



AVIAN RELATED MONITORING AND ASSESSMENT SERVICES

September 24, 2019

REQUEST FOR PROPOSALS NO. PS20190342  
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ANNEX 1 - REQUIREMENTS

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**1.0 Introduction**

The purpose of this Request for Proposals (RFP) is to retain an environmental consultant to implement a plan for the management and monitoring of Pelagic Cormorants nesting on the Burrard and Granville Bridges.

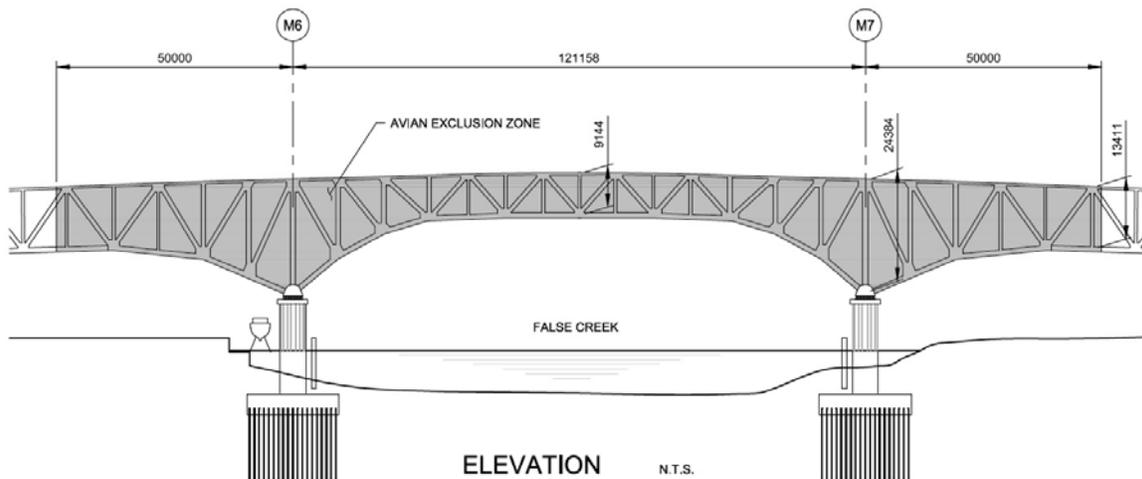
**2.0 Background**

The Pelagic Cormorant (*Phalacrocorax Pelagicus*) is protected in BC per Section 34 of the Provincial Wildlife Act, which prohibits the possession, taking, injury, molestation, or destruction of a bird or its eggs, or a nest that is occupied by a bird or its egg (Government of BC, 1996).

Pelagic Cormorants usually nests on the underside of the Burrard and Granville bridges marine span during breeding season (start of March to end of November). Based on Pelagic Cormorant nest monitoring from 2015 to 2019 for the Granville Bridge, an estimated 292 Pelagic Cormorant nests were spotted.

The City of Vancouver (CoV) is initiating repairs and upgrades to Granville Bridge (the "Project"). Early works on the Project (north approach of the bridge) have been completed. The major works are anticipated to start in late October 2019 and to be completed by May 2021. The Project construction activities require access to the steel truss sub-structure on the bridge which may generate noise and visual disturbance above and below the bridge deck that may disturb the colony of Pelagic Cormorants nesting in the substructure of the bridge.

Work within the marine span of the bridge is anticipated to occur between November 2019 and March 2021. To minimize disturbance to Pelagic Cormorants, no construction work or activity can take place on the marine span (the part of Granville Bridge that spans over False Creek, from and including Pier M6 to Pier M7 - "No Work Area") or within a "no-disturbance setback", as shown in figure 1, (50 m buffer zone around Pier M6 and Pier M7) during the Pelagic Cormorant nesting season (the period from March to November), unless avian exclusion netting has been installed and accepted by CoV.



Marine span: the part of Granville Bridge that spans over False Creek, from and including Pier M6 to Pier M7 ("No Work Area") No-disturbance setback" (50 m buffer zone around Pier M6 and Pier M7)

Prior to the installation of the avian exclusion netting, construction work on the marine span or within the no-disturbance setback will only take place outside of the nesting season. Installation of avian exclusion netting is expected to be complete by December 2019.

It is anticipated that with placement of exclusion netting, the Pelagic Cormorant would migrate to the other bridge in the vicinity i.e. Burrard Bridge. The bridge can provide enough potential nest

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sites to support Pelagic Cormorant colony of equivalent size that the currently nesting on the Granville Bridge. A truss substructure exists between Piers 1 and 3 on the Burrard Bridge and provides potential nest sites at two levels (i.e., struts at the bottom of the truss substructure and on the underside of the bridge deck). There is no truss substructure between Piers 3 and 4, but ledges and struts on the underside of the bridge deck provide potential nest sites.

As a measure to provide additional/alternative potential nesting sites for birds by exposing the substructure of the bridge, a portion of the Burrard Bridge avian exclusion netting that was installed in 2015 between Pier 3 and 4 has been removed in Feb 2019. Prior to the installation of that netting, the Pelagic Cormorants had historically nested on the marine span of the Burrard Bridge.

CoV seeking proposals to engage an environmental consultant to perform and undertake the activities set in section 3.0 below. undertake a range of monitoring, assessment, preparing management plan and construction support activities over the next 4 years.

In addition to rehabilitation works, CoV anticipates to undertake coating works of the Granville and Burrard bridges as well as other routine works for which the support and input of the successful proponent will be required.

### **3.0 Summary of Requirements**

City of Vancouver requires the services of a qualified environmental consultant to undertake a range of monitoring, assessment, preparation of a management plan and construction support activities over the next 3 years, with three possible two-year extensions.

The purpose of this RFP is to engage professional services to carry out several tasks for the "Pelagic Cormorant Monitoring Program" and further support/routine activities, including:

#### **3.1 Task 1 - Construction Monitoring**

The Consultant shall document the behavioural response of nesting Cormorants to construction activities, determine the nesting stage of the colony, and evaluate whether planned mitigation in place is effective. Construction monitoring will be required at the Granville Bridge in 2020 and 2021.

#### **3.2 Task 2 - Nest Monitoring**

The Consultant shall document changes in the number and distribution of Cormorant nests on the Granville and Burrard Bridges during implementation of the Project. The nest monitoring program includes surveys at Burrard and Granville Bridges in 2020, 2021, and 2022.

#### **3.3 Task 3 - Granville and Burrard Bridges Support Work**

The Consultant shall engage with CoV staff to provide input in the ongoing development and assessment of strategies related to optimizing ongoing maintenance activities on Granville and Burrard bridges while minimizing impact on the Pelagic Cormorants.

### **4.0 Description of Services**

The scope of work requires that various types of surveys be completed for each of the Tasks 1 through 3. This section describes each survey type and CoV's reporting expectations for each. All surveys shall be completed by a qualified biologist experienced in interpreting cormorant identification and bird nesting behavior and for all surveys:

- i. The location of observed nests shall be recorded.
- ii. Observed nests shall be assigned a unique identifier based on their location (e.g., BE03N - bottom structure -east side - strut number 03 -viewed from the north observation) and referenced on a sketch of the under-structure of the bridge or photograph.
- iii. When adequately visible, both the size of each nest and the amount of whitewash shall be assigned a value based on a scale 1 to 3. The total number and age of individual cormorants

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shall be counted for and given an observation location and whether or not an individual cormorant is associating with a nest shall also be recorded. The previous Consultant created a survey sheet that could be use as reference for the upcoming monitoring program. An example of the data sheet is presented for references in Attachment A.

#### **4.1 Survey Type A: Construction Monitoring Survey**

Type A involves scanning visible surfaces below the Granville Bridge with the potential to support a cormorant nest (level and covered surface, usually over water) using binoculars or any other recommended tool from land-based observation stations. There were stations established by Golder Associates during previous Pelagic Cormorant nest monitoring program and shall be used for consistency in the monitoring program. The locations of the observation stations can be found in Attachment B. The Consultant can propose new observation stations and recommend establishing in their reports. If nesting is observed, additional monitoring may be required to document behavioural response to construction activities and evaluate mitigation efficacy.

Construction monitoring surveys shall begin one hour prior to daily commencement of construction work to observe baseline Cormorant behavior and shall continue for minimum of one hour and up to 2 hours following commencement of construction work to document potential changes in Cormorant behaviors or disturbance behavior. For bidding purposes please assume 2 hour for each vessel-based survey and provide cost for provisional time.

#### **4.2 Survey Type B: Nest Monitoring Survey**

Type B may be conducted at Granville and Burrard bridges at any time of the day as long as lighting is sufficient for clear observation in 2020, 2021 and 2022. Nest monitoring surveys shall not be conducted during weather conditions that may compromise observer ability (e.g., very high winds, freezing temperatures, heavy rain or snow). There are two types of nest monitoring surveys required for this scope of work:

- i. **Land-based** surveys shall consist of nest counts from observation stations adjacent to the bridges. Observation stations shall be established to optimize visibility beneath the bridges, while taking care to avoid disturbance to birds from surveyor presence. Five existing observation stations were established at the Granville Bridge during monitoring in 2015 and 2018 and shall continue to be used for consistency. Two new observation stations have been established at the Burrard Bridge during the first survey in 2019 and will be used by the Consultant for the remainder of the program. The Consultant can propose new observation stations and recommend establishing in their reports. For bidding purposes please assume 3 hours for each land-based survey and provide cost for provisional time. See Attachment B for diagram of observation stations already established.
- ii. **Vessel-based** surveys shall be conducted by slowly maneuvering a small motorized boat to various locations beneath and adjacent to the bridges to optimize viewing of Cormorants and theirs nests from the water. During both land-based and vessel-based surveys, visible surfaces below the bridge with the potential to support a cormorant nest (level and covered surface, usually over water) shall be scanned using binoculars. The duration of each observation period is at discretion of the Consultant and depends on how many nests and cormorants are present. For bidding purposes please assume 3 hours for each vessel-based survey and provide cost for provisional time.

#### **5.0 Work Scope**

The following are specific tasks and requirements for the Work to be provided by the Consultant (the "Tasks", individually, "Task"). Any tasks not identified here but required to complete the Work shall be identified by the Proponent in their Proposal.

#### **5.1 Task 1 - Construction Monitoring: Survey Type A**

The Consultant shall document the behavioural response of nesting Cormorants to construction activities, determine the nesting stage of the colony, and evaluate whether planned mitigation is in place and effective. Construction monitoring will be required at Granville Bridge in, 2020 and 2021

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as described below. The surveys related to this task are as per described under section 4.1 "Survey Type A: Construction Monitoring Survey".

**5.1.1 Task 1A - Construction Monitoring for Mitigation Efficacy in 2020 and 2021.**

Construction monitoring in 2020 and 2021 shall be limited to checking the Granville Bridge early in the Cormorant breeding season (i.e. May-June) each year for the presence of nesting Cormorants as requested by CoV. It is anticipated that the avian exclusion netting may fully exclude Cormorants from nesting on the steel span of the Granville Bridge. The objective of these surveys is to confirm such assumption and for the Consultant to identify the need for additional mitigation measures if Cormorant nesting is observed. Please consider 4 surveys type A in 2020 and 2 in 2021 for year for bidding purposes.

Reporting requirements after construction monitoring surveys shall include the preparation of:

- i. A brief e-mail summary of construction monitoring results provided to CoV within 1 day of each construction monitoring session.
- ii. A technical memorandum describing the purpose of the construction monitoring session, relevant observations (e.g. findings, if disturbance behavior was observed, colony nesting status), and associated recommendations. The proponent will provide the technical memorandum within 5 business days of the monitoring session.

**Deliverables for Task 1A - Construction Monitoring for Mitigation Efficacy (2020 and 2021):**

- i. Brief Emails after each monitoring session
- ii. Technical Memorandum

**5.1.2 Task 1B - Construction Monitoring Technical Report**

An annual construction monitoring technical report will be prepared at the end of each Cormorant breeding season if multiple construction monitoring sessions occurred during that season. The technical report shall compile results from the technical memorandums corresponding to each monitoring session and shall serve as a summary of construction monitoring activities completed during that specific year.

**Deliverables for Task 1B - Construction Monitoring Technical Report:**

- i. Technical Report for 2020 and 2021

**5.2 Task 2 - Nest Monitoring: Survey Type B**

The Consultant shall document potential changes in the number and distribution of Cormorant nests on the bridges as a result of construction on Granville Bridge. It is anticipated that Cormorants nesting on the Granville Bridge will relocate to the Burrard Bridge following avian exclusion netting installation on the Granville Bridge in November 2019. The nest monitoring program includes surveys type B at both bridges during the years specified in the following table:

- i. One Land-based survey during the incubation period
- ii. One Vessel-based survey during the chick-rearing period
- iii. One Land-based survey during the chick-rearing period

**Table 1: Monitoring Survey Days Summary**

Year	Monitoring Survey Days		Monitoring Location
	Incubation Period	Chick-rearing Period	
2020	1	2	Burrard Bridge
2021	1	2	Burrard Bridge

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2022	1*	2*	Burrard and Granville Bridges**
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\*Quantity per bridge

\*\*Assuming netting has been removed by 2022

The Consultant or designated representative shall meet with CoV staff 2 times a year and provide updates for the Pelagic Cormorant Nest Monitoring Program and Construction Monitoring Program. 1 hour meetings are anticipated to be scheduled at the beginning and end of each nesting season.

The reporting requirements surveys type B are:

- i. A brief factual e-mail to CoV following each survey,
- ii. An annual technical report provided to CoV, via e-mail, following the completion of monitoring surveys as specified on section 5.2. The technical report shall describe and include:
  - a. Soft copy of life database
  - b. Detailed methodology
  - c. Survey methods
  - d. Summary of number of nests observed at each bridge, including observed changes in the number of nests from year to year
  - e. Monitoring program recommendations and lessons learned

**Deliverables for Task 2 - Nest Monitoring**

- i. Brief Email
- ii. Technical Report for 2020, 2021, 2022 as described in section 5.2. above.
- iii. 2 meetings per year with CoV staff (beginning and end of nesting season)

**5.3 Task 3 - Granville and Burrard Bridges Support**

The Consultant shall engage with CoV staff to provide input in the ongoing development and assessment of strategies related to optimizing ongoing maintenance activities on Granville and Burrard bridges while minimizing impact on the Pelagic Cormorants. The Consultant shall complete additional works as detailed below

**5.3.1 Task 3A - Re-coating strategy for the Granville and Burrard Bridges**

The Consultant shall join an integrated team with CoV staff and CoV's structural & coating consultant to assist in developing a re-coating strategy for the Granville and Burrard Bridges that is anticipated to begin in the summer of 2020. The re-coating of the bridges is an extended project consisting of multiple phases and to be implemented over multiple capital plans (likely multiple decades) for which the Consultant is expected, but not limited to, providing input on:

- i. The best time to carry-out the bridges coating work and to facilitate the use of seasonal weather considering cormorant nesting season.
- ii. Permits required
- iii. Development and planning of advanced works
- iv. Provide recommendations as needed

The Consultant shall also develop a plan for the management of Pelagic Cormorant nesting on the Granville and Burrard Bridges while carrying out re-coating works and considering the current mitigation measures taken for the Granville Bridge Rehabilitation project. The consultant shall:

- i. Outline mitigation measures to be implemented prior during and following bridge re-coating work.
- ii. Elaborate Pelagic Cormorant monitoring program to be implemented prior to, during, and after the bridge re-coating work;

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**Deliverables for Task 3A - Re-coating strategy for the Granville and Burrard Bridges:**

- i. Pelagic Cormorant Monitoring Program during implementation of re-coating

Stantec Consulting Ltd. Developed a General Bridge Coating Maintenance and Environmental Plan for the City's three major bridges and it is attached as Attachment D and E respectively as ready reference.

**5.3.2 Task 3B - Gantry System Inspection Strategy during Pelagic Cormorant Nesting Season**

CoV requires access to the Gantry system of the Granville Bridge rails in order to perform regular and emergency inspections. The Consultant shall engage with CoV staff to develop and assess a strategy that allows access to the Gantry system rails throughout the year, including during Pelagic Cormorant nesting season. This strategy shall provide CoV with input to minimize disruption to the Pelagic Cormorants while allowing for use of the Gantry system.

The reporting requirements for the Gantry System Inspection Strategy will include a technical memo outlining optimal times of the year to perform inspections and the development of mitigation measures to be implemented prior to, during and following bridge inspection work.

**Deliverables for Task 3B - Gantry System Inspection Strategy:**

- i. Technical Memo as described above in task 3B

**5.3.3 Task 3C - Marina Bird Avoidance Strategy**

The Pelagic Cormorants located underneath the land span of the Granville and Burrard Bridges lead to dropping issues in the marina and public areas. The City is exploring and looking at different mitigation measures for which require the input of an environmental consultant. The Consultant will engage with CoV staff to develop mitigation strategies regarding bird dropping issues while ensuring the Pelagic Cormorants are not disturbed. CoV will require input from the Consultant to facilitate guidance, assessment, and feedback on potential strategies to be implemented. CoV along with a structural consultant will be developing a protective screening option in 2020 for the boater's center located at the north side of Granville Bridge. The Consultant will review the concept, provide feedback, and suggest alternative strategies.

**Deliverables for Task 3C - Marina Bird Avoidance Strategy:**

- i. Technical Memo and feedback on Conceptual Design of Marina Bird Avoidance Strategy
- ii. Post installation (boater's welcome facility) assessment (TBD at some time in the future)

**5.3.4 Task 3D - Project Communications**

The Consultant is to assume that at least 4 meetings per year (2 hours long each meeting) will occur with the City Project Manager (and other City staff as required) to connect and discuss on the three strategies mentioned above on tasks 3A, 3B, and 3C. The meetings are expected to be located at 507 W Broadway, Vancouver, BC. The Consultant will also provide monthly updates to the City throughout the Project. These updates will be through various means including phone conversations, written, and the like. Please consider 2 hour per month for monthly updates and 4 meetings 2 hours long each year for bidding purposes.

**6.0 Consultant Experience Requirements**

Proponents should identify key project team members and describe general roles and responsibilities in relation to this project. A resume should be provided for each key team member, which demonstrates relevant experience.

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Proponents' consultant experience should also be demonstrated through relevant past Pelagic or Avian experience. Up to five representative projects which have been completed by the proponent in the past five years should be provided in the form of project sheets.

The Proponent should have experience as follows:

- Environmental engineering
- Avian behaviour, including:
  - Pelagic cormorants
  - Preparation of avian mitigation programs

The Proponent will utilize only the Project Team members noted in the Proposal. Except for substitutions required by circumstances not within its reasonable control, the Proponent may not make substitutions of Project Team members without the prior written consent of CoV.

**7.0 Deliverables**

A summary of the deliverables and their deadlines can be found in Table 2 below.

Table 2: Summary of Deliverables

Task	Deliverables	Task Deadline
<b>Task 1: Construction Monitoring</b>	i. A brief e-mail summary of construction monitoring results ii. Technical memorandum iii. Annual construction monitoring technical report	i. One day after completion of each construction monitoring session. ii. 5 business days after each monitoring session. iii. Every year after the monitoring season is complete
<b>Task 2: Nest Monitoring</b>	i. Brief e-mail ii. Annual technical report iii. Project meetings	i. One day after completion of each nesting monitoring survey. ii. December 1st of each year iii. Beginning and end of each nesting season.
<b>Task 3: Granville and Burrard Bridges Support</b>	i. Detail Design of a Monitoring Program during implementation of re-coating ii. Technical Memo iii. Technical Memo and feedback on Structural Consultant concept iv. Post installation (baoter's welcome facility) assessment (TBD at some time in the future) v. 4 meetings per year	i. May 2020 ii. August 2020 iii. TBD iv. TBD v. TBD

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All documents produced by the Consultant will become the property of CoV and as such will be subject to disclosure under the provisions of the Freedom of Information & Protection of Privacy Act. All input files and technical analysis used in developing the designs will be provide to CoV for CoV records.

**8.0 Schedule**

Tables 3 and 4 below outline a high level project timeline for informational purposes only; CoV may adjust the schedule of concurrent work streams at its discretion.

Throughout the project, the Consultant shall monitor the schedule and prioritize the work outlined above accordingly, in order to meet agreed upon deadlines.

**Table 3: Project Milestones**

Milestone	Dates
Project Award and Kick Off Meeting	February 2020
Monitoring Period	March 2020 - November 2022
Project Closeout	November 2025

**Table 4: Project Timeline**

Task	Description	Quantity/ Per Bridge	Monitoring Location	Start Date	Finish Date
<b>1</b>	<b>Construction Monitoring: Survey Type A</b>				
1A	Construction Monitoring in 2020	4	Granville Bridge	March	November
1B	Construction Monitoring in 2020	2	Granville Bridge	March	May
<b>2</b>	<b>Nest Monitoring: Survey Type B</b>				
	<b>Nest Monitoring Survey - 2020</b>			March	November
	Incubation Period	1	Granville Bridge	April 25	August 30
	Chick Rearing Period	2	Burrard Bridge	June 18	October 20
	Annual Report	1		October 21	December 1
	<b>Nest Monitoring Survey - 2021</b>				
	Incubation Period	1	Burrard Bridge	April 25	August 30
	Chick Rearing Period	2	Burrard Bridge	June 18	October 20
	Annual Report	1		October 21	December 1
	<b>Nest Monitoring Survey - 2022</b>				
	Incubation Period	1	Burrard & Granville Bridges	April 25	August 30
	Chick Rearing Period	2	Burrard & Granville Bridges	June 18	October 20
	Annual Report	1		October 21	December 1
<b>3</b>	<b>Granville and Burrard Bridges Support</b>				
3A	Re-coating strategy for the Granville and Burrard Bridges			November 2019	May 2020
3B	Gantry System Inspection Strategy			November 2019	August 2020
3C	Marina Bird Avoidance Strategy			November	November

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			2019	2020
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**9.0 Attachments**

The following attachments are available separately and incorporated herein by reference. The attachments will be made available to Proponents who complete the PART E - Non-Disclosure Agreement of the RFP and send to [jing.fan@vancouver.ca](mailto:jing.fan@vancouver.ca)

- A. Granville Bridge Pelagic Cormorant management Plan by Golder Associates Ltd.
- B. Pelagic Cormorant Monitoring Locations by Golder Associates Ltd.
- C. Pelagic Cormorant Management Plan - Burrard Bridge Rehabilitation Project, Phase 2 by Golder Associates Ltd
- D. General Bridge Coating Maintenance Plan by Stantec Consulting Ltd.
- E. Environmental Management Plan - Bridge Coating Operation and Maintenance Plan by Stantec Consulting Ltd.