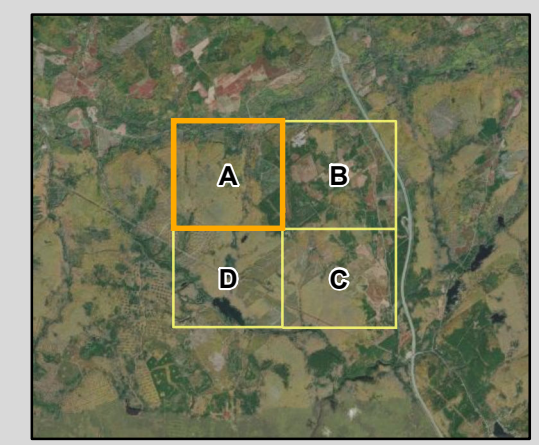


WETLANDS WITHIN THE STUDY AREA
FIGURE 9A

- Proposed Turbine Location
- Proposed Substation Location
- Potential Development Area (PDA)
- Study Area
- Field Delineated Wetland Boundary
- Model Interpreted Wetland Boundary
- Watercourse
- Waterbody
- Highway












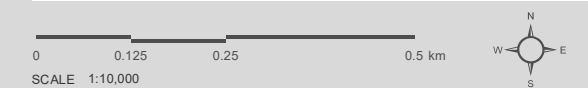
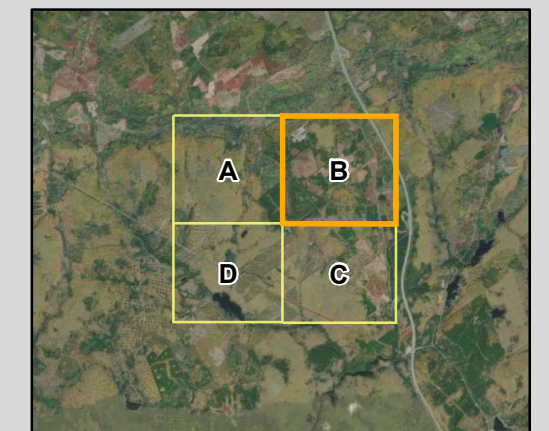
MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: DU
MAP CHECKED BY: KB
MAP PROJECTION: NAD 1983 UTM ZONE 20N

WETLANDS WITHIN THE STUDY AREA

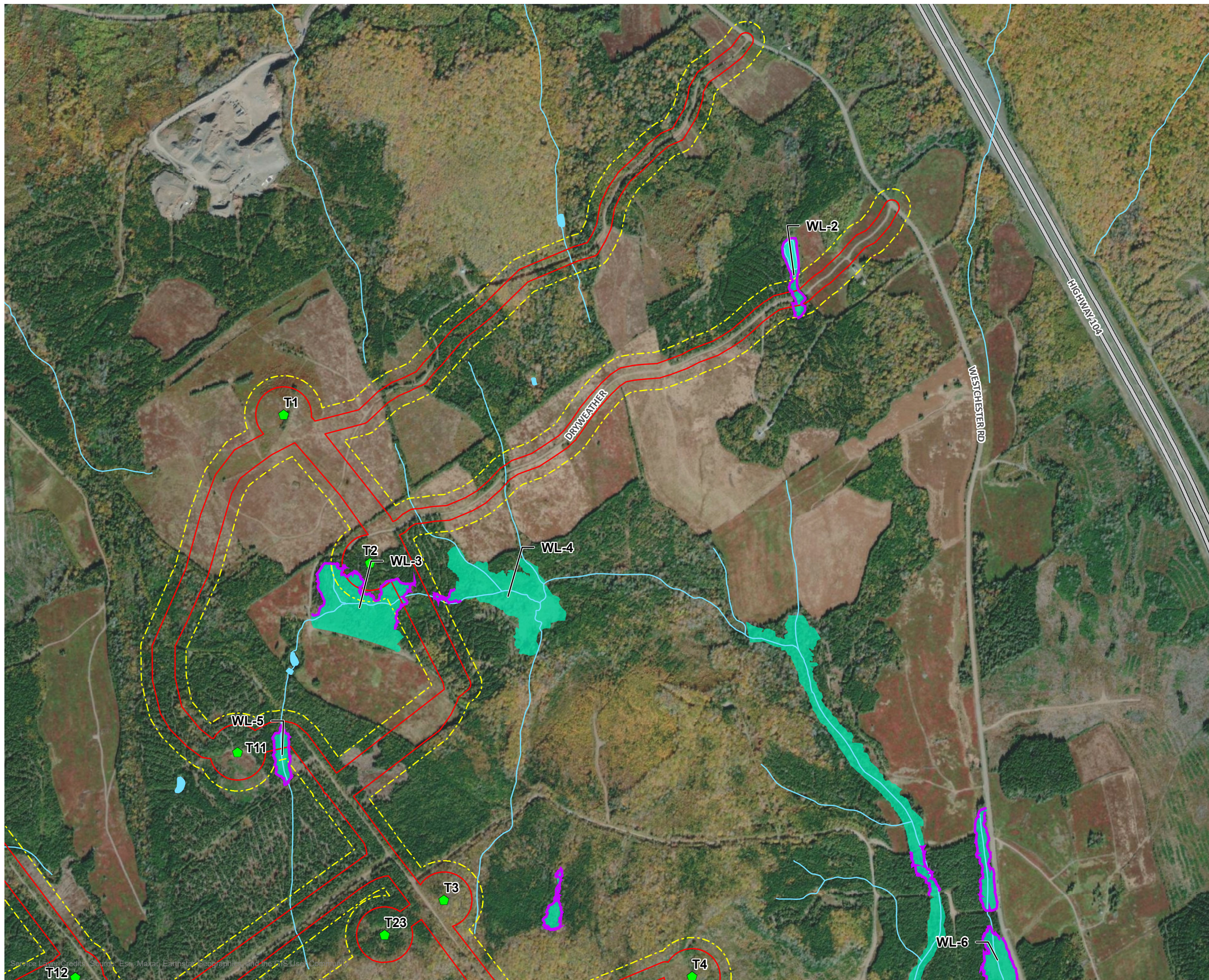
FIGURE 9B

-  Proposed Turbine Location
-  Proposed Substation Location
-  Potential Development Area (PDA)
-  Study Area
-  Field Delineated Wetland Boundary
-  Model Interpreted Wetland Boundary
-  Watercourse
-  Waterbody
-  Highway












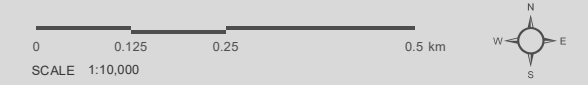
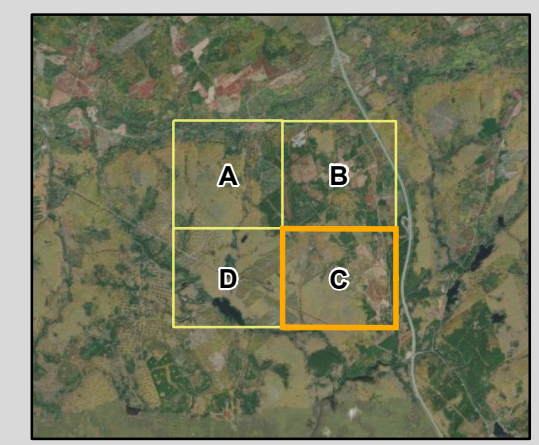
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DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: DU
MAP CHECKED BY: KB
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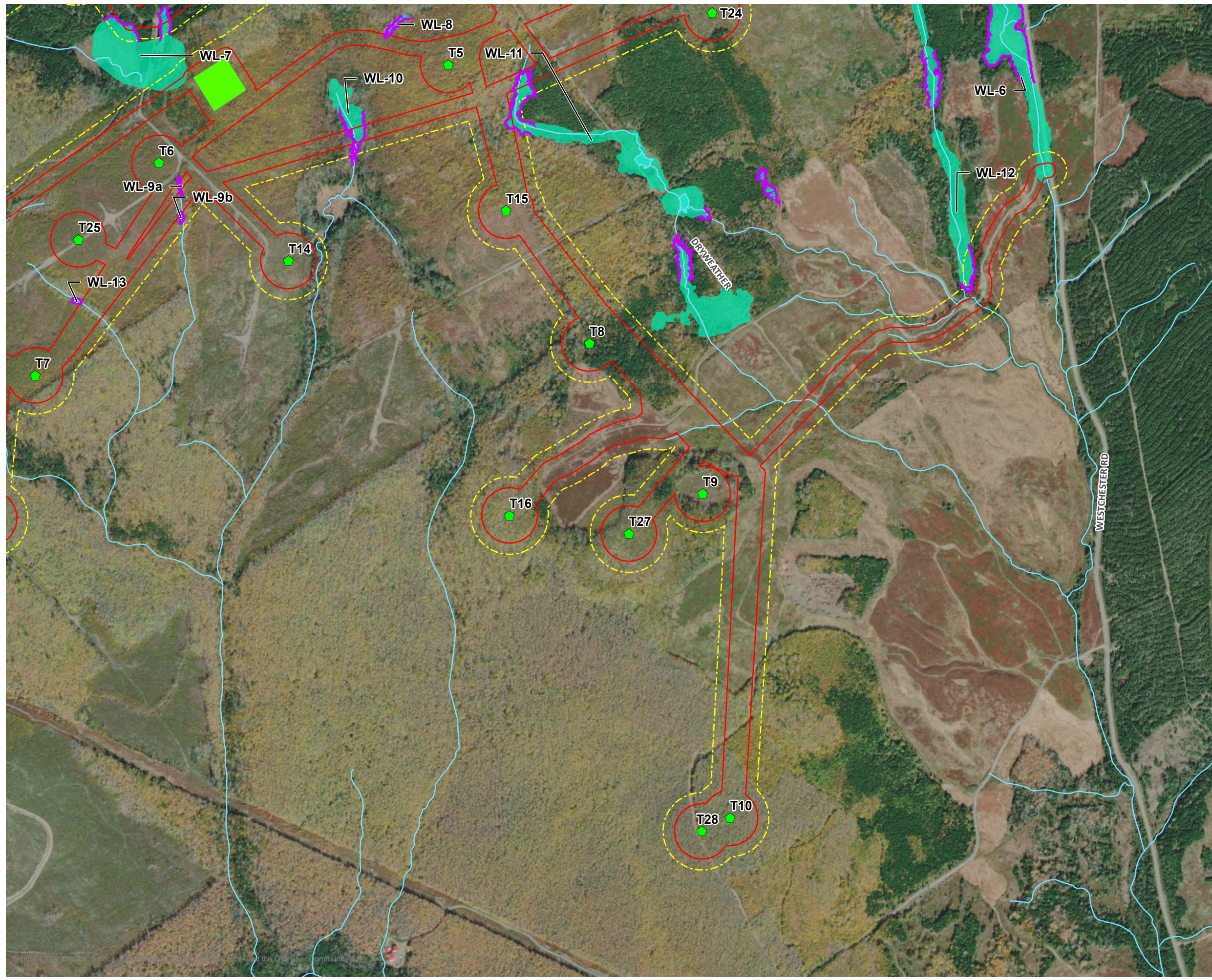
WETLANDS WITHIN THE STUDY AREA
FIGURE 9C

-  Proposed Turbine Location
-  Proposed Substation Location
-  Potential Development Area (PDA)
-  Study Area
-  Field Delineated Wetland Boundary
-  Model Interpreted Wetland Boundary
-  Watercourse
-  Waterbody
-  Highway












MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

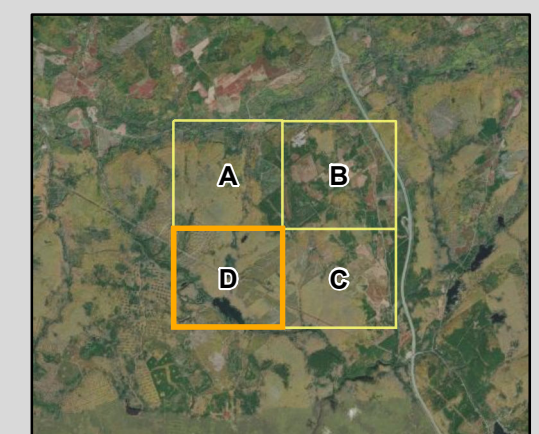
MAP CREATED BY: DU
MAP CHECKED BY: KB
MAP PROJECTION: NAD 1983 UTM ZONE 20N



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WETLANDS WITHIN THE STUDY AREA
FIGURE 9D

-  Proposed Turbine Location
-  Proposed Substation Location
-  Potential Development Area (PDA)
-  Study Area
-  Field Delineated Wetland Boundary
-  Model Interpreted Wetland Boundary
-  Watercourse
-  Waterbody
-  Highway



MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: DU
MAP CHECKED BY: KB
MAP PROJECTION: NAD 1983 UTM ZONE 20N

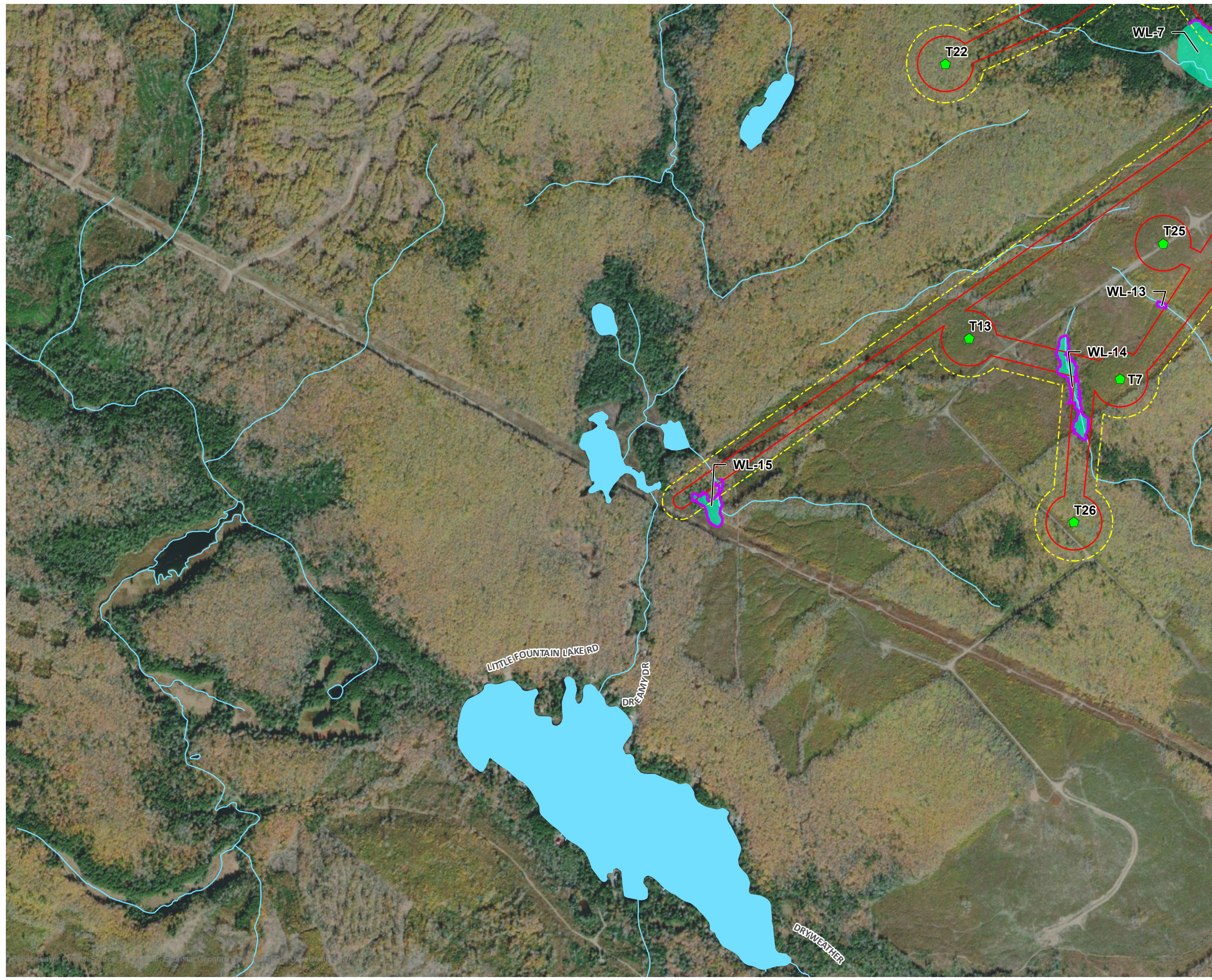


TABLE 11. SUMMARY OF WETLANDS CHARACTERISTICS AND PROPOSED ALTERATIONS WITHIN 30 M OF THE PDA

Wetland ID	Wetland Type	Total Wetland (ha)	Water Flow Path	Landscape Position	Landform	Wetland Within PDA		Potential Alterations
						Area (ha)	%	
Wetland 1	Treed Swamp	0.03	Throughflow-intermittent	Lotic	Stream Fringe	0	0	None
Wetland 2	Wet Meadow/ Swamp	0.55	Outflow-intermittent	Terrene	Fringe (Pond)	0.10	18	Potential - This wetland is crossed by an existing access road that may require upgrading before it can be used by the Project.
Wetland 3*	Treed Swamp	3.67	Throughflow-intermittent	Terrene	Flat	0.28	8	<p>Potential - The edge of this wetland is located adjacent to a proposed access road. The final design of this across road should consider avoidance of this wetland.</p> <p>This wetland is located within the PDA near T2. With careful site planning, the crane pad and footprint of T2 will avoid this wetland.</p> <p>A collector line is proposed to run across the eastern lobe of this wetland. With careful site planning, the line can span this wetland.</p>
Wetland 4*	Tree and Shrub Swamp	4.06	Throughflow-intermittent	Terrene	Flat	0	0	None
Wetland 5	Treed Swamp	0.51	Throughflow via WC3	Lotic	Stream Fringe	0.23	45	Partial Infill - This wetland will be crossed in one location by both a collector line and an access road for T11.

Wetland ID	Wetland Type	Total Wetland	Water Flow Path	Landscape Position	Landform	Wetland Within PDA		Potential Alterations
Wetland 6*	Fen/Shrub Swamp	4.51	Throughflow	Lotic	Stream Fringe	0.17	3.8	Potential - An existing access road that spans this wetland will be used as an access road for the Project. The final design should consider if the existing road requires upgrades. If so, upgrades should be considered that avoid altering, maintaining, restoring, or enhancing the potential WSS.
Wetland 7*	Fen	2.78	Throughflow	Lotic	Floodplain	0.10	4	Potential - An existing access road that spans the eastern lobe of this wetland that will be used as an access road for the Project. The final design should consider if the existing road requires upgrades. If so, upgrades should be considered that avoid altering, maintaining, restoring, or enhancing the potential WSS.
Wetland 8	Hardwood Treed Swamp	0.10	Outflow-intermittent	Terrene	Basin	0.01	1	None
Wetland 9 (a&b)	Wet Meadow/Treed Swamp	0.06	Throughflow via WC2	Lotic	Stream Fringe	0.03	50	None - A collector line is proposed to run between the lobes of this wetland. With careful site planning, the line can span this wetland.
Wetland 10	Treed Swamp	0.89	Outflow-intermittent	Terrene	Basin	0.17	19	Potential partial infill - A collector line is proposed to run through this wetland. With careful site planning, the line can span this wetland and construction access may be possible using an adjacent access road.

Wetland ID	Wetland Type	Total Wetland	Water Flow Path	Landscape Position	Landform	Wetland Within PDA		Potential Alterations
Wetland 11*	Fen and Shrub Swamp Complex	2.5	Throughflow via WC11	Lotic	Stream Fringe	0.14	6	None - One collector line is proposed to run through this wetland and a second line is located adjacent to this wetland. With careful site planning, the lines can span this wetland and construction access may be possible using an adjacent access road.
Wetland 12*	Shrub Swamp	1.78	Throughflow via Gleason Brook	Lotic	Stream Fringe	0	0	None
Wetland 13	Treed Swamp	0.03	Throughflow via WC1	Lotic	Stream Fringe	0	0	None
Wetland 14	Treed Swamp	0.72	Throughflow via WC17	Lotic	Stream Fringe	0.23	32	Partial Infill - This wetland will be crossed in two locations by both collector lines and access roads to T13, T7 and T36.
Wetland 15	Treed Swamp	0.42	Throughflow-intermittent	Terrene	Flat	0.12	29	None - wetland is adjacent to proposed new interconnection line and can be avoided.
Total:		22.6 [‡]				1.6	7%	

*Wetlands of special significance. Further description and rationale are presented in Section 3.1.3.3.

‡Approximate total wetland area includes the delineated area of wetlands within the study area, as well as the predicted area extends beyond the study area, where applicable.

3.1.3.3 Wetland Functional Assessment Approach and Methodology

Wetland functional assessments were also completed at the 15 delineated wetlands within the study area (**Figure 9a-d**). The assessments followed a standardized method for assessing natural wetland functions and benefits called the Wetland Ecosystems Services Protocol for Atlantic Canada (WESP-AC) protocol. WESP-AC represents a standardized approach to the way data is collected and interpreted to indirectly yield relative estimates of a wide variety of important wetland functions and their associated benefits. The functional assessments were completed from July – September 2022, consistent with protocol requirements of assessments occurring prior to site construction and within the growing season (approximately June 1 – September 30). Results of the WESP-AC functional assessment provided a classification for assessed wetlands based on their functionality as well as the identification of wetlands of special significance (WSS).

The WESP-AC generates scores (i.e., 0 to 10) and ratings (i.e., “Lower”, “Moderate”, or “Higher”) to a variety of wetland functions based on visual assessments of weighted ecological indicators (Adamus 2018). The number of ecological indicators applied to estimate a particular wetland function depends on which functions were being assessed as part of the field surveys. The indicators are then combined in a spreadsheet using logic-based, mathematical models to generate the score and rating for each wetland function and benefit (NSDNR 2021). Together, this information provided a profile of functions and benefits provided by each assessed wetland.

Wetland functions are summarized as grouped functions in the WESP-AC calculator. For each wetland function, scores and ratings represent a particular wetland’s standing relative to those in a statistical sample of non-tidal wetlands previously assessed in the province (121 calibration wetlands in NS; NBDELG 2018).

A WESP-AC functional assessment was completed on wetlands within 30 m of the Project footprint in July 2022. This included wetlands delineated in both 2021 and 2022 that have the potential to be impacted by the proposed development. The following wetland functions, summarized by group, were included in the assessment:

- Hydrologic group
 - Water storage and delay
- Water quality support group
 - Sediment retention and stabilization
 - Phosphorus retention
 - Nitrate removal and retention
 - Carbon sequestration
- Aquatic support group
 - Stream flow support
 - Aquatic invertebrate habitat
- Organic nutrient transport
- Water cooling
- Aquatic habitat group
 - Anadromous fish habitat
 - Resident fish habitat
 - Amphibian and turtle habitat
 - Waterbird feeding habitat
 - Waterbird nesting habitat
- Transition habitat group
 - Songbird, raptor and mammal habitat

- Pollinator habitat
- Native plant habitat

Further descriptions of the wetlands functions and benefits are provided in **Appendix D**.

Wetlands of Special Significance

Wetlands within the study area were evaluated for their potential for meeting the criteria of a Wetlands of Special Significance (WSS). WSS are defined within Nova Scotia's Wetland Conservation Policy as wetlands that play particularly important roles in providing ecosystem services or functions (NSECC 2019). Based on the Policy, this includes the following wetland types:

- Salt marshes;
- Wetlands that are within or partially within a designated protected or managed area (as defined in the Policy);
- Intact or restored wetlands that are project sites under the North American Waterfowl Management Plan and secured for conservation;
- Wetlands known to support SAR;
- Wetlands in designated protected water areas.

Additionally, the following characteristics, functions and services were considered in the evaluation of WSS within the study area:

- Wetlands that support a significant species or species assemblages (e.g., coastal plain flora);
- Wetlands that support high wildlife biodiversity;
- Wetlands that have high hydrologic value; and
- Wetlands that have high social or cultural importance.

The wetlands were evaluated for the potential of being WSS in addition to functional assessment using the WESP-AC. Although the excel model used for the WESP-AC assessments includes an interpretation tool to classify WSS based on wetland functionality, it is recognized that the tool currently does not consider all aspects of WSS that are considered under the provincial Wetland Conservation Policy. As such, following completion of WESP-AC assessment wetlands were reviewed to see if they fall under the definition of WSS per the provincial Wetland Conservation Policy.

Results

The WESP-AC datasheets summary scores for the assessed wetlands are included in **Appendix D** and include a numerically weighted score for functions and benefits of 21 wetland functions and other attributes. WESP-AC functional assessment applies a three-level categorical rating (i.e., Lower, Moderate or Higher) and is based on natural breaks in the statistical distribution of scores among the calibration wetlands for each function or benefit,

determined objectively using a statistical procedure known as Jenks Optimisation (Jenks 1967).

WESP-AC guidance states that the primary focus should be on the normalised function scores of the WESP-AC. However, normalised benefit scores are included as they include data associated with the context within which the associated function is being performed currently (e.g., they are influenced by current land uses). The following discussion includes a summary of the five grouped wetland functions considered by WESP-AC in the non-tidal calculator for wetland functional assessment. The ratings for grouped wetland functions in the study area study area are summarized in **Table 12**. A summary report of the functional assessment results, including normalized benefit ratings for individual wetlands, are provided in **Appendix D**.

TABLE 12: SUMMARY OF NORMALIZED FUNCTION RATINGS FOR GROUPED WETLAND FUNCTIONS

Wetland ID	Hydrologic Group	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat
Wetland 1	1.61*	3.04*	8.00	3.10*	6.74
Wetland 2	3.61	4.33*	5.25	7.15	5.30
Wetland 3*	1.54	3.14*	7.74*	6.61	8.45
Wetland 4*	2.43	4.06*	7.96*	7.57	8.19
Wetland 5	1.39*	4.10*	8.00	4.36	7.92
Wetland 6*	1.91*	3.33*	7.05*	5.93*	7.38*
Wetland 7*	2.44	4.18*	7.96*	6.71	9.00
Wetland 8	3.26	3.01	6.98	3.83	7.07
Wetland 9a/b	3.17*	3.23	7.75	4.16	7.76
Wetland 10	2.12	3.32	5.96	4.08*	8.77
Wetland 11*	0.60*	3.85*	8.54*	7.47	7.67*
Wetland 12*	1.43*	3.01*	7.13*	7.99	7.99*
Wetland 13	2.14	2.37*	6.01	3.28	7.31
Wetland 14	1.57*	3.39	7.77*	3.70*	8.25
Wetland 15	4.55	3.27*	5.44	3.68	7.64

Notes:

Lower‡	Moderate‡	Higher‡	*Normalized Benefits Rating of “Higher”
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*Wetlands of special significance.

‡Based on WESP-AC scoring (i.e., 0 to 10) and ratings using weighted ecological indicators and using logic-based, mathematical models (indicators (Adamus 2018).

Grouped functions with values in orange and bold in **Table 12** have a “higher” wetland normalized function and benefit scores based on the WESP-AC functional assessment conducted in 2022. Based on the data in **Table 12**, the following can be summarized:

- No wetlands were assessed a higher function and benefit for the Hydrologic Function group;
- No wetlands were assessed a higher function and benefit for the Water Quality Support function group;
- Seven wetlands (Wetlands 3, 4, 6, 7, 11, 12 and 14) were assessed as having a higher function and benefits for the Aquatic Support function group;
- No wetlands were assessed a higher function and benefit for the Aquatic Habitat function group; and
- Three wetlands (Wetlands 6, 11 and 12) were assessed as having a higher function and benefits for the Transition Habitat function group.

Hydrologic Functions

The hydrologic function of a wetland is defined by its contribution to ground and surface water resources. The WESP-AC assessment gives higher scores to wetlands with the capability to store or delay the downslope movement of surface water (e.g., wetlands that do not have surface water outlets).

In general, many of the wetlands in the study area have lower normalized function rating for the hydrological group of functions based on the WESP-AC functional assessment conducted in 2022. Many of the wetlands within the Study Area have both through-flowing watercourses and shallow soils that tend to function lower for water storage.

Wetland 15 was the only wetland within the assessment area with a moderate rating, the remaining wetlands were given a lower rating. Although the functional ratings were lower for hydrologic grouped functions, seven of the wetlands received a higher benefits rating.

Water Quality Support Group

The water quality support group is defined as its contribution to the quality of surface and groundwater of an area. This group considers the following functions: sediment retention and stabilization, phosphorus retention, nitrate removal and carbon sequestration.

Similar to the hydrologic group, wetlands with higher function scores typically do not have a surface water outlet, and instead are isolated from flowing surface water. The normalized function rating for the water quality support group of functions was moderate for 14 out of the 15 wetlands based on the WESP-AC functional assessment conducted in 2022 for wetlands within the study area. Although the functional ratings were lower or moderate for this group of functions, the average benefits rating for these functions was often considered “higher”.

Aquatic Support Group

The aquatic support function of a wetland determines its ability to support ecological stream functions that promote habitat health. This group considers the following functions:

- Stream flow support;
- Aquatic invertebrate habitat;
- Organic nutrient export; and
- Water cooling.

The normalized function rating for the aquatic support group functions was high for 13 out of the 15 wetlands based on the WESP-AC functional assessment conducted in 2022 for wetlands within the study area. Wetlands lying adjacent to or containing flowing water and headwater wetlands typically score the highest in this group. As discussed above, all of the wetlands assessed in the study area had an outlet, many of which were formed around through flowing watercourses. As a result of these, wetlands in the vicinity of the PDA are considered to function highly for aquatic support.

Six wetlands (Wetlands 3, 4, 6, 7, 11 and 12) had both “higher” function and benefit scores, noting that only three of these wetlands have areas that extend into and may be impacted within the PDA.

Transition Habitat Group

The aquatic habitat group considers the following different functions:

- Anadromous fish habitat;
- Resident fish habitat;
- Amphibian and turtle habitat;
- Waterbird feeding habitat; and
- Waterbird nesting habitat.

Wetlands that have the highest functions within this group include those that are adjacent to or contain flowing water, including many of the assessed wetlands within the study area. The normalized function and benefit ratings for the aquatic habitat group of functions were both moderate for nine of the wetlands and high for six of the assessed wetlands based on the WESP-AC functional assessment conducted in 2022 for wetlands within the study area.

Aquatic Habitat Group

The main function of the collective group is to evaluate the wetland ability to support healthy habitat for birds, mammals, and native plants. The transition habitat group comprises three different functions:

- Songbird, raptor, and mammal habitat;
- Native plant habitat; and
- Pollinator habitat.

The average normalized function rating for the transition habitat group of functions was high (7.6) based on the WESP-AC functional assessment conducted in 2022 for wetlands within the study area. The benefits provided by the wetlands within the study area were ranked “moderate” (i.e., the average normalized ranking was 7.0).

Wetland 7 had both a “higher” function and benefit score with individual function scores of higher for pollinator, as well as songbird, raptor, and mammal habitats (i.e., 8.8 and 8.3, respectively) and a moderate functional score for native plant habitat (i.e., 4.3). The benefit score for all three functions in this group was high for this wetland (i.e., 10 for each function). The higher scores for this functional group at Wetland 7 take into consideration the presence of several species and risk and species of conservation concern that were identified near this wetland throughout the biophysical surveys conducted in 2021 and 2022 with associations with Gleason Brook that flows through Wetland 7:

- Critical habitat for the Inner Bay of Fundy [IBoF] population of Atlantic Salmon (*Salmo salar* pop. 1)
- Brook trout (*Salvelinus fontinalis*) minnows observed in July 2022 within Gleason Brook
- Eastern waterfan (*Peltigera hydrothyria*) observed in 2021 within Gleason Brook
- Large Purple Fringed Orchid (*Platanthera grandiflora*)

Wetlands of Special Significance

The wetlands were evaluated for the potential of being WSS in addition to functional assessment using the WESP-AC. Although the excel model used for the WESP-AS assessments includes an interpretation tool to classify WSS based on wetland functionality, it is recognized that the tool currently does not consider all aspects of WSS that are considered under the provincial Wetland Conservation Policy. The results of the WESP-AC WSS interpretation tool are included in Appendix D with the WESP-AC functional assessment summary for wetlands within the study area. None of the wetlands within the study area were flagged as WSS by the interpretation tool based solely on the functions assessment in 2022.

Six wetlands were identified within the study area as potential WSS, of these, three are located outside of the PDA and are not anticipated to be impacted by the proposed Project activities. After completing surveys for delineation/functional assessments, only three of the six potential WSS wetlands extend within the PDA (i.e., Wetland 3, Wetland 6 and Wetland 7). Additional WESP-AC data for these wetlands will be provided to regulatory and permitting authorities prior to construction for further consultation and consideration if the potential WSS is not avoided. These wetlands and the rationale for their potential to be WSS is provided below in **Table 13** with a summary of the adjacent development within the PDA, if applicable.

TABLE 13: POTENTIAL WSS RATIONALE AND PROPOSED ALTERATIONS WITHIN THE PDA

Wetland ID	Rationale as a Potential WSS	Potential Alterations or Effects of the PDA
Wetland 3	<p>Wetland has the potential to provide high hydrologic value. Function and benefits ratings of “Higher” for the Aquatic Support group of functions.</p> <p>Wetland is located upstream and hydrologically connected to a watercourses that is known to support SAR (eastern waterfan, IBoF population of Atlantic Salmon, brook trout).</p>	<p>Potential – The edge of this wetland is located adjacent to a proposed access road. The final design of this across road should consider avoidance of this wetland.</p> <p>This wetland is located within the PDA near T2. With careful site planning, the crane pad and footprint of T2 will avoid this wetland.</p> <p>An overhead collector line is proposed to run across the eastern lobe of this wetland. With careful site planning, the transmission poles can be located outside the buffer and the line can span this wetland.</p>
Wetland 4	<p>Wetland has the potential to provide high hydrologic value. Function and benefits ratings of “Higher” for the Aquatic Support group of functions.</p> <p>Wetland is located upstream and hydrologically connected to a watercourses that is known to support SAR (eastern waterfan, IBoF population of Atlantic Salmon, brook trout).</p>	<p>None – This wetland is located downstream and outside of the PDA.</p>
Wetland 6	<p>Wetland has the potential to provide high hydrologic value. Function and benefits ratings of “Higher” for the Aquatic Support group of functions.</p> <p>Wetland has the potential to support high wildlife biodiversity. Function and benefits ratings of “Higher” for the Transition Habitat group of functions.</p> <p>Wetlands known to support SAR (eastern waterfan, IBoF population of Atlantic Salmon, brook trout).</p>	<p>Potential – An existing access road that spans this wetland will be used as an access road for the Project. The final design should consider if the existing road requires upgrades. If so, upgrades should be considered that avoid altering, maintaining, restoring, or enhancing the potential WSS.</p>

Wetland ID	Rationale as a Potential WSS	Potential Alterations or Effects of the PDA
Wetland 7	Wetland has the potential to provide high hydrologic value. Function and benefits ratings of “Higher” for the Aquatic Support group of functions.	Potential – An existing access road that spans the eastern lobe of this wetland that will be used as an access road for the Project. The final design should consider if the existing road requires upgrades. If so, upgrades should be considered that avoid altering, maintaining, restoring, or enhancing the potential WSS.
Wetland 11	<p>Wetland has the potential to provide high hydrologic value. Function and benefits ratings of “Higher” for the Aquatic Support group of functions.</p> <p>Wetland has the potential to support high wildlife biodiversity. Function and benefits ratings of “Higher” for the Transition Habitat group of functions.</p>	None – One collector line is proposed to run through this wetland and a second line is located adjacent to this wetland. With careful site planning, the lines can span this wetland and construction access may be possible using an adjacent access road.
Wetland 12	<p>Wetland has the potential to provide high hydrologic value. Function and benefits ratings of “Higher” for the Aquatic Support group of functions.</p> <p>Wetland has the potential to support high wildlife biodiversity. Function and benefits ratings of “Higher” for the Transition Habitat group of functions.</p> <p>Wetland is known to support SAR (eastern waterfan, IBoF population of Atlantic Salmon, brook trout).</p>	None – This wetland is located downstream and outside of the PDA.

3.1.3.4 Assessment Conclusions

As previously discussed, the Project layout was designed to attempt to minimize interactions with wetlands. The location of only one of the WTG (T2) is within 30 m of a wetland, and depending on the final road and collector network selected for development, up to 15 wetlands were identified that have extent within 30 m of the PDA. These wetlands included treed and shrub swamps with lesser areas of fens and wet meadows. During the 2021 and 2022 field assessments, 11 of these wetlands were found to extend into the PDA with 1.6 ha of wetland area within the PDA. Further, of the wetlands that extend within the PDA, the use of

mitigation measures and careful selection of which locations are included in the final design will further reduce the area and number of wetlands with the potential to require alterations.

The WESP-AC wetland analysis indicated that, on average, wetlands within the study area have highest rankings for functions related to aquatic support (i.e., stream flow support, aquatic invertebrate habitat and organic nutrient export and water cooling functions) and as transition habitats (i.e., songbird, raptor, and mammal habitat; native plant habitat; and pollinator habitat functions). Wetlands within the study area have lower ratings for functions related to water quality support (i.e., Sediment retention and stabilization, phosphorus retention; nitrate removal; and carbon sequestration).

Wetlands within the study area were evaluated for their potential for meeting the criteria of a WSS as defined within Nova Scotia's Wetland Conservation Policy (NSECC 2019). Six wetlands were identified within the study area as potential WSS, of these, three are located outside of the PDA and are not anticipated to be impacted by the proposed Project activities. Effects of the Project on wetlands and the proposed mitigation measures are described in **Section 3.2.4**. Following the finalization of the Project layout, which will avoid the remaining three WSS to extent feasible, consultation with NSECC and NSDNR will be requested for confirmation of WSS status and permitting requests.

3.1.4 Aquatic Habitat

3.1.4.1 Watercourses and Fish Habitat

Scope of VECs

Watercourses and fish habitat are considered a VEC because of their importance in supporting aquatic life such as freshwater fish, and benthic invertebrate species, as well as aquatic SAR; as a fisheries resource; and as a food source for other fish and wildlife.

The LAA for watercourses and fish habitat is defined as watercourse crossings within 30 m of the PDA and their associated tributaries or distributaries. Watercourse crossings within 30 m of the PDA were assessed in the field from 50 m upstream to 100 m downstream from the PDA as part of the study area (**Figure 10**). A buffer of 30 m was selected to include watercourses that are adjacent to the PDA and could be impacted by Project activities within their riparian zone.

3.1.4.1.1 Desktop Assessment

Approach and Methodologies

A desktop assessment of watercourses and potential aquatic habitat was carried out prior to the onset of the field survey. While reviewing the resources for the wetland and watercourse surveys the information was also reviewed to evaluate the potential for aquatic SAR and/or SoCC within the general area of the proposed project and to assist in scoping the field programs. The following sources were reviewed:

- ACCDC (AC CDC 2021, AC CDC 2022);
- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC);
- Fisheries and Oceans Canada (DFO) Species at Risk Mapping;

- NSDNRR Provincial Landscape Viewer; and
- Google Earth satellite imagery.

An evaluation of the potential habitat for SAR and SoCC fish species included an assessment of the AC CDC screening and the results of the field surveys conducted throughout 2021 and 2022. The results of the fish priority species assessment include a description of suitable habitat for SAR and SoCC fish with the potential to occur within the LAA, as well as a summary identified potential habitat within watercourses of the PDA for those species.

Results

Surface water flow across the PDA is expected to be guided by topography. The PDA is situated on ridges that are broken up by steep valleys and surface water flow is directed towards watercourses which are contained within their watersheds by the surrounding topography. Based on topographical mapping, the elevation within the PDA ranges from 130 m above sea level in the vicinity of Mountain Brook in the northwestern portion of the PDA to maximum peaks approximately 330 m above sea level towards the center of the PDA.

The PDA is located within the Economy (1DJ) and Phillip/Wallace (1DN) primary watersheds. The LAA for the physical environment includes the three secondary watersheds that the PDA is located within: The River Philip (1DN-1), the Wallace River (1DN-3) and the Portapique River (1DJ-7) secondary watersheds. The largest portion of the PDA falls within the Economy watershed, specifically, the Portapique River secondary watershed (1DJ-7) which flows south towards Minas Basin. Some areas of the PDA to the west and north are located within the River Philip (1DN-1) and Wallace River (1DN-3) secondary watersheds, respectively, which both flow north and eventually to the Northumberland Strait.

The following watercourses and water bodies located the LAA and shown on **Figure 10** by their secondary watersheds:

- River Phillip Secondary Watershed (1DN-1):
 - Mountain Brook
 - Tributaries to Mountain Brook
- Wallace River Secondary Watershed (1DN-3):
 - Tributaries to West Branch Wallace River
- Portapique River Secondary Watershed (1DJ-7):
 - Duck Pond
 - Little Duck Pond
 - Tributaries to Fountain Lake
 - Fountain Lake
 - Tributaries to Fountain Lake Brook
 - Fountain Lake Brook
 - Gleason Brook
 - Tributaries to Gleason Brook