

PERMIT TO ALTER A BODY OF WATER

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **JUNE 15, 2020**

File No: **526**
Permit No: **ALT11082-2020**

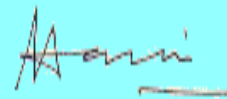
Permit Holder: **Labrador Island Link Limited Partnership**
500 Columbus Drive
St. John's, NL A1B 4K7
JackieWells@nalconenergy.com

Attention: **Jackie Wells**

Re: **Upgrading and rehabilitation of existing bridges and culverts along the access road of Labrador-Island Transmission Link in Northern Peninsula - Segment 3**

Permission is hereby given for : **upgrading and rehabilitation of ninety nine (99) bridges and culverts, which were originally constructed on a temporary basis during the construction of Labrador-Island Transmission Link, along the access road in segment-3 in Northern Peninsula to retain them in existing locations as permanent structures in order to facilitate inspection, repairing and maintenance of the Transmission Link, with reference to the application dated February 18, 2020 and additional information received on March 6, April 17, and May 20, 2020**

- This Permit does not release the Permit Holder from the obligation to obtain appropriate approvals from other concerned municipal, provincial and federal agencies.
- The Permit Holder must obtain the approval of the Crown Lands Administration Division if the project is being carried out on Crown Land.
- This Permit is subject to the terms and conditions indicated in Appendices A and B (attached).
- It should be noted that prior to any significant changes in the design or installation of the proposed works, or in event of changes in ownership or management of the project, an amendment to this Permit must be obtained from the Department of Municipal Affairs and Environment under Section 49 of the *Water Resources Act*.



(for) MINISTER

APPENDIX A
Terms and Conditions for Permit

Culvert Design

1. The crossing structure must provide adequate capacity to safely discharge flood flows without causing backwater effects upstream or increased flow velocity downstream.
2. To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: A complete list of culverts as per the following table in Appendix E

Crossing Name / No.	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m³/s)	Minimum Size (mm)	Number of Pipes	Length (m)	PPWSA
See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E	See Appx E

Culvert Installation

3. Drainage ditches must collect and transport surface runoff in a manner that does not cause flooding, erosion or sedimentation of adjacent land or receiving waters.
4. Inlet and outlet areas of culvert installations must be adequately protected from erosion by placing rip-rap, fitted stone, or concrete headwalls.
5. Culvert installations must follow the stream channel gradient to the maximum extent possible and placed in line with the direction of the main flow to minimize disturbance to the channel. Culverts must not disrupt the flow of water or cause ponding at the upstream side of the installation.
6. In multiple culvert installations, one culvert must be set a minimum of 150 mm lower than the others to provide adequate water depth and velocity for fish passage during low flow conditions. In addition, multiple culverts must be installed within 0.6 to 0.9 metres apart for maximum stability.
7. Where pumping is used to bypass flow, cofferdams must be installed both above and below areas of construction. The Permit Holder must provide pumps with sufficient capacity to prevent washout of cofferdams.
8. Cofferdams must be properly designed and constructed of suitable materials to prevent leakage and to resist loss of any material as a result of erosion. Cofferdams must be removed upon completion of their intended function. All material must be removed carefully to prevent disturbance of the water body and to prevent water quality degradation.
9. All work involving minor alteration to the stream channel to permit culvert placement must be carried out at a time of low flow, and in a manner that prevents downstream siltation and unnecessary alteration of the channel.
10. Grading and finishing of roadways or road embankments must not cause damage to culverts or allow road material to enter the watercourse.
11. Roadside embankments near the watercourse must be adequately protected from erosion by sodding, seeding or placing of rip-rap.

12. Culverts must be inspected regularly so that immediate action can be taken to clear blockages caused by ice or debris or to undertake repairs as required.
13. The inlet and outlet of culverts must be clearly marked so that operators of road grading and snow clearing equipment can avoid blocking culverts.
14. Any damage to culverts during installation or due to inadequate capacity and/or improper construction must be reported to this Department. Damaged culverts must be replaced immediately to prevent overtopping, erosion, or flooding.
15. If a culvert is installed in natural fish habitat it must be embedded a minimum of 150 mm below the natural streambed (up to a maximum of 1/3 of the culvert diameter).

Bridge Design

16. The crossing structure must provide adequate capacity to safely discharge flood flows without causing backwater effects upstream or increased flow velocity downstream.
17. Piers must be designed to prevent failure resulting from scouring of streambed material.
18. The bridge(s) must have the following minimum dimensions: A complete list of bridges as per the following table in Appendix F

Crossing Name / No.	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m³/s)	Span (m)	Waterway Opening (m²)	Height Above Stream Bed (m)	Freeboard (m)	PPWSA
See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F	See Appx F

Bridge Construction

19. The use of creosote treated wood is strictly prohibited within 15 metres of all bodies of fresh water in the province.
20. Drainage ditches must collect and transport surface runoff in a manner that does not cause flooding, erosion or sedimentation of adjacent land or receiving waters.
21. Bridge abutments must be set back 0.5 metres from the normal edge of a watercourse to prevent constriction during high flow conditions.
22. Infilling must not cause increased water elevation upstream or increase flow velocity downstream of the site. Reduction of the natural cross sectional area of any watercourse is not permitted.
23. The upstream and downstream sides of abutments must be protected with rip-rap, concrete or heavy timber to prevent erosion and scouring.
24. Where pumping is used to bypass flow, cofferdams must be installed both above and below areas of construction. The Permit Holder must provide pumps with sufficient capacity to prevent washout of cofferdams.
25. Cofferdams must be properly designed and constructed of suitable materials to prevent leakage and to resist loss of any material as a result of erosion. Cofferdams must be removed upon completion of their intended function. All material must be removed carefully to prevent disturbance of the water body and to prevent water quality degradation.

26. Abutments and piers must be constructed in the dry and during times of low flow.
27. Roadside embankments near the watercourse must be adequately protected from erosion by sodding, seeding or placing of rip-rap.
28. Adequate erosion protection must be provided where roadside ditches discharge into watercourses near bridges.

General Alterations

29. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
30. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
31. Water pumped from excavations or work areas, or any runoff or effluent directed out of work sites, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to a body of water. Effluent discharged into receiving waters must comply with the *Environmental Control Water and Sewage Regulations, 2003*.
32. All operations must be carried out in a manner that prevents damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.
33. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment must be confined to dry stable areas.
34. All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.
35. During the construction of concrete components, formwork must be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.
36. Wood preservatives such as penta, CCA or other such chemicals must not be applied to timber near a body of water. All treated wood or timber must be thoroughly dry before being brought to any work site and installed.
37. Any areas adversely affected by this project must be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if considered necessary in the opinion of this Department.
38. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by this project, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
39. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
40. Periodic maintenance such as painting, resurfacing, clearing of debris, or minor repairs, must be carried out without causing any physical disruption of any watercourse. Care must be taken to prevent spillage of pollutants into the water.
41. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
42. Sediment and erosion control measures must be installed before starting work. All control measures must be inspected regularly and any necessary repairs made if damage is discovered.
43. Fill material must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters.

44. The attached Completion Report (Appendix C) for Permit No. 11082 must be completed and returned to this Department upon completion of the approved works. Pictures must be submitted along with the completion report, showing the project site prior to and after development.
45. This Permit is valid for two years from the date of issue. Work must be completed by that date or the application and approval procedure must be repeated.
46. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
47. All work must be carried out within the Permit Holder's legal property boundaries.

APPENDIX B
Special Terms and Conditions for Permit

1. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall keep all systems and works in good condition and repair and in accordance with all laws, by-laws, directions, rules and regulations of any governmental authority. The Permit Holder or its agent(s), subcontractor(s), or consultant(s) shall immediately notify the Minister if any problem arises which may threaten the structural stability of the systems and works, endanger public safety and/or the environment or adversely affect others and/or any body of water either in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for all damages suffered by the Minister and Government resulting from any defect in the systems and works, operational deficiencies/inadequacies, or structural failure.
2. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall operate the said Project and its systems and works in a manner which does not cause any water related and/or environmental problems, including but not limited to problems of erosion, deposition, flooding, and deterioration of water quality and groundwater depletion, in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for any and all damages associated with these problems caused as a result of changes, deficiencies, and inadequacies in the operational procedures by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
3. If the Permit Holder or its agent(s), subcontractor(s), or consultant(s) fails to perform, fulfil, or observe any of the terms and conditions, or provisions of this Permit, as determined by this Department, the Minister may, without notice, amend, modify, suspend or cancel this Permit in accordance with the *Water Resources Act*.
4. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) indemnify and hold the Minister and Government harmless against any and all liabilities, losses, claims, demands, damages or expenses including legal expenses of any nature whatsoever whether arising in tort, contract, statute, trust or otherwise resulting directly or indirectly from granting this Permit, systems and works in or outside the said Project areas, or any act or omission of the Permit Holder or its agent(s), subcontractor(s), or consultant(s) in or outside the said Project areas, or arising out of a breach or non-performance of any of the terms and conditions, or provisions of this Permit by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
5. This Permit is subject to all provisions of the *Water Resources Act* and any regulations in effect either at the date of this Permit or hereafter made pursuant thereto or any other relevant legislation enacted by the Province of Newfoundland and Labrador in the future.
6. This Permit shall be construed and interpreted in accordance with the laws of the Province of Newfoundland and Labrador.

- cc: File Copy for Binder
- cc: Jeff Bannister (Western and Labrador)
Western and Labrador Regional Lands Manager
Crown Lands Administration Division
JeffBannister@gov.nl.ca
- cc: Fisheries Protection Division
Ecosystem Management Branch
Fisheries and Oceans Canada
P.O. Box 5667
St. John's, NL A1C 5X1
FPP-NL@dfo-mpo.gc.ca
- cc: Amir Ali Khan, Ph.D., P.Eng.
Manager, Water Rights, Investigations and Modelling Section
Water Resources Management Division
Department of Municipal Affairs and Environment
P.O. Box 8700
4th Floor, West Block, Confederation Building
St. John's, NL A1B 4J6
akhan@gov.nl.ca



Appendix C - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **JUNE 15, 2020**

File No: **526**
Permit No: **ALT11082-2020**

Permit Holder: **Labrador Island Link Limited Partnership
500 Columbus Drive
St. John's, NL A1B 4K7
JackieWells@nalcenergy.com**

Attention: **Jackie Wells**

Re: **Upgrading and rehabilitation of existing bridges and culverts along the access road of Labrador-Island Transmission Link in Northern Peninsula - Segment 3**

Permission was given for : **upgrading and rehabilitation of ninety nine (99) bridges and culverts, which were originally constructed on a temporary basis during the construction of Labrador-Island Transmission Link, along the access road in segment-3 in Northern Peninsula to retain them in existing locations as permanent structures in order to facilitate inspection, repairing and maintenance of the Transmission Link, with reference to the application dated February 18, 2020 and additional information received on March 6, April 17, and May 20, 2020**

I (the Permit Holder named above or agent authorized to represent the Permit Holder) do hereby certify that the project described above was completed in accordance with the plans and specifications submitted to the Department of Municipal Affairs and Environment and that the work was carried out in strict compliance with the terms and conditions of the Permit issued for this project.

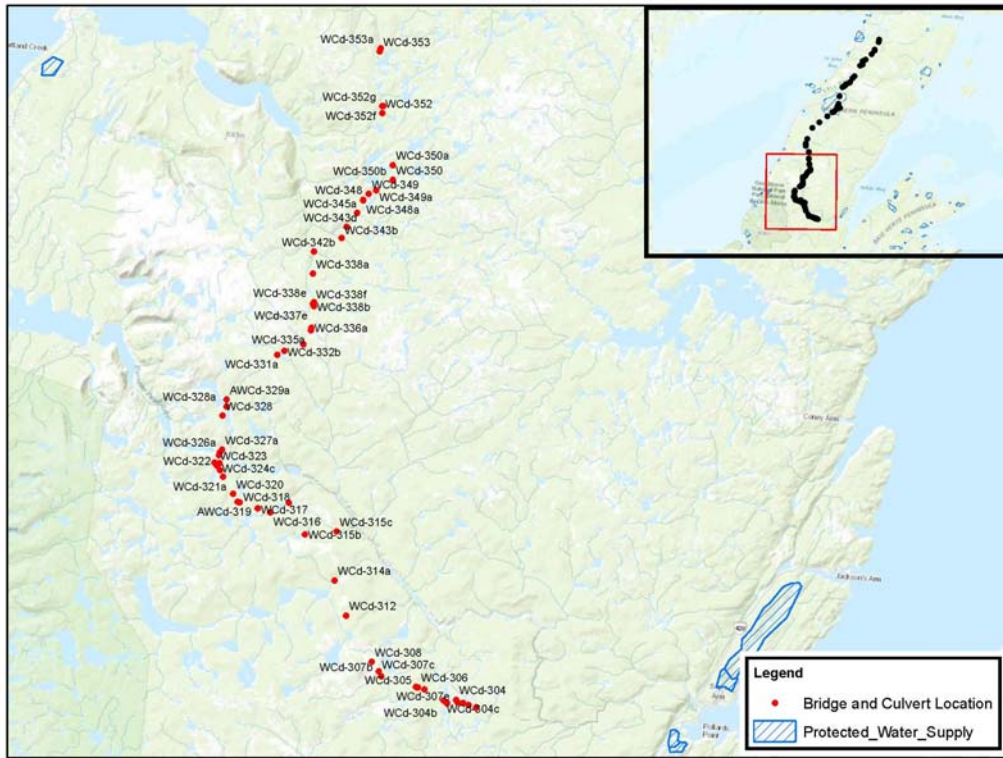
Date: _____ Signature: _____

This completion report must be completed and forwarded to the following address upon completion of the approved work.

Department of Municipal Affairs and Environment
Water Resources Management Division
PO Box 8700
St. John's NL A1B 4J6

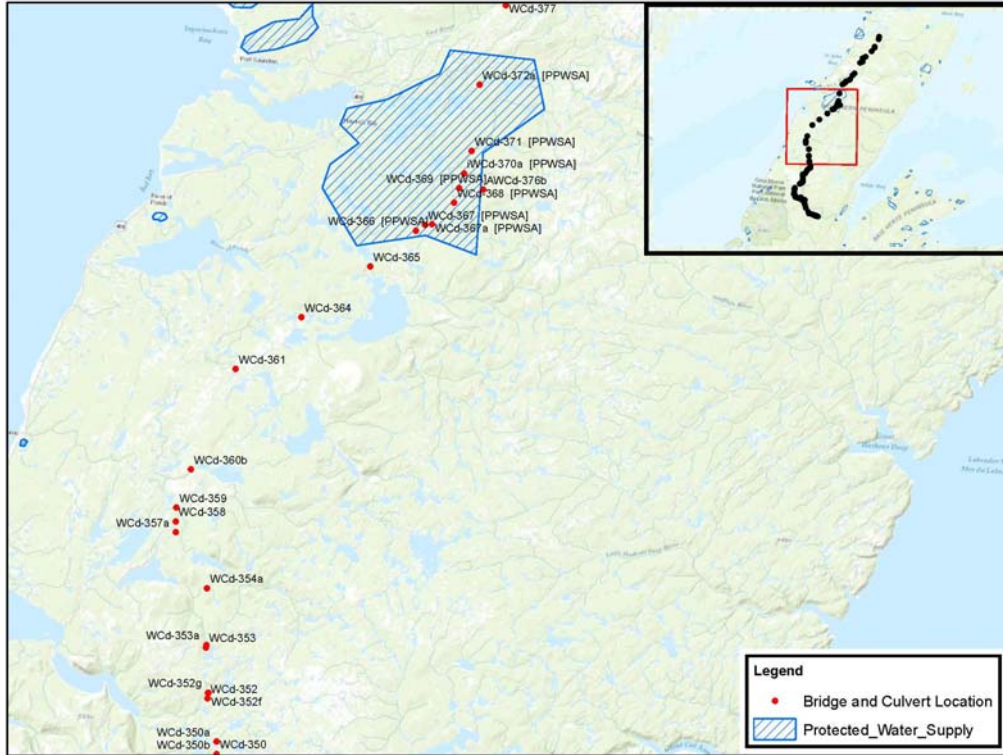
APPENDIX D
Location Map for Permit

Location Map 1 (Segment 3)



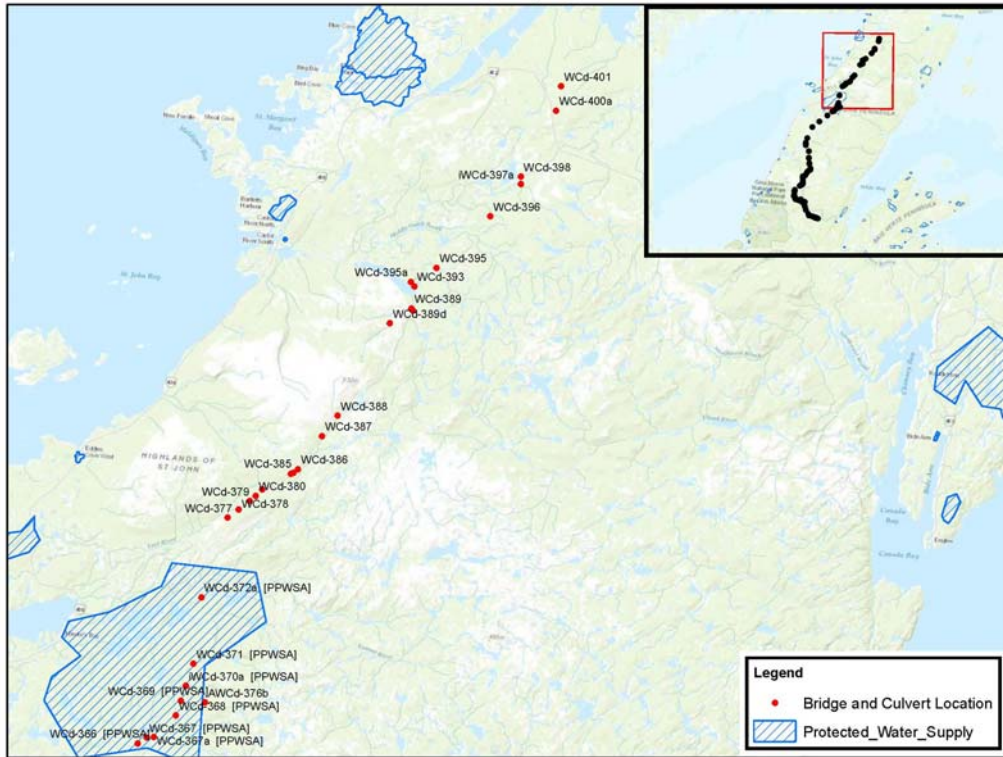
Second Attached Image File

Location Map 2 (Segment 3)



Third Attached Image File

Location Map 3 (Segment 3)



Appendix E - Hydraulic design criteria for culverts

To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: Segment no - 3 Northern Peninsula

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Minimum size (mm)	Number of pipes	Length (m)	PPWSA
WCd-301a	5511561	490386	21	1:20	0.7629	2-800	2	9	No
WCd-302b	5511697	489807	21	1:10	0.6786	1-800	1	9	No
WCd-303a	5511819	489408	21	1:05	4.8762	2-1200	2	9	No
WCd-303b	5511832	489008	21	1:05	5.0510	2-1200	2	9	No
WCd-304	5511997	488885	21	1:05	0.2945	1-600	1	12	No
WCd-304a	5511707	488254	21	1:05	3.1241	1-1200 & 1-1000	2	9	No
WCd-304b	5511697	488253	21	1:05	3.1241	1-1200 & 1-1000	2	9	No
WCd-304c	5511883	487972	21	1:05	2.5632	2-1000	2	0	No
WCd-305	5512574	486528	21	1:05	1.3247	1-1000	1	9	No
WCd-306	5512695	486056	21	1:05	0.6368	1-800	1	9	No
WCd-307b	5513251	483324	21	1:20	0.0006	1-450	1	9	No
WCd-307e	5512706	485904	21	1:10	0.6984	1-800	1	9	No
WCd-308	5514270	482558	21	1:05	1.0565	2-800	2	9	No
WCd-312	5517472	480411	21	1:05	1.4818	1-1000 & 1-450	2	9	No
WCd-317	5524717	473398	21	1:05	0.7279	1-800	1	9	No
WCd-318	5525057	472067	21	1:05	0.1428	1-450	1	9	No
AWCd-319	5525073	471889	21	1:05	0.7296	1-800 & 1-450	2	9	No
WCd-320	5525639	471537	21	1:05	0.9894	1-1000 & 1-450	2	12	No
WCd-321a	5526808	470705	21	1:05	1.6062	1-1000 & 1-600	2	12	No
WCd-323	5527597	470187	21	1:20	0.5807	1-800	1	9	No
WCd-324a	5527783	470003	21	1:05	1.3276	1-1000	1	21	No
WCd-326a	5528604	470328	21	1:20	1.0500	1-1000	1	9	No
WCd-327a	5528778	470481	21	1:20	1.1614	1-1000	1	9	No
WCd-328	5531266	470304	21	1:20	0.6701	1-800	1	9	No
WCd-328a	5531954	470550	21	unknown	unknown	2-2000	2	18	No
WCd-332b	5536324	474421	21	1:20	1.8214	1-1000	1	18	No
WCd-335a	5537953	476229	21	1:20	0.5178	1-800	1	12	No
WCd-336a	5538135	476234	21	1:20	1.5941	2-1000	2	12	No
WCd-338a	5542089	476033	21	1:05	0.8664	2-800	2	9	No

To safely convey peak flows the culvert installations must be designed according to the following hydraulic criteria: Segment no - 3 Northern Peninsula

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Minimum size (mm)	Number of pipes	Length (m)	PPWSA
WCd-338f	5539886	476194	21	1:20	0.0013	1-450	1	15	No
WCd-343b	5544828	477876	21	1:05	2.7535	2-1000	2	9	No
WCd-348	5547735	479240	21	1:20	1.1208	1-1000	1	12	No
WCd-348a	5547704	479243	21	1:20	1.1169	1-1000	1	12	No
WCd-349	5548183	479586	21	1:20	0.0024	1-450	1	9	No
WCd-349a	5548492	480134	21	1:05	2.8357	1-1200 & 1-1000	2	13	No
WCd-352	5554131	480096	21	1:05	1.4394	1-1000 & 1-600	2	9	No
WCd-357a	5568461	476156	21	1:05	1.4632	1-1000 & 1-600	2	9	No
WCd-358	5569408	476043	21	1:20	1.5089	1-1000	1	9	No
WCd-361	5583163	480226	21	1:05	3.3866	1-1200 & 1-1000	2	9	No
WCd-366	5596555	495005	21	1:05	1.0907	2-800	2	9	Yes
WCd-367	5597119	495755	21	1:05	0.7119	1-800	1	9	Yes
WCd-367a	5597230	496363	21	1:05	1.4232	1-1000 & 1-450	2	9	Yes
WCd-369	5600595	498482	21	1:05	1.2384	1-1000	1	9	Yes
WCd-371	5603911	499343	21	1:05	3.4783	1-1200 & 1-1000	2	9	Yes
AWCd-376b	5600611	500611	21	1:05	0.3078	1-800	1	9	No
WCd-377	5616939	501286	21	1:10	1.4770	1-1000	1	9	No
WCd-378	5617741	502181	21	1:05	0.9619	1-1000 & 1-600	2	9	No
WCd-379	5618572	503086	21	1:05	0.4920	1-800 & 1-600	2	9	No
WCd-380	5619062	503586	21	1:05	0.6641	1-800	1	9	No
WCd-381a	5619690	504118	21	1:05	1.1369	2-800	2	9	No
WCd-384c	5621248	506511	21	1:05	1.4355	1-1000 & 1-600	2	13	No
WCd-385	5621322	506717	21	1:05	0.3078	1-600	1	9	No
WCd-386	5621692	507089	21	1:20	1.0794	1-1000	1	9	No
WCd-395	5640315	517781	21	1:05	3.2648	2-1200	2	9	No
WCd-400a	5654943	527132	21	1:20	1.2619	1-1000	1	9	No
WCd-401	5657104	527400	21	1:20	0.1084	1-450	1	9	No

Appendix F - Hydraulic design criteria for bridges

The bridge(s) must have the following minimum dimensions: Segment no - 3 Northern Peninsula

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Span (m)	Waterway Opening (m ²)	Height above streambed (m)	Freeboard (m)	PPWSA
WCd-307c	5513602	483130	21	1:20	8.27	9.15	16.46	3.8	2.0	No
WCd-314a	5519955	479394	21	1:20	70.01	36.59	73.17	6.5	4.5	No
WCd-315b	5523135	476971	21	1:20	6.22	6.10	37.64	6.0	2.5	No
WCd-315c	5523508	479238	21	1:20	9.17	15.24	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-316	5524506	474336	21	1:20	24.32	18.29	18.29	3.1	2.1	No
WCd-316a	5525319	475614	21	1:20	25.72	24.39	24.39	3.1	2.1	No
WCd-322	5527263	470448	21	1:20	8.07	12.20	6.10	2.6	2.1	No
WCd-324c	5527803	470355	21	1:20	8.02	9.15	11.95	2.3	1.3	No
WCd-325a	5528351	470289	21	1:20	9.27	9.15	9.50	3.1	2.1	No
AWCd-329a	5532454	470503	21	1:20	7.31	15.24	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-331a	5535977	473933	21	1:20	0.53	12.20	32.24	5.0	2.5	No
AWCd-333b	5536905	475743	21	1:20	2.79	12.20	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-337e	5539744	476309	21	1:20	2.71	21.34	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-338b	5539980	476269	21	1:20	8.28	12.20	22.36	2.8	2.0	No
WCd-338e	5540007	476285	21	1:20	8.27	10.00	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-342b	5545661	478197	21	1:20	9.11	15.24	25.19	3.4	2.0	No
WCd-343d	5545661	478197	21	1:21	9.11	15.24	25.19	3.4	2.0	No
WCd-345a	5546742	478862	21	1:20	3.22	30.49	60.98	4.0	2.0	No
WCd-350	5549346	481251	21	1:20	13.78	15.24	15.24	3.5	2.5	No
WCd-350a	5550421	481174	21	1:20	12.89	18.29	18.29	3.0	2.0	No
WCd-350b	5549324	481257	21	1:20	13.73	12.20	12.20	3.5	2.5	No
WCd-352f	5554631	480084	21	1:20	16.18	15.24	30.49	3.5	1.5	No
WCd-352g	5554645	480133	21	1:20	16.11	15.24	15.24	2.5	1.5	No
WCd-353	5558587	479583	21	1:20	8.12	12.20	12.20	2.8	1.8	No
WCd-353a	5558816	479622	21	1:20	8.06	9.15	3.93	2.0	1.8	No
WCd-354a	5563789	479248	21	1:20	33.77	12.20	9.76	3.6	2.8	No
WCd-359	5570618	476024	21	1:20	64.32	36.58	7.00	3.4	2.8	No
WCd-360b	5574060	477027	21	1:20	43.65	24.39	36.99	4.6	3.6	No

The bridge(s) must have the following minimum dimensions: Segment no - 3 Northern Peninsula

Crossing name/no	Northing	Easting	UTM Zone	Design Return Period (years)	Design Flow (m ³ /sec)	Span (m)	Waterway Opening (m ²)	Height above streambed (m)	Freeboard (m)	PPWSA
WCd-364	5588162	485597	21	1:20	5.90	6.10	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-365	5593081	491270	21	1:05	5.66	6.10	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-368	5599263	498166	21	1:20	26.52	24.39	31.43	3.1	2.5	Yes
iWCd-370a	5601914	298831	21	1:20	13.98	12.20	17.80	3.5	2.5	Yes
WCd-372a	5609795	499538	21	1:20	31.08	36.59	36.27	2.8	2.0	Yes
WCd-387	5624769	508973	21	1:20	3.21	9.15	8.16	2.5	1.7	No
WCd-388	5626653	510171	21	1:20	4.46	6.10	6.62	2.7	1.8	No
WCd-389	5636576	515868	21	1:20	9.04	15.24	6.97	3.4	3.0	No
WCd-389a	5636384	516000	21	1:20	48.81	33.54	105.10	6.3	3.5	No
WCd-389d	5635134	514083	21	1:20	5.08	15.24	24.39	3.4	1.8	No
WCd-393	5638525	515963	21	1:20	23.54	21.34	20.54	5.2	4.5	No
WCd-395a	5638902	515643	21	1:20	4.77	9.15	7.45	3.1	2.4	No
WCd-396	5645217	522127	21	1:20	2.78	12.20	11.16	2.8	2.0	No
iWCd-397a	5648227	524548	21	1:20	9.86	15.24	Unknown until installation	Unknown until installation	At least 1 m	No
WCd-398	5648892	524505	21	1:20	0.73	21.34	23.44	3.5	2.5	No