

**THE GOVERNMENT OF  
THE HONG KONG SPECIAL ADMINISTRATIVE REGION  
TERRITORY DEVELOPMENT DEPARTMENT  
NEW TERRITORIES WEST DEVELOPMENT OFFICE**

**TSUEN WAN ROAD UPGRADING**

**PROJECT PROFILE**

**AUGUST 1999**

**mm** Mott  
Connell 

in association with

**MVA Hong Kong Ltd  
ERM Hong Kong Ltd**

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## **1. BASIC INFORMATION**

### **1.1 Project Title**

Tsuen Wan Road Upgrading

### **1.2 Purpose and Nature of the Project**

Tsuen Wan Road (TWR) (see Fig 1.1) is part of the strategic road network carrying a significant volume of long distance traffic through the Tsuen Wan area, between the north-west New Territories, Kowloon and Hong Kong Island. It also functions as a collector-distributor road in Tsuen Wan. Between the Tai Chung Road Roundabout and Tsuen Tsing Interchange, TWR has three lanes in each direction reducing to two through the interchanges.

The proposed Tsuen Wan Bay Further Reclamation (TWBFR) and the West Rail (WR) property development sites at Tsuen Wan are planned to accommodate 11,000 and 4,600 flats respectively in addition to office (82,000m<sup>2</sup>) and hotel (350 rooms) developments. Both the Planning, Environmental and Investigation Study for Tsuen Wan Bay Further Reclamation (TWBFR) (for Territory Development Department) and the Technical Study for West Rail, identified that TWR and some of its on/off ramps would become overloaded by year 2006, irrespective of the impacts of the particular developments each study assessed. This overloading is expected to be brought about by natural traffic growth and the additional traffic brought along by Castle Peak Road which is to be upgraded.

The preliminary assessment carried out for the TWBFR Investigation Study indicated that providing additional lane(s) on TWR would provide some improvement. However, it also indicated that the reduction in congestion in terms of V/C ratio would not be as might be expected from the increased capacity. This was attributed to additional traffic being attracted on to TWR from other over-saturated routes in the area and partly due to the heavy weaving movements on the road to/from the local area via the on/off ramps.

The Detailed Feasibility Study for Route 9 between Tsing Yi and Cheung Sha Wan indicated that, if an all-movements interchange between Route 3, Route 9 and Lantau Link were adopted, the traffic loading on TWR could only be alleviated to a certain extent and the Project would still be required irrespective of this.

The objective of this TWR Upgrading Project is to provide additional traffic capacity between Tuen Mun Road in the north-west and Kwai Chung Road in the south-east, and to improve the associated junctions as necessary. Considering the urgent need for the improvement, and the time required for planning, investigation and design of the Project, it is the Government's intention to commence the construction of the Project as soon as possible but in any event no later than 2004.

### **1.3 Name of Project Proponent**

Territory Development Department, New Territories West Development Office

### **1.4 Location and Scale of Project and History of Site**

*Figure 1.1* shows the study area and *Figure 1.2* shows the general layout of the upgraded TWR.

### ***History of the Site***

The geology along the corridor comprises a bedrock formation of fine to coarse grained granodiorite with intrusion of medium to coarse grained granite in the vicinity of Kwai Chung Park area. The rockhead has a depth of less than 45m below the existing ground level in general. Rockhead appears very close to the existing ground in the vicinity of Tsuen Tsing Interchange.

The thickness of completely or highly decomposed rock overlying the bedrock varies from 1m to 30m along the route, but generally in the range of 5m to 15m.

Existing drillhole records indicate that the proposed alignment is sited generally on reclaimed land apart from the vicinity of Tsuen Tsing Interchange which was previously high ground and has been cut during the site formation. The distribution of marine deposits and alluvium along the alignment indicate that the marine deposits and alluvium were dredged before the reclamation. However, thin layers of marine deposits and alluvium (up to 4m thick) overlying completely decomposed granodiorite are present in the vicinity of Hoi Hing Road adjacent to the Tsuen Wan Cargo Working Area. A layer of marine deposits up to 4m thick is also present adjacent to the Kwai Chung Park area.

The site along the proposed alignment is formed of fill of thickness up to 24m, but generally in the range of 15m to 20m, overlying mainly completely decomposed granodiorite in general.

### ***Location and Scale of Project***

The existing TWR is generally a dual-three lane carriageway, dropping to 2 lanes through both Tai Chung Road and Texaco Road Interchanges with single lane up and down ramps at Kwai Tsing Road, Texaco Road and Tai Chung Road. It is an elevated structure between Tuen Mun Road and Kwai Tsing Interchange.

The upgrading of TWR would commence at the junction of Castle Peak Road and Hoi On Road in the west. This would require a dual-two lane road in cut-and-cover tunnel (as proposed in the TWBFR study) which would run parallel to Hoi On Road. Hoi On Road would be diverted either side of the proposed tunnel portal. The two carriageways would diverge at the eastern end of Hoi On Road, and pass under the junction with Hoi Hing Road before leaving the tunnel section.

The southbound carriageway would have a portal immediately to the east of the Hoi Hing Road junction, and rise to ground level where it would connect with Hoi Kok Street. The northbound carriageway would continue from the north in tunnel to pass under Hoi Kok Street before rising to pass over the Tai Chung Road Roundabout for receiving traffic from the southern end.

From the Tai Chung Road Roundabout south to the Tsuen Tsing Interchange the proposed viaduct would be separate from the existing structure. The southbound carriageway would connect with the existing structure to the north of the off ramp to allow traffic to exit onto the off ramp, which would itself be widened from one to two lanes. The southbound carriageway would reduce to one lane width, and merge with the existing carriageway over the middle length of the interchange, which would be widened from two to three lanes. The northbound carriageway would merge with the existing structure to the north of the on ramp, to allow traffic movement from the existing to the proposed roads. The northbound carriageway would be reduced to one lane width and merge with the off slip, which would be realigned westwards. The existing on slip to the southbound carriageway would be widened from one to two lanes.

From the south end of Tsuen Tsing Interchange both existing carriageways would be widened from three to five lanes. This would continue to the northern end of the Kwai Tsing Interchange where the existing on and off slips would be widened to two and three lanes respectively. The main carriageways would reduce to the original three lanes at this section.

The proposed scope of the project is thus as follows:

- construction of a 800m long cut and cover tunnel connection from the junction of Castle Peak Road/Hoi On Road to the existing TWR at Tai Chung Road Roundabout;
- construction of a dual 2-lane viaduct parallel to the existing mainline of TWR between Hoi Kok Street and Tsuen Tsing Interchange;
- widening of the existing at grade section from dual 3-lane to dual 4-lane between Tsuen Tsing Interchange and Kwai Tsing Interchange;
- provision/modification/realigning of the existing roundabouts/interchanges along TWR to suit the above widening;
- provision of noise mitigation measures;
- reprovision/modification to existing crossing affected; and
- provision/reprovision of associated civil, structural, geotechnical, landscaping and associated drainage, traffic aid installation and lighting works.

### **1.5 Number and Types of Designated Projects**

The following items are identified as Designated Project under the items A.1 and A.7 in Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499).

- Dual-two lane cut and cover tunnel (Tsuen Wan Bay Tunnel Bypass);
- Dual-one lane viaduct connecting Tuen Mun Road to the existing TWR;
- Dual-two lane viaduct running parallel to the existing TWR; and
- Widening of existing TWR to Dual-4 lane.

### **1.6 Name and Telephone of Contact Person**

## **2. OUTLINE OF THE PLANNING AND IMPLEMENTATION PROGRAMME**

### **2.1 Project Planning and Implementation**

It is proposed to implement the project by employing consultants to undertake the investigation study, detailed design and the supervision for the construction phase of the Project.

### **2.2 Project Timetable**

The EIA, TIA (Construction Stage) and Engineering Review will be conducted between February 2000 and February 2001 while the Detailed Design and Tender will commence in December 2001 for completion in December 2003. Construction works are expected to commence in 2004 for completion by 2008.

### **2.3 Interactions with broader programme requirements or other projects**

The project shall take cognizance of the following interfaces

- Tsuen Wan Bay Further Reclamation.
- KCRC West Rail Phase 1.
- Reconstruction and Improvement of Tuen Mun Road (PWP Item 6520TH).
- Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen.
- NWNT Landfills and Gin Drinkers Bay Landfill Restoration (PWP Item 5158df).
- Completion of Texaco Road/Tsuen Wan By-Pass interchange and improvement to Texaco Road, remaining works.

### **3. POSSIBLE IMPACTS ON THE ENVIRONMENT**

#### **3.1 Introduction**

This section identifies the likely environmental impact of the proposed works in both the construction and operational phase.

#### **3.2 Construction Phase**

##### *3.2.1 Gaseous Emissions*

The main source of gaseous emissions will be emitted from diesel-powered equipment used within the construction sites. However, since the number of such plant required on-site will be limited, their gaseous emissions are expected to be minor. Thus no impacts are expected from gaseous emissions during the construction stage.

##### *3.2.2 Dust*

Construction activities such as the construction of the cut and cover tunnel, handling and stockpiling of excavated materials and truck movement on unpaved road will be the main dust generating sources during the construction stage.

##### *3.2.3 Odour*

Odour impact is not anticipated during the construction phase.

##### *3.2.4 Noisy Operations*

Major noise sources would be from the use of Powered Mechanical Equipment (PME) during the construction of road tunnel, piling of viaduct foundations and road pavement. Due to the proximity of noise sensitive receivers, high levels of noise impacts are expected.

##### *3.2.5 Night-time Operations*

Night-time construction works are not expected. Night-time construction work is subject to statutory control under the Noise Control Ordinance.

##### *3.2.6 Traffic Generation*

Construction traffic are expected to increase the overall traffic volume in the vicinity of the study area.

##### *3.2.7 Liquid Effluents, Discharges or Contaminated Runoff*

The potential water quality impacts include construction site runoff, runoff from the tunneling activities; liquid spillage, sewage from the on-site construction work force and drainage from construction sites.

##### *3.2.8 Generation of Waste or by-products*

Generation of wastes during the construction phase include surplus excavated and inert material; general construction waste; demolition waste; chemical waste; and general refuse.

##### *3.2.9 Storage, Handling, Transport and Disposal of Dangerous Goods, Hazardous Materials or*



### *Wastes*

Storage, handling, transport and disposal of dangerous goods, hazardous materials or wastes are not expected during the construction phase.

#### *3.2.10 Risk of accidents which would result in pollution or hazard*

The water treatment works (WTW) to the west of TWBFR (Yau Kom Tau WTW) is a Potentially Hazardous Installation (PHI). A qualitative risk assessment has been carried out by the consultants of the TWBFR development.

The project is within 250m of the Kwai Chung Park area (former Gin Drinker's Bay Landfill site). A risk assessment would therefore be required for the construction of the project.

#### *3.2.11 Disposal of Spoil Material, including Potentially Contaminated Material*

The only large-scale underground excavation will be from the tunnel section. As the cut and cover work will be done in newly reclaimed land, land contamination problem should be negligible unless dredging work had not been done thoroughly at the initial stage of reclamation Area 35. Taking account of this low possibility, disposal of potentially contaminated material is not expected.

#### *3.2.12 Disruption of Water Movement or Bottom Sediment*

As only land based construction activities will take place, disruption of water movement or bottom sediment are not expected during the construction phase.

#### *3.2.13 Unsightly Visual Appearance*

During the construction of the project, the visual appearance is expected to be poor. A detailed landscape and visual impact assessment should be undertaken to identify the impacts and mitigation requirements to minimise any potential impacts.

#### *3.2.14 Ecological Impacts*

The project would be within an extremely "urban" area and principally no natural habitat would be affected. No important ecological resources have been identified within the study area and ecological impacts are not expected.

#### *3.2.15 Impacts of Known Archaeological Sites*

In the vicinity of the project limit, there is no evidence of the existence of any historic buildings or cultural heritages. As the project site is a highly urbanized area, known historical interest is not likely to exist. However, the contractors should be alert to the monument or antique buried underground during the excavation work. Antique and Monument Office must be consulted and reported if there is any suspected antique found in the course of construction. Further assessment is not necessary.

### **3.3 Operational Phase**

#### *3.3.1 Gaseous Emissions*

Vehicles emissions from the open road sections will be the main source of gaseous emissions. Due to the proximity of some air sensitive receivers to the proposed alignment, high pollutant levels are expected. In addition, emissions from the tunnel section of the alignment (ie from the tunnel portal or ventilation shaft) is another source of gaseous emissions. Further assessment should be carried out to assess the potential cumulative impacts of these gaseous emissions.

#### *3.3.2 Dust*

Main source of dust during the operational phase will be from the vehicles on the open road sections.

#### *3.3.3 Noisy Operations*

Road traffic noise from the open sections of the alignment would be the main source of noisy operations during the operational phase. Due to the proximity of some noise sensitive receivers to the proposed alignment, the unmitigated alignment is expected to cause adverse noise impacts and the use of direct mitigation measures is required. In addition, if the use of ventilation building is required for the tunnel operations, noise arising from the ventilation fans would also be the source of noisy operations. Further assessment should be carried out to assess the potential impacts from the proposed alignment and to identify the exact extent of mitigation measures required.

#### *3.3.4 Night-time Operations*

The use of ventilation fans for the tunnel section would involve night-time operations. Noise arising from these equipments would be a potential noise impact. Detailed assessment should be undertaken to identify the impacts and mitigation requirements to minimise any potential impacts.

#### *3.3.5 Traffic Generation*

With the road improvement, it is anticipated that for the year 2018, peak hour flow on the upgraded TWR will be increased to 11345 vehicle/hr.

#### *3.3.6 Risk of accidents which would result in pollution or hazard*

The project is within 250m of the Kwai Chung Park area (former Gin Drinker's Bay Landfill site). A risk assessment would therefore be required for the operation of the project.

## 4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

### 4.1 Existing and Planned Developments

The study area covers the existing urban area of Tsuen Wan West and Kwai Chung. This dense urban area includes a variety of landuse such as industrial/commercial buildings, high rise residential towers, schools, open spaces and recreation facilities. In addition, planned environmental sensitive uses in Area 35 such as housing developments, schools and open spaces and the West Rail Tsuen Wan West Station Development have been identified (see *Figure 4.1*). The existing and planned sensitive receivers along the upgraded TWR are listed in Table 4.1 and are shown in *Figures 4.2 & 4.3*.

**Table 4.1 Locations and Distances of Air and Noise Sensitive Receivers from the Proposed Development**

Location	ASR ID	NSR ID	Distance from the Proposed Development
Garden View Terrace	A1	N1	80
Blossom Terrace	A2	N2	50
Bayview Garden	A3	N3	25
Belvedere Garden	A4	N4	40
The Panorama	A5	N5	100
Clague Garden Estate	A6	N6	30
Skyline Plaza	A7	N7	150
Waterside Plaza	A8	N8	65
Riviera Garden	A9	N9	140
CNEC Lee I Yao Memorial school	A10	N10	90
Kwai Shing West Estate	A23	N11	170
Housing Development in Area 102*	A24	N12	60
Housing Development in Area 104*	A25	N13	70
West Rail Tsuen Wan West Station Development*	A26	N14	70
Hoi On Road Playground	A11		20
Kong Nam Industrial Building	A12		40
Cable TV Tower	A13		25
Tsuen Wan Cargo Working Area	A14		45
Tsuen Wan Sports Ground	A15		180
Tsuen Wan Industrial Building	A16		10
Wah Kei Industrial Building	A17		15
Tsuen Wan Chinese Cemetery	A18		160
Chun Shing Factory Building	A19		20
Kwai Shing Swimming Pool	A20		180
Kwai Chung Park	A21		70
Lucky Industrial Godown Building	A22		45

(\*) denotes the planned environmental receiver

In addition to the above air & noise sensitive receivers, the residential developments along Hoi On Road, Waterside Plaza along TWR and the open spaces within the study area including the Tsuen Wan District Open Space at Hoi On Road (Area 2), the Tsuen Wan District Open Space to the east of Clague Garden Estate (Area 35) and Kwai Chung Park have been identified as the main Visually Sensitive Receivers (VSRs) within the study area.

## 5 ENVIRONMENTAL PROTECTION MEASURES AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

### 5.1 Noise

#### 5.1.1 Construction Phase

Construction noise could be controlled by the use of quiet construction methods and equipment. Construction activities should be limited to daytime hours (0700-1900) Monday to Saturday only, otherwise a Construction Noise Permit must be obtained from EPD. Good site practice and noise management can be effective in reducing the impact of construction site activities on nearby NSRs. Where applicable, the following indicative control measures should be implemented to minimise construction noise levels:

- only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;
- machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- plant known to emit noise strongly in one direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs;
- silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction programmes;
- mobile plant should be sited as far away from NSRs as possible;
- the use of quiet PME and reducing the number of PME operating concurrent; and
- where necessary, movable noise barriers should be positioned within a few metres of noisy plant items to achieve  $L_{eq, 30 \text{ min}} 75 \text{ dB(A)}$  at the NSRs.

Further assessment is required to identify the impacts and mitigation requirements to minimise any potential impacts.

#### 5.1.2 Operational Phase

A package of direct mitigation measures have been recommended including:

- low noise road surfacing for roads with speed limits greater than 50 kph; and
- semi-enclosures.

Further assessment is required to identify the impacts and mitigation requirements to minimise any potential impacts.

## 5.2 Air Quality

### 5.2.1 Construction Phase

The likely air quality impact arising from the construction of the proposed road alignment is related to dust nuisance, and gaseous emissions from the construction plant and vehicles.

Dust suppression measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* should be followed by the contractor to control any potential construction dust impact arising from the work sites within relevant standards and guidelines, no further study is needed.

These typical control measures include:

- where breaking of rock/concrete is required, watering should be implemented to suppress dust generation, water spray should be used during the handling of excavated material at the site and at active cuts, tunnel construction works, excavation and fill sites where dust is likely to be created;
- the heights from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading;
- all dusty materials should be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;
- any stockpiles of aggregate or spoil should be enclosed or covered and water applied;
- the haul road should be located away from sensitive receivers and water spray of road are recommended for the cut and fill section work;
- every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site;
- the load on the vehicles should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; and
- the working area of any excavation should be sprayed with water before, during and immediately after the operation so as to maintain the entire surface wet.

### 5.2.2 Operational Phase

No mitigation measures have been proposed. However, it is recommended that further assessment should be undertaken to identify the impacts and mitigation requirements where necessary.

## 5.3 Water Quality

### 5.3.1 Construction Phase

It is considered that controls on discharge from land based construction activities and proper site management procedures will minimise residual water quality impacts to comply with limits stipulated in the WPCO criteria. As such, detailed water quality assessment is not recommended.

### 5.3.2 Operational Phase

Provided that appropriate mitigation measures are properly implemented, potential water quality impacts are not expected including:

- a surface water drainage system to collect road runoff and operational tunnel drainage. Where oils and lubricating fluids could be spilt, the road and tunnel drainage discharges will pass through the oil and grit interceptors to remove oil, grease and sediment before pumped to the public stormwater drainage system;
- the efficiency of silt traps and oil interceptors is dependent on regular cleaning and maintenance. These installations should be regularly cleaned and maintained in good working condition; and
- oily contents of the oil interceptors should be collected for reuse, or transferred to an appropriate disposal facility.
- pre-treatment of discharges resulting from routine tunnel washing activities during operational stage should be undertaken to meet the effluent discharge standards specified in the Technical Memorandum of the Water Pollution Control Ordinance.

## 5.4 Waste

### 5.4.1 Construction Phase

It is considered that with measures such as good construction practices and proper waste management procedures, no adverse impact will be anticipated. As such, detailed construction waste assessment is not recommended.

## 5.5 Landscape & Visual

### 5.5.1 Construction Phase

The landscape impacts would be reduced by appropriate landscaping works and careful architectural treatment of highway structures. Further assessment is required to identify the impacts and mitigation requirements to minimise any potential impacts.

As discussed in the above section, mitigation measures have been proposed to reduce the impacts associated with the proposed alignment. A summary of the proposed mitigation measures are presented in Table 5.1.

**Table 5.1 Summary of the Proposed Mitigation Measures**

Environmental Issues	Location	Proposed Mitigation Measures
Construction Noise	Within the works boundary	Environmental pollution control measures such as the use of quiet PME, reducing the number of PME operating concurrently and the use of movable noise barriers
Road Traffic Noise	All open new roads with speed limits above 50 kph	Low noise road surfacing

Environmental Issues	Location	Proposed Mitigation Measures
Road Traffic Noise	Opposite Clague Garden Estate	Semi noise enclosure
Road Traffic Noise	Opposite Waterside Plaza	Semi noise enclosure
Construction Dust	Within the works boundary	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation such as the use of water sprays, wheel wash facilities etc
Water Quality	Within the works boundary	Control on discharge from land based construction with proper site management procedures
Construction Waste	Within the works boundary	Proper waste management procedures
Landscape and Visual	Within the works boundary	Landscaping works

#### 5.6 Possible Severity, Distribution and Duration of Environmental Effects

With the implementation of the recommended mitigation measures, no adverse environmental impacts (both short and long term) are expected from the proposed project.

## 6 USE OF PREVIOUSLY APPROVED EIA REPORTS

Title: Tsuen Wan Bay Further Reclamation, Area 35, Tsuen Wan, Engineering, Planning and Environmental Investigation

EIAO register reference number: EIA-002/1998

Time of Approval: 24 November, 1998

The following environmental aspects were addressed by the TWBFR EIA report.

- noise;
- air quality;
- marine mud contamination;
- water quality;
- waste management; and
- hazard.

Title: West Rail - Final Assessment Report West Kowloon to Tuen Mun Centre - Environmental Impact Assessment - Vol.1, Technical Annexes and EM&A Manual

EIAO register reference number: EIA-149/BC

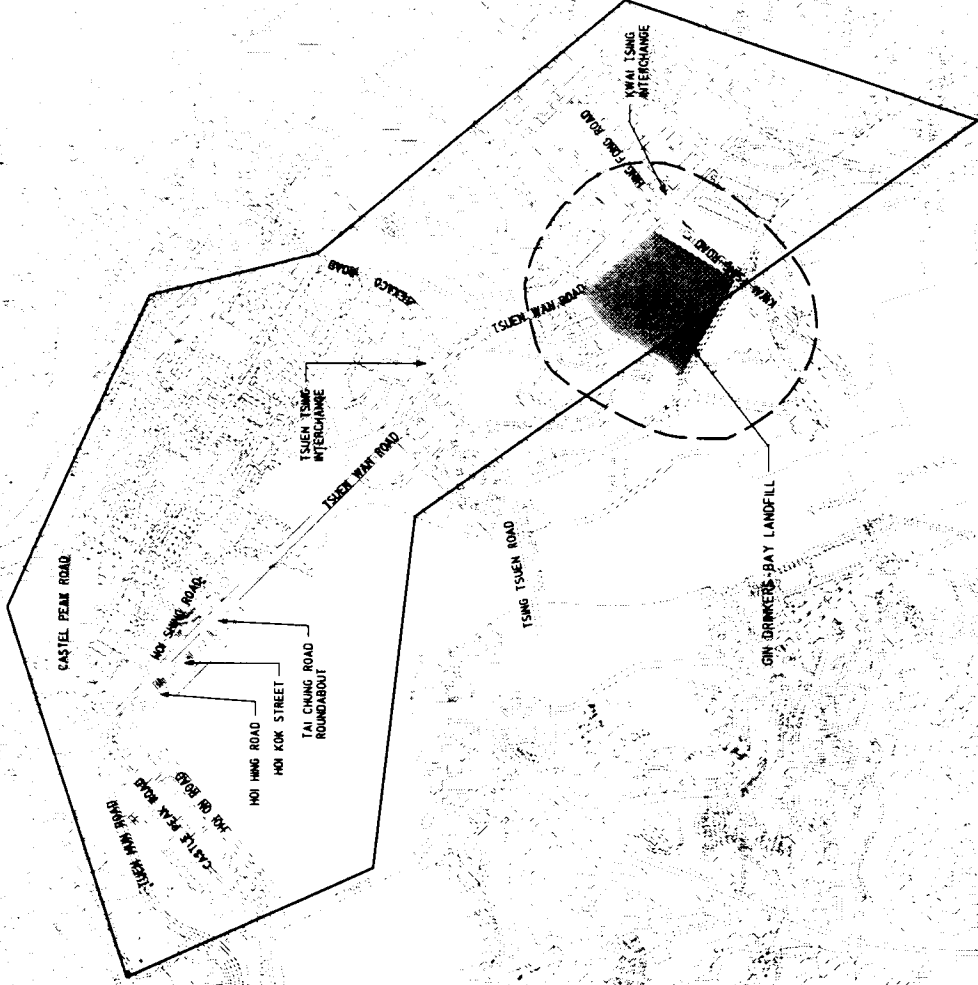
Time of Approval: March 1998

The following environmental aspects were addressed by the West Rail EIA report.

- noise;
- air quality;
- water quality;
- landscape and visual;
- archaeological and cultural;
- ecology;
- waste;
- land contamination; and
- hazards.

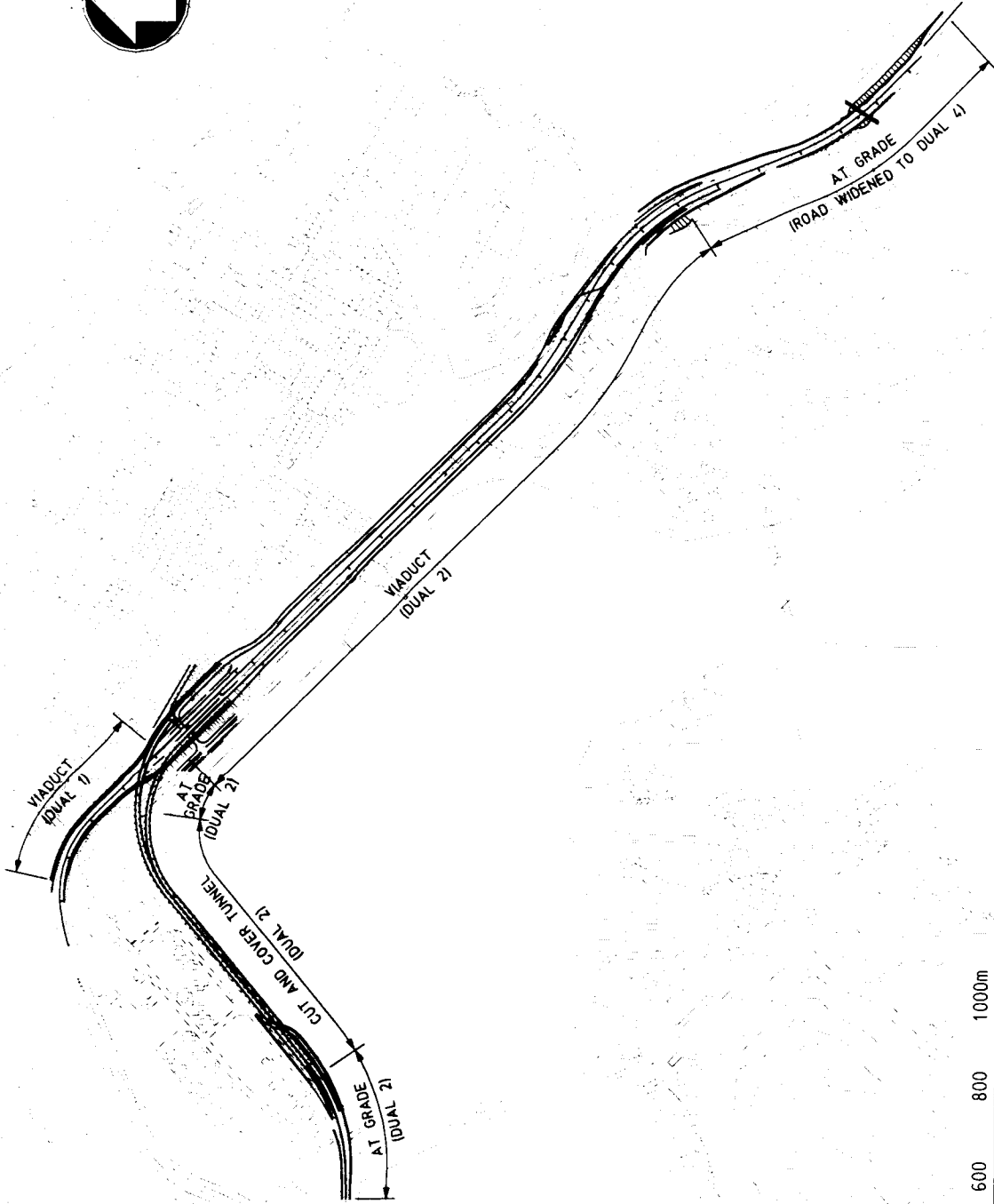


**FIGURES**



KEY  
 — STUDY AREA  
 — 250m CONSULTATION ZONE  
 ■ LOCATION OF EX-LANDFILL

Project	Tsuen Wan Road Upgrading Feasibility Study		Title		STUDY AREA		Figure No.		Rev.			
							1:1					
				Date	Drawn	Checked	Approved	Scale	AS SHOWN			
				CAD File: I:\PROJ\540\PRELIM\SKETCH\FIG1							Tel No. 2828 5757 Fax No. 2827 1023	



<b>Project</b> Tsuen Wan Road Upgrading Feasibility Study		<b>Title</b> GENERAL LAYOUT PLAN		<b>Figure No.</b> 1.2		<b>Rev.</b>	
<b>Scale</b> AS SHOWN		<b>Approved</b>		<b>Checked</b>		<b>Date</b>	
<b>CAD File:</b> I:\PROJECTS\540\PRELIM\SKETCH\FIG1-2		<b>Drawn</b>		<b>Checked</b>		<b>Date</b>	
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KEY

- N = NOISE SENSITIVE RECEIVERS
- N1 = GARDEN VIEW TERRACE
- N2 = BLOSSOM TERRACE
- N3 = BAYVIEW GARDEN
- N4 = BELVEDERE GARDEN
- N5 = THE PANORAMA
- N6 = CLAGUE GARDEN ESTATE
- N7 = SKYLINE PLAZA
- N8 = WATERSIDE PLAZA
- N9 = RIVIERA GARDEN
- N10 = CNEC LEE I YAO MEMORIAL SCHOOL
- N11 = KWAI SHING ESTATE WEST
- N12 = HOUSING DEVELOPMENT IN AREA 102
- N13 = HOUSING DEVELOPMENT IN AREA 104
- N14 = WEST RAIL TSUEN WAN WEST STATION DEVELOPMENT

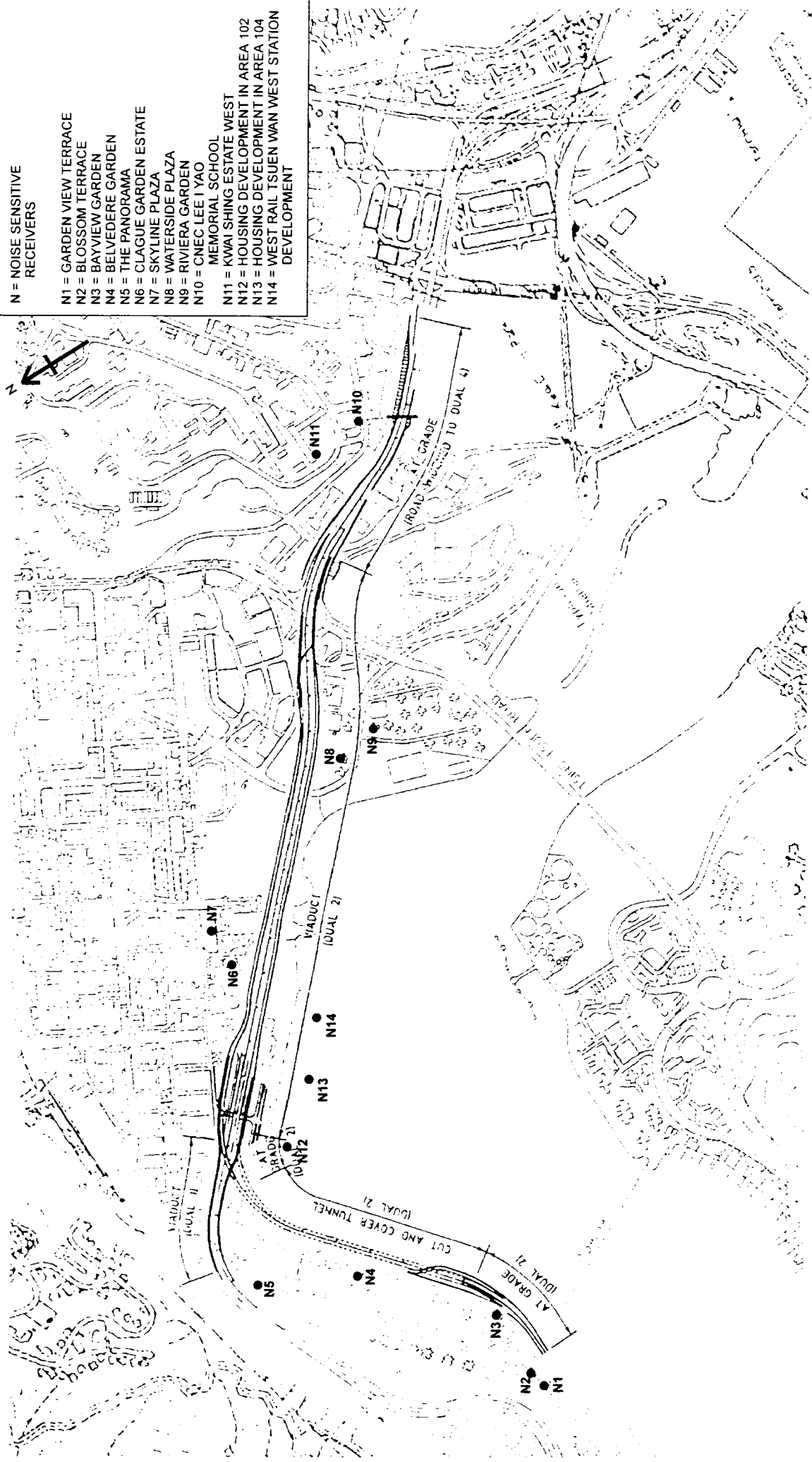


FIGURE 4.2

LOCATION OF THE NOISE SENSITIVE RECEIVERS

KEY

- A = AIR SENSITIVE RECEIVERS
- A1 = GARDEN VIEW TERRACE
- A2 = BLOSSOM TERRACE
- A3 = BAYVIEW GARDEN
- A4 = BELVEDERE GARDEN
- A5 = THE PANORAMA
- A6 = CLAGUE GARDEN ESTATE
- A7 = SKYLINE PLAZA
- A8 = WATERSIDE PLAZA
- A9 = RIVIERA GARDEN
- A10 = CNEC LEE I YAO MEMORIAL SCHOOL
- A11 = HOI ON ROAD PLAYGROUND
- A12 = KONG NAM INDUSTRIAL BUILDING
- A13 = CABLE TV TOWER
- A14 = TSUEN WAN CARGO WORKING AREA
- A15 = TSUEN WAN SPORTS GROUND
- A16 = TSUEN WAN INDUSTRIAL BUILDING
- A17 = WAH KEI INDUSTRIAL BUILDING
- A18 = TSUEN WAN CHINESE CEMETERY
- A19 = CHUN SHING FACTORY BUILDING
- A20 = KWAI SHING SWIMMING POOL
- A21 = KWAI CHUNG PARK
- A22 = LUCKY INDUSTRIAL GODOWN BUILDING

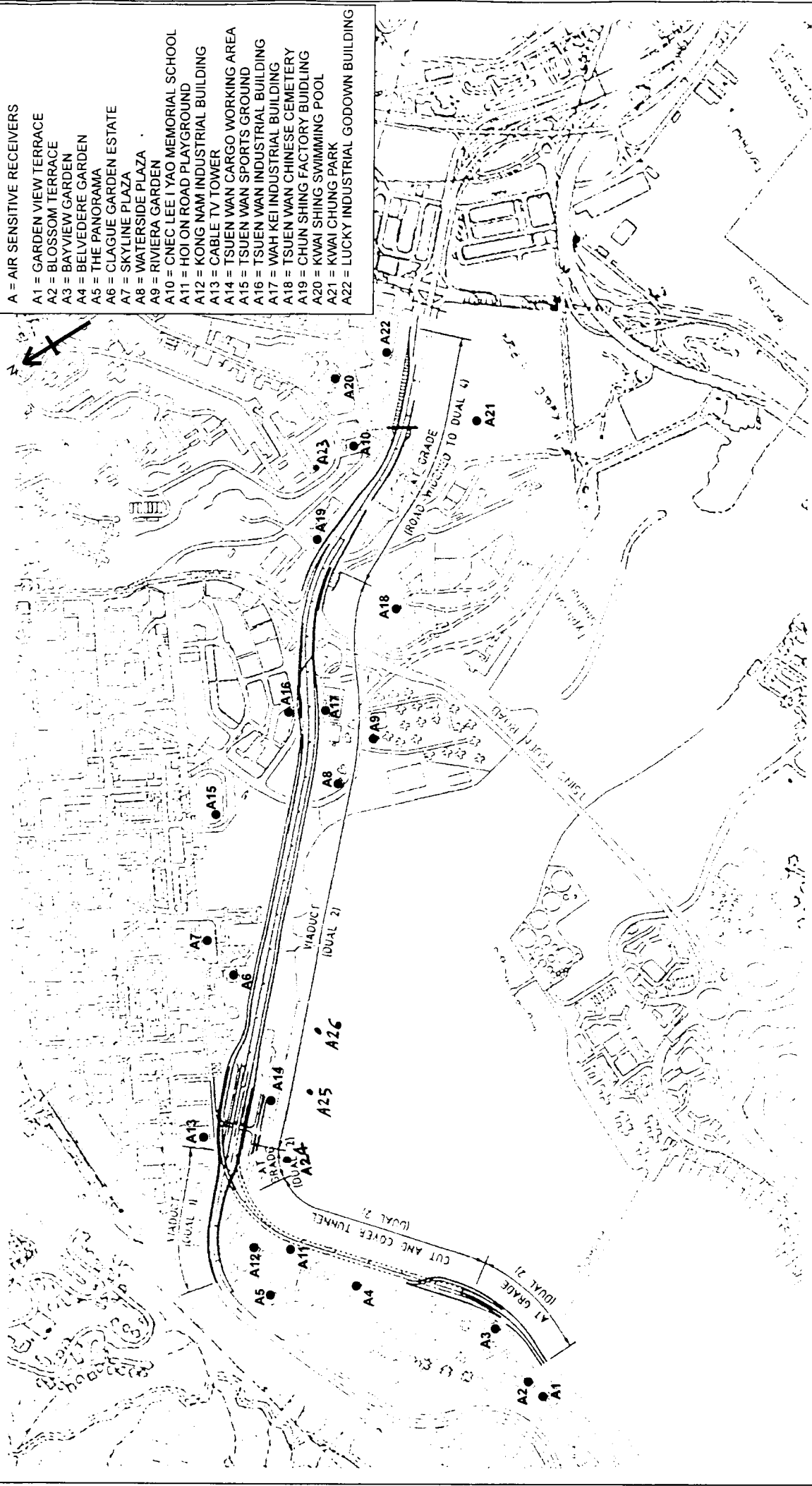


FIGURE 4.3 LOCATION OF THE AIR SENSITIVE RECEIVERS