

MTR Corporation Limited

Project Profile

For

Kwun Tong Line Extension (KTE)

April 2008

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1 BASIC INFORMATION

1.1 PROJECT TITLE

- 1.1.1** The project is known as Kwun Tong Line Extension (KTE)

1.2 PURPOSE AND NATURE OF the PROJECT

- 1.2.1** The project profile describes the construction and operation of a new railway extension to serve Ho Man Tin and Whampoa in Kowloon. The introduction of the electric-powered railway system in these two major population and employment areas will offer a faster and more convenient transport than the road-based vehicular system while bringing an overall improvement to the environment.
- 1.2.2** The project is approximate 3.0 km extension of the existing Kwun Tong Line from Yau Ma Tei Station to a new railway station at Whampoa and with an interchange with the Shatin to Central Link (SCL) at the proposed Ho Man Tin Station. With the Executive Council decision to proceed with the KTE, it can be implemented for completion in 2015.

1.3 NAME OF THE PROJECT PROPONENT

The project proponent is MTR Corporation Limited (hereinafter, the Corporation).

1.4 LOCATION AND SCALE OF the PROJECT

The project comprises a new railway extension approximately 3.0 km long running from the existing Kwun Tong Line overrun track at Yau Ma Tei station (YMT) to the Whampoa area. Major components of the project include the following: -

- a) Running line from YMT through to the Ho Man Tin Station (HMT) which will be interchangeable with the proposed Shatin to Central Link (SCL);
- b) Running line between HMT to Whampoa Station (WHA);
- c) A number of proposed Essential Public Infrastructure Works (EPIW) including temporary public transport interchange, subway construction and disused air raid prevention tunnel fill up;
- d) Ho Man Tin Station with associated structures and provisions and property development enabling works;
- e) Whampoa Station with associated structures and provisions;
- f) Providing temporary access opening at Gascogine Road Rest Garden for existing railway connection and modification works;
- g) Re-provision of Gascogine Road substation with associated cable diversion works;

The project locations and alignments are shown in Attachment 1.

1.5 NUMBER & TYPE OF DESIGNATED PROJECT

The proposed project is a single project comprising a railway and its associated stations as defined under Schedule 2, Part I, Categories A.2, A.4 and A.7 of the Environmental Impact Assessment Ordinance.

1.6 NAME AND TELEPHONE NUMBER OF CONTACT PERSONS

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2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 PROJECT PLANNING AND IMPLEMENTATION

The whole project will be planned and implemented by the Corporation in-house departments together with external consultants and contractors. The works contracts will be awarded to the Contractor for project construction, under the management of the Corporation.

The Corporation will appoint a specialist environmental consultant to undertake an Environmental Impact Assessment (EIA) providing interactive environmental inputs to the engineering design teams. Environmental monitoring and audit works of the project will be conducted and managed by the Corporation.

2.2 TENTATIVE PROJECT PROGRAMME

The project design contracts are scheduled to be awarded in mid 2008. The project construction contracts are planned to be awarded in end 2010 after the Authorisation of the Railway Scheme under Railways Ordinance. The project completion will be in 2015.

2.3 PROJECT INTERFACE

The railway alignment will be constructed underground throughout most of its length. The SCL is a committed and planned project that will interface with the KTE at the HMT for interchange, with both projects managed by the Corporation. Other planned projects that could affect the KTE project include the widening of Gascoigne Road Flyover and the Central Kowloon Route.

3 POSSIBLE IMPACTS ON THE ENVIRONMENT

3.1 PROPOSED METHODS OF CONSTRUCTION

The envisaged proposed methods of construction for the project are mentioned as follows:-

The two running lines will be constructed by bored tunnelling method with consideration for the use of Tunnel Boring Machine and drill and blast methods. The both underground HMT and WHA are envisaged to be constructed using a combination of cut and cover tunnelling and minor bored tunnelling.

3.2 POTENTIAL IMPACTS ON THE ENVIRONMENT

The electrified railway of KTE is an environmental friendly mode of transport but will inevitably lead to certain levels of environmental impacts. A series of following environmental impacts for construction and operational phase are identified. Effective mitigation measures will be designed in consultation with the authorities in order to mitigate the impacts to an acceptable level.

3.3 CONSTRUCTION PHASE IMPACTS

The following sections describe the potential environmental impacts during construction phase, which will be alleviated by effective mitigation measures designed according to the assessed levels of impact.

3.3.1 Air Quality

Potential air quality impacts may arise from fugitive dust emissions generated by construction activities such as excavation, backfilling, rock breaking, stockpiling and construction vehicle movements.

3.3.2 Noise

Airborne construction noise will be generated from cut and cover activities, retaining wall construction, piling, excavation, backfilling, road reinstatement and construction of above ground structures. Groundborne construction noise from the tunnelling works will be limited. Noise surveys for the existing noise conditions at noise sensitive receivers (NSRs) are considered unnecessary.

3.3.3 Water Quality

Water quality impacts may arise due to the following potential sources during construction of the Project:

- Site run off due to erosion of exposed surfaces, chemical accidental spillage from plant maintenance, materials handling and general site construction activities;
- Wastewater due to retaining wall, piling works, tunnelling works and underground construction works;
- Groundwater extracted during underground construction; and

- Sewage effluent from construction workforce.

3.3.4 Waste Management

Construction activities will result in the generation of a variety of surplus materials that may include: excavated materials, construction and demolition (C&D) materials and wastes, chemical waste from construction plant and machinery and general refuse from worksites.

3.3.5 Hazard

Potential hazard may be generated during construction work due to a site magazine that may be required to provide overnight storage of explosives for drill and blast tunnel construction. The former airport at Kai Tak may be a possible selected location if the site remains undeveloped at the time of KTE. Alternative locations may also be sought. The final selected location for the site magazine must be kept an absolute safe distance away from the nearly public and properties which may be affected.

3.3.6 Ecology

The project will be constructed in a well-developed urban environment, adverse ecological impacts are not anticipated. Nevertheless, any ecological impacts associated with this project will be reviewed during the EIA stage.

3.3.7 Historical and Cultural Impacts

Potential impacts on existing historical and cultural heritage may arise due to project construction activities associated with plant operation, excavation, temporary and permanent landtake, change in site set up, and construction vibration impact. It is not expected the project construction would have adverse effect to any declared monument.

The EIA will be conducted on the potential historical and cultural heritage within or in close proximity to the proposed alignments that include the Disused Air Raid Protection (ARP) Tunnels located between Gascoigne Road and Cliff Street at Yau Ma Tei and in Valley Road at Ho Man Tin, Tin Hau Temple at Public Square Street and Kwun Yum Temple at Station Lane.

3.3.8 Land Contamination

A review of historical maps and selected historical aerial photographs has indicated that the proposed alignment and stations will be situated on the well developed areas for residential, commercial and recreational uses. The potential contaminated areas include marine mud underlying reclamation in Hung Hom Wan, former dockyards between Baker Street and Hung Hom South Road, former gas plant located on the Green Wood residential estate near Hutchinson Park and former power station located on the Laguna Verde residential estate near the Green Wood.

3.3.9 Landscape and Visual Impact

The construction activities will be carried out along the proposed alignments through a well-developed urban environment. The cut and cover tunnel construction, excavation works, temporary noise barriers and illumination within the construction sites may create short-term visual impacts.

3.4 OPERATIONAL PHASE IMPACTS

3.4.1 Air Quality

Trains to be operated on the project will be electrically powered so there will be minimal dust and gaseous emissions. Tunnel ventilation exhausts and emergency smoke extraction facilities will be carefully positioned to avoid adverse air quality impacts. Air quality impacts during operational phase are envisaged to be insignificant.

3.4.2 Noise

Potential impacts arising from operational rail noise are not anticipated as the railway alignment will be entirely underground. Under proper design with compliance with the stipulated noise criteria, no adverse impacts from fixed noisy provisions including tunnel ventilation shafts and fans and environmental control systems are expected.

Apart from airborne noise, groundborne noise from the operating railway is not expected due to careful selection on the type of rolling stock for adoption.

3.4.3 Water Quality

Limited quantities of oils and lubricants used in the train operation may cause the potential runoff. Wastewater from railway track cleaning, discharge from air conditioning systems and sewage water generated at the stations may also contribute minor water quality impacts. The impacts will be properly managed for disposal during railway operation services.

3.4.4 Waste Management

Municipal waste generated from the railway operation services, including litter, foodstuffs, plastics, wood, office waste and cleaning materials, will be properly managed for disposal to the approved landfill areas.

3.4.5 Hazard

No potential hazardous installations have been identified within the proximity of the proposed railway alignment and no significant impacts are anticipated to be generated by railway operation. However, any potential hazardous impacts will be reviewed in the EIA stage.

3.4.6 Ecology

No ecological impacts are anticipated during railway operation..

3.4.7 Historical and Cultural Impacts

No historical and cultural impacts are expected during railway operation.

3.4.8 Land Contamination

No land contamination impacts are expected during railway operation.

3.4.9 Landscape and Visual

Potential landscape impacts would result from the permanent loss of trees arising from the project construction. Whilst the proposed railway alignment will be underground, there will be some above ground structures construction such as station entrances and ventilation shafts, which may cause impact on the physical landscape and visual amenity of surrounding areas.

4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 EXISTING AND PLANNED SENSITIVE RECEIVERS

4.1.1 Noise

Existing and planned Noise Sensitive Receivers (NSRs) and representative assessment locations would be identified in detail during the EIA. Reference will be made on the land uses proposed in the current available plans prepared under the Town Planning Ordinance or any other land use plans published by the Government. The proposed NSRs of the project for construction and operation phases are shown as follows:-

Location of Noise Sensitive Receivers in Construction Phase

Area	Location
Running Line between Yau Ma Tei and Ho Man Tin	<ul style="list-style-type: none"> • Schools, hospital, nursing homes and hotels along Gascoigne Road • Residential buildings along Chung Hau Street
Ho Man Tin Station	<ul style="list-style-type: none"> • Residential buildings along Valley Road, Yan Fung Street and Chung Hau Street • Future property development at the station
Running Line between Ho Man Tin and Whampoa	<ul style="list-style-type: none"> • Residential buildings, school and institutions along Station Lane and the west side of Hung Hom Road
Whampoa Station	<ul style="list-style-type: none"> • Whampoa Estate • Whampoa Garden • Oak Mansion

Location of Noise Sensitive Receivers in Operational Phase

Area	Location	Noise Source
Ho Man Tin Station	<ul style="list-style-type: none"> • Future property development at the station • Residential buildings along valley Road , Yan Fung street and Chung Hau Street 	Ventilation shaft
Whampoa Station	<ul style="list-style-type: none"> • Whampoa Estate • School at Tak On Street 	Ventilation shaft

4.1.2 Air Quality

Potential Air Sensitive Receivers for KTE are described below:

Area	Location
Running Line between Yau Ma Tei and Ho Man Tin	<ul style="list-style-type: none"> • Schools, hospital, nursing homes and hotels along Gascoigne Road • Residential buildings along Chung Hau Street
Ho Man Tin Station	<ul style="list-style-type: none"> • Residential buildings along Valley Road, Yan Fung Street and Chung Hau Street • Future property development at the station
Running Line between Ho Man Tin and Whampoa	<ul style="list-style-type: none"> • Residential buildings, school and institutions along Station Lane and west side of Hung Hom Road
Whampoa Station	<ul style="list-style-type: none"> • Whampoa Estate • Whampoa Garden • Oak Mansion

4.1.3 Water Quality

The Victoria Harbour at Hung Hom Wan and existing drainage around the work sites have been identified as potential Water Sensitive Receivers (WSR).

4.1.4 Cultural Heritage

Historical and cultural heritage resources in the vicinity of the project railway alignment are listed in Section 3.3.7.

4.1.5 Landscape and Visual

Landscape Impacts

The following locations would have physical landscape impacts on existing trees/ vegetations, open public spaces and rest gardens caused by construction of the project:-

Area	Location
Yau Ma Tei	<ul style="list-style-type: none"> • Gascoigne Road Rest Garden
Ho Man Tin	<ul style="list-style-type: none"> • Former Valley Road Estate site, Chung Hau Street, Fat Kwong Street, Fat Kwong Street Playground, Yan Fung Street Rest Garden, Shun Yung Street
Whampoa	<ul style="list-style-type: none"> • Tak Man Street, Tak On Street, Man Siu Street, Hung Hom Road, Tak Hong Street and Shung King Street.

Visual Impacts

Potential visual impacts caused by the project have been identified in the vicinity to the project alignment and the following representative Visual Sensitive Receivers (VSRs) are listed as below:-

Area	Location
Running line Between Yau Ma Tei and Ho Man Tin	<ul style="list-style-type: none"> • Gascoigne Road Rest Garden, schools along Gascoigne Road • Place of worship, hotels, open public space and recreational facilities at King's Park.
Ho Man Tin	<ul style="list-style-type: none"> • Chung Hau Street, Fat Kwong Street, Fat Kwong Street Playground, Yan Fung Street, Yan Fung Street Rest Garden, Shun Yung Street and Ping Chi Street residential premises.
Whampoa	<ul style="list-style-type: none"> • Tak Man Street, Tak On Street, Hung Hom Road, Tak Hong Street and Shung King Street residential premises, schools and park.

4.2 MAJOR ELEMENTS OF SURROUNDING ENVIRONMENT AND EXISTING/PAST LAND USERS

Areas where land contamination may occur along the proposed project alignment have been identified as below through a review of historical survey maps and relevant environmental assessment reports. Areas which may potentially be contaminated include:-

Area	Location
Former dockyards	<ul style="list-style-type: none"> • between Baker Street and Hung Hom South Road;
Former gas plant	<ul style="list-style-type: none"> • on the Green Wood residential estate near Hutchinson Park
Former power station	<ul style="list-style-type: none"> • on the Laguna Verde residential estate near the Green Wood and at north of Dyer Avenue.
Marine mud layers	<ul style="list-style-type: none"> • below reclaimed area at Hung Hom Wan

5 ENVIRONMENTAL PROTECTION MEASURES AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 POTENTIAL MEASURES TO MINIMIZE ENVIRONMENTAL IMPACTS

The following potential measures for controlling air quality, noise, water quality, waste, hazards, ecology, historical and cultural heritage during construction and operation phases of the project will be carefully considered during the EIA process and addressed in the relevant report.

Construction Phase

5.1.1 Air Quality

- Implement dust suppression measures set out in the Air Pollution Control (Construction Dust) Regulation, such as provision of wheel-washing facilities and watering of exposed ground.

5.1.2 Noise

- Adopt quieter powered mechanical equipment (PME) and construction method as well as good site practices;
- Provide purpose-built noise barriers or enclosures where applicable e.g. acoustic enclosures to enclose vertical shafts for tunnelling;
- Plan tunnelling works in particular during restricted hours in noise sensitive areas;
- Control charge amount and carefully schedule blasting activities to minimize ground-borne noise impacts.

5.1.3 Water Quality

- Consider site practices as recommended in EPD's Practice Note for Professional Persons PN1/94 "Construction Site Drainage";
- Install appropriate drainage facilities to control site runoff;
- Provide adequate treatment facilities to treat wastewater from construction activities prior to discharge;
- Provide proper toilet facilities.

5.1.4 Waste Management

- Implement waste management practices to minimize waste generation and maximize waste recovery and recycling;
- Sort and segregate waste for reuse and disposal;
- Dispose waste to landfills only as a last resort.

5.1.5 Ecology

- Avoid and minimize disturbance to conservation areas and any flora/ fauna and habitats of conservation interest;
- Minimize indirect construction disturbance, e.g. fence off works areas;
- Mitigate unavoidable impacts, e.g. transplantation and provision of compensatory habitats.

5.1.6 Landscape and Visual

- Avoid and minimize disturbance to significant landscape resources by minimizing works areas;
- Mitigate unavoidable landscape impacts through compensatory planting or transplantation;
- Use decorative screen hoarding and control night time lighting.

5.1.7 Cultural Heritage

- Avoid and minimize disturbance to sites of archaeological interest, sites of cultural heritage and historic buildings.

5.1.8 Hazard

- Undertake Quantitative Risk Assessment (QRA) for the explosives magazine needed for tunnel construction and the related works and identify any necessary mitigation measures.

5.1.9 Land Contamination

- Take coring of soil samples at the concerned areas for investigation where required and identify any necessary mitigation measures.

Operation Phase

5.1.10 Noise

- Adopt appropriate rolling stock;
- Locate and orientate fixed plants and ventilation shaft openings away from noise sensitive receivers;
- Use silencers, mufflers or acoustic shields for noisy fixed plant.

5.1.11 Water Quality

- Install appropriate treatment facilities e.g. divert surface runoff to silt traps and oil interceptors before discharge to local drainage system;
- Divert wastewater from depot to a dedicated treatment facilities before discharge.

5.1.12 Waste Management

- Implement waste management practices to minimize waste generation and maximize waste recovery and recycling.

5.1.13 Landscape and Visual

- Restore temporary works areas;
- Carry out landscape planting;
- Adopt appropriate architectural form, colour and finishes to above-ground structures.

5.2 PUBLIC CONSULTATION

The Corporation will undertake considerable public consultation on the project. The views gathered will be considered and where appropriate incorporated into the scheme being developed. The Corporation will keep the consultation throughout the preliminary and detailed design of the TKE as well as the construction stage.

6 CONCLUSIONS

In summary, the key environmental issues during construction are expected to be airborne noise, air quality, water quality, spoil management and short-term visual impact of the construction sites. During operation, the key issues would be airborne noise from the built ventilation shafts and visual impacts from above-ground structures.

Currently, it would appear that there will be no insurmountable environmental impacts during the construction and operation of the KTE. Detailed assessments will be undertaken in the EIA. The Corporation is committed to fully integrate the environmental issues with the project design and construction and, will ensure adoption of suitable mitigation measures for compliance with relevant environmental legislation and standards.

7 USE OF PREVIOUSLY APPROVED EIA REPORTS

No previously approved EIA report exists for the proposed project. However, reference may be made within the study area from the Shatin to Central Link (Tai Wai to Hung Hom Section) EIA study which is anticipated to be carried out within approximately the same period of time. Reference will also be made to former MTR and KCRC projects with approved EIA reports on the EIAO register and other developments that potentially interface with the Project.



Project Locations and Alignments