

**MITIGATING MEASURES TO PROTECT  
THE CENTRAL CATCHMENT NATURE RESERVE (CCNR) DURING SI WORKS**

Key environmental impact mitigating measures, with inputs from NParks and nature groups before the commencement of SI works, include:

- (a) Reduced the number of boreholes required for the SI works, from 72 boreholes to 16 boreholes.
- (b) All boreholes were located on existing trails and clearings within the CCNR.
- (c) Engineers used non-intrusive geophysical survey methods to supplement the data obtained from the boreholes. When conducting these surveys, engineers followed specific access routes marked out by NParks officers, which were restricted to existing unmarked trails in the forest.
- (d) Imposed strict accessibility criteria to guide off-trail movements. The surveyor team was supervised by NParks officers at all times.
- (e) Vehicular access limited to existing trails.
- (f) Avoided ecologically sensitive areas such as streams, and swampy areas. For example, no boreholes were allowed within a 30m buffer zone around these sensitive areas.
- (g) All SI activities were restricted to daylight hours, so as not to affect nocturnal animals.
- (h) Geophysical surveys scheduled to include at least one to two rest days in between surveys, over the period of borehole operations within the same sector, to allow respite for sensitive and less mobile fauna.
- (i) Involved nature groups as observers for the SI works to reinforce compliance with the mitigating measures.
- (j) Engaged a certified arborist, who developed methods to avoid damage to trees due to borehole operations.
- (k) Modified the drilling rig by installing a silencer at the end of the drill engine exhaust to reduce noise.
- (l) Contractor conducted trial runs of and rehearsed the borehole operations and geophysical surveys off-site prior to actual works in the CCNR. This provided the opportunity to further enhance operations to minimise impact on the environment, while allowing the SI workers to familiarise themselves with the stringent requirements of working within the CCNR.
- (m) Allowed a longer period of time before resuming SI works after heavy rain to reduce soil erosion into streams and to protect the integrity of the top soil structure. Resumption of work only allowed with consent from NParks.

- (n) Worked with PUB to access boreholes located on Terentang Trail through Bukit Kalang Service Reservoir compound. This reduced vehicular movement along Terentang Trail, which is narrow and undulating.
- (o) NParks officers could issue immediate stop-work orders, should there be any breach of or deviation from the agreed mitigating measures, or when pollution is detected.
- (p) Dispense with the use of Mackintosh Probes, which means there was no works in streams.