

## **Annex A10**

### **RESEARCH COLLABORATION OPPORTUNITY**

**Research Collaboration Opportunity Ref No.:** RCO-CUGE-2019-02

**Project Title:** Impact of Trap-Neuter-Release-Manage (TNRM) programme on Free Roaming Dog (FRD) population in Singapore

#### **1. Key Challenges and Objectives**

- 1.1 Population monitoring of FRD is an important component of work in the management of canine population. A five year TNRM programme was implemented in November 2018 to manage the FRD population in Singapore through sterilisation. Priority will be to rehome as many sterilised dogs as possible. Those that cannot be rehomed will be released/relocated back to the environment. Up to date demographics will allow NParks to better augment its management strategies.
- 1.2 We are seeking research proposals to evaluate the effectiveness of NParks' current management (i.e. TNRM) and provide recommendations for a comprehensive, effective and feasible approach to control and manage the FRD population.
- 1.3 The proposed project should include (but not be limited to):
  - (i) The techniques of population estimate and monitoring so as to obtain up to date demographics of the FRD population in Singapore;
  - (ii) Collaboration with local/overseas experts with relevant experience in canine research studies; and
  - (iii) NParks staff attachment to understudy and learn from the research team.

#### **2. Minimum Project Deliverables**

- 2.1 The deliverables described here represent the minimum outcomes arising from the proposed project. Additional relevant deliverables that are proposed will be favourably considered during project evaluation.
  - (i) Determine the impacts of the TNRM programme on the population size, age class/structure (population demographics), trend and distribution of FRD in Singapore;

- (ii) Determine annual sterilisation rate (number of unsterilised vis-à-vis sterilised stray dogs), within project duration, of the TNRM programme on FRD in Singapore;
- (iii) Determine the effects of sterilisation on the:
  - a. Behaviour (e.g. dog-dog aggression, dog-human interactions);
  - b. Health (body condition score, injury, visible skin condition, no. of open wounds, disease sampling) of FRD;
  - c. Mortality;
  - d. Birth rate;
  - e. Migration behaviour of FRD to and fro other areas (emigration and immigration);
  - f. Reproduction rate of the remaining unsterilised FRD in the area; and
  - g. Public safety risk posed by FRD.
- (iv) To assess public perception of and degree of public receptiveness to the current approach on FRD management (including TNRM programme, e.g. social perception of the rehoming of FRD) through platforms e.g. focus group discussions and questionnaire surveys. The Tenderer shall ensure that all questions and/or communication materials to the public to fulfil the aforementioned requirement must be approved in writing by the Authority prior to commencement;
- (v) Evaluate current FRD management approach and give recommendations to enhance the approach and methods;
- (vi) Propose an attachment schedule for NParks staff to understudy the research team in (1) field sampling & monitoring methods and (2) data and results analysis; and
- (vii) Provide bi-annual progress report on the status of the research study on all the deliverables (i.e. progress report to be submitted within three (3) month at the end of every six (6)-month cycle upon commencement of the project).

### **3. Budget Limits**

3.1 The proposed budget, including GST, cannot exceed \$410,400. Proposals that exceed this limit will not be considered. Please note that this amount is simply an indication of budget availability, not an estimate of expected project cost.

3.2 The project shall be completed by October 2023. Proposals that require a longer time to be completed (i.e. after October 2023) will not be considered.

3.3 Please note that NParks' decision on the funding support to be awarded for the project is final.

#### **4. Submission Instructions**

4.1 Proposals for the Research Collaboration Opportunity as stated above must be submitted to Mr Evan Lin at [Evan\\_LIN@nparks.gov.sg](mailto:Evan_LIN@nparks.gov.sg) and Dr Lin Anhui at [LIN\\_Anhui@nparks.gov.sg](mailto:LIN_Anhui@nparks.gov.sg) by 15 November 2019, 2359 hrs.

#### **5. Enquiries**

5.1 For transparency, all enquiries and associated clarifications will be published (without details on the identity of the person making the enquiry) on the Research Collaboration Opportunity page on the CUGE website. We regret that phone enquiries will not be entertained.

5.2 For enquiries, please contact Mr Evan Lin at [Evan\\_LIN@nparks.gov.sg](mailto:Evan_LIN@nparks.gov.sg) and Dr Lin Anhui at [LIN\\_Anhui@nparks.gov.sg](mailto:LIN_Anhui@nparks.gov.sg) for enquiries.