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香港觀鳥會
THE
HONG
KONG
BIRD
WATCHING
SOCIETY

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By email only

29 March 2019

Dear Mr. Tong,

**Comments on the Environmental Impact Assessment for Yuen Long Effluent Polishing
Plant - Investigation, Design and Construction (EIA-259/2019)**

The Hong Kong Bird Watching Society (HKBWS) would like to express our concerns regarding the environmental impact assessment (EIA) report for the upgrade of the Yuen Long Effluent Polishing Plant (YLEPP).

1. Importance of the Great Cormorant night roost

Nam Sang Wai (NSW) is the **largest night roost of Great Cormorant in Hong Kong**. For the winters in past six years from 2012/13 to 2017/18, the peak count ranged from 3,713 to 6,035 individuals, **accounting for a least half of the Deep Bay population**¹. This indicates the importance of the NSW roosting site to the regional population. However, part of this roosting site is within 500 m from the project site boundary (and can be as close as about 280 m). We are concerned the noise generated from the demolition and construction works of the proposed development would have adverse impacts on this roosting site.

2. Importance of the ardeid night roost adjacent to YLEPP

During a site visit at Nam Sang Wai conducted on 19 February 2019, we noticed at least 500 ardeids individuals were using the strip of mangrove east of the YLEPP at Shan Pui River late at around sunset. Species include Little Egret, Great Egret, Chinese Pond Heron and Eastern Cattle Egret. We further conducted a survey on 26 February 2019 and confirmed **almost 800 ardeid individuals using the night roost** (Table 1). This accounts for at least 16% and up to 39% of the Deep Bay population depending on the bird species (i.e. comparing with the peak count of waterbirds during the winter of 2017/18²). If the number is compared against the February 2018 waterbird



¹ Data were extracted from the Monthly Waterbird Monitoring Biannual Reports (October to March, from 2012 to 2018) for the Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programmes 2012-18, reported by the Hong Kong Bird Watching Society to the Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Region Government.

² Anon. 2018. Monthly Waterbird Monitoring Biannual Report 2 (October 2017 to March 2018), Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2017-18. Report by the Hong Kong Bird

count data², the **ardeids at the night roost accounts for at least one-fourth of the Deep Bay population, and even reach up to almost 60% for Eastern Cattle Egret.**

The EIA report stated “...a change in night roosting site is unlikely to trigger a decline in population as their breeding/nursery site are not affected... ardeid night roosts are known for their highly changeable locations and roosting population”³. We cannot fully agree with the above statement. Further monitoring is required to confirm if there are no breeding activities at the roost. Even without any breeding activities observed, **this night roost still supports a significant proportion of the ardeids in the Deep Bay area.** Therefore, we consider that **the night roost is an important habitat in a Deep Bay context.**

Table 1. The species and number of individuals of ardeids recorded at the night roost east of YLEPP and comparison with total population in the Deep Bay area.

Species	Number of individuals at night roost	Population in the Deep Bay area ² (% the night roost supports)	
		Feb (%)	Winter peak (%)
Great Egret	253	665 (38%)	1223 (21%)
Intermediate Egret	5	14 (36%)	23 (22%)
Little Egret	397	873 (45%)	1009 (39%)
Eastern Cattle Egret	38	66 (58%)	238 (16%)
Chinese Pond Heron	91	331 (27%)	555 (16%)

According to our recent findings from several Little Egrets with Global Positioning System tracking tags⁴, we found that the some individuals recently shifted their nighttime roosting site from Fung Lok Wai to the mangrove strip east of YLEPP in the winter of 2018/19. The individuals **which used this night roost including both resident and migrant.** Two individuals of the vagrant bird species Glossy Ibis, which their last record in Hong Kong was in 1994, visited the Deep Bay wetlands in 2019 and were seen using the ardeid night roost as well⁵. If the majority of the birds using the night roost are migrants, it is likely that the numbers will drop after winter/spring as they will leave Hong Kong and migrate back to their original location. **We consider that monitoring surveys for the night roost should be conducted at least once a month by the consultant before, during and after the construction phase, in case of change in location of the roost within the study area of this EIA.**

Watching Society to the Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Region Government.

³ Section 8.7.1.21 of the EIA report.

⁴ Unpublished data from the research project “Study of local movement of waterbirds in the Deep Bay area” under our Fishpond Management Agreement Scheme 2017-2019.

⁵ Carmen Or, Wetland Officer of WWF - Hong Kong, personal communication, 25 March 2019.

Although there are a lot of similar wetlands and mangrove habitats in the Deep Bay area, **the reason for the ardeids to choose this location but not others is still unknown.** We consider that precautionary approach should be adopted for any development or works near this night roost.

3. Disturbance to the ardeid/cormorant night roost caused by construction hours

Section 8.7.1.21 of the EIA report stated “...ardeids habitually return to the night roost at every evening at around an hour before sunset and the construction activities (construction hours: 07:00 to 19:00) would potentially briefly interfere with the night roosts for up to around 2 hours and cause disturbance impacts (mainly construction noise) on the ardeids night roosts in the mangrove strips northeast and east to the Project site”.

The earliest sunset in a year is in November and December at around 17:38⁶. According to the above statement, if the ardeids return to the night roost an hour before sunset and construction works finish at 19:00 every day, then the construction works would actually cause **more than two hours of disturbance** to the night roost. Taking a precautionary approach, we consider that it is more appropriate to finish all construction works an hour before sunset each day if the ardeid night roost is present within the study area of the EIA.

However, it seems stopping all construction works an hour before sunset is not considered by the project proponent and the works would continue until 19:00. To mitigate the disturbance, the EIA report stated that “No construction works with PME (Powered Mechanical Equipment) should be undertaken within 100m from any night roost confirmed by the pre-construction survey after 18:00 during wet season and 17:30 during dry season to avoid disturbance.”⁷ Yet, there is still a major deficiency in this recommendation and is illustrated in Table 2.

Using the EIA recommended criteria, the construction works with PME would **only stop 13 minutes after sunset** in October. From September to January, the works would stop **less than 20 minutes before sunset**. These months are likely to have more adverse impacts on the ardeid night roost as there are more migratory/overwintering ardeids and thus likely a higher usage of the night roost. **We consider that the use of dry/wet season is NOT an ideal criteria to define the time for the construction works with PME to stop, and the project proponent should revise their construction schedule to minimise the adverse noise impacts on the ardeids/cormorant night roost.**

⁶ Data collected from Hong Kong Observatory, retrieved from http://www.hko.gov.hk/gts/astron2019/almanac2019_index_uc.htm

⁷ Section 8.10.2.5 of the EIA report

Table 2. Deficiency of the EIA recommended time to stop construction works with PME and the proposed revised recommendation.

Month	Season	Earliest sunset in the month ⁶	Time to stop works with PME (EIA)	Duration from stopping works to sunset (min)
Jan	dry	17:50	17:30	00:20
Feb	dry	18:11	17:30	00:41
Mar	dry	18:27	17:30	00:57
Apr	wet	18:38	18:00	00:38
May	wet	18:49	18:00	00:49
Jun	wet	19:03	18:00	01:03
Jul	wet	19:04	18:00	01:04
Aug	wet	18:41	18:00	00:41
Sep	wet	18:12	18:00	00:12
Oct	wet	17:47	18:00	-00:13
Nov	dry	17:38	17:30	00:08
Dec	dry	17:38	17:30	00:08

4. Adverse noise impacts on the waterbird and wetland dependent species usage in the Shan Pui River and the ardeid night roost

Ecological sensitive receivers (ESRs) such as the ardeid night roost east of the YLEPP, the mudflats along the Shan Pui River and Kam Tin River (Figure 1) and the Great Cormorant night roost in Nam Sang Wai are not included in Section 4 (noise impact assessment) of the EIA report. Some of these ESRs are **in much closer distance** to the project site than all the noise sensitive receivers (NSRs) identified in the EIA, **hence the ESRs are receiving significant noise disturbance from the project site during the construction phase even under the mitigated scenario as stated in section 4 of the EIA**. A middle point in the section of the Shan Pui River adjacent to the YLEPP was taken as ESR1 (Figure 2), and the estimated construction noise received by ESR1 was recalculated under the mitigated scenario and methodology as stated in Section 4 of the EIA report (please refer to Appendix 1). **The noise level at ESR1 was found to be particularly high during the demolition of the inlet works and biological/tertiary treatment facilities from April 2020 to October 2021, with an estimated noise level of 78 dB(A) to 81 dB(A) which is equivalent to a diesel freight train running at high speed at 25m⁸.**

⁸ Environmental Protection Department. *Characteristics of Sound and the Decibel Scale*. Retrieved from https://www.epd.gov.hk/epd/noise_education/web/ENG_EPD_HTML/m1/intro_5.html

5. Importance of the proposed 4m noise barrier and its uncertainties

Most of the noise mitigation measures proposed in the ecological impact assessment (section 8 of the EIA) **were adopted** in the construction noise calculation under the mitigated scenario in the noise impact assessment (section 4 of the EIA), **apart from the 4m high noise barriers** with absorptive materials to be erected along the northern, eastern and western sides of the project site. **Under such “mitigated” scenario without the 4m high noise barrier, the estimated noise level at Shan Pui River (ESR1) would still reach 78 dB(A) to 81 dB(A)** (please refer to the above section and Appendix 1).

Table 3. Noise mitigation measures proposed in the ecological impact assessment which are included/not included in the construction noise calculation under the mitigated scenario in the noise impact assessment

Noise mitigation measures proposed in the ecological impact assessment of the EIA (extracted from Table 8.37)	Adopted in the construction noise calculation under the mitigated scenario in Appendix 4.7 and 4.8
<ul style="list-style-type: none"> Percussive piling works and demolition using breakers mounted on excavators are scheduled outside the dry season (i.e. November to March) and will only be used during wet season. 	✓
<ul style="list-style-type: none"> Demolition using crusher, which is quieter than using breaker mounted on excavator, will be adopted for demolition works during dry season 	✓
<ul style="list-style-type: none"> Quieter foundation methods, including bored piling, raft foundation and shallow foundation, would be adopted as far as possible. 	✓
<ul style="list-style-type: none"> Facilities in the eastern side of the Project site are scheduled to be developed first that the new structures could “fence off” other construction works from Shan Pui River, further minimizing the noise impacts on MW1, MW2, MW3, active ponds of P4 and MG adjacent to Project site in the later stage of the construction. 	✓
<ul style="list-style-type: none"> Noise barriers with absorptive materials of about 4m high will be erected along the northern, eastern and western sides of the site. 	x
<ul style="list-style-type: none"> Movable noise barriers will be provided to breaker mounted on excavator used for demolition works and acoustic mat will be provided to the piling plants around the rig. 	✓
<ul style="list-style-type: none"> Contractor should also provide noise enclosure for construction equipment, particularly on static plants, as far as practicable. 	✓

As such, the **installation of the 4m high noise barriers with absorptive materials along the northern, eastern and western sides of the project site is very important to further protect the ecological sensitive receivers**, such as the ardeid night roost east of the YLEPP, the mudflats along the Shan Pui River and Kam Tin River and the Great Cormorant night roost in Nam Sang Wai, from noise disturbance generated at the construction site.

However, it is uncertain what materials it is made of for these 4m high noise barriers and their effectiveness in sound absorption. **No detail description of the 4m high noise barrier was found in the ecological impact assessment section, and it was not even mentioned in the noise impact assessment section. We are concerned if the 4m high noise barrier will really be implemented for the proposed project, and its effectiveness and efficiency in shielding construction noise.**

Instead, specification of the temporary movable noise barrier was mentioned in the noise impact assessment, where it *"should be made of materials with density of at least 10 kg/m² to provide sufficient noise reduction. No sound leaks should be allowed through the barriers due to holes, slits, cracks, openings or gaps. Noise barriers will become more effective when located immediately adjacent to the work area, and can reduce the noise level by up to 5dB(A) and 10dB(A) for mobile and stationary plant respectively."* Such specification may not be entirely relevant to the 4m noise barrier, but similar description is expected it indicate its effectiveness and efficiency in shielding construction noise. If such description or calculation of noise absorbance for the noise barrier is not applicable, the project proponent should otherwise explain.

6. Large scale installation of solar panels in ecologically sensitive area

We appreciate measures were taken to minimize the bird collision impacts of solar panels on birds⁹. However, there are lots of wetlands and ecological sensitive habitats particularly for migratory and over-wintering birds surrounding the project site, and the site is within the Wetland Buffer Area and immediately adjacent to the Wetland Conservation Area. **We consider that such large scale installation of solar panels (of about 1 hectare in total area) at an ecological sensitive area should be taken with great care. Taking a precautionary approach, we recommend further bird surveys should be conducted at the solar panel installation site during the operation phase of the proposed development to monitor if any abnormal bird behavior is observed.**

⁹ Section 8.7.2.17 and 8.10.4.4 of the EIA report.

7. Human disturbance caused by public co-use at the project site

We understood that the upgraded YLEPP may be partly opened for public use¹⁰. This would permanently increase the human disturbance to the mangroves and wetland habitats at Shan Pui River, particularly when visitors are walking along the eastern boundary inside the project site. Besides retaining/planting trees along the eastern boundary, we consider that the project proponent can consider to plant some dense short shrubs or install some bird blinds (e.g. a wooden fence with some small slits for visitors to peek) to further shield the human disturbance. No facilities which would intrude or introduce human disturbances to the mangroves and mudflats at Shan Pui River (e.g. view deck or board walk) should be installed.

The HKBWS hopes that our comments would be taken into consideration during the EIA process. Thank you for your kind attention.

Yours sincerely,



Woo Ming Chuan
Senior Conservation Officer
The Hong Kong Bird Watching Society

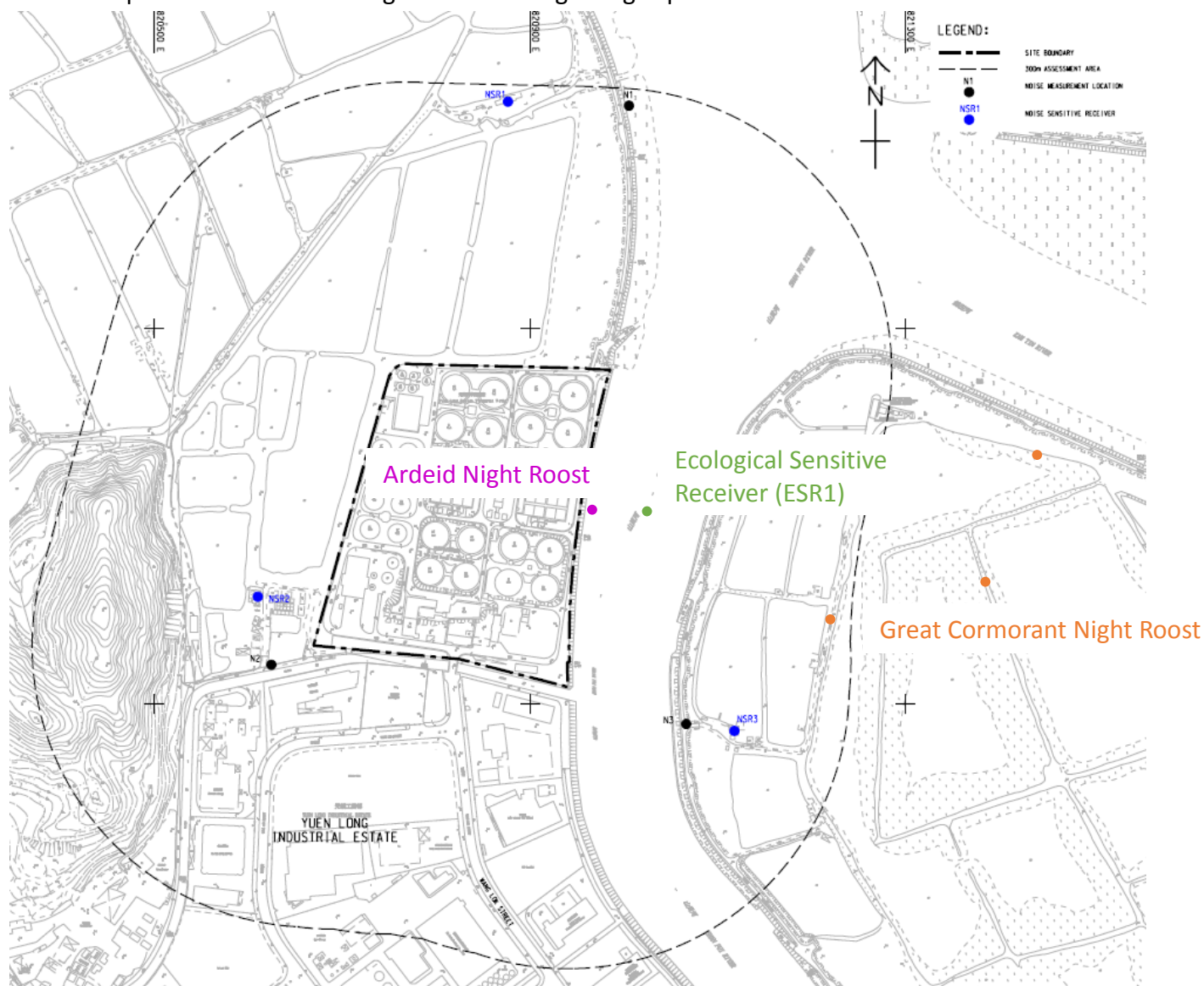
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AFCD
The Conservancy Association
Designing Hong Kong
Kadoorie Farm and Botanic Garden
WWF – Hong Kong

¹⁰ Section 2.7.4 of the EIA report.

Figure 1. We have recorded waterbirds and wetland dependent birds, including the globally endangered Black-faced Spoonbill, foraging in the upper course of Shan Pui River (MW3), in the Shan Pui River adjacent to YLEPP (MW2), and at the confluence of Shan Pui River and Kam Tin River (MW1). We are concerned the bird usage in these areas would be affected during the construction of the proposed project. Photographs were taken at Shan Pui River in November 2017.



Figure 2. A middle point in the section of the Shan Pui River adjacent to the YLEPP was taken as ESR1 (Ecological Sensitive Receiver), and the construction noise received by ESR1 was recalculated under the mitigated scenario and methodology as stated in Section 4 of the EIA report (please refer to Appendix 1). The noise level at ESR1 was found to be particularly high during the demolition of the inlet works and biological/tertiary treatment facilities from April 2020 to October 2021, with an estimated noise level of 78 dB(A) to 81 dB(A) which is equivalent to a diesel freight train running at high speed at 25m.



Appendix 1 - Estimated Construction Noise Level at ESR1 under Mitigated Scenario

[illegible]

Appendix 1 - Construction Noise Level at ESR1 under Mitigated Scenario

[illegible]

Appendix 1 - Construction Noise Level at ESR1 under Mitigated Scenario

[illegible]

Location of Noise Sensitive Receiver and Construction Site Boundary (Phase 1)

Legend

1:4000

NSR1

Noise Sensitive Receiver

Construction Site Boundary

1C

Notional Source

The map displays a construction site boundary outlined in red, containing several notional sources labeled 1A through 1I. A noise sensitive receiver (NSR1) is marked with a blue dot. Distances from each notional source to NSR1 are indicated by purple lines and labeled in meters: 1A (160m), 1B (100m), 1C (250m), 1D (260m), 1E (250m), 1F (180m), 1G (190m), 1H (240m), and 1I (300m). The map also shows the SHAN PUJI RIVER and KIAM TIN RIVER, along with a north arrow and a scale of 1:4000.

Notional Source	Distance from Notional Source to ESR1 (m)
1A	160
1B	100
1C	250
1D	260
1E	250
1F	180
1G	190
1H	240
1I	300

Location of Noise Sensitive Receiver and Construction Site Boundary (Phase 2)

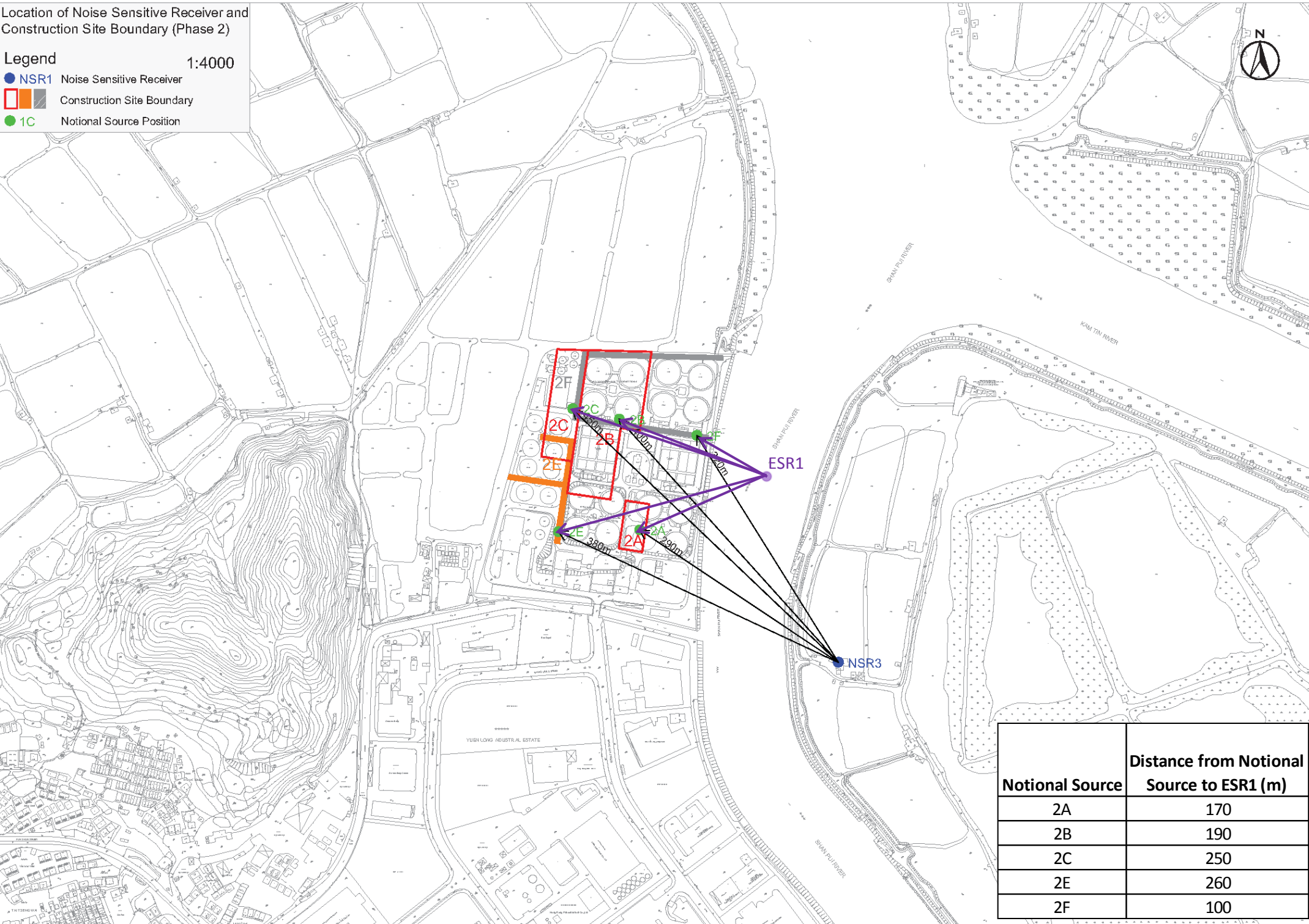
Legend

1:4000

NSR1 Noise Sensitive Receiver

Construction Site Boundary

1C Notional Source Position



Notional Source	Distance from Notional Source to ESR1 (m)
2A	170
2B	190
2C	250
2E	260
2F	100