

Tung Chung New Town Extension



8th PLG Meeting
Date : 15 February 2023



土木工程拓展署
CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT

可持續大嶼辦事處
SUSTAINABLE LANTAU OFFICE

Agenda

1. Confirmation of Last Meeting Minutes
2. Tung Chung East
 - a) Matters Arising from Last Meeting
 - b) Overview and Progress
 - c) Environmental Monitoring and Audit (EM&A)
3. Tung Chung West
 - a) Matters Arising from Last Meeting
 - b) Overview and Progress
 - c) Environmental Monitoring and Audit (EM&A)
4. AOB

1. Confirmation of Last Meeting Minutes

2. Tung Chung East

a) Matters Arising from Last Meeting

Matters Arising from Last Meeting

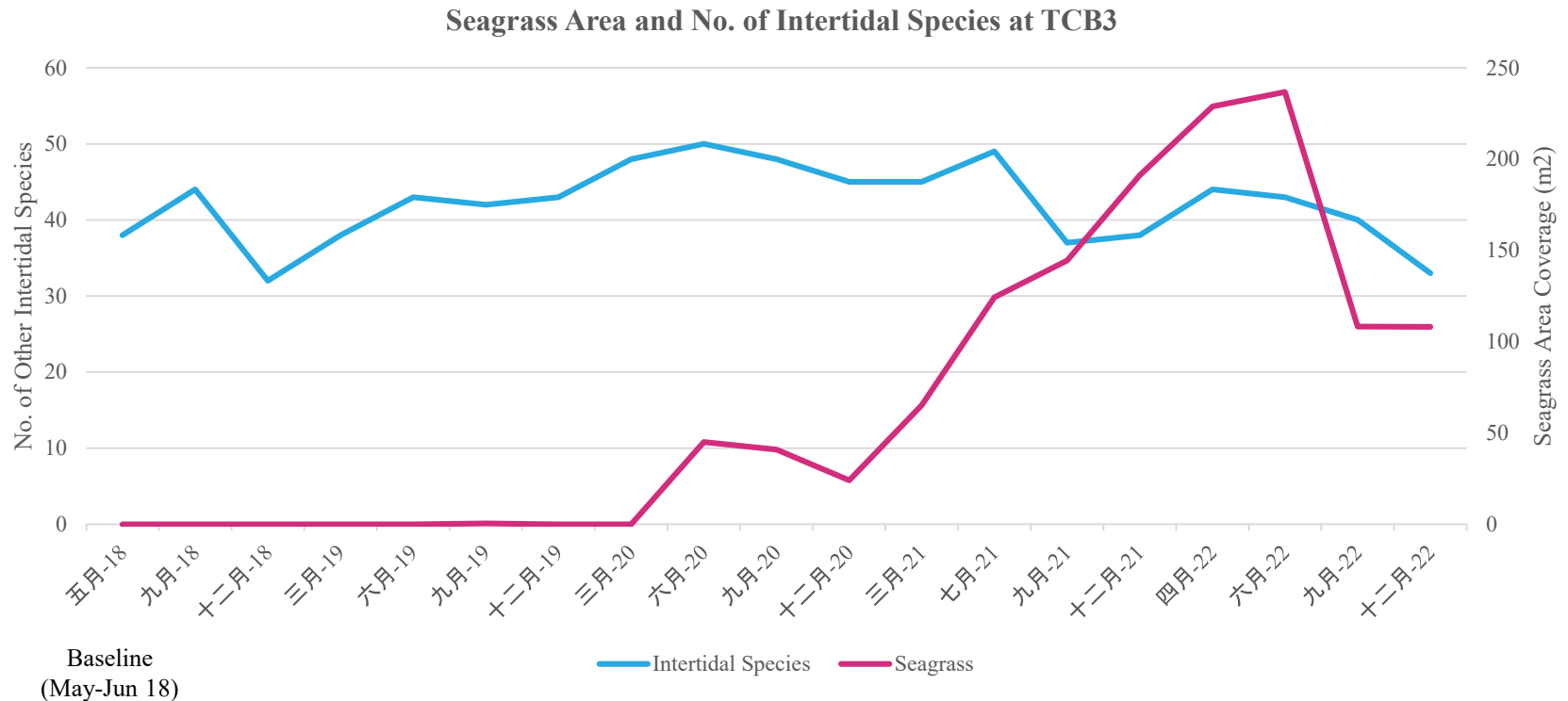
Para. 4.3.1:

Ecological Monitoring

- *A member suggested to review the ecological data such as the species diversity of the intertidal species found in the seagrass habitat or any symbiosis relationship between intertidal species and seagrass. ET/E would consider the suggestion and present the findings of the review, if any, in the next meeting.*

Seagrass Area and Intertidal Species

- No seagrass was recorded at all monitoring locations during the TCE baseline monitoring (2018)
- Throughout TCE ecological monitoring, seagrass was only observed at TCB3 (but not at other monitoring stations).
- No. of intertidal species observed remain similar over the time



Seagrass Area and Intertidal Species

- Example of dominant species at TCB3



Batillaria zonalis



Cerithidea djadjariensis



Batillaria multiformis

Matters Arising from Last Meeting

Para. 4.3.2:

Ecological Monitoring

- *A member suggested that restoration works such as **re-stocking of horseshoe crabs** could be considered to increase its population. Another member advised the re-stocking could be conducted when construction works were completed.*

Re-stocking of horseshoe crabs

- Ocean Park Conservation Foundation, Hong Kong (OPCFHK) has been collaborating with City University of Hong Kong (CityU) to launch the “**Juvenile Horseshoe Crab Rearing Programme**” since 2009. So far, >2,700 students participated in the programme.
- The conservation of horseshoe crabs will be introduced to local secondary school to see if they are interested to join the programme.

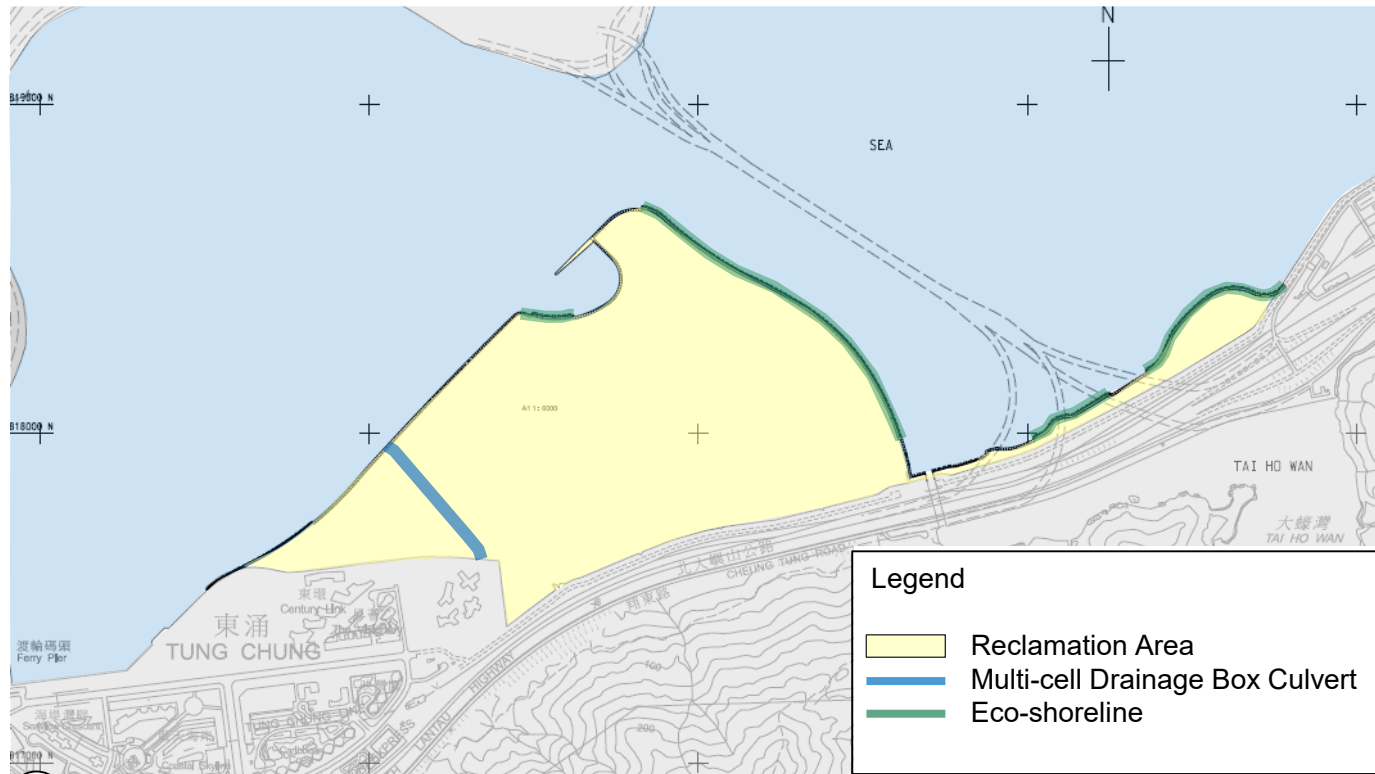


Source - <https://www.opcf.org.hk/en/community-education/juvenile-horseshoe-crab-rearing-programme#background>

2. Tung Chung East

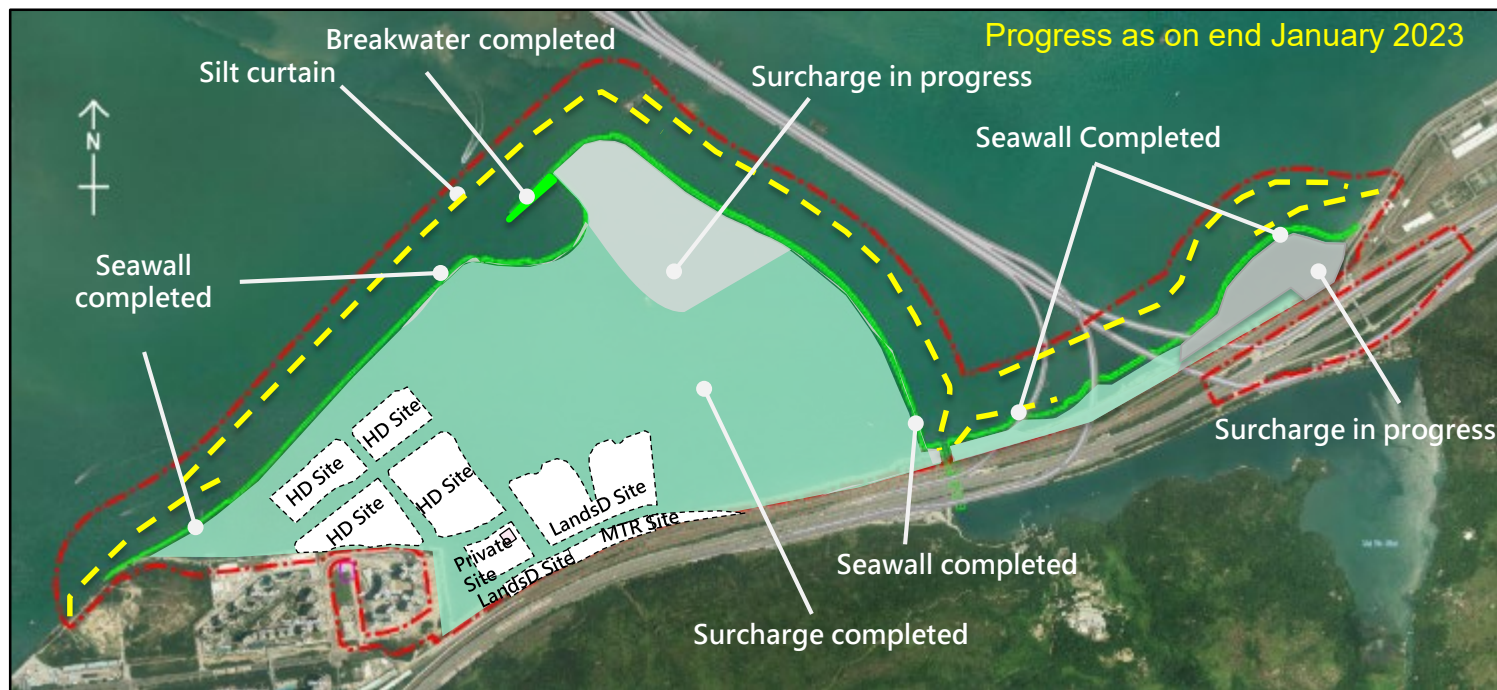
b. Overview and Progress

Tung Chung East Reclamation



- ① 130 hectares land reclamation by non-dredged method
- ② Construction of 4.9 km seawalls partly with eco-shorelines
- ③ Construction of 470m extension of multi-cell drainage box culvert

Current Progress



Aerial Photo

Photo taken in January 2023



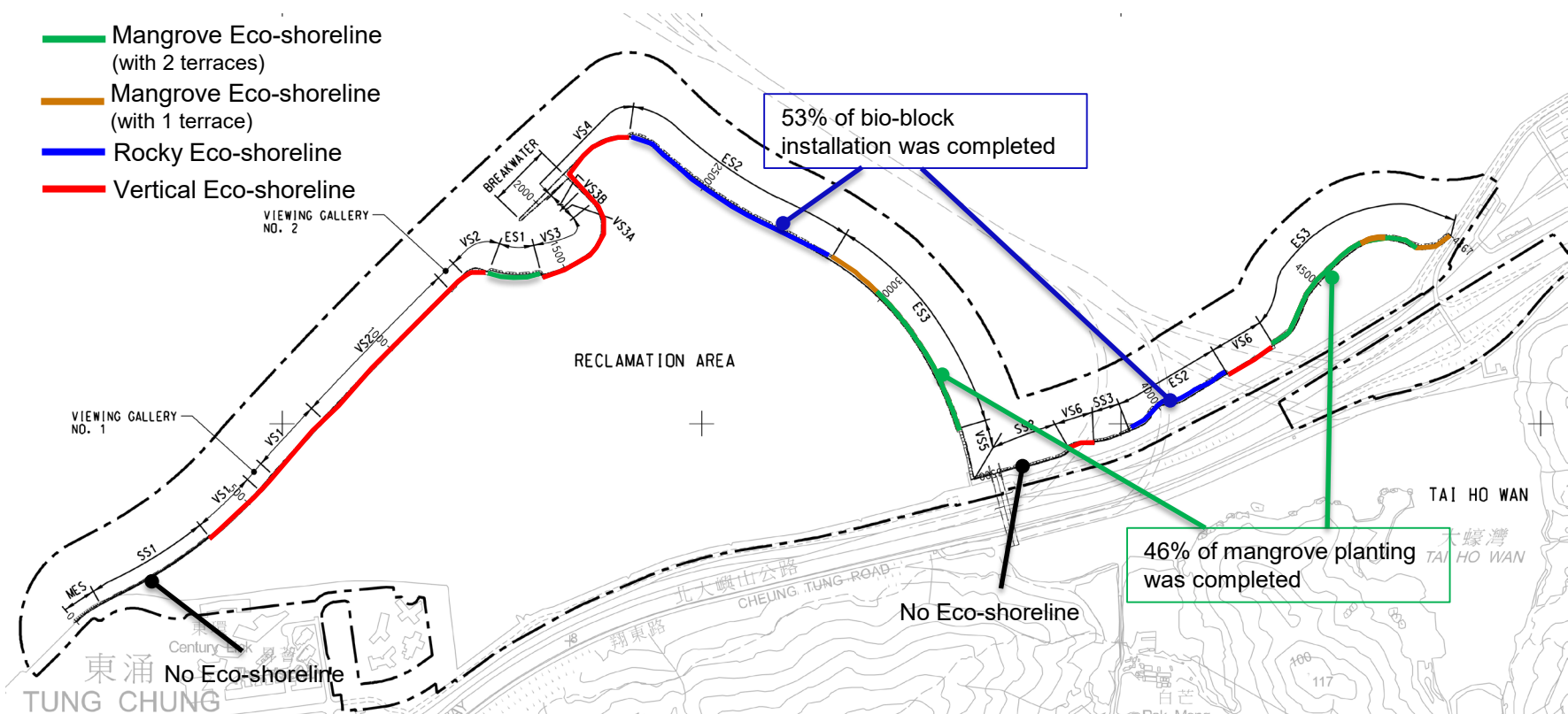
Aerial Photo

Photo taken in January 2023



Eco-shoreline

Type of Eco-shoreline	Length (km)	Status
Mangrove Eco-shoreline	1.2	46% completed
Rocky Eco-shoreline	0.8	53% completed
Vertical Eco-shoreline	1.8	100% completed



Mangrove Eco-Shoreline (Main Site)



Mangrove Species

水筆仔 *Kandelia obovate*

白骨壤 *Avicennia marina*

木欖 *Bruguiera gymnorhiza*

欖李 *Lumnitzera racemosa*

桐花樹/蠟燭果 *Aegiceras corniculatum*

老鼠簕 *Acanthus ilicifolius*



General View of Mangrove Eco-shoreline

Mangrove Eco-Shoreline (Area E)



Mangrove Species

水筆仔 *Kandelia obovate*

白骨壤 *Avicennia marina*

桐花樹/蠟燭果 *Aegiceras corniculatum*



2023年2月1日 14:12:15
新界大嶼山



2023年2月1日 14:36
新界大嶼山

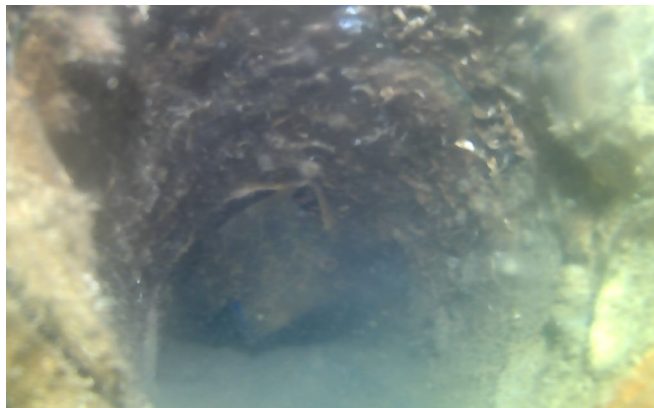
General View of Mangrove Eco-shoreline

Vertical Eco-shoreline



Thin film of algae observed

General View of Vertical Eco-shoreline



Creatures observed

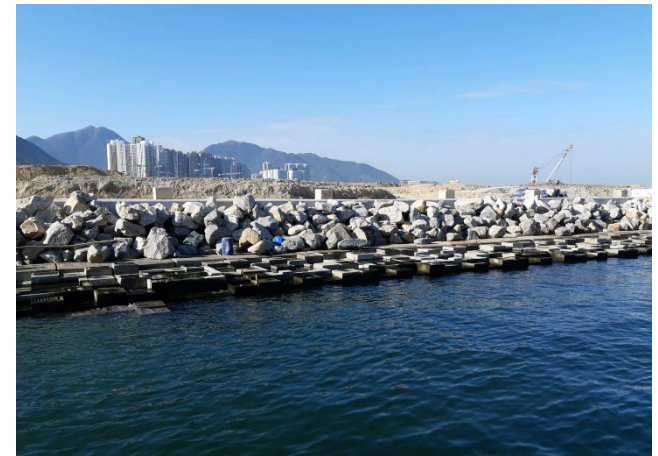
Rocky Eco-shoreline



General View of ES2(E)

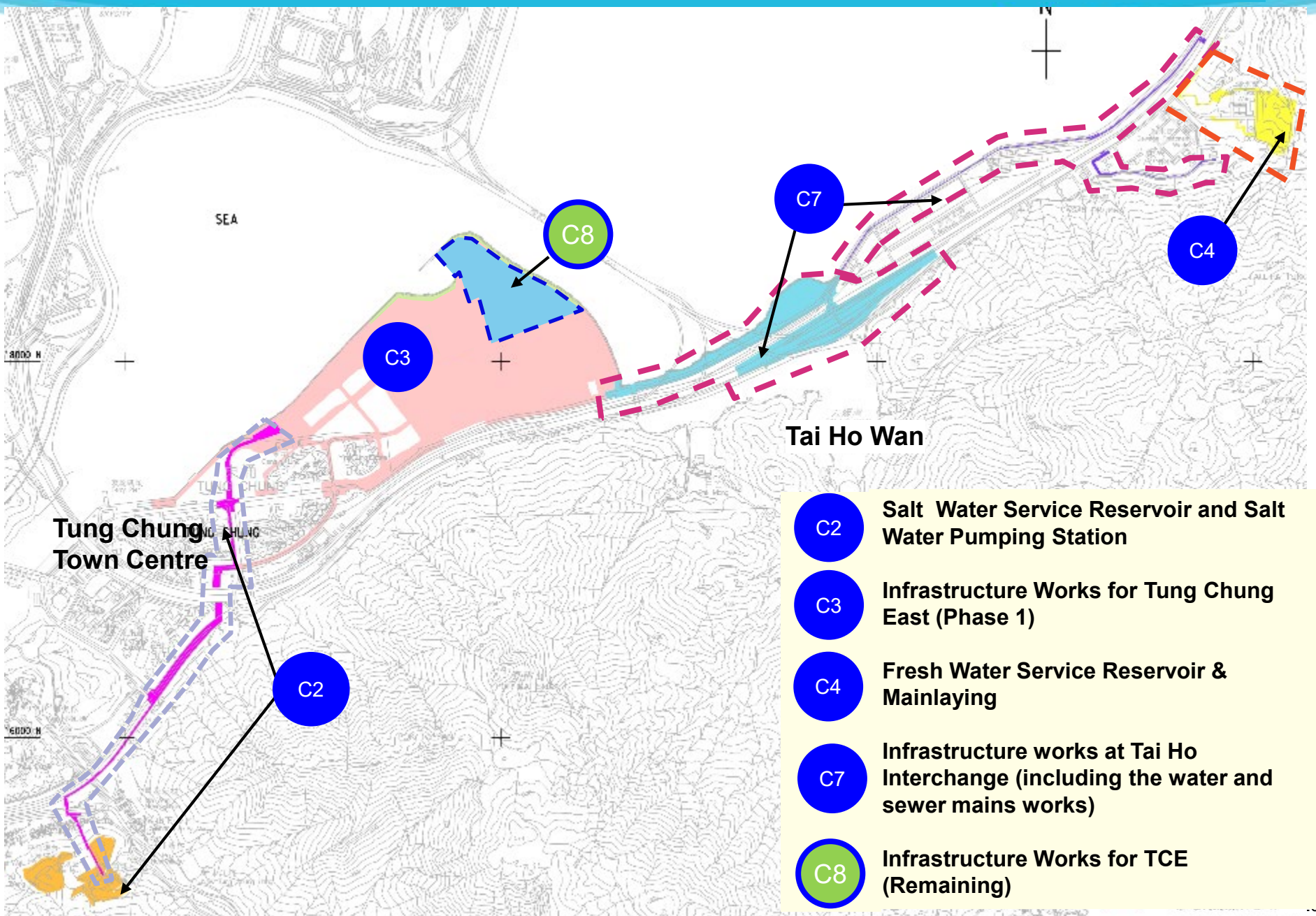


General View of ES2

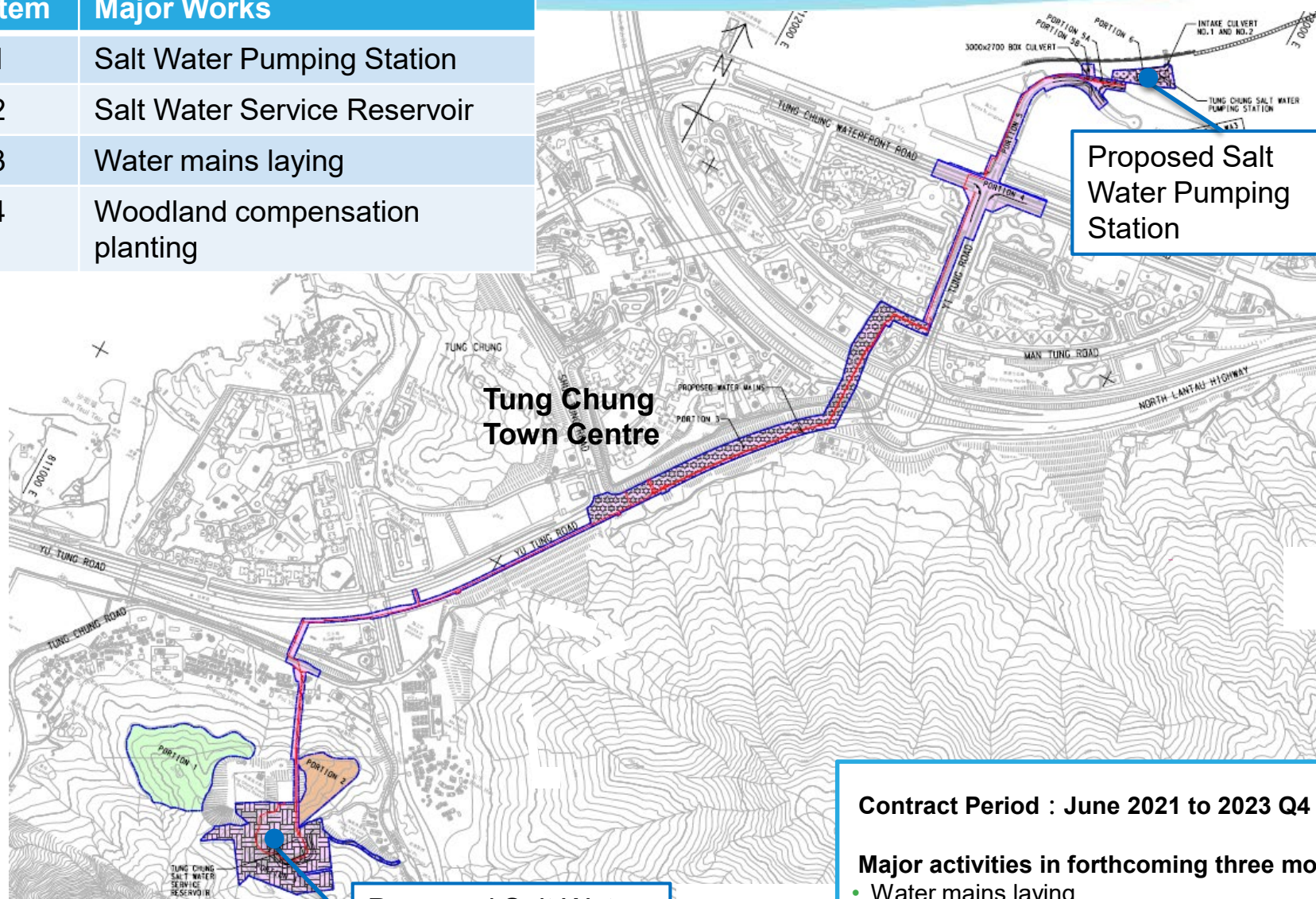


- Precasting of bio-concrete block in progress

Tung Chung East Infrastructure



Item	Major Works
1	Salt Water Pumping Station
2	Salt Water Service Reservoir
3	Water mains laying
4	Woodland compensation planting



Proposed Salt Water Pumping Station

Proposed Salt Water Service Reservoir

Contract Period : June 2021 to 2023 Q4

Major activities in forthcoming three months:-

- Water mains laying
- Construction of Salt Water Pumping Station
- Construction of Salt Water Service Reservoir

Salt Water Pumping Station (SWPS)

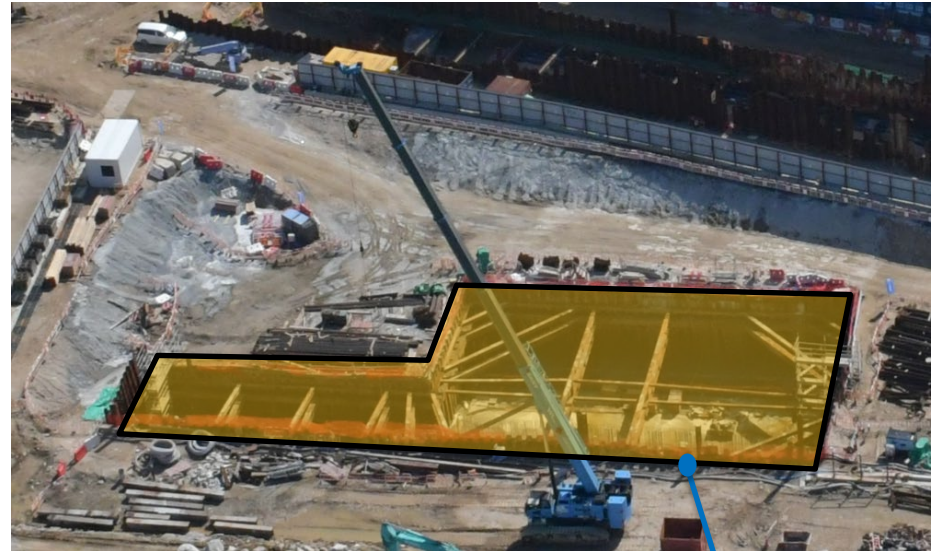
Construction Period
2021 Q4 to 2023 Q4

Related Works

- ELS works
- R.C. structures



RC Structure for Pumping Station in progress



Salt Water Pumping
Station

Salt Water Service Reservoir

Construction Period

2022 Q2 to 2023 Q4

Related Works

- Site Formation
- RC structures



Salt Water Service Reservoir

Watermain Laying

Construction Period

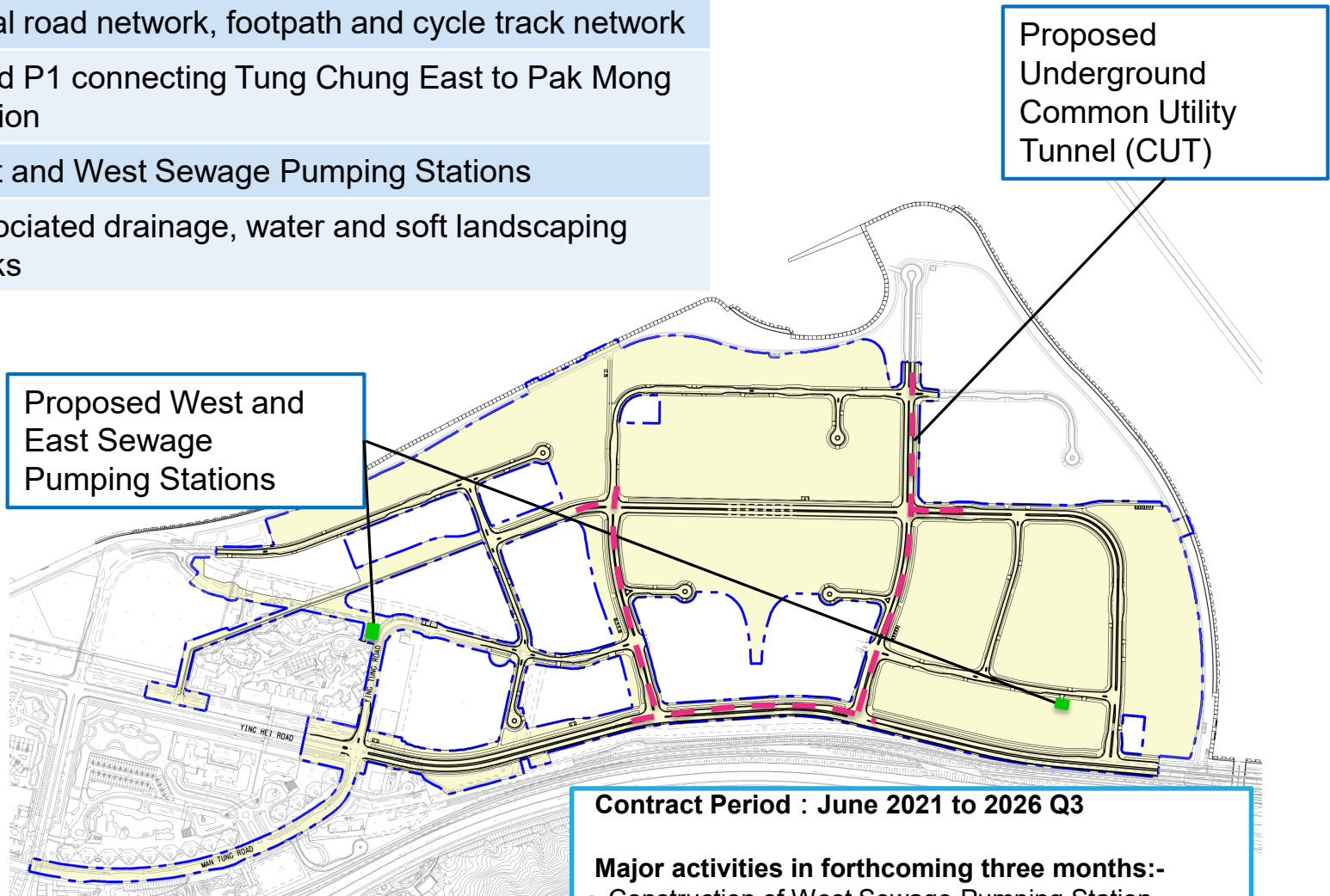
2021 Q4 to 2023 Q4

Related Works

- TTA and traffic diversion
- ELS installation



Item	Major Works
1	Local road network, footpath and cycle track network
2	Road P1 connecting Tung Chung East to Pak Mong section
3	East and West Sewage Pumping Stations
4	Associated drainage, water and soft landscaping works



Contract Period : June 2021 to 2026 Q3

Major activities in forthcoming three months:-

- Construction of West Sewage Pumping Station
- Construction of Common Utility Tunnel No. 1 and No. 3
- Pipe laying along Man Tung Road, Ying Tung Road, Road L3, Road L4 and Road 5

West Sewage Pumping Station (WSPS)

Construction Period
2021 Q3 to 2023 Q3

Related Works

- ELS works
- R.C. structures



Common Utility Tunnel (CUT)

CUT Completion Date
2026 Q3

Related Works

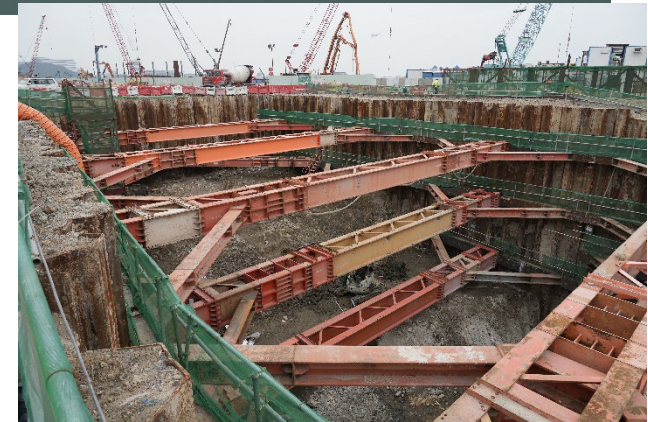
- ELS works
- Underground R.C. structures



Legend:



Common Utility Tunnel (CUT)

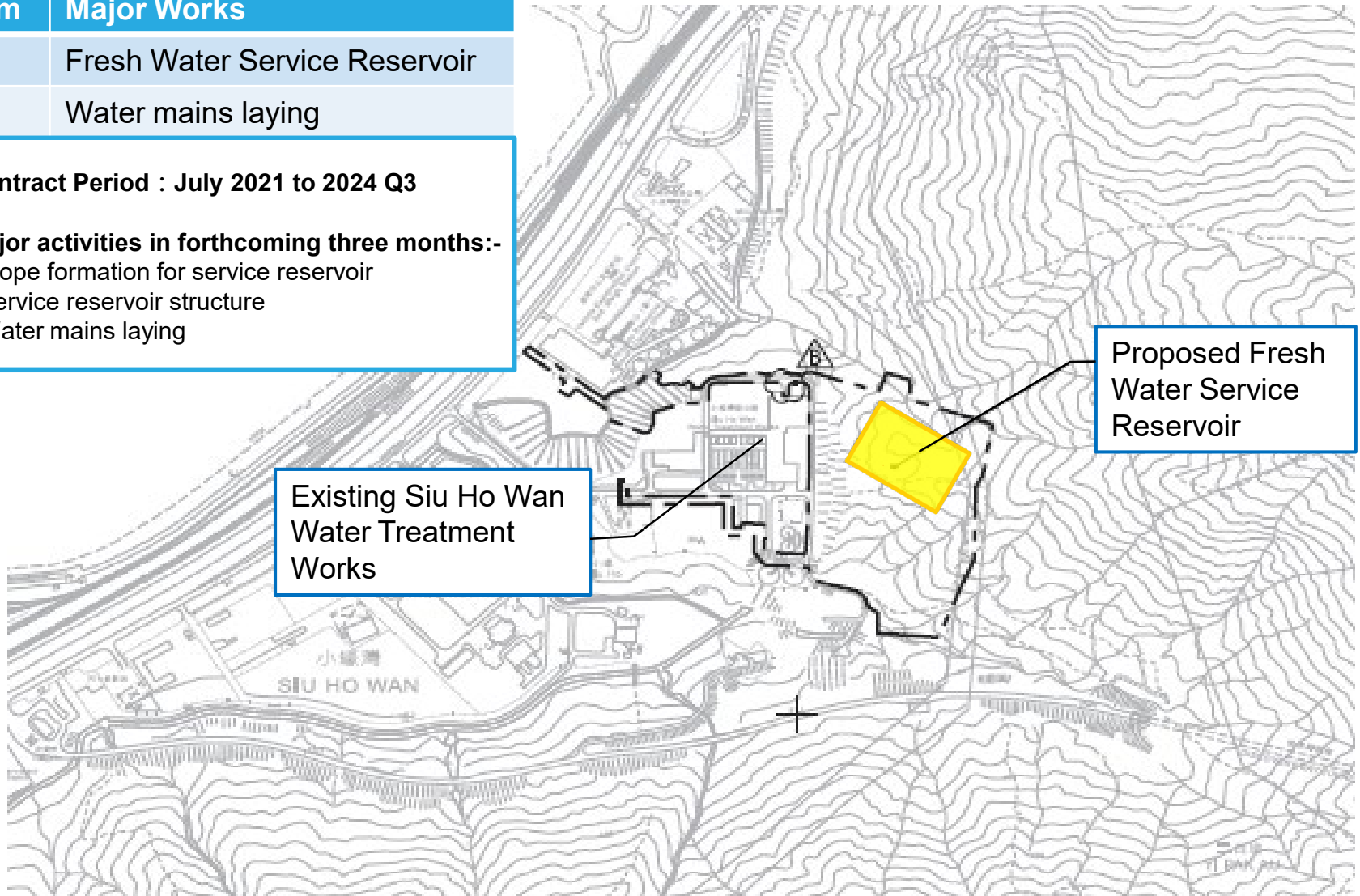


Item	Major Works
1	Fresh Water Service Reservoir
2	Water mains laying

Contract Period : July 2021 to 2024 Q3

Major activities in forthcoming three months:-

- Slope formation for service reservoir
- Service reservoir structure
- Water mains laying



Fresh Water Service Reservoir

Construction Period
2022 Q2 to 2024 Q3

Related Works

- Site formation
- Soil Nail Works
- R.C. structures



Legend



Fresh Water Service Reservoir

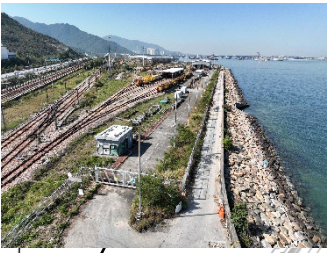


Rebar fixing of base slab of service reservoir



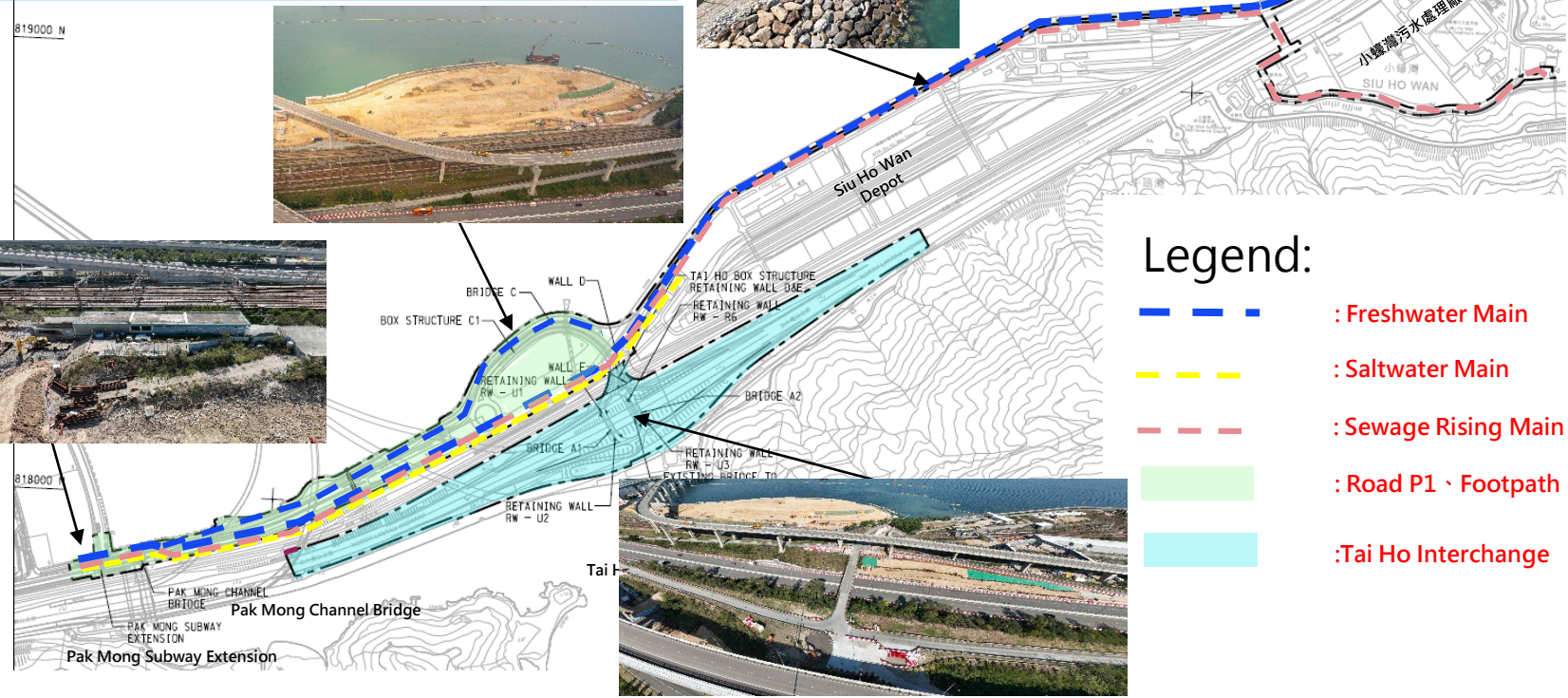
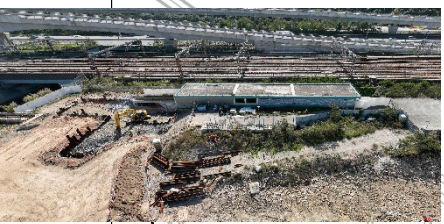
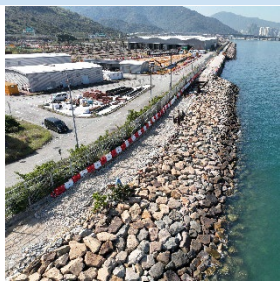
Soil Nail Works

Item	Major Works
1	Construction of Tai Ho Interchange
2	Construction of a section of dual two-lane road between Tung Chung East and Tai Ho Interchange
3	Laying of fresh watermains, salt watermains and sewage rising mains



Contract Period : Oct 2021 to 2025 Q4
Major activities in forthcoming three months:-

- Pak Mong Subway Extension
- Pak Mong Channel Bridge
- Main-Laying works
- Associated works for Tai Ho Interchange



Legend:

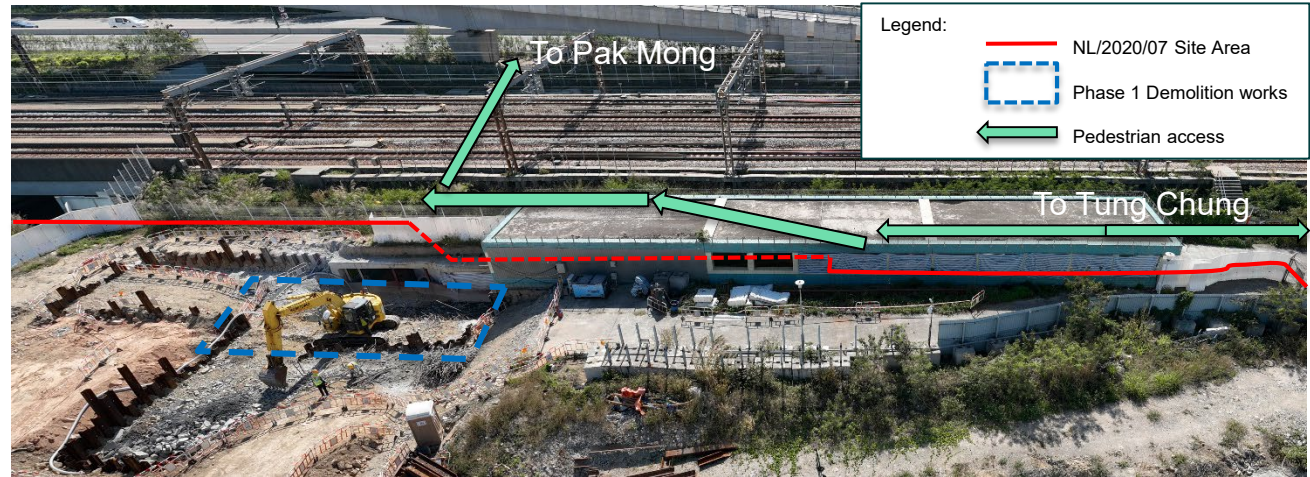
- - - : Freshwater Main
- - - : Saltwater Main
- - - : Sewage Rising Main
- : Road P1 · Footpath · Cycle Track
- : Tai Ho Interchange

Pak Mong Subway Extension

Construction Period
2022 Q2 to 2024 Q3

Related Works

- Demolition works
- R.C. structure & Steel frame roof

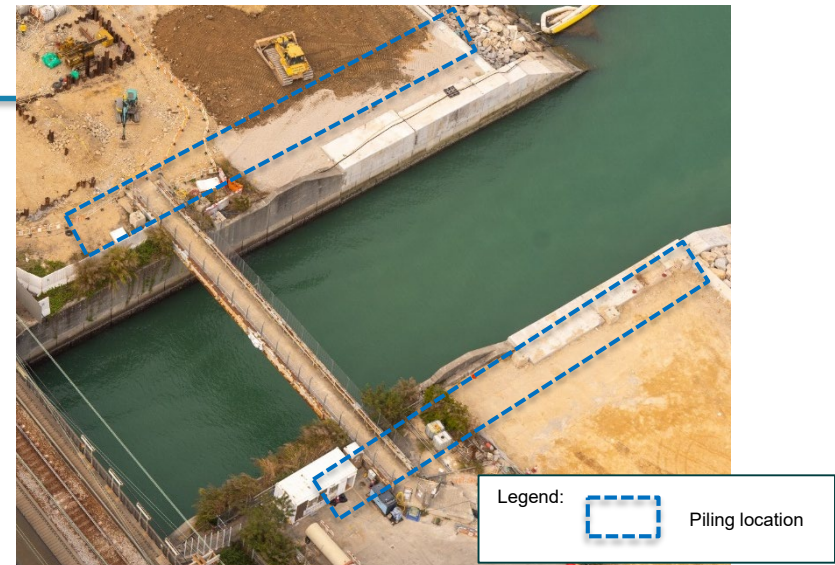


Pak Mong Channel Bridge

Construction Period
2023 Q1 to 2024 Q4

Related Works

- Piling works
- Bridgeworks



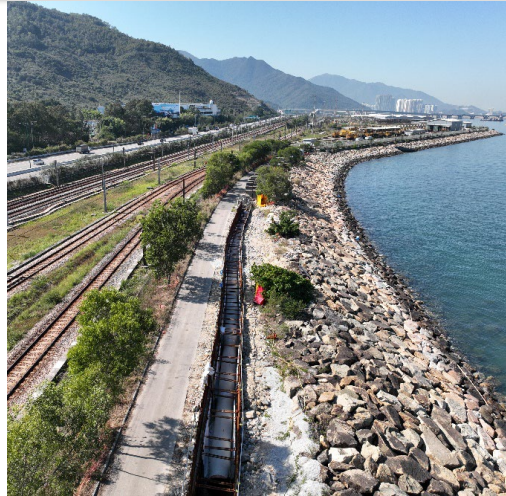
Main-laying works (Rising, Fresh and Salt Water Mains)

Construction Period

2021 Q3 to 2024 Q3

Related Works

- Rising Main-laying
- Fresh & Salt Water Main-laying



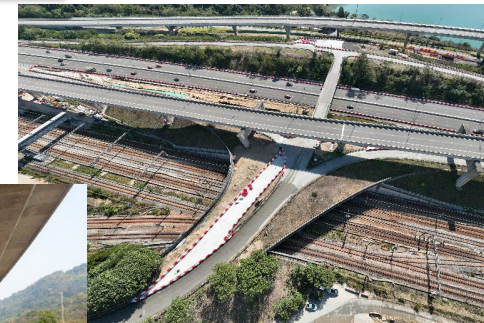
Associated works for Tai Ho Interchange

Construction Period

2022 Q3 to 2025 Q2

Related Works

- TTA and traffic diversion
- ELS installation
- R.C. structure



2. Tung Chung East

c) Environmental Monitoring and Audit

Dedicated Website under EP-519/2016



Website: <http://env.tcnte.hk/index-TCE.html>



Tung Chung New Town Extension (East)

This dedicated website is set up in accordance with the requirements in the Environmental Permit (EP) (EP NO. EP-519/2016) to enable user-friendly public access of information of the Tung Chung New Town Extension (East) and the associated environmental monitoring data.

Protection and Mitigation Measures on Construction Activities



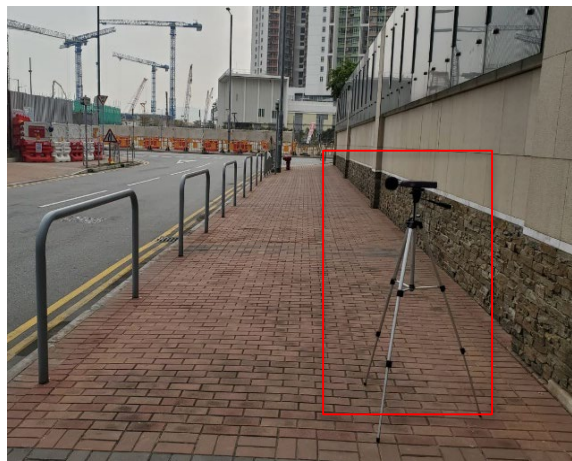
Water spraying by water truck for dust control



Wheel washing bay with high pressure jet



Sprinkler system



Noise monitoring



Noise barrier



Noise mitigation measures on sheet piling works

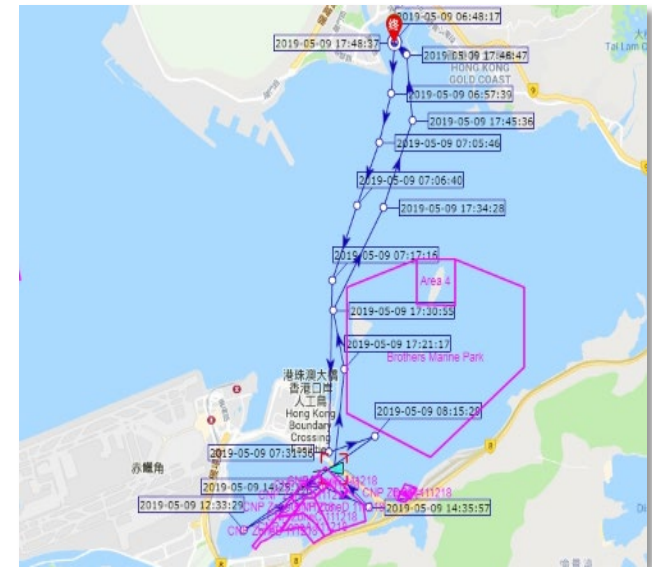
Protection and Mitigation Measures on Construction Activities



Maintenance of
perimeter silt curtain

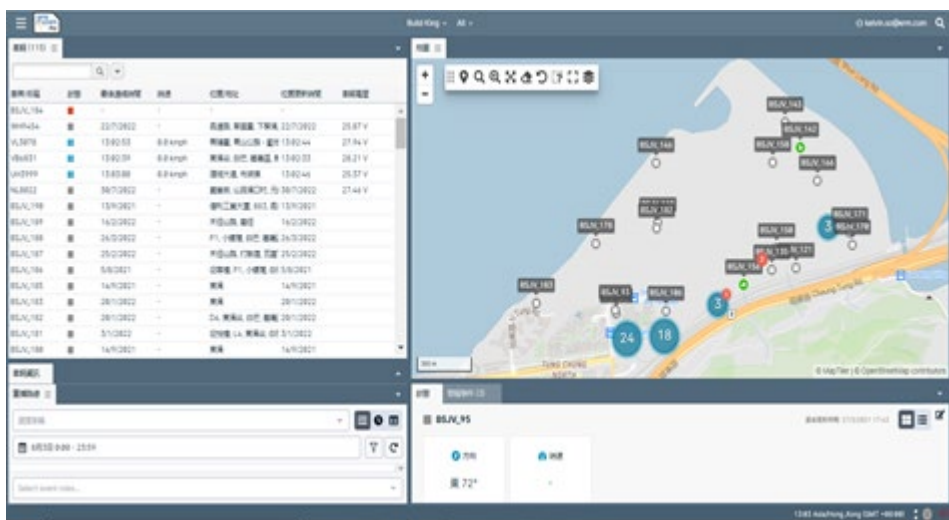


Water quality monitoring

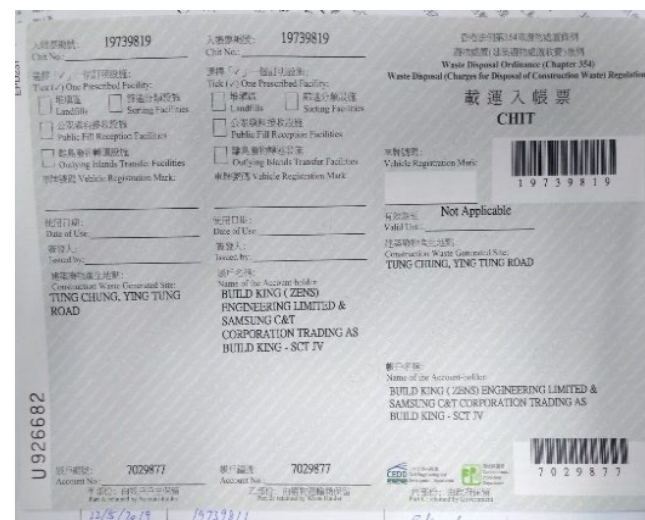


Tracking and Speed control of
works vessels

Protection and Mitigation Measures on Construction Activities



Real time tracking and monitoring system for dump trucks



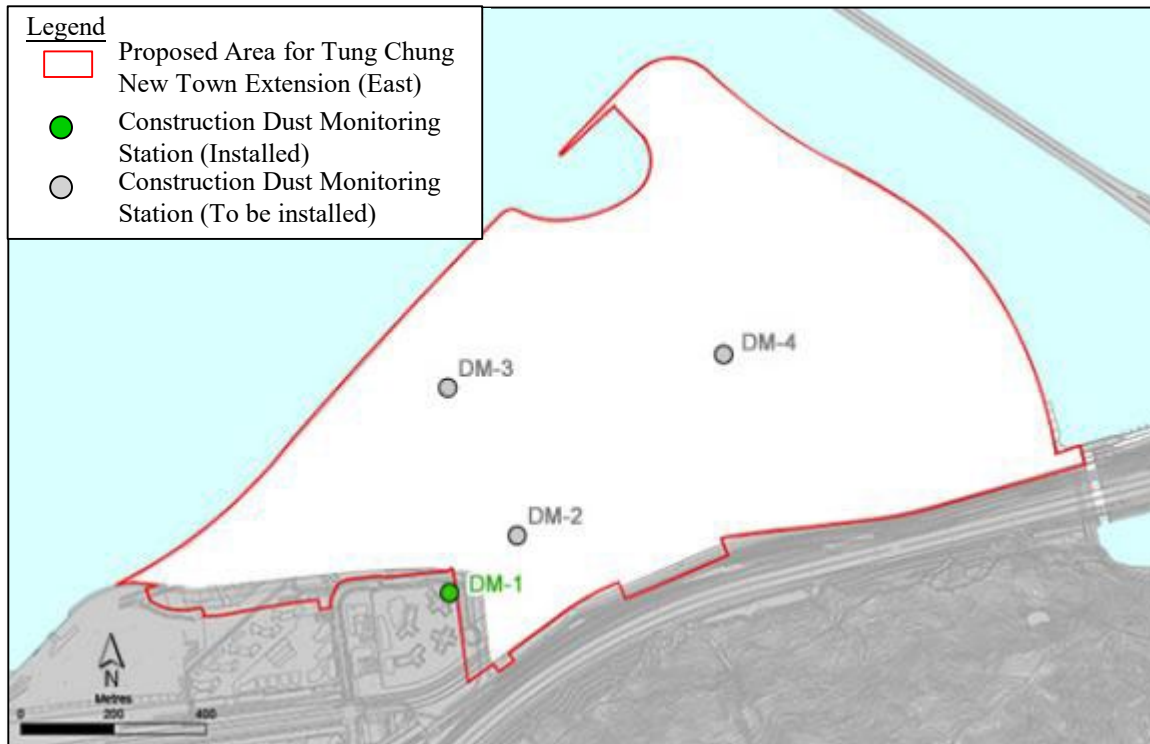
Trip ticket for waste control

EM&A Monitoring – Air Quality



Air Quality Monitoring

Frequency Three times every six days
Monitoring Parameter 1-hour Total Suspended Particulate



Monitoring Results between Aug 2022 and Jan 2023

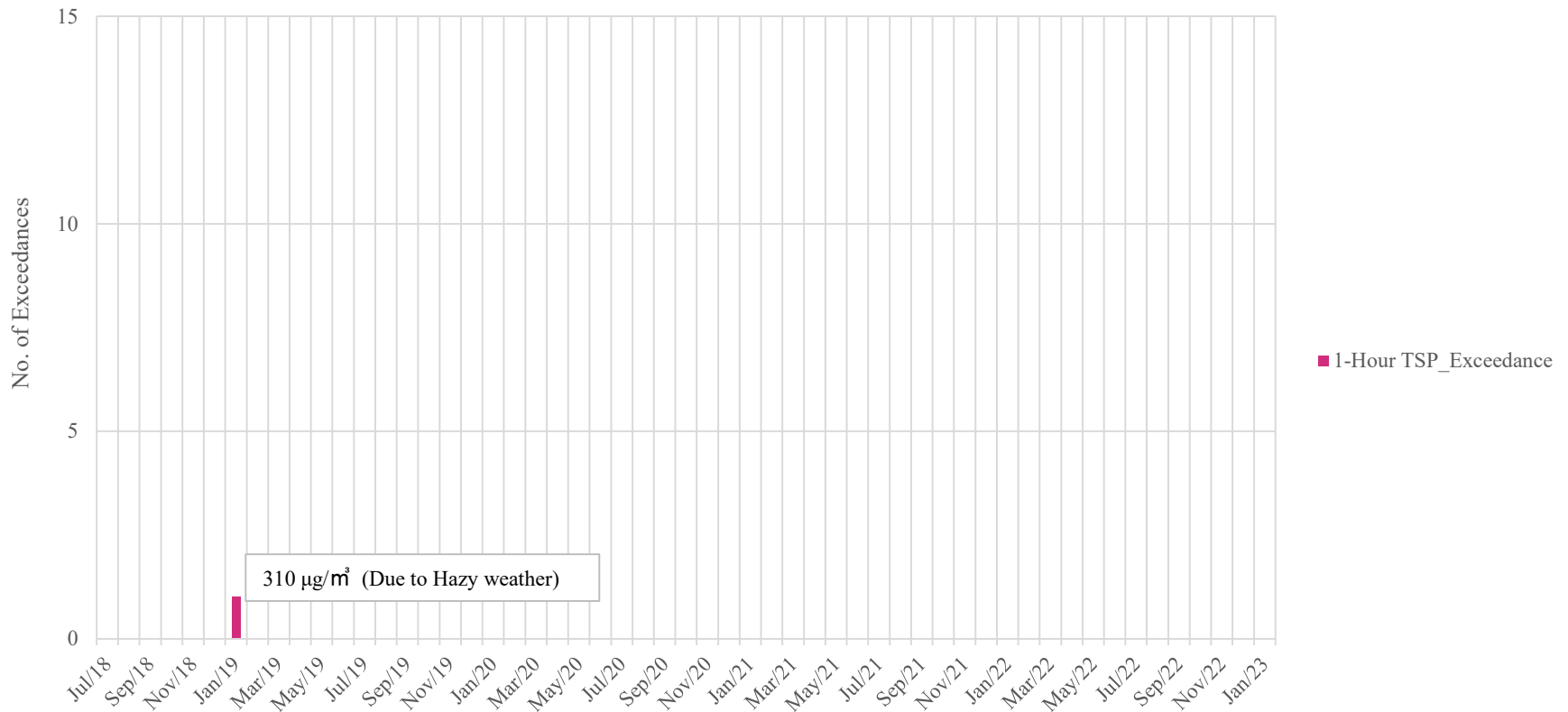
No project-related exceedance was recorded.



Dust monitoring near Ying Tung Estate (DM-1)

EM&A Monitoring – Air Quality

Tung Chung New Town Extension - Reclamation and Advance Works
1-Hour TSP Exceedance Record of Air Quality Monitoring

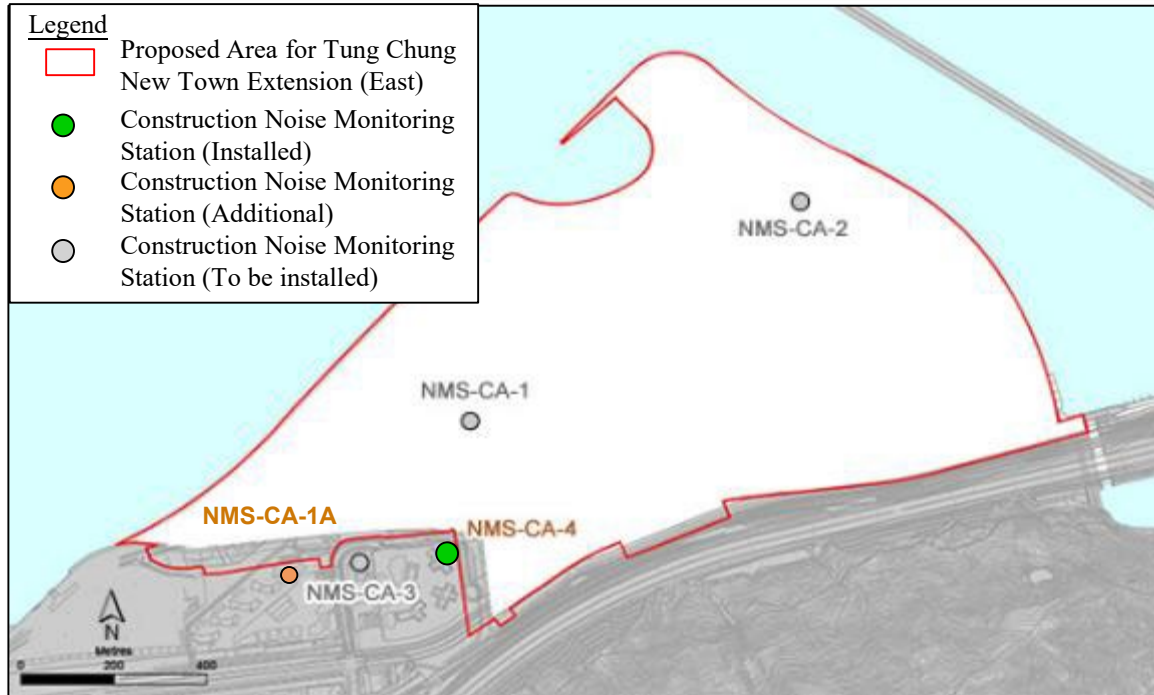


EM&A Monitoring – Noise



Noise Monitoring

Frequency Once per week
Monitoring Parameter L_{eq} (30mins)



Monitoring Results between Aug 2022 and Jan 2023

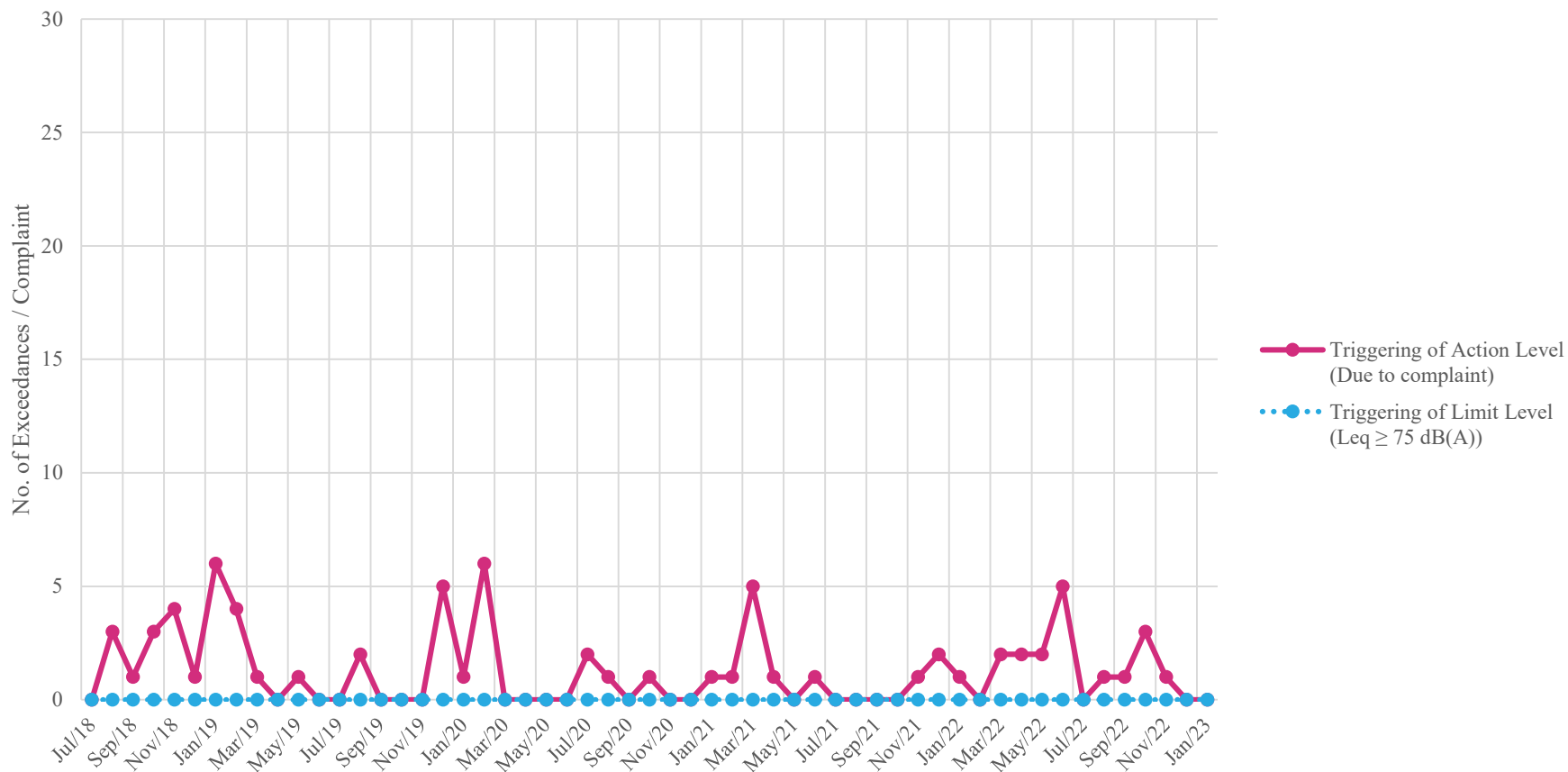
Results of noise monitoring indicated that noise levels were within acceptable level (75dBA)



Noise monitoring near Ying Tung Estate (NMS-CA-4)

EM&A Monitoring – Noise

Tung Chung New Town Extension - Reclamation and Advance Works
Exceedance / Complaint Record of Noise Monitoring

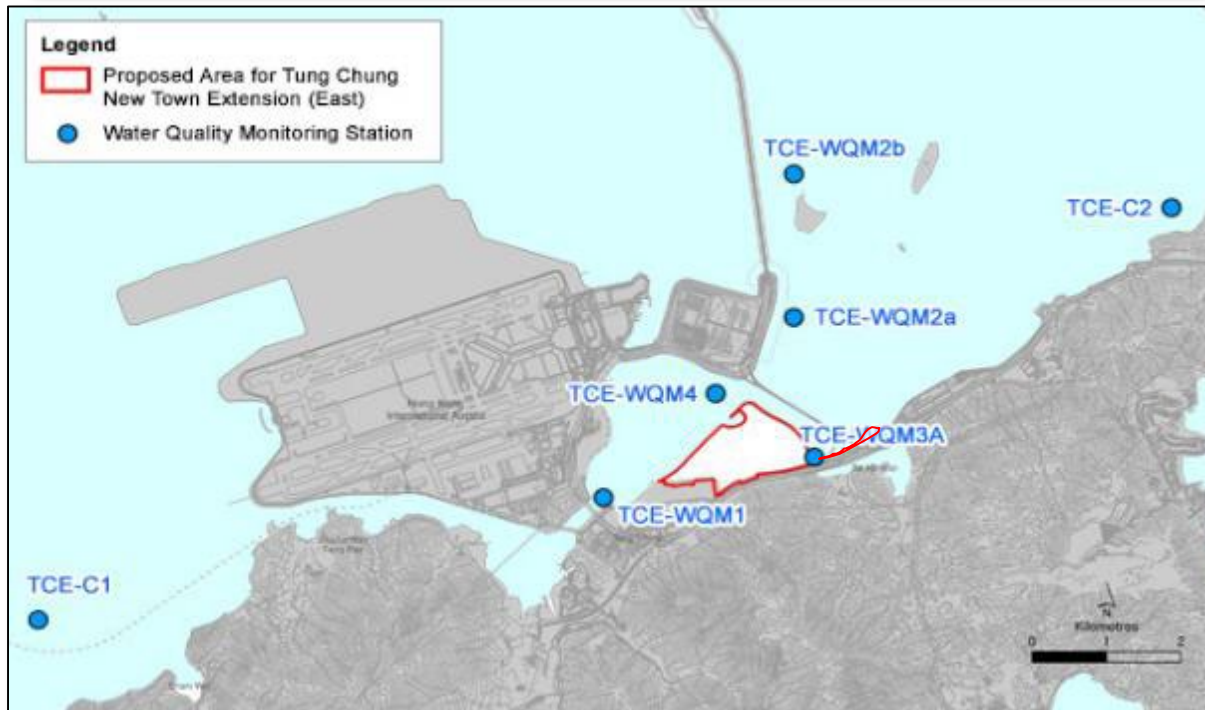


EM&A Monitoring – Water Quality



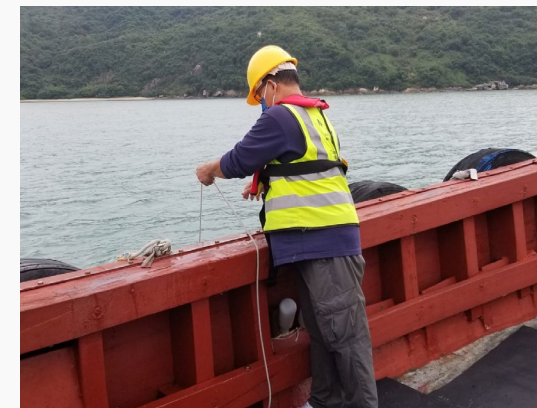
Water Quality Monitoring

Frequency 3 times per week, at mid-flood & mid-ebb tides
Monitoring Parameter Dissolved Oxygen, pH Value, Salinity, Turbidity, Suspended Solids, Temperature



Monitoring Results between Aug 2022 and Jan 2023

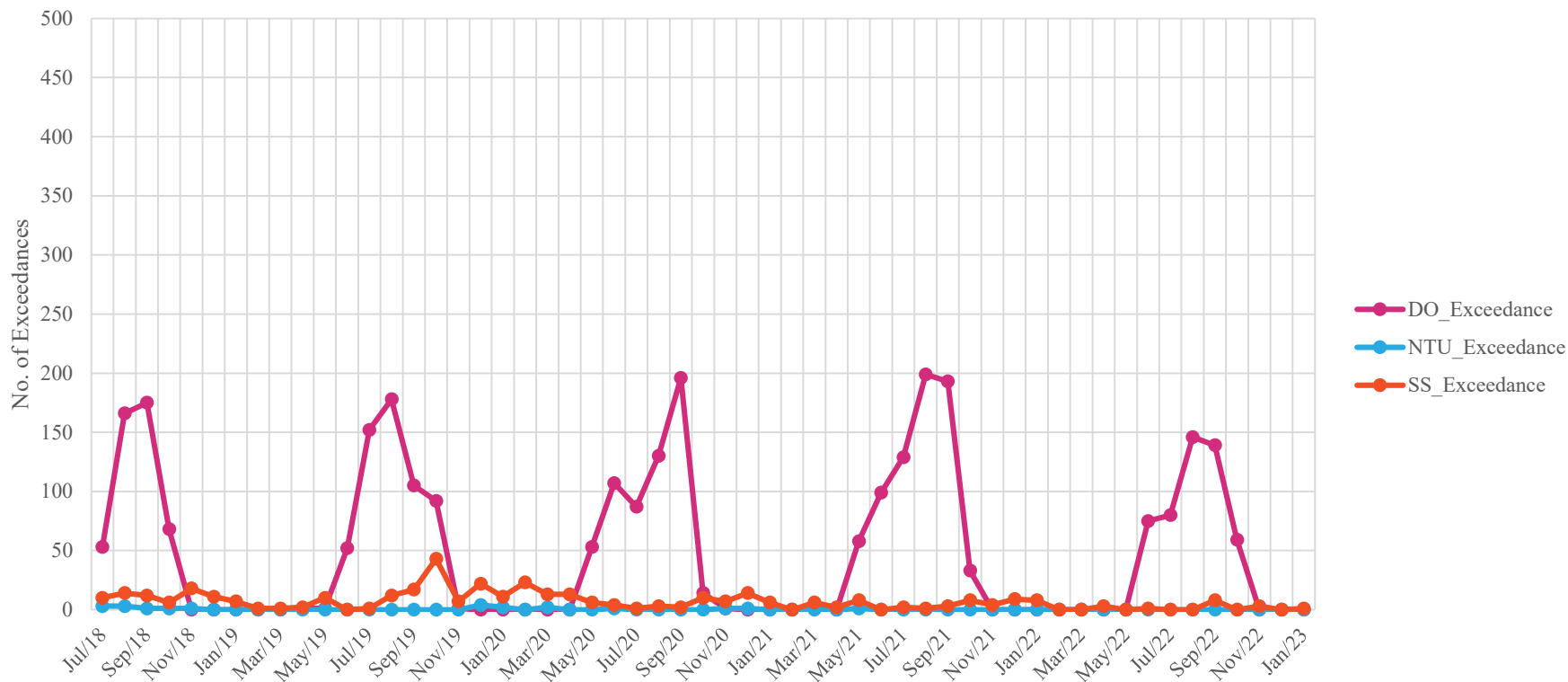
No project-related exceedance was recorded.



Water monitoring by ET (TCE-WQM2b)

EM&A Monitoring – Water Quality

Tung Chung New Town Extension - Reclamation and Advance Works Exceedance Record of Water Quality Monitoring



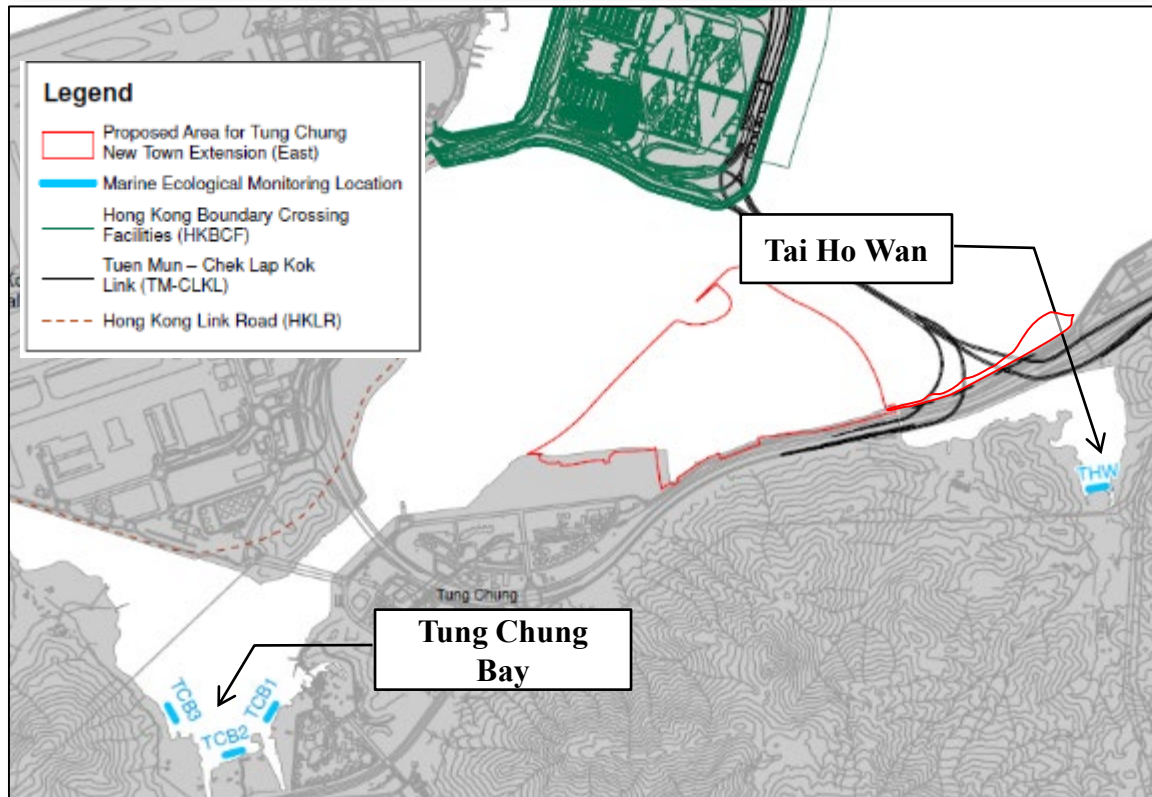
The majority exceedances recorded were DO exceedances. Low levels of DO were recorded during summer period. This trend suggested the changes should be due to seasonal fluctuation.

EM&A Monitoring – Ecology



Ecological Monitoring

Frequency	Quarterly
Monitoring Parameter	Horseshoe Crabs, Seagrass, Intertidal Soft Shore Communities



Monitoring Results between Sep 2022 and Dec 2022

Ecological monitoring was conducted in Jun and Dec 2022.

Horseshoe crabs were found in both Tung Chung Bay and Tai Ho Wan.

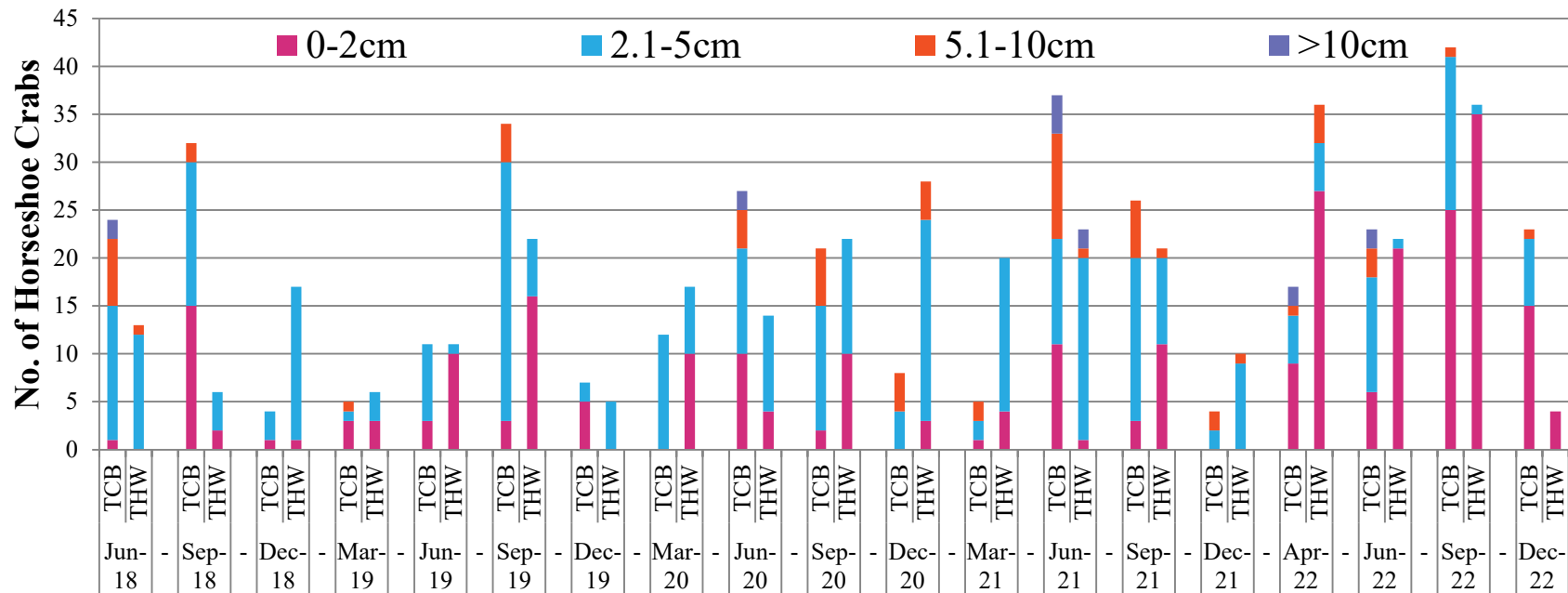


Juvenile *Tachypleus tridentatus* found at Tai Ho Wan

Horseshoe Crab

- Numbers of horseshoe crabs varied over time and were generally higher in summer period (May – Sep)
- Small juvenile horseshoe crabs (prosomal width <2 cm) were recorded during all impact monitoring since Sep 2018

Size (Prosomal Width) of Horseshoe Crabs



Baseline
(May-Jun 18)

Complaint received

Date	Water	Air	Noise	Others (Light, Waste, Ecology)
Jul 18 – Dec 18	2	1	12	4
Jan 19 – Jun 19	4	4	12	2
Jul 19 – Dec 19	1	4	7	0
Jan 20 – Jun 20	1	6	7	0
Jul 20 – Dec 20	4	24	4	0
Jan 21 – Jun 21	3	10	9	0
Jul 21 – Dec 21	1	1	3	0
Jan 22 – Jun 22	0	8	11	0
Jul 22 – Jan 23	1	8	5	0
Categories for recent complaints	<ul style="list-style-type: none"> Sea pollution (Discharge) 	<ul style="list-style-type: none"> Dust Dark smoke Ying Hei Road 	<ul style="list-style-type: none"> Noise from Sheet pile installation Noise early at the morning 	

Thank You



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Civil Engineering and
Development Department



Overview and Progress

Environmental Monitoring and Audit

Tung Chung West

8th PLG Meeting
Date: 15 February 2023

8th Professional Liaison Group Meeting – Agenda

Tung Chung West

- a) Matters Arising from Last Meeting**
- b) Overview and Progress**
- c) Environmental Monitoring and Audit**



土木工程拓展署
Civil Engineering and
Development Department



ARUP

Tung Chung West

a) Matters Arising from Last Meeting

Follow Up on Discussion in Last PLG Meeting

1. Monitoring of Bird Species for Ecological Monitoring (para. 3.4.2 of last meeting)

Based on the ecological survey of the TCNTE EIA:

- No nesting sites for birds (e.g. owls) were recorded in the current Project Area.
- No mitigation measures for the potential disturbance impacts on birds were proposed.



土木工程拓展署
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ARUP

Tung Chung West

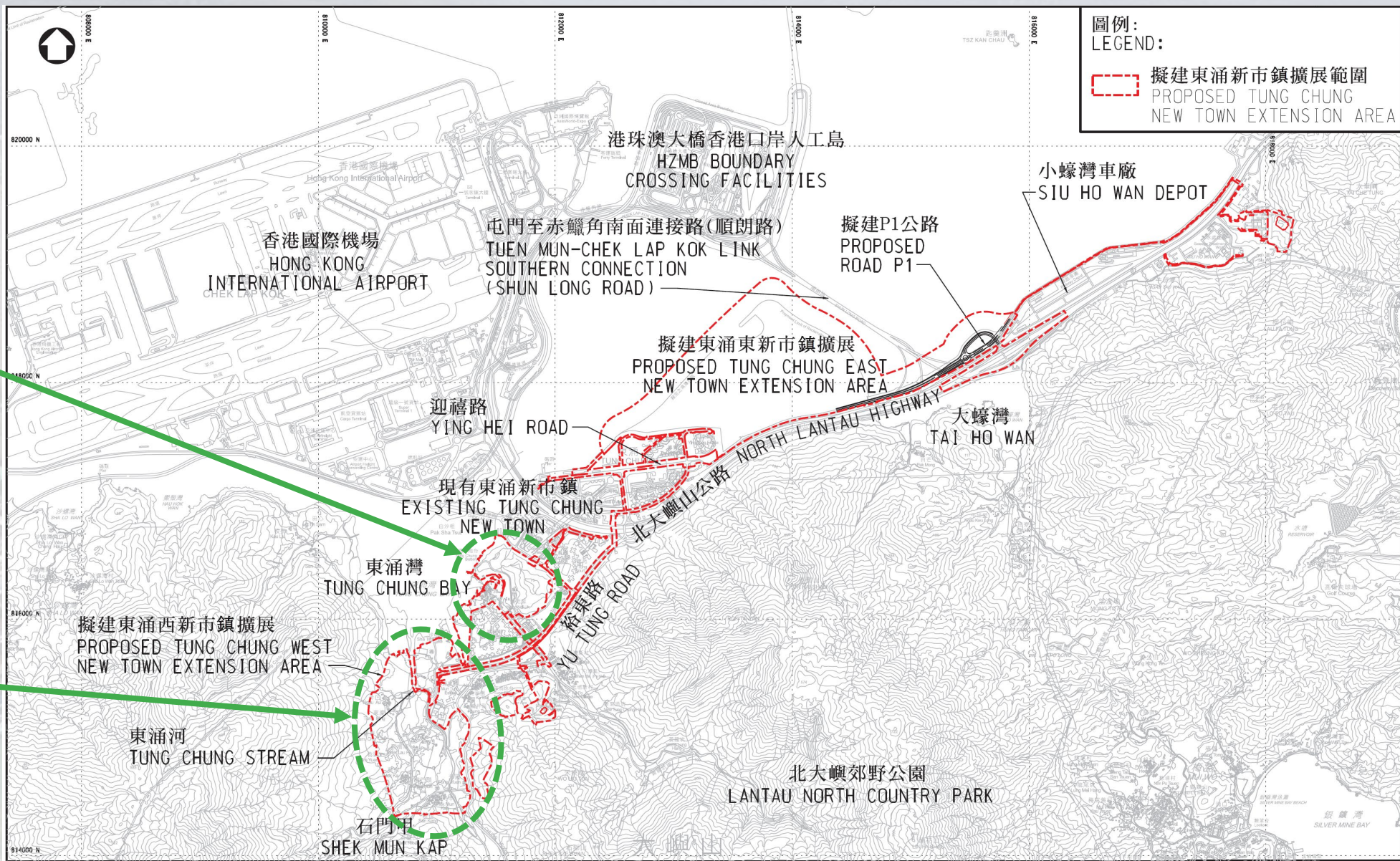
b) Overview and Progress



Location of Tung Chung West Works Contracts

Contract No. NL/2020/05 – Site Formation and Infrastructure Works at Ma Wan Chung

Contract No. NL/2020/06 – Site Formation and Infrastructure Works at Tung Chung Valley, Phase 1



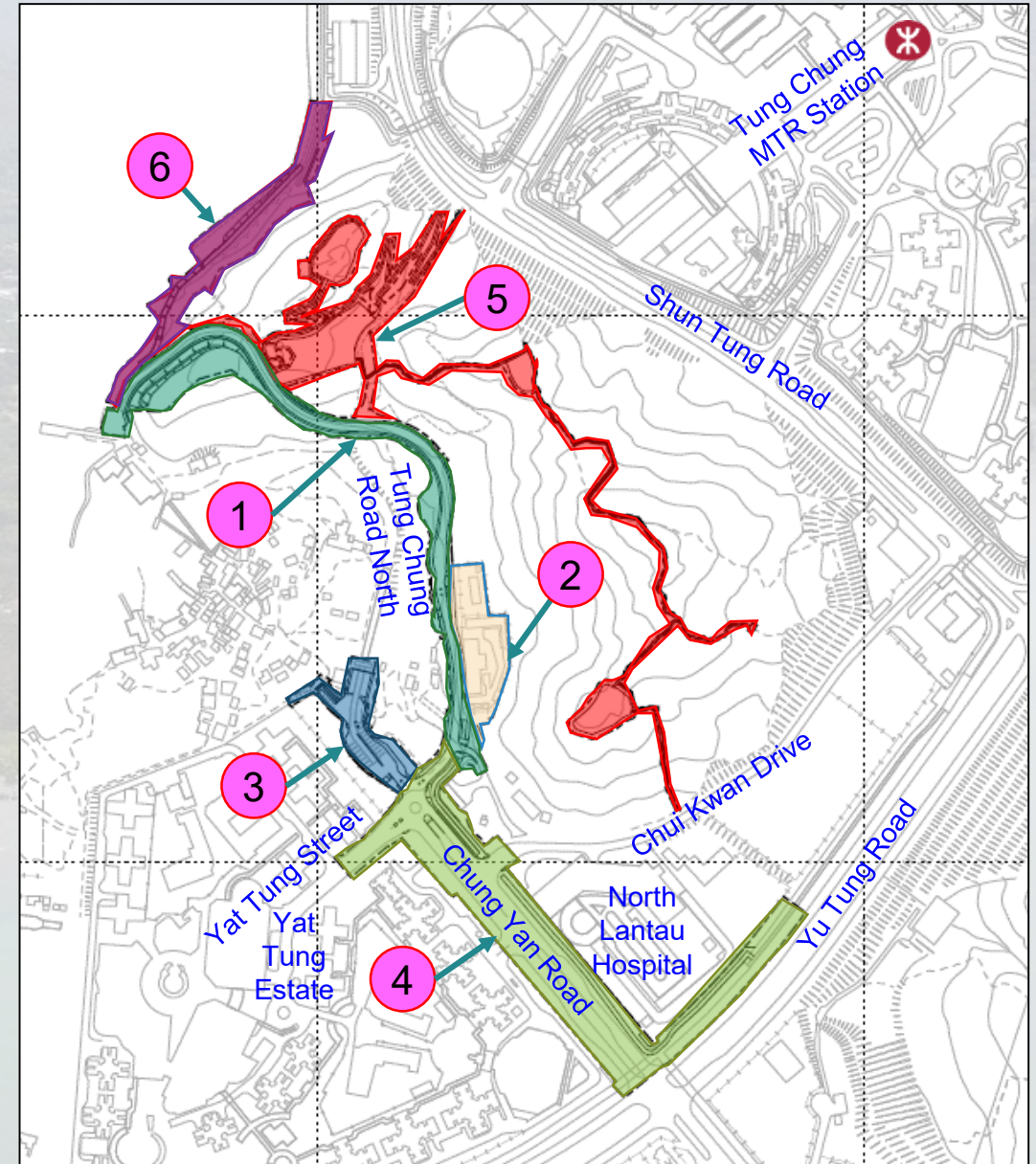
Contract No. NL/2020/05 – Site Formation & Infrastructure Works at Ma Wan Chung

Item	Major Works
1	Widening of Tung Chung Road North
2	Site Formation of Area 23
3	Construction of Carpark at Ma Wan Chung
4	Road Improvement Works and Drainage Works at Chung Yan Road
5	Construction of Open Space at Area 29A
6	Construction of the Coastal Pedestrian Access

Contract Period : May 2021 to January 2025

Major activities in coming three months :-

- Site formation works at Area 23 & Area 29A
- Construction of underground utilities and road works at Chung Yan Road & Tung Chung Road North
- Slope works at Tung Chung Road North
- Ground investigation works at Coastal Pedestrian Access



Contract No. NL/2020/05 – Site Progress

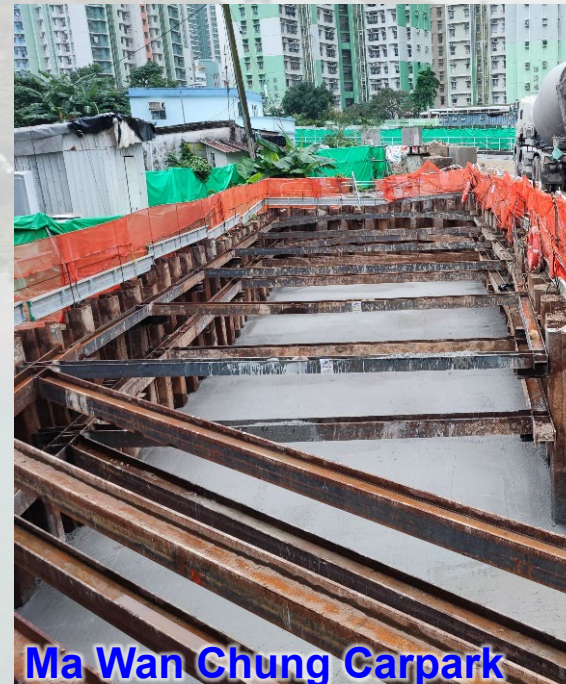
Progress of Area 23:

1. Demolition of the Tung Chung Community Services Complex completed.
2. Soldier pile wall construction for site formation works in progress.



Progress of Ma Wan Chung Carpark:

1. Retaining wall construction in progress.



Contract No. NL/2020/05 – Site Progress

Progress of Tung Chung Road North:

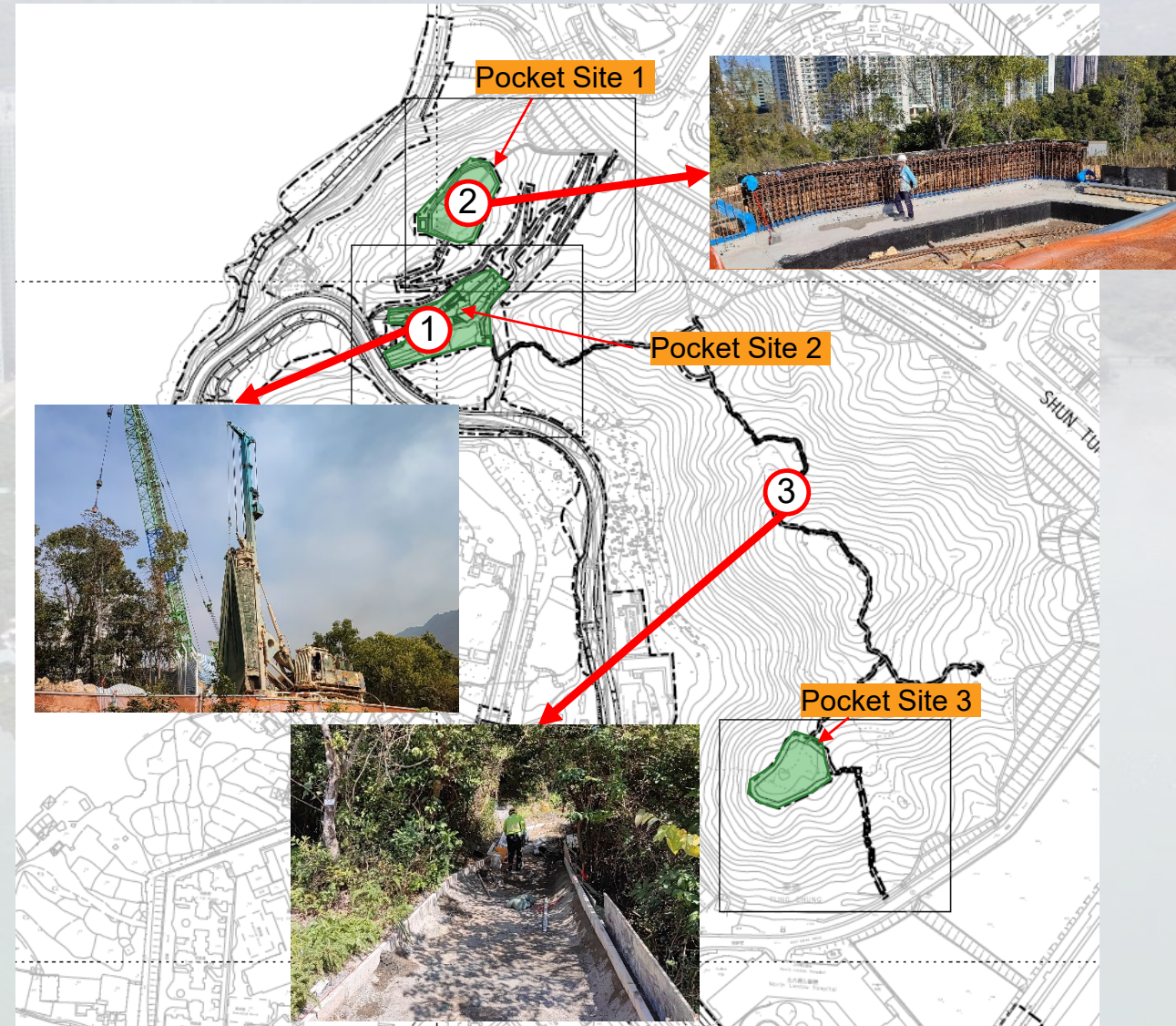
1. Slope works in progress.
2. Construction of underground utilities and road works in progress.



Contract No. NL/2020/05 – Site Progress

Progress of Area 29A:

1. Soldier pile wall construction for site formation works at Pocket Sites 1 & 2 completed.
2. Retaining wall construction and site formation works at Pocket Sites 1 & 2 in progress.
3. Improvement works of hiking trail in progress.



Contract No. NL/2020/05 – Site Progress

Progress of Coastal Pedestrian Access (CPA):

1. Formation of temporary site access in progress.
2. Ground investigation works in progress.



Contract No. NL/2020/05 – Site Progress

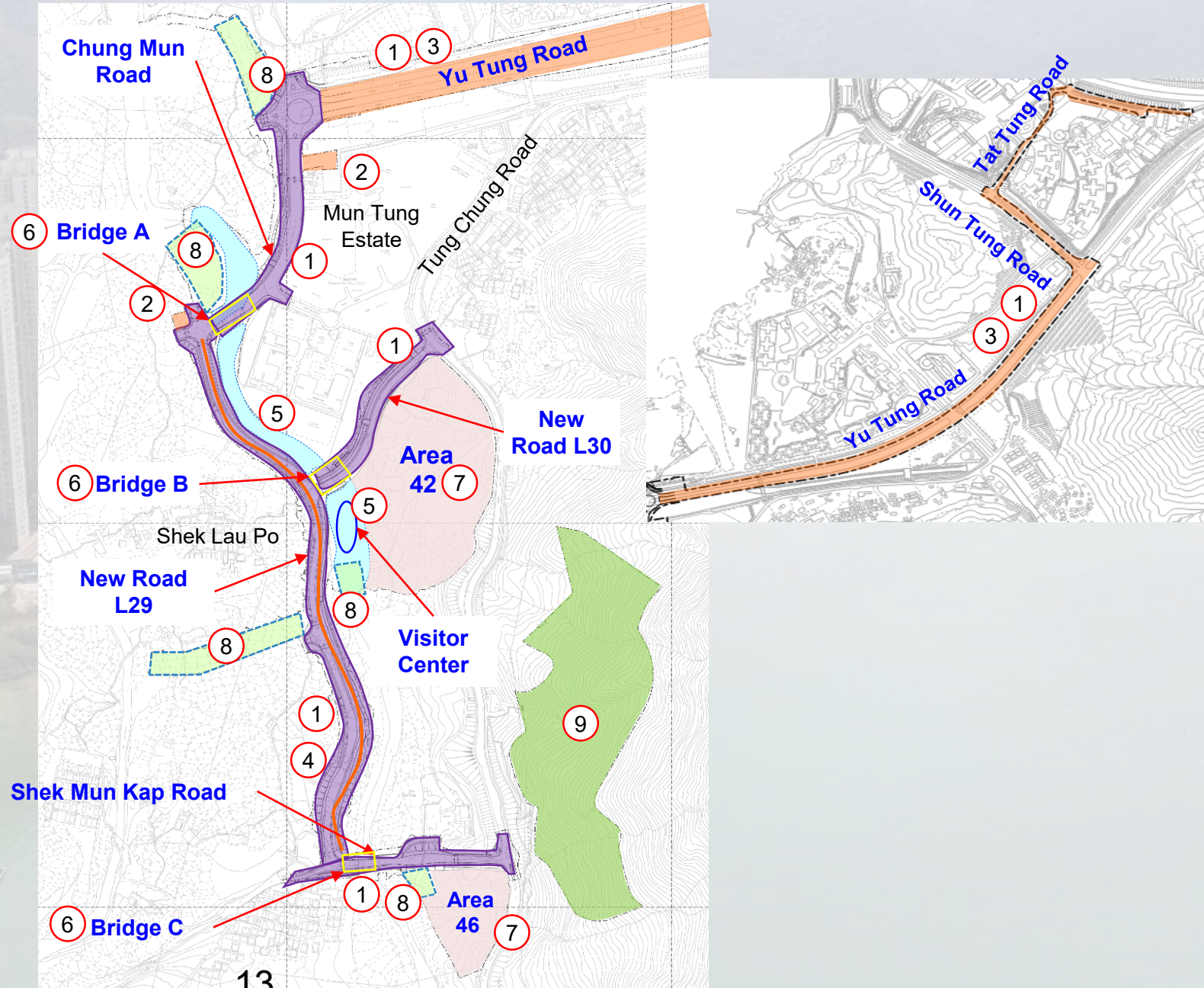
Progress of Chung Yan Road:

1. Construction of the covered walkway in progress.
2. Construction of underground utilities and road works in progress.



Contract No. NL/2020/06 – Site Formation and Infrastructure Works at Tung Chung Valley, Phase 1

Item	Major Works
1	Road Works for Chung Mun Road, Yu Tung Road, Road L29, Road L30 & Shek Mun Kap Road
2 & 3	Sewerage Pumping Station & Associated Pressurized Pipes
4	Common Utility Tunnel
5	River Park & Visitor Center
6	Bridges across Tung Chung River
7	Site Formation at Area 42 & Area 46
8	Sustainable Urban Drainage System
9	Woodland Compensatory Planting



Contract Period : May 2021 to January 2025

Major activities in coming three months :-

- Site formation works at Area 42 & Area 46
- Temporary diversion works at Tung Chung Stream
- Construction of underground utilities and road works at Chung Mun Road, Yu Tung Road, Road L29, Road L30 & Shek Mun Kap Road
- Construction of sewerage pumping station

Contract No. NL/2020/06 – Site Progress

Progress of Area 42 and Area 46:

1. Site formation works in progress.



Progress of Road L30:

1. Construction of underground utilities and road works in progress.



Contract No. NL/2020/06 – Site Progress

Progress of Road L29:

1. Works for temporary diversion of the Tung Chung Stream in progress.
2. Revitalisation works at Tung Chung Stream will be commenced soon.



Contract No. NL/2020/06 – Site Progress

Progress of SPS-A:

1. Piling works completed.
2. Construction of structures of pumping station to be commenced.



Progress of Yu Tung Road:

1. Construction of underground utilities and road works in progress.





土木工程拓展署
Civil Engineering and
Development Department



ARUP

Tung Chung West

c) Environmental Monitoring and Audit

Management Organisation



Environmental Mitigation Measures for Construction Activities



Water Spraying by Water Truck for Dust Control



Tree Protection Zone (TPZ) for Existing Trees



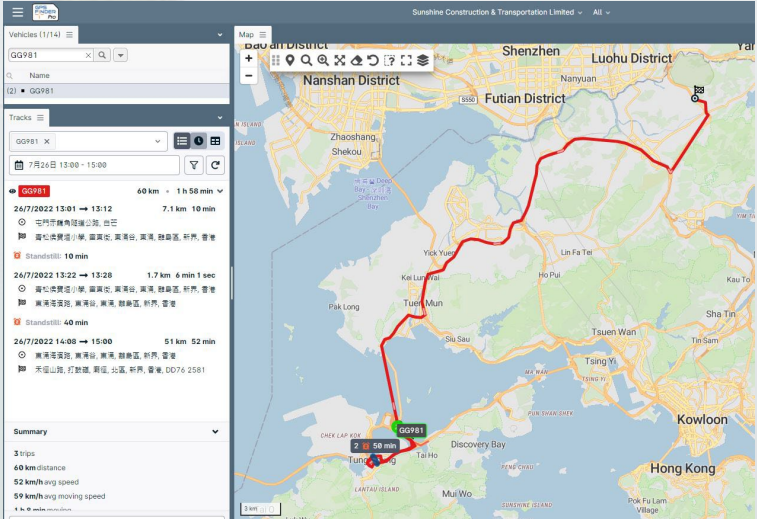
Wastewater Treatment Facility



Wheel Washing Facility



Deployment of Noise Barrier



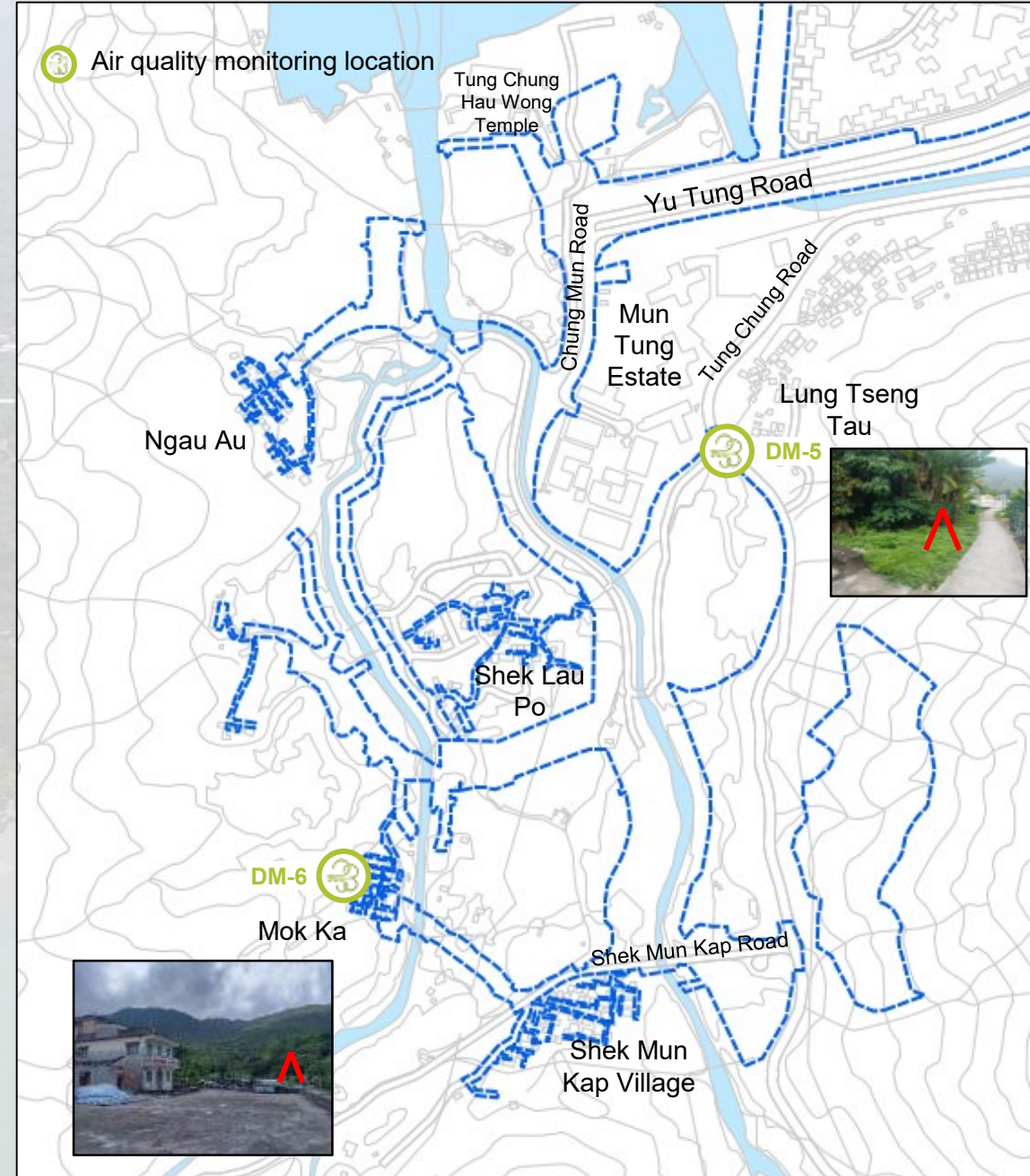
Real Time Tracking and Monitoring System for Dump Trucks

EM&A Monitoring – Air Quality

ID	Description	Monitoring Parameter	Monitoring Frequency
DM-5	Lung Tseng Tau	1-hr TSP	Three times every six days
DM-6	Mok Ka		

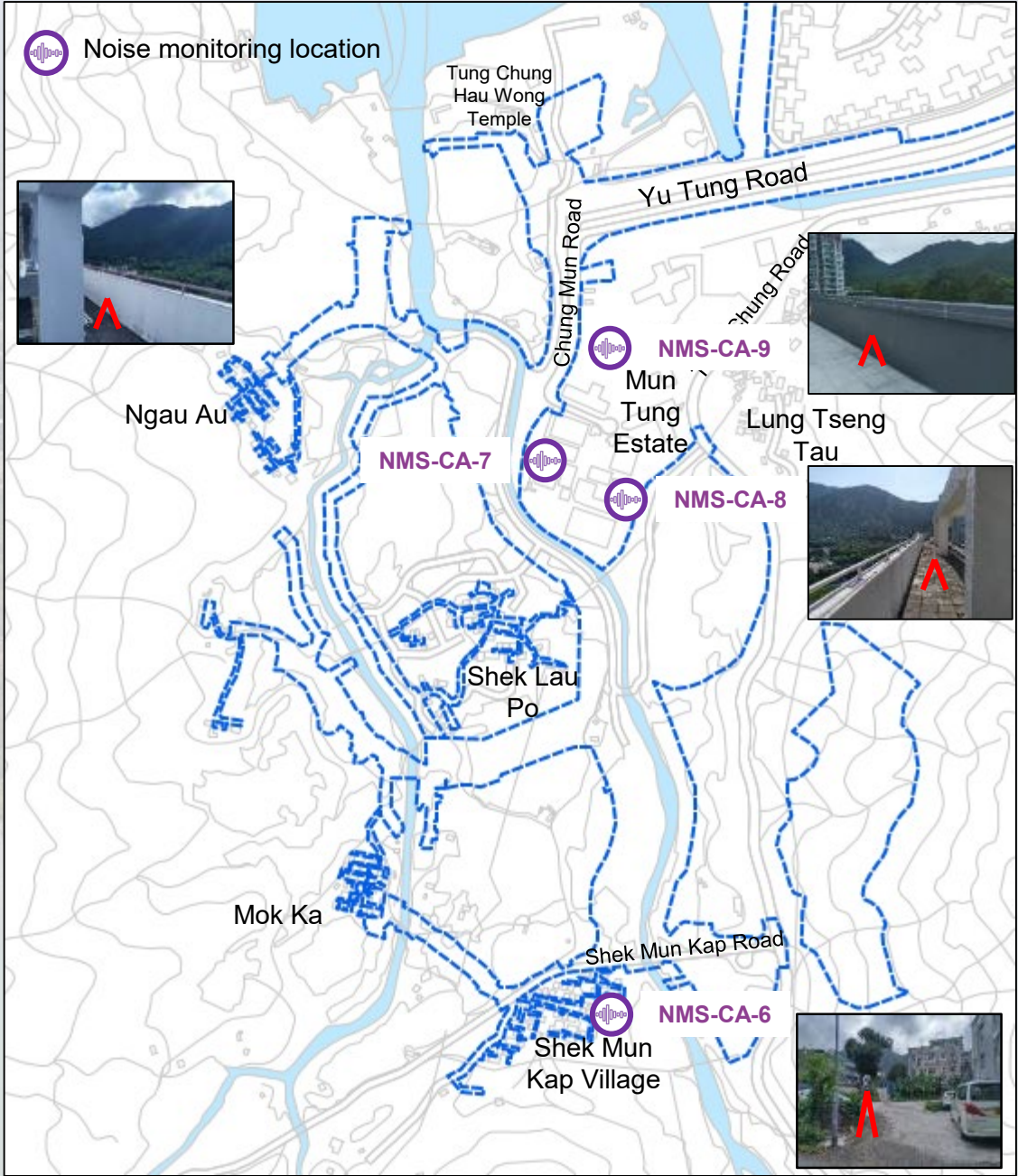
Monitoring Results from Aug 2022 to Jan 2023

No exceedances were recorded



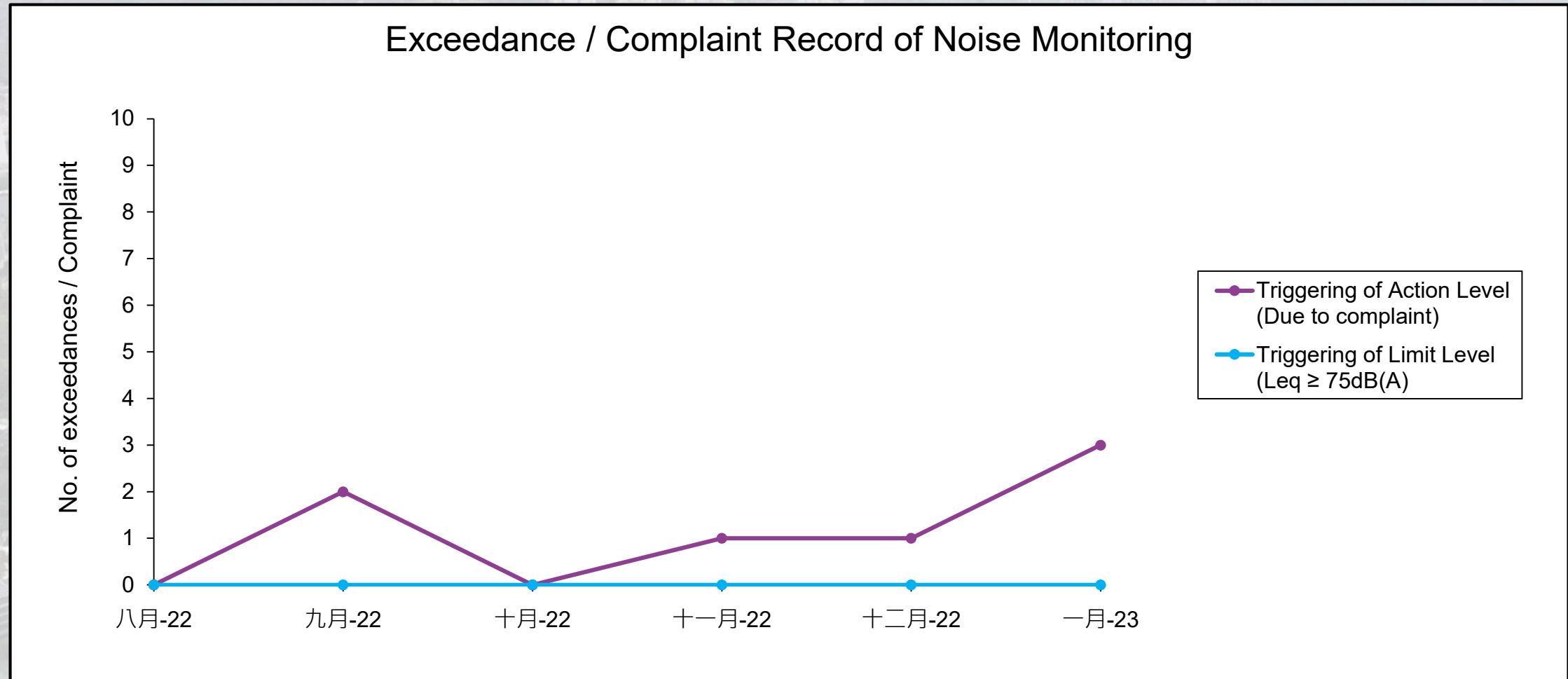
EM&A Monitoring – Noise

ID	Description	Monitoring Parameter	Monitoring Frequency
NMS-CA-5	Village house in Ma Wan Chung	A-weighted equivalent continuous sound pressure level L_{eq}	Once per week
NMS-CA-6	Village house in Shek Mun Kap		
NMS-CA-7	YMCA of Hong Kong Christian College		
NMS-CA-8	Caritas Charles Vath College (Roof Floor)		
NMS-CA-9	Hong Chi Shiu Pong Morninghope School (Roof Floor)		



EM&A Monitoring – Noise




Statistics of Exceedance from Aug 2022 to Jan 2023

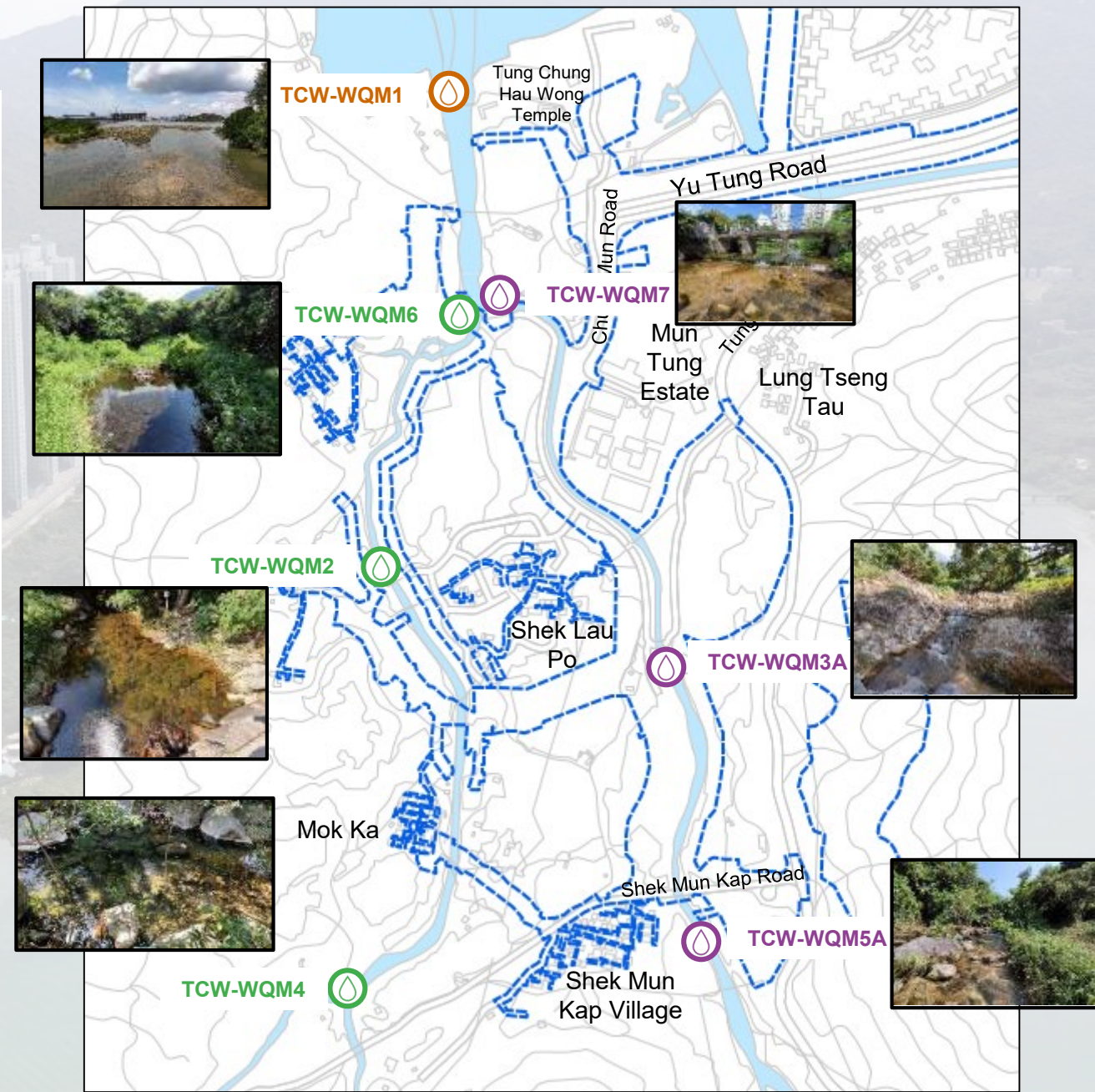


Exceedances as recorded in the reporting period were due to the receipt of noise complaints.

EM&A Monitoring – Water Quality

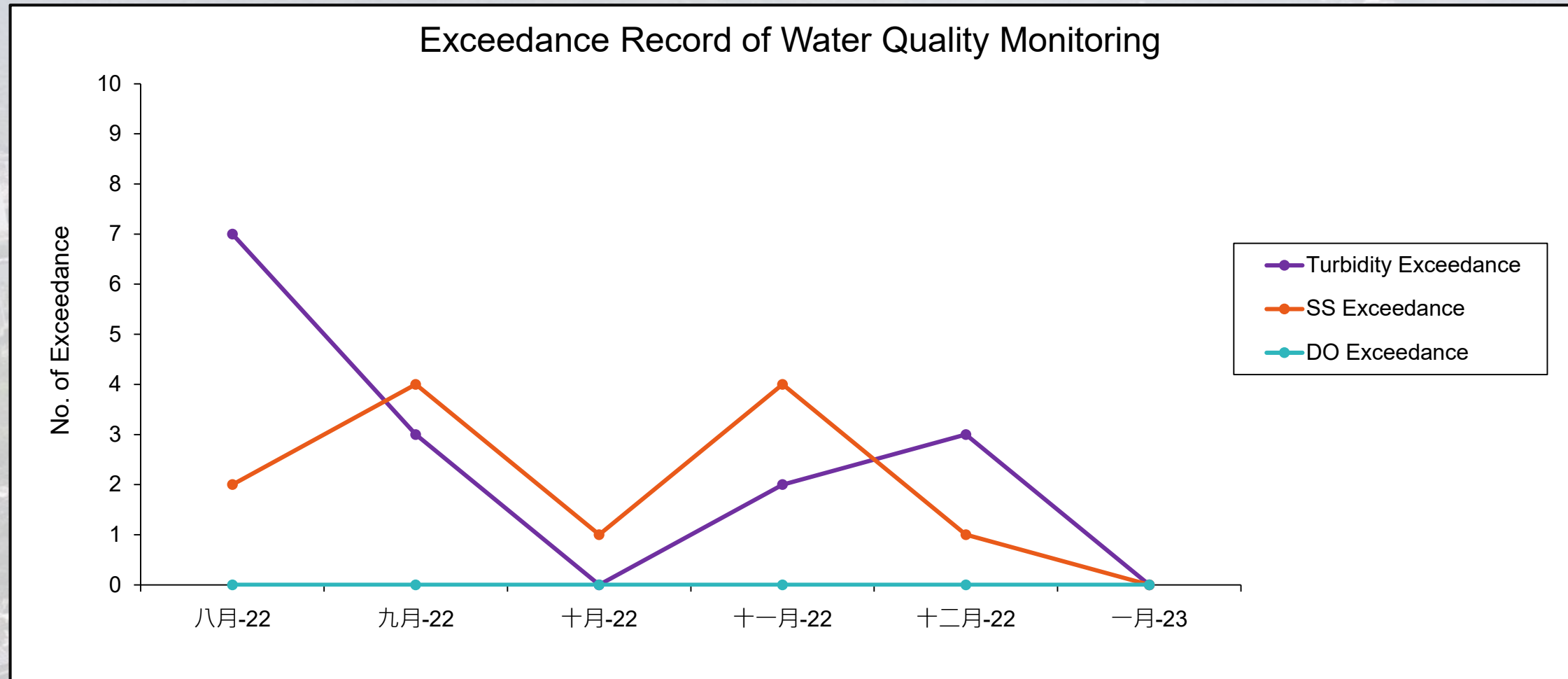
ID	Description	Monitoring Parameter	Monitoring Frequency
TCW-WQM-1	Downstream of Tung Chung Stream	<ul style="list-style-type: none"> • Temperature • Salinity • Conductivity • pH • Dissolved Oxygen • Turbidity • Suspended Solids 	3 days per week
TCW-WQM-2	Middle of Tung Chung Stream (West)		
TCW-WQM-3A	Middle of Tung Chung Stream (East)		
TCW-WQM-4	Upstream of Tung Chung Stream (West)		
TCW-WQM-5A	Upstream of Tung Chung Stream (East)		
TCW-WQM-6	Downstream of Tung Chung Stream (West)		
TCW-WQM-7	Downstream of Tung Chung Stream (East)		

-  Stream water quality monitoring location (River Mouth)
-  Stream water quality monitoring location (West Tributary)
-  Stream water quality monitoring location (East Tributary)



EM&A Monitoring – Water Quality

Statistics of Exceedance from Aug 2022 to Jan 2023



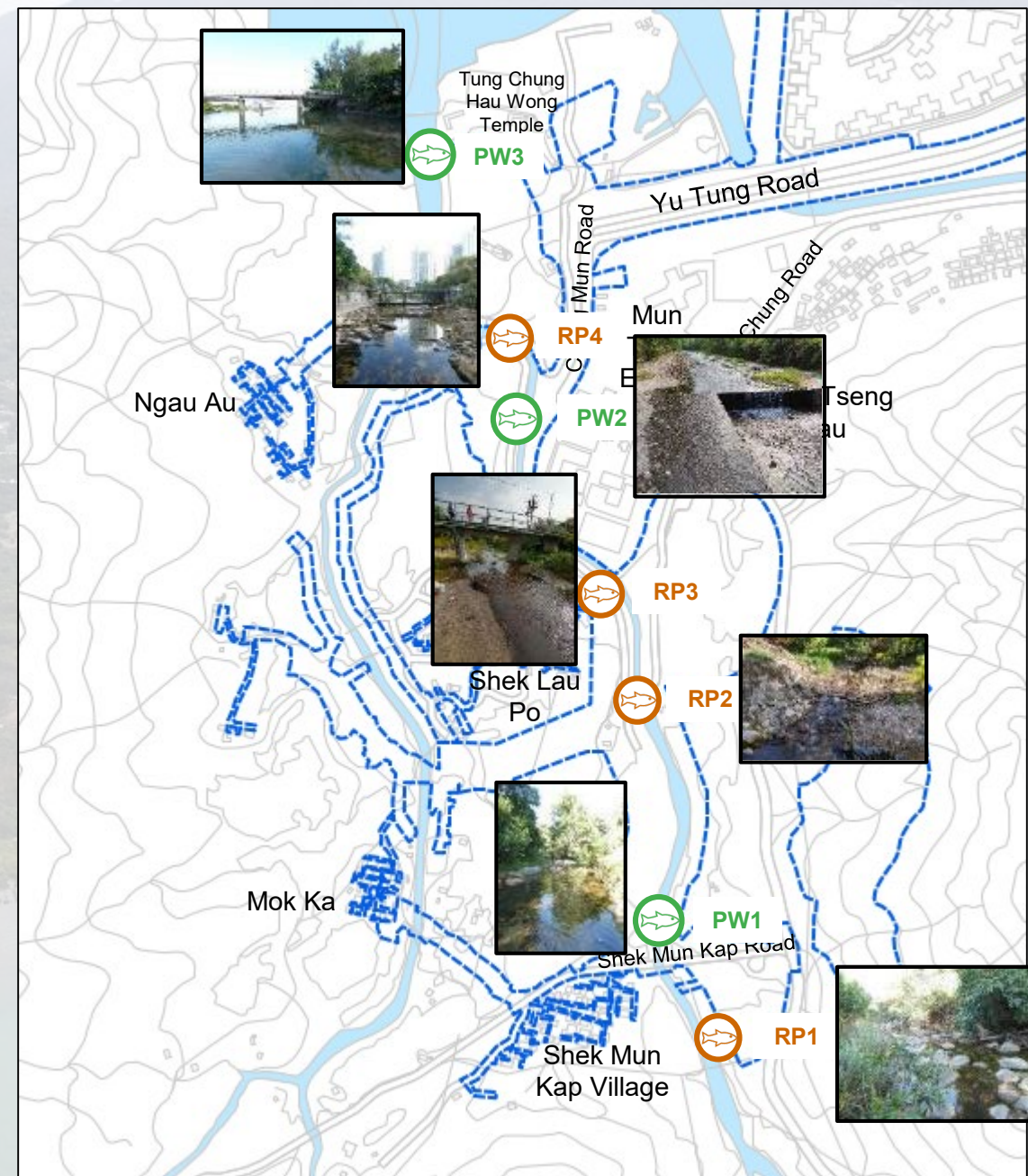
Exceedances as recorded in the reporting period were mainly due to inclement weather.

EM&A Monitoring – Ecology

ID	Description	Monitoring Parameter	Monitoring Frequency
RP1	Conservation Zone (Natural Section)	<ul style="list-style-type: none"> Water Quality [Note] Taxa diversity of Fish Species and Aquatic Invertebrate 	Once per month
RP2	Upstream of River Park		
RP3	Revitalisation Zone (Channelised Section)		
RP4	Downstream of River Park		
PW1	Near Public Works		
PW2	Near Public Works		
PW3	Near Public Works		

Notes:

- pH
- Salinity
- Temperature
- Turbidity
- Dissolved Oxygen
- Suspended Solids
- Ammonia as N
- Total Kjeldahl Nitrogen
- E. Coli
- Biochemical Oxygen Demand
- Chemical Oxygen Demand
- Oil & Grease



Ecological monitoring location for other public works



Ecological monitoring location for the proposed River Park

EM&A Monitoring – Ecology

Summary of exceedance between Aug 2022 and Jan 2023

Month	Monitoring Parameter	Monitoring Stations	No. of Fish Species			Related to Project (Yes(Y) / No(N))	Remark
			Action Level	Limit Level	Monitoring Result		
Aug 2022	Taxa diversity of fish species	RP4	5.0 (Wet season)	3.6 (Wet season)	9		
Sep 2022					8		
Oct 2022					7		
Nov 2022			7				
Dec 2022			4.3 (Dry season)	3.1 (Dry season)	0	Y	<ul style="list-style-type: none"> Seepage of runoff at various locations along Road L29 to TC Stream during rainy weather Cold and rainy weather
Jan 2023					2	N	<ul style="list-style-type: none"> Seasonal variation

*Numbers highlighted in red when exceedance occurred.

Complaint Received

Month	Air	Noise	Water	Others (Waste, Ecology, Landscape and Visual)
Aug-2022	0	0	0	0
Sep-2022	2	2	0	0
Oct-2022	1	0	0	0
Nov-2022	0	1	2	1
Dec-2022	2	1	0	0
Jan-2023	0	3	0	1
Nature of Complaints	<ul style="list-style-type: none"> Construction dust generated from breaking works & piling works Chung Mun Road Area 42 	<ul style="list-style-type: none"> Construction noise from sheet-piling works at Road L29 	<ul style="list-style-type: none"> Suspected discharge of wastewater into Tung Chung Stream 	<ul style="list-style-type: none"> Tree cutting at Chung Mun Road Light nuisance & energy wastage at Area Part H



土木工程拓展署
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Thank you