Soils and Soils Potential Ratings.** Hydric soil map units, and map units with a low or very low development potential rating for low density development must be clearly identified on the soil survey map as being hydric soils or as having a low or very low development potential rating, respectively.

e. **Exceptions.** The Commission may:

(1) Allow the use of U.S.D.A. Natural Resources Conservation Service (NRCS) Soil Survey published mapping in lieu of any Class C soil survey required in Sections 10.25,G,1,a through c when the published mapping indicates the map unit(s) in the project area is rated with a medium or high potential for low density development.

(2) Allow the use of NRCS Soil Survey published mapping in lieu of any Class C soil survey required in Sections 10.25,G,1,a through c for areas within a development that will be preserved as undeveloped open space in accordance with Section 10.25,S.

(3) In lieu of a site-specific soil survey of any proposed disturbed area within a development, the Commission may allow use of a geotechnical investigation prepared for that area by a registered professional engineer and other licensed professionals, as appropriate, if the Commission determines that the geotechnical report will provide sufficient information.

(4) The Commission may waive one or more of the provisions of a Class A or B high intensity soil survey, including but not limited to the contour mapping requirement, where such provision is considered by the Commission unnecessary for its review.

2. Determination of soil suitability shall be based on the NRCS soils potential ratings for low density development. Soils with a low or very low development potential rating shall not be developed unless the Commission determines that adequate corrective measures will be used to overcome those limitations that resulted in a low or very low rating.

3. For all developments that include onsite subsurface wastewater disposal, a sufficient number of test pits must be provided within the footprints of all proposed wastewater disposal fields to adequately document that disposal fields can be installed entirely on soils and slopes in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241).

a. At least one test pit shall be dug within the boundaries of each subdivision lot proposed to be served by a combined septic system. The applicant shall provide additional subsurface exploration data for certain soil conditions or disposal field designs, in accordance with the following requirements:

(1) Soil conditions AII and AIII (bedrock depth nine inches to 24 inches). A minimum of five subsurface explorations: one test pit is to be centrally-located within each disposal field footprint, plus a subsurface exploration at each disposal field corner which may consist of either a test pit, boring, or probe.

(2) Soil with profile 8- or 9-parent material (lacustrine/marine deposits). A minimum of two test pits, one of which shall be in the area of the disposal field footprint where the most limiting condition is expected based on the best professional judgement of the Licensed Site Evaluator.

(3) Soil condition D (limiting factor depth less than 15 inches). A minimum of two test pits, one of which shall be in the area of the disposal field footprint where the most limiting condition is expected based on the best professional judgement of the Licensed Site Evaluator.

(4) Disposal field length of 60 feet or longer. A minimum of two test pits, one of which shall be in the area of the disposal field footprint where the most limiting condition is expected based on the best professional judgement of the Licensed Site Evaluator.

b. For lots to be served by primitive and limited disposal systems, evidence must be submitted to show there are suitable locations on the lot for a grey water disposal field, any proposed pit privy (outhouse), and a backup system reserve area as required by and in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241,4,I). At least one test pit shall be dug within the boundaries of each proposed disposal area and the backup system reserve area on the lot.

c. The location of such test pits shall be shown on the subdivision plat.

L. PHOSPHORUS CONTROL

1. The standards set forth below must be met for:

a. Subdivisions located within the direct watershed of a body of standing water 10 acres or greater in size; and

b. Commercial, industrial or other non-residential development that creates a disturbed area of one acre or more within the direct watershed of a body of standing water 10 acres or greater in size.

2. General Standards.

a. Provision shall be made to limit the export of phosphorus from the site following completion of the development or subdivision so that the project will not exceed the allowable per-acre phosphorus allocation for the water body, determined by the Commission according to the "Maine Stormwater Best Practices Manual, Volume II, Phosphorus Control in Lake Watersheds: A Technical Guide to Evaluating New Development" Maine Department of Environmental Protection, 2008, and hereafter cited as the Phosphorus Design Manual.

b. **Impact Analysis.** The phosphorus impact analysis and control plan for a proposed subdivision or development on a water body shall be prepared using the procedures set forth in the Phosphorus Design Manual, including all worksheets, engineering calculations, and construction specifications and diagrams for control measures as may be required by the manual, except as allowed in Section 10.25,L,2,d, below.

c. **Erosion Control.** All filling, grading, excavation or other similar activities that result in unstabilized soil conditions must meet the standards of Section 10.25,M.

d. **Alternative Standard Option.** In lieu of meeting the general standard in Section 10.25,L,2,a, and conducting a phosphorus impact analysis according to Section 10.25,L,2,b, an applicant with a project that includes less than three acres of impervious area and less than five acres of developed area in a watershed of a body of standing water that is not severely blooming (as identified in 06-096 CMR 502, Appendix A), may choose to limit the export of phosphorus from the site by meeting the alternative buffer standard in Section 10.25,L,3. For the purposes of Section 10.25,L,2,d, developed area means all disturbed area, including, in the case of a subdivision, all proposed building envelopes, but excluding area that within one calendar year of being disturbed is returned to a condition with the same drainage pattern that existed prior to the disturbance and is revegetated, provided the revegetated area is not mowed more than once per year.

3. Alternative Buffer Standard.

a. To meet the alternative standard, a project must include treatment measures that will provide for effective treatment of phosphorus in stormwater. This must be achieved by using vegetated buffers to control runoff from no less than 95 percent of the impervious area and no less than 80 percent of the developed area that is impervious, landscaped or otherwise disturbed, except as provided in Section 10.25,L,3,d below.

b. **Vegetated Buffers.** Vegetated buffers for phosphorus control are undisturbed strips of dense vegetation located adjacent to and down gradient of developed areas, and that provide storage and treatment for stormwater that enters them in diffuse overland flow. Five types of

vegetated buffers are allowed under the alternative standard as listed in Section 10.25,L,3,b,(1) through (5) below. All vegetated buffers must be appropriately used, located, designed, sized, constructed, and maintained as specified in the "Maine Stormwater Best Practices Manual, Volume III. BMP Technical Design Manual, Chapter 5. Vegetated Buffers" Maine Department of Environmental Protection, June 2010, and hereafter cited as the Technical Design Manual. Where the Technical Design Manual allows for a variation in the design specification with approval from the Department of Environmental Protection, approval from the Land Use Planning Commission is required for projects located in the unorganized and deorganized areas of Maine.

(1) Buffers adjacent to residential, largely pervious or small impervious areas;

(2) Buffers with stone bermed level lip spreaders;

(3) Buffers adjacent to the downhill side of a road;

(4) Ditch turn-out buffers; and

(5) Buffers down gradient of a single family residential lot.

c. Deed Restrictions and Covenants. Areas designated as vegetated buffers, not otherwise protected as open space in accordance with Section 10.25,S, must be clearly identified on the subdivision plat and plans, and protected from alteration by deed restrictions and covenants.

d. Exception for Linear Portions of a Project. For a linear portion(s) of a project, runoff control may be reduced to no less than 75 percent of the impervious area and no less than 50 percent of the developed area that is impervious, landscaped or otherwise disturbed.

4. Design and Maintenance Standards.

a. Phosphorus control measures and their maintenance shall meet the design criteria contained in the "Maine Stormwater Best Practices Manual, Volume III. BMP Technical Design Manual, Chapter 11. Designing for Operation and Maintenance" Maine Department of Environmental Protection, 2008, and hereafter cited as the Technical Design Manual.

b. Structural Measures. High maintenance structural measures, such as wet ponds and runoff infiltration systems, shall not be used as part of any proposed phosphorus control plan unless:

(1) Other measures, such as increasing the width of vegetated buffers, greater limits on clearing, reducing road lengths, and clustering of lots to achieve less disturbed area are clearly demonstrated to be insufficient to allow the proposed development to meet the standards of Section 10.25,L; and

(2) The Commission finds that the applicant has the technical and financial capabilities to properly design, construct, and provide for the long-term inspection and maintenance of the facility in accordance with the procedures in the Technical Design Manual.

D. VEHICULAR CIRCULATION, ACCESS, AND PARKING

1. General Circulation. Provision shall be made for vehicular access to and within the project premises in such a manner as to avoid traffic congestion and safeguard against hazards to traffic and pedestrians along existing roadways and within the project area. Development shall be located and designed so that the roadways and intersections in the vicinity of the development will be able to safely and efficiently handle the traffic attributable to the development in its fully operational stage.

2. Access Management. Access onto any roadway shall comply with all applicable Maine Department of Transportation safety standards. For subdivisions and commercial, industrial and other non-residential development, the following standards also apply:

a. The number and width of entrances and exits onto any roadway shall be limited to that necessary for safe entering and exiting.

b. Access shall be designed such that vehicles may exit the premises without backing onto any public roadway or shoulder.

c. Shared road access shall be implemented wherever practicable.

d. Access between the roadway and the property shall intersect the roadway at an angle as near to 90 degrees as site conditions allow, but in no case less than 60 degrees.

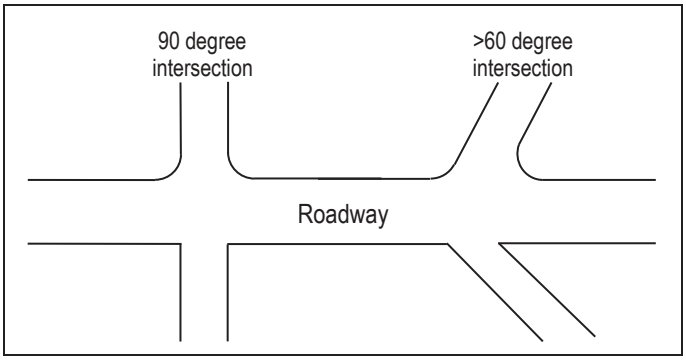

Figure 10.25,D-1. Intersection angle.

e. The Commission may require a traffic impact study of roadways and intersections in the vicinity of the proposed project site if the proposed development has the potential of generating significant amounts of traffic or if traffic safety or capacity deficiencies exist in the vicinity of the project site.

3. Parking Layout and Design. The following standards apply to all subdivisions and commercial, industrial and other non-residential development, except for parking areas associated with trailered ramps and hand-carry launches which are regulated under the provisions of Section 10.27,L:

a. Sufficient parking shall be provided to meet the parking needs of the development. The minimum number of parking spaces required shall be based on parking generation rates determined in accordance with standard engineering practices. In cases where it is demonstrated that a particular structure can be occupied or use carried out with fewer spaces than required, the Commission may reduce number of required spaces upon finding that the proposed number of spaces will meet the parking needs of the structure or use and will not cause congestion or safety problems.

b. Parking areas and access roads shall be designed such that runoff water is discharged to a vegetated buffer as sheet flow or alternatively collected and allowed to discharge to a concentrated flow channel, wetland or water body at a rate similar to pre-construction conditions. If runoff water is discharged to a concentrated flow channel, wetland or water body, a sediment basin shall be constructed to collect sediment before the runoff water is discharged.

c. **On-street parking.** In areas where on-street parking already exists, new development shall have on-street parking where practicable and if there are sufficient spaces available in the immediate vicinity. Otherwise, parallel or diagonal on-street parking is permitted where the Commission finds that it will adequately meet the parking needs of the development and will not cause congestion or safety problems. Perpendicular on-street parking is prohibited.

d. **Off-street Parking for Commercial, Industrial and Other Non-residential Development.**

(1) Where practicable, off-street parking shall be located to the side or rear of the principal structure.

(2) Notwithstanding the dimensional requirements of Section 10.26, the Commission may reduce the minimum road setback requirement by up to 50 percent or to no less than 20 feet, whichever is greater, for development utilizing on-street parking in accordance with Section 10.25,D,3,c or for development whose parking area is located to the rear of the principal structure, except where the Commission finds that such parking will cause an undue adverse impact to the natural resources or community character of the area.

(3) Off-street parking shall not be directly accessible from any public roadway. Ingress and egress to parking areas shall be limited to driveway entrances.

(4) Off-street parking areas with more than two parking spaces shall be arranged so that each space can be used without moving another vehicle.

e. Parking spaces shall not be placed in the required roadway vegetative buffer. However, a "sight triangle" shall be maintained 25 feet in length on each side of the intersection of the driveway and the roadway right-of-way, with the third side connecting the other two sides. Within each sight triangle, no landscape plants, other than low growing shrubs, shall be planted. These shrubs must be maintained to be no more than 30 inches in height above the driveway elevation.

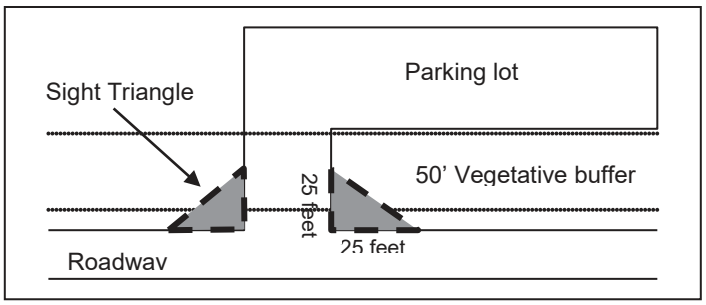

Figure 10.25,D-2. Sight triangle within a vegetative buffer.

f. Except for sight triangles, parking areas for commercial, industrial or other non-residential development shall be visually buffered from the roadway by planting and maintaining a

vegetative buffer of trees and shrubs or by locating parking areas to the rear of the principal structure.

g. When parking areas associated with commercial, industrial or other non-residential development are adjacent to residential structures or uses, landscaping and/or architectural screens shall be used to provide an effective visual buffer and separation between property lines and the edge of the parking area.

h. For parking areas associated with commercial, industrial or other non-residential development that are greater than one acre in size, a landscaping plan shall be developed and implemented that indicates planting locations, type and maintenance. The plan shall include the following:

(1) Parking areas shall have landscaped strips along the perimeter, as well as landscaped islands within the parking area.

(2) Expanses of parking area shall be broken up with landscaped islands that include shade trees and shrubs. Where possible, the area of ground left uncovered around the base of a tree must be at least equal to the diameter of the branch area or crown at maturity. Where not possible, adequate measures, including but not limited to soil enhancement techniques and underground irrigation, shall be used to ensure sufficient space for root growth and vegetative survival.

4. Subdivision and Development Roadway Design Specifications. The following standards apply to Level B and Level C road projects:

a. Classification of Roadways. The Commission shall determine which roadway classification is most appropriate for a particular project. For the purposes of Section 10.25,D,4, the following general criteria shall apply:

(1) Class 1 Roadway. Generally appropriate for most projects surrounded by a relatively compact development pattern, for high-intensity commercial or industrial projects, and for residential subdivisions with 15 or more lots.

(2) Class 2 Roadway. Generally appropriate for low-intensity commercial or industrial projects surrounded by a relatively sparse development pattern and for residential subdivisions with fewer than 15 lots surrounded by a relatively sparse development pattern.

(3) Class 3 Roadway. Generally appropriate for low-intensity, small-scale commercial projects surrounded by a relatively sparse development pattern or located on an island.

b. Determination of Classification. In making its determination on the appropriate roadway classification, the Commission shall consider the following factors:

(1) The number of lots served by the roadway or projected level of use;

(2) The nature of roadways accessing the project site;

(3) Location in relation to surrounding patterns of development;

(4) The level of development within the vicinity of the project;

(5) Natural and imposed limits on future development;

(6) The type and intensity of the proposed use; and

(7) Service by utilities or likelihood of service in the future.

c. Roadway Design.

(1) To the fullest extent practicable, roadways must be designed to first fit the natural topography of the land such that cuts and fills are minimized, and then to minimize the overall length, minimize the use of ditching, and protect scenic vistas while preserving the scenic qualities of surrounding lands.

(2) Roadways in towns and plantations within the Commission's service area that are proposed to be dedicated to the town or plantation shall also comply with the town's or plantation's roadway construction and design standards. The applicant shall clearly specify the ownership of all roadways proposed to be dedicated and shall submit a maintenance plan that includes roadway construction and design standards in accordance with the Commission's standards.

(3) Roadways shall adhere to the applicable standards of Section 10.27,D and Section 10.27,H and the roadway specifications outlined in Table 10.25,D-1, below, unless the applicant utilizes site-specific best management practices and the Commission determines that proposed alternative roadway specifications will meet the needs of the development and will not cause erosion or safety problems.

Maximum sustained grade for Class 1 roadways may be increased by up to five percent over that specified in Table 10.25,D-1 below, if no other option is practicable, provided that the roadway portion exceeding the maximum sustained grade standard is no longer than 300 feet in length and is greater than 150 feet from the next down-hill road intersection, and the Commission determines that the proposed alternative grade will not cause unreasonable drainage, erosion or public safety impacts.

	Class 1 Roadway	**Class 2 Roadway**	**Class 3 Roadway**
Minimum roadway surface width	18 ft. or 14 ft. with turnouts every 500 feet, on average.	14 ft. or 8 ft. with turnouts every 500 feet, on average.	8 ft.
Minimum base (coarse gravel)	18 in.	12 in.	As needed.
Minimum wearing surface	3 in. fine gravel or 2.5 in. bituminous concrete.	3 in. fine gravel or 2.5 in. bituminous concrete.	2 in. fine gravel.
Maximum sustained grade	10 percent	15 percent	15 percent

Table 10.25,D-1. Roadway construction specifications.

(4) Roadways that will be co-utilized for forest management purposes shall include turnouts that are large enough to accommodate wood haulers and other large vehicles.

d. Additional Subdivision Road Standards.

(1) Emergency Egress. All subdivisions that include a new interior road exceeding one-quarter mile in length must include provisions for all lot owners to have at least two ways of emergency egress from the development. Emergency egress may include: (i) egress by water for subdivisions on water bodies, provided there is a legally enforceable right of egress off the water body such as a public boat ramp or dock, and (ii) may include existing motorized trails maintained for public access, provided all lot owners have a legally enforceable right to access the trail.

(2) New Entrances. Subdivision access must be limited to no more than two new entrances onto an existing roadway within any one-half mile section of the existing road. Also, where practicable for the proposed development site, subdivision roads must be designed such that new entrances onto existing roads are located directly across from existing entrances on the roadway, allowing for safe cross movement of traffic at the intersection.

(3) Future Connectivity.

(a) Whenever there is remaining land on a parcel proposed for subdivision that is not included in the subdivision layout and design, the subdivision design must include provisions for future access to the remaining land to accommodate and minimize conflicts between proposed and future uses such as timber harvests, further lot development, or recreation.

(b) Right-of-way widths for internal subdivision roads must include sufficient room for future expansion unless demonstrated that future expansion is not technically feasible. Rights-of-ways must be at least 50 feet in width.

(4) Road and Infrastructure Maintenance.

(a) Subdivision designs must include a plan for long-term maintenance of the subdivision access roads and common infrastructure, including but not limited to maintenance of drainage structures, water crossings, and road grading or resurfacing. The plan must include a list of inspection and maintenance tasks, recommended task frequency, and a responsible party.

(b) If an association is proposed for maintenance of roads and common infrastructure, documents necessary for establishing the association must be created. The documents must require lot owner or lessee membership, lot owner or lot lessee rights and privileges, association responsibilities and authority, operating procedures, proper capitalization to cover operating costs, and the subdivision developer's responsibilities until development sufficient to support the association has taken place. Responsibilities of the association must include the maintenance of common property, infrastructure, or facilities; assessing annual charges to all owners or lessees to cover expenses; and the power to place liens on property of members who fail to pay assessments. The following governmental entities are not required to be members of road associations: the State; executive branch agencies of the State; counties; municipalities, townships, or plantations; or the federal government. Those governmental entities, however, should work with associations to create an agreement through which, subject to allocation by the Maine Legislature or applicable budgetary authority, the governmental entity would contribute a fair

percentage of the minimum maintenance and repair costs through financial contributions or in-kind services.

D. ROADS AND WATER CROSSINGS

Roads and water crossings not in conformance with the standards of Section 10.27,D may be allowed upon issuance of a permit from the Commission provided that such types of activities are allowed in the subdistrict involved. An applicant for such a permit shall show by a preponderance of the evidence that the proposed activity, which is not in conformance with the standards of Section 10.27,D, will be conducted in a manner that produces no undue adverse impact upon the resources and uses in the area.

The following standards apply to roads and water crossings for any purpose other than land management roads and water crossings on/for land management roads where those uses are regulated by the Maine Forest Service; repair and maintenance of legally existing road culverts or replacement of legally existing road culverts in accordance with 12 M.R.S. §685-B(1-A)(A); and driveways associated with residential structures and uses, except as provided in Section 10.27,H.The following requirements shall apply to construction and maintenance of roads:

1. Roads, Drainage Ditches, and Turnouts. The following standards apply to construction and maintenance of roads, including the creation of drainage ditches and turnouts:

a. Sediment barriers, such as silt fences or erosion control mix berms, must be properly installed between areas of soil disturbance and downgradient non-tidal waterbodies and wetlands prior to construction. Sediment barriers must be maintained until the disturbed area is permanently stabilized, and removed within 30 days, or as soon as practicable, following final stabilization of the site;

b. Prior to any forecasted storm event and within 7 days following the completion of construction, all cut or fill slopes and areas of exposed mineral soil outside the road surface must be seeded and mulched, or otherwise stabilized to prevent unreasonable soil erosion and sedimentation of non-tidal water bodies or wetlands;

c. Road side slopes must have a slope no steeper than 2 horizontal to 1 vertical;

d. All drainage ditches created as part of the project must be properly stabilized upon completion to prevent unreasonable soil erosion;

e. Roads, drainage ditches, and turnouts must be located, constructed, and maintained to provide an undisturbed filter strip, of at least the width indicated below, between any exposed mineral soil and the normal high water mark of a non-tidal water body or upland edge of a wetland located in a P-WL1 subdistrict:

Average Slope of Land Between Exposed Mineral Soil and Normal High Water Mark (Percent)	**Width of Filter Strip Between Exposed Mineral Soil and Normal High Water Mark** (Feet Along Surface of the Ground)
0-10	25
11-20	45
21-30	65
31-40	85
41-50	105
51-60	125
61-70	145
71-100	165

Table 10.27,D-1. Filter strip width requirements for roads, drainage ditches, and turnouts.

These filter strip requirements do not apply to road surfaces for approaches to water crossings or wetlands.

f. **Drainage ditches may not extend to the resource being crossed.** Drainage ditches for roads approaching a water crossing or wetland must be designed, constructed, and maintained to empty into an undisturbed filter strip, of at least the width indicated in the table set forth in Section 10.27,D,1,e above. Where such filter strip is impracticable, appropriate techniques must be used to avoid unreasonable sedimentation of non-tidal water bodies and wetlands. Such techniques may include the installation of plunge pools or settling basins, or the effective use of additional ditch relief culverts and ditch water turnouts placed so as to reasonably avoid sedimentation of the water body or wetland;

g. Ditch relief (cross drainage) culverts, stone-lined drainage dips, water turnouts, and other best management practices must be installed, where necessary, to disperse the volume or velocity of water in drainage ditches into undisturbed filter strips to prevent ditch erosion.

(1) Stone-lined drainage dips may be used in place of ditch relief culverts only where the road grade has a sustained slope of 10% or less;

(2) On roads having sustained slopes greater than 10%, ditch relief culverts must be placed across the road at an angle of approximately thirty-degrees downslope from a line perpendicular to the center line of the road;

(3) Ditch relief culverts, stone-lined drainage dips, and water turnouts must direct drainage into undisturbed filter strips as required in Sections 10.27,D,1,e and f above;

(4) Ditch relief culverts must be sufficiently sized and properly installed to allow for effective functioning, and their inlet and outlet ends must be stabilized with appropriate materials; and

(5) Ditch relief culverts, stone-lined drainage dips, and water turnouts must be spaced along the road at intervals no greater than indicated in the following table:

Road Grade (Percent)	**Spacing** (Feet)
0-2	500-300
3-5	250-180
6-10	167-140
11-15	136-127
16-20	125-120
21+	100

Table 10.27,D-2. Spacing requirements for ditch relief culverts, drainage dips, and water turnouts.

h. Ditches, culverts, bridges, dips, water turnouts and other water control installations associated with roads must be maintained on a regular basis to assure effective functioning.

i. Maintenance of the above required water control installations must continue until the road is discontinued and put to bed by taking the following actions:

(1) All culverts, open-bottom arches, and bridges must be dismantled and removed in a fashion to reasonably avoid sedimentation of non-tidal water bodies and wetlands. Stream banks must be restored to original conditions to the fullest extent practicable, and disturbed soils must be stabilized to prevent soil erosion.

(2) Water bars must:

(a) Be constructed across the road at intervals established below:

Road Grade (Percent)	Distance Between Water Bars (Feet)
0-2	250
3-5	200-135
6-10	100-80
11-15	80-60
16-20	60-45
21+	40

Table 10.27,D-3. Spacing requirements for water bars.

(b) Be constructed at an angle of approximately thirty-degrees downslope from the line perpendicular to the center line of the road;

(c) Be constructed so as to reasonably avoid surface water flowing over or under the water bar; and

(d) Extend sufficient distance beyond the traveled way so that water does not reenter the road surface.

j. Extension, enlargement or resumption of use of presently existing roads, which are not in conformity with the provisions of Section 10.27,D, are subject to the provisions of Section 10.11.

2. Water Crossings of Flowing Waters. Except as provided in Section 10.27,D,2,d,(17) for trail crossings, the following standards apply to crossings of flowing waters:

a. All Crossings. All crossings must be installed, and, in the case of temporary crossings, removed during low-flow conditions between July 15 and September 30 in any calendar year, unless the notice submitted pursuant to Section 10.27,D,5 includes written approval from the Maine Department of Inland Fisheries and Wildlife for an alternative time period.

b. Temporary Crossings. Temporary crossings may be used for equipment access across flowing waters. Temporary crossings must:

(1) Be removed within 180 days;

(2) Not use soil materials for construction or stabilization;

(3) Unless constructed in a way that spans the stream channel, with no disturbance to the streambed or banks, involve a culvert installation that meets all the following standards:

(a) Placed on geotextile fabric or other equally effective material where practicable to ensure restoration to the original grade,

(b) Covered with rock large enough in size to allow for easy removal without disturbing the streambed,

(c) Designed and maintained to withstand and pass high flows, such that water height is no higher than the top of the culvert's inlet, a minimum culvert diameter of 24 inches is required to pass debris, and

(d) Aligned to prevent bank erosion or streambed scour; and

(4) Removed upon completion of the work. Impacts to the streambed or bank must be restored to original condition to the fullest extent practicable.

c. Permanent Crossings.

(1) To the greatest extent practicable, work in the stream must be minimized, and design and construction must allow the stream's natural structure and integrity to remain intact.

(2) If a stream to be crossed is a perennial watercourse and has a sustained slope of more than 2%, a bridge or open-bottom arch must be used to maintain the natural streambed.

(3) If a perennial stream to be crossed is used for navigation, the crossing must consist of a bridge span or open-bottom arch with at least 4 feet of clearance during normal high water for boat passage.

(4) Except as provided in Section 10.27,D,2,d,(5) and Section 10.27,D,2,d,(8),(c), bridges, open-bottom arches, and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate flow from a 25-year frequency storm event, or with a cross-sectional area at least equal to 3 times the cross-sectional area of the flowing water.

(5) Bridges, open-bottom arches, and culverts located in special flood hazard areas must be designed and constructed to provide an opening sufficient in size and structure to accommodate flow from a 100-year frequency storm event.

(6) Footings and abutments for bridges and open-bottom arches must be landward of 1.2 times the width of the channel at normal high water.

(7) Culverts utilized in permanent crossings must:

(a) Not exceed 75 feet in length;

(b) Follow the alignment and grade of the existing stream channel where possible. On perennial streams, the culvert's gradient may not exceed 2%;

(c) Have the bottom of the entire culvert installed below the streambed elevation, as follows:

(i) >2 feet for box culverts and other culverts with smooth internal walls,

(ii) >1 foot for corrugated pipe arches, and

(iii) >1 foot and at least 25% of the culvert diameter for corrugated round pipe culverts;

(d) Have diameters that exceed 1.2 times the width of the channel at normal high water;

(e) Be seated on firm ground, or on geotextiles used to stabilize the ground;

(f) Have soil compacted up the side of the culvert;

(g) Be covered by soil to a minimum depth of 1 foot or according to the culvert manufacturer's specifications; and

(h) Have the inlet and outlet ends stabilized by rip-rap or other suitable means to reasonably avoid erosion of material around the culvert.

(8) Provided they are properly applied and used for circumstances for which they are designed, methods including but not limited to the following are acceptable to the Commission as means of calculating 25-year and 100-year frequency storm events and thereby determining crossing sizes as required in Section 10.27,D,2:

(a) The USDA Natural Resources Conservation Service (NRCS) Method: "Urban Hydrology for Small Watersheds." (Technical Release #55). USDA Soil Conservation Service (June 1986).

(b) The USDA NRCS Method: "TR-20 – Computer Program for Project Formulation – Hydrology," Second Edition, U.S. Department of Agriculture, Soil Conservation Service (March 1986).

(c) Provided that the only design storm used for sizing the crossing is a 100-year frequency storm event, the Commission may also allow use of the United States Geological Survey (USGS) method: StreamStats, a Web-based Geographic Information Systems application (Geological Survey, U. S. (2019, April 19). USGS. Retrieved from StreamStats: https://streamstats.usgs.gov/ss/).

(9) Except as provided in Section 10.27,D,2,d,(10), water crossings must have natural bottom substrate placed within the structure matching the characteristics of the substrate in the natural channel at the time of construction and over time as the structure has had the opportunity to pass significant flood events. To allow terrestrial passage for wildlife and prevent undermining of footings, crossings must have a bank on both sides of the stream matching the horizontal profile of the natural stream banks.

(10) Installation of substrate material in culverts with diameters (round pipes) or rises (pipe arches or box culverts) of less than 60 inches may not be safe or practicable. In those cases, natural deposition and bed development is allowed.

(11) Wheeled or tracked equipment may not operate in the water. Equipment operating on shore may, where necessary, reach into the water with a bucket or similar extension. Equipment may cross streams on rock, gravel or ledge bottom.

(12) If work is performed in a flowing water that is less than 3 feet deep at the time of the activity and at the location of the activity, the applicant must provide for temporary diversion of flow to the opposite side of the channel while work is in progress.

(a) Diversion may be accomplished by placing sandbags, timbers, sheet steel, concrete blocks, at least 6 mil polyethylene, or geotextiles from the bank to midstream on the upstream side of the activity. No more than two-thirds or 25 feet of stream width, whichever is less, may be diverted at one time.

(b) Any material used to divert water flow must be completely removed upon completion of the activity, and the stream substrate must be restored to its original condition.

(c) A pump may be operated where necessary, for a temporary diversion. The pump outlet must be located and operated such that erosion or the discharge of sediment to non-tidal waterbodies or wetlands is prevented.

(13) All wheeled or tracked equipment that must travel or work in a vegetated wetland area must travel and work on mats or platforms in order to protect wetland vegetation.

(14) All excavated material must be stockpiled either outside the wetland or on mats or platforms. Sediment control barriers must be used, where necessary, to prevent sedimentation.

(15) The use of untreated lumber is preferred. Lumber pressure treated with chromated copper arsenate (CCA) may be used only if necessary, only if use is allowed under federal law and not prohibited from sale under 38 M.R.S. § 1682, and provided it is cured on dry land in a way that exposes all surfaces to the air for a period of at least 21 days prior to construction. Wood treated with creosote or pentachlorophenol may not be used where it will contact water.

(16) Water crossings must be maintained to facilitate passage of aquatic life. Culverts that develop "hanging" inlets or outlets, bed washout, or a stream channel that does not match the characteristics of the natural stream channel, such as substrate mobility and type, and channel slope, stability, and confinement must be repaired as necessary to provide for natural channel characteristics and ensure adequate passage of aquatic life.

(17) Except that Section 10.27,D,4 below always applies, trail crossings of minor flowing waters are exempt from the standards of Section 10.27,D, provided such crossings are constructed in a manner that causes no disturbance to the streambed, and no substantial disturbance to the banks or shoreland areas in the vicinity of the crossing, and provided such crossings do not impede the flow of water or the passage of fish. If properly undertaken, acceptable methods may include, but not be limited to the laying of logs from bank to bank, or placement of bed logs and stringers with decking. This exemption does not extend to the construction of abutments or piers.

Trail crossings not so exempted are subject to the water crossing standards of Section 10.27,D.

3. Wetland Crossings. The design and construction of roads, other than those located in areas below the normal high-water mark of standing or flowing waters, must avoid wetlands unless there are no reasonable alternatives, and must maintain the existing hydrology of wetlands.

To maintain the existing hydrology of wetlands, road drainage designs must provide cross drainage of the water on the surface and in the top 12 inches of soil in wetlands during both flooded and low water conditions so as to neither create permanent changes in wetland water levels nor alter wetland drainage patterns. This must be accomplished through the incorporation of culverts or porous layers at appropriate levels in the road fill to pass water at its normal level through the road corridor. Where culverts or other cross-drainage structures are not used, all fills must consist of free draining granular material.

To accomplish the above, the following requirements apply:

a. Wetland crossings on mineral soils or those with surface organic layers up to 4 feet in thickness.

(1) Fill may be placed directly on the organic surface compressing or displacing the organic material until equilibrium is reached. With this method, culverts or other cross-drainage structures are used instead of porous layers to move surface and subsurface flows through the road fill material.

(a) For road construction on mineral soils or those with surface organic layers less than 16 inches in thickness, culverts or other cross-drainage structures must be appropriately sized and placed at each end of each wetland crossing and at the lowest elevation on the road centerline with additional culverts at intermediate low points as necessary to provide adequate cross drainage. Culverts or other cross-drainage structures must be placed at maximum intervals of 100 feet.

(b) For road construction on surface organic layers in excess of 16 inches but less than 4 feet in thickness, cross drainage must be provided by placing culverts at each end of each wetland crossing and at the lowest elevation on the road centerline with additional culverts at intermediate low points as necessary to provide adequate cross drainage. Culverts or other cross-drainage structures must be placed at maximum intervals of 100 feet. Culverts must be a minimum of 18 inches in diameter, or the functional equivalent, and have the bottom embedded at least 6 inches below the soil surface of the wetland.

(c) Where necessary to maintain existing water flows and levels in wetlands, ditches parallel to the road centerline must be constructed along the toe of the fill to collect surface and subsurface water, carry it through the culvert(s) and redistribute it on the other side. Unditched breaks must be left midway between culverts to prevent channelization.

(2) Alternatively, a porous layer may be created to move surface and subsurface flows through the road fill materials. If a porous layer is used, geotextile fabric must be placed above and below fill material to increase the bearing strength of the road and to preserve the bearing strength of fill material by preventing contamination with fine soil particles.

b. Wetland crossings on soils with organic layers in excess of 4 feet in thickness.

(1) Such construction must only take place under frozen ground conditions.

(2) Geotextile fabric must be placed directly on the soil surface. Road fill or log corduroy must then be placed on the geotextile fabric.

(3) Cross drainage must be provided by either a continuous porous layer, or appropriate placement of culverts or other cross-drainage structures and ditching as specified below:

(a) A continuous porous layer or layers must be constructed by placement of one or more layers of wood corduroy, large stone, or chunkwood separated from adjacent fill layers by geotextile fabric placed above and below the porous layer(s) such that continuous cross drainage is provided in the top 12 inches of the organic layer; or

(b) Cross drainage culverts or other cross-drainage structures must be placed at points where they will receive the greatest support. Culverts or other cross-drainage structures must be a minimum of 18 inches in diameter, or the functional equivalent, and have the bottom embeded at least 6 inches below the soil surface of the wetland. Where necessary to maintain existing water flows and levels in wetlands, ditches parallel to the roadbed on both sides must be used to collect surface and subsurface water, carry it through the culvert(s), and redistribute it on the other side. Such ditches must be located three times the depth of the organic layer from the edge of the road fill. Unditched breaks must be left midway between culverts to prevent channelization.

4. Erosion and Sedimentation Control. In addition to the foregoing minimum requirements, provision must otherwise be made in the construction and maintenance of roads and water crossings in order to reasonably avoid sedimentation of non-tidal water bodies and wetlands.

5. Written Notice Required. Written notice of all road and water crossing construction activities, except level A road projects and exempt trail crossings as provided in Section 10.27,D,2,d,(17) above, must be given to the Commission prior to the commencement of such activities. Such notice must conform to the requirements of Section 10.16 and must state the manner in which the water crossing size requirements of Section 10.27,D will be satisfied.

WATER BODY AND WETLAND ALTERATIONS
Supplement S-3

WHO SHOULD SUBMIT THIS FORM?

If your project requires a permit *and* involves disturbing any amount of land area that:

i) Is within a P-WL protection subdistrict shown on the Commission's official Land Use Guidance Map;

ii) Is located below the normal high water mark of a lake, pond, river, or stream;

iii) Has been identified as wetland based on a required on-site wetland delineation; or

iv) Has been identified as wetland by LUPC staff based on National Wetland Inventory maps or a field visit.

WHERE CAN I GET HELP TO COMPLETE THIS FORM?

To save time, please read the attached instructions for completing this form. Depending on the size of the project and the type of wetland involved, different levels (or tiers) of permit review apply. Question #8 (on the second page) of the application form will help you to decide which tier of review applies to your project. The application instructions are divided into sections and color coded as follows:

WHITE - General Application Instructions *for all projects*
YELLOW - Instructions for Tier 1 Projects
BLUE - Instructions for Tier 2 and Tier 3 Projects

When reviewing this form electronically, the color code for the page is shown at the top of the page.

If you have questions, please call the LUPC regional office that serves your area and ask to speak to one of our regional representatives. See the main application form for the project for contact information. Also, you can visit our website www.maine.gov/dacf/lupc/ to browse through our laws and rules, reports and publications, and other valuable information.

APPLICABLE STANDARDS

The Land Use Planning Commission (the Commission or LUPC) standards for water body and wetland alterations are primarily found in the Commission's Chapter 10 rules, *Land Use Districts and Standards,* Section 10.25,P. To obtain a copy of these rules, visit the Commission's website or contact the LUPC regional office that serves your area.

OTHER PERMITS YOU MAY NEED

If your activity involves State-owned submerged lands (below mean low water), it may require a lease or easement from the Department of Agriculture, Conservation and Forestry, Bureau of Parks & Lands (BPL). Any questions about submerged lands should be directed to BPL at (207) 287-3061.

Some projects may require a permit from the U.S. Army Corps of Engineers. It is the applicant's responsibility to ensure that all required permits are obtained for the project. If your project affects any wetlands or waterways, contact the Army Corps of Engineers at (207) 623-8367.

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For office use:

Tracking No. | Permit No.

Supplement S-3

Water Body and Wetland Alterations

PROJECT INFORMATION

1. Applicant Name(s):	2. Project Location (Township, Plantation, or Town):

3. How was the water body or wetland(s) identified on the property? (Check all that apply.)
   - ☐ P-WL subdistrict shown on the Commission's official Land Use Guidance Map
   - ☐ Wetland delineation
   - ☐ LUPC staff (based on National Wetlands Inventory maps)
   - ☐ LUPC staff (based on staff field visit)
   - ☐ Other, please explain_____

4. Describe the water body or wetland alteration (include the purpose of and need for the project):

5. Has any water body or wetland area previously been altered on the property? .....☐YES ☐NO
   If YES, provide the date, purpose, and amount of previous alteration, and whether permits were obtained.

TYPE AND AMOUNT OF ALTERATION

6. What type of water body or wetland(s) will be altered? *(Check all that apply.)*

7. Provide the amount of area *(in square feet)* that will be altered for each category below and calculate the total. If the "other" category is used, please explain_____.

6. Wetland Type	7. Impact Type in Square Feet						TOTAL
	Structure	Fill	Vegetation Removal	Dredging or Dewatering	Shoreland Stabilization	Other	
☐ River, Stream or Brook (P-WL1)							0
☐ Lake or Pond (P-WL1)							0
☐ Coastal Wetland (P-WL1)							0
☐ Freshwater Wetland (P-WL1) (Wetland of Special Significance)							0
☐ Shrub Scrub Wetland (P-WL2)							0
☐ Forested Wetland (P-WL3)							0
TOTAL	0	0	0	0	0	0	0

LEVEL OF REVIEW AND REQUIRED EXHIBITS

8. Determine the level of review required for your project *(check only one option)* and submit all necessary exhibits with this form *(see instructions for each level attached)*.	Level of Review	Required Exhibits
☐ Altering less than 4,300 sq. ft. of a P-WL2 or P-WL3 wetland.	None	
☐ Altering 4,300 to 14,999 sq. ft. of a P-WL2 or P-WL3 wetland. ☐ Altering a P-WL1 wetland (S1 or S2 natural community only) *See General Instructions, attached.	Tier 1	☐ 1. Plan or drawing ☐ 2. Photos of area ☐ 3. Statement of avoidance & minimization
☐ Altering 15,000 to 43,560 sq. ft. of a P-WL2 or P-WL3 wetland.	Tier 2	☐ All Tier 1 exhibits ☐ 4. Wetland delineation report ☐ 5. Alternatives analysis ☐ 6. Functional assessment, if required ☐ 7. Compensation plan, if required
☐ Altering 43,560 sq. ft. or more of a P-WL2 or P-WL3 wetland. ☐ Altering a P-WL1 wetland of any size	Tier 3	

Please read. If you determined that the level of wetland review for your project is Tier 2 or Tier 3, contact the LUPC for guidance on how to proceed. Some projects may qualify for a lower tier of review if certain criteria are met. For large projects affecting wetlands, or projects of any size affecting P-WL1 wetlands, a pre-application meeting with the LUPC staff is strongly encouraged. Contact the LUPC office that serves your area to set up an appointment.

GENERAL APPLICATION INSTRUCTIONS (WHITE)

APPLICATION FORMS

Please answer every application question. If additional information is required to fully answer the question, label the question number on a separate sheet and organize the extra information and exhibits in numerical order.

> INSUFFICIENT OR MISSING INFORMATION IN THE APPLICATION IS A COMMON CAUSE OF DELAY. APPLICATIONS WITH MISSING INFORMATION OR EXHIBITS CANNOT BE PROCESSED. PLEASE CALL YOUR REGIONAL OFFICE IF YOU HAVE QUESTIONS.

PROJECT INFORMATION (QUESTIONS 1-5)

Questions 1 and 2. Please write in the name of the applicant; and the township, plantation, or town where the proposed project is located.

Question 3. Check all boxes that apply to show how the water body or wetland was identified on the property. If "other" is checked, please explain. Examples of "other" identifiers include LUPC protection subdistricts such as Shoreland Protection Subdistrict (P-SL) or Great Pond Protection Subdistrict (P-GP).

Question 4. Describe the purpose of and need for the project, in detail. What will it be used for and why? Also, describe the type(s) of activity involved in the alteration. Alterations include removing or displacing soil, sand, vegetation or other materials, dredging, bulldozing, draining or dewatering, filling, or any other construction, repair, or alteration of a permanent structure.

Question 5. If any water body or wetland area was altered on the property before this application was submitted, check "YES." In deciding whether water bodies or wetlands have been previously altered, consider all known alterations that occurred in your project area or in its general vicinity. There are many different types of water body and wetland alterations. For example, consider whether there is an old dock, boat house, boat launch, area of disturbed or filled soils, drainage ditches, or impoundments near your project. Provide, to the extent known, the date, purpose and size of the previous water body or wetland alteration, and whether state or federal permits were obtained for the activity.

WATER BODY OR WETLAND TYPE, AND AMOUNT OF ALTERATION (QUESTIONS 6 AND 7)

Question 6. Indicate what type of water body or wetland(s) will be altered by checking all boxes that apply. P-WL subdistricts include lakes, ponds, rivers, streams, bogs, marshes, intertidal areas and other types of wetlands. These subdistricts usually are identified on the Commission's zoning maps as P-WL1, P-WL2, or P-WL3 subdistricts. However, small streams are considered P-WL1 subdistricts, even if they are not shown on the Commission's maps. The legend on the maps will help you interpret the symbols. If a wetlands professional visited your site to identify wetland boundaries, the professional will determine the wetland type(s). For each type of wetland that will be altered, write down the area (in square feet) that will be impacted.

Question 7. Indicate the types of impacts involved with the project by checking all boxes that apply. Enter the amount of water body or wetland that will be altered for each of the impact types checked. For shoreland stabilization projects, such as riprap or retaining walls, the amount is the total square feet altered below the normal high water mark of the water body.

Then, total the amounts in each column for impact amounts. The totals for each of the columns should match.

> Please remember:
>
> 1. To include all parts of your project that are within the water body or wetland when you calculate the size of the area to be altered. Also, include any areas below the normal high-water mark of a lake, pond, river, stream, or intertidal area.
> 2. If your project involves more than one type of impact, please do not double count the area to be altered when you complete the table.

LEVEL OF REVIEW, AND REQUIRED EXHIBITS (QUESTION 8)

Question 8. Using the answers to Questions #6 and #7, determine the level of review required for your project. **Select only one box here!** Based on the level of review required for your project, identify which exhibits must be included with your application form.

In cases where LUPC staff has identified the wetland on your property, please request the applicable level of review from your LUPC Regional Representative.

* Note: Alterations of P-WL1 wetlands where the wetland is included as a P-WL1 wetland of special significance solely on the basis of its containing an S1 or S2 natural community are reviewed under a Tier 1 level of review. All other alterations of P-WL1 wetlands are reviewed under a Tier 3 level of review, unless otherwise determined by the Commission.

> If you determined that the level of wetland review for your project is Tier 2 or Tier 3, contact the LUPC for guidance on how to proceed. Some projects may qualify for a lower tier of review if certain criteria are met. For large projects affecting wetlands, or projects of any size affecting P-WL1 wetlands, a pre-application meeting with the LUPC staff is strongly encouraged. Contact the LUPC office that serves your area to set up an appointment.

INSTRUCTIONS FOR TIER 1 EXHIBITS (YELLOW)

1. PLAN OR DRAWING

For projects requiring Tier 1 wetland review, submit a plan, drawn to scale, that indicates the types and locations of wetlands within the project area; the proposed wetland alterations; and locations of streams and other natural features. Also, show the distance between the proposed structure or disturbed area, and any nearby lakes, ponds, streams, rivers, intertidal areas, or wetlands.

2. PHOTOS OF AREA

Include color photos showing the wetland in the activity area. Label each photo with the applicant's name, township where the activity is located, and the date taken. Photographs may be taken from the air or the ground but should be taken during the growing season, if possible. Try to include landmarks in the photos, such as existing structures, large rocks or trees, lakes, etc.

3. STATEMENT OF AVOIDANCE & MINIMIZATION

Avoidance: Each applicant must provide a statement that indicates the alteration of wetlands on the property has been avoided to the extent possible based on the overall purpose of the project. In determining whether an alternative exists consider: use of other sites; reducing the size, scope, design, or density of activity; developing alternative activity designs; and demonstrating the need for the proposed project.

Minimization: The applicant must demonstrate that the area of wetland to be altered will be limited to the minimum amount necessary to complete the project. Include in the statement a discussion about how the project was designed to reduce wetland impacts (*e.g.,* 2:1 side slopes for fill instead of 3:1; or orienting a structure to minimize wetland impacts).

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INSTRUCTIONS FOR TIER 2 & 3 EXHIBITS (BLUE)

ALL TIER 1 EXHIBITS:

Provide all the exhibits required for a Tier 1 level of review. See the required exhibits list and the Tier 1 Instructions.

4. WETLANDS DELINEATION REPORT

Submit a wetland delineation, conducted by a qualified wetland professional, along with a report describing the physical characteristics of the wetland. The wetland delineation must be conducted using the methods described in the "Corps of Engineers Wetlands Delineation Manual," U.S. Army Corps of Engineers (1987) and the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region," U.S. Army Corps of Engineers (Version 2.0, January 2012).

For a Tier 2 review, a map must show the wetland boundaries, but the associated field sheets (sample plot logs) do not have to be submitted with this supplement (the LUPC may request field sheets to be submitted on some projects, depending upon the types of resources to be impacted, the amount of proposed impact, or the nature of the proposal).

For a Tier 3 review, a map and field sheets (sample plot logs) must be submitted with this form.

5. ALTERNATIVES ANALYSIS

The alternatives analysis is a narrative that explains how your project has been designed to have the least amount of impact on the wetland. In addition to explaining how your project will alter the least amount of wetland possible, you also need to explain why other alternatives to the project are not feasible, including the "no action" alternative (that is, not doing the project at all). As you plan your project, remember to lay it out and use construction techniques that will have the least amount of effect on the wetland. Do not fill or disturb any area of wetland if there is a way to do your project that will avoid it. For example, do not plan to place a structure in a wetland if it can be placed on upland, or plan to drive heavy machinery on the wetland if it can be avoided.

In discussing whether a practicable alternative exists, include information on the feasibility of:

- Utilizing, managing, or expanding one or more other sites that would avoid the wetland impact;
- Reducing the size, scope, layout, or density of the project as proposed, thereby avoiding or reducing the wetland impact; and
- Developing alternative project designs, such as cluster development, that avoid or lessen the wetland impact.

> Under the Commission's standards for wetland alterations, a project must not cause a loss in wetland area, functions, and values if there is a practicable alternative to the project that would be less damaging to the environment.

6. FUNCTIONAL ASSESSMENT

A functional assessment is an evaluation of the functions and values of a wetland that is prepared by a qualified wetland professional. The functional assessment must be conducted in accordance with Section 10.25,P,2,f,(2) of the Commission's rules and be sufficient to allow the Commission to evaluate whether the proposed wetland alteration will cause a loss or degradation of wetland functions.

> Certain projects are exempt from the functional assessment and compensation plan requirements. See Sections 10.25,P,2,b,(3),(f) and (g) of the Commission's rules. Contact the LUPC office that serves your area for guidance on which projects are exempt from these requirements.

7. COMPENSATION PLAN

Wetland compensation is required for certain projects where the functional assessment has shown that the wetland alteration will cause wetland functions and values to be lost or degraded. Because the compensation plan is tied to the results of the functional assessment, the need for a compensation plan is determined either during a pre-application meeting with the LUPC, or in consultation with the LUPC once the functional assessment has been submitted. If compensation is required, the compensation plan must meet the standards found in the Commission's Chapter 10 rules. See Section 10.25,P,2,b,(3) for more information on compensation and Section 10.25,P,2,c for wetland compensation standards.

Unless the compensation plan includes use of an existing wetland mitigation bank or in lieu fee, a compensation plan must include the following:

- A plan of the proposed compensation area showing proposed boundaries and characteristics of the compensation site, including boundaries of any existing and proposed wetland areas.

- A narrative describing the specific goals of the compensation project in terms of particular wetland functions and values as related to those of the lost or degraded wetland. The narrative also should identify the criteria that will be used to measure success of the compensation project.

- If the project includes wetland restoration or creation, include:
  - A narrative describing the available literature or experience to date (if any) for carrying out the compensation work;
  - Proposed implementation and management procedures;
  - A description of the short-term and long-term sources of water for the wetland;
  - Plans for re-planting, including a description of plant species, sizes and sources of plant material, numbers of each species/size, proposed spacing, and an explanation of how, when, and where seeding or planting will take place;
  - Proposed buffers or protective measures such as sediment control methods;
  - Plans for monitoring the compensation work, identifying criteria which require mid-course corrections and possible remediation measures; and
  - Plans for control of non-indigenous plant species.

- Provisions for long-term protection of the compensation site. For projects involving a covenant and restriction or conservation easement, the proposed deed or easement language must be submitted. Also, any agreements or terms necessary to execute the restriction or easement, such as an agreement for the holder of the easement, also must be included.