

**HIGHWAYS DEPARTMENT
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION**

**“PROVISION OF ADDITIONAL INTERCHANGE CONNECTING
TUEN MUN ROAD AND CASTLE PEAK ROAD NEAR SAM SHING ESTATE”**

AND

“WIDENING OF TUEN MUN ROAD AT TSING TIN INTERCHANGE”

**PROJECT PROFILE
(JUNE 2005)**

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1 BASIC INFORMATION

1.1 Project Title

Project A

Provision of Additional Interchange connecting Tuen Mun Road and Castle Peak Road near Sam Shing Estate

Project B

Widening of Tuen Mun Road at Tsing Tin Interchange

1.2 Purpose and Nature of Project

The opening of Hong Kong-Shenzhen Western Corridor (HK-SWC) and Deep Bay Link (DBL) in 2006 will undoubtedly increase the east-west traffic in Northwest New Territories. It is anticipated that most of this additional cross-boundary traffic will make use of Tuen Mun Road (TMR) to access the urban areas. There is some general public concern that the Town Centre Section of TMR (TCSTMR) will be overloaded after commissioning of HK-SWC and DBL.

TMR is the major east-west transport corridor in the Northwest New Territories. The section of TCSTMR (from Lam Tei to Sam Shing Hui) is currently operating close to its capacity. This section is the most critical section of TMR as the number of traffic lanes reduces from three to two at a number of interchanges. The traffic condition of this road section will inevitably be worsened by the additional traffic from HK-SWC. Hence traffic improvement schemes will be necessary to relieve the traffic congestion at this section of road.

In this regard, Transport Department (TD) conducted a study to investigate measures to ameliorate the traffic congestion for TCSTMR. The study report recommended, inter alia, the following two traffic improvement measures to alleviate the anticipated traffic congestion of the TCSTMR after the commissioning of the HK-SWC and DBL:

- provision of an additional interchange connecting Tuen Mun Road and Castle Peak Road (CPR) near Sam Shing Estate; and
- widening of TMR at Tsing Tin Interchange from a dual two-lane to dual three-lane arrangement

Correspondingly, TD initiated two new projects, i.e., Project A and Project B, with a view to materialize the recommended traffic improvement measures.

1.3 Name of Project Proponent

Highways Department.

1.4 Location and Scale of Project and History of Site

The locations of the two projects are shown in Figure 1. The additional interchange at Sam Shing Hui under Project A is located in the southern part of TCSTMR, which is adjacent to the Kam Fai Garden and Sam Shing Temple (see Figure 2). The improvement works for Tsing Tin Interchange under Project B will be undertaken at the northern part of TCSTMR near the Tuen Mun River Channel (see Figure 3).

The scope of Project A is as follows:

- construction of two single-lane slip roads, one southbound and the other northbound, connecting TMR and CPR near Sam Shing Estate;
- construction of an access road in the vicinity of Tsing Sin Street to connect the local roads with the southbound slip road;
- implementation of traffic management measures such as local road widening, modification to existing traffic light signal-controlled junctions along CPR, banning of the merging arrangement from Tuen Hing Road slip road to TMR;
- construction of associated earth retaining structures, geotechnical works, landscape works, drainage works, utility works, traffic aids, traffic safety enhancement measures, environmental mitigation measures and other ancillary works including the slope stabilization works to natural and man-made slopes, which would affect or be affected by the new road alignment, street lighting, fire hydrants and street furniture; and
- traffic control and surveillance system (TCSS) including variable message signs (VMSs) between Yuen Long and Tuen Mun and closed circuit television (CCTV) cameras at Tuen Mun Town Centre, including their integration with the central control systems at Transport Department (TD)'s Traffic Control Centre in Wanchai.

The scope of Project B is as follows:

- widening of the 240 metre-long dual two-lane section of TMR at Tsing Tin Interchange to a 11 metre-wide dual three-lane carriageway; and
- construction of associated earth retaining structures, slope works, geotechnical works, and works on environmental mitigation, landscape, drainage, road lightings, water mains and traffic aids.

1.5 Number and Types of Designated Projects to be covered by the Project Profile

Two designated projects (Project A and Project B) are covered by this project profile. The project profile was prepared in accordance with Annex 1 of the Technical Memorandum on the Environmental Impact Assessment Process (EIAO-TM). Both projects are classified as designated projects under Schedule 2, Part 1, A.1 of the Environmental Impact Assessment (EIA) Ordinance. Environmental permits are therefore required for implementation of the projects.

1.6 Name and Telephone Number of Contact Person

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2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Implementation and Timetable

The tentative implementation programme for Project A and Project B is scheduled as follows:

Investigation and Preliminary Design	October 2005	-	September 2006
Tendering and Construction Consultancy	January 2007	-	December 2008
Tendering Stage	February 2007	-	May 2007
Construction Stage	May 2007	-	December 2008

A Gantt chart illustrating the programme of the two projects is attached in Appendix A.

3 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

The major existing and planned sensitive receivers that might be affected by the proposed projects are summarised in Table 3.1. The locations of these receivers are shown in Figures 2 and 3.

Table 3.1 Summary of Representative Air and Noise Sensitive Receivers

Project	Receivers	Description	Use
Project A	KF1	Block 2, Kam Fai Garden	Residential
	HG1	Block 1, Harvest Garden	Residential
	HTG1	Block 1, Hoi Tak Garden	Residential
	AG1	Block 4, Alpine Garden	Residential
	AG2	Block 1, Alpine Garden	Residential
	HB1	Block 9, Handsome Court	Residential
	RG1	Block D, Rainbow Garden	Residential
	JC1	Tower 2, JC Place	Residential
	JC2	Tower 1, JC Place	Residential
	SCCS	Chung Sing Benevolent Society Mrs. Aw Boon Haw Secondary School	Education Institution
	SL1	Sui Lun House	Residential
	HGA1	Block 2, Hanford Garden	Residential
	HGA2	Block 1, Hanford Garden	Residential
	CYH1	Chun Yu House	Residential
	SST1	Sam Shing Temple	Places of Public Worship
	SST2	Sam Shing Temple	Places of Public Worship
	TSP*	Tsing Sin Playground	Open space
	KLK*	Ki Lun Keng Public Park	Open space
Project B	TMH	Tuen Mun Hospital	Hospital
	TMHQ	Block F, Tuen Mun Hospital	Residential
	TLLF	The Church of Christ in China Tam Kee Lai Fun Memorial Secondary School	Education Institution
	LB1	Lakeshore Building	Residential
	MYS	SKH Mung Yan Primary School	Education Institution
	BG1	Block A, Brilliant Garden	Residential
	FTG*	Fung Tei Garden	Open space
	OP*	Open space next to Tuen Mun River	Open space

Note: * Representative Air Sensitive Receivers only

4 POSSIBLE IMPACTS ON THE ENVIRONMENT DURING CONSTRUCTION PHASE

The likely environmental impacts of the proposed works that may arise during the construction phase of the two projects are described as below:

4.1 Air Quality

The main potential air quality impact during construction would be dust generated from the construction activities including material handling, wind erosion of open sites and stockpiling areas and truck haulage on unpaved roads.

During construction, residential premises, schools, education institutes, offices, temples/churches and active open spaces in the vicinity of the construction sites may be affected. The major air sensitive receivers (ASRs) including residential developments and educational institutions are listed in Table 3.1.

4.2 Noise

During the construction phase, dominant powered equipment and machineries which are expected to generate noise include: breakers, power units for various types of plant, including air compressors, excavators, concrete lorry mixers and cranes. Moreover, major noisy activities for the two projects would include breaking of road surface, excavation, piling, concreting, road surfacing and handling of earth materials. The noise sensitive receivers (NSRs) listed in Table 3.1 in the vicinity of the construction sites may be affected by the construction works.

4.3 Water Quality

Potential water pollution sources resulting from the construction works of the two projects would include construction site runoff and drainage, debris, refuse and liquid spillages from general construction activities and sewage effluent from the construction workforce. Water quality control measures recommended in the Professional Persons Environment Consultative Committee Practice Note (ProPECC PN) 1/94, "Construction Site Drainage" would be implemented to minimise the surface runoff and to retain and reduce any suspended solids prior to discharge. Temporary sanitary facilities, such as portable chemical toilets, will be employed on-site. A licensed contractor would be responsible for the appropriate disposal and maintenance of these facilities. The construction works are not anticipated to result in any unacceptable impact on the water quality with the implementation of appropriate mitigation measures.

4.4 Waste Management

Wastes generated from the construction works of the two projects are likely to include site wastes, workforce wastes, chemical wastes, construction and demolition materials and excavated materials. The identified wastes should be handled, transported and disposed of in accordance with EPD's regulations and requirements and good waste management practices, should be implemented at all work sites.

4.5 Ecology

Ecological impact resulting from Project A would be limited to the loss of small areas of very low ecological value habitats including existing roads/pavement, roadside planting/amenity planting and car parks/wasteland. Disturbance to wildlife in adjacent habitats through construction phase activities is expected to be very minor. With implementation of mitigation measures, insignificant ecological impact would be anticipated.

The proposed works of Project B would be confined to highly urbanised areas where there is little scope for ecological impact. Negligible ecological impact would be expected during construction phase in view of the existing environment.

4.6 Cultural Heritage

For Project A, impact upon areas/items of significant cultural heritage is considered minimal for the road works as physical encroachment/interference with the cultural heritage areas is generally avoided. Sam Shing Temple near the proposed slip road at Sam Shing Hui is the only cultural heritage area in concern.

For Project B, no record of archaeological findings and built heritage resources is identified near the proposed traffic improvement works.

4.7 Landscape and Visual Impacts

The potential sources of landscape and visual impacts for the two projects during the construction phase include site clearance works that involve the removal of existing vegetation, excavation works for road carriageways, slopes and structures, haulage off-site of some excavated materials, construction traffic on site and lighting of roads and construction sites at night.

5 POSSIBLE ENVIRONMENTAL IMPACTS DURING OPERATION

The likely environmental impacts of the proposed works that may arise at the operation phase of the two projects are described as below:

5.1 Air Quality

The major source of air quality impact for the two projects would be related to vehicular exhaust emissions from vehicles using the proposed interchanges. The ASRs identified in the vicinity of the interchanges are summarised in Table 3.1. Their locations are indicated in Figures 2 and 3.

5.2 Noise

Potential NSRs in the vicinity of the proposed slip roads at Sam Shing Hui of Project A and Tsing Tin Interchange of Project B are summarised in Table 3.1. Their locations are shown in Figures 2 and 3.

Project A

Adverse noise impact would be expected on the residential sensitive receivers in vicinity of the proposed slip roads.

As adverse traffic noise impact from the proposed interchange would be expected on the nearby NSRs, the impacts should be assessed in detail and appropriate control measures shall be recommended for adoption, where necessary.

According to the *Agreement No. CE41/2001(HY) - Investigation and Preliminary Design for Reconstruction and Improvement of Tuen Mun Road*, direct noise mitigation measures (DNMM) in the form of cantilevered noise barriers were proposed at eastbound carriageway and central median of TMR Sam Shing Hui Section to protect Kam Fai Garden. Since the proposed slip roads would merge with TMR at the same road section, the noise assessment for the proposed slip roads should take into account this already proposed DNMM.

Project B

For Tsing Tin Interchange, potential traffic noise impact would be expected on the nearby sensitive receivers including hospital and schools. A more stringent noise criteria should be complied with, i.e. 65 dB(A) at the facades of educational institutes and 55 dB(A) at the facades of hospital. The impact should be assessed in detail and appropriate control measures shall be recommended for adoption, where necessary.

5.3 Water Quality

It is expected that water quality impact during the operation phase of both projects would be negligible as the impact would be confined to surface runoff from the road surface, which may include grease/oil and debris that can readily be controlled by the oil interceptors and silt traps installed on the drainage system. The collected runoff would be discharged to the existing local stormwater drainage system and is considered unlikely to produce any quantifiable adverse effects on the receiving coastal waters. As there is no ecologically sensitive receiver nor particularly sensitive aquatic receivers in the vicinity of the projects, adverse water quality impact associated with the discharge of surface runoff are not expected.

5.4 Waste Management

Waste management implications arising from the projects would be minimal as only small quantities of general refuse associated with littering and road maintenance activities are expected during operation of the two projects.

5.5 Ecological Impact

For both projects, ecological impact during the operation phase would be limited to minor noise and visual disturbance to the nearby habitats from the vehicular traffic. The impact are considered negligible due to low ecological value of these habitats adjacent to the proposed roads.

5.6 Cultural Heritage Impact

For Project A, cultural heritage impact during the operation phase is considered to be minimal as no direct impact or interference with the Sam Shing Temple is anticipated.

For Project B, no record of archaeological findings and built heritage resources is identified near the proposed traffic improvement works. Therefore, no cultural heritage impact is expected.

5.7 Landscape and Visual Impacts

The principal sources of landscape and visual impacts associated with Project A include the elevated sections of the proposed slip roads, the associated noise barriers/noise enclosures, and the associated cut slopes.

For Project B, noise barriers/noise enclosures, if required at the widened TMR, may pose visual impact to the nearby visual sensitive receivers during the operation phase.

6 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED

6.1 Air Quality Impact

During the construction phase of both projects, proper dust control and suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation should be implemented to sufficiently control the potential air quality impact at the ASRs.

Adverse air quality impact on the nearby existing ASRs is not expected during the operation phase of both projects.

6.2 Noise Impact

Construction noise impact can be alleviated with the application of mitigation measures in the form of quieter alternative mechanical plant, installation of movable noise barriers, and reduction in number of plant. Construction works close to schools that require particularly noisy items of plant should be scheduled to avoid examination periods that are more sensitive to excessive noise.

Mitigation measures such as noise enclosure, noise barrier and low noise road surfacing would be considered to reduce traffic noise impact during the operational phase.

6.3 Water Quality Impact

For land-based construction activities, water quality impact would be readily mitigated with the adoption of good site management practices following the guidelines of ProPECC PN 1/94 "Construction Site Drainage" published by EPD.

Water quality impact during the operation phase of the two projects is considered negligible, as the impact would be confined to the surface runoff from the road surface.

6.4 Waste Management

Standard waste management measures and good site practices in waste handling, disposal and transportation should be implemented during the construction period. Waste management implications arising from the construction of both projects are expected to be minimal.

6.5 Ecological Impact

To reduce ecological impact on the environment, implementation of standard good site practices during the construction phase is required.

No mitigation measures are required during the operation phase as there would be limited impact on the nearby habitats, which are also of very low ecological value.

6.6 Cultural Heritage Impact

Impact on sites of cultural heritage or archaeological resources that may be affected by the proposed slip roads at Sam Shing Hui Interchange of Project A should be assessed and mitigation measures should be proposed. Subject to the findings of the assessment, these may include either preservation in whole or in part, or rescue under a comprehensive and practical rescue plan.

6.7 Landscape and Visual Impact

During the construction phase, mitigation measures such as provision of decorative hoarding, use of erosion preventive measures and advance tree planting are recommended.

During the operation phase, the principal visual mitigation measures required would include the following:

- minimising the extent of cut slopes;
- tree and shrub planting on cut slopes;
- sensitive aesthetic design of all elevated roads and associated noise mitigation measures;
- screen planting alongside the road and associated structures.

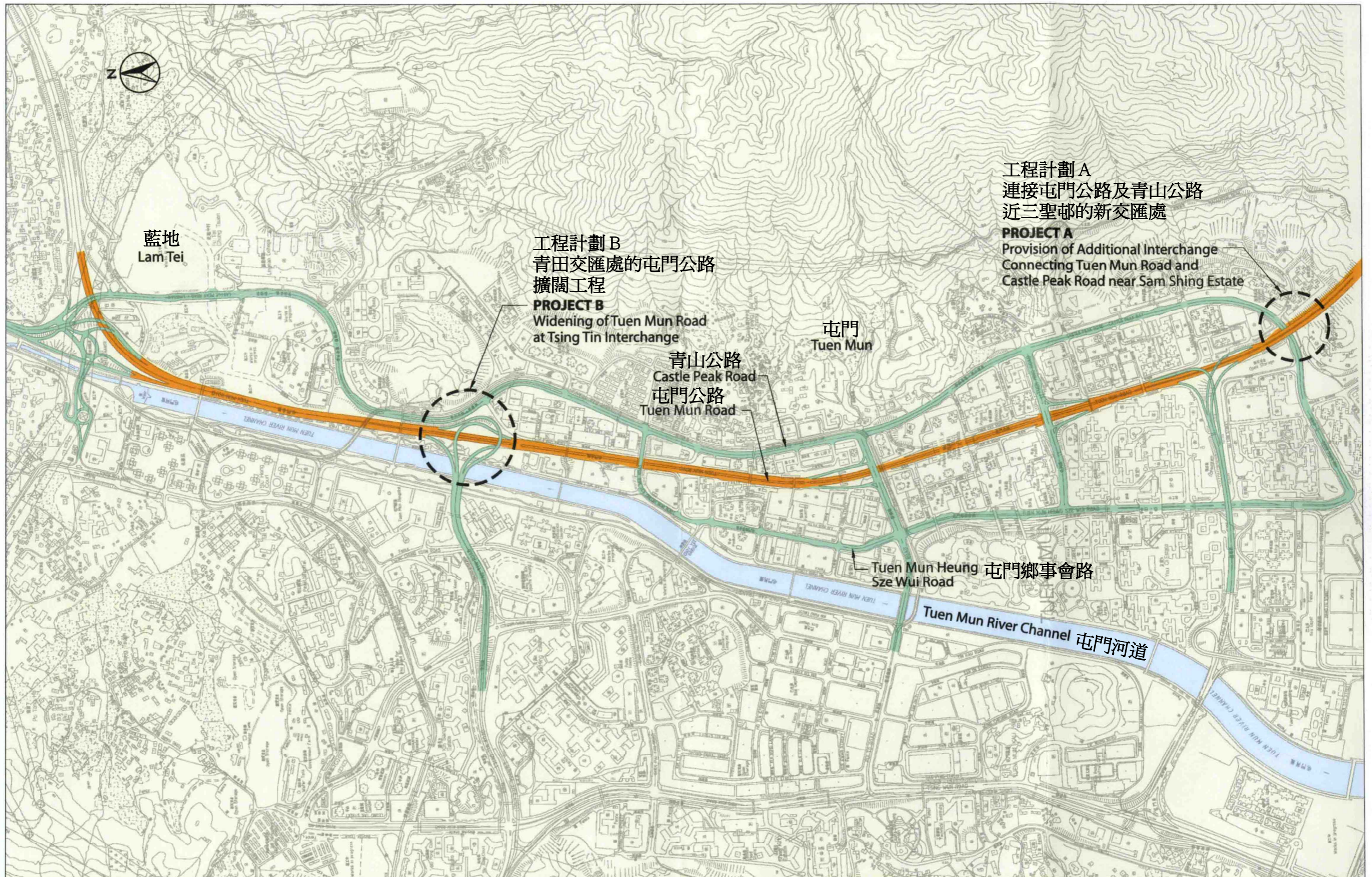
Principal landscape mitigation measures required would include all the visual mitigation measures identified above, plus a combination of tree transplanting and compensatory tree planting to compensate for all affected trees.

7 USE OF PREVIOUSLY APPROVED EIA REPORTS

No previous EIA Reports have been submitted that cover the proposed works areas.

Figure 1

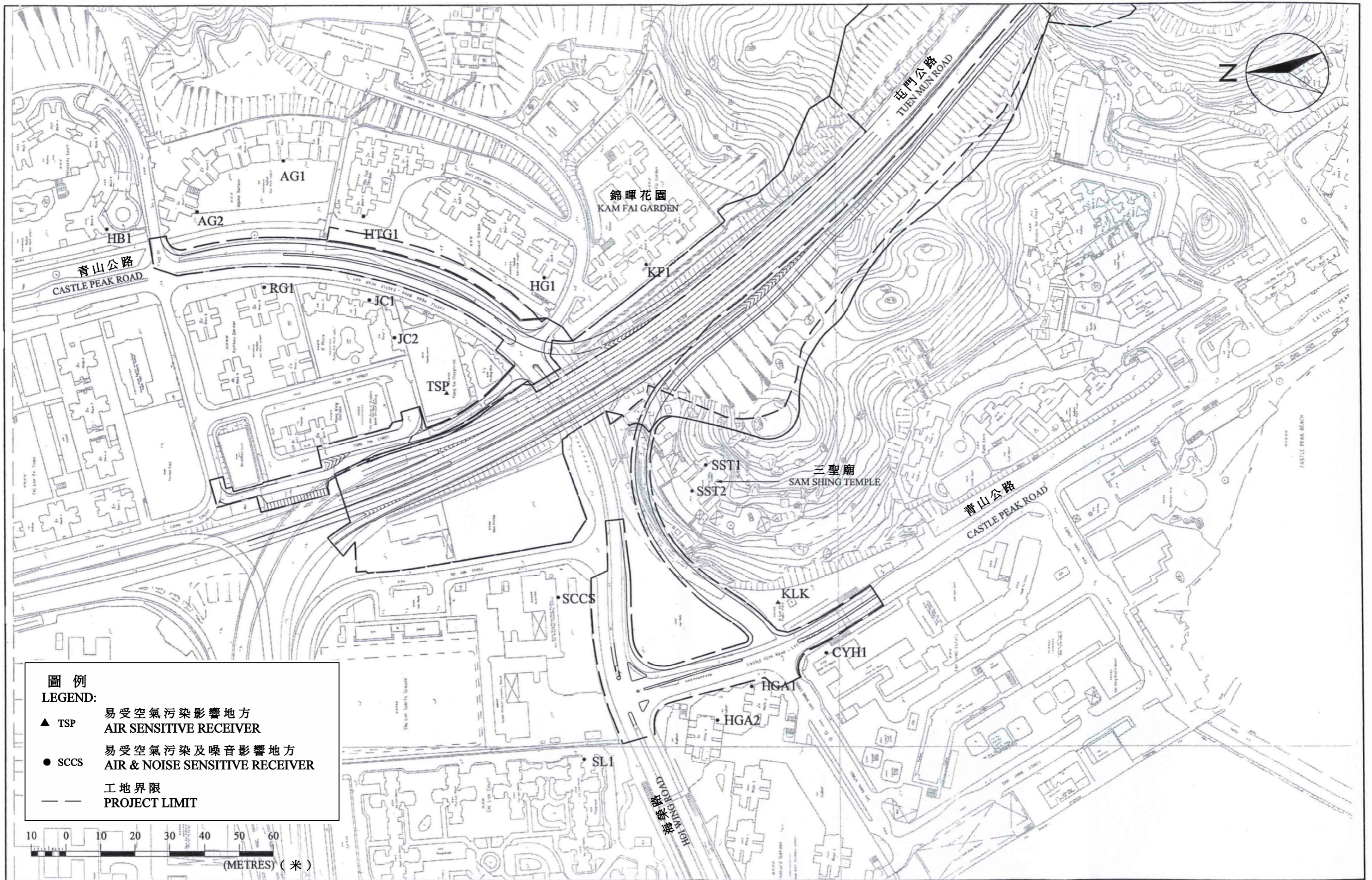
Locations of Project A and Project B



SCALE	-	DATE	JUNE 2005	
CHECK	-	DRAWN		
JOB No.	98703	FIGURE No.	1	REV

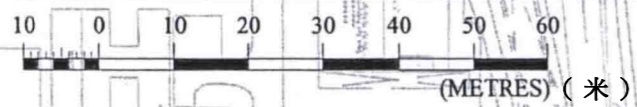
Figure 2

Locations of Air and Noise Sensitive Receivers – Project A



圖例
LEGEND:

- ▲ TSP 易受空氣污染影響地方
AIR SENSITIVE RECEIVER
- SCCS 易受空氣污染及噪音影響地方
AIR & NOISE SENSITIVE RECEIVER
- 工地界限
PROJECT LIMIT



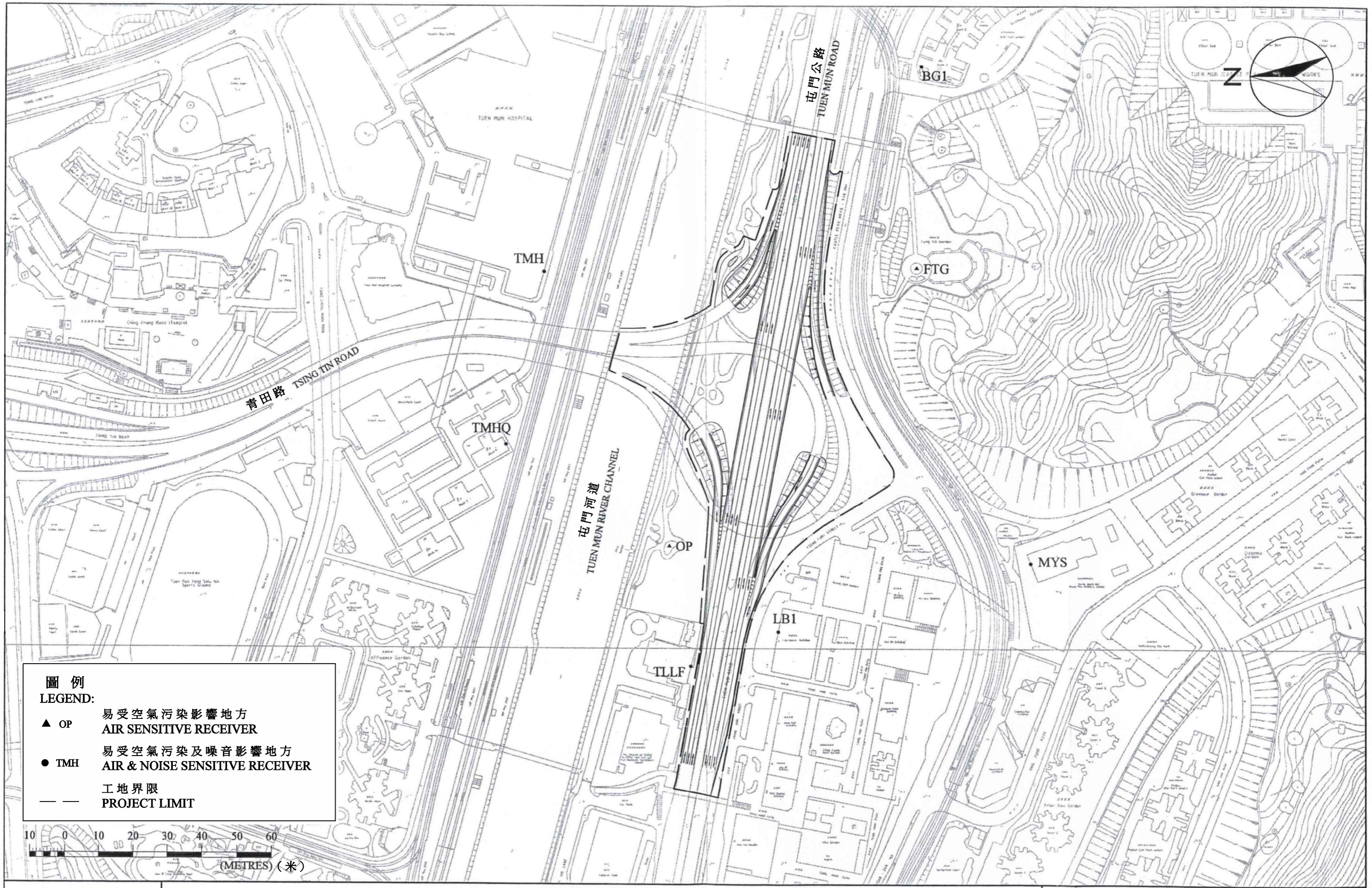
Maunsell
 茂盛(亞洲)工程顧問有限公司

工程計劃 A 的易受空氣污染及噪音影響地方位置
 LOCATIONS OF AIR AND NOISE SENSITIVE RECEIVERS - PROJECT A

SCALE	A3 1:2500	DATE	JUNE 2005
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JOB No.	98703	FIGURE No.	2
		REV	

Figure 3

Locations of Air and Noise Sensitive Receivers – Project B



圖例
LEGEND:

- ▲ OP 易受空氣污染影響地方
AIR SENSITIVE RECEIVER
- TMH 易受空氣污染及噪音影響地方
AIR & NOISE SENSITIVE RECEIVER
- 工地界限
PROJECT LIMIT



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工程計劃B的易受空氣污染及噪音影響地方位置
 LOCATIONS OF AIR AND NOISE SENSITIVE RECEIVERS - PROJECT B

SCALE	A3 1:2500	DATE	JUNE 2005
CHECK	--	DRAWN	AKYL
JOB No.	98703	FIGURE No.	3
		REV	

Appendix A

Project Implementation Programme for Project A and B

