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Transport Department

Agreement No. TD 186/2010

Traffic Study on Pedestrian Links for the West Kowloon Development Area and its Connections with Surrounding Districts

Final Executive Summary

April 2013

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in association with MEINHARDT

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DRAWINGS

DESCRIPTION OF ABBREVIATIONS

AOI - Area of Influence
AUR - Austin Road
AURW - Austin Road West
AUS - MTR Austin Station
BOS - Bowring Street
CAR - Canton Road
CP - Conceptual Plan
DP - Development Plan
ETS - MTR East Tsim Sha Tsui Station
FST - Ferry Street
JOR - Jordan Road
JOS - MTR Jordan Station
KGVMP - King George V Memorial Park
KOW - MTR Kowloon Station
KPD - Kowloon Park Drive
KUD - Kowloon Station and Union Square Development
LCR - Lin Cheung Road
LOS - Level-of-Service
MOC - Method of Control
MTRC - MTR Corporation
NCR - Nga Cheung Road
OVT - Old and valuable trees
R.C. - Reserve Capacity
R.F.C. - Ratio of Flow-to-Capacity
TCL - MTR Tung Chung Line
TD - Transport Department
TPEDM - Territorial Population and Employment Data Matrices
TST - Tsim Sha Tsui
TSTS - MTR Tsim Sha Tsui Station
TWL - MTR Tsuen Wan Line
WCR - Wui Cheung Road
WKCD - West Kowloon Cultural District
WKCDA - West Kowloon Cultural District Authority
WKDA - West Kowloon Development Area
WKT - West Kowloon Terminus
WMR - Wui Man Road
WR - MTR West Rail
XRL - Express Rail Link

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1. INTRODUCTION

1.1 Background

1.1.1 There are major developments in West Kowloon Development Area (WKDA) including the West Kowloon Cultural District (WKCD), West Kowloon Terminus (WKT) of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) and the property developments above Austin Station (AUS), Kowloon Station (KOW) and WKT.

1.1.2 The recently completed traffic study by Transport Department (TD) in 2009, entitled "West Kowloon Reclamation Development Traffic Study (Agreement No. TD 54/2008)" (hereinafter referred to "TD 54/2008 Traffic Study") has recommended concept proposals for future pedestrian links between WKDA and Jordan / Tsim Sha Tsui districts.

1.1.3 The Stage 2 public engagement exercise for WKCD was conducted from August to November 2010 and the Conceptual Plan (CP) of Foster and Partners Hong Kong Limited had been selected by the WKCD Authority for development into a detailed Development Plan (DP). The Stage 3 public engagement exercise for WKCD was conducted from September to October 2011. The draft DP was submitted to the Town Planning Board on 30 December 2011, and the Town Planning Board decided in September 2012 not to propose any amendment to the draft DP, and the draft DP was approved under the Town Planning Ordinance in early January 2013. In the DP, a number of pedestrian links for connection between WKCD and its periphery have been proposed.

1.1.4 Pedestrian accessibility to the WKCD and WKT has been a public concern and new pedestrian links should be timely put in place to facilitate those developments at the WKDA.

1.1.5 In order to take forward pedestrian links recommended under "TD 54/2008 Traffic Study" and to review and assess the proposed pedestrian links between WKCD and surrounding districts in the DP, a more focused study is required to investigate into the viability of various pedestrian link proposals taking into account public views and planning / site constraints. Against this background, MVA Hong Kong Limited has been appointed by TD in April 2011 to undertake this more focused study under Agreement No. TD 186/2010 (hereinafter referred to "the subject Traffic Study"). It is expected that the viability, form and alignment of the various pedestrian link proposals would be investigated and assured in the subject Traffic Study with a view to improving the conditions of pedestrian facilities and pedestrian circulation in the Study Area. Moreover, preferred options of the pedestrian links between WKDA and Jordan / Tsim Sha Tsui districts can be established.

1.1.6 The Study Area and Area of Influence (AOI) of the subject Traffic Study are delineated in **Drawing 1.1**.

1.2 Objectives of the Executive Summary

1.2.1 The main objectives of the Executive Summary are to summarize the overall findings, proposals and recommendations developed throughout the study process and the issued working papers; to summarize comments, views and suggestions gathered from public consultation that had been carried out; to present the preliminary design and implementation strategies for the preferred options of the pedestrian links; to present the short-term improvement measures derived to be in place before the dedicated pedestrian links are implemented; and to present the issues to be addressed by the future project proponents of the pedestrian links proposed in the current study.

1.3 Structure of Executive Summary

1.3.1 The Executive Summary is structured into the following chapters:

- **Chapter 1 - Introduction**

- **Chapter 2 – Baseline Review**

  This section describes the current pedestrian and road network in the Study Area, and provides a summary of the surveys carried for the current study and the main observations.

- **Chapter 3 – Study Scenario and Approach**

  This section outlines the study scenarios and approach for the current study.

- **Chapter 4 – Overview of Preliminary Pedestrian Link Proposals**

  This section recaps and briefly describes the principles and preliminary alignment concepts of the pedestrian link proposals derived in the initial stage of the study.

- **Chapter 5 – Option Selection and Recommendation**

  This section evaluates the merits and constraints for the pedestrian link proposals and recommends the options to be carried forward.

- **Chapter 6 – Views Collected from Public Consultation Exercise**

  This section presents a summary of the views, comments and suggestions as collected from public consultation exercise throughout the study.

- **Chapter 7 – Preliminary Design of Pedestrian Link 1 (WKDA – Jordan)**

  This section presents the preliminary design of the preferred option for the WKDA – Jordan pedestrian link, including items such as alignment, structural form, construction methodology, utility diversion plans and temporary traffic arrangements.

- **Chapter 8 – Preliminary Design of Pedestrian Link 2 (WKDA – Tsim Sha Tsui)**

  This section presents the preliminary design of the preferred option for the WKDA – Tsim Sha Tsui pedestrian link, including items such as alignment, structural form, construction methodology, utility diversion plans, and temporary traffic arrangements.

- **Chapter 9 – Short-term Improvement Measures**

  This section presents the short-term improvement measures derived to be in place before the dedicated pedestrian links are implemented.

- **Chapter 10 – Key Issues to be Addressed in the Future Project Stages**

  This section presents any further issues and considerations regarding technical and implementation aspects of the pedestrian links recommended to be taken up by the future project design and construction stages.

- **Chapter 11 – Conclusion**

  This section presents the summary and conclusion for the Study.

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2. BASELINE REVIEW

2.1 Pedestrian Network

2.1.1 The pedestrian network in the Study Area is made up of the older districts of Jordan and Tsim Sha Tsui, and the newer West Kowloon Reclamation (WKR).

2.1.2 In the older districts of Jordan and Tsim Sha Tsui, pedestrians are served by close-knit, at-grade linkages in the form of footpaths and pedestrian crossings. In Tsim Sha Tsui, at critical and busy road junctions the pedestrian linkages take the form of subways for segregating pedestrians from vehicular traffic, and a comprehensive subway network centering around TSTS has been formed. However, there are still intensive pedestrian volumes on footpaths due to the active commercial and retail uses on street levels.

2.1.3 In contrast, the pedestrian linkages in WKR are defined by the mega-block developments of MTR KOW, AUS and the WKT site which is currently under construction. At present, there are low pedestrian volumes and activities on street level and this will likely continue to be the case. There are only few at-grade pedestrian crossings now, and upon the opening of WKT the principle would be to provide a comprehensive pedestrian network with its many footbridge and subway links to MTR KOW and AUS developments.

2.2 Road Network

2.2.1 Echoing the pedestrian connections, the road network in the Study Area is also composed of two contrasted sections. The older districts of Jordan and Tsim Sha Tsui are characterized by dense and close-knit roads, while the new districts are defined by the mega-block developments resulting in wide road reserves and junctions spaced well apart.

2.2.2 The major thoroughfares in the Jordan and Tsim Sha Tsui districts include Nathan Road, JOR, CAR, AUR, KPD and Salisbury Road. These roads, for most of their sections, are dual-carriageway with few development frontage access points. CAR between KPD and Salisbury Road is the exception where it is one-way southbound with access points from the adjoining developments of Harbour City and 1 Peking Road.

2.2.3 The inner local streets are mostly one-way single-carriageway. Most of which are either lined with metered parking spaces, or there are intensive kerbside activities carried out along. These streets have relatively low traffic throughput and are mostly for local access to the adjoining developments. As PLBs are not allowed in the Tsim Sha Tsui district, many on-street PLB stops are located along the inner streets of Parkes Street, Shanghai Street and Woosung Street north of Jordan Road.

2.2.4 In contrast, the road linkages in WKR are mostly dual-carriageways for high traffic throughput, and there are no kerbside activities except on-street bus stopping.

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3. STUDY SCENARIO AND APPROACH

3.1 Assessment Scenarios

3.1.1 The design years at the three different stages adopted for this study, are described below:

- Year 2011 – The baseline year when the pedestrian and vehicular traffic surveys were conducted.
- Year 2020 – The design year when Phase 1 of the WKCD would be completed and open to the public. In addition, the WKT and residential developments at Sites C & D AUS are assumed to be completed. The future road network in WKDA including LCR-AURW Underpass, depressed LCR/AURW junction, as well as the road improvement schemes H, I, J and Interim Option of Scheme Q (CAR Widening Scheme) are assumed to be completed.
- Year 2031 – The design year when the developments in WKDA including WKCD and the property development at Site A WKT are assumed to be fully completed, and the Scheme Q (CAR Underpass) is assumed to be completed before year 2031 as well.

3.1.2 The Traffic Model has taken into account the latest planning data including WKCD and the property development sites in WKR and highway network assumptions available at the time of study commencement.

3.2 Study Approach

3.2.1 A total of fourteen proposals were developed. Based on the technical review of the options to consider the engineering aspects of structural form, underground conditions, constructability/construction methods, environmental conditions, heritage, drainage impacts and visual impacts, as well as the views obtained from the 1st Stakeholders Workshop, a total of four pedestrian link options were considered to be more viable, two for each of the link to Jordan and the link to Tsim Sha Tsui.

3.2.2 Further technical assessment was carried out and the views obtained from the 2nd Stakeholders Workshop on the four viable options were considered, the preferred option for each of Pedestrian Link 1 (to Jordan) and Pedestrian Link 2 (to Tsim Sha Tsui) were selected. Preliminary design of the preferred options was then carried out for subsequent consultation with the Traffic and Transport Committee (T&TC) of Yau Tsim Mong District Council (YTMDC).

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4. OVERVIEW OF PRELIMINARY PEDESTRIAN LINK PROPOSALS

4.1 Overview

4.1.1 A total of fourteen proposals were developed, and at the conclusion, a total of four pedestrian link options were considered to be technically more viable, two for each of the link to Jordan and the link to Tsim Sha Tsui.

4.1.2 The fourteen proposals that were developed are as follows:

4.2 Pedestrian Link 1 – Connection between WKDA and Jordan District

4.2.1 For the grade-separated schemes, the possible alignments and constraints for each proposed scheme connecting between WKDA and Jordan District are shown in **Drawings 4.1** and **4.2** and as follow:

Option A1: Footbridge along BOS

Option A2: Subway along BOS

Option B1: Footbridge along AUR

Option B2: Subway along AUR

Option C1: Footbridge along JOR

Option C2: Subway along JOR

Option C3: Subway along JOR via Shanghai Street and BOS

4.3 Pedestrian Link 2 – Connection between WKDA and Tsim Sha Tsui District

4.3.1 The possible alignments for each proposed scheme connecting between WKDA and Tsim Sha Tsui District are shown in **Drawings 4.3** and **4.4** and as follow:

Option D0: Using/Upgrading Existing Walkways through Kowloon Park

Option D1: Footbridge through Kowloon Park

Option D2: Subway through Kowloon Park

Option E1: Footbridge along AUR and Nathan Road

Option E2: Subway along AUR and Nathan Road

Option F1: Footbridge along CAR and Haiphong Road

Option F2: Subway along CAR and Haiphong Road

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5. OPTION SELECTION AND RECOMMENDATION

5.1 Overview

5.1.1 Technical review has been carried out for the fourteen options and the findings for the evaluation are summarized in **Table 5.1** below. The assessment of the options in terms of the various aspects on geotechnical, structural, constructability, environmental etc. will each result in an allocation as follows:

- No or little constraints envisaged (√√)
- Some constraints envisaged (√)
- Major constraints envisaged (×)
- No feasible practical solution to overcome the constraint (××)

5.1.2 For each option, if any one aspect is scored as "no feasible practical solution (××)" then the option is deemed to be technically a "no-go" option.

5.2 Shortlisting of Viable Options from Technical Review

5.2.1 The main findings from the technical review as shown in **Table 5.1** are as follows:

Viable Options – WKDA – Jordan Linkage

- Option A2 (BOS subway); and
- Option C3 (Subway along JOR via Shanghai Street and BOS).

Viable Options – WKDA – Tsim Sha Tsui Linkage

- Option D0 (Using/Upgrading Existing Walkways through Kowloon Park); and
- Option D2 (Kowloon Park subway).

5.3 Selection of Preferred Options

5.3.1 Based on the technical review, as well as the views obtained from the local stakeholders' workshops, the selection of the preferred option for each of Pedestrian Link 1 (to Jordan) and Pedestrian Link 2 (to Tsim Sha Tsui) rests on the following key considerations.

Pedestrian Link 1 – WKDA to Jordan

5.3.2 One of the key factors on the selection of the preferred option is the impacts to the existing street stalls along Bowring Street both temporarily and permanently. The significance of these impacts has been emphasized by local stakeholders and Food and Environmental Hygiene Department (FEHD) in stakeholders' workshops and Steering Group meetings.

5.3.3 On Option A2 (BOS subway), the construction impacts on the existing street stalls along BOS were noted to be a significant concern to some of the consulted stakeholders. Even with the proposed horizontal pipe piling methods which would reduce the impacts to street level to an absolute minimum for such works (only localized relocation of a few number of stalls during each construction sub-stage), some of the consulted stakeholders expressed strong reservations as they considered any relocation of stalls to be highly inconvenient and disruptive to the businesses and customers alike. The difficulty in the relocation and rearrangement of street stalls were also expressed by FEHD.

5.3.4 In terms of permanent impacts on the street stalls, despite that the scheme has already included various street entrances at side streets crossing BOS (e.g. Shanghai Street, Pilkem Street) to enhance the accessibility to the street level, there were also concerns expressed by the consulted stakeholders that the subway would affect the businesses of the street stalls as pedestrians would divert to away from street level to use the subway.

5.3.5 Meanwhile, the construction of Option C3 would not require any road closure/narrowing for works area at the section of BOS with street stalls, so the street stalls can maintain their predominant conditions during subway construction. The east-west alignment is further away from the street stalls, but with a proposed entrance at BOS/ Kwun Chung Street facing the direction of the street stalls, so it can provide close accessibility to the stalls without directly drawing pedestrians away from the street level. From this perspective, this option was more welcomed than Option A2.

5.3.6 Option C3 also has some advantages over Option A2 on catchment potential as it would provide a street entrance at Temple Street north of JOR, such that the night market area along Temple Street and Nanking Street, which is a popular tourist spot, would be conveniently accessed from MTR and WKCD. This was also well noted and received by the consulted stakeholders.

5.3.7 It is concluded from the above that Option A2 is unlikely to gain comprehensive support from the relevant local stakeholders to make it viable for implementation. Thus, Option C3 (subway along Jordan Road via Shanghai Street and Bowring Street) is identified to be the more preferred option for Pedestrian Link 1 to be taken forward for further consideration.

Pedestrian Link 2 – WKDA to Tsim Sha Tsui

5.3.8 The two options have similarly low impacts on traffic during construction periods and under permanent case. The main difference is on the construction methodology, programme and costs for obvious reasons, since Option D0 is primarily enhancement of existing at-grade facilities, while Option D2 is the construction of new underground structures through Kowloon Park.

5.3.9 For Option D2, the construction of the subway is proposed to be by means of cut-and-cover and as such impacts on some facilities and some operational aspects of the park would inevitably be generated. Meanwhile, Option D0 would entail improvement works at some sections of the park walkway only and the scale of works is relatively minor.

5.3.10 Option D0 also incurs considerable savings in construction costs and construction duration over Option D2. An additional intangible benefit is the potential synergy between the open space and recreational landuses of Kowloon Park and WKCD. The proposed use of the existing park walkways for WKDA-Tsim Sha Tsui pedestrians does not only serve as strictly commuting or utilitarian purpose. This pedestrian movement, a considerable portion of which is expected to be tourists and visitors, should also be viewed as potential visitors to enjoy the environment, amenities and museum/exhibition facilities inside Kowloon Park.

5.3.11 From the consultation with the local stakeholders, the views expressed also indicated that using/upgrading the existing Kowloon Park walkways would be an acceptable connection between WKDA and Tsim Sha Tsui, without creating massive construction areas in the area.

5.3.12 Option D0 would be under the same opening hours of Kowloon Park (05:00-24:00). However, the scheme is justified not by the late night-time pedestrian demands, but by the higher demands envisaged during the regular PM peak periods and weekend daytimes. Therefore, the scheme should still be well used throughout most of the opening hours during the week, and the viability of or the need for the scheme would not be contingent upon any extension of the park opening hours.

5.3.13 In conclusion from the above, Option D0 (using/upgrading existing walkways within Kowloon Park) is identified to be the more preferred option for Pedestrian Link 2.

Table 5.1 Evaluation of Options

Option	Review Criteria											
	Underground Conditions/Utilities	**Construction**	**Environmental**	**Heritage**	**Drainage Impact**	**Programme**	**Costing**	**Connectivity**	**Pedestrian Estimates**	**Traffic Impacts due to Permanent Structures**	**Traffic Impacts due to Construction**	**Visual Impacts**
WKDA – Jordan Link												
A1 – Footbridge along BOS	√ Existing stormwater drain and cable	√ Foundation and pile construction, erecting bridge deck during night time	√ No major concerns with OVT, possible noise issues close to dwelling units	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 2-2 ½ years	√ medium	√ Typical footbridge level with landings close to MTR station	× Relatively lower	×× Piers and at carriageways pose significant constraints for EVA and firefighting for adjoining buildings	× Likely road closure by section and local diversion scheme required	× Major impact due to typical footbridge level and close distance from adjoining buildings; privacy concerns
A2 – Subway along BOS	√ Existing stormwater drain and cable	√ Cut-and-cover/horizontal pipe piling works	√√ No major concerns with OVT or noise	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 2½-3 years	√ medium	√√ Direct connection into MTR station and other existing links; could provide more ground entrances to enhance accessibility to street level	√ Relatively higher	√ Subway exits and vent shaft at side streets	× Partial road closure by section	√ Minor visual impacts from subway exits and vent shaft
B1 – Footbridge along AUR	√ Existing stormwater drain, cable and gas pipe	√ Foundation and pile construction, erecting bridge deck during night time	√ No major concerns with OVT, possible noise issues close to dwelling units	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 2 ½ -3 years	√ medium	√ Typical footbridge level with landings close to MTR station	√ Relatively higher	× Piers and landings at carriageways or footpaths	×× Lane closure by section, serious link capacity issues arise	× Major impact due to typical footbridge level and close distance from adjoining buildings; privacy concerns
B2 – Subway along AUR	√ Existing stormwater drain, cable and gas pipe	√ Cut-and-cover/horizontal pipe piling works	√√ No major concerns with OVT or noise	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 3 – 3 ½ years	√ medium	√√ Direct connection into MTR station and other existing links; could provide more ground entrances to enhance accessibility to street level	√ Relatively higher	√ Subway exits and vent shaft at side streets	×× Lane closure by section, serious link and junction capacity issues arise	√ Minor visual impacts from subway exits and vent shaft
C1 – Footbridge along JOR	√ Existing box culvert, stormwater drain, fresh water pipe, and cable	√ Foundation and pile construction, erecting bridge deck during night time	√ No major concerns with OVT, possible noise issues close to dwelling units	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 2 ½ -3 years	√ medium	√ Typical footbridge level with landings close to MTR station	√ Relatively higher	x Piers and landings at carriageways or footpaths	x Lane closure by section	x Major impact due to typical footbridge level and close distance from adjoining buildings; privacy concerns
C2 – Subway along JOR	× Existing box culvert, stormwater drain, fresh water pipe, and cable. Need to cross box culvert near JOR/CAR/FST which involves great elevation change	√ Cut-and-cover/horizontal pipe piling works	√√ No major concerns with OVT or noise	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 3 – 3 ½ years	√ medium	√√ Direct connection into MTR station and other existing links; could provide more ground entrances to enhance accessibility to street level, and to area north of Jordan Road	√√ Highest	√ Subway exits and vent shaft at side streets	× Lane closure by section	√ Minor visual impacts from subway exits and vent shaft
C3 – Subway along JOR via Shanghai Street and BOS	√ Existing box culvert, stormwater drain, fresh water pipe, and cable	√ Cut-and-cover/horizontal pipe piling works	√√ No major concerns with OVT or noise	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 3 – 3 ½ years	√ medium	√√ Direct connection into MTR station and other existing links; could provide more ground entrances to enhance accessibility to street level, and to area north of Jordan Road	√√ Highest	√ Subway exits and vent shaft at side streets	× Lane closure by section	√ Minor visual impacts from subway exits and vent shaft
WKDA – Tsim Sha Tsui Link												
D0 – Using/Upgrading Existing Walkway through Kowloon Park	√√ No impacts on underground conditions	√√ Primarily at-grade level works	√√ No major concerns with OVT or noise	√ Historic buildings in Kowloon Park, but should have no direct impacts	√√ Minor impacts on existing system, minor impacts during construction	√√ 9-12 months	√√ low	× At-grade level and same level to other existing links, but subjected to opening hours of Kowloon Park	√ Relatively higher	√√ No permanent structures at carriageways or footpaths	√√ No construction traffic impacts	√√ No additional visual impacts except possible alterations to park facilities
D1 – Footbridge through Kowloon Park	× Existing MTR TWL tracks in parallel, stormwater drain, cable and gas pipe	√ Foundation and pile construction, erecting bridge deck during night time	× OVT along Nathan Road, no major concerns with noise	√ Historic buildings in Kowloon Park, but should have no direct impacts	× Minor impacts on existing system, but drainage diversion required for construction	√ 2 ½ -3years	√ medium	× Greater level difference with MTR station	× Relatively lower	√ No permanent structures at carriageways or footpaths except outside Park Lane	√ No lane closure, bus stop may be affected	× Major impact due to footbridge incompatible with park greenery and leisurely environment
D2 – Subway through Kowloon Park	× Existing MTR TWL tracks in parallel, stormwater drain, cable and gas pipe	√ Cut-and-cover/horizontal pipe piling works	× OVT along Nathan Road, no major concerns with noise	√ Historic buildings in Kowloon Park, but should have no direct impacts	√ Minor impacts on existing system, but minor drainage diversion required for construction	√ 3-3 ½ years	√ medium	× Greater level difference with other existing links	√ Relatively higher	√√ No permanent structures at carriageways or footpaths	√ No lane closure, bus stop may be affected	√ Minor visual impacts from subway exits and vent shaft
E1 – Footbridge along AUR and Nathan Road	× Existing MTR TWL tracks in parallel, stormwater drain, cable	× Foundation and pile construction, erecting bridge deck during night time, in MTR protection zone	× OVT along Nathan Road, no major concerns with noise	√ Historic buildings along Nathan Road, but should have no direct impacts	× Minor impacts on existing system, but drainage diversion required for construction	√ 3-3½ years	√ medium	× Greater level difference with MTR station	× Relatively lower	× Piers and landings at carriageways or footpaths	× Lane closure by section	× Major impact due to typical footbridge level and close distance from adjoining buildings; privacy concerns
E2 – Subway along AUR and Nathan Road	× Existing MTR TWL tracks in parallel, stormwater drain, cable	× Cut-and-cover works in MTR protection zone	× OVT along Nathan Road, no major concerns with noise	√ Historic buildings along Nathan Road, but should have no direct impacts	× Minor impacts on existing system, but drainage diversion required for construction	× 3 ½ -4 years	× high	√ Direct connection into MTR station and other existing links; longer walking distance between WKDA and TST	√ Relatively higher	√ Subway exits and vent shaft at side streets	×× Lane closure by section, serious link and junction capacity issues arise	√ Minor visual impacts from subway exits and vent shaft
F1 – Footbridge along CAR and Haiphong Road	×× Existing MTR WR tracks, box culvert, stormwater drain, gas pipe	× Foundation and pile construction, erecting bridge deck during night time, in MTR protection zone	√ No major concerns with OVT, possible noise issues close to dwelling units	√√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	√ 3-3½ years	√ medium	×× Excessive level difference with street level	√ Relatively higher, but primarily not target WKDA-TST demands	×× Piers and at carriageways pose significant constraints for EVA and firefighting for adjoining buildings	×× Lane closure but no practical diversion scheme due to key E-W movements using Haiphong Rd	× Major impact due to typical footbridge level and close distance from adjoining buildings
F2 – Subway along CAR and Haiphong Road	×× Existing MTR WR tracks, box culvert, stormwater drain, gas pipe	× Cut-and-cover works in MTR protection zone	√ No major concerns with OVT or noise	√ No heritage buildings in vicinity	× Minor impacts on existing system, but drainage diversion required for construction	× 3 ½ -4 years	× high	√ Direct connection into MTR station and other existing links	√ Relatively higher, but primarily not target WKDA-TST demands	√ Subway exits and vent shaft at side streets	×× Lane closure but no practical diversion scheme due to key E-W movements using Haiphong Rd	√ Minor visual impacts from subway exits and vent shaft

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6. VIEWS COLLECTED FROM PUBLIC CONSULTATION EXERCISE

6.1 Stakeholders' Workshop

6.1.1 To enable the vision and aspirations of the relevant local public to be better represented on the course of this study, two Stakeholders' Workshop were held on 17th January 2012 and 18th April 2012 to collect views and concerns of the relevant stakeholders on the proposals of the pedestrian links.

6.1.2 Representatives from local stakeholder groups, and representatives from the Home Affairs Department were invited to attend the workshop. The stakeholder groups invited to the workshop are summarized in **Table 6.1**.

Table 6.1 Stakeholder Groups Invited to the Workshop

Group Invited	Attendance at	
	1st Workshop	2nd Workshop
Yau Tsim Mong District Council Members	√	√
West Kowloon Cultural District Authority	√	√
MTR Corporation	√	√
China-Hong Kong City	√	√
寶靈街販商協會	√	√
Canton Road Association	×	√
Tsim Sha Tsui Kaifong Welfare Association (尖沙咀街坊福利會)	×	×
油尖旺南分區委員會	×	×
油尖旺民生關注會	×	×
油尖旺地區事務聯會	×	×
Western Harbour Tunnel Company Ltd.	×	×

Note:

√ Attended the workshop
× Not attended the workshop

6.1.3 The general views from the stakeholders in the 1st Stakeholders' Workshops are as follow:

- Footbridges will adversely affect other buildings / improvement measures in future;
- Both footbridge and subway options will have significant impact to the public during construction and Footbridge will have significant impact during operation as well;
- Safety and security issues in subway options should be considered; and
- Whether or not there is a genuine need to build the links

6.1.4 The general views from the stakeholders in the 2nd Stakeholders' Workshops are as follow:

- For Pedestrian Link 1 (WKDA – Jordan), the preferred option is Option C3 as the alignment could cover more area in Jordan district and could attract more local Jordan resident to use the subway and suggested to relocated the landing to Temple Street; and
- For Pedestrian Link 2 (WKDA – Tsim Sha Tsui), the preferred option is Option D0 as would have less traffic impact during construction.

6.2 District Council Consultation

6.2.1 Findings of the study and the recommended preferred options were presented to the T&TC of the YTMDC on 29th November 2012. The general views and concerns of the T&TC are as follows:

- No objection to the preferred options.
- For the subway link to Jordan: Concerns on traffic impact to existing roads during construction, management and security issues of the subway.
- For the upgrading work associated with Kowloon Park: Concerns on the work programme and interfacing with MTRC's improvement work.

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7. PRELIMINARY DESIGN OF PEDESTRIAN LINK 1 (WKDA – JORDAN)

7.1 Alignment and Entrance/ Exits Points

7.1.1 The proposed subway connecting the existing subway at the junction of CAR/AUR/AURW and Jordan MTR Station is 560m approximately long excluding the length of exits as shown in **Drawing 7.1**. The internal depth is generally 4.5m (2.5m pedestrian headroom clearance plus E&M services). The walls and the top and bottom slab are generally 800mm thick. The subway has a 4.5m internal clear width pedestrian walkway without travelators.

7.1.2 There are four intermediate entrance/exits in this option. For intermediate entrance/exit at Bowring Street, there is a lift located near Kwun Chung Municipal Services Building at Bowring Street. Stairs are located between Kwun Chung Street and Shanghai Street. Two intermediate entrances/exits with stair and lift are located on Temple Street, at north and south of Jordan Road, respectively. The last intermediate entrance/exit with stairs and lift is located on Pilkem Street.

7.2 Construction Methodology and Traffic Arrangements

Horizontal Pipe Piles Method

7.2.1 To minimise traffic impact, part of the proposed subway would be constructed using horizontal pipe piling method, apart from the conventional cut-and-cover method. For instance, the works along Shanghai Street and Jordan Road, the way out to the exit at Temple Street on the north side of Jordan Road and a section of Bowring Street near Shanghai Street, horizontal pipe piling method would be proposed, primarily for the purpose of minimizing works area on street level, even though it is a more lengthy and costly method than cut-and-cover method over the same works section.

Cut-and-Cover Method

7.2.2 For the road sections with more sufficient road width, cut-and-cover method would be used for shorter construction periods. These could be at most of the section of Bowring Street, all the covered stairs and lifts at Temple Street and Pilkem Street and the connection to the existing subway at Canton Road/Austin Road junction.

7.2.3 In terms of construction traffic impacts, all side street access could be maintained with the proposed construction methodology and staged work sequence. With careful planning of the TTMS, there would be no unacceptable traffic impacts.

7.3 Alternative Design for Underground Retail

7.3.1 Development of underground retail had been considered in the study, however it is concluded that it is not feasible due to the following reasons:

- If retail shops shall be provided along the subway, the total width of the subway structure will be about 10m. For construction of a 10m underground structure, a minimum of 3 traffic lanes along Jordan Road would need to be closed during construction, and would lead to unacceptable traffic overloading.

- There are no notable basement developments in adjoining buildings, and so there is little scope for integration with surrounding developments to generate any synergy effect. There would be low attraction potential to the subway retail.

- The proposed subway is located in an urban area with many existing buildings and utilities. Space between existing buildings foundation and / or existing major utilities (e.g. box culvert) on both sides of the road is very confined along the subway alignment.

- At Bowring Street, Shanghai Street and Jordan Road, the wider subway structure requires and a lot of existing utilities and the existing box culvert under the footpath and carriageway would be affected and need to be diverted for the subway construction.

7.4 Alternative Design for Installation of Travellators

7.4.1 Installation of travellators inside the subway had also been considered. However, it would cause the same impacts as the provision of underground retail development. The overall structural width of the subway would be increased from approximately 6m to 10m if travellators are installed. The construction risk will be increased as the construction of the subway will be much closer to the existing buildings' foundation at Bowring Street and Shanghai Street. Closure of 3 lanes of Jordan Road will be required during construction and this would worsen the traffic at Jordan Road. Diversion of the box culvert will also be required in order to make room for a wider subway. Due to the above reasons, installation of travellators is not recommended.

7.5 Construction Programme

7.5.1 Based upon the construction methods adopted in the preliminary design, the construction period for this preferred pedestrian link has been estimated. The construction period for Pedestrian Link 1 is approximately 4 years. This estimation need to be reviewed and details need to be further developed in later study stages of this project.

8

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8. PRELIMINARY DESIGN OF PEDESTRIAN LINK 2 (WKDA – TSIM SHA TSUI)

8.1 Permanent Traffic Arrangements

8.1.1 For entrance/exit point at Entrance A1 of Tsim Sha Tsui Station, existing stairs next to the Entrance A1 is proposed to convert to two ramps with one landing in between for barrier-free access as shown in Detail A in **Drawing 8.1**. It is proposed here to adjust the levels of the park entrance and a part of the internal walkway to convert to a gentle ramped section between the park and Nathan Road footpath. The access (ramp and stairs) to the Health Education Exhibition and Resource Centre (HEERC) would be maintained, and the building structure itself, which is a Grade I historical building, would be unaffected. An alternative configuration for the barrier-free access arrangement has also been derived, which the ramp up to Kowloon Park level is more localized. This is shown in **Drawing 8.2**. It is suggested that in the next stages of the project, detailed engineering feasibility of the schemes shown in **Drawings 8.1** and **8.2** shall be carried out to ascertain and select the most suitable scheme with least impact for implementation.

8.1.2 For entrance/exit point at Nathan Road, existing stairs and proposed lift are provided. The proposed lift for barrier-free access is located next to the roof garden of Park Lane Shopper's Boulevard as shown in Detail B in **Drawing 8.1**.

8.2 Construction Methodology and Traffic Arrangements

8.2.1 The construction of the lift and the minor modification works from stairs to ramp at the section adjacent to TST station Exit A1 shall be carried out with great care to the surrounding heritage and existing buildings. There are no impacts on vehicular traffic in the vicinity arising from the construction works of the pedestrian link.

8.3 Construction Programme

8.3.1 Based upon the construction methods adopted in the preliminary design, the construction period for the above upgrading works has been estimated to be approximately 11 months. This estimation need to be reviewed and details need to be further developed in later study stages of this project.

9

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9. SHORT-TERM IMPROVEMENT MEASURES

9.1 Objectives

9.1.1 Some of the major developments in WKDA will be completed in 2015 /2016. To cope with the pedestrian demand before the preferred links are in place, short-term at-grade improvement measures have been proposed to tie-in with the completion of these developments.

9.2 Proposed Traffic Management Measures

9.2.1 The proposed improvement measures are shown in **Drawing 9.1** and as follows:

- **Jordan Road/Temple Street Junction**
  Install speed table at pedestrian crossing of Temple Street.

- **Jordan Road/Shanghai Street Junction**
  Provide traffic lights for pedestrian crossing of Shanghai Street.

- **Bowring Street/Parkes Street Junction**
  Install speed table at the junction.

- **Bowring Street /Temple Street Junction**
  Install speed table at the junction. Relocate a street name sign accordingly.

- **Bowring Street/Shanghai Street Junction**
  Install build-out at the junction. Relocate a fire hydrant and a street name sign accordingly.

- **Canton Road/Haiphong Road Junction**
  Increase width of northern pedestrian crossing to 8m and extend the pedestrian green time of the traffic signal.

9.2.2 Some street furniture is obstructing pedestrian movement and it is proposed to relocate them from the middle of pavement. They include the followings, as also illustrated in **Drawing 9.2**:

- Fire hydrant at the junction of Parkes Street/Bowring Street.
- Street name sign at the junction of Austin Road/Woosung Street.
- Lamp post at the junction of Temple Street/Bowring Street.
- Lamp post at the junction of Shanghai Street/Bowring Street.

10

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10. KEY ISSUES TO BE ADDRESSED IN THE FUTURE PROJECT STAGES

10.1 Overview

10.1.1 Upon the general acceptance of the pedestrian link proposals (Link 1 and Link 2) by the Yau Tsim Mong District Council, the study would be moving into Feasibility Study stage next for detailed feasibility review, whereupon the project would be moving from primarily planning-oriented to an engineering and design oriented perspective. Upon completion of the Feasibility Stage, and that the engineering feasibility of the links is ascertained, Design-and-Construction (D&C) stage would then proceed. The key issues to be addressed by the future project stages are highlighted here.

10.2 Pedestrian Link 1

10.2.1 The key issues related Pedestrian Link 1 to be addressed in future include:

- The connection work at Jordan Station may be entrusted to MTRC.
- Management, operation and maintenance of the subway.
- Station and Transport Integration Committee (STIC) and Safety and Security Coordinating Committee (SSCC) submissions for modification work at Jordan Station.
- The existing subway at AUR may be reconfigured in future.

10.3 Pedestrian Link 2

10.3.1 The key issues related Pedestrian Link 2 to be addressed in future include:

- Opening hours of internal walkways of Kowloon Park.
- Interfacing with MTRC's improvement work at Entrance A.

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11. CONCLUSION

11.1 Conclusion

11.1.1 The findings from the study identify the following options to be most preferred, taking into account technical aspects and aspirations of the relevant stakeholders:

Pedestrian Link 1 - WKDA – Jordan

- Option C3 – Subway along Jordan Road via Shanghai Street and Bowring Street

Pedestrian Link 2 - WKDA – Tsim Sha Tsui

- Option D0 – Using/upgrading existing walkways within Kowloon Park

11.1.2 This study also presented short-term improvement schemes in the Jordan and Tsim Sha Tsui districts to be implemented for tying in with the early phases of developments in WKDA. The proposed schemes have included footpath modifications, traffic calming measures (build-outs, speed tables), pedestrian crossing modifications, signal timing modifications and/ or signalized junction MOC modifications.

Figures

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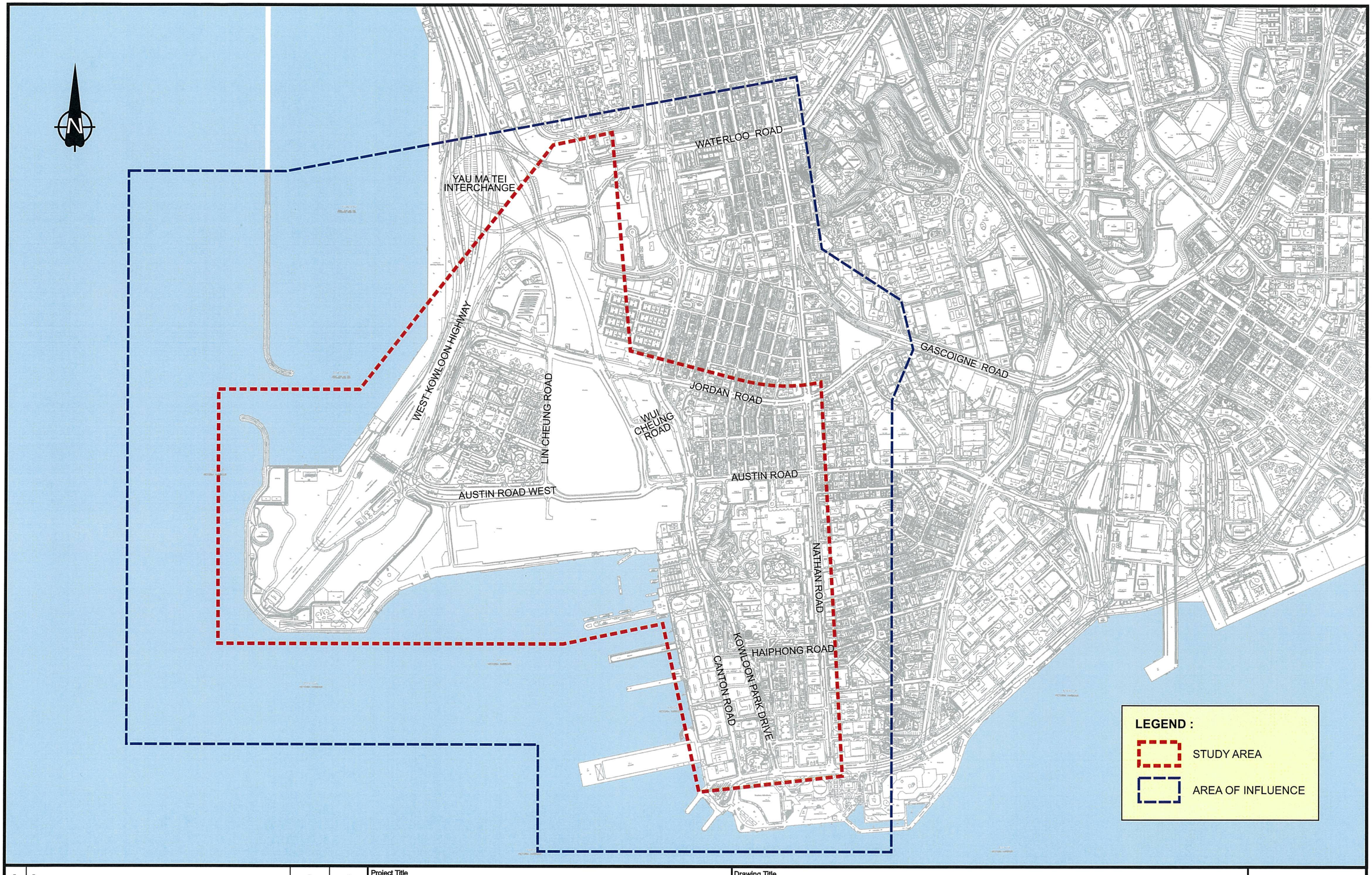

Rev.	Description	Checked	Date
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Project Title

AGREEMENT NO. TD 186/2010
TRAFFIC STUDY ON PEDESTRIAN LINKS FOR
THE WEST KOWLOON DEVELOPMENT AREA AND
ITS CONNECTIONS WITH SURROUNDING DISTRICTS

Drawing Title

STUDY AREA AND AREA OF INFLUENCE

Designed	Checked	Scale	Date	Drawing No.	Rev.
TKM	EDK	NTS	FEB 2013	1.1	-

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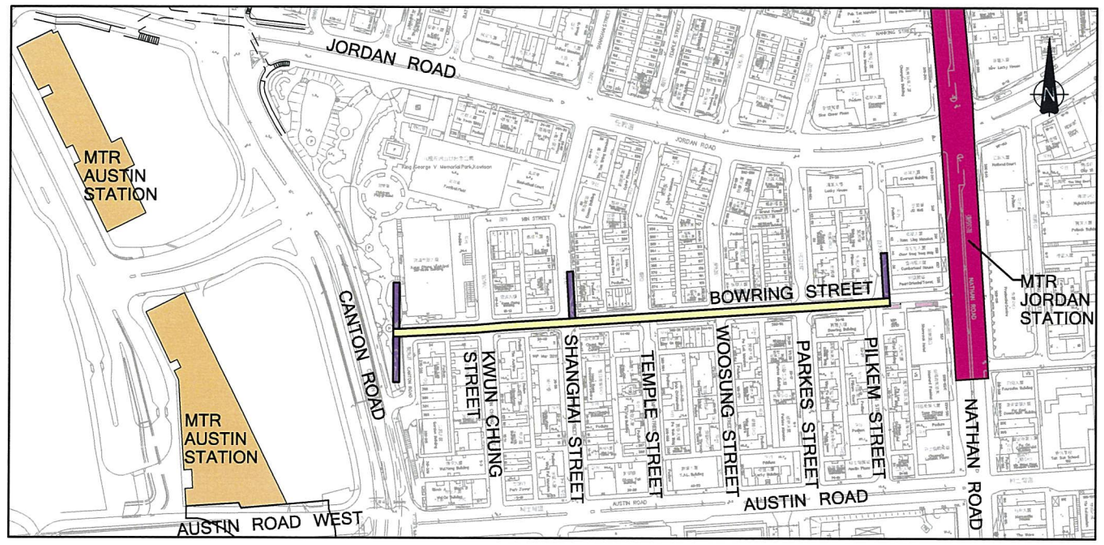
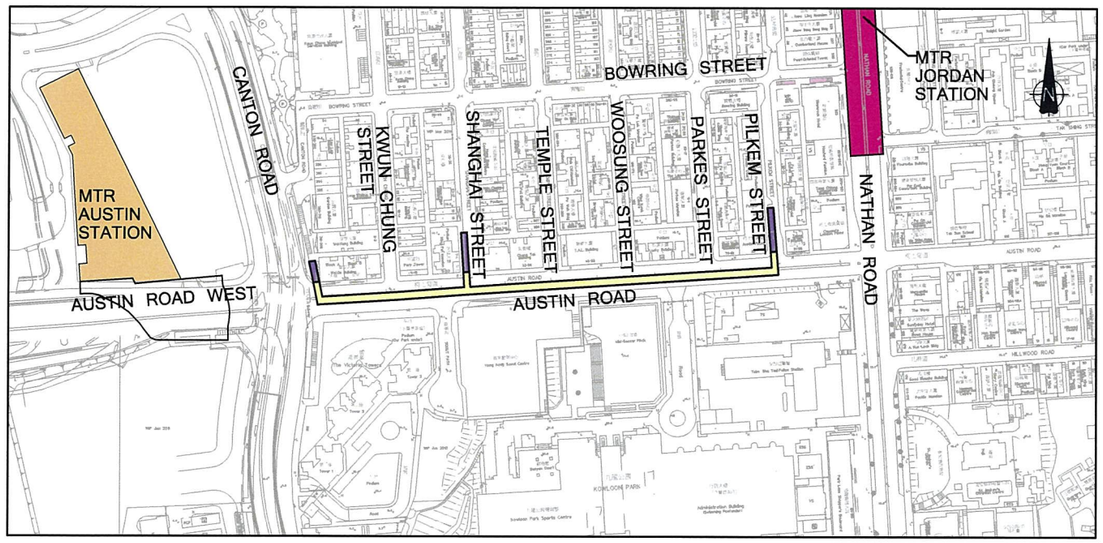
29293/ES/F11.CDR/LLH/4FEB13

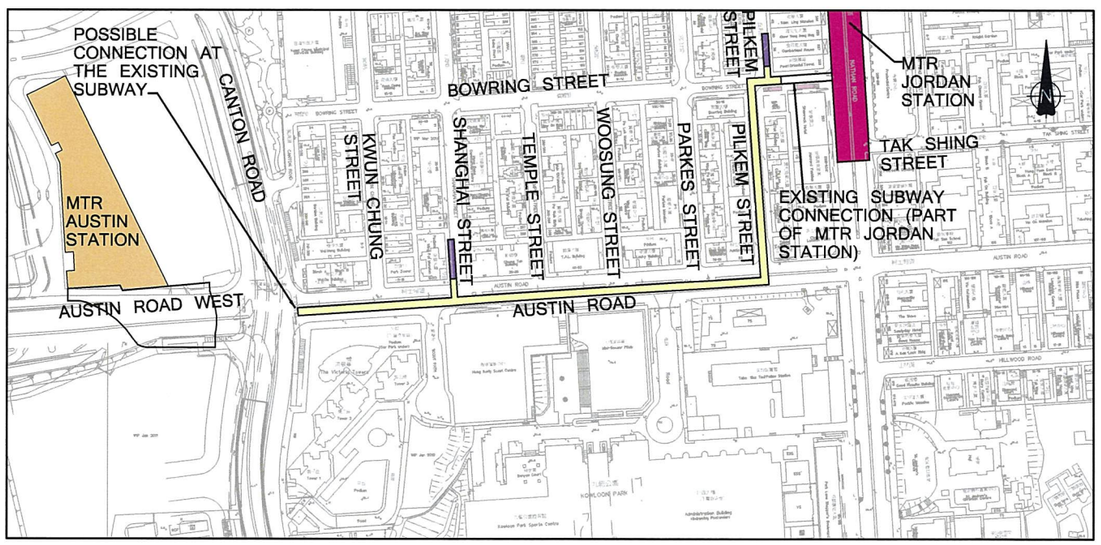


PEDESTRIAN LINK OPTION A1 - FOOTBRIDGE ALONG BOWRING STREET

PEDESTRIAN LINK OPTION A2 - SUBWAY ALONG BOWRING STREET



PEDESTRIAN LINK OPTION B1 - FOOTBRIDGE ALONG AUSTIN ROAD



PEDESTRIAN LINK OPTION B2 - SUBWAY ALONG AUSTIN ROAD

LEGEND:

PROPOSED FOOTBRIDGE/ SUBWAY ALIGNMENT

PROPOSED FOOTBRIDGE/ SUBWAY LANDING LOCATION

Rev.	Description	Checked	Date
-	-	-	-

Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

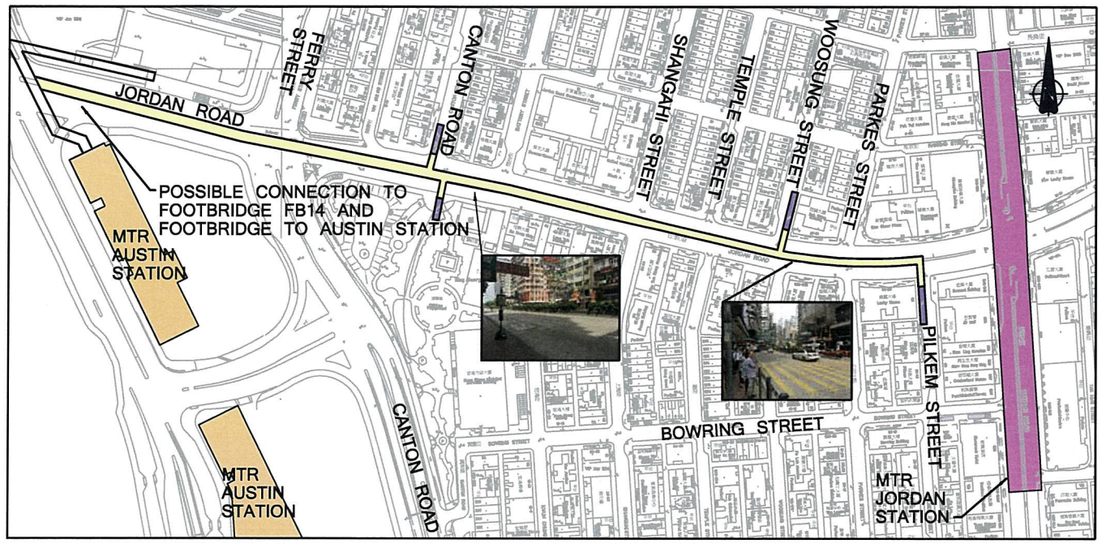
Drawing Title

PRELIMINARY OPTIONS OF PEDESTRIAN LINK 1 - CONNECTION BETWEEN WKDA AND JORDAN DISTRICT (SHEET 1 OF 2)

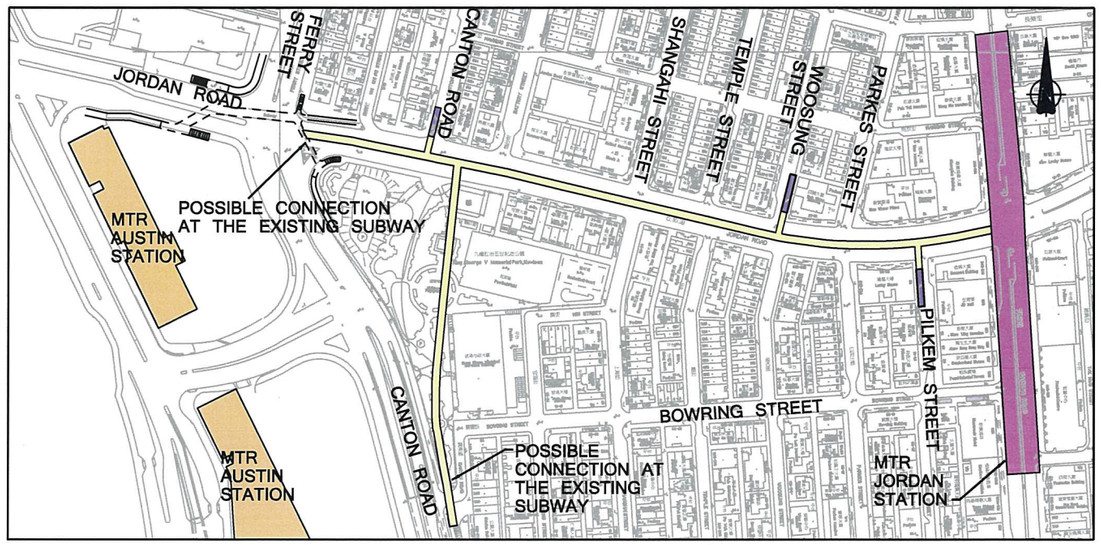
Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:4000(A3)	FEB 2013	4.1	-

MVA SYSTRA GROUP

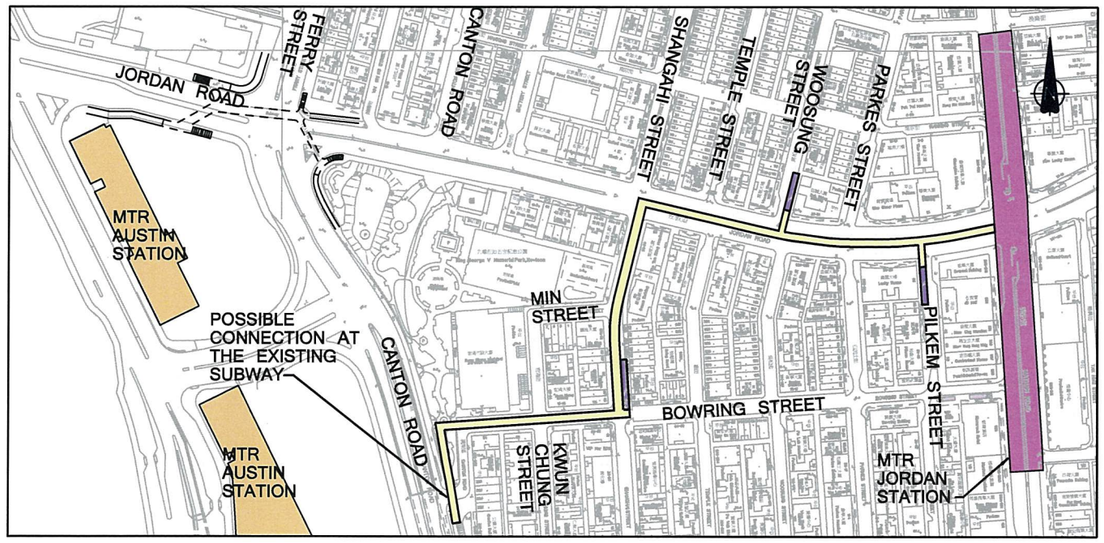
29293/ES/F41.DGN/TUV/20FEB13



PEDESTRIAN LINK OPTION C1 - FOOTBRIDGE ALONG JORDAN ROAD



PEDESTRIAN LINK OPTION C2 - SUBWAY ALONG JORDAN ROAD



PEDESTRIAN LINK OPTION C3 - SUBWAY ALONG JORDAN ROAD VIA SHANGHAI STREET/ BOWRING STREET

LEGEND:

PROPOSED FOOTBRIDGE/ SUBWAY ALIGNMENT

PROPOSED FOOTBRIDGE/ SUBWAY LANDING LOCATION

Rev.	Description	Checked	Date
-	-	-	-

Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

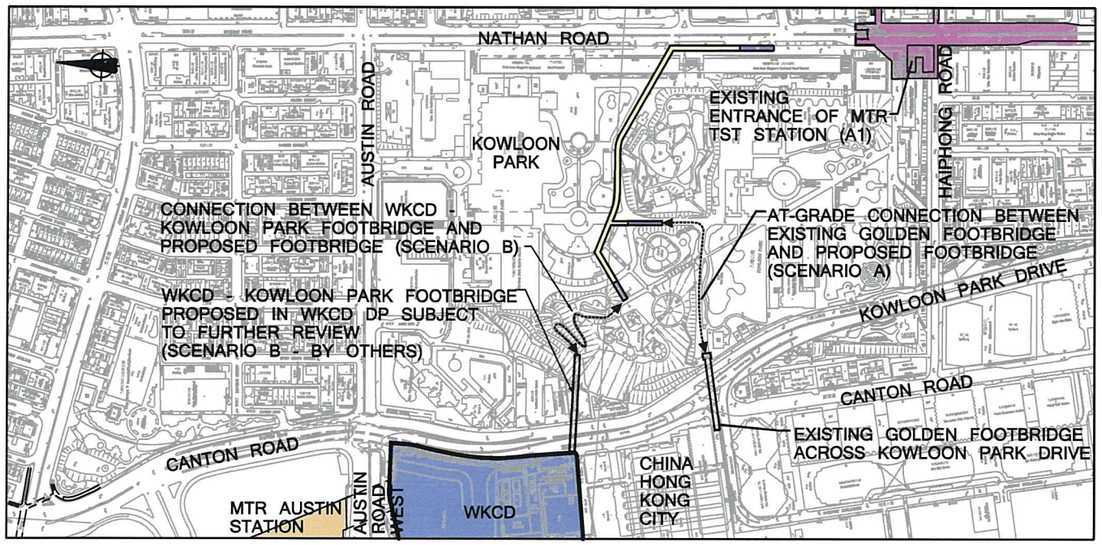
Drawing Title

PRELIMINARY OPTIONS OF PEDESTRIAN LINK 1 - CONNECTION BETWEEN WKDA AND JORDAN DISTRICT (SHEET 2 OF 2)

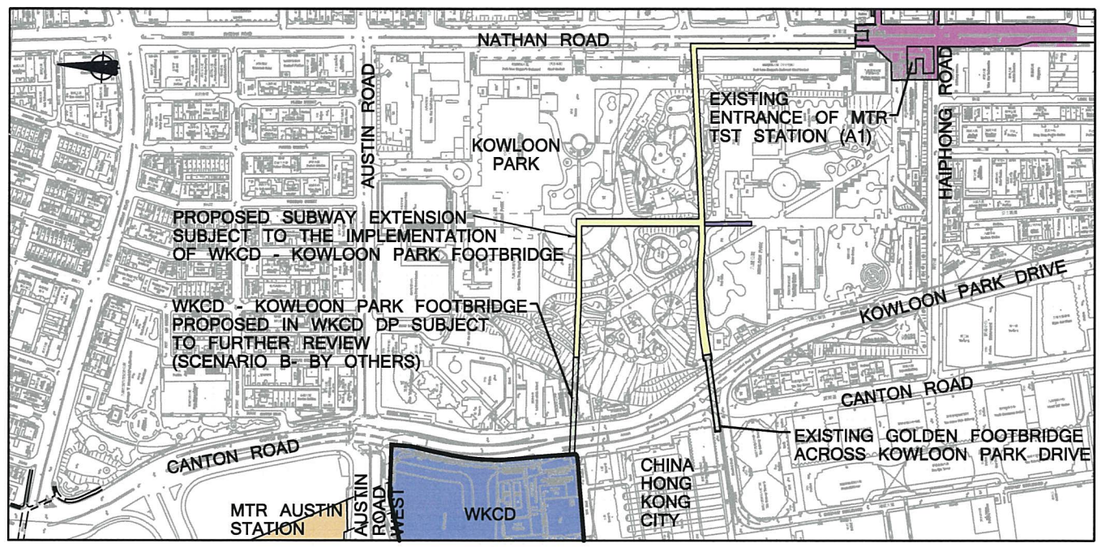
Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:4000(A3)	FEB 2013	4.2	-

MVA SYSTRA GROUP

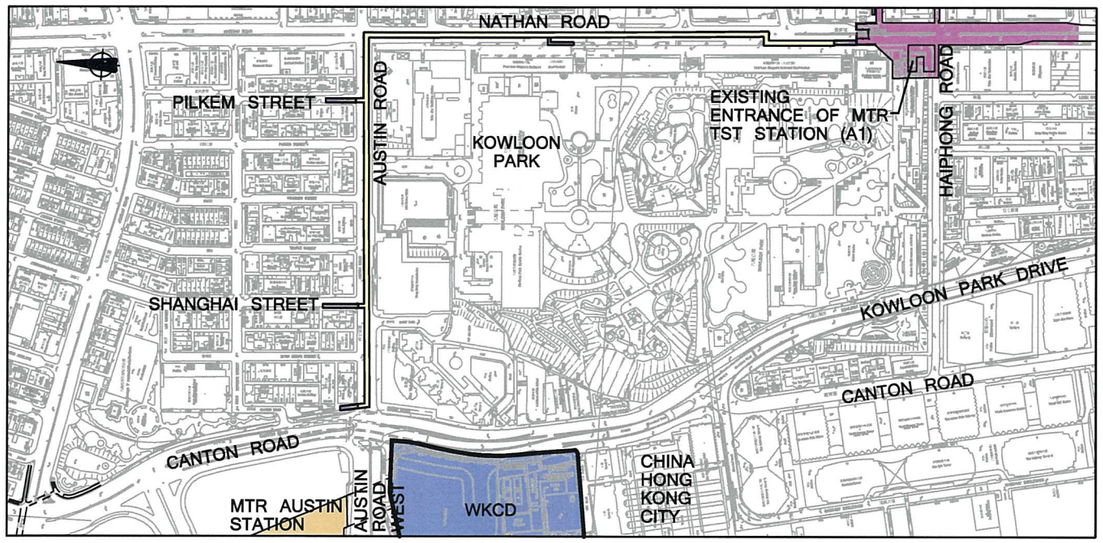
29293/ES/F42.DGN/CHK/07MAR13



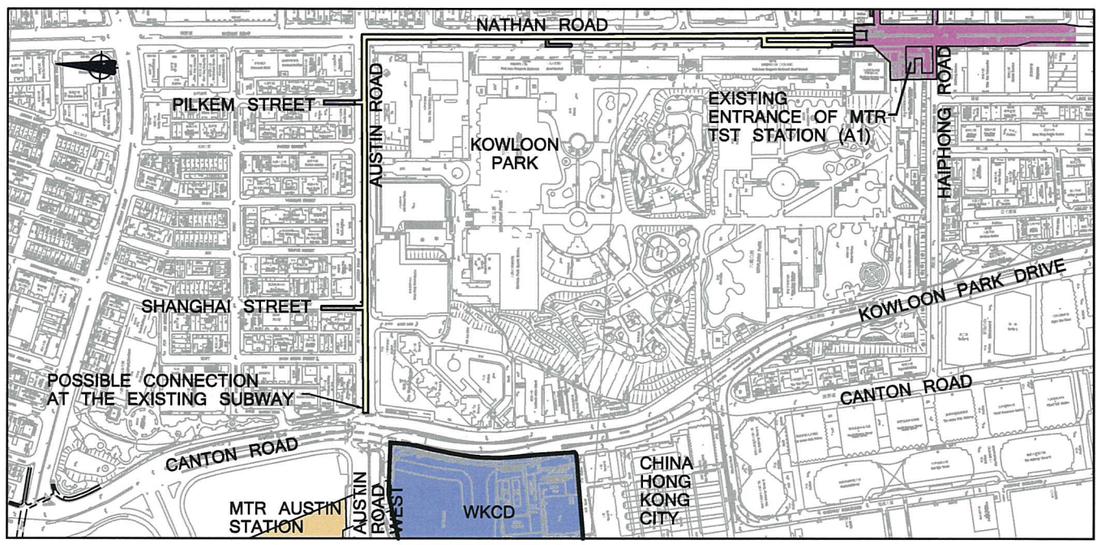
PEDESTRIAN LINK OPTION D1 - FOOTBRIDGE THROUGH KOWLOON PARK



PEDESTRIAN LINK OPTION D2 - SUBWAY THROUGH KOWLOON PARK



PEDESTRIAN LINK OPTION E1 - FOOTBRIDGE ALONG AUSTIN ROAD AND NATHAN ROAD



PEDESTRIAN LINK OPTION E2 - SUBWAY ALONG AUSTIN ROAD AND NATHAN ROAD

LEGEND:

PROPOSED FOOTBRIDGE/ SUBWAY ALIGNMENT

PROPOSED FOOTBRIDGE/ SUBWAY LANDING LOCATION

Rev.	Description	Checked	Date
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Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

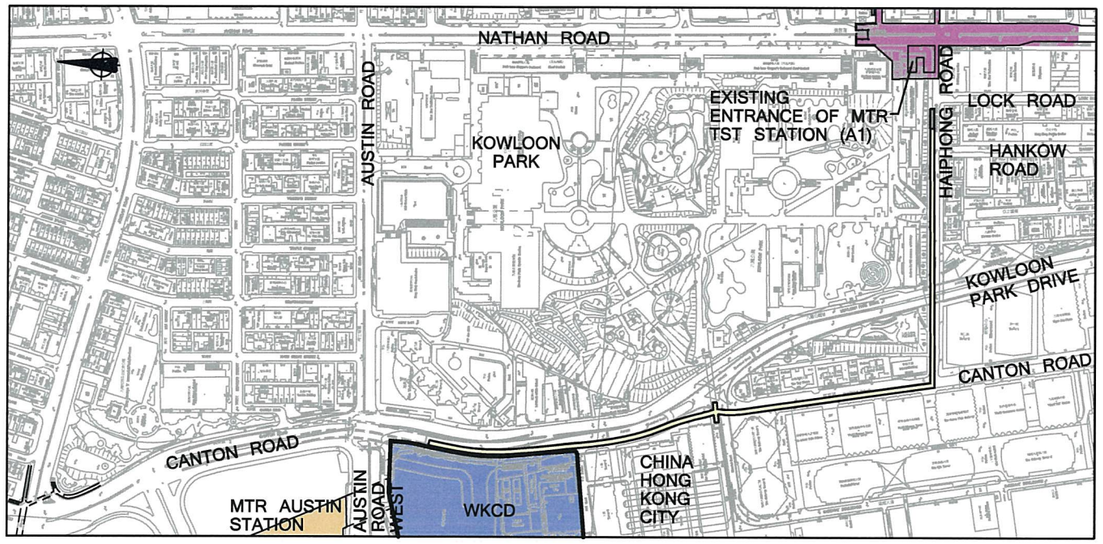
Drawing Title

PRELIMINARY OPTIONS OF PEDESTRIAN LINK 2 - CONNECTION BETWEEN WKDA AND TSIM SHA TSUI DISTRICT (SHEET 1 OF 2)

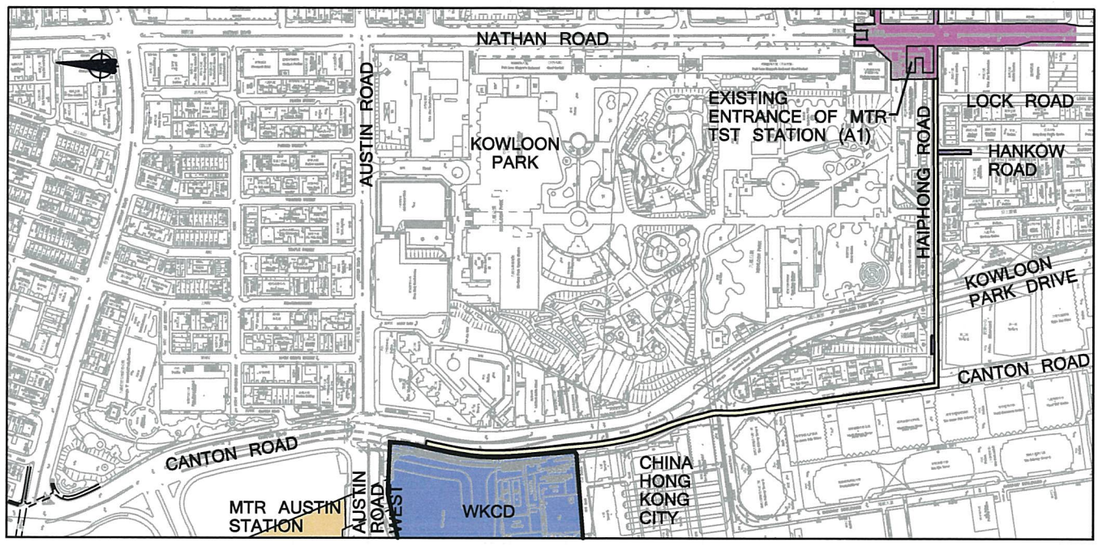
Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:6000(A3)	FEB 2013	4.3	-

MVA SYSTRA GROUP

29293/ES/F43.DGN/CHK/05MAR13



PEDESTRIAN LINK OPTION F1 - FOOTBRIDGE ALONG CANTON ROAD AND HAIPHONG ROAD



PEDESTRIAN LINK OPTION F2 - SUBWAY ALONG CANTON ROAD AND HAIPHONG ROAD

LEGEND:

PROPOSED FOOTBRIDGE/ SUBWAY ALIGNMENT

PROPOSED FOOTBRIDGE/ SUBWAY LANDING LOCATION

Rev.	Description	Checked	Date
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Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

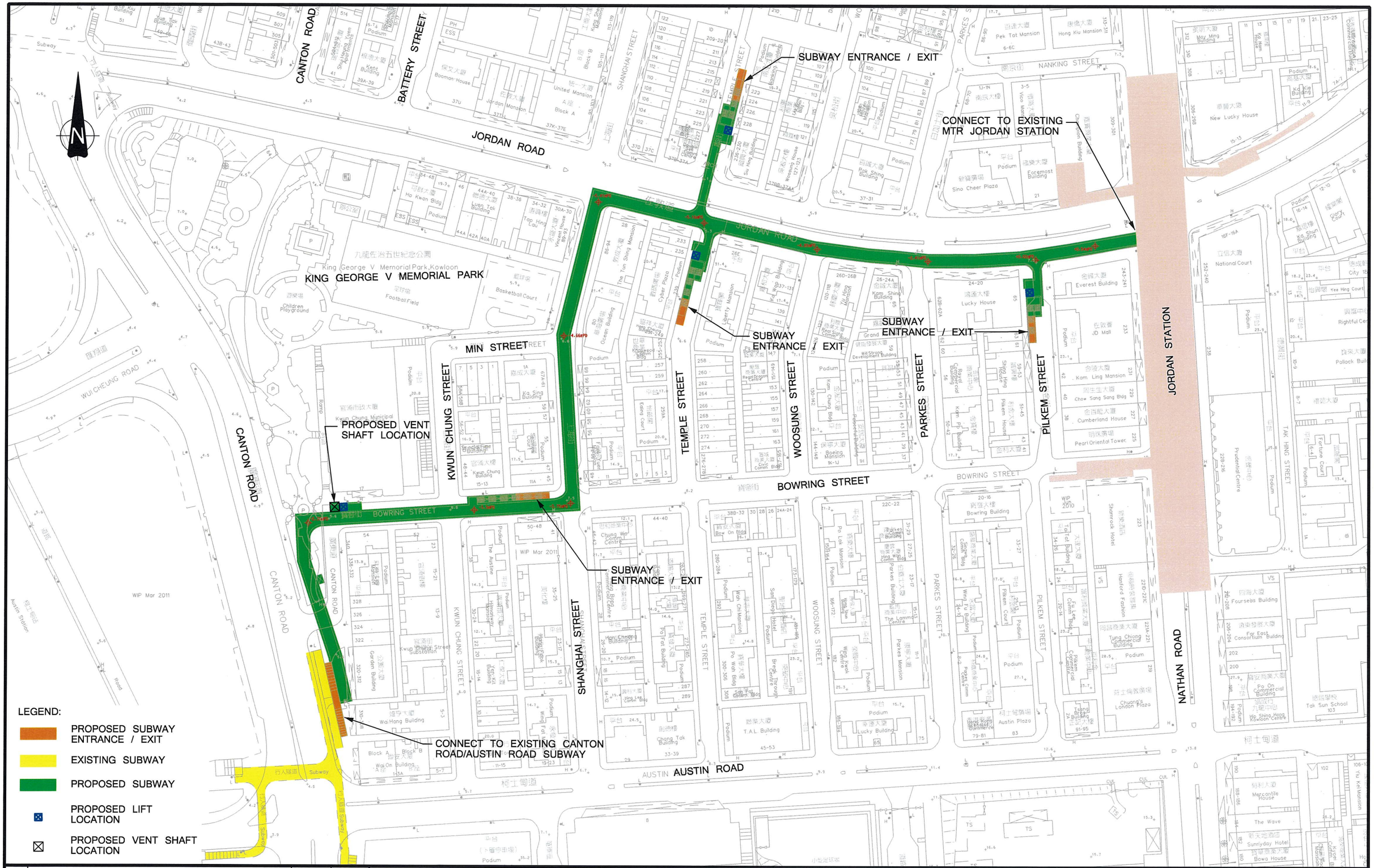
Drawing Title

PRELIMINARY OPTIONS OF PEDESTRIAN LINK 2 - CONNECTION BETWEEN WKDA AND TSIM SHA TSUI DISTRICT (SHEET 2 OF 2)

Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:6000(A3)	FEB 2013	4.4	-

MVA SYSTRA GROUP

29293/ES/F44.DGN/CHK/04MAR13



Rev.	Description	Checked	Date
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Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

Drawing Title

PREFERRED OPTION OF PEDESTRIAN LINK 1 - GENERAL PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:1500(A3)	APR 2013	7.1	-

MVA SYSTRA GROUP

29293/ES/F71.DGN/TUV/22APR13

LEGEND:

- WKCD AND POSSIBLE FOOTBRIDGE PROPOSED BY WKCDA
- EXISTING FOORBRIDGE
- EXISTING TST STATION
- PROPOSED FOOTPATH / WALKWAY WITH IMPROVEMENT WORKS
- PROPOSED LIFT
- PEDESTRIAN ROUTING
- FUTURE MAJOR PEDESTRIAN ROUTING

WKCD

CHINA HONG KONG CITY

CANTON ROAD

CANTON ROAD

KOWLOON PARK DRIVE

HAIPHONG ROAD

NATHAN ROAD

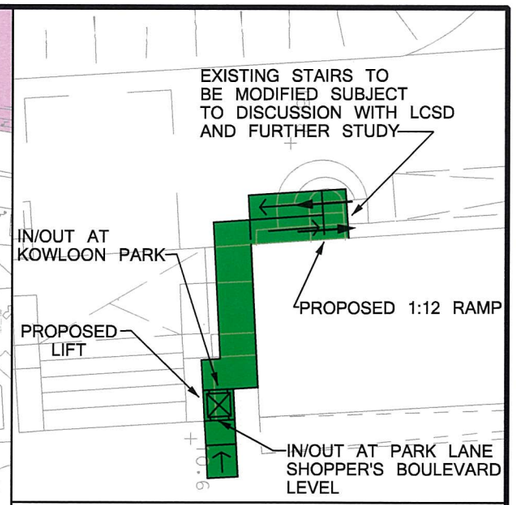
KOWLOON PARK

MODIFICATION WORKS MAY BE REQUIRED TO UPGRADE THIS WALKWAY (SUBJECT TO STUDY BY OTHERS)

FUTURE MAJOR PEDESTRIAN ROUTING UPON COMMISSIONING OF WKCD-KOWLOON PARK FOOTBRIDGE

TST STATION

PHOTOMONTAGE OF PROPOSED IMPROVEMENT WORKS AT KOWLOON PARK NEAR ENTRANCE A1 OF TSIM SHA TSUI MTR STATION



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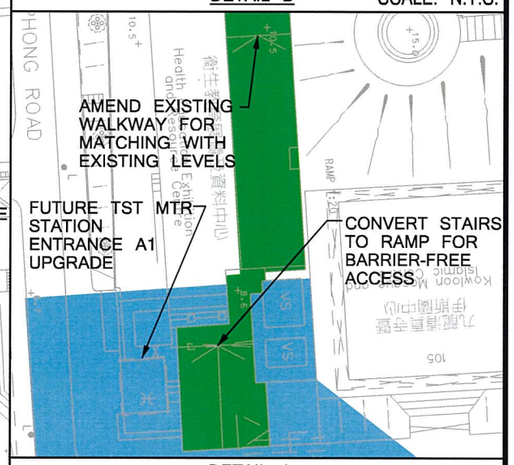

DETAIL A SCALE: N.T.S.

Rev.	Description	Checked	Date
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Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

Drawing Title

PREFERRED OPTION OF PEDESTRIAN LINK 2 - GENERAL PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:2000(A3)	APR. 2013	8.1	-

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29293/ES/F81.DGN/TUV/22APR13

KOWLOON PARK

CONVERT STAIRS TO RAMP
FOR BARRIER-FREE ACCESS

DISABLED ACCESS TO KP

8.5m

7.5

3m

8.2

8.8

DISABLED ACCESS TO KP

9.7

9.5

9m

DISABLED ACCESS TO MTR

1 NO. PASSENGER LIFT

DISABLED ACCESS FROM KP

1800

1850

1850

FUTURE TST MTR STATION
ENTRANCE A1 UPGRADE
(BY MTRC)

NATHAN ROAD

7-19R

10.0

9.8

9.7

VS

VS

H

L

NE

GMB

N

Rev.	Description	Checked	Date
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-	-	-	-

Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

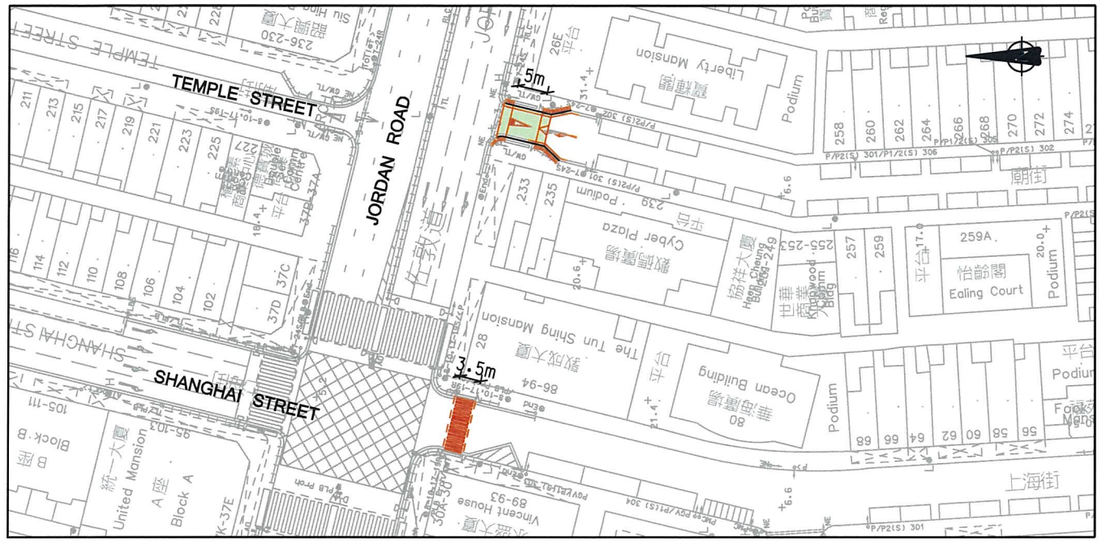
Drawing Title

PROPOSED ALTERNATIVE OPTION FOR THE BARRIER-FREE ACCESS AT KOWLOON PARK NEAR TSIM SHA TSUI MTR STATION ENTRANCE A1

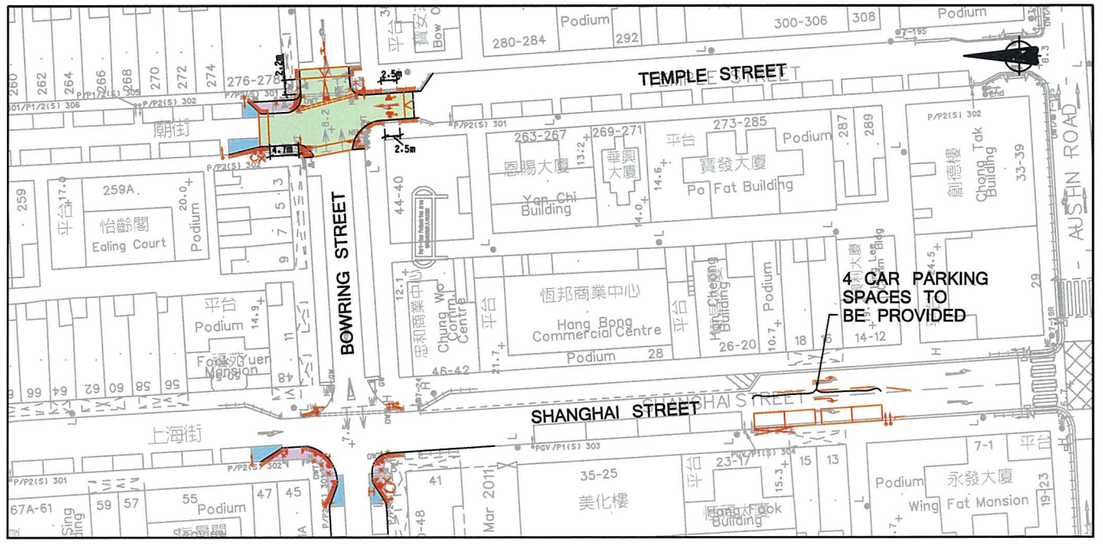
Designed	Checked	Scale	Date	Drawing No.	Rev.
TKM	EDK	1:200(A3)	MAR 2013	8.2	-

MVA SYSTRA GROUP

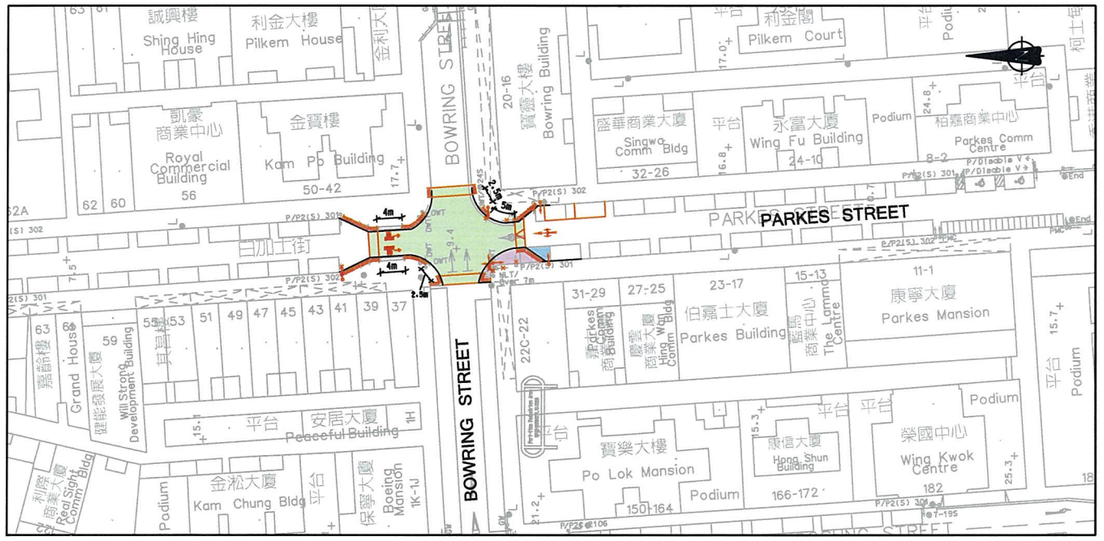
29293/ES/F82.DGN/CHK/12MAR13



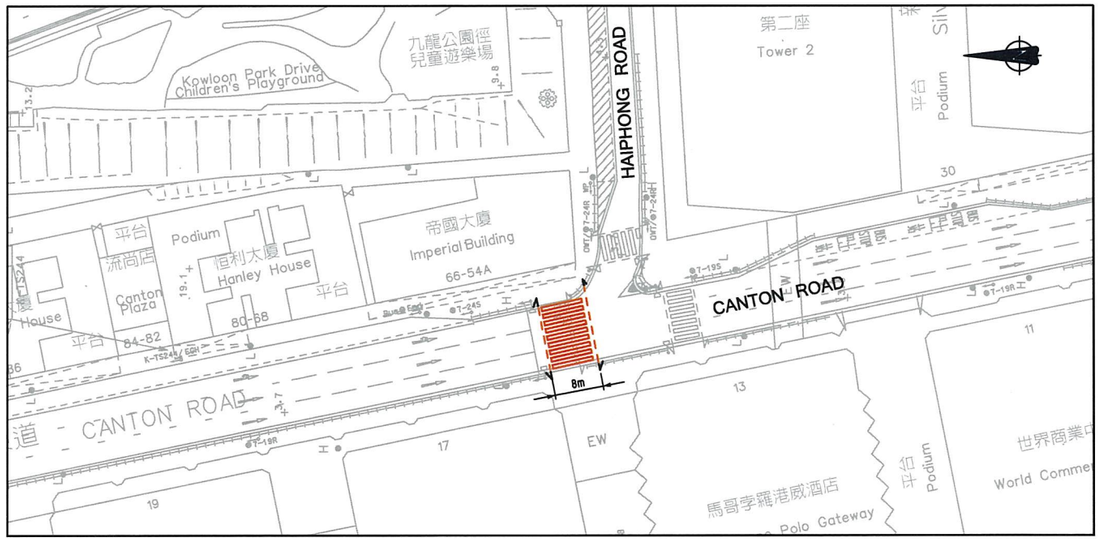
JORDAN ROAD / TEMPLE STREET / SHANGHAI STREET JUNCTIONS



BOWRING STREET/ TEMPLE STREET / SHANGHAI STREET JUNCTIONS



BOWRING STREET / PARKES STREET JUNCTIONS



HAIPHONG ROAD / CANTON ROAD JUNCTIONS

LEGEND:

- PROPOSED SPEED TABLE
- PROPOSED PAVEMENT
- PROPOSED PARKING SPACE TO BE DELETED
- PROPOSED RAILINGS (DETAILS REFER TO THE TYPE AS INSTALLED AT BOWRING STREET/PILKEM STREET JUNCTION)
- EXISTING TRAFFIC SIGNAGE TO BE REMOVED
- L PROPOSED RELOCATED LIGHT POLE
- H PROPOSED RELOCATED FIRE HYDRANT
- PROPOSED RELOCATED STREET NAME SIGN

Rev.	Description	Checked	Date
-	-	-	-

Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

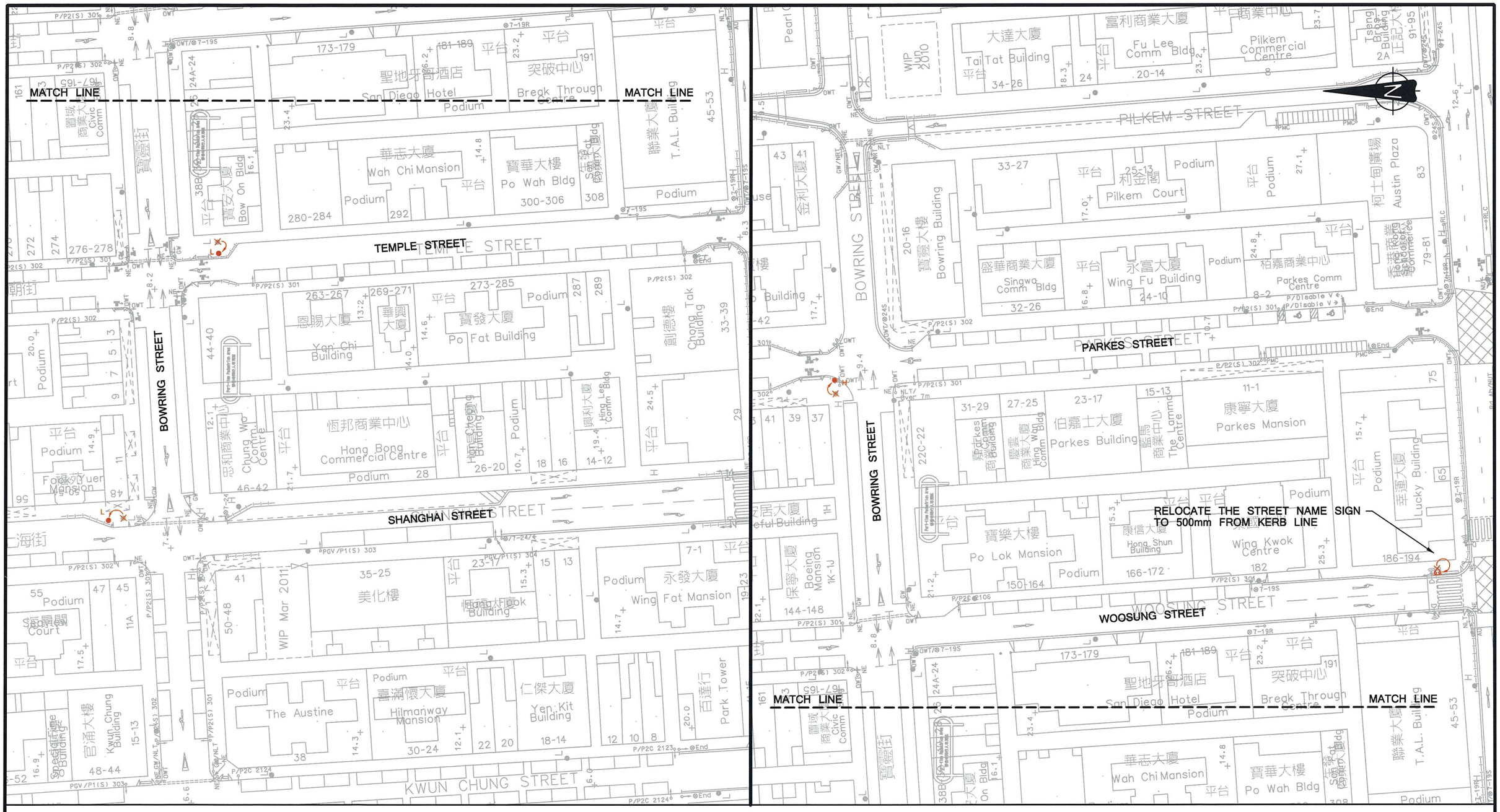
Drawing Title

PROPOSED SHORT TERM IMPROVEMENT MEASURES

Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:4000(A3)	FEB 2013	9.1	-

MVA SYSTRA GROUP

29293/ES/F91.DGN/CHK/05MAR13



LEGEND:

- ● L — PROPOSED RELOCATED LIGHT POLE
- ● H — PROPOSED RELOCATED FIRE HYDRANT
- ⫘ — PROPOSED RELOCATED STREET NAME SIGN

Rev.	Description	Checked	Date
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Project Title

AGREEMENT NO. TD 186/2010 TRAFFIC STUDY ON PEDESTRIAN LINKS FOR THE WEST KOWLOON DEVELOPMENT AREA AND ITS CONNECTIONS WITH SURROUNDING DISTRICTS

Drawing Title

STREET FURNITURE - BOWRING STREET / TEMPLE STREET / SHANGHAI STREET JUNCTIONS AND BOWRING STREET / PARKES STREET / WOOSUNG STREET JUNCTIONS

Designed	Checked	Scale	Date	Drawing No.	Rev.
HWL	TKM	1:750(A3)	MAR 2013	9.2	-

MVA SYSTRA GROUP

29293/ES/F92.DGN/CHK/05MAR13