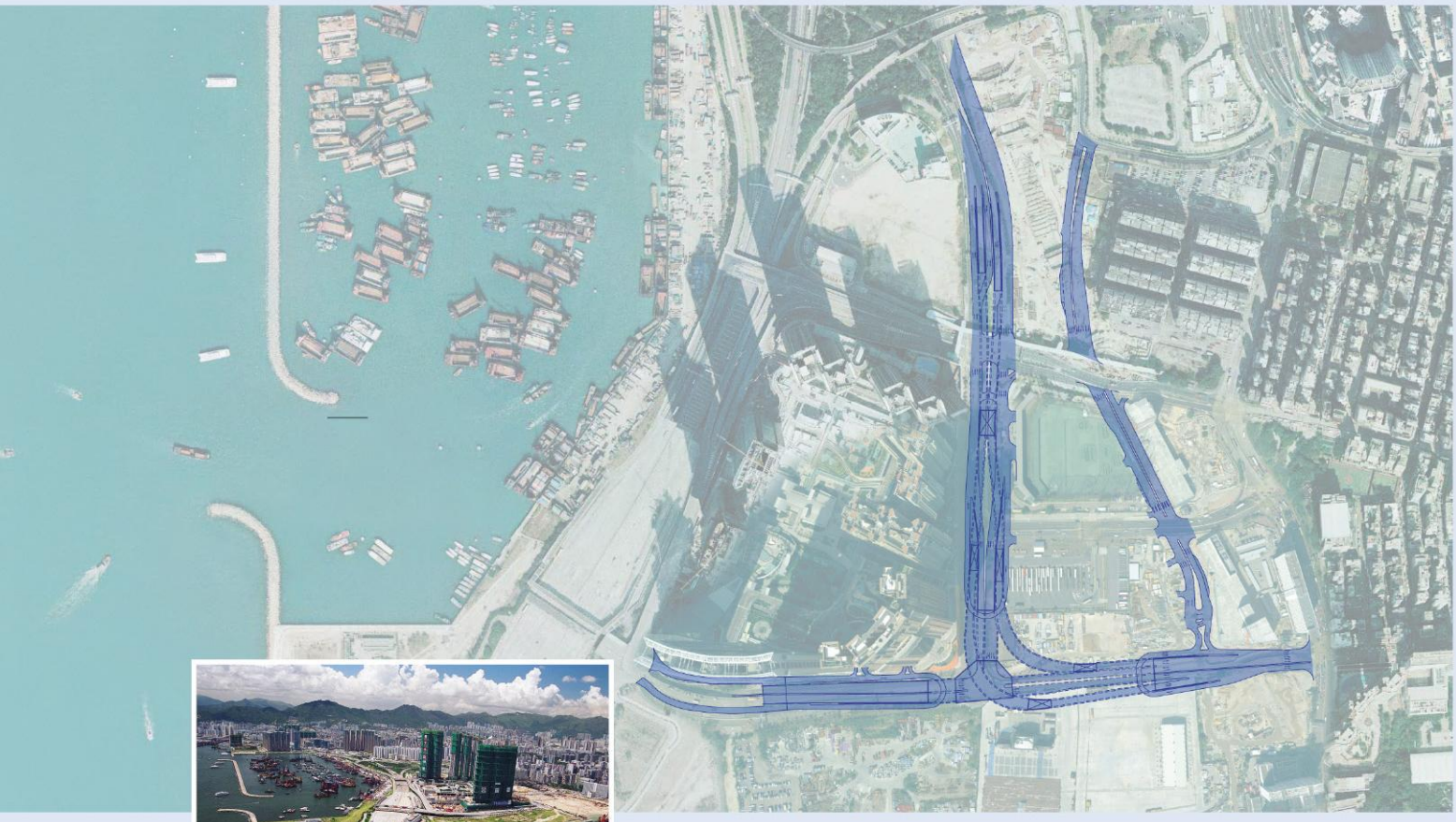
MTR港鐵

Consultancy Agreement No. NOL/ERL-300

Environmental Impact Assessment of Road Works at West Kowloon



Executive Summary

July 2009

AECOM

AECOM Environment

MTR Corporation Limited

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1 INTRODUCTION

1.1 In 2006, Mott MacDonald Hong Kong Limited, the consultant of Civil Engineering Development Department (CEDD) conducted a traffic study for the road network of West Kowloon Reclamation Area (WKRA) and revealed that it will experience very substantial traffic growth following completion of the future West Kowloon Cultural District (WKCD) and the top side developments of Kowloon Station (KOW) and Austin Station (AUS). In addition, the north-south through traffic will also continue to grow and a hierarchical road network is required to accommodate the strategic, district and local traffic.

1.2 Subsequently, the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) is programmed for urgent implementation and opening in 2015, and the West Kowloon Terminus (WKT) will be located within the WKRA between AUS and KOW. WKT and its associated property developments will further generate substantial increment in traffic.

1.3 As a result, a separate traffic study was conducted by MTR Corporation Limited (MTRCL) during the preliminary design of WKT. It revealed that additional traffic capacity and network restructuring will be required through and within the WKRA, upon the opening of the WKT and development of the WKCD. The road network in WKRA will also serve the future commercial/residential developments in the vicinity. To ease the current congested traffic condition and fulfil future demand, the roads D1A, D1, Lin Cheung Road - Austin Road West Underpass and upgrading of Austin Road West (hereinafter, the Project) are proposed to accommodate the increasing traffic demand in West Kowloon.

1.4 Under Items A.1 and A.9, Part 1, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499), the Project is a designated project and therefore an Environmental Permit is required under the EIAO for the construction and operation of the Project.

1.5 AECOM Asia Co. Ltd. (Integrating the operation of ENSR Asia (HK) Limited) has been commissioned by the MTRCL to undertake the Environmental Impact Assessment (EIA) Study of the Project.

2 PROJECT DESCRIPTION

Proposed Road Works

2.1 To ease the current congested traffic condition and fulfil future demand, construction of new roads and upgrading of the existing roads are proposed in the WKRA (See **Figure No. NOL/ERL/300/C/WKT/ENS/M50/100**). The proposed roads include:

- Road D1A: Dual carriageway extending from Hoi Wang Road to Jordan Road and Wui Cheung Road, running parallel to Lin Cheung Road and Man Cheong Street.
- Road D1: Dual carriageway extending from Road D1A, connecting Wui Cheung Road and Austin Road West, running parallel to Lin Cheung Road and Canton Road.
- Lin Cheung Road – Austin Road West Underpass: Dual two-lane underpass running from north of Jordan Road, along and below Lin Cheung Road and Austin Road West with a depressed junction, to the west of Canton Road.
- Upgrading of Austin Road West: Austin Road West will be upgraded from a single two carriageway, i.e. post AUS opening situation, to a dual carriageway.

Consideration of Alternatives Schemes

2.2 Consideration for alternative alignments of the proposed road networks is severely constrained by the existing roads and the developments within the area. Nevertheless, two road schemes were identified and investigated during the preliminary design of WKT.

Base Scheme – At-Grade Lin Cheung Road/Austin Road West Junction

2.3 Lin Cheung Road, Austin Road West, Road D1A and Road D1 will be constructed mainly at-grade, with only a part of the Austin Road West depressed to form a pedestrian deck on the south side of WKT. An underpass for through traffic will be provided from the north of Jordan Road intersection running under Lin Cheung Road and Austin Road West to the ground level west of the Canton Road.

Improved Scheme – Depressed Lin Cheung Road/Austin Road West Junction

2.4 The majority of the Lin Cheung Road and Austin Road West intersection is lowered to permit a much wider mega at-grade traffic free pedestrian deck between WKT, KOW and WKCD. An opening will be formed at the junction of Lin Cheung Road and Austin Road West to provide natural light down to the depressed junction and allow ventilation. An underpass for through traffic similar to that in the Base Scheme, but at a lower level to make way for the depressed junction, will also be provided.

2.5 The two schemes were compared and evaluated with respect to factors including traffic benefits, environmental benefits and implementation. The Improved Scheme was selected as the preferred scheme of the Project. During the stakeholder engagement conducted so far, the preferred road scheme was also generally in favour by stakeholders including Government departments (e.g. Transport & Housing Bureau, Railway Development Office, Transport Department, Planning Department, etc), the District Council and West Kowloon Cultural District Authority (WKCDA).

Works Programme

2.6 The construction of the Project is tentatively scheduled to commence in August 2011 and complete by September 2014.

3 KEY FINDINGS OF ENVIRONMENTAL IMPACT ASSESSMENT

Noise Impact

Construction Phase

3.1 Potential construction noise impacts would mainly be due to road works and construction of noise screening structures and would affect the noise sensitive receivers (NSRs) in the vicinity of the work areas. Unmitigated construction noise levels at the representative NSRs would be in the range of 63 to 86 dB(A). With the adoption of quiet powered mechanical equipment, movable noise barriers, acoustic mats, acoustic sheds and good site practices, the noise levels at all representative are predicted to comply with the construction noise standard.

3.2 Taking into account the concurrent construction works of the XRL project, the cumulative construction noise levels at the representative NSRs would comply with the EIAO-TM noise standard given MTRCL will properly implement the construction noise mitigation measures recommended in this EIA as well as the EIA study of XRL.

Operation Phase

3.3 The potential road traffic noise impacts have been assessed based on the worst case traffic flows in 2030. The unmitigated noise levels at the identified NSRs would range from 53 to 84 dB(A). The noise levels at some NSRs are predicted to exceed the EIAO-TM traffic noise criteria due to the Project and other existing roads. With the proposed low noise road surfacing and noise screening structures in place, the predicted overall noise levels at all representative NSRs would comply with the noise limit, except Lai Chack Middle School and some existing NSRs at Man Cheong Street, Ferry Street, Canton Road and the junction of Lin

Cheung Road and Jordan Road as well as the planned Hong Kong Girl Guides Association Headquarters & related hostel use and residential developments at Yan Cheung Road and Austin Station. Although the overall noise levels at these NSRs would still exceed the relevant noise criteria, the road noise contributions from the Project to the overall noise levels would be less than 1.0 dB(A) and the road noise levels from the Project itself would all be below the noise limit. Noise exceedances at the representative NSRs, if any, are due to the existing roads.

Air Quality Impact

Construction Phase

3.4 Potential air quality impacts arising from the construction of the Project would mainly be related to dust nuisance from excavation, material handling and wind erosion of the site. Cumulative dust impacts from other concurrent projects such as Hong Kong Section of the Guangzhou-Shenzhen- Hong Kong Express Rail Link and West Kowloon Terminus were also considered in the assessment. With the implementation of complete watering coverage of active excavation and sandfill areas eight times a day and appropriate dust control and suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, no adverse cumulative dust impact at the air sensitive receivers would be expected.

Operation Phase

3.5 The potential impacts arising from the background pollutant levels within and adjacent to the Project area, vehicle emissions from open road networks, portal emissions from the Western Harbour Crossing, the proposed underpass and landscape decks, emissions from the top openings of proposed underpasses, emissions from ventilation building of Central Kowloon Route (CKR), portal emissions from the noise enclosures at the portal of CKR tunnel (west end) and the reprovisioned Gascoigne Road under the CKR project, and the implementation of noise screening structures were assessed. No adverse air quality impacts would be induced from the Project at the air sensitive receivers in the future. The predicted air pollutants concentrations inside the proposed underpasses and under the proposed landscape deck over Lin Cheung Road would comply with the EPD Tunnel Air Quality Guidelines. Air sensitive uses and fresh air intakes under the proposed landscape deck on Lin Cheung Road are however not recommended based on the current configuration of the proposed landscape deck and the non-compliance of the hourly NO_2 Air Quality Objective identified at this particular location. The potential air quality implications on land use at this location will be further reviewed during the detailed design stage.

Water Quality Impact

3.6 Potential sources of water quality impact associated with the road works and construction of noise screening structures would be site runoff, effluent discharges from construction activities and sewage effluent from the workforce. Water quality impacts from the land-based construction works can be controlled to comply with the standards of Water Pollution Control Ordinance by implementing the recommended mitigation measures. All the effluents and runoff generated from the works areas will be treated so as to comply with discharge standards listed in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters and the discharge licence under Water Pollution Control Ordinance. No unacceptable water quality impacts are expected from the land-based construction activities. Site inspections should be undertaken routinely to inspect the works areas in order to ensure that the recommended mitigation measures are properly implemented.

3.7 During the operation phase, a surface water drainage system with silt traps would be provided and properly maintained to collect runoff from the roads during periods of rain and no adverse impact is anticipated.

Waste Management Implications

3.8 Waste types generated by the construction activities of the road works are likely to include construction and demolition material from earth works, chemical waste generated from the maintenance of construction plants and equipments and general refuse from the workforce. Provided that these wastes are handled, transported and disposed of using approved methods and that the recommended good site practices are strictly followed, adverse environmental impacts are not expected during the construction phase.

3.9 The amount of waste that would be generated in the operation phase of the Project, which may include silt or grit from road gullies and litter collected from road surface, is predicted to be minimal, and therefore adverse environmental impacts in the operation phase is expected to be negligible.

3.10 Based on the findings of site appraisal within the Project boundary, a site which may need further assessment was identified. However, as the concern of land contamination, if any, at the site will be addressed under West Kowloon Terminus Project and no other historical and present potential contaminated land uses were identified. Adverse land contamination impact arising from the Project is not anticipated.

Landscape and Visual Impact

3.11 The proposed road works in an urban area of West Kowloon will inevitably result in some landscape and visual impacts particularly during the construction phase. These impacts have been minimised through careful consideration of road layouts and incorporation of aesthetic design and landscape compensation measures.

3.12 The proposed road works located within the existing road corridor network will cause alteration to the existing road layout horizontally and vertically and minor alteration of current land use of the area. However, these changes will not create any insurmountable impact on the existing and proposed landscape framework. On the contrary, a depressed road system has been proposed at the Lin Cheung Road and Austin Road West junction to enhance the at-grade connectivity between the Kowloon Station Development, the future West Kowloon Terminus Development and the future West Kowloon Cultural District. A landscape deck is proposed near the Lin Cheung Road and Jordan Road junction to further enhance pedestrian connectivity between the Kowloon Station Development and the future West Kowloon Terminus Development at podium level. Another landscape deck and associated covered walkway system at Austin Road West is proposed to enhance pedestrian connectivity between Austin Station, Sites C & D and future WKCD and provide noise mitigation for the planned residential development at Site D. The landscape deck at the entrance to the WKCD would create significant visual impact for the future WKCD, particularly at pedestrian level. The compatibility of the project with the future context of the area is undetermined as the designs of WKCD and Site D development are not available at this stage. Ongoing liaison between the proponent of this Project and the WKCDA regarding the landscape deck interfacing will be carried out throughout the design development process to ensure that this landscape deck is compatible with future visual context of this territorial landmark development. As a whole, it is considered that the Project would be in accordance with the planning goals and objectives for the Study Area, as set out in the Outline Zoning Plans and would further improve the at-grade and podium pedestrian connectivity in the area with the impact on WKCD undetermined at this stage.

3.13 Approximately 390 existing trees will be affected by the proposed road works, of which approximately 270 trees will be transplanted and 120 trees will be felled. Many of the affected trees are of semi-mature to mature size. None of these are Champion Trees or Registered Old and Valuable Trees on the records of Leisure and Cultural Services Department. There

are no rare species or endangered species but only common species. Under the proposed scheme for the Project, compensation for felled trees in ratio of 1:1 or more will be planted in the amenity area at the both sides of the proposed roads and above the depressed road at the Lin Cheung Road and Austin Road West junction. Approximately 1.1 hectares of roadside amenity area will be temporarily alienated during the construction stage. However, approximately 1.5 hectares of roadside amenity area will be re-provided upon completion of the construction. The overall residual impact on landscape resources is considered as acceptable after Year 10.

3.14 The proposed road works are located in an area of major ongoing development including the West Kowloon Terminus Development and the West Kowloon Cultural District. Due to the scale of the Project, there will be moderate residual impact on LCA2 - Ongoing Development Landscape Character Area (LCA), LCA3 - City Grid Mixed Urban LCA, LCA4 - Urban Residential LCA and LCA5 - Transport Corridor LCA during construction phase. During the operation stage, the proposed noise screening structures will become the main source of impact on LCAs. The residual impact on the Transport Corridor LCA is still considered as moderate in Year 10. The impacts of noise screening structures on other LCAs which are in the vicinity of the source of impact are indirect. The residual impacts are therefore considered as slight.

3.15 During the construction stage, there will be moderate residual impact on the travelling visual sensitive receivers (VSRs) using the existing road networks and the adjacent VSRs in high-rise residential developments, but there would be significant impacts for pedestrians along the roads at locations of near the landscape deck and semi-noise enclosure at Lin Cheung Road and the landscape deck at Austin Road West. During the operation stage, the proposed noise screening structures will become the main source of visual impact. To minimise the visual impact, an integrated urban, landscape and engineering design approach has been adopted in the design phase of the Project. A depressed road system has been proposed at the Lin Cheung Road and Austin Road West junction to minimise the requirement of noise screening structures. A landscape deck is proposed near the Lin Cheung Road and Jordan Road junction and the eastern end of Austin Road West instead of traditional noise semi-enclosure. Aesthetic design measures, such as the use of light weight metal structure, matt-finished translucent panels for the roof of enclosures to minimise the reflective glare, tinted panels for the upper part of noise barriers/semi-enclosures to provide visual transparency across the structure and green panels to create visual interest for the lower part of the noise barriers/semi-enclosures. Even with the implementation of the proposed aesthetic design and mitigation measures, there will still be moderate residual visual impact on some adjacent residential VSRs and moderate residual impact on the travelling VSRs along Lin Cheung Road, Road D1A and Austin Road West. However, the residual impact on travellers VSR T4 and T8, especially pedestrians, at locations near the landscape decks and semi-enclosure at Lin Cheung Road and the landscape deck at Austin Road West would remain substantial. There would also be significant visual impact on future VSRs in WKCD in locations where the landscape deck would span some 50m along the northern boundary of the WKCD. (The 50m landscape deck has yet to be confirmed and is subjected to actual design insofar as visual impact is concern.) The design of the WKCD is not available at this stage, the impact on future VSRs in WKCD at the locations near the landscape deck in Austin Road West is considered as undetermined However, ongoing liaison between the proponent of this Project and the WKCDA regarding the landscape deck interfacing will be carried out throughout the design development process of both projects to ensure that a coherent urban, landscape and architectural design is achieved so as to minimise the potential visual impact on the future VSRs in WKCD and maintain the design flexibility for the entrance gateway to WKCD. Detail design of the landscape deck at Austin Road West junction and the noise barrier at Road D1A will be subject to review upon detail design of development schemes, including implementation of alternative noise mitigation measures aiming at integrating aesthetic and functional requirements, in Sites C and D.

3.16 There will not be any insurmountable cumulative landscape and visual impact of the Project and the XRL project with the implementation of mitigation measures for both projects.

3.17 As a whole, it is considered that the residual landscape and visual impacts are considered as acceptable with mitigation measures except for WKCD. During detailed design stage, there should be a review of the need for the landscape deck at Austin Road West / Canton Road, taking into consideration an integrated design approach for the developments in the area. Similarly, the need for the noise barrier along Road D1A to protect the planned residential development at Site C should also be reviewed at the detailed design stage.

Environmental Monitoring and Audit

3.18 Environmental monitoring and audit is recommended for construction dust, construction noise and operational traffic noise, to check compliance with relevant statutory criteria and to ensure the effectiveness of the recommended mitigation measures. Site inspection and audit are also recommended for water quality, waste management and landscape and visual aspects during construction, and implementation of landscaping measures during operation. Details of the recommended mitigation measures, monitoring procedures and locations are presented in a stand-alone Environmental Monitoring and Audit (EM&A) Manual. This will enable the Contractor to obtain early warning on potential adverse impacts from the works and take necessary action to reduce impacts in specific areas if the monitoring results are found to be close to the criteria.

Overall Conclusion

3.19 The EIA has been conducted based on the latest and best available information. The findings of this EIA have provided information on the nature and extent of environmental impacts arising from construction and operation of the Project. The EIA has, where appropriate, identified mitigation measures to ensure compliance with environmental legislation and standards.

3.20 In conclusion, the Project would generally comply with the environmental standards and legislation with the implementation of the proposed mitigation measures during the construction and operation phases. This EIA has also demonstrated the general acceptability of the residual impacts and the population and environmentally sensitive resources in the vicinity of the site would be sufficiently protected. Environmental monitoring and audit mechanisms have been recommended for the construction and operation of the Project, where necessary, to verify the effectiveness of the recommended mitigation measures.