

A 3D architectural rendering of a modern high-rise residential or commercial building complex with a train platform in the foreground.

**Tung Chung Line
Extension (TUE)**

MTR New Projects Opportunities and Challenges

An architectural rendering of a large, modern train station interior with a high, vaulted ceiling and people walking.

**Tuen Mun South
Extension (TME)**

An aerial rendering of a large-scale infrastructure project, likely a depot or station, with multiple tracks and buildings.

**Siu Ho Wan Station
(SHO) & Siu Ho Wan
Depot Development
(SHD)**

A topographic map showing a proposed rail line through a mountainous region.

Northern Link (NOL)

This pack of slides is intended to provide an outline only of the opportunities and challenges associated with the new MTR projects. Given the early stage of these projects it should be recognized that details may change as the projects develop. In the event of any queries or comments please contact: newprojects@mtr.com.hk

An aerial rendering of a large urban area with a prominent station building and surrounding infrastructure.

**Hung Shui Kiu
Station (HSK)**

An interior rendering of a long, curved tunnel with tracks and overhead power lines.

**Airport Railway
Extended Overrun
Tunnel (ARO)**

Agenda

1. Objectives

2. MTR New Projects

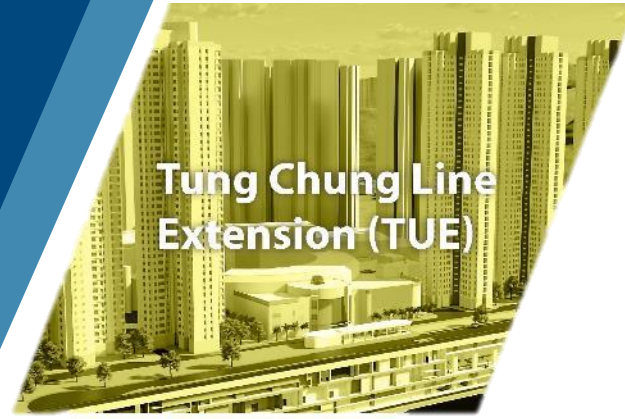
3. Tentative Project Timelines

4. Key Challenges

5. Expectations of the Supply Chain

6. New MTR Capital Works Business Unit

1. Objectives



Tung Chung Line Extension (TUE)



Tuen Mun South Extension (TME)



Siu Ho Wan Station (SHO) & Siu Ho Wan Depot Development (SHD)



Northern Link (NOL)



Hung Shui Kiu Station (HSK)



Airport Railway Extended Overrun Tunnel (ARO)

Objectives



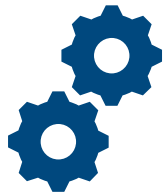
Build Awareness



Early Engagement

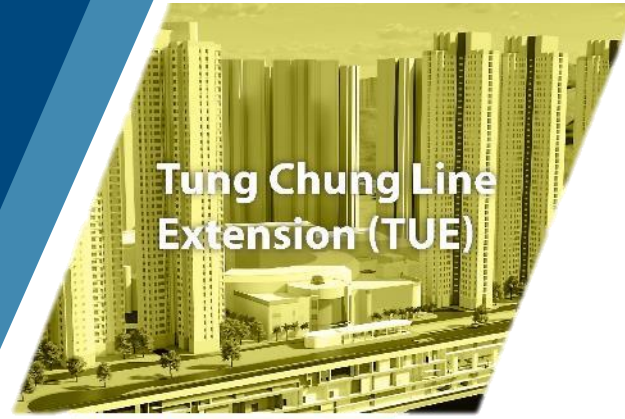


Exchange Ideas



Understand Supply Chain Challenges

2. MTR New Projects



Tung Chung Line Extension (TUE)



Tuen Mun South Extension (TME)



Siu Ho Wan Station (SHO) & Siu Ho Wan Depot Development (SHD)



Northern Link (NOL)



Hung Shui Kiu Station (HSK)



Airport Railway Extended Overrun Tunnel (ARO)

SHENZHEN



Northern Link

Hung Shui Kiu Station

Tuen Mun South Extension

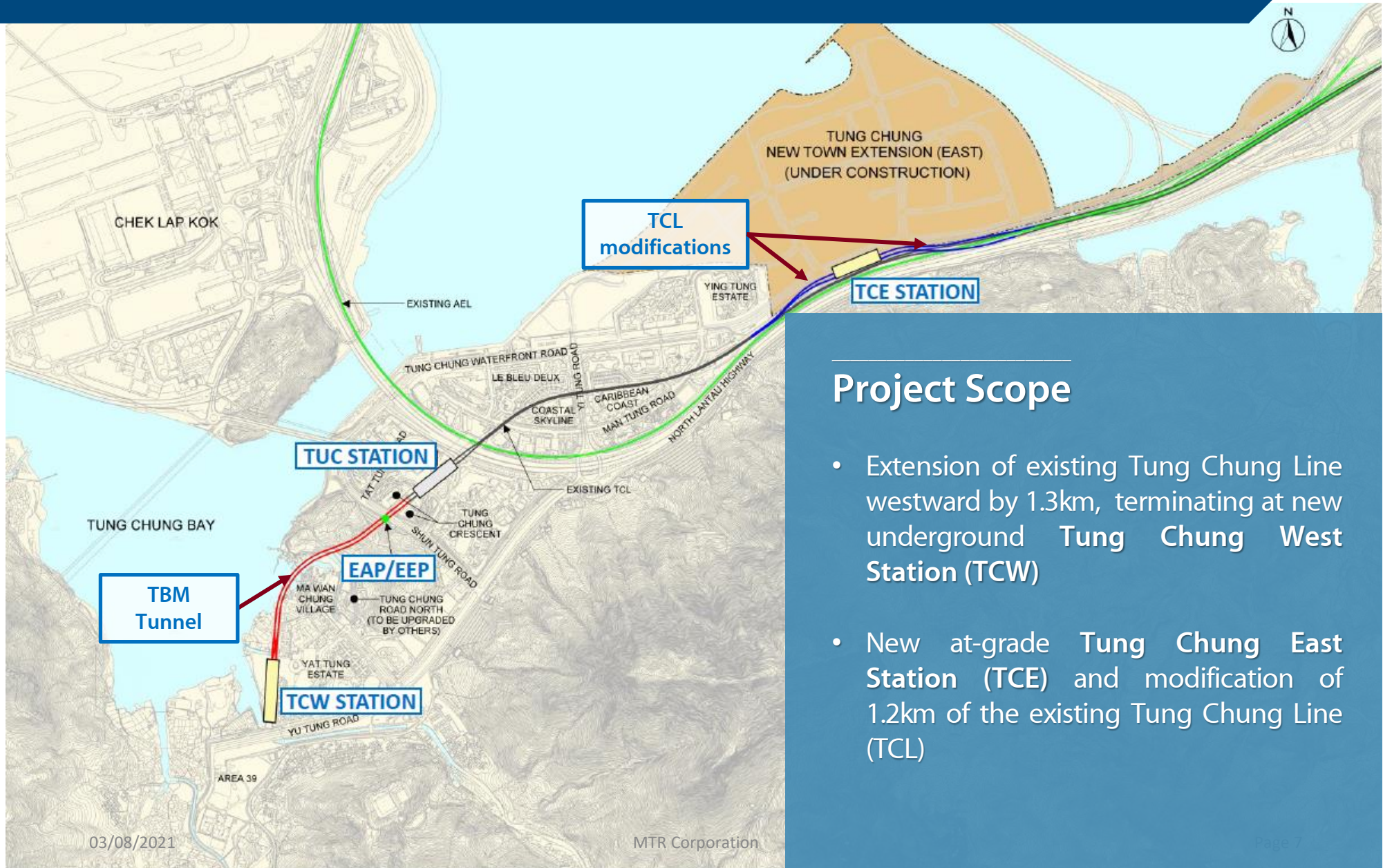
Tung Chung Line Extension

Siu Ho Wan Station & Siu Ho Wan Depot Development

Airport Railway Extended Overrun Tunnel

MTR New Projects
MTRCL proceeding with detailed planning & design

Tung Chung Line Extension (TUE)



Project Scope

- Extension of existing Tung Chung Line westward by 1.3km, terminating at new underground Tung Chung West Station (TCW)
- New at-grade Tung Chung East Station (TCE) and modification of 1.2km of the existing Tung Chung Line (TCL)

Tung Chung Line Extension (TUE)

Project Challenges

Tung Chung East Station (TCE)

- Next to existing railway
- Non-traffic hour works
- Complicated project interfaces
- Construction on newly reclaimed land

Tung Chung West Station (TCW)

- Deep excavation, next to existing Yat Tung Estate
- Subsea tunnel
- Next to existing Ma Wan Chung village structures and ecologically sensitive area
- Stakeholder engagement



TCE is next to existing AEL and TCL



Yat Tung Estate

Ma Wan Chung Village

Airport Railway Extended Overrun Tunnel (ARO)

Project Scope & Challenges

- Extends the overrun tunnels for Tung Chung Line and Airport Express by about 0.5km to the east of Hong Kong Station
- Major underground utility diversions, traffic management and careful geotechnical monitoring



Tuen Mun South Extension (TME)



Project Scope

- Extends the Tuen Ma Line on viaduct from Tuen Mun Station southwards by about 2.4km
- New elevated terminus, **Tuen Mun South Station (TMS)**, near Tuen Mun Ferry Pier and an intermediate elevated **A16 Station**
- Re-provision of existing Tuen Mun Swimming Pool, Pet Garden and Tuen Mun Community Green Station

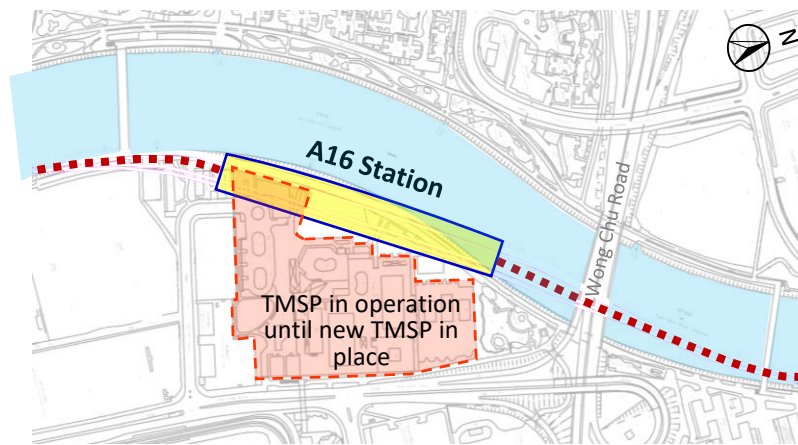
Tuen Mun South Extension (TME)

Project Challenges

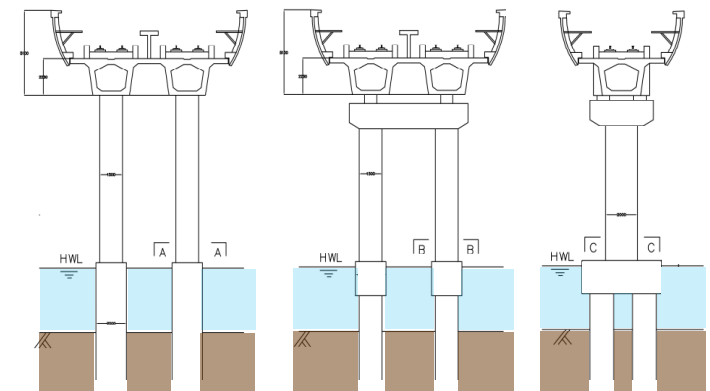
- Construction in Tuen Mun River with limitations during wet season
- Need to re-provision existing swimming pool prior to the construction of A16 Station
- Close proximity to residential areas, busy roads and footbridges
- Complicated project interfaces
- Stakeholder engagement



Existing Congested Infrastructures



Phased Construction of A16 Station



Proposed Works in Tuen Mun River

Siu Ho Wan Station (SHO) & Siu Ho Wan Depot Development (SHD)

Project Scope

- Multiple phases of Siu Ho Wan Depot rearrangement, podium deck construction and property enabling works to support the Siu Ho Wan Depot Topside Residential Property Development
- New at-grade Siu Ho Wan Station (SHO) and associated railway facilities



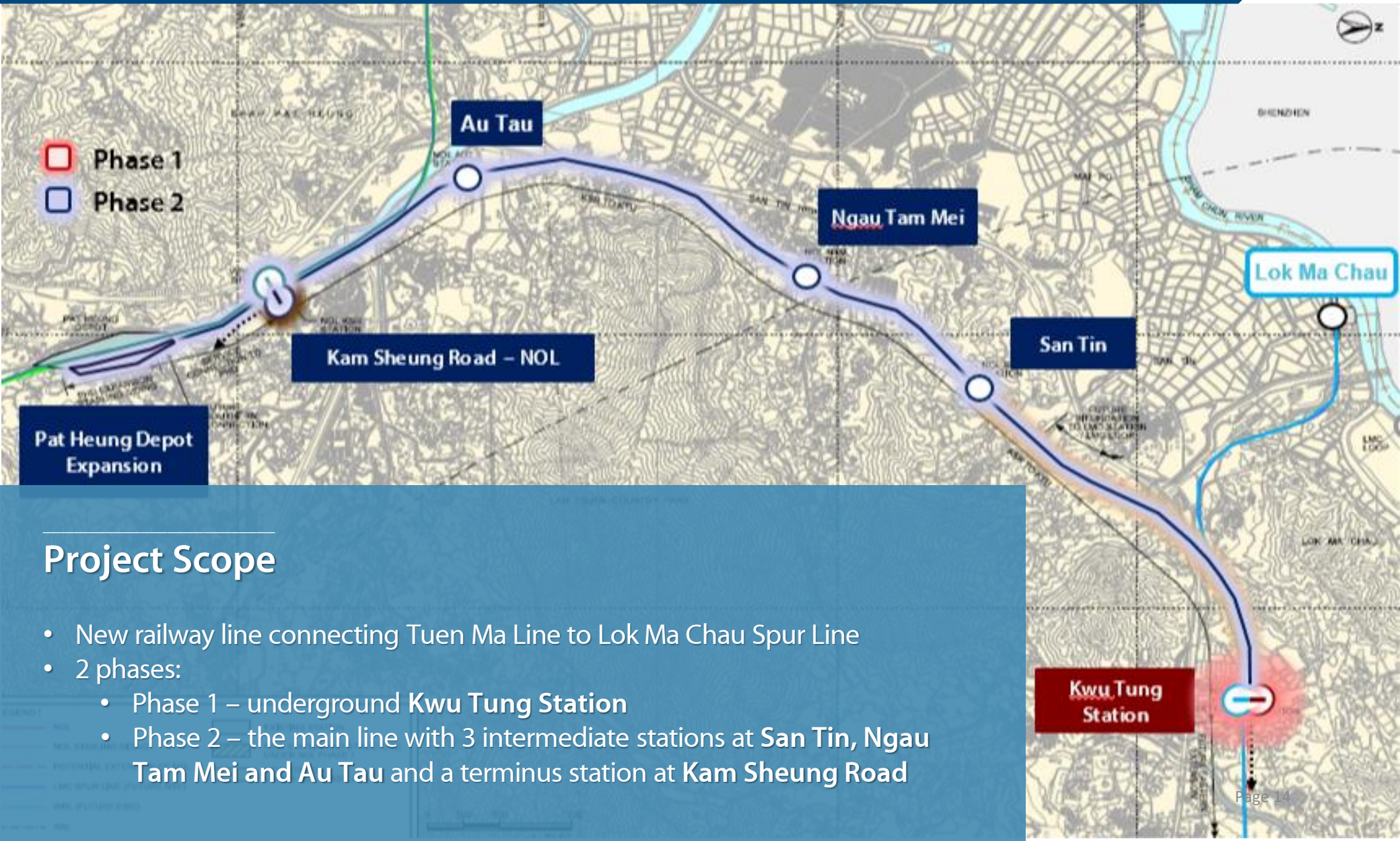
Siu Ho Wan Station (SHO) & Siu Ho Wan Depot Development (SHD)

Project Challenges

- Brownfield works
- Non-traffic hour works
- Maintain depot operations throughout
- Complicated project interfaces



Northern Link (NOL)



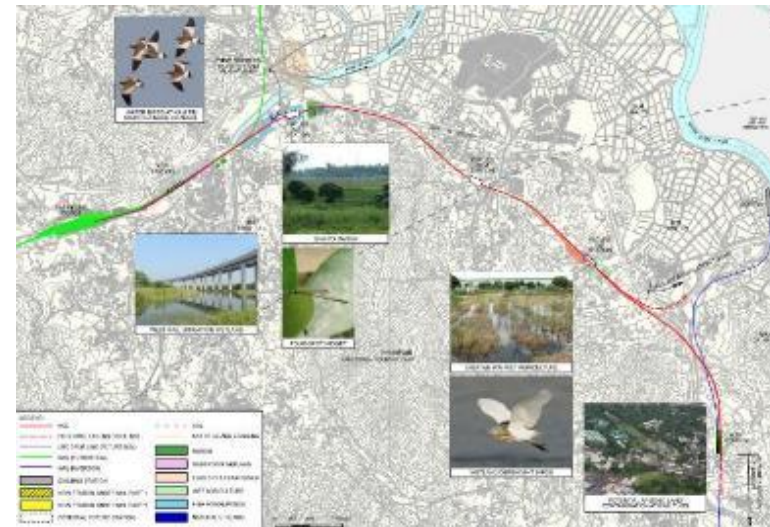
Project Scope

- New railway line connecting Tuen Ma Line to Lok Ma Chau Spur Line
- 2 phases:
 - Phase 1 – underground **Kwu Tung Station**
 - Phase 2 – the main line with 3 intermediate stations at **San Tin**, **Ngau Tam Mei** and **Au Tau** and a terminus station at **Kam Sheung Road**

Northern Link Phase 1 & 2 (NOL)

Project Challenges

- Next to existing railway facilities
- Non-traffic hour works
- Environmentally and ecologically sensitive areas
- Passes through many local villages
- Extensive stakeholder engagement
- Land acquisition
- Complicated project interfaces



Ecologically Sensitive Areas



Interface with New Development Areas

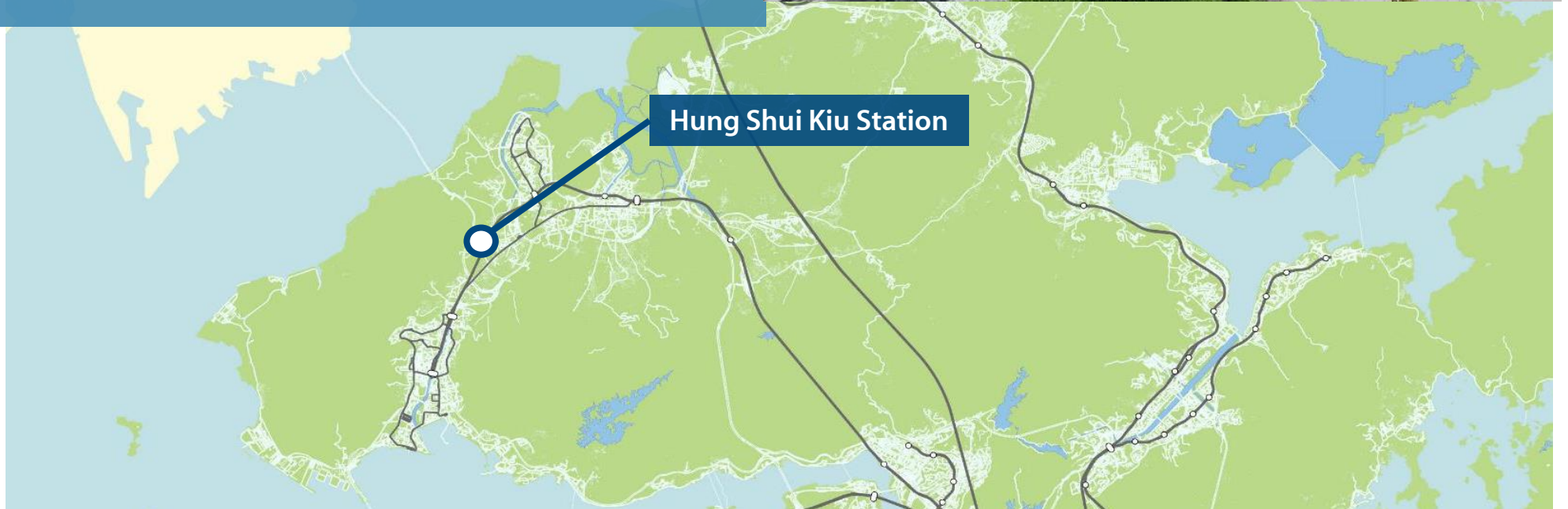


Interface with Operating Railway

Hung Shui Kiu Station (HSK)

Project Scope

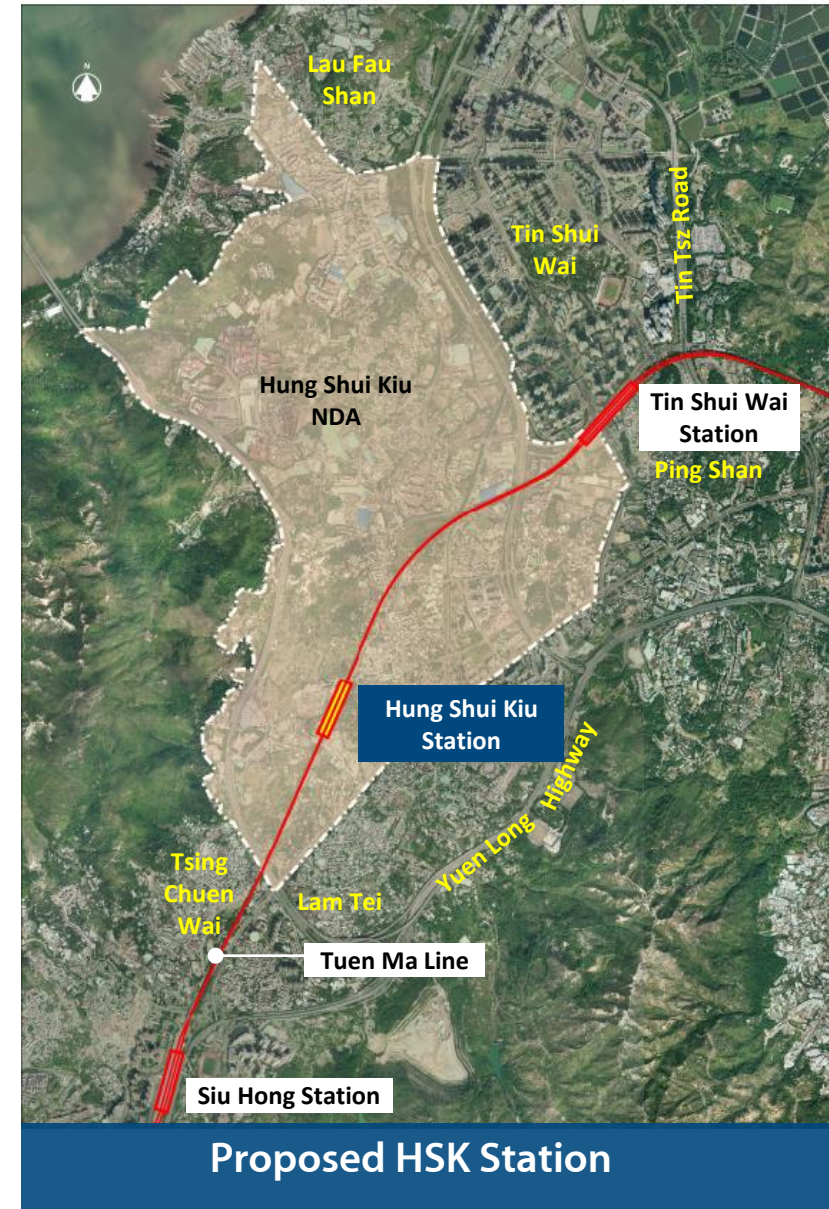
- A new station to be built on the existing Tuen Ma Line between Tin Shui Wai Station and Siu Hong Station
- To serve the future Hung Shui Kiu/Ha Tsuen New Development Area (NDA)

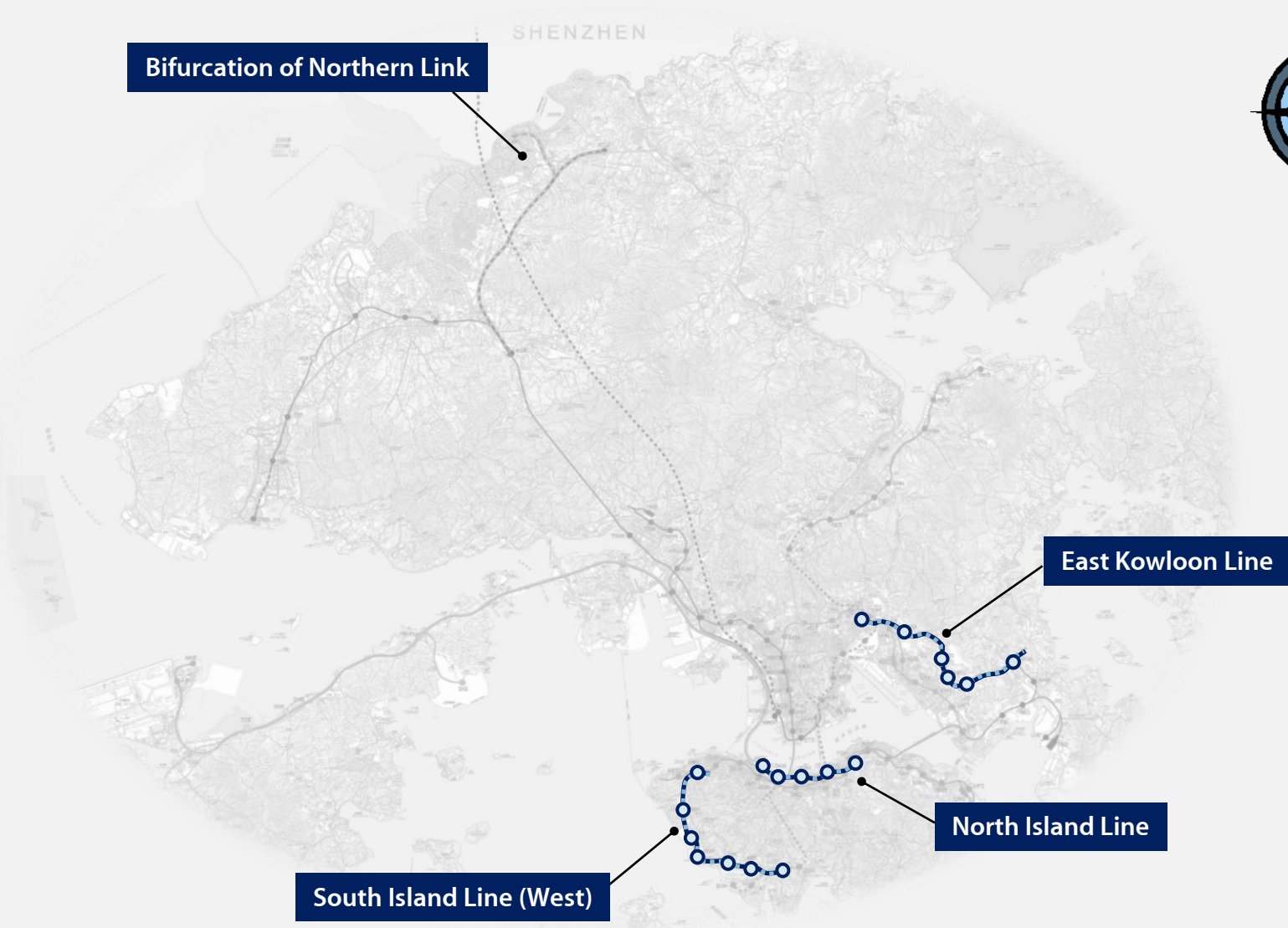


Hung Shui Kiu Station (HSK)

Project Challenges

- Delivery programme to match the first population in-take at HSK/HA NDA
- First time in Hong Kong to build a new station on an operating railway line while maintaining full line operation
- Non-traffic hour works

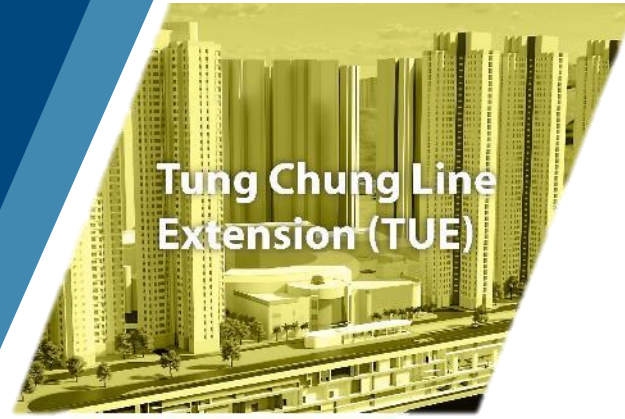




MTR New Projects
MTRCL working with Gov't on technical studies

3.

Tentative Project Timelines



Tung Chung Line Extension (TUE)



Tuen Mun South Extension (TME)



Siu Ho Wan Station (SHO) & Siu Ho Wan Depot Development (SHD)



Northern Link (NOL)

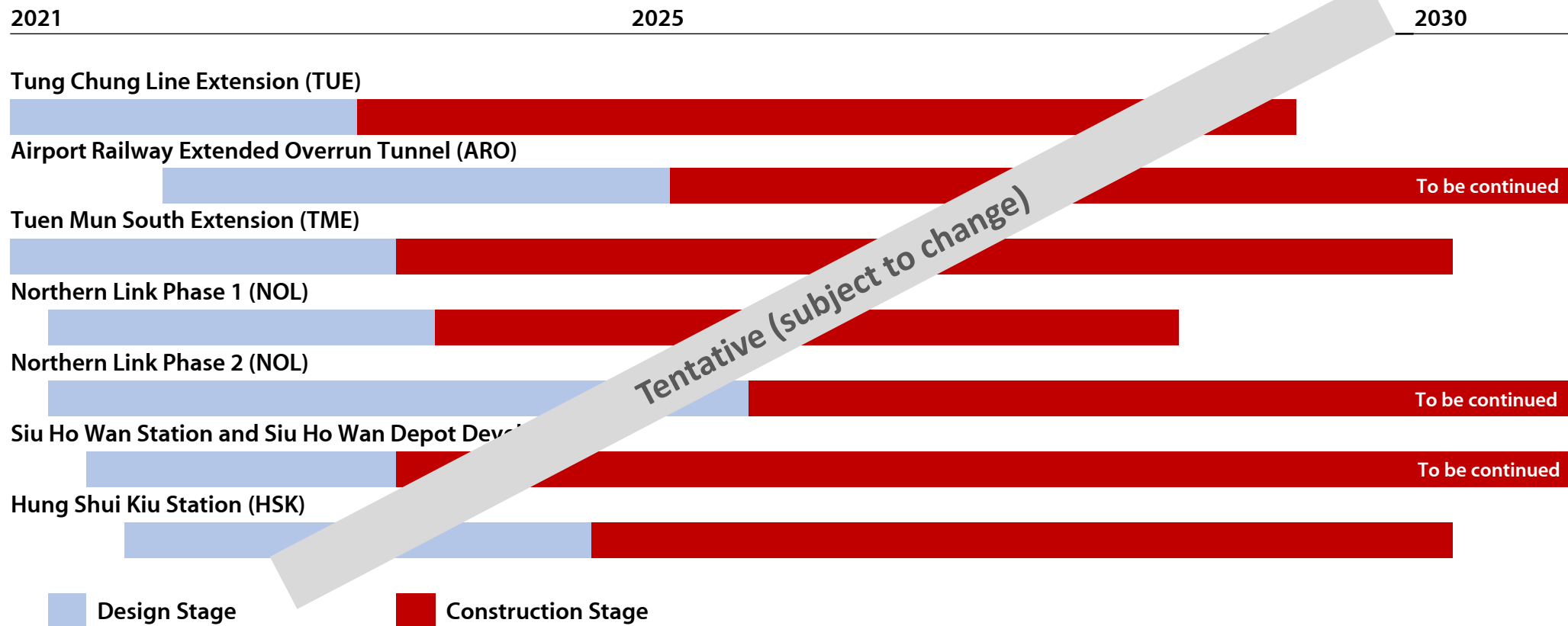


Hung Shui Kiu Station (HSK)



Airport Railway Extended Overrun Tunnel (ARO)

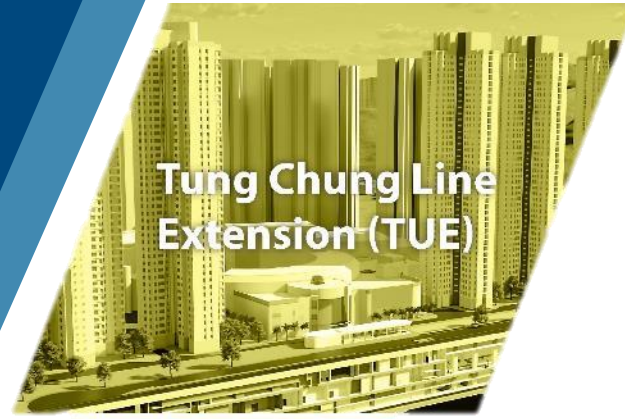
Tentative Projects Timelines



Tentative Key Milestones for Procurement:

- TUE major procurement activities targeted to commence in 1H/2022
- ARO major procurement activities targeted to commence in 2H/2023
- TME major procurement activities targeted to commence in 1H/2022
- NOL Phase 1 major procurement activities targeted to commence in 1H/2022
- NOL Phase 2 major procurement activities targeted to commence in 1H/2023
- SHO/SHD major procurement activities targeted to commence in 2H/2022
- HSK major procurement activities targeted to commence in 1H/2023

4. Key Challenges



**Tung Chung Line
Extension (TUE)**



**Tuen Mun South
Extension (TME)**



**Siu Ho Wan Station
(SHO) & Siu Ho Wan
Depot Development
(SHD)**



Northern Link (NOL)

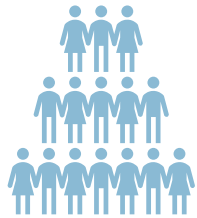


**Hung Shui Kiu
Station (HSK)**



**Airport Railway
Extended Overrun
Tunnel (ARO)**

Key Challenges



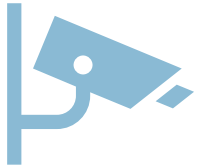
**Public
Attention**



**Stakeholder
Engagement**



**Resources in
the Industry**



**Greater Focus on
Quality &
Increased Scrutiny**



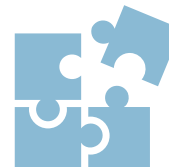
**Focus on Time &
Cost Effectiveness**



Sustainability

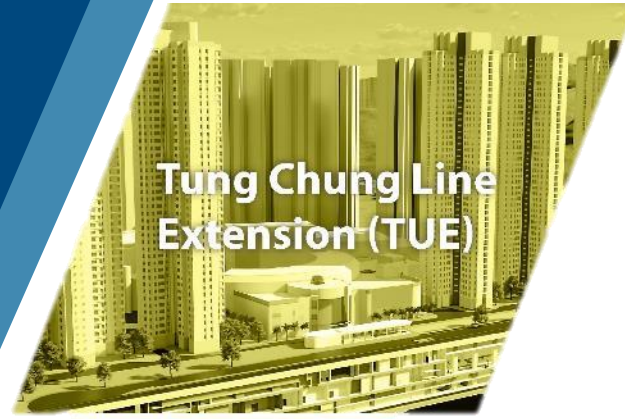


**Major Interface
with Operating
Railways**



**Interface
with Other
Projects**

5. Expectations of the Supply Chain



Tung Chung Line Extension (TUE)



Tuen Mun South Extension (TME)



Siu Ho Wan Station (SHO) & Siu Ho Wan Depot Development (SHD)



Northern Link (NOL)

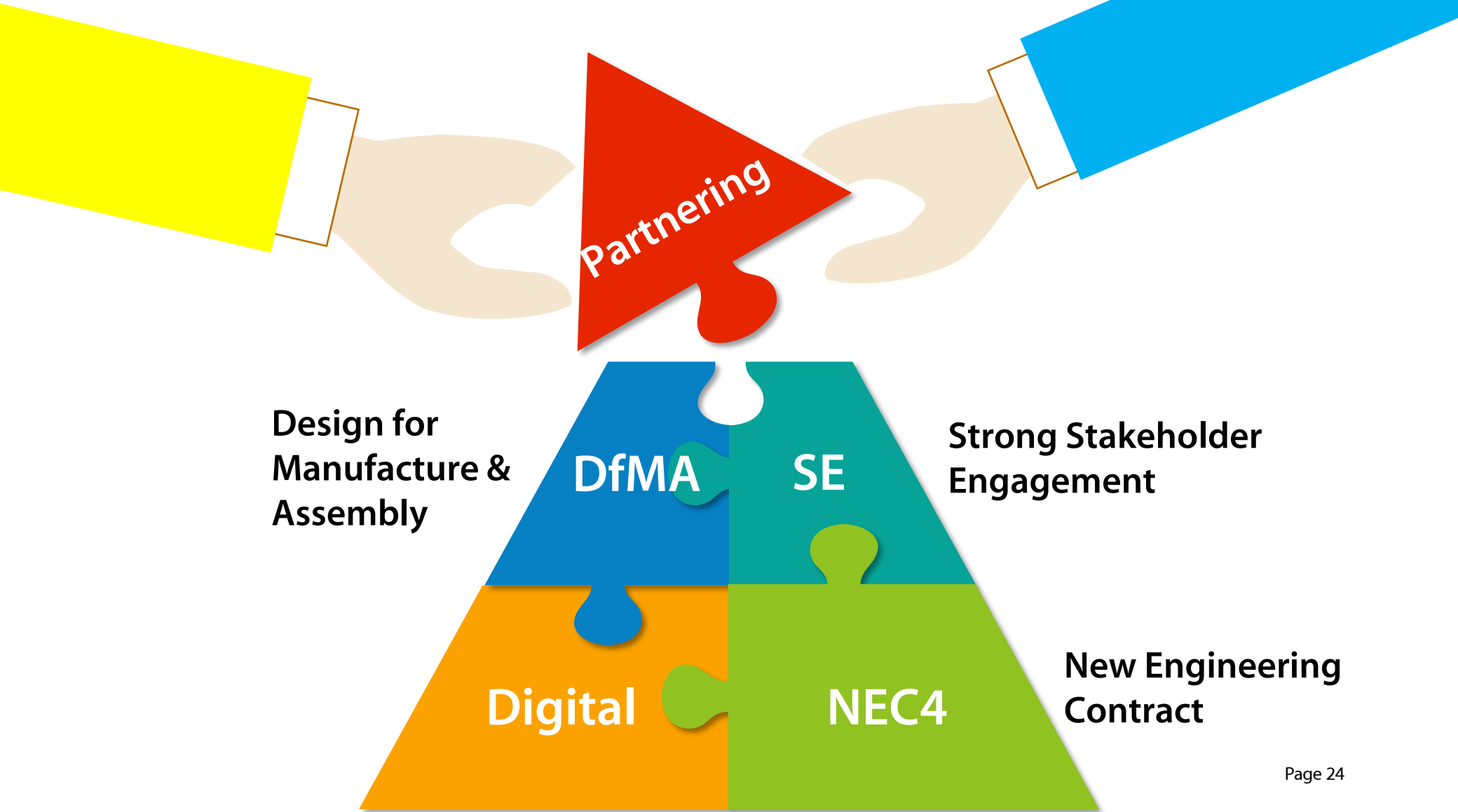


Hung Shui Kiu Station (HSK)



Airport Railway Extended Overrun Tunnel (ARO)

Collaborative Working





Support the changing requirements of users



Stimulate good project management



Improve clarity and simplicity

Contract Types

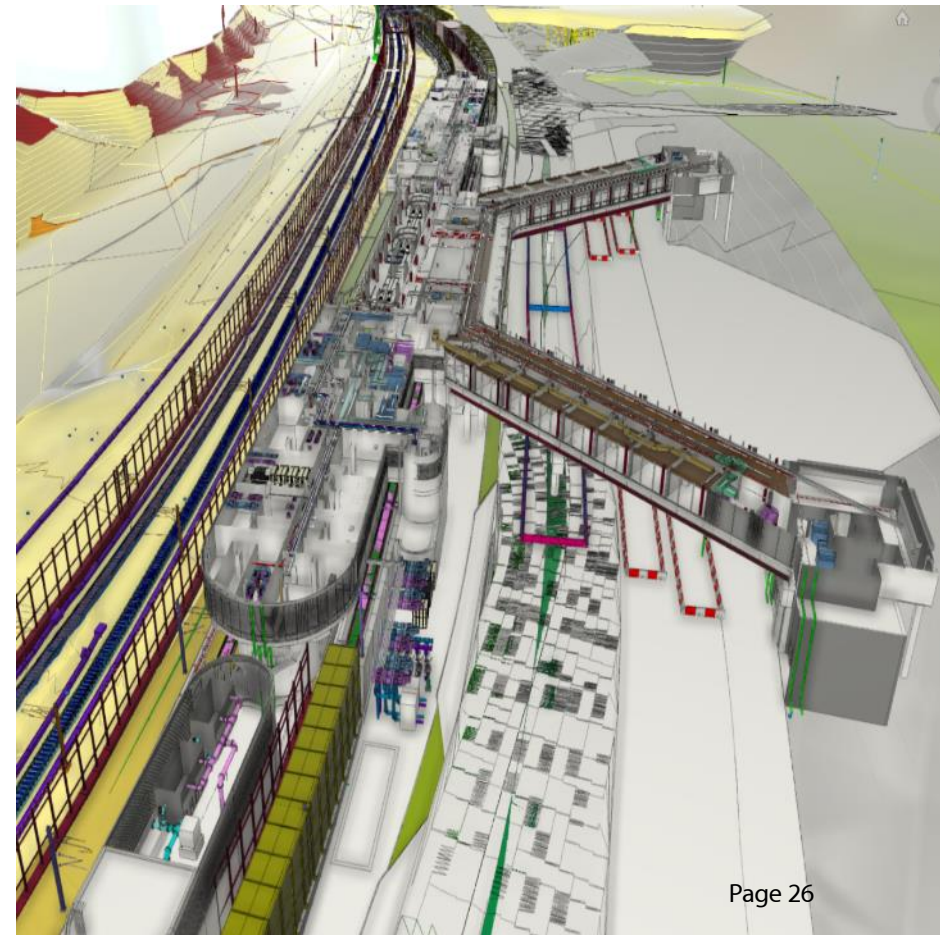
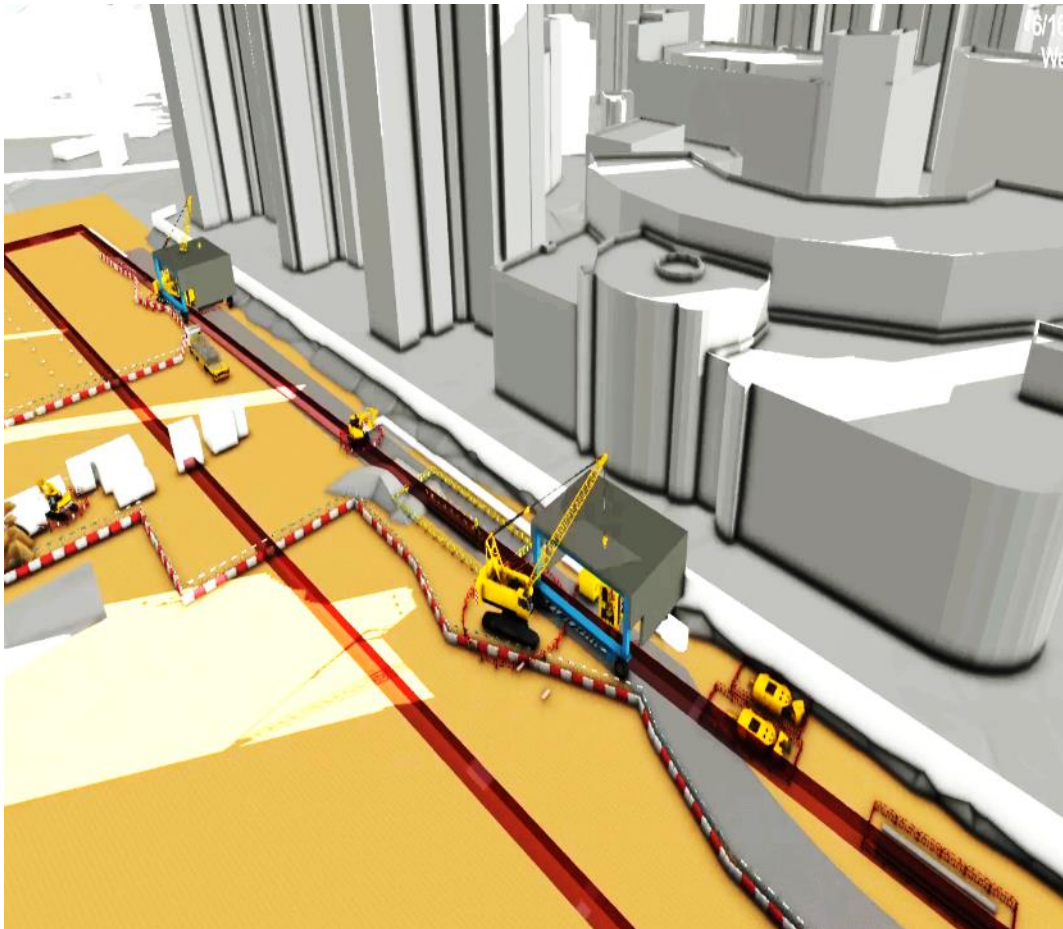
- Lump Sum Engineer's Design
- Design & Build
- Re-measurement
- Target Cost (Early Contractor Involvement)
- MTR Standard Form Contract or NEC

NEC

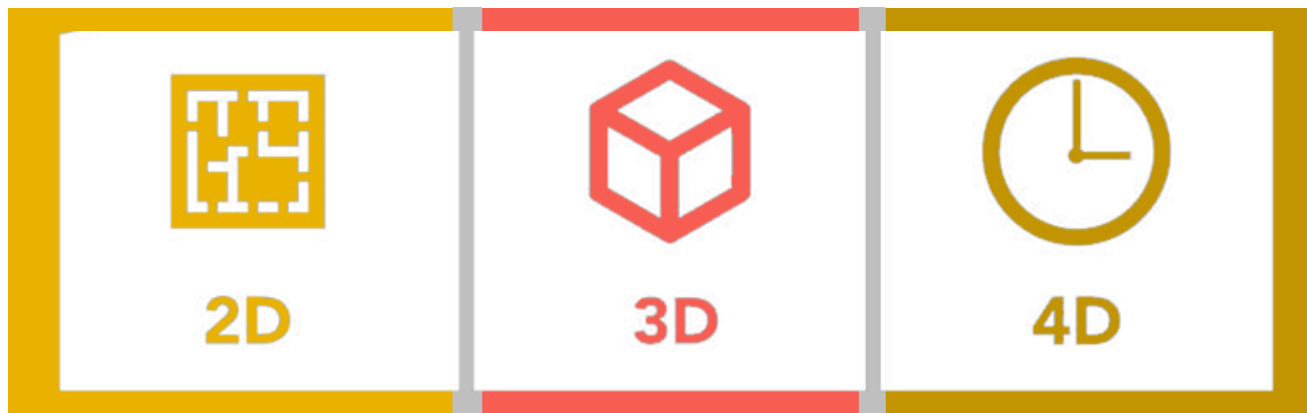
- Facilitates Collaboration
- Provides Flexibility, Clarity and Simplicity
- Proactive Time and Risk Management
- Equitable Risk Sharing and Incentivisation
- Stimulus to Good Project Management

Digital

- Digital Project Management
- Digital Engineering
- Digital On-site



- Work collaboratively within a common data environment (CDE)
- Virtual simulation before construction starts
- Provides a framework



DfMA (Design for Manufacture and Assembly)

Off-site construction is encouraged in MTR New Projects

Pre-fabrication /
Precast unit for roofs,
viaducts, tunnel
lining, etc.



Modular integrated
services and support
system at corridors
and risers

Modular integrated
plant kits / plant
rooms



Modular fire hydrants
and fire hose reel
cabinets

Strong Stakeholder Engagement

New Projects
Volunteering
Team



Design Ideas
Engagement
Events

AR / VR
Visualisation



Consultation
& Forums

Virtual
Information
Center



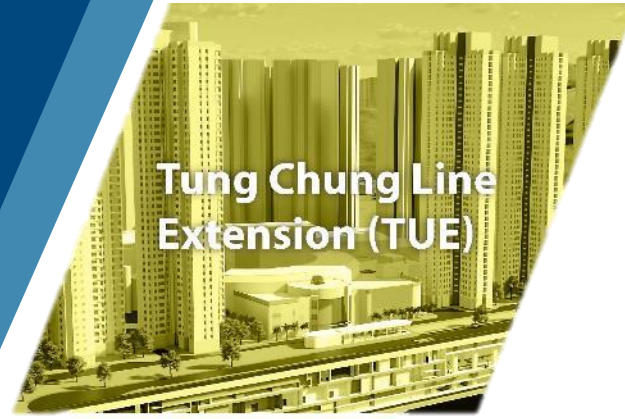
Workshops &
Collaboration

Partnering



6.

New MTR Capital Works Business Unit



Tung Chung Line
Extension (TUE)



Tuen Mun South
Extension (TME)



Siu Ho Wan Station
(SHO) & Siu Ho Wan
Depot Development
(SHD)



Northern Link (NOL)



Hung Shui Kiu
Station (HSK)



Airport Railway
Extended Overrun
Tunnel (ARO)

The New MTR Capital Works Business Unit

Project Delivery

Operations
Projects

SCL & HSR

New
Projects

E&M
Construct
-ion

Enabling Functions

Capital
Works
Technical

Project
Manage
-ment
Office

Commercial
Manage
-ment

Chief of
Staff

Project
Safety

**Send
feedback or
questions to
newprojects@
mtr.com.hk**