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- (f) Conduct monthly fauna surveys within forest adjacent to the worksite according to methods and locations as deployed during baseline. This includes deployment of at least 18 camera traps across Maju Forest (6) and Clementi Forest (12).
- (g) Develop and conduct Fauna Response Plan.
- (h) Develop and conduct a Light Management Plan if night works are necessary.

23.3.6 This section highlights specific management measures for environmental protection during construction of CR206. This list is not exhaustive and the Contractor shall refer to the **Appendix BD** for details and additional measures.

- (i) Additional Hoarding

The Contractor shall setup temporary barriers of adequate length (e.g. water barrier of 1 m height) when tunnel boring and rock breaking and excavation work are due to occur. During rock breaking / excavation stage / tunnel boring, a barrier of 480 m shall be provided along Clementi Road. At this stage, canvas sheets must be used to cover the 635 m of the permanent BRC fences along Brookvale Drive. In addition, existing railings along Clementi Road must be covered with canvas sheets. Refer to **Appendix BD** of the Particular Specification for details.

## **23.4 Waste Management during Construction Phase**

23.4.1 The Contractor shall refer to **PS13 Clause 13.1.6 of the Particular Specification** for the waste management strategies during construction phase.

## **23.5 Vector Control during Construction Phase**

23.5.1 The Contractor shall refer to **PS13 Clause 13.1.7 of the Particular Specification** for the vector management strategies during construction phase.

## **23.6 Surface Water during Construction Phase**

23.6.1 Before the commencement of construction works, the Contractor shall carry out one-time monitoring for in-situ parameters (i.e. temperature, pH, conductivity, turbidity, total dissolved solids, total suspended solids and dissolved oxygen) and ex-situ parameters (i.e. biochemical oxygen demand, chemical oxygen demand, total nitrogen, nitrate, total phosphorus, orthophosphate, oil & grease [Total], oil & grease

three (3) strategic locations during construction phase as detailed in **Appendix BD** of the Particular Specification.

- 23.9.3 Noise barriers and additional noise mitigation measures are recommended in **Appendix BD** of the Particular Specification based on preliminary estimation of construction methodology. These noise barrier locations are described in **Clauses 23.9.5**.
- 23.9.4 Above-ground works not critical for safety reasons within the CR206 shall only be allowed from Mondays to Saturdays from 7am to 7pm. However, noisy activities shall only be allowed from 9am to 5pm.
- 23.9.5 For the worksite near Clementi Forests and Maju Forest, the Contractor shall erect a 12m height noise barrier with minimum Sound Transmission Class (STC) of 20, along the west boundary of the construction worksite and LTA's standard TBM enclosure (one façade opening at northern side) 15m high at the boundary of Launch shaft worksite. The Contractor shall apply 6m high noise barrier along the south-east boundary of the construction worksite and 12m high noise barrier along the north-east boundary of the noise barriers with minimum Sound Transmission Class (STC) of 20. The Contractor shall use the portable noise barrier close to the noisy equipment/ activities, whichever the equipment is applicable. When portable inflatable noise barrier is used, silent type of gensets shall be used for the barrier. More details on the location of this barrier can be viewed in **Appendix BD** of the Particular Specification.
- 23.10 Ground-borne Vibration during Construction Phase**
- 23.10.1 The Contractor shall control construction vibration levels using the best available techniques (BAT). The Contractor shall ensure that the vibration levels at Maju Forest and Clementi Forest (excluding the worksite area) do not exceed Peak Particle Velocity PPV, 8 mm/s.
- 23.10.2 The Contractor shall setup temporary barriers of adequate length (e.g. water barrier of 1 m height) when tunnel boring and rock breaking and excavation work are due to occur. At Stage 2, a barrier of 480 m shall be provided along Clementi Road. At this stage, canvas sheets must be used to cover the 635 m of the permanent BRC fences along Brookvale Drive. In addition, existing railings along Clementi Road must be covered with canvas sheets. Refer to **Appendix BD** of the Particular Specification for details.
- 23.10.3 At Maju and Clementi Forests, continuous vibration monitoring shall be conducted at one (1) location each before the commencement of construction to obtain baseline levels at each location as detailed in **Appendix BD** of the Particular Specification.

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| Phases                         | Document                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Submission Milestones and Frequency     | Action by                |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------|
|                                | <ul style="list-style-type: none"> <li>Waste Management (<b>Clause 23.4</b>)</li> <li>Vector Control (<b>Clause 23.5</b>)</li> <li>Surface Water (<b>Clause 23.6</b>)</li> <li>Soil and Groundwater (<b>Clause 23.7</b>)</li> <li>Air and Dust (<b>Clause 23.8</b>)</li> <li>Airborne Noise (<b>Clause 23.9</b>)</li> <li>Ground-borne Vibration (<b>Clause 23.10</b>)</li> <li>Complaint handling and corrective action plans (<b>Clause 23.16</b>)</li> </ul> |                                         |                          |
| Construction and commissioning | Monthly monitoring report for waste management, vector control, surface water, soil and groundwater, air and dust, airborne noise, ground-borne and vibration ( <b>Clauses 23.4 to 23.15</b> )                                                                                                                                                                                                                                                                  | End of each month                       | Environmental Consultant |
|                                | Complaint investigation report and corrective action plan ( <b>Clause 23.16</b> )                                                                                                                                                                                                                                                                                                                                                                               | Within 24 hr upon receipt of complaints | Environmental Consultant |