

Tung Chung New Town Extension



9th PLG Meeting
Date : 20 October 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

Response to Comment

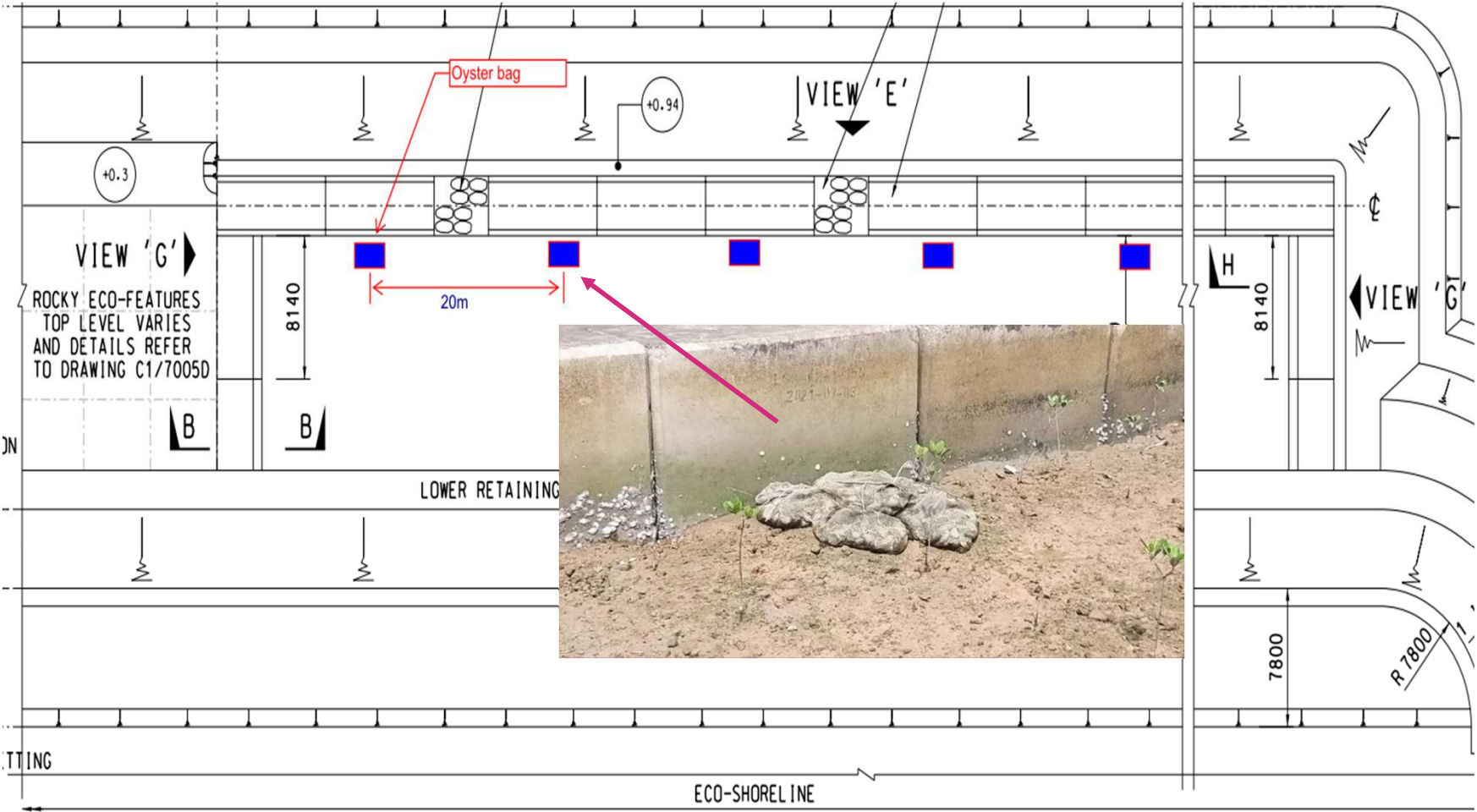
- ❑ S.4.1.4: *“A member suggested to raise the platform level of mangrove eco-shoreline or stock oyster reef at lower platform for more effective ecological enhancement.”*
- Total length of Mangrove Eco-shoreline is 1.2 km
- 1/3 of mangrove area: Platform level has been raised from 0.9mPD to 1.5mPD
- 2/3 of mangrove area: 40 piles of oyster bags (5 oyster bags per pile) will be placed at the lower platform and still in progress.



Oyster Bags at Lower Terrace of Mangrove Eco-shoreline



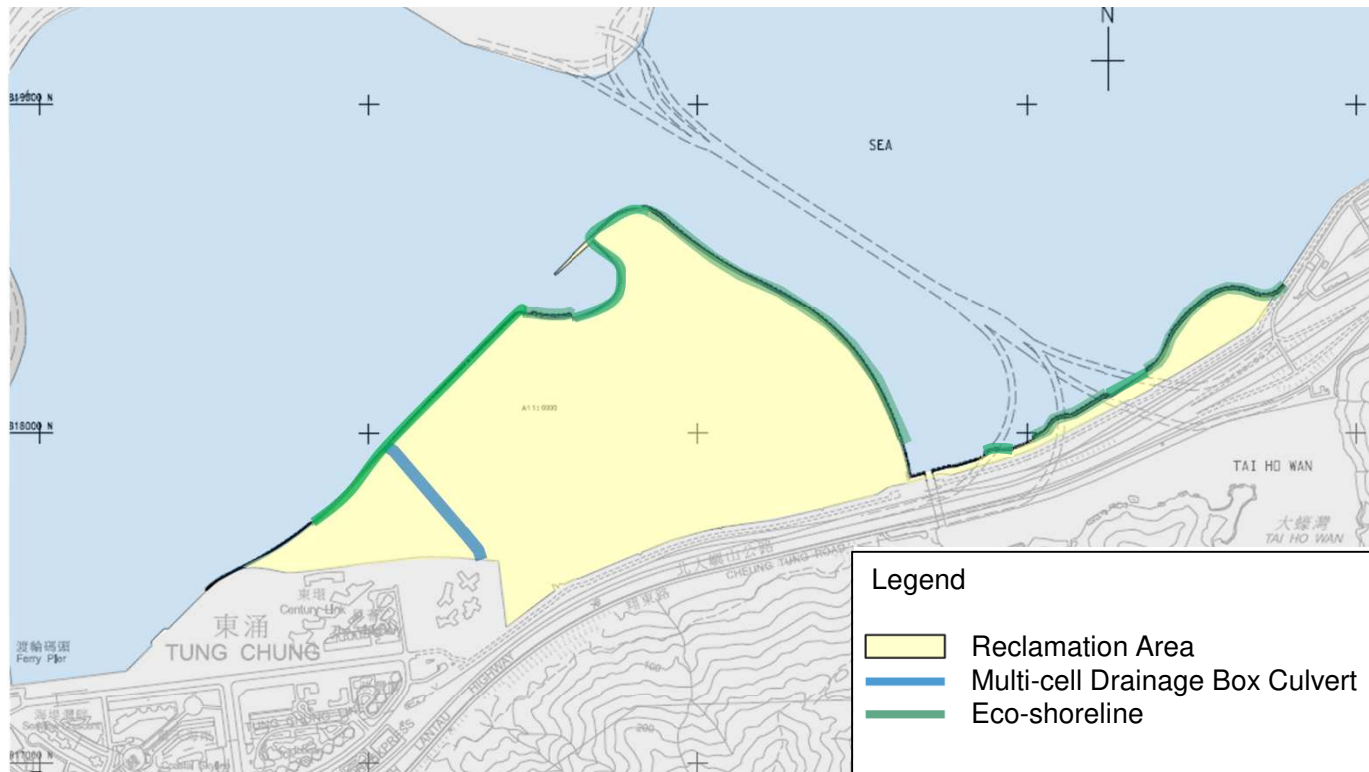
- 5 oyster bags per pile
- 10mm mesh size nylon net
- 450mm x 600mm each



2. Tung Chung East

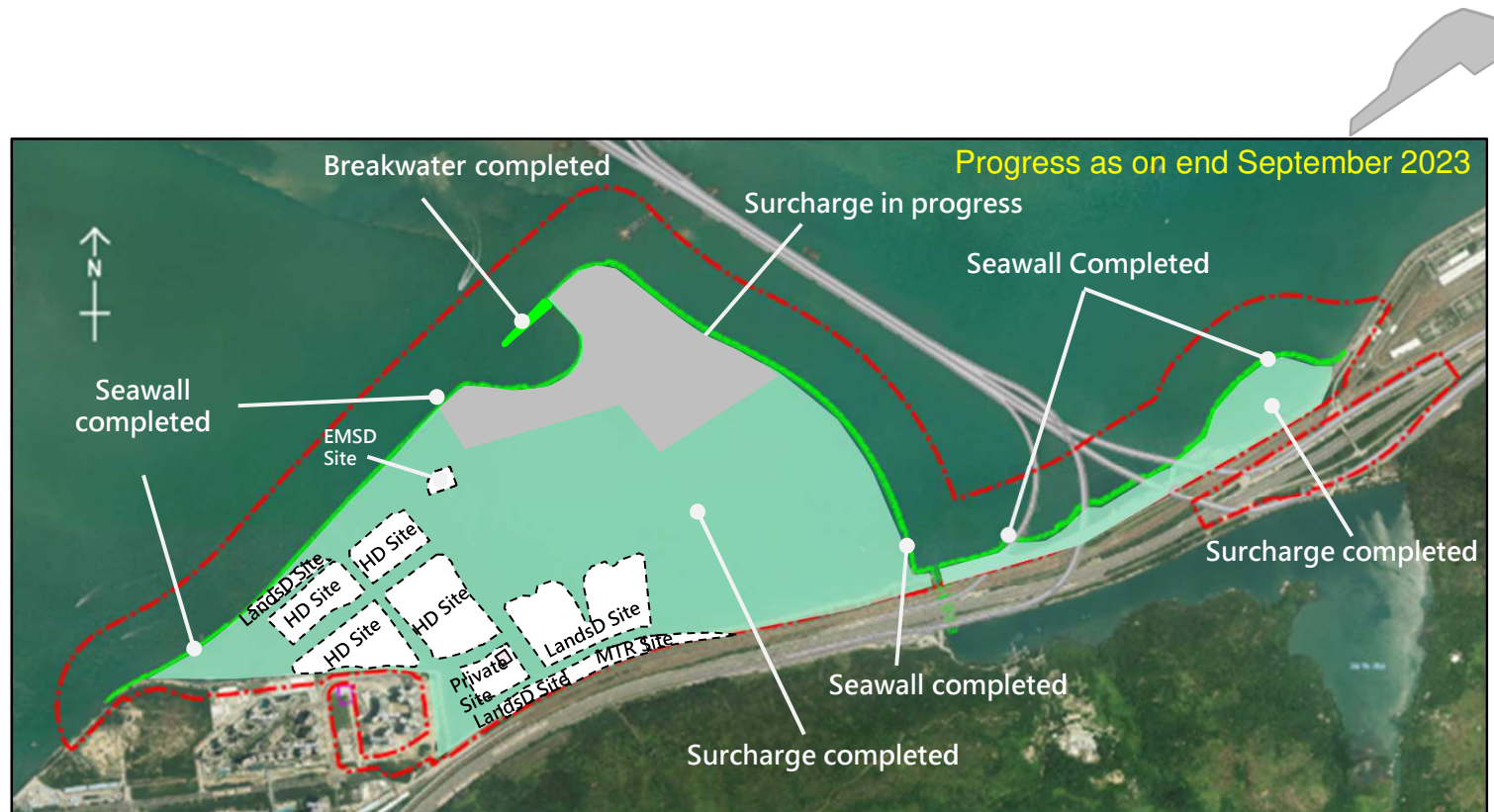
b. Overview and Progress

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



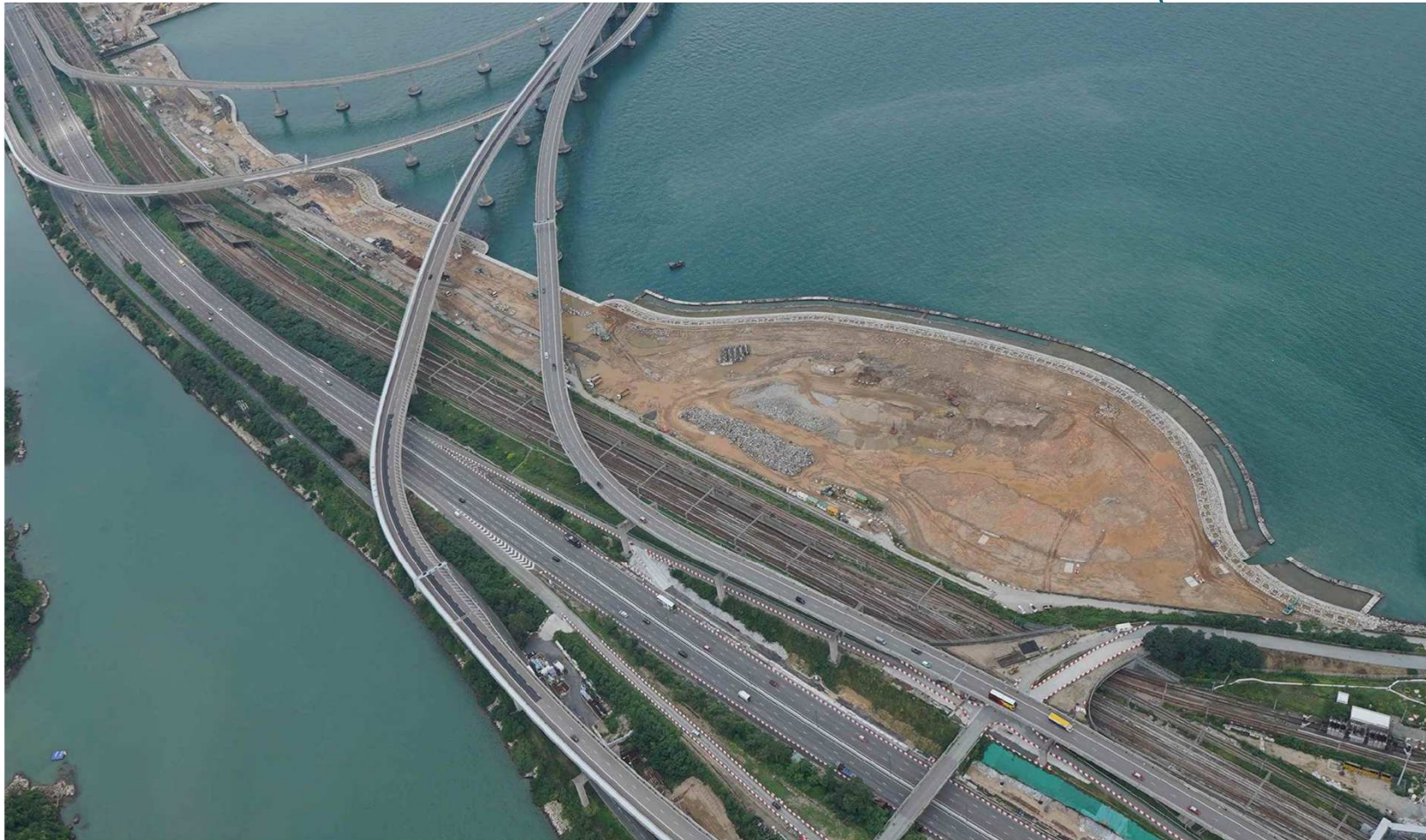
Aerial Photo

Photo taken in September 2023



Aerial Photo

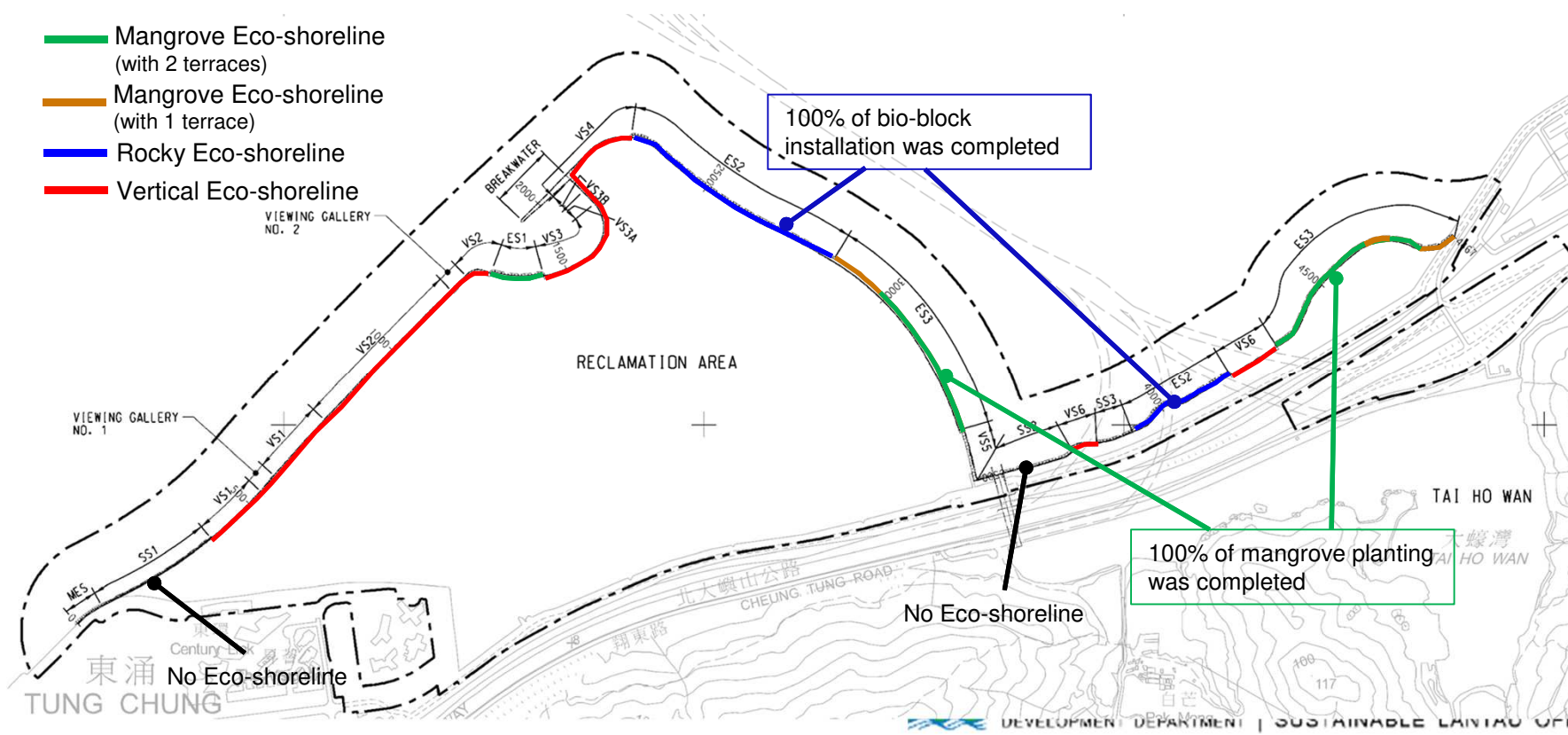
Photo taken in September 2023



Eco-shoreline



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



Mangrove Eco-Shoreline (Main Site)

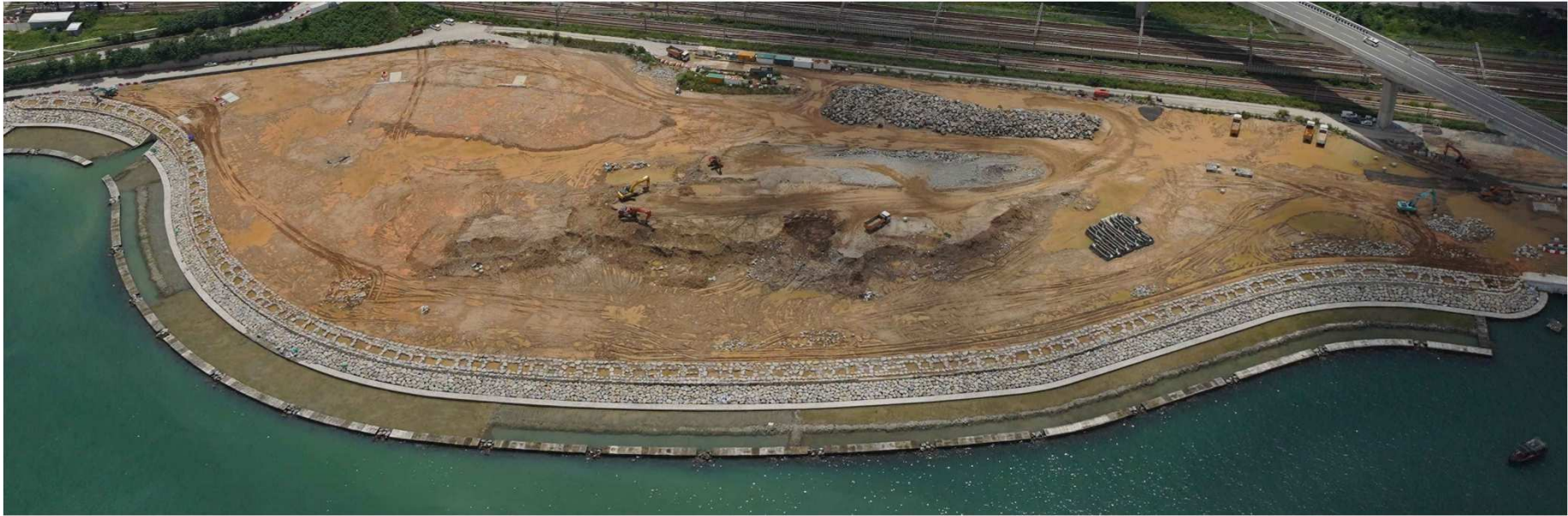


Mangrove Species
水筆仔 <i>Kandelia obovata</i>
白骨壤 <i>Avicennia marina</i>
木欖 <i>Bruguiera gymnorhiza</i>
欖李 <i>Lumnitzera racemosa</i>
桐花樹 <i>Aegiceras corniculatum</i>
老鼠簕 <i>Acanthus ilicifolius</i>



General View of Mangrove Eco-shoreline

Mangrove Eco-Shoreline (Area E)



Mangrove Species
水筆仔 <i>Kandelia obovata</i>
白骨壤 <i>Avicennia marina</i>
桐花樹 <i>Aegiceras corniculatum</i>



General View of Mangrove Eco-shoreline

Vertical Eco-shoreline



General View of Vertical Eco-shoreline



organisms observed

Rocky Eco-shoreline



General View of Rocky Eco-shoreline

Rocky Eco-shoreline

Organisms observed at Rocky Eco-shoreline



Mangrove Eco-shoreline



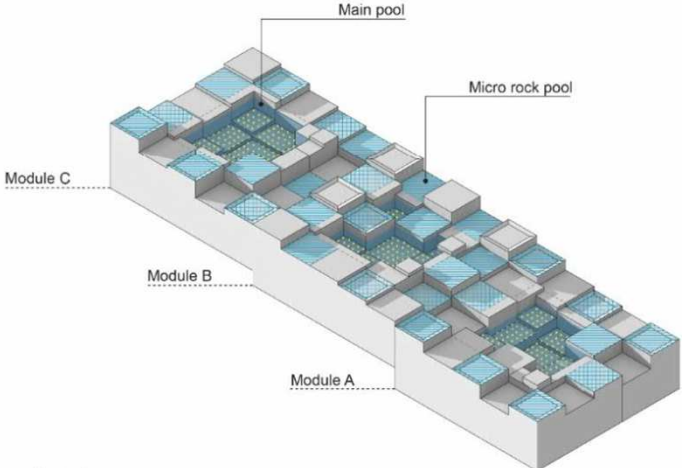
General View of Mangrove Eco-shoreline

Mangrove Eco-shoreline

Organisms observed at Mangrove Eco-shoreline



Rocky Eco-shoreline



- Legend
- Micro Rock Pool Surface Type 1
 - Micro Rock Pool Surface Type 2



General View of ES2(E)



General View of ES2

Monitoring Methodologies



Monitoring Period – Oct 2023 to Sep 2026

Frequency – Twice in wet season and twice in dry season

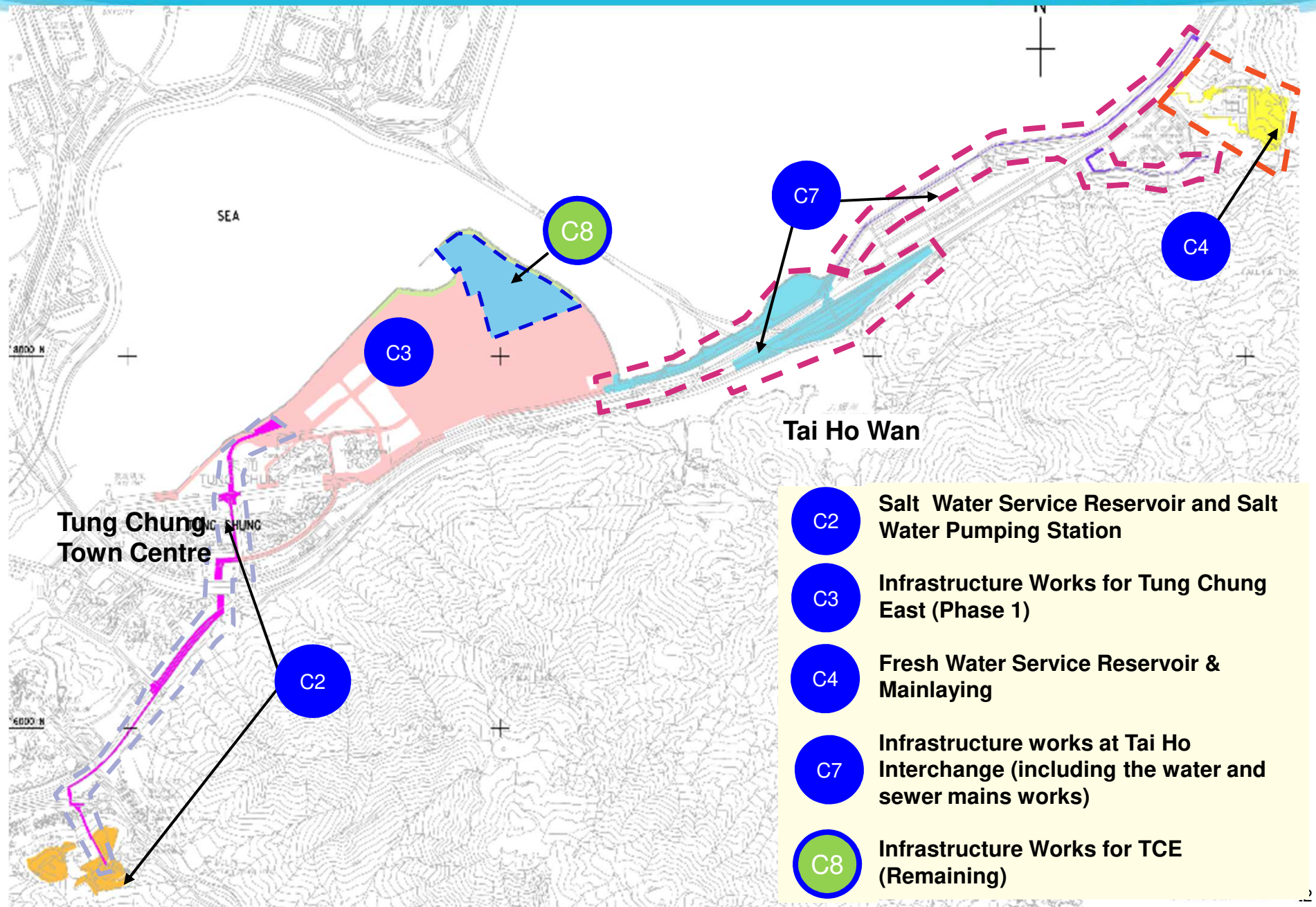
Parameters:

- Avifauna by point count
- Epifauna by transect
- Water Quality by spot sample
- Ichthyoplankton by plankton net
- Juvenile fish by purse seine
- Infauna by transect (Mangrove only)
- Vegetation by transect and fixed point sample (Mangrove only)
- Mudflat properties by core sample (Mangrove only)
- Mudflat level (Mangrove only)

Reporting:

- Progress reports in half-year basis
- Annual report
- Final report

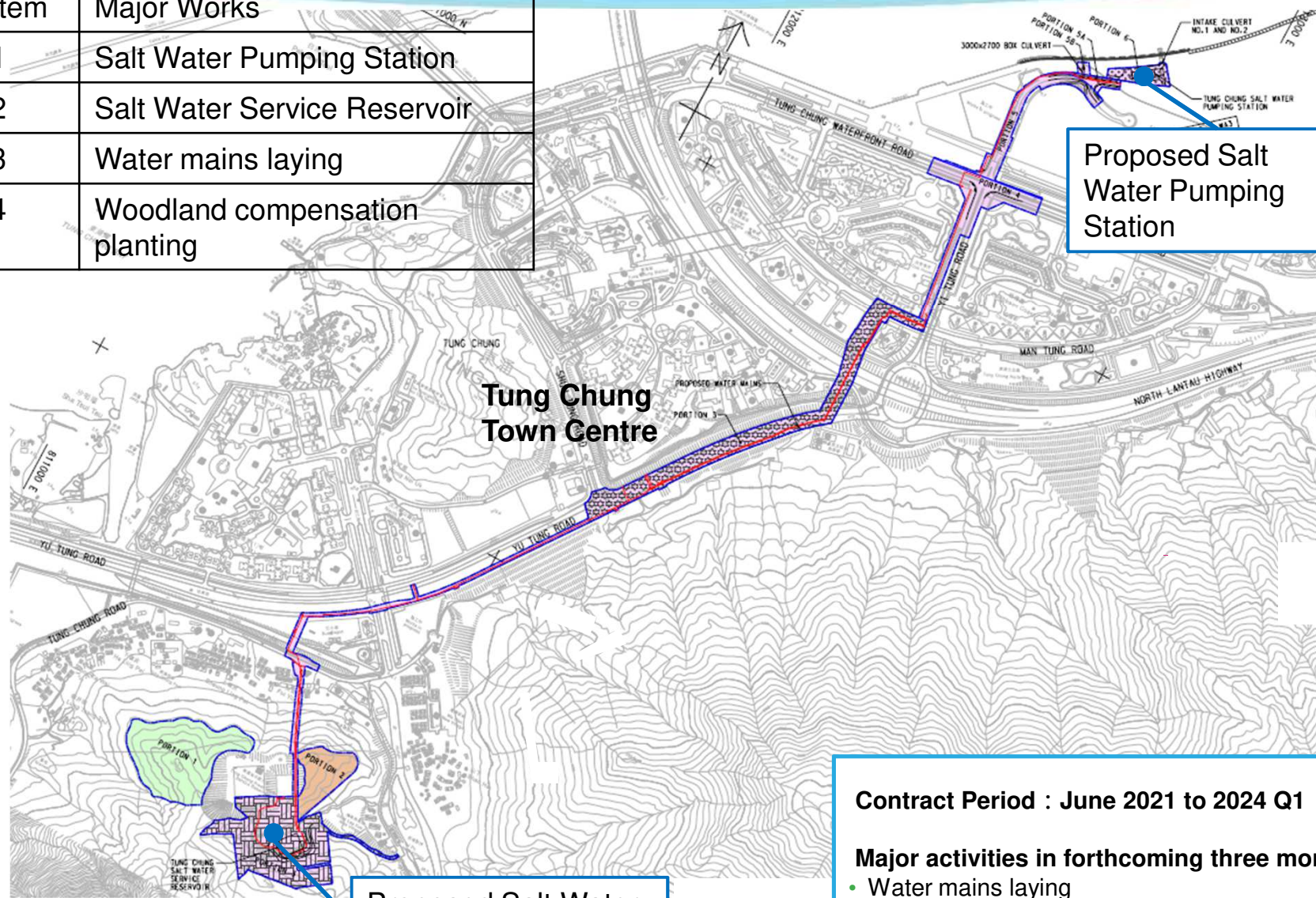
Tung Chung East Infrastructure



- C2** Salt Water Service Reservoir and Salt Water Pumping Station
- C3** Infrastructure Works for Tung Chung East (Phase 1)
- C4** Fresh Water Service Reservoir & Mainlaying
- C7** Infrastructure works at Tai Ho Interchange (including the water and sewer mains works)
- C8** Infrastructure Works for TCE (Remaining)

C2 Contract No. NL/2020/02

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 2024 Q1

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

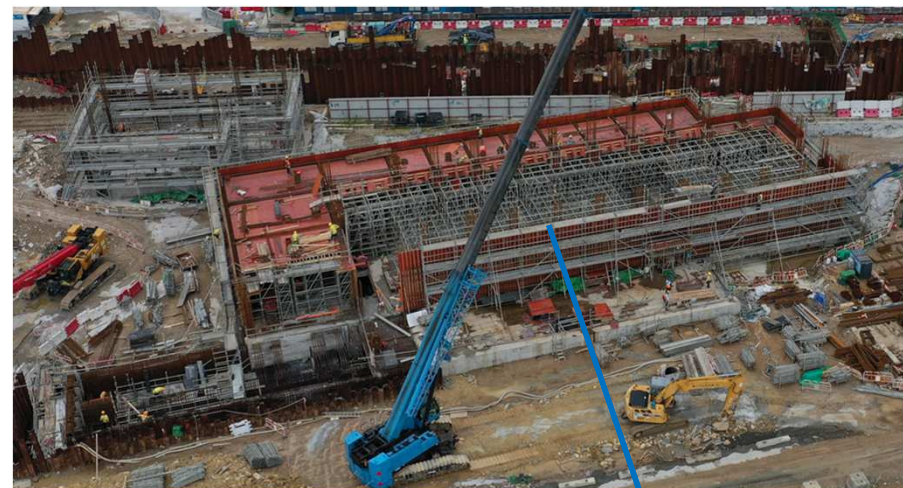
2021 Q4 to 2023 Q4

Related Works

- R.C. structures
- E&M Works
- ABWF Works



RC Structure and E&M Works for Pumping Station
in progress



Salt Water Pumping
Station

Salt Water Service Reservoir

Construction Period
2022 Q2 to 2023 Q4

Related Works

- RC structures



Salt Water Service Reservoir

Watermain Laying

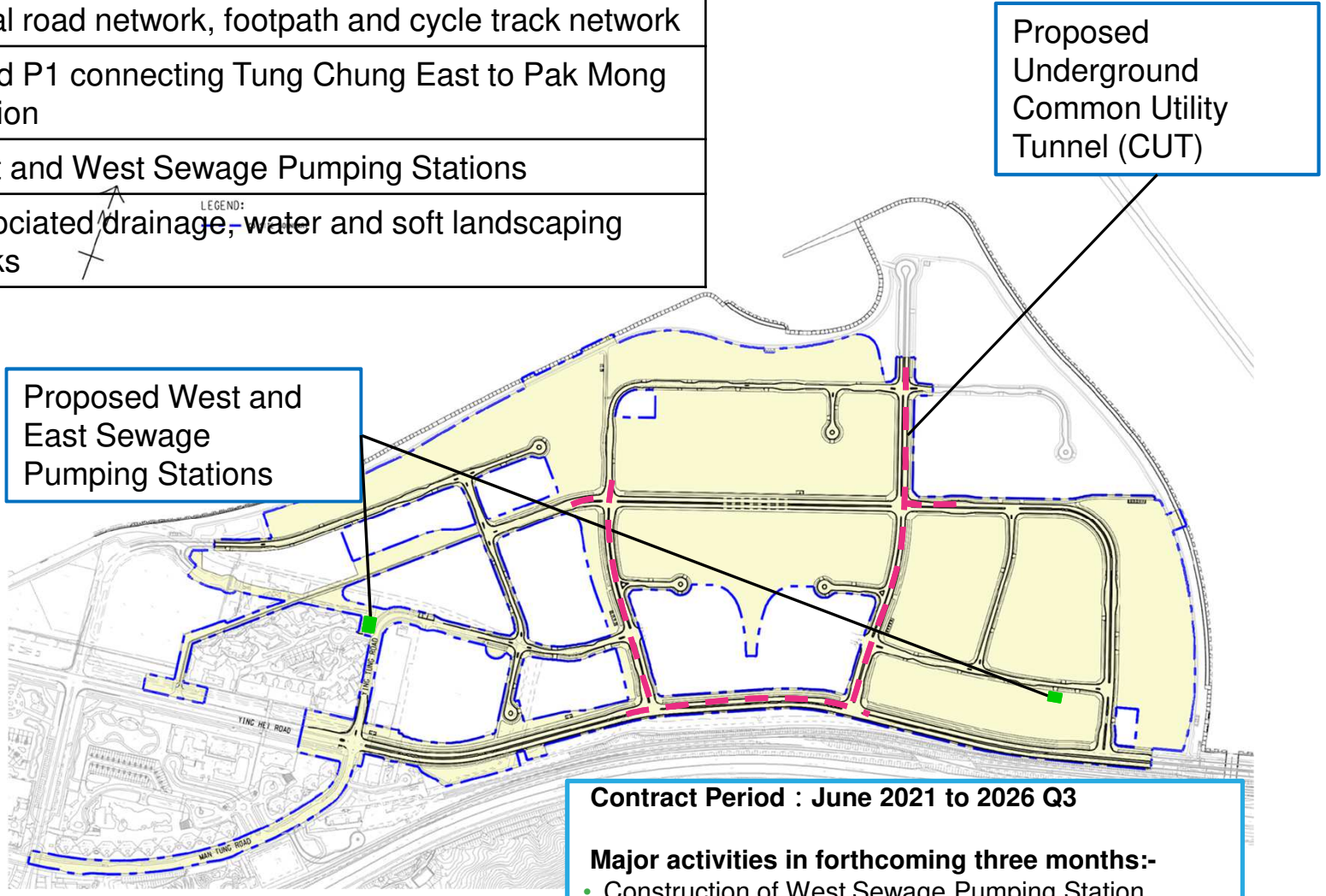
Construction Period
2021 Q4 to 2024 Q1

Related Works

- TTA and traffic diversion
- Watermain Laying



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
- Pipe laying along Man Tung Road, Ying Tung Road, Road L3, Road L4 and Road D5


West Sewage Pumping Station (WSPS)

Construction Period
2021 Q3 to 2024 Q2

Related Works

- ELS works
- R.C. structures

Legend:

 NL/2020/03 Site Area



Common Utility Tunnel (CUT)

CUT Completion Date
2026 Q3

Related Works

- ELS works
- Underground R.C. structures



Legend:



Common Utility Tunnel (CUT)

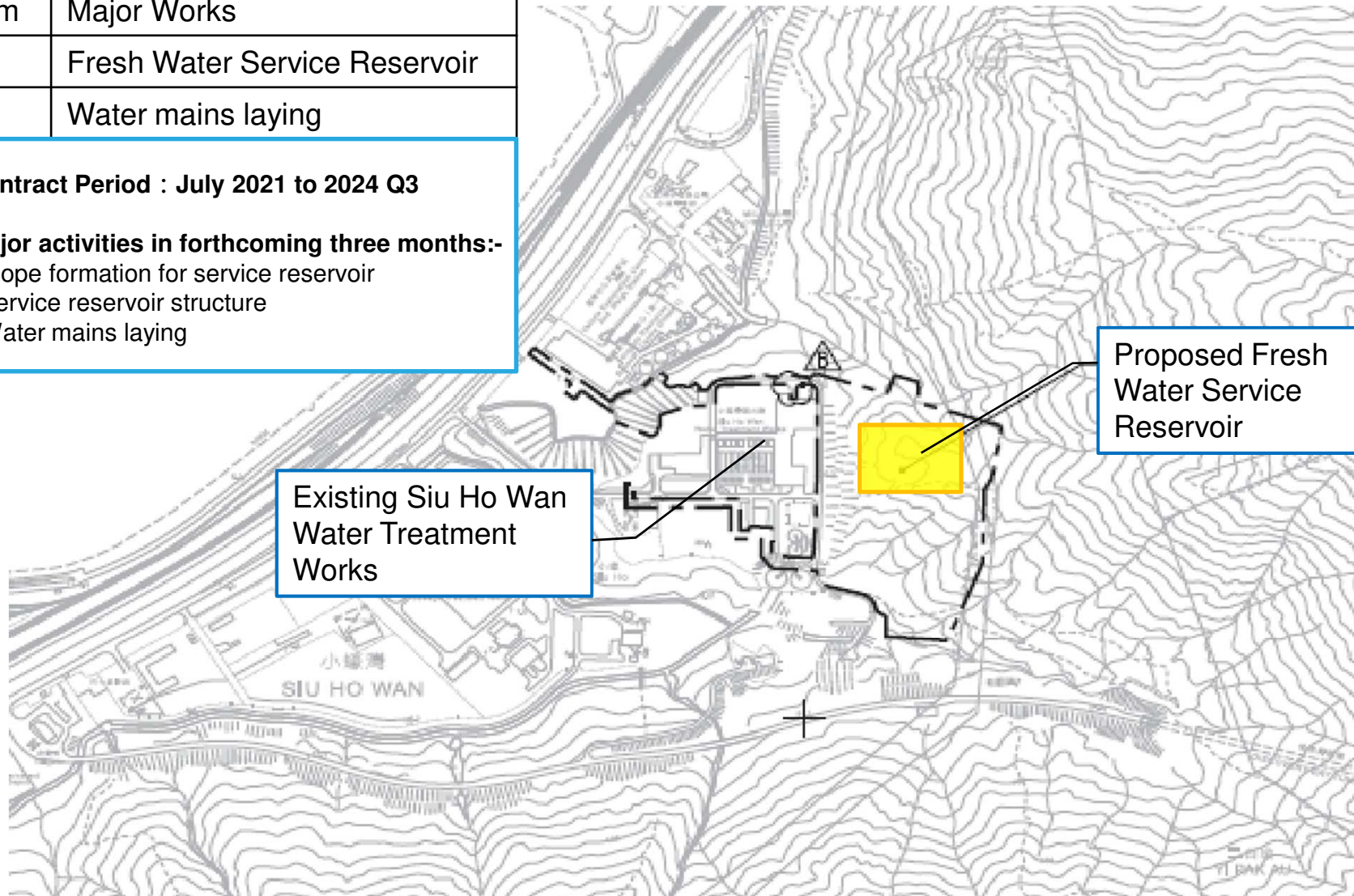


Item	Major Works
1	Fresh Water Service Reservoir
2	Water mains laying

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

- Slope works
- R.C. structures



Rebar fixing of wall of service reservoir



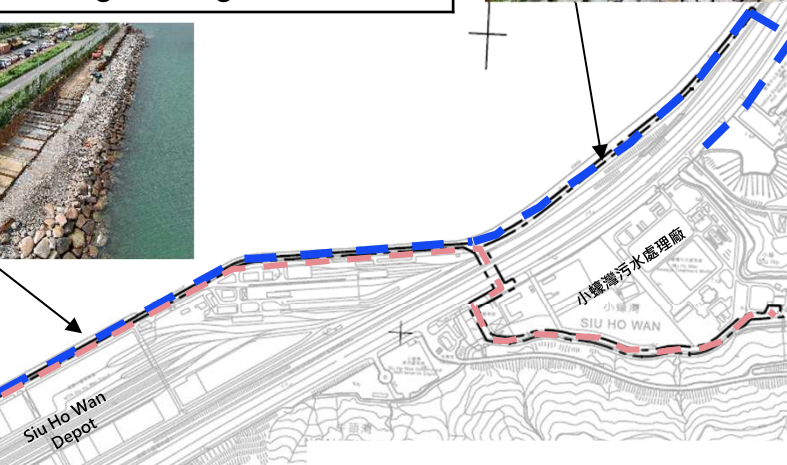
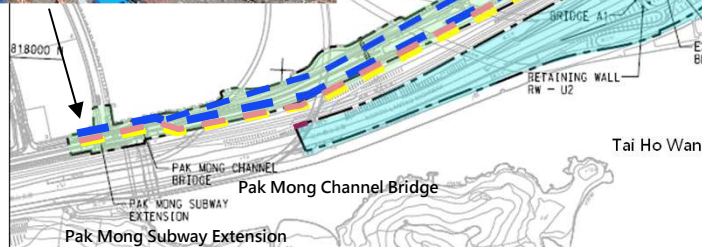
Installation of watermain in valve chamber

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

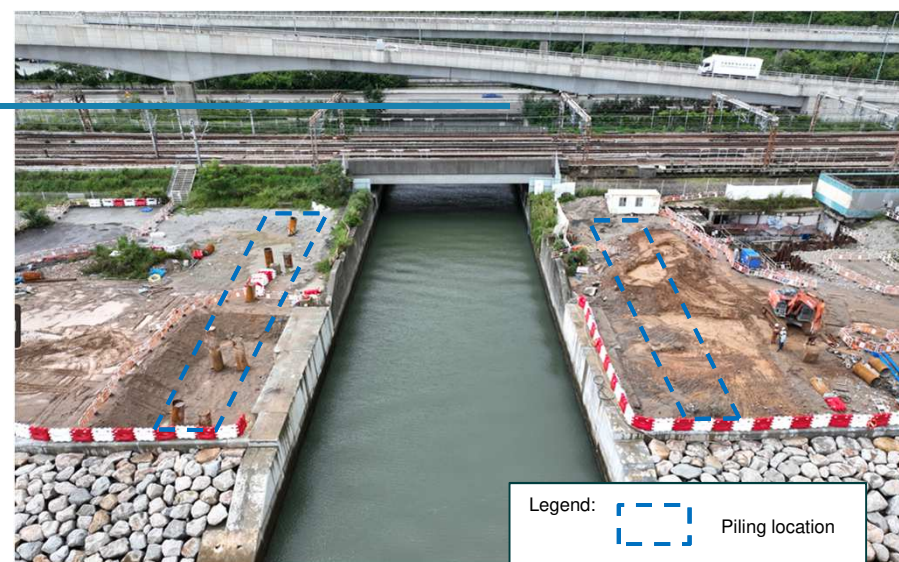


Pak Mong Channel Bridge

Construction Period
2023 Q1 to 2024 Q4

Related Works

- Piling works
- Bridge construction



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



Construction of Tai Ho Interchange

Construction Period

2022 Q3 to 2025 Q2

Related Works

- Temporary Traffic Arrangement and diversion
- Piling works
- R.C. structure
- Bridge construction



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



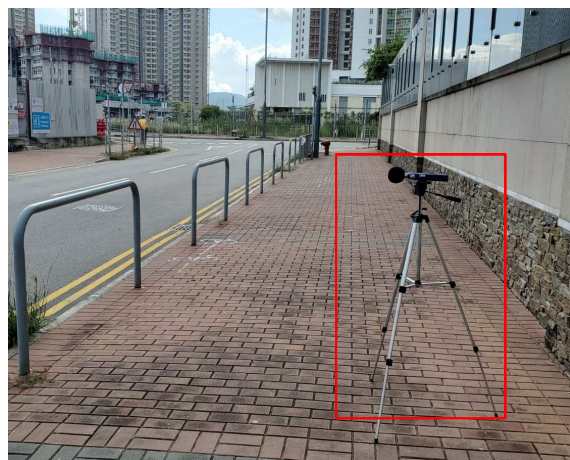
Water spraying by water truck for dust control



Wheel washing bay with high pressure jet



Sprinkler system



Noise monitoring



Noise barrier



Noise mitigation measures on sheet piling works

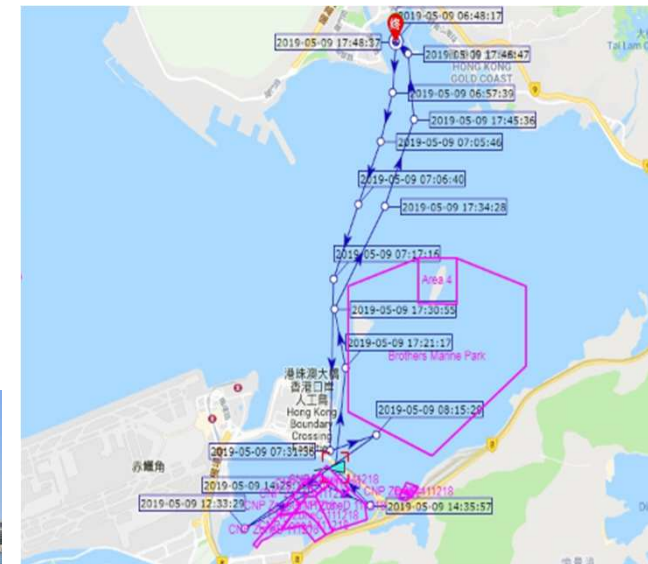
Protection and Mitigation Measures on Construction Activities



Maintenance of perimeter silt curtain
(All silt curtain removed in Mid-August 2023)



Water quality monitoring

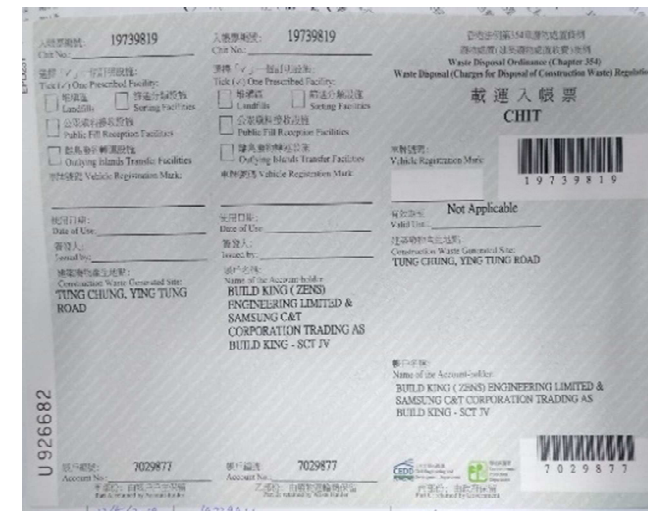


Tracking and Speed control of works vessels

Protection and Mitigation Measures on Construction Activities



Real time tracking and monitoring system for dump trucks



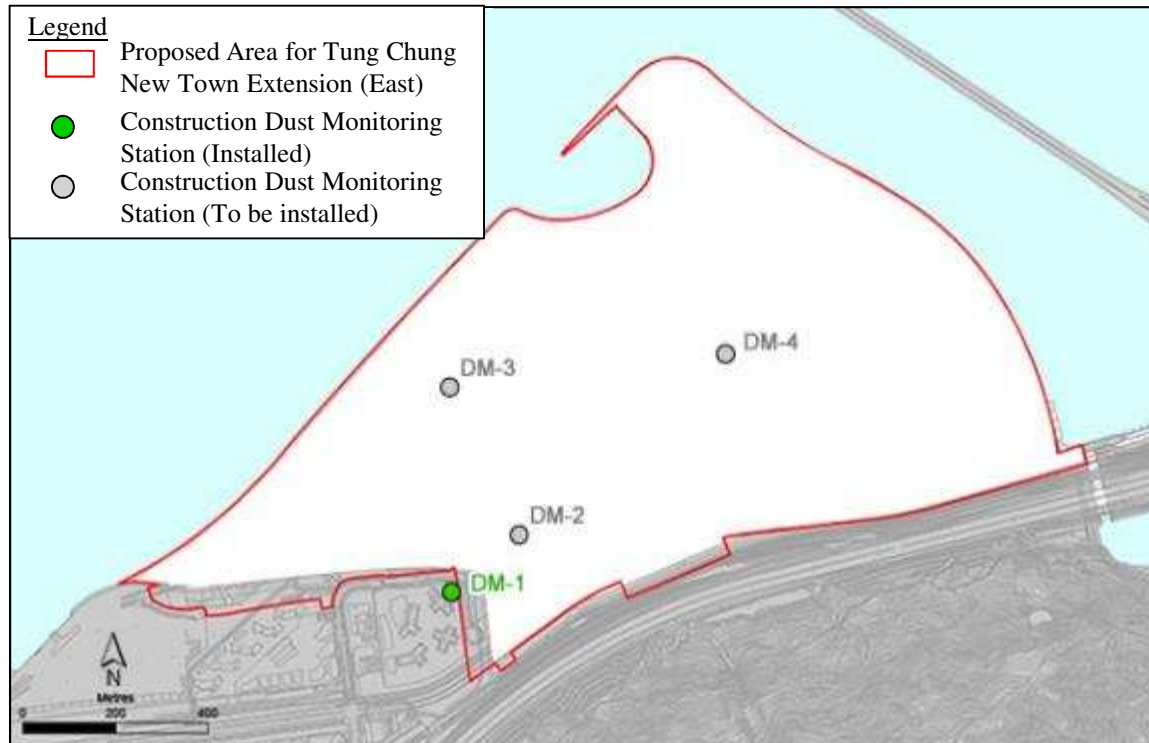
Trip ticket for waste control

EM&A Monitoring – Air Quality



Air Quality Monitoring

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



Monitoring Results between Jan and Sep 2023

No project-related exceedance was recorded.

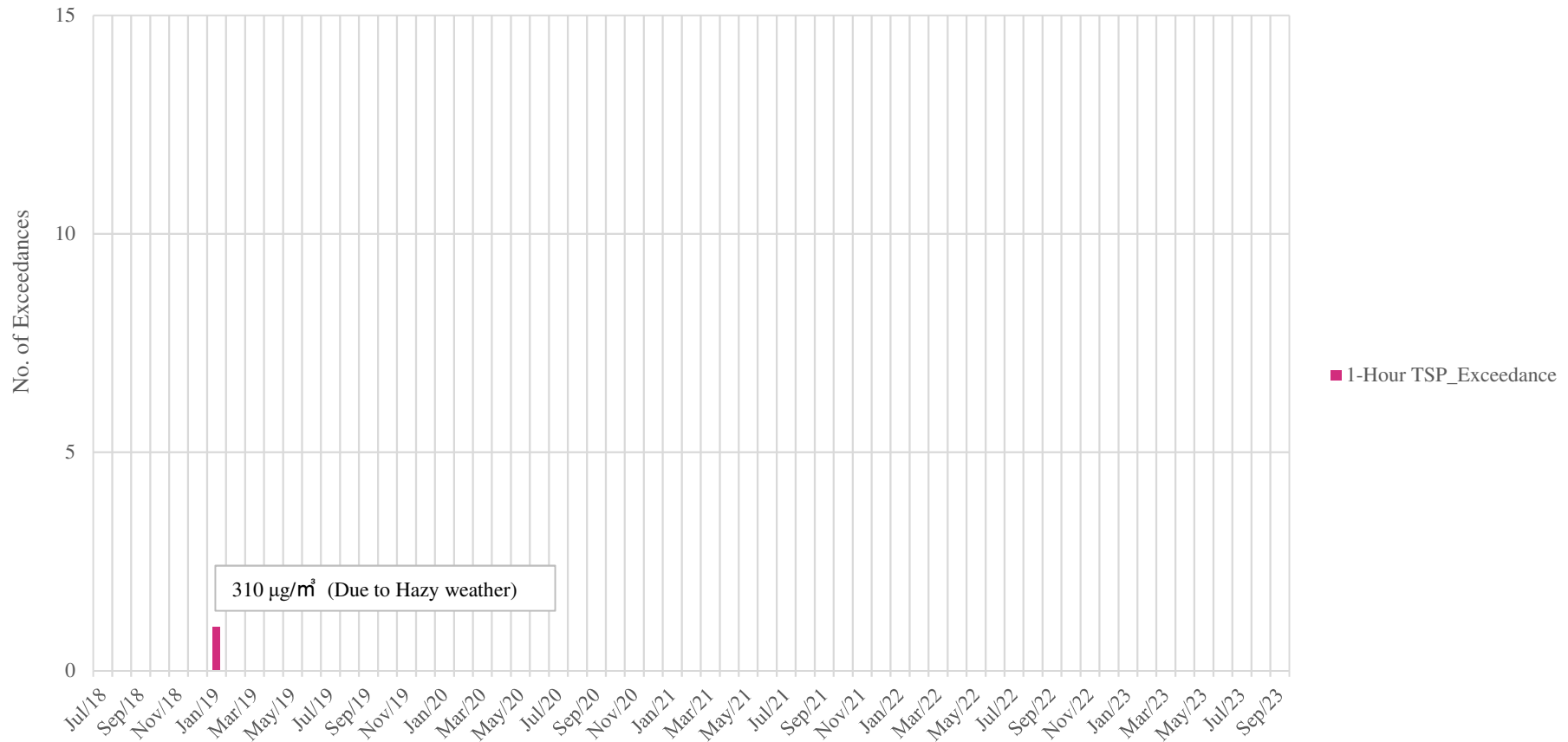


Dust monitoring near Ying Tung Estate (DM-1)

EM&A Monitoring – Air Quality



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

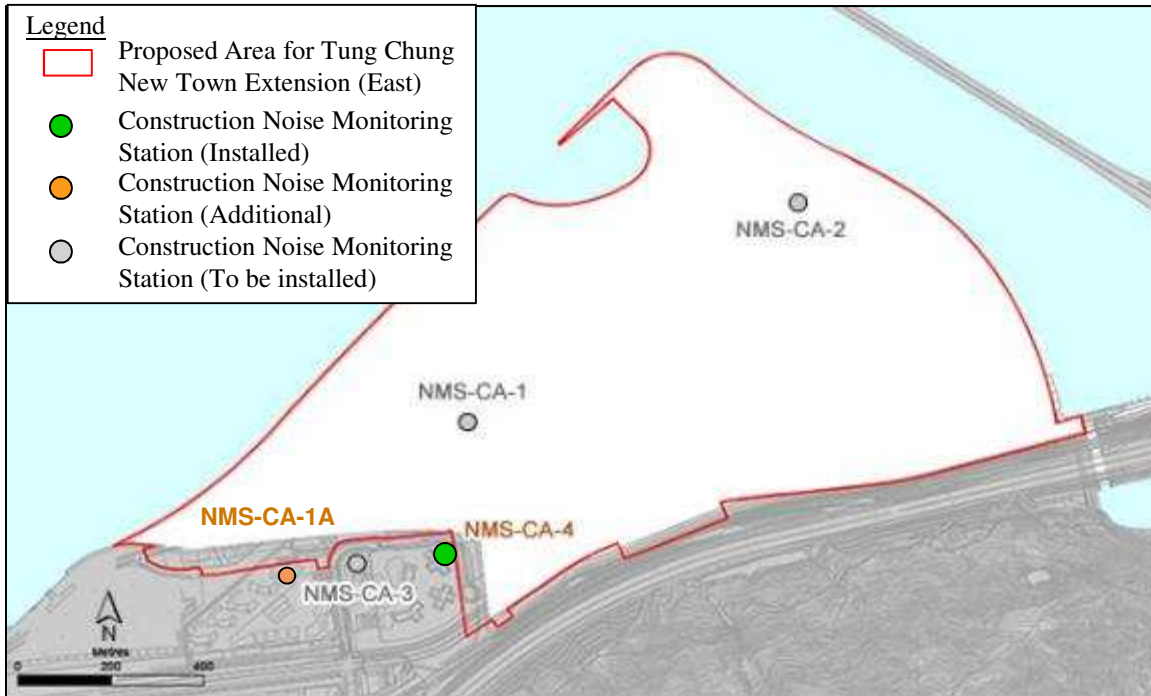


EM&A Monitoring – Noise



Noise Monitoring

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



Monitoring Results between Jan and Sep 2023

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

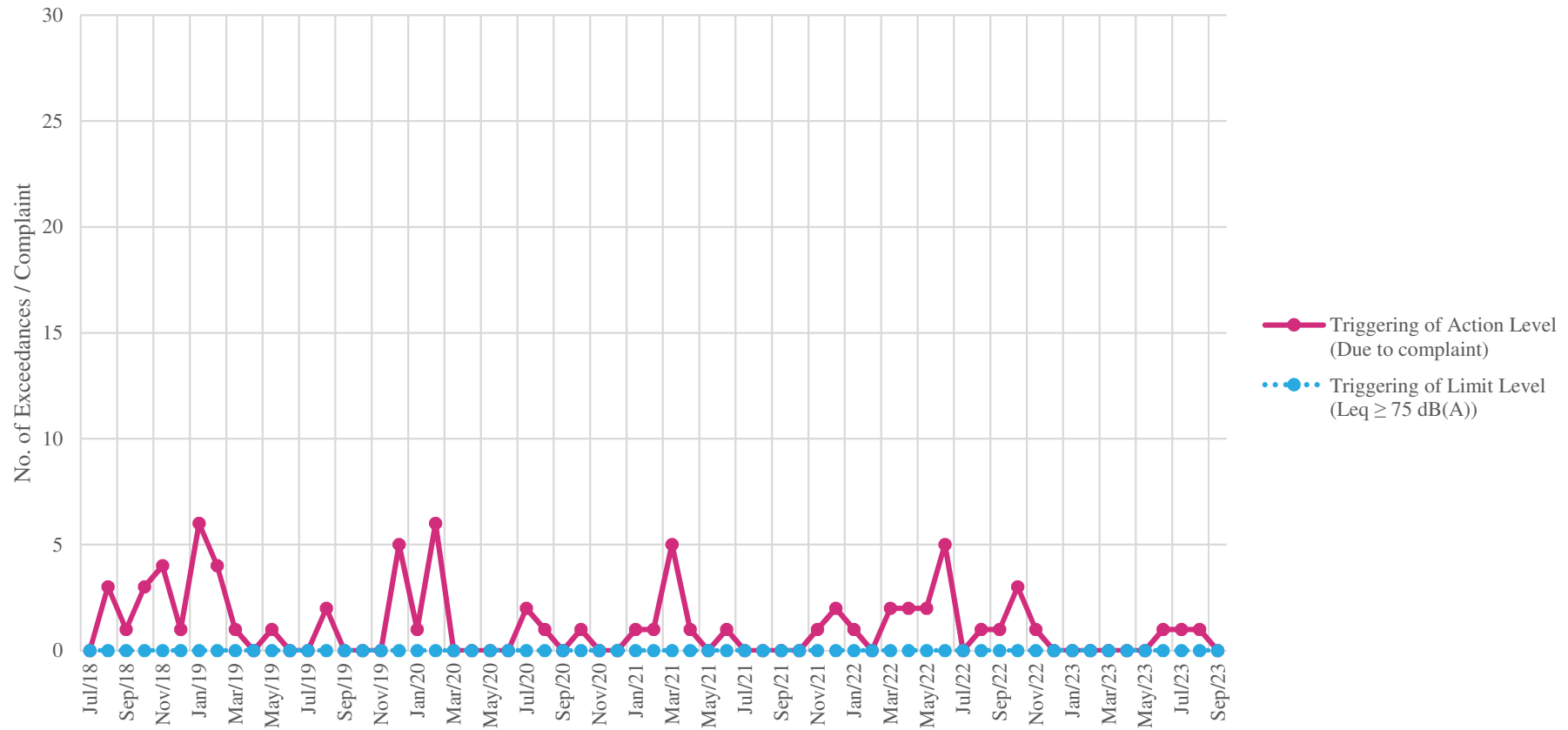


Noise monitoring near Ying Tung Estate (NMS-CA-4)

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 Jan and Sep 2023

No project-related exceedance was recorded.

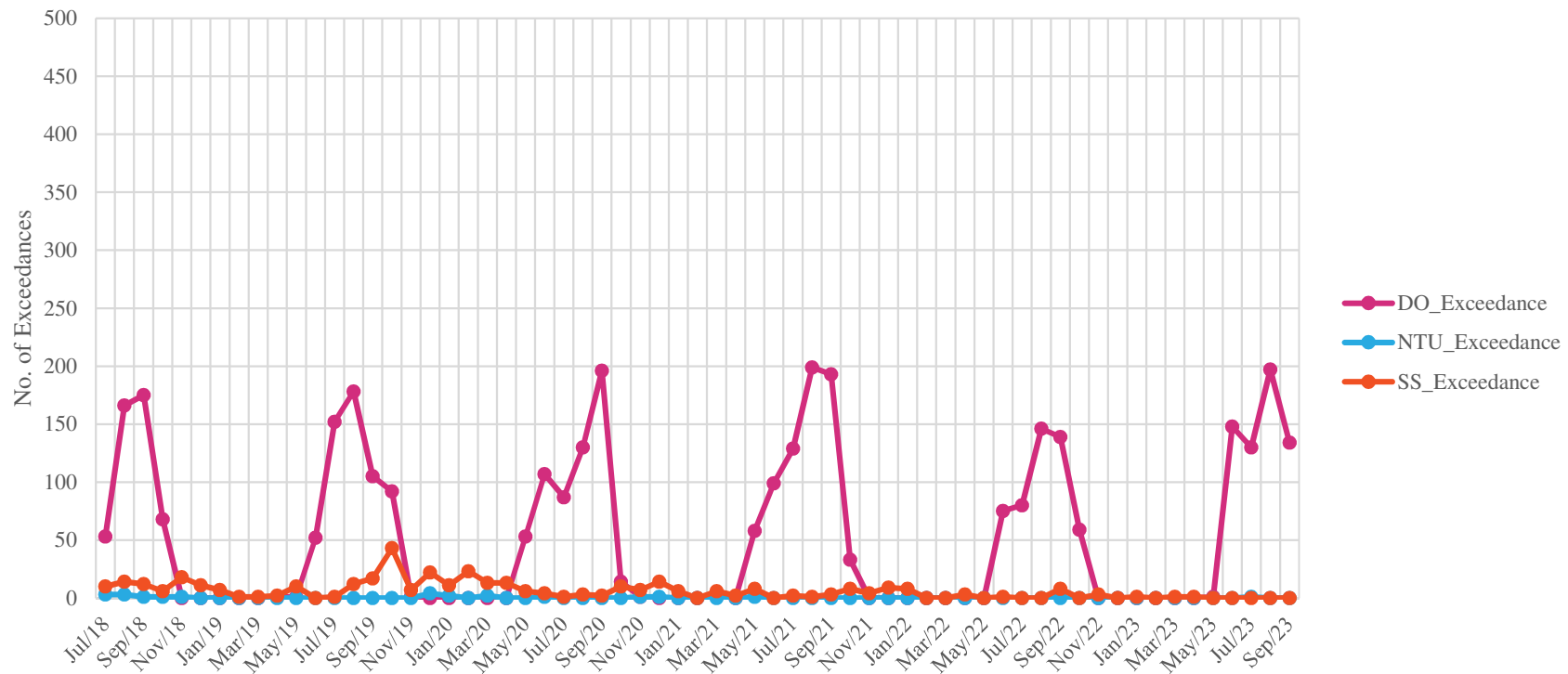


Water monitoring by ET (TCE-WQM4)

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.

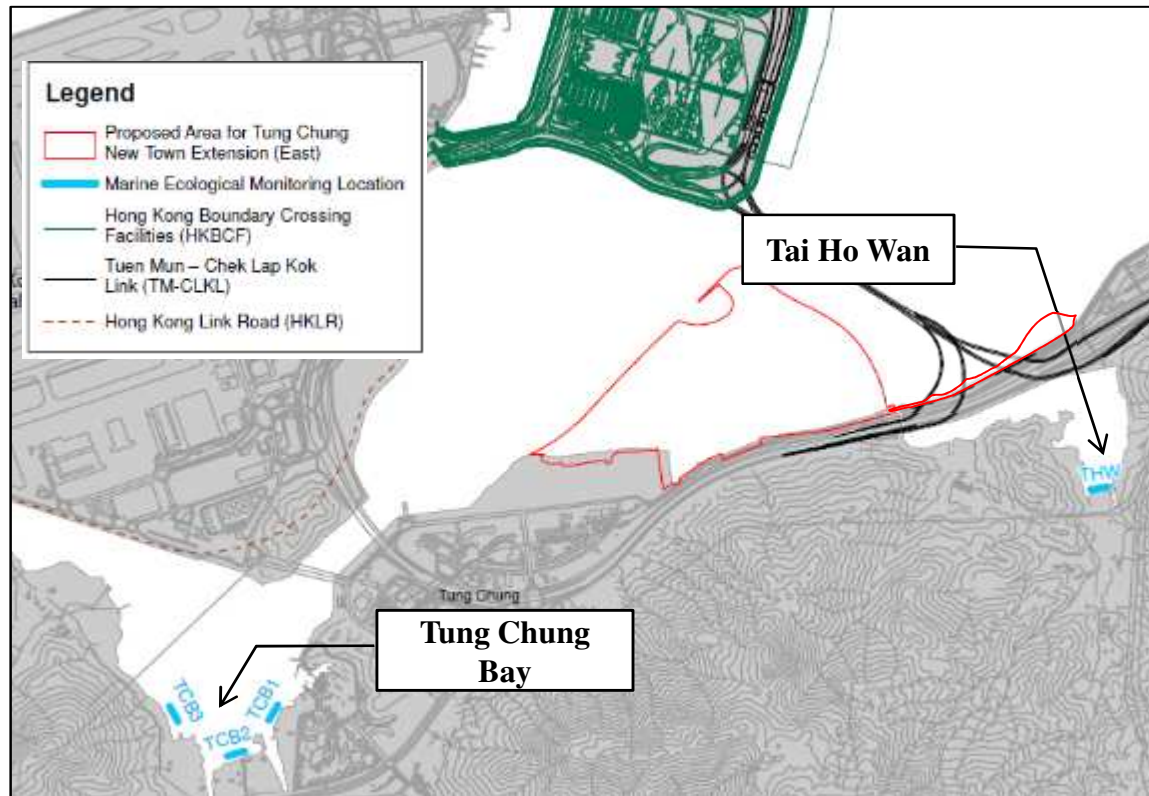
With reclamation and marine construction activities completed, Water Quality Monitoring has been suspended since Oct 2023 with no objections from EPD.

EM&A Monitoring – Ecology



Ecological Monitoring

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



Monitoring Results between Mar and Sep 2023

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



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 – Dec 22	1	8	5	0
Jan 23 – Jun 23	0	3	3	0
Jul 23 – Oct 23	0	4	2	0
Categories for recent complaints		<ul style="list-style-type: none"> Dust Ying Hei Road 	<ul style="list-style-type: none"> Noise from Sheet pile installation Car Honking 	

Thank You



土木工程拓展署
Civil Engineering and
Development Department



ARUP

Overview and Progress

Environmental Monitoring and Audit

Tung Chung West

9th PLG Meeting

Date: 20 October 2023

An aerial photograph of Tung Chung West, showing a dense cluster of high-rise residential buildings on the left, a large body of water (the bay) on the right, and a road leading from the buildings towards the water. The background features hazy mountains.

8th Professional Liaison Group Meeting – Agenda

Tung Chung West

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



土木工程拓展署
Civil Engineering and
Development Department



Tung Chung West

b) Overview and Progress



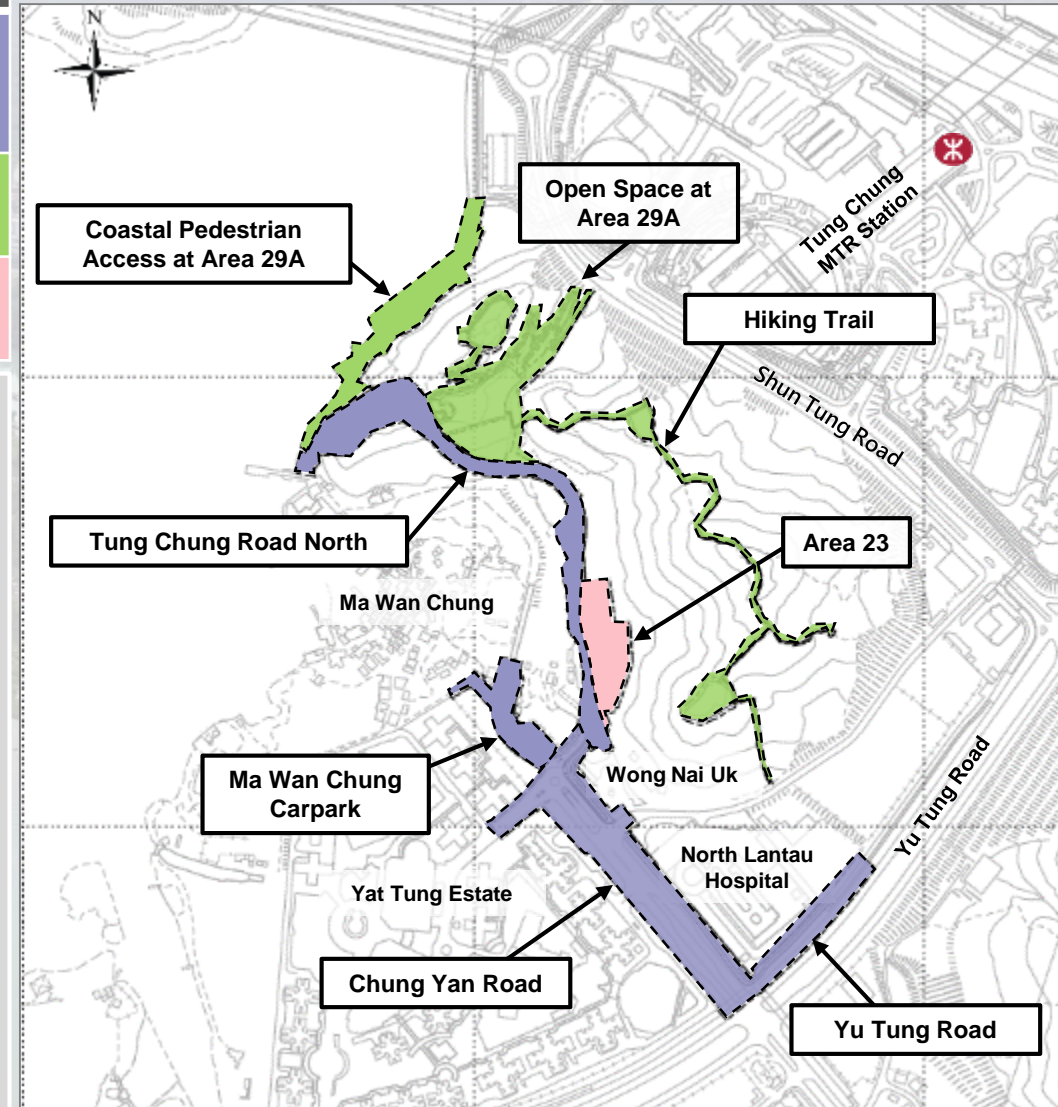
Contract No. NL/2020/05 – Site Formation & Infrastructure Works at Ma Wan Chung

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

Contract Period : May 2021 to January 2025

Major activities in coming three months :-

- Site formation works at Area 29A
- Construction of underground utilities and road works at Yu Tung Road, Chung Yan Road & Tung Chung Road North
- Slope works at Tung Chung Road North
- Foundation works at Coastal Pedestrian Access
- Upgrading works of existing hiking trail
- Construction of retaining walls



Contract No. NL/2020/05 – Site Progress

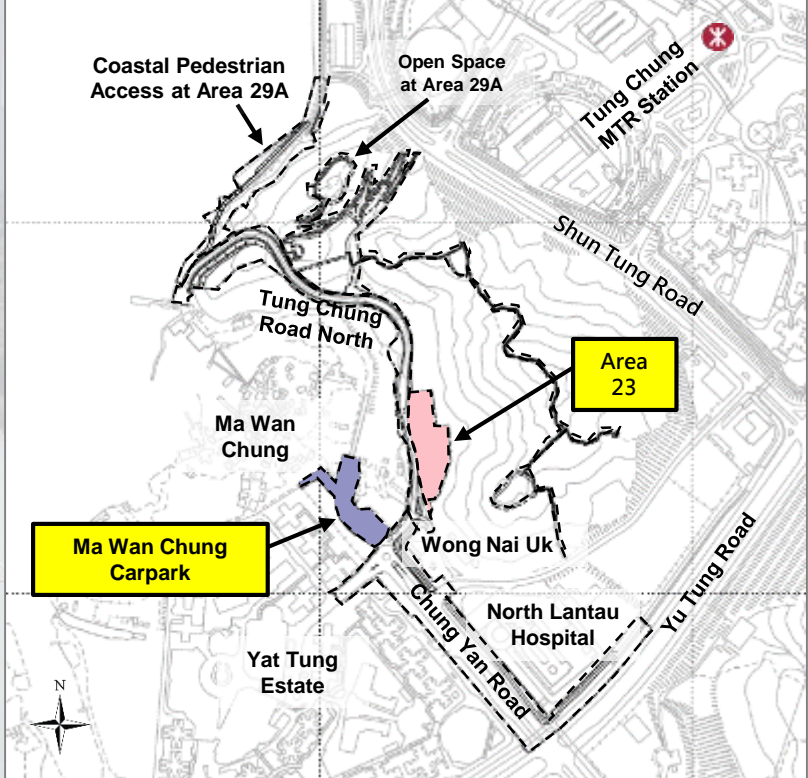
Site Formation of Area 23

- Defect rectification and outstanding works



Ma Wan Chung Carpark

- Retaining wall construction



Contract No. NL/2020/05 – Site Progress

Slope works at Tung Chung Road North

- Slope Works
- Laying underground utilities
- Retaining wall construction



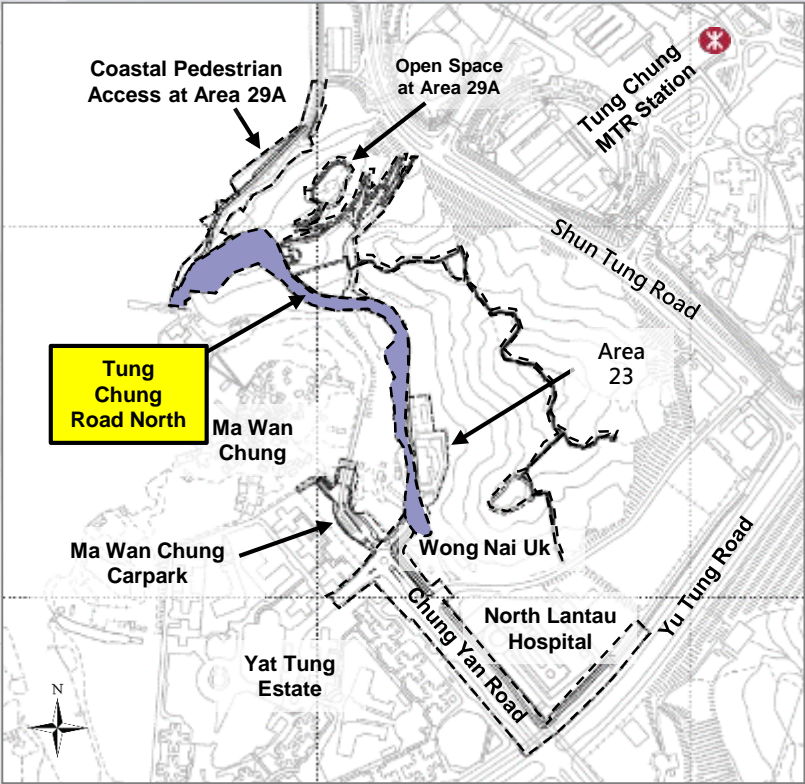
Slope works



Laying underground utilities



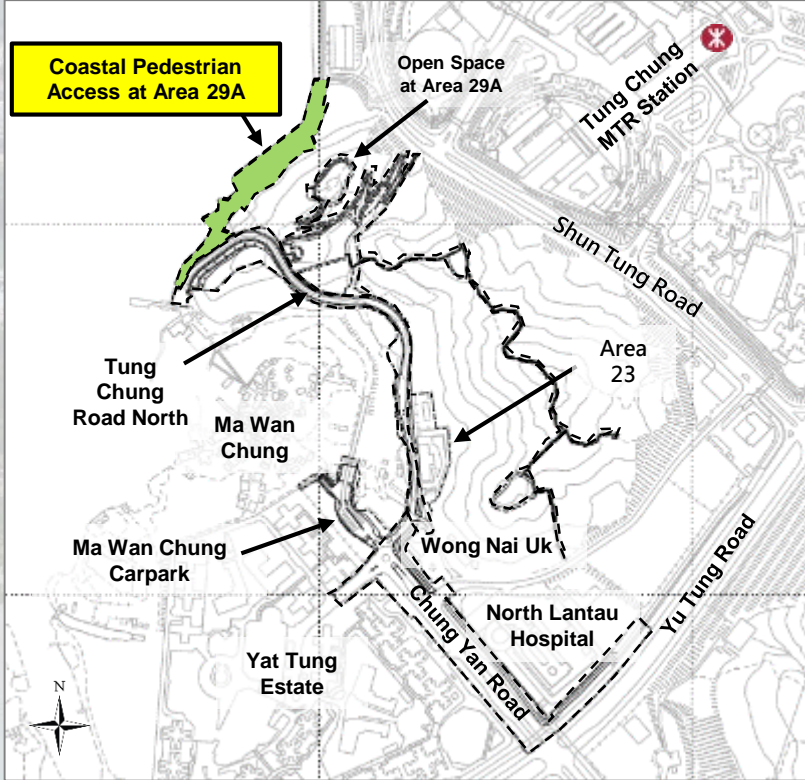
Retaining Wall



Contract No. NL/2020/05 – Site Progress

Coastal Pedestrian Access at Area 29A

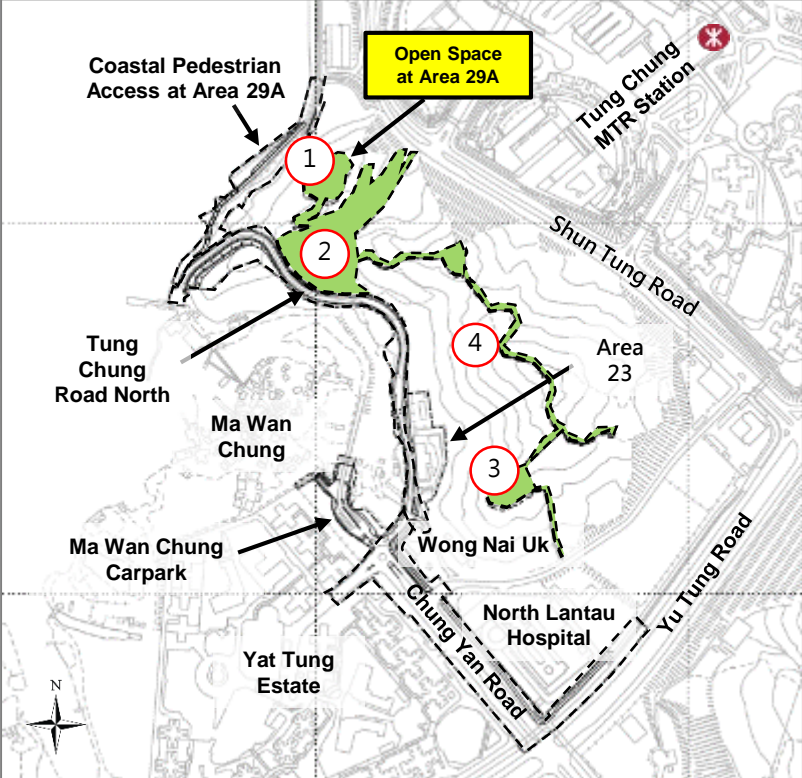
- Foundation works



Contract No. NL/2020/05 – Site Progress

Open Area at Area 29A

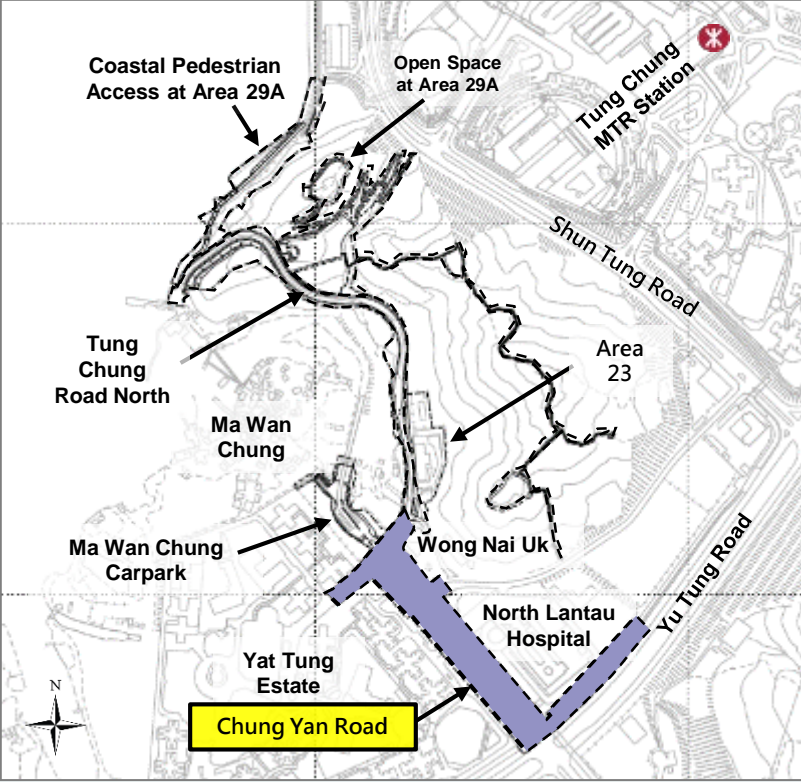
- Pocket Site 1 – Drainage, sewerage, watermains and backfilling works
- Pocket Site 2 – ELS works
- Pocket Site 3 - Retaining wall construction
- Upgrading works of existing hiking trail



Contract No. NL/2020/05 – Site Progress

Improvement Roadworks at Chung Yan Road

- ELS works and underground utilities laying works
- Construction of the covered walkway



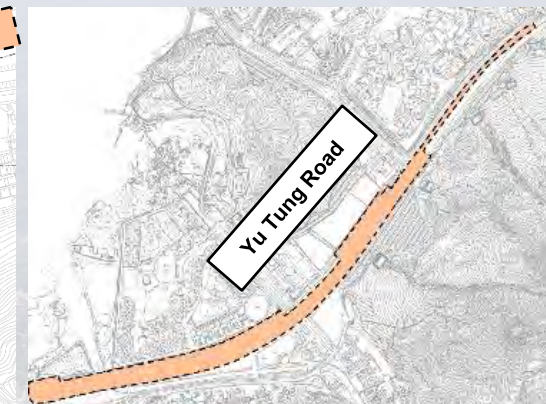
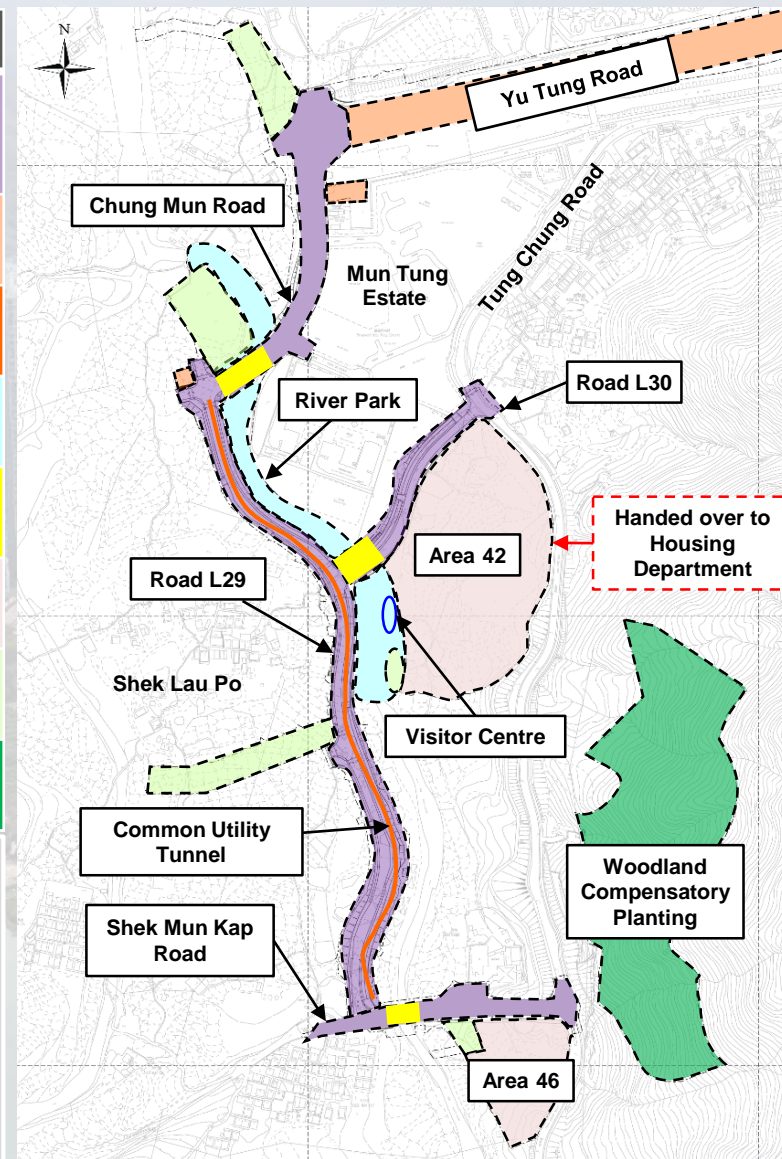
Contract No. NL/2020/06 – Site Formation and Infrastructure Works at Tung Chung Valley, Phase 1

Item	Major Works
1	Road Works at 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 Centre
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 :-

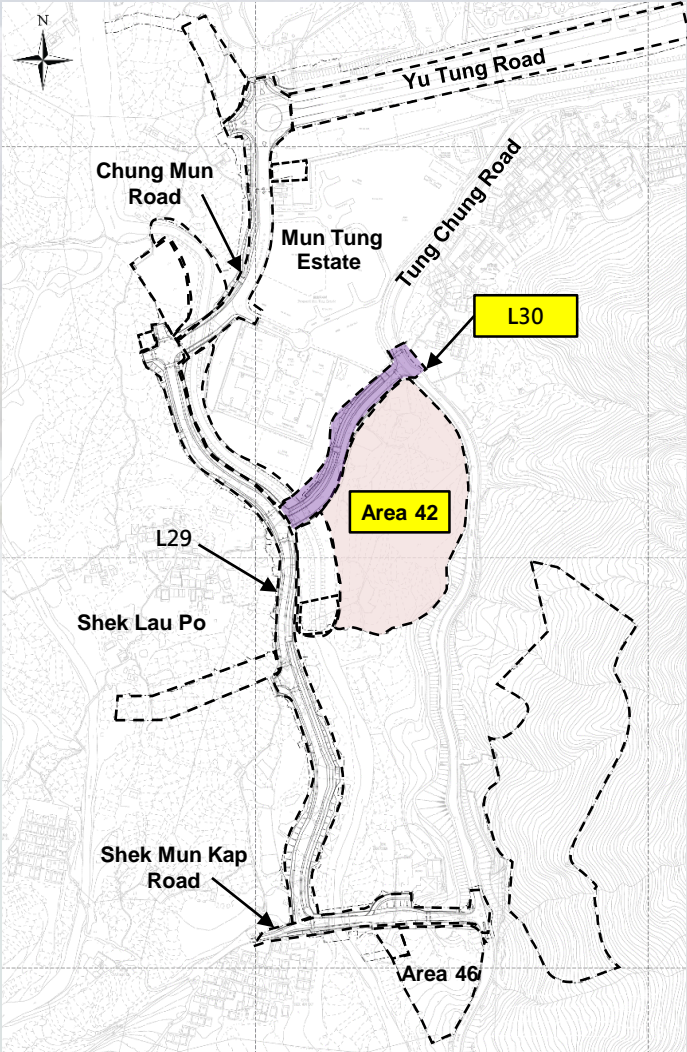
- Site formation works at Area 46
- Construction of underground utilities and road works at Chung Mun Road, Yu Tung Road, Road L29, Road L30 & Shek Mun Kap Road
- Site formation and infrastructure works of sewerage pumping station
- Construction of retaining walls
- Construction of bridges
- Foundation works for Visitor Centre



Contract No. NL/2020/06 – Site Progress

Site Formation of Area 42

- Site formation works completed and it was handed over to HD on 31 May 2023.
- HD commenced piling works from August 2023.



Roadworks at L30

- Retaining wall construction
- Roadworks



Contract No. NL/2020/06 – Site Progress

Site Formation of Area 46

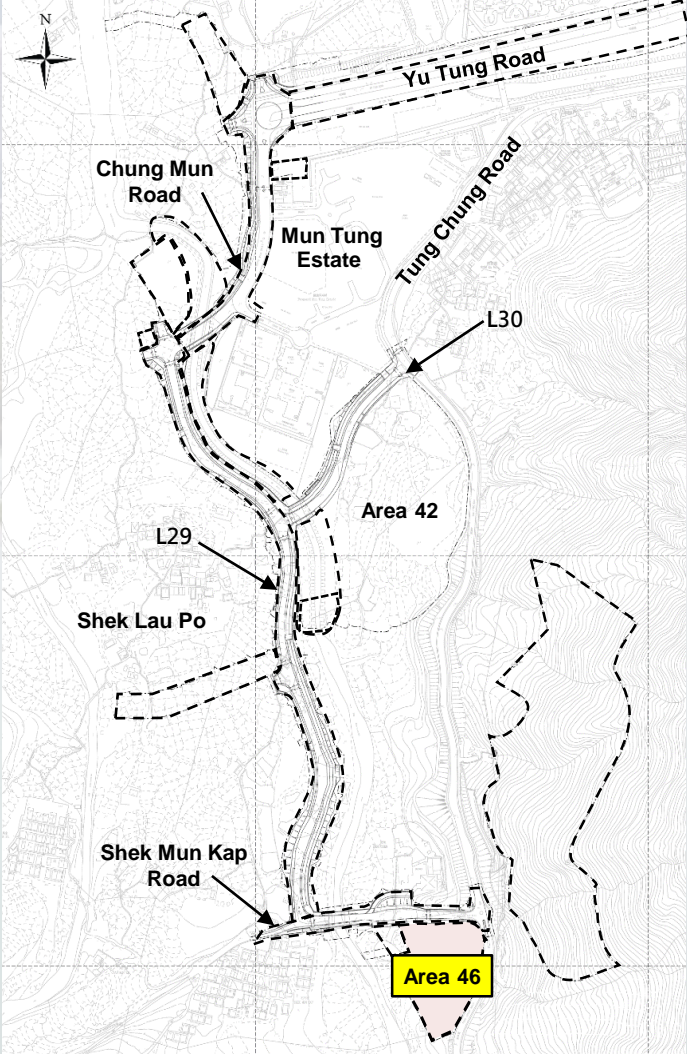
- Site formation works and Boundary Drainage Construction



Site Formation



Hydroseeding



Contract No. NL/2020/06 – Site Progress

Roadworks at L29 and construction of River Park

- Temporary Tung Chung River diversion completed
- Revitalization of Tung Chung River

Fish translocation exercises were carried out before temporary diversion of Tung Chung Stream



Fish Translocation Exercise

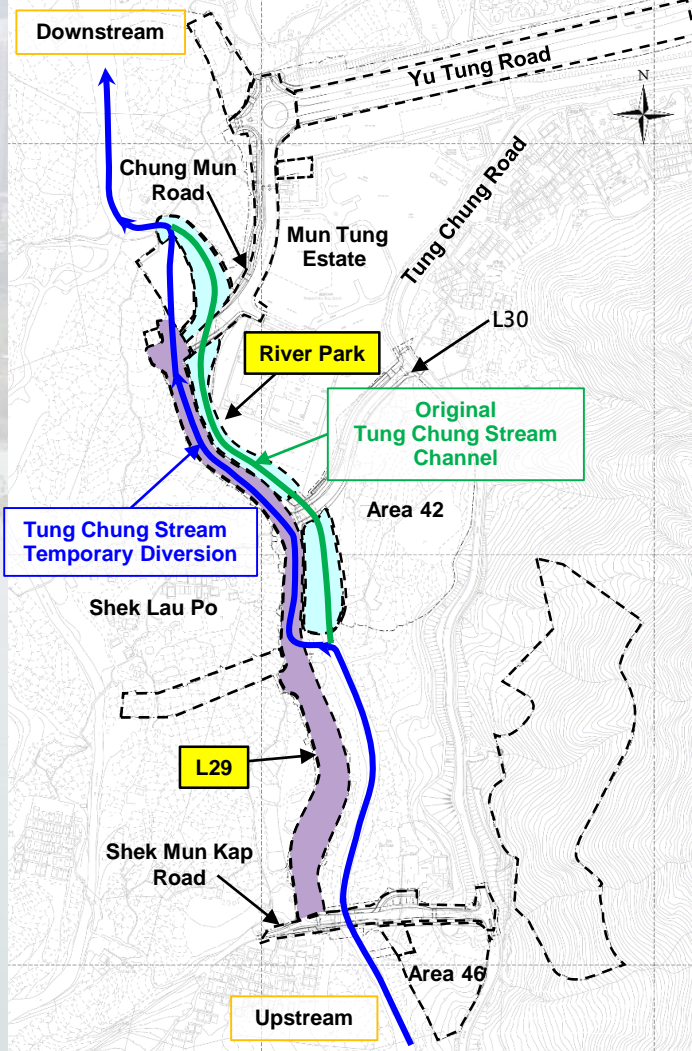


Demolition of original channelized river bed

Examples of diverted fishes:



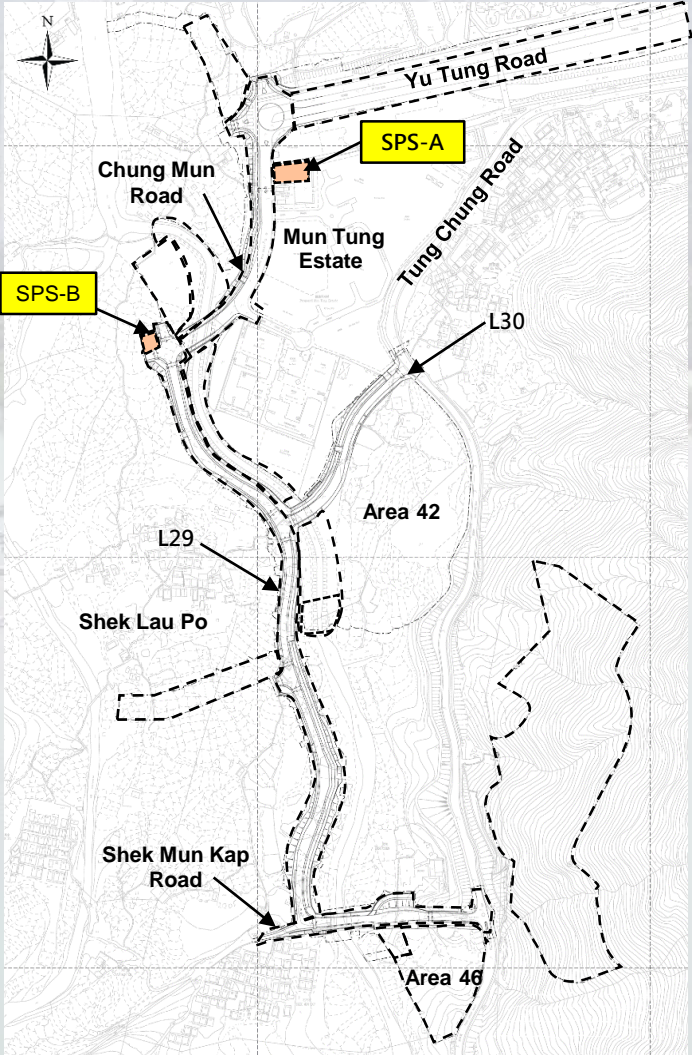
Acrosssocheilus beijiangensis
北江光唇魚



Contract No. NL/2020/06 – Site Progress

Sewage Pumping Station A

- ELS Works



Sewage Pumping Station B

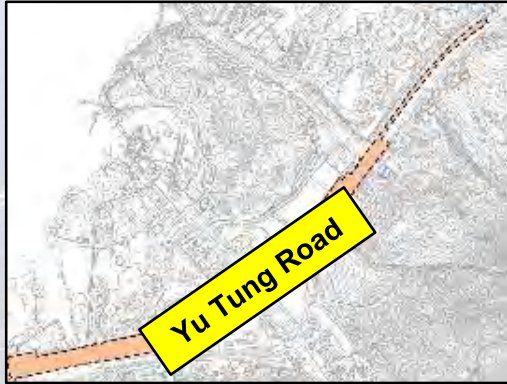
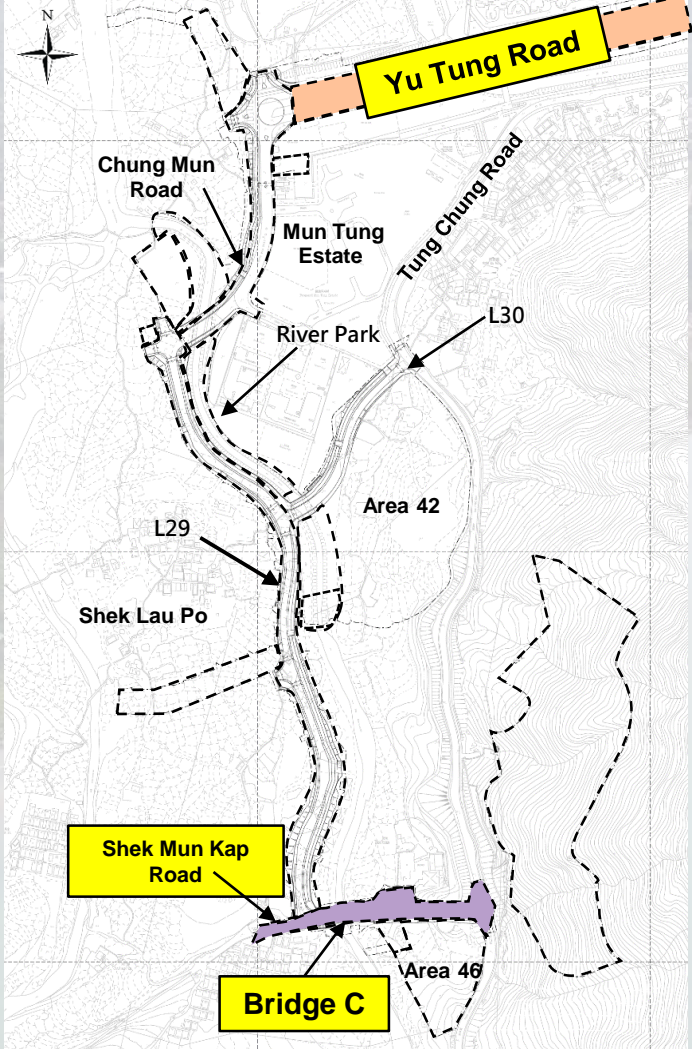
- Foundation works



Contract No. NL/2020/06 – Site Progress

Yu Tung Road

- Laying underground utilities



Shek Mun Kap Road improvement work

- Retaining wall construction



Contract No. NL/2020/06 – Site Progress

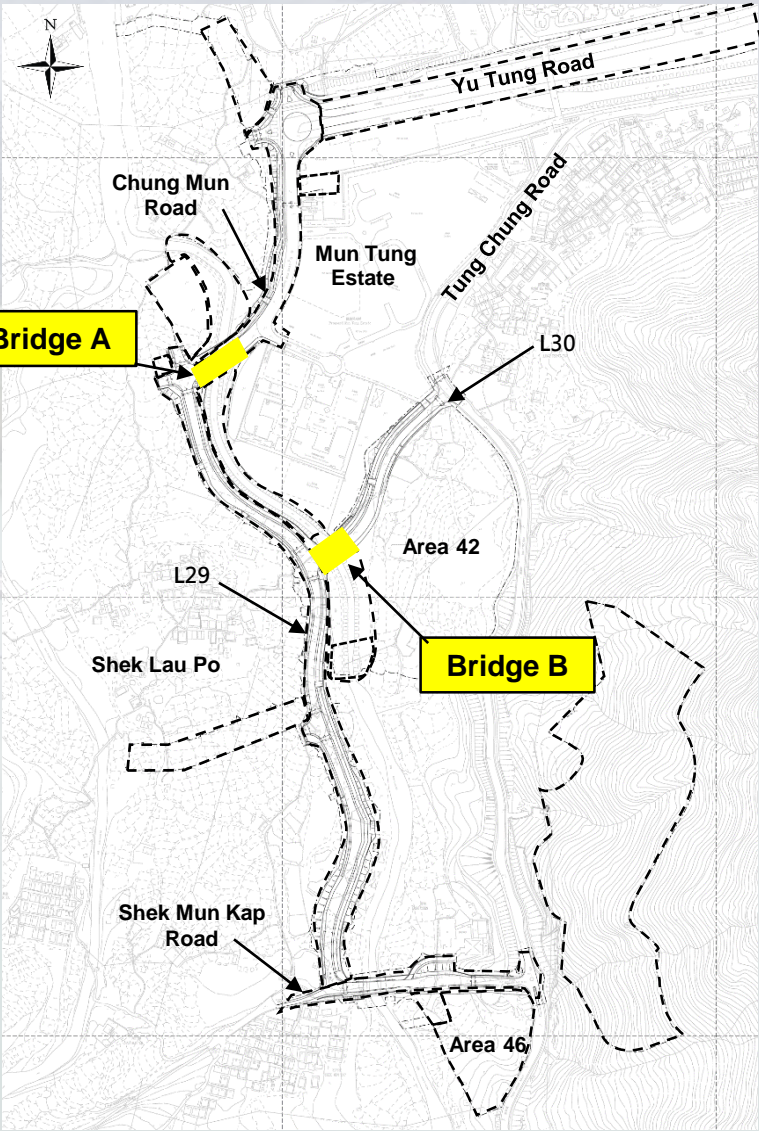
Bridge A

- Foundation works for bridge A



Bridge B

- Foundation works for bridge B



Contract No. NL/2020/06 – Site Progress

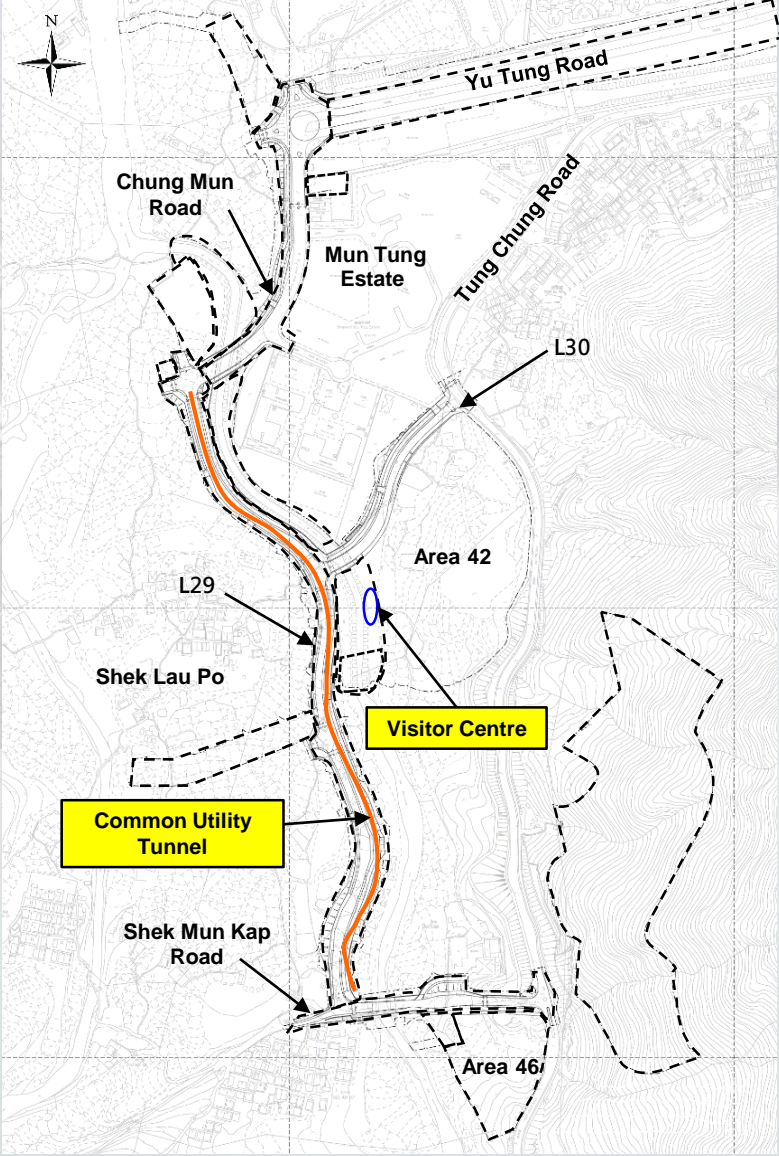
Visitor Centre

- Foundation works for Visitor Centre



Common Utility Tunnel

- ELS works



Tung Chung West

c) Environmental Monitoring and Audit

Environmental Mitigation Measures for Construction Activities



Water spraying via mist cannon at the idled construction materials



Wheel washing facility at the site exit



Water spraying by water truck along haul road



Water spraying by manual hose during materials handling

Environmental Mitigation Measures for Construction Activities (Cont'd)



Deployment of noise barrier



Demolition activity by silenced type
Powered Mechanical Equipment (PMEs)



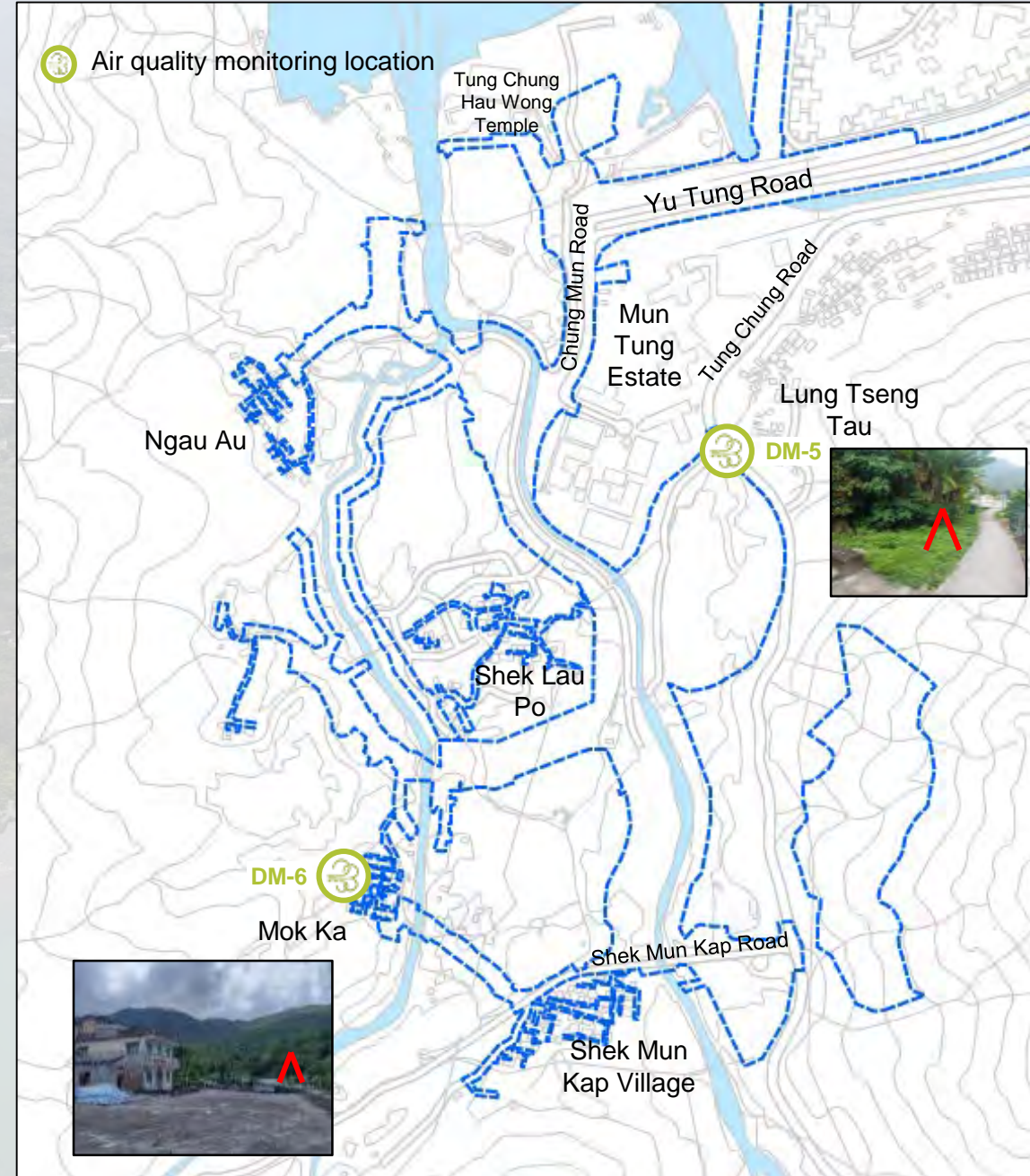
Wastewater treatment facility

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		

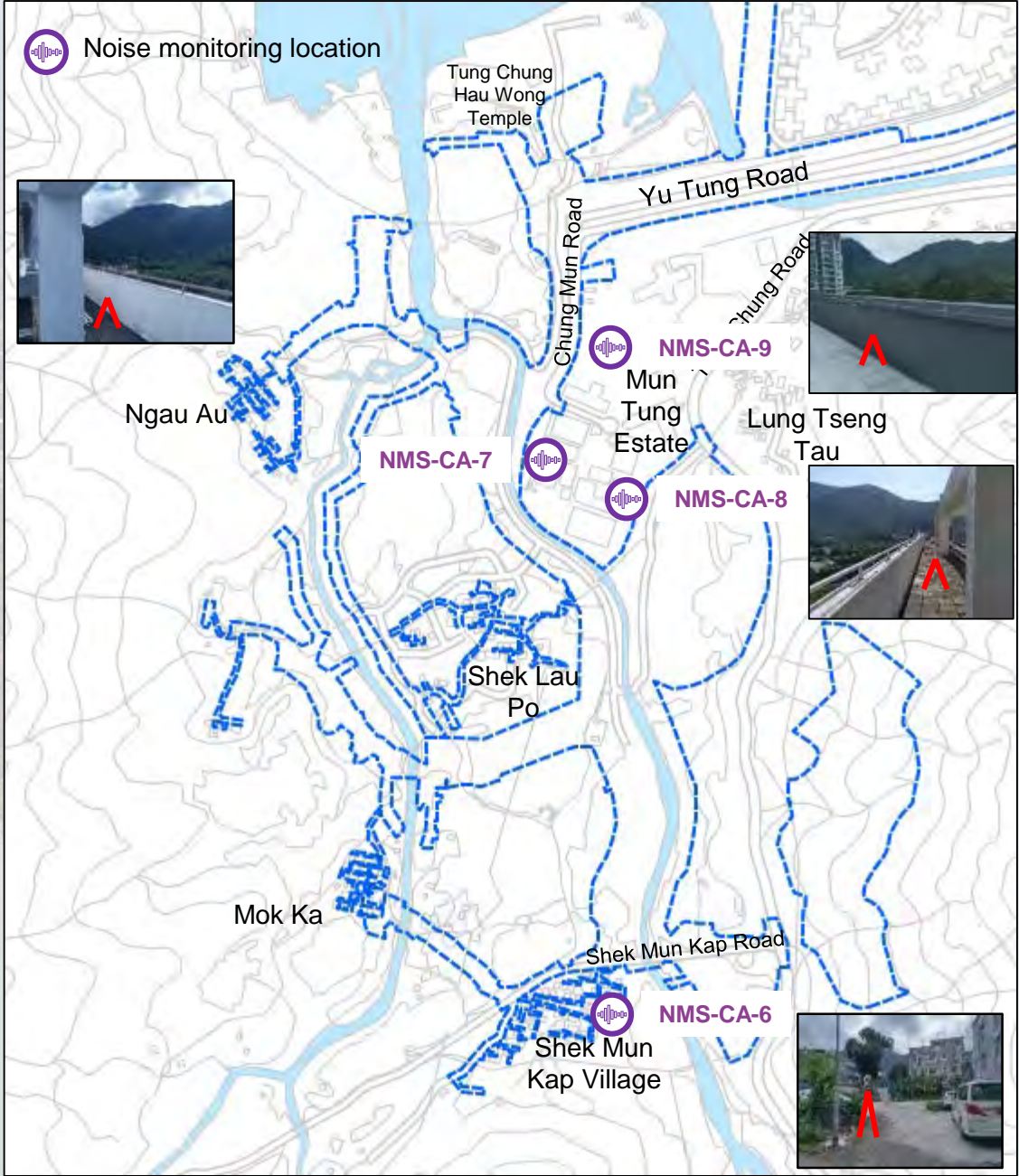
Monitoring Results from Feb 2023 to Sep 2023

No exceedances were recorded



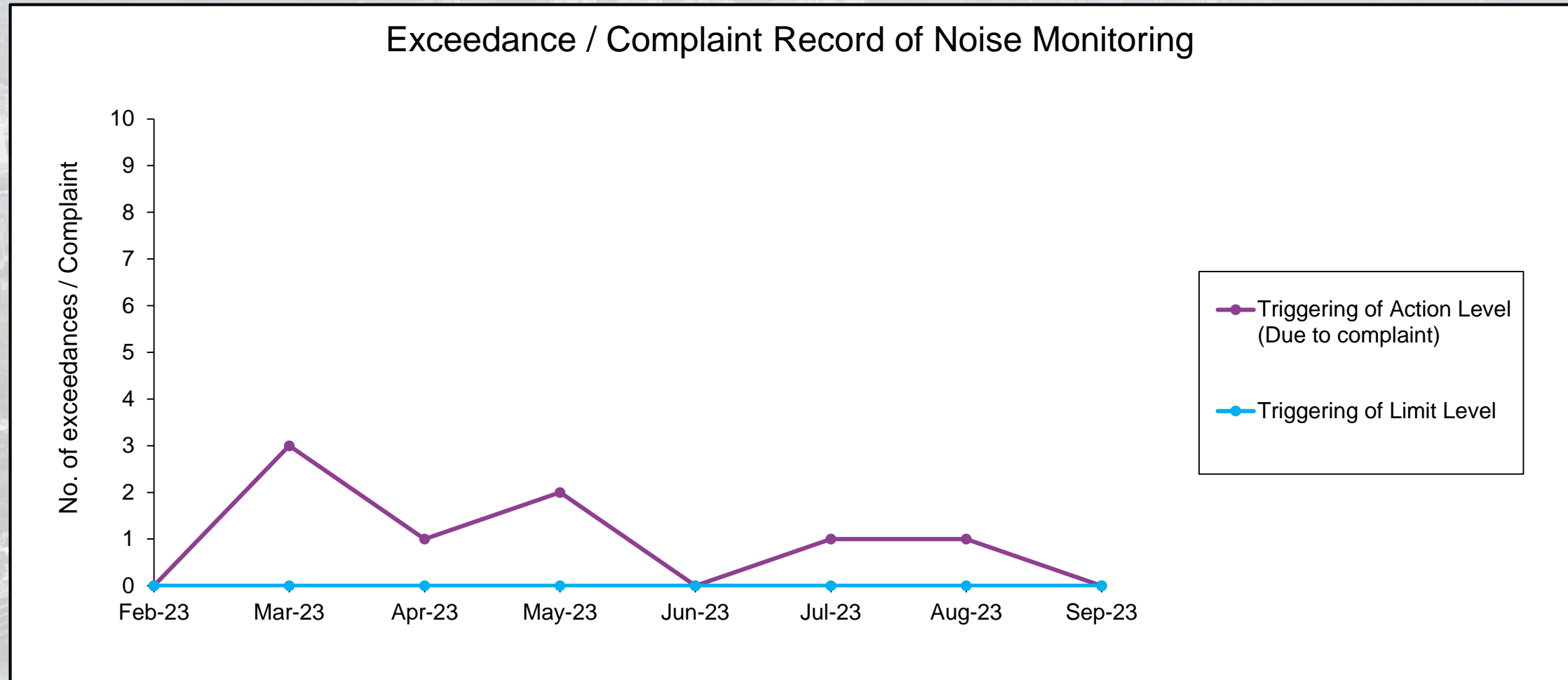
EM&A Monitoring – Noise

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 Feb 2023 to Sep 2023

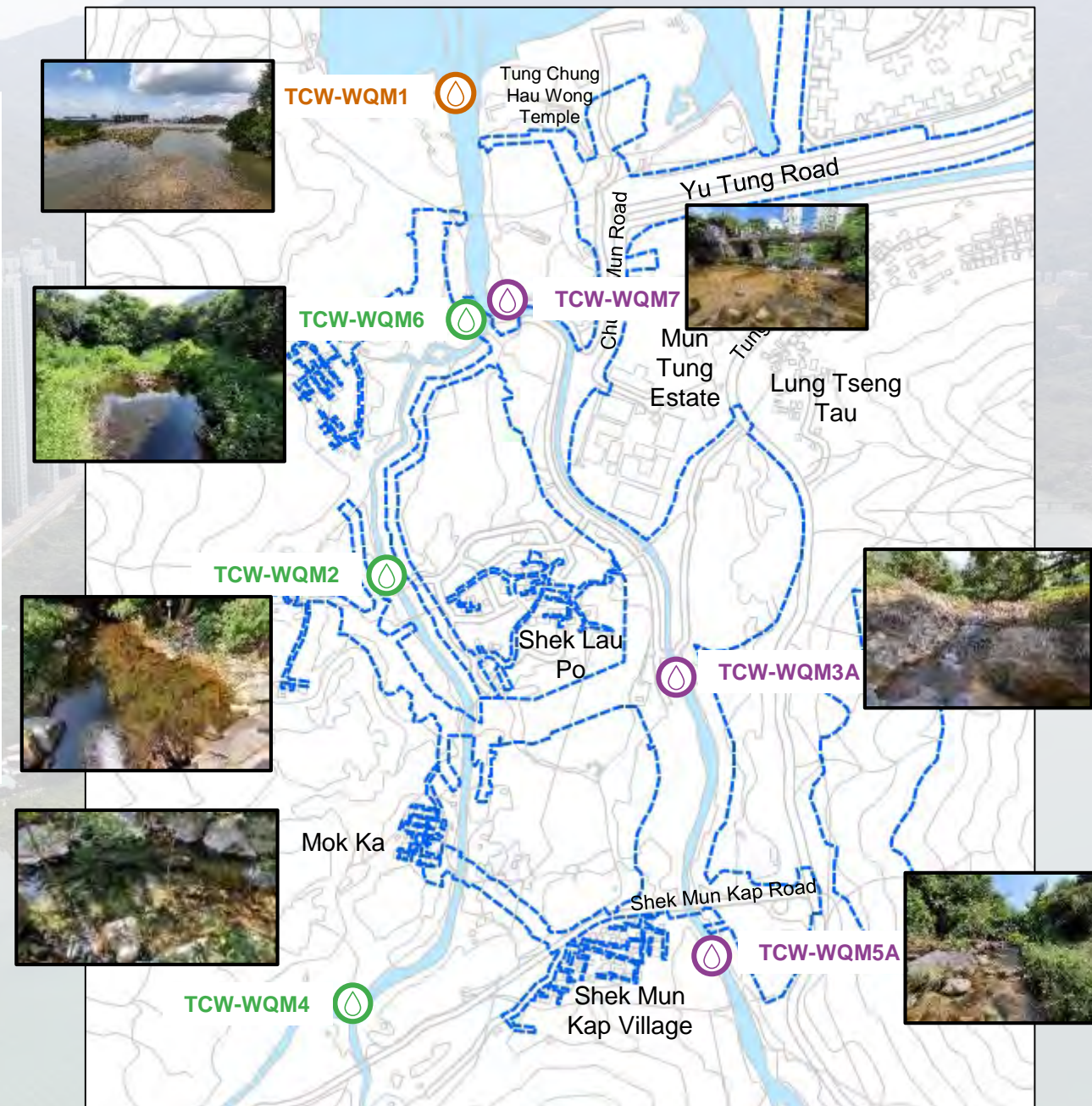


Exceedances as recorded in the reporting period were due to the receipt of noise complaints.

EM&A Monitoring – Water Quality

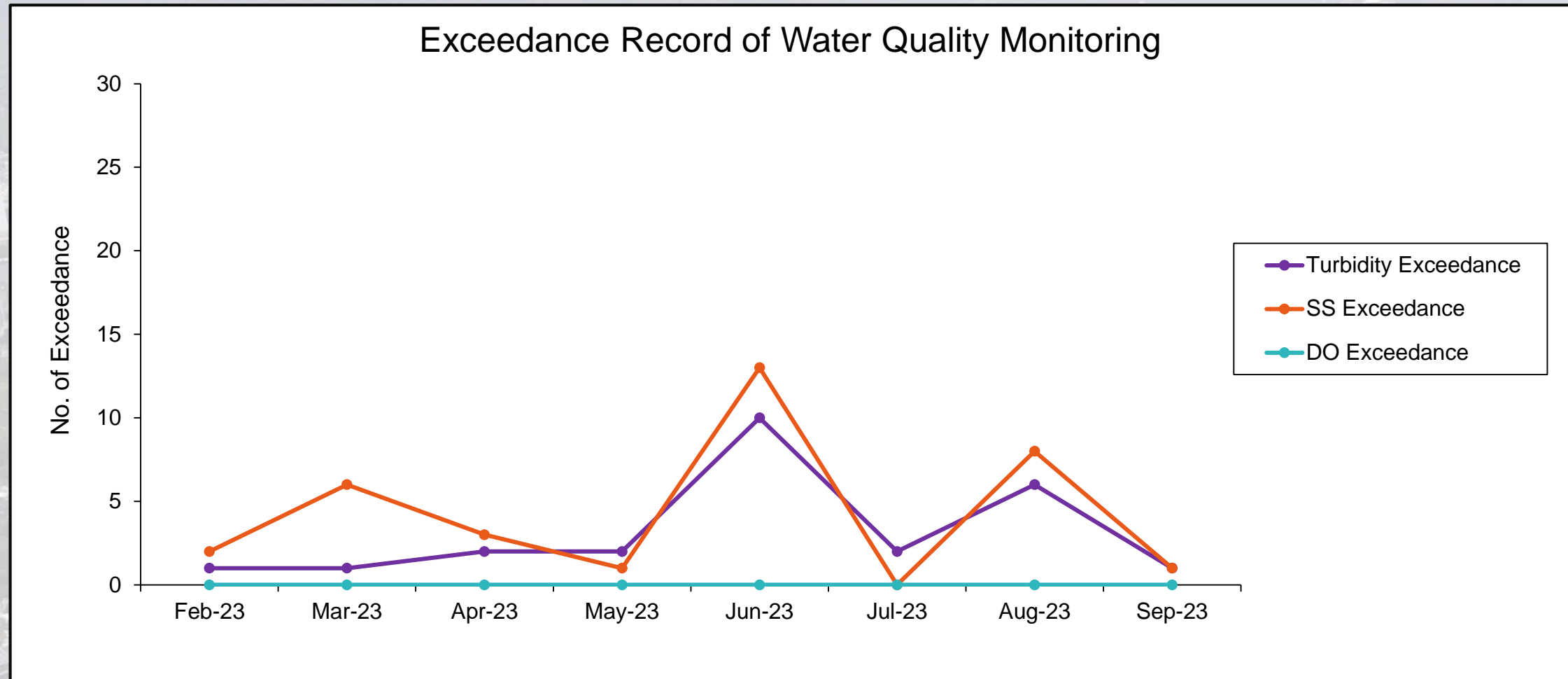
ID	Description	Monitoring Parameter	Monitoring Frequency
TCW-WQM-1	Downstream of Tung Chung Stream	<ul style="list-style-type: none"> • Temperature • Salinity • Conductivity • pH • Dissolved Oxygen • Turbidity • Suspended Solids 	3 days per week
TCW-WQM-2	Middle of Tung Chung Stream (West)		
TCW-WQM-3A	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 Feb 2023 to Sep 2023



1. Impact monitoring is carried out at seven stations for three times per week.
2. Exceedances as recorded in the reporting period were mainly due to the inclement weather.

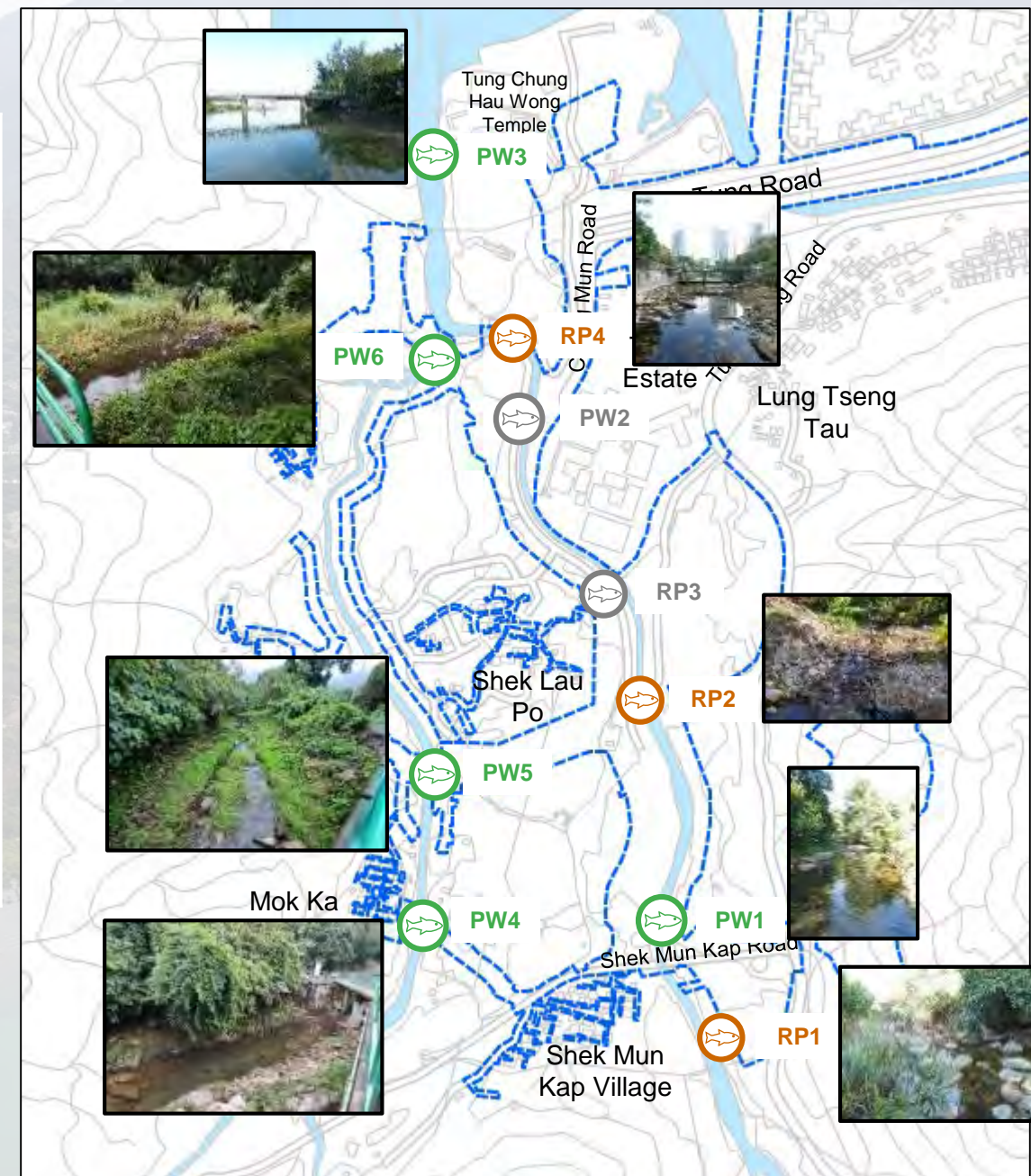
EM&A Monitoring – Ecology

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		Baseline monitoring was commenced in May 2023 in bi-monthly basis
PW4	Near Public Works		
PW5	Near Public Works		
PW6	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 at the monitoring station RP3 and PW2 were suspended since March 2023 with the commencement of temporary river diversion in Tung Chung Stream.

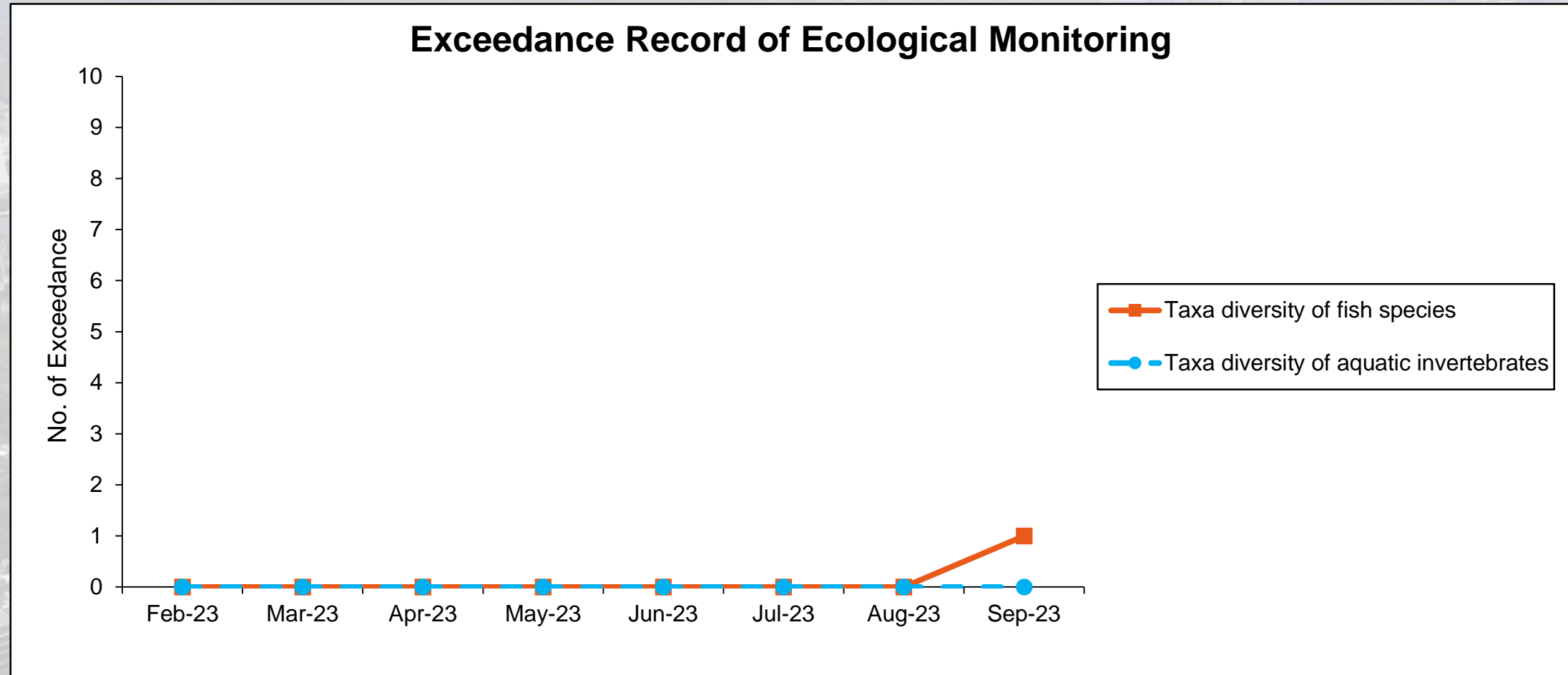


Ecological monitoring location for other public works

Ecological monitoring location for the proposed River Park

EM&A Monitoring – Ecology

Statistics of Exceedance from Feb 2023 to Sep 2023



1. Exceedance as recorded in the reporting period was mainly due to extreme weather and consecutive heavy rainfall.

Complaint Received

Month	Air	Noise	Water	Others (Waste, Ecology, Landscape and Visual)
Feb-2023	3	0	0	0
Mar-2023	3	3	0	0
Apr-2023	1	1	0	0
May-2023	3	2	0	0
Jun-2023	1	0	0	0
Jul-2023	0	1	0	0
Aug-2023	0	1	1	0
Sep-2023	0	0	0	0
Nature of Complaints	<ul style="list-style-type: none"> Dusty road at Shek Mun Kap Road, Tung Chung Road and Chung Yan Road Construction dust 	<ul style="list-style-type: none"> Area 23 and Chung Yan Road Area 42 Sheet-piling works at Road L29 and Sewage Pumping Station-A 	<ul style="list-style-type: none"> Suspected water pollution at Tung Chung Stream 	



土木工程拓展署
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Thank you