The following changes to the tender documents are effective immediately and will form part of the contract documents:

Table of Contents:

Add: Specification 10 99 99 – Bird Netting

Add: Appendix I – Bird Deterrent Drawings

Add: Appendix J – Mitigation and Monitoring Plan for Breeding Birds and Species of Conservation Concern

Specification 01 35 43 – Environmental Procedures

Add: Clause 1.2.3

.3 Bird Mitigation and Monitoring Plan
.1 Appendix J – Public Serves and Procurement Canada, St. Andrews Lock and Dam Bird Mitigation & Monitoring Plan, Project No. R.097504.001 (March 2021)

Delete: Clause 1.7.1
.1 The Contractor shall prepare a Migratory and Protected Bird Management Plan for review by the Departmental Representative. at a minimum the plan should include:

Replace with:
.1 The Contractor shall prepare a Migratory and Protected Bird Management Plan for review by the Departmental Representative. The Plan shall incorporate the minimum requirements of Appendix J – Mitigation and Monitoring Plan for Breeding Birds and Species of Conservation Concern. At a minimum the plan should include:

Drawing S21:

Delete: Delete the requirement to salvage the existing 15M @ 200 barrier reinforcing steel

Replace with: This bar shall be replaced by a hooked bar (L-bar) embedded in the new concrete. The bar shall extend a minimum 700 mm into the new barrier above the deck construction joint complete with a standard hook embedded in the deck below.

Enquiries received during the Solicitation Period:

1. Manitoba Transportation is using ASTM A1035-CS since 2010 for all provincial bridges. The question, why Public Works & Government Services Canada is specifying A955 while A1035 is proven to provide 100 years' service life maintenance free at 2/3 the cost of A955?

    - Response: Bidders shall base pricing on the specifications as currently shown.

2. On drawing S110 it shows that the precast panels bear on the continuous neoprene pads. Typically we see a levelling device cast in the precast panel that allow you to set the panel to a fixed height. The levelling device also provides for a fixed installation preventing any further compression to the neoprene pad that may be experienced during casting the deck.

    - Response: Bidders shall base pricing on the detail currently shown on S110.

3. Because the compression on the neoprene pad would be minimal with the setting of the panels, sealing between the pad and panel and/or steel could be problematic if variances are encountered. Would it be acceptable to use a product such as EVA-Foam in lieu of the specified neoprene pad?

    - Response: Bidders shall base pricing on the detail currently shown on S110.

4. Drawing D08 – Detail 1 and Detail 4 shows that concrete is to be milled to within 10mm of existing shear connectors. Detail also shows top mat of reinforcing to be removed. Milling can only be accomplished to the top of reinforcing steel. What is the depth of concrete cover to the top of the top mat of reinforcing? What alternative method of concrete removal can be conducted to remove the top mat of reinforcing and balance of concrete to achieve removal to 10mm clear of existing shear connectors? Is hydro-demolition an acceptable means of concrete removal or will hand chipping be required?

    - Response: Hydro-demolition is an acceptable means of concrete removal.

5. Drawing S21 – Note for Detail 2/Section 3 regarding salvaging of existing 15M bar. The means and methods required to remove the barrier in order to salvage the 15M bar as noted would have a way greater cost associated with it than if the Contractor was just required to drill and epoxy a new bar. As it is already a possibility that the lap length would be too short and drilling and epoxying would be required it may be more practicable and cost effective to revise the detail accordingly. Please advise if removing the barriers, without salvaging the 15M as shown as existing to remain, and drill and epoxy new 15M dowels is acceptable.

    - Response: It is not necessary to salvage this bar. See Drawing S21 response above. Note this response supersedes Response to Enquiry #2 from Addendum 1. This will no longer be considered a change item per R286D GC6.

END OF ADDENDUM NO. 3

Addendum No. 3

New Specification

Part 1 General

1.1 SYSTEM DESCRIPTION

.1 Design Requirements: Bird exclusion netting mesh size as indicated on the Contract Drawings.

.2 Details for mounting bird exclusion netting shown on the Contract Drawings.

1.2 SUMMARY

.1 Provide all labor, materials and supervision to install bird exclusion netting to the bridge structure as shown on the Contract Drawings.

1.3 QUALITY ASSURANCE

.1 Obtain all technical information on products and installation from the manufacturer.

.2 Installer must be completely familiar with the proper installation procedures for the bird exclusion netting and the specified mounting system.

.3 Installer shall visit the site to gather all information of existing site conditions.

.4 Single Source Responsibility: Netting and all parts / accessories of the bird exclusion netting shall be from one manufacturer for entire project.

1.4 ACTION AND INFORMATION SUBMITTALS

.1 Submit in accordance with Section 01 10 00 - General Requirements.

.2 Product Data:

.1 Submit manufacturer’s instructions, printed product literature and data sheet. Include physical size, material, fastener methods and hardware, and limitations.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer’s written instructions.

.2 Storage and Handling Requirements:

.1 Store materials off ground and in accordance with manufacturer’s recommendations in clean, dry, well-ventilated area.

.2 Store and protect from damage.

.3 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

.1 Material: U.V. and rot resistant black, extruded polypropylene. Netting to be waterproof.

.1 Melting point (approximately) : 320+ degrees F.

.2 Flash point (approximately) : 625 degrees F.

.3 Remains flexible at very low temperatures.

.2 Break Strength: 219 lbs per foot minimum in accordance with ISO 1806.

.3 Mesh Size: 12.7 mm (1/2") square. Lengths as required to suit the project.

2.2 ACCESSORIES

.1 Hardware: All metal hardware or products to be galvanized or stainless steel.

.2 Twist Locks: Seam fastening. Twist Locks are used to join two (2) overlapped pieces of the bird exclusion netting at an overlap seam or to close up cuts or tears in the netting. Install every 3" (7.6 cm) along both sides of an overlapped seam. Can be installed, removed and reinstalled quickly to gain access to the areas behind the netting.

.3 Net Ties: Multi-purpose fastener. Military spec UV resistant Net Ties quickly fasten the netting to all types of objects. Use to prevent net sag or loose fitting net by securing the netting to objects above or behind netting enclosure. Three sizes to choose from.

.4 Poly Cord: Multi-purpose fastener. Reinforce seams, patch tears, close circular openings, use for overhead support. Do not use for perimeter fastening.

.5 Net Cable & Connection Hardware:

.1 Net Cable: Aircraft grade, all stainless steel, 7 x 7 (49 strand), 3/32" (2.2 mm) diameter cable with 900 lb. (407 kg) breaking strength. Net Cable comes in 250' (76.2 m) and 500' (152.4 m) spools.

.2 Turnbuckles: Stainless steel, hook & eye turnbuckles. The size of the turnbuckle is determined by the maximum continuous cable length of any one cable run.

.1 For one Small Turnbuckle the max continuous cable length is 25 ft. (7.6 m).

.2 For one Medium Turnbuckle the max continuous cable length: 50 ft. (15.2 m).

.3 For one Large Turnbuckle the max continuous cable length: 75 ft. (22.9 m).

.3 Net Ferrules: Zinc plated copper core crush ferrules for 3/32" (2.2 mm) dia. cable. Acceptable connection when the max continuous cable length is 25 ft. (7.6 m) OR LESS. Always use at least 2 ferrules per cable loop connection. Always use a Cable Swaging Tool approved by the manufacturer to crush the ferrules onto the cable at all loop connections. Always use a Cable Thimble with Net Ferrules.

.4 Wire Rope Clamps: Galvanized or stainless steel wire rope clamps for 3/32" (2.2 mm) diameter cable. Mandatory for all loop connections on cable runs of 25' (7.6 m) OR MORE. Always use 2 clamps per cable loop connection. Always use a Net Cable Thimble with wire rope clamps. Use the appropriate wrench or hex driver to tighten the Wire Rope Clamp around the Net Cable at all loop connections.

.5 Cable Thimble: Forged stainless steel Cable Thimble for 3/32" (2.2 mm) diameter cable. The Thimble prevents cable fraying and creasing when creating

loop connections and/or tensioning the Net Cable after installation. One Thimble is required for each loop connection.

.6 Corner Hardware (Anchoring):

.1 Eyebolts: Use as corner hardware in steel, thick sheet steel, cast iron, masonry and stone (with Machine Screw Anchors). Extreme duty stainless steel eyebolt, 2" (51 mm) long, 9/16" I.D. (14.3 mm) with 1/4-20 NC threads and stainless steel hex nut. Maximum distance between eyebolts: 50' (15.2 m).

Part 3 Execution

3.1 EXAMINATION

.1 Examine the installation area and note any detrimental or hazardous work conditions. Notify the Engineer in writing of the detrimental work condition.

.2 Do not proceed with installation until conditions are corrected.

.3 Verify the dimensions for each area specified for enclosure with the bird exclusion netting. Use manufacturers Planning Guides to verify that sufficient quantities of bird netting and net hardware will be installed at each location specified for bird netting.

3.2 SURFACE PREPARATION

.1 Surface should be thoroughly cleaned and free of bird droppings, nesting materials, rust peeling paint or other debris.

.2 The Contractor shall prevent any deleterious and objectionable materials from entering streams, rivers, water bodies or watercourses that would result in damage to aquatic and riparian habitat.

.3 The Contractor will notify the Engineer prior to removing and existing nests. Nests will be removed by a Qualified Avian Biologist

.4 Remove or repair articles that may damage netting after installation including overhanging foliage, brush and loose parts of the structure, as approved by the Engineer.

3.3 INSTALLATION

.1 Install netting as recommended by the manufacturer. Netting shall fit the area to be protected perfectly so birds cannot enter the protected area.

.2 Netting shall be installed tightly and securely, free of wrinkles, gaps, and openings.

3.4 INSPECTION

.1 Upon completion of installation, visually inspect netting in the presence of the Engineer.

.2 Rectify any deficiencies noted during the inspection.

3.5 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 10 00 – General Requirements.

.1 Leave Work area clean at end of each day.

.2 Final cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 10 00 – General Requirements.

END OF SECTION

Addendum No. 3

New Specification Appendix I

Drawings S01 to S07
separate attachments

Addendum No. 3

New Specification Appendix J

Associated Engineering | GLOBAL PERSPECTIVE. LOCAL FOCUS.

MONITORING AND MITIGATION PLAN

Issue Date:	March 26, 2021	**File No.:**	
To:	Public Services and Procurement Canada (PSPC)	**Previous Issue Date:**	
From:	Stephen Chiasson, P.Eng, Wade Sumners, P. Bio	**Project No.:**	2019-4307
Client:	Public Services and Procurement Canada		
Project Name:	St. Andrews Lock and Dam Bridge Deck Replacement		
Subject:	Mitigation and Monitoring Plan for Breeding Birds and Species of Conservation Concern		

1 INTRODUCTION

The purpose of this Monitoring and Mitigation Plan (Plan) is to reduce or eliminate potential disturbance effects by the St. Andrew's Lock and Dam (SALD) Bridge Deck Replacement Project (Project) to breeding birds and bird Species of Conservation Concern (SOCC). This guidance focuses generally on breeding birds, and specifically on breeding bird species and bird SOCC that have been documented at and near the Project Site (i.e., cliff swallows, eastern phoebes, chimney swifts), and forms the minimum requirements for monitoring and mitigation on the Project. The outlined monitoring and mitigation measures pertain to all activities relating to the Project (e.g., pre-construction, construction) (the Works), including low-, moderate- and high- level disturbances. Environment and Climate Change Canada (ECCC) and Manitoba Climate and Conservation (MCC) have been consulted in the development of this Plan.

2 REGULATORY CONTEXT

2.1 Breeding Birds

This Plan provides guidance for breeding bird species inhabiting the Project Site and surrounding area, including:

- Migratory birds; and,
- Non-migratory birds.

Most migratory and non-migratory birds and their nests are protected from harm and disturbance under federal and/or provincial legislation. For the purposes of this Plan, breeding bird species are defined as those with legislative protection that meet one or both of the following criteria:

- Identified under the federal Migratory Birds Convention Act and Migratory Birds Regulations; and/or,
- Identified under Manitoba's The Wildlife Act.

2.2 Bird Species of Conservation Concern

This Plan provides guidance for bird SOCC and their habitats. For the purposes of this Plan, bird SOCC are defined as breeding birds that also meet one or more of the following criteria:

- Listed under Manitoba's Endangered Species and Ecosystems Act (ESEA);
- Listed under Schedule 1, Schedule 2, or Schedule 3 of the federal Species at Risk Act (SARA) as Endangered, Threatened, or Special Concern;
- Currently under consideration for addition to Schedule 1 of SARA;

- Assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered, Threatened, or Special Concern;
- Ranked as S1, S2, or S3 by the Manitoba Conservation Data Centre (MBCDC); and/or,
- Identified as a sensitive species or feature under the MBCDC's "Recommended Development Setback Distances from Birds".

A Species at Risk (SAR) is defined as an SOCC that has been granted legal protection under the ESEA and/or SARA, including those listed under Schedule 1 of SARA as Endangered, Threatened, or Special Concern.

3 BACKGROUND

During a 2020 Breeding Bird Assessment, breeding cliff swallows and eastern phoebes and their nests were identified along the east and west approach spans of the Project Site (**Photos 3.1 and 3.2**). These breeding birds are susceptible to disturbance by Works as their nests have been constructed on the underside and faces of the Project Site. An unknown number of active rock pigeon nests were suspected at the Project Site as well, but were not visible due to obstructing beams and ledges. No active or historical raptor nests were identified at the Project Site or surrounding area during the 2020 Breeding Bird Assessment.

Seven bird SOCC were also detected in the area surrounding Project Site during the 2020 Breeding Bird Assessment; American white pelican, bald eagle, barn swallow, chimney swift, double-crested cormorant, Franklin's gull and ring-billed gull. The majority of these bird SOCC are not expected to be disturbed by Works due to the distances of their suspected breeding areas from the Project Site, and the high level of ambient noise and visual obstructions in the local area. However, chimney swifts detected using two natal/roosting chimneys on a brick workshop in the SALD maintenance compound that may be habituated to higher levels of disturbance, may still be susceptible to Works; the brick workshop is located approximately 40 m south of the Project Site on the east side of the Red River (**Photos 3.3 and 3.4; Figure 6.1**). The chimney swift is defined as a SOCC and SAR; this species is listed as a Schedule 1, Threatened species under the federal SARA, and Threatened under Manitoba's ESEA.

Photo 3.1
Cliff swallow at active nest on SALD's west approach span

Photo 3.2
Eastern phoebe perching below active nest on SALD's east approach span

Photo 3.3
Chimney swifts near natal/roosting chimneys on the brick workshop in the SALD maintenance compound

Photo 3.4
Chimney swift natal/roosting chimneys on the brick workshop in the SALD maintenance compound

4 GENERAL BREEDING PERIODS

4.1 Breeding Birds and Bird SOCC

Based on the geographic location of the Project Site (Zone B4), the general nesting season falls between mid-April to mid-August. However, some breeding birds in the surrounding area of the Project Site may nest as early as March (e.g., Canada goose) and as late as September (e.g., cedar waxwing) (Government of Canada 2017). The general breeding periods for cliff swallows, eastern phoebes and chimney swifts identified in and around the Project Site during the 2020 Breeding Bird Assessment are provided in **Table 4.1** (Manitoba Breeding Bird Atlas 2010; Manitoba Chimney Swift Initiative [MCSI] 2021).

Table 4.1
General Breeding Periods for Chimney Swift, Cliff Swallow and Eastern Phoebe in Southern Manitoba

Common Name	Breeding Bird	Bird SOCC	Spring Arrival	Breeding Period	Late Breeding	Roosting Period	Late Summer/ Fall Departure
Chimney swift	☐	☐	Early May[2]	Late May to late-August[2]	Late August[2]	Mid-August to early September[2/3]	Late August to mid- September[2]
Cliff swallow	☐		Late April to early May	Early-May to late August	Early September	n/a	Early May to September
Eastern phoebe	☐		Mid-April to early May	Early May to early August	Late August	n/a	Late August

[1] SAR.
[2] Dates based on documented chimney swift activity at natal/roosting chimneys on the brick workshop in the SALD maintenance compound in 2020; data provided by Manitoba Chimney Swift Initiative (MCSI) (MCSI 2021).

[3] Roosting chimneys and roosting periods are protected for this species.

5 MONITORING PLAN

If Project Activities can not be avoided between April 15 and September 15, surveys for breeding bird activity should be completed to identify and monitor breeding birds and bird SOCC that could potentially be disturbed by Works. These efforts should be scheduled at appropriate times of day and in suitable weather conditions. Because the MCC does not currently have published breeding bird detection protocols, the Saskatchewan Ministry of Environment's (SMOE) Species Detection Survey Protocols (SDSP) should be referenced to inform monitoring for breeding birds and bird SOCC.

Presently, neither the MCC nor SMOE have published chimney swift detection protocols. However, monitoring protocols for chimney swifts have been developed by the Manitoba Breeding Bird Atlas (2010), Manitoba Chimney Swift Initiative (MCSI) (2020), and Stewart and Stewart (2011), and should be referenced. Survey extents for all monitoring should be determined based on the largest potential breeding bird or bird SOCC setbacks that may apply (MBCDC 2014). Monitoring should be conducted by a qualified, on-site Avian Ecologist with significant experience in identifying and assessing breeding birds and bird SOCC, including behaviour, life stages, and habitats.

5.1 Breeding Birds

The following are minimum standards for monitoring breeding birds:

- Breeding bird surveys should be conducted between sunrise until 10:00; this is when breeding birds are most active and identifiable throughout the day. Tree- and structure- nesting raptors can be surveyed for any time during daylight hours.
- Rapid assessments for breeding bird activity should be completed throughout the day to supplement breeding bird surveys.
- These should be focused at the Project Site and surrounding area, and include scanning and investigations of infrastructure, equipment, vehicles, stored supplies and stockpiles for breeding bird activity.
- Setbacks will be established by the on-site Avian Ecologist based on findings from breeding bird surveys and rapid assessments. A nest does not have to be located to establish a setback. The detection of birds exhibiting certain breeding behaviors in a given area is considered sufficient evidence to confirm nesting (Environment and Climate Change Canada [ECCC] 2017).
- When possible, setback boundaries should be clearly marked using wooden lath and standardized flagging or spray paint and labeling at the outer boundary of the setback. Flagging should never be placed at a nest site.
- Climatic conditions (e.g., temperature, precipitation) should be recorded and evaluated prior to and during Works.

5.2 Bird SOCC

The following are minimum standards for monitoring bird SOCC:

- If bird SOCC are detected or suspected at the Project Site or surrounding area as a result of breeding bird surveys or rapid assessments, targeted SDSP should be completed to verify and further monitor bird SOCC.

5.2.1 Chimney Swift

The following are minimum standards for monitoring chimney swifts and the natal/roosting chimneys on the brick workshop in SALD's maintenance compound:

- Natal/roosting chimneys will be monitored prior, during and following Works.
- A combination of daytime and early evening monitoring should be completed to target chimney swift activity. Daytime monitoring can be conducted for this species during egg laying, incubating and nestling stages, and early evening monitoring can be conducted for this species during the nestling and fledgling stages, and roosting periods (MCSI 2021). MCSI monitors the natal/roosting chimneys on the brick workshop in the SALD maintenance compound weekly throughout the breeding and roosting seasons, and can be consulted and/or partnered with for monitoring.
- Climatic conditions (e.g., temperature, precipitation) should be recorded and evaluated prior to and during Works.

6 MITIGATION PLAN

Mitigative measures should be implemented and advised on by a qualified Avian Ecologist during all Works to reduce or eliminate potential disturbance effects to breeding birds and bird SOCC. Mitigation measures may include, but are not limited to, restricted activity periods, application of setbacks, application of deterrents, and work modifications.

6.1 Breeding Birds

Minimum mitigation measures for breeding birds, including cliff swallows and eastern phoebes, are provided in **Table 6.1**.

6.2 Bird SOCC

Minimum mitigation measures for bird SOCC are provided in **Table 6.1**.

6.2.1 Chimney Swift

Minimum mitigation measures for chimney swifts are provided in **Table 6.1**.

7 REPORTING

The on-site Avian Ecologist will prepare a daily monitoring report (DMR) for distribution to the Project Team outlining daily monitoring and mitigation activities. The DMR will also identify any concerns and/or recommendations based on the day's events, including any recommendations for monitoring or mitigation based on unforeseen conditions.

8 CONTACT INFORMATION

Contact information for internal and external resources available to assist with breeding bird and bird SOCC matters are provided in **Tables 8.1 and 8.2**. The on-site Avian Ecologist should always be the first point of contact.

Table 8.1
Internal Contacts

Contact	Position	Company	Location	Phone
Mark Schneider	Departmental Representative	Public Services and Procurement Canada (PSPC)	Winnipeg, MB	Phone: 204-227-3013
Jackie Mertler	Senior Avian Ecologist	Vista Environmental Services	Regina, SK	Phone: 306-530-9899
Wade Sumners	Environmental Lead and Senior Biologist	Associated Engineering (Sask.) Ltd. (AE)	Saskatoon, SK	Phone: 306-850-2976
Stephen Chiasson	Project Manager and Senior Engineer	Associated Engineering (Sask.) Ltd. (AE)	Saskatoon, SK	Phone: 306-370-1458

Table 8.2
External Contacts

Contact	Position	Company	Location	Phone
Wildlife Emergency Hotline	Wildlife Emergency/ Rehabilitation Facility	Prairie Wildlife Rehabilitation Centre	Winnipeg, MB	Phone: 204-510-1855 (24 hours)
Wildlife Emergency Hotline	Wildlife Emergency/ Rehabilitation Facility	Wildlife Haven Rehabilitation Centre	Île des Chênes, MB	Phone: 204-878-3740 (8am-8pm daily)
Paul Gregoire	Federal Wildlife Biologist and Senior Environmental Assessment Officer	Canadian Wildlife Service (CWS), Prairie Region, ECCC, Government of Canada	Edmonton, AB	Phone: 780-222-3039
Christian Artuso	Federal Species at Risk Biologist	CWS, Migratory Birds Conservation Unit, ECCC, Government of Canada	Gatineau, QB	Phone: 819-420-7709

Contact	Position	Company	Location	Phone
Timothy Poole	Provincial Species at Risk Biologist	Wildlife and Fisheries Branch, Biodiversity, Habitat and Endangered Species Section, MCC, Government of Manitoba	Winnipeg, MB	Phone: 204-945-5439

Table 6.1
Mitigation Measures for Breeding Birds and Bird SOCC

Project Component	Targeted Breeding Birds and Bird SOCC	Mitigation Measures
Project Personnel, Vehicles and Equipment	All breeding birds and bird SOCC	• Fueling and servicing should avoid permanent setbacks (**Figure 6.1**) and other setbacks. • All equipment and vehicles should travel at reduced speeds at the Project Site. • All equipment and vehicles should be powered off when not in use.
	Chimney swift	• A minimum 40 m setback around the brick workshop in SALD's maintenance compound should be avoided between May 1 and September 15 (**Figure 6.1**). • Noise suppression accessories should be used on equipment and vehicles when possible to reduce auditory disturbance. • Dust should be managed to minimize effects on air quality and aerial insect populations (i.e., chimney swift food source). • Back-up alarms, operating alarms, flashing lights and beacons should be disabled or minimized on equipment and vehicles operating on the east side of the Project Site in consultation with the Departmental Representative and the Contractor Safety Manager between May 1 and September 15. • Total number of project personnel, vehicles and equipment on the east side of the Project Site (**Figure 6.1**) should be limited to the minimum necessary. • Use of tall, towering equipment (e.g., cranes, booms) should be avoided on the east side of the Project Site (**Figure 6.1**) between May 1 and September 15. • Tall, towering equipment (e.g., cranes, booms) should be stored in lowered, horizontal positions when not in use between May 1 and September 15. • If vehicles and equipment need to be stored on the east side of the Project Site (**Figure 6.1**), the Contractor should avoid permanent setbacks (**Figure 6.1**) and other setbacks, and consult with the on-site Avian Ecologist to find a suitable alternate staging/storage area.
Project Supplies and Stockpiles	All breeding birds and bird SOCC	• Project supplies and stockpiles should be covered and secured when unattended. • Where storage of supplies and stockpiles is needed, the Contractor should avoid permanent setbacks (**Figure 6.1**) and other setbacks, and consult with the on-site Avian Ecologist to find a suitable alternate staging/storage area.
	Chimney swift	• A minimum 40 m setback around the brick workshop in SALD's maintenance compound should be avoided between May 1 and September 15 (**Figure 6.1**). • If supplies and stockpiles need to be stored on the east side of the Project Site (**Figure 6.1**), the Contractor should avoid permanent setbacks (**Figure 6.1**) and other setbacks, and consult with the on-site Avian Ecologist to find a suitable alternate staging/storage area.
Project Works	All breeding birds and bird SOCC	• Setbacks will be applied to breeding bird activity and active nests. Setbacks for breeding birds and their nests typically range from 30-100 m, but are species-, individual- and environment- specific. Recommended setbacks for bird SOCC are provided in MBCDC's "Recommended Development Setback Distances from Birds". Applied setback distances will be determined by the on-site Avian Ecologist and may involve consultation with ECCC and/or MCC. • Nests of unprotected species (i.e., rock pigeons) that are encountered at the Project Site with no contents can be removed. As a best practice, nests containing nestlings should not be removed until the young have fledged. If nest removal is required for an unprotected

Project Component	Targeted Breeding Birds and Bird SOCC	Mitigation Measures
		species, it is recommended that nests with nestlings be taken to a wildlife rehabilitation center for care. The assistance and advisement of the on-site Avian Ecologist is required when identifying and removing the nests of unprotected species to ensure correct identification of species and nest stage. • Artificial light sources (e.g., spotlights) should be avoided from 9 pm to 6 am between March 15 and October 30. Artificial light sources can attract and disorient breeding birds between May and September, and migrating birds in March, April, September and October. Any artificial light used should be only as-required and shielded downward. In these cases, blue and green lights (little to no visible long-wavelength radiation) and the minimum number of lights should be used in consultation with the on-site Avian Ecologist.
	Cliff swallow; eastern phoebe	• A minimum 30 m setback from the nest structures for low-level disturbance Works, and a minimum 50 m setback for moderate- and high-level disturbance Works surrounding the artificial nest structures should be avoided between April 15 and September 1 (**Figure 6.1**).
	Chimney swift	• A minimum 40 m setback surrounding the workshop in SALD's maintenance compound should be avoided between May 1 and September 15 (**Figure 6.1**). • Works should conclude prior to 9 pm daily between May 1 and September 15. Chimney swifts are more vulnerable to disturbance in natal/roosting chimneys between sunset and sunrise; this time of day is a critical rest period for the species. • Works should be avoided on the east side of the Project Site (**Figure 6.1**) between May 1 and September 15. • Artificial light sources (e.g., spotlights) should be avoided on the east side of the Project Site (**Figure 6.1**) from 9 pm to 6 am between May 1 and September 15. Any artificial light used should be only as-required, shielded downward and never shining directly or indirectly on the brick workshop in the SALD maintenance compound. In these cases, blue and green lights (little to no visible long-wavelength radiation) and the minimum number of lights should be used in consultation with the on-site Avian Ecologist. • High-disturbance Works on the east side of the Project Site(**Figure 6.1**) should be scheduled between September 1 and May 1. This will eliminate the potential of disturbing nesting and roosting chimney swifts inhabiting the brick workshop in the SALD maintenance compound. • Any Works which result in disturbance to chimney swifts will be suspended at the discretion of the on-site Avian Ecologist, and resumed only when appropriate mitigative adjustments have been made in consultation with the Project Team, and appropriate chimney swift behavioural cues have been observed. In these cases, Works may require modification in duration, location, etc. If Works result in significant disturbance (e.g., unacceptable total number of consecutive disturbances, concerning behaviour exhibited by chimney swifts) as determined by the on-site Avian Ecologist, all Works will be suspended to consult further with the Project Team.
Bird Deterrence	Cliff swallow; eastern	• Inactive and remnant nests at the Project Site should be removed between September 15 and April 15 under the advisement of the on-site Avian Ecologist. A Letter of Approval issued by ECCC is required before undertaking these activities.

Project Component	Targeted Breeding Birds and Bird SOCC	Mitigation Measures
	phoebe	• Bird exclusions (e.g., netting, wire, tarps, plywood, sheeting) should be installed and maintained at the Project Site. Installation should take place between September 15 and April 15, and maintenance should occur based on regular inspections by the on-site Avian Ecologist. Other bird deterrents (e.g., surface modification [e.g., non-toxic vegetable oil) used should also be appropriately maintained. • Artificial nest structures should be installed within 500 m of the Project Site to encourage cliff swallows to nest at alternative sites. Call-playback technology should be administered by the on-site Avian Ecologist to attempt to lure cliff swallows to the artificial nest structures. Cliff swallow breeding calls should be broadcast daily for one-hour between sunrise and 10:00, upon the species' spring arrival at the Project Site, and until cliff swallows begin demonstrating acceptance of the artificial nesting structures (T. Poole, pers. comm., March 2, 2021). ECCC has indicated that a permit is not required to administer luring call-playback technology for the mitigative purposes of this Project (P. Gregoire, pers. comm., March 2, 2021). • Predatory call-playback technology may be administered by the on-site Avian Ecologist on the west side of the Project Site (**Figure 6.1**) only, if cliff swallows persist where bird exclusions have been installed. Predator calls of local accipiter and raptor species will be selected and used with discretion. Predatory call-playback technology should not be used on the east approach span to avoid causing disturbance to chimney swifts. ECCC has indicated that a permit is not required to administer predatory call-playback technology for the mitigative purposes of this Project (P. Gregoire, pers. comm., March 2, 2021). • Removal of preliminary nest material (e.g., mud, sticks) at the Project Site may be considered by the on-site Avian Ecologist in consultation with ECCC. This would only be considered if the location of early nest building is problematic, and if performed by the on-site Avian Ecologist to ensure correct identification of species and nest-building stages. Only select species (e.g., cliff swallows, eastern phoebes) would be considered for this deterrent approach (P. Gregoire, pers. comm., March 2, 2021). Daily removal of preliminary nest material would be required of the on-site Avian Ecologist, as nest-building can occur quickly for some species. • Relocating active nests may be considered and executed by the on-site Avian Ecologist in consultation with ECCC for select species only, and would require an ECCC-issued permit.
Emergency Bird Care	All breeding birds and bird SOCC	• If breeding birds or bird SOCC are discovered injured, ill or orphaned at the Project Site, the on-site Avian Ecologist will retrieve and transport them to a local wildlife rehabilitation center for care. If unprotected bird species (e.g., rock pigeon) are discovered in these same states, it is best practice to also transport those birds to a local wildlife rehabilitation center. Contact information for wildlife rehabilitation centers are provided in **Section 8**. Perished birds discovered at the Project Site should be collected and investigated by the on-site Avian Ecologist, and may require consultation with ECCC and/or MCC. • Only the on-site Avian Ecologist should handle perished birds and birds in need of care and will do so wearing gloves and according to all other Project Health & Safety protocols. ECCC has indicated that permits are not required for the on-site Avian Ecologist to handle or transport birds in emergency situations (P. Gregoire, pers. comm., March 2, 2021). Birds being transported for care should be contained in

Project Component	Targeted Breeding Birds and Bird SOCC	Mitigation Measures
		a box or dark enclosure to reduce stress.

Figure 6.1
Project Site and Permanent Project Setbacks

Note: The setback distance for chimney swift natal/roosting building is a minimum 40 m from the SALD workshop for low- and moderate- level disturbance Works; this setback distance has been developed in consultation with ECCC and MCC. The shoreline setback (provincial Special Area of Conservation [SAC]) distance for low-, moderate- and high- level disturbance Works is a minimum 30 m from the shoreline. Setback distances for the artificial nest structures are a minimum 30 m from the nest structures for low-level disturbance Works, and a minimum 50 m for moderate- and high-level disturbance Works. Setbacks may be subject to modification by the on-site Avian Ecologist in consultation with the Departmental Representative

9 REFERENCES

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