

HIGHWAYS DEPARTMENT/MW

Agreement No. CE 29/96  
Flyover at Tai Chung Kiu Road/  
Siu Lek Yuen Road

Environmental Impact Assessment  
Final Report

March 1998

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# TABLE OF CONTENTS

	Page	
1	INTRODUCTION	1
	1.1 Requirement for the Flyover	1
	1.2 Site Location	1
	1.3 Extent of Works	1
	1.4 Requirements of EIA	2
	1.5 Existing Environmental Conditions	2
2	LEGISLATIVE CONTROL AND GUIDELINES	5
3	SENSITIVE RECEIVERS	6
	3.1 Operational Phase Traffic Noise	6
	3.2 Construction Phase	6
4	CONSTRUCTION NOISE IMPACTS	10
	4.1 Assessment Methodology	10
	4.2 Results	15
	4.3 Conclusions and Recommendations	18
	4.4 Duration of predicted exceedances	19
5	CONSTRUCTION DUST IMPACT	21
	5.1 Assessment Methodology	21
	5.2 Emissions Calculations	21
	5.3 Dispersion Modelling	22
	5.4 Predicted Dust Impacts	22
	5.5 Assessment of Results	24
	5.6 Recommended Controls and Mitigation Measures	24
6	OPERATIONAL TRAFFIC NOISE IMPACT	31
	6.1 Assessment Methodology	31
	6.2 Impacts on Receivers with No Mitigation	32
	6.3 Mitigation Using Vertical Barriers	33
	6.4 Summary	33
	6.5 Mitigation with Cantilever Barriers	34
	6.6 Mitigation with an Enclosure	34
	6.7 Mitigation through Traffic Management	35
	6.8 Refined Mitigation Option	35
	6.9 Mitigation on the Existing Ground Level Roads	37
7	VISUAL AND LANDSCAPE IMPACT ASSESSMENT	43
	7.1 Background	43
	7.2 Sensitive Receivers	43
	7.3 Methodology	43
	7.4 Baseline Data	43
	7.5 Assessment Criteria	44
	7.6 Noise Barrier Design	44
	7.7 Existing Landscape and Townscape Character	44
	7.8 Description of the Proposed Flyover	45
	7.9 Landscape Impact Assessment	45
	7.10 Visually Sensitive Receivers and Visual Envelope	46

7.11	Visual Impact Assessment	46
7.12	Mitigation Measures	49
8	ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS	60
9	SUMMARY AND CONCLUSIONS	61
9.1	Operation Phase Noise Impacts	61
9.2	Construction Phase Noise Impacts	61
9.3	Construction Phase Dust Impacts	61
9.4	Landscape and Visual Impacts	62

#### List of Tables

Table 3.1	Locations of Selected Representative Air Sensitive Receivers	6
Table 4.1	Details of Alternative 'Quieter' Powered Mechanical Equipment and Potential for Practical Acoustic Screening	10
Table 4.2	Powered Mechanical Equipment Used for General Road Widening and Utility Diversion	11
Table 4.3	Powered Mechanical Equipment Used for Utility Diversion Beneath Flyover Footprint	11
Table 4.4	Powered Mechanical Equipment Used for Temporary Nullah Bridge Works	12
Table 4.5	Powered Mechanical Equipment Used for Piling Works for Nullah Widening	12
Table 4.6	Powered Mechanical Equipment Used for Nullah Bridge Widening Pile Cap Construction	13
Table 4.7	Powered Mechanical Equipment Used for Pier and Superstructure Construction for Nullah Bridge Widening	13
Table 4.8	Powered Mechanical Equipment Used for Flyover Piling	14
Table 4.9	Powered Mechanical Equipment Used for Flyover Pile Cap Construction	14
Table 4.10	Powered Mechanical Equipment Used for Flyover Pier and Superstructure Construction	15
Table 4.11	Powered Mechanical Equipment Used for Carriageway Construction	15
Table 4.12	Summary of Noise Levels at NSRs Predicted (exposed to Levels greater than the Recommended Criteria), (Mitigated Scenario)	17
Table 4.13	Duration of Exceedance of noise levels greater than the Recommended Criteria- Mitigated Scenario (number of days)	20
Table 5.1	Predicted Maximum 1-hour and 24-hour Average TSP Concentrations at the Representative ASRs (No Dust Mitigation)	23
Table 5.2	Predicted Maximum 1-hour and 24-hour Average TSP Concentrations at the Representative ASRs (with 50% Dust Mitigation)	23
Table 6.1	Year 2016 AM Peak Hour Traffic Flows	31
Table 6.2	Year 1997 AM Peak Hour Traffic Flows	32
Table 6.3	Comparison of Noise Levels Adopting Different Mitigation Options	36
Table 9.1	Extent of Visual Impacts at Sensitive Receiver Locations	63

#### List of Figures

Figure 1.1	General Location Plan	3
Figure 1.2	Works Layout	4
Figure 3.1	Proposed Flyover Location, and Operational Phase Noise Sensitive Receivers	7
Figure 3.2	Baseline Noise Monitoring Station and the Location of Construction Phase Noise Sensitive Receivers	8
Figure 3.3	Air Quality Sensitive Receivers	9



Figure 5.1	Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase A) with No Dust Mitigation	25
Figure 5.2	Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase B) with No Dust Mitigation	26
Figure 5.3	Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase C) with No Dust Mitigation	27
Figure 5.4	Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase A) with 50% Dust Mitigation	28
Figure 5.5	Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase B) with 50% Dust Mitigation	29
Figure 5.6	Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase C) with 50% Dust Mitigation	30
Figure 6.1	Existing Traffic Flows, Peak hour AM	40
Figure 6.2	2016 Peak AM Traffic Flows	41
Figure 6.3	Position of Structures for the Refined Mitigation Option	42
Figure 7.1	Landscape Character Plan	50
Figure 7.2	Visual Character Plan	51
Figure 7.3 to 7.5	Rotational Views from Flyover Location	52
Figure 7.6a to 7.6f	Rotational Views from Flyover Location	53
Figure 7.7 to 7.8	Rotational Views from Flyover Location	54
Figure 7.9 to 7.13	Rotational Views from Flyover Location	55
Figure 7.14 to 7.19	Rotational Views from Flyover Location	56
Figure 7.20	Axonometric View of Cantilever and Vertical Barrier Junction	57
Figure 7.21	Illustrative Sketch of Flyover Structure and Noise Barriers View From Floating Restaurant	58
Figure 7.22	Illustrative Sketch of Flyover Structure and Noise Barriers View From City One Estate	59

#### List of Appendices

Appendix A	Legislation and Guidelines
Appendix B	Traffic Noise Modelling Results
Appendix C	Fugitive Dust Modelling Results
Appendix D	Construction Noise Data

1 INTRODUCTION

## 1 INTRODUCTION

### 1.1 Requirement for the Flyover

The Hong Kong Highways Department (Major Works) HyD commissioned CES (Asia) Ltd to carry out an Environmental Impact Assessment (EIA) and a Traffic Impact Assessment for the construction of a new flyover at the junction of Tai Chung Kiu Road and Siu Lek Yuen Road in Sha Tin.

Tai Chung Kiu Road is a major traffic link between Sha Tin and Ma On Shan. It carries traffic from the Ma On Shan area to the Lion Rock Tunnel/Shing Mun Tunnel and other major traffic generators in Sha Tin such as railway stations and the New Town Plaza.

With the developments in Ma On Shan and the natural growth of traffic, it is anticipated that the existing junction of Tai Chung Kiu Road and Siu Lek Yuen Road will be operating over capacity at approximately 20% and 28% in the AM peak and PM peak respectively in the year 2001.

The construction of a single 2-lane flyover across the junction was identified in the Ma On Shan Area 77, 86B and 90B Potential Development Traffic Impact Study in June 1995 as a means to improve the junction capacity to cater for the growth in traffic. The likely commissioning date of the proposed roadwork will be by late 2001.

### 1.2 Site Location

The flyover will be located across the junction of Tai Chung Kiu Road and Siu Lek Yuen Road. The general location is shown in Figure 1.1. The Study Area includes the existing urban development alongside a portion of the Shing Mun River and Siu Lek Yuen Nullah concentrated at the junction of Tai Chung Kiu Road and Siu Lek Yuen Road.

### 1.3 Extent of Works

The proposed flyover comprises a 260m long section of elevated carriageway in the centre lane of Tai Chung Kiu Road. The deck of the flyover structure will be at a maximum height of around 9.5m above the existing road level at the centre of the junction. The construction project will involve provision of:

- a single 2-lane flyover of about 260m in length along Tai Chung Kiu Road over the junction with Siu Lek Yuen Road;
- local road widening on both sides of Tai Chung Kiu Road near the junction to accommodate the flyover;
- widening of a portion of the existing nullah bridge;
- modification to road junction layout and improvement to the signal control arrangement;
- noise mitigation measures, including noise barriers along the southern edge of the flyover facing Sha Tin City One Estate, the extent and scope of which is subject to review; and
- ancillary drainage works.

The works layout is shown in Figure 1.2.

#### 1.4 Requirements of EIA

This EIA examines impacts arising from the development changes, particularly with regards to:

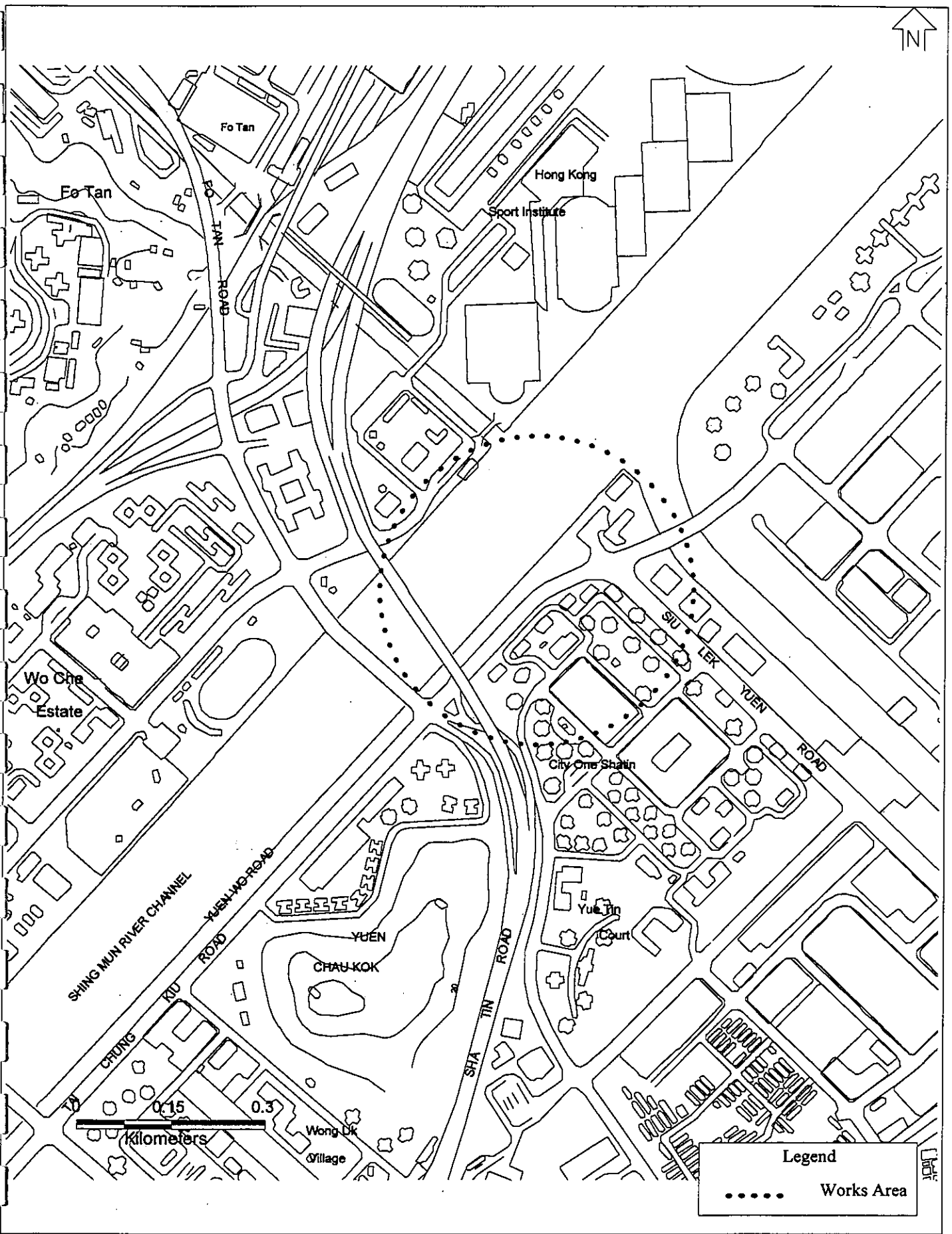
- Traffic noise impact;
- Visual and landscape impacts;
- Construction dust impact;
- Construction noise impact; and
- Environmental monitoring and audit requirements.

#### 1.5 Existing Environmental Conditions

Both Tai Chung Kiu Road and Siu Lek Yuen Road are busy highways. For the purpose of this study, for comparative and environmental monitoring and audit manual purposes, it was considered necessary to establish the existing background noise environment, and more specifically to quantify the existing traffic noise levels affecting the sensitive receivers.

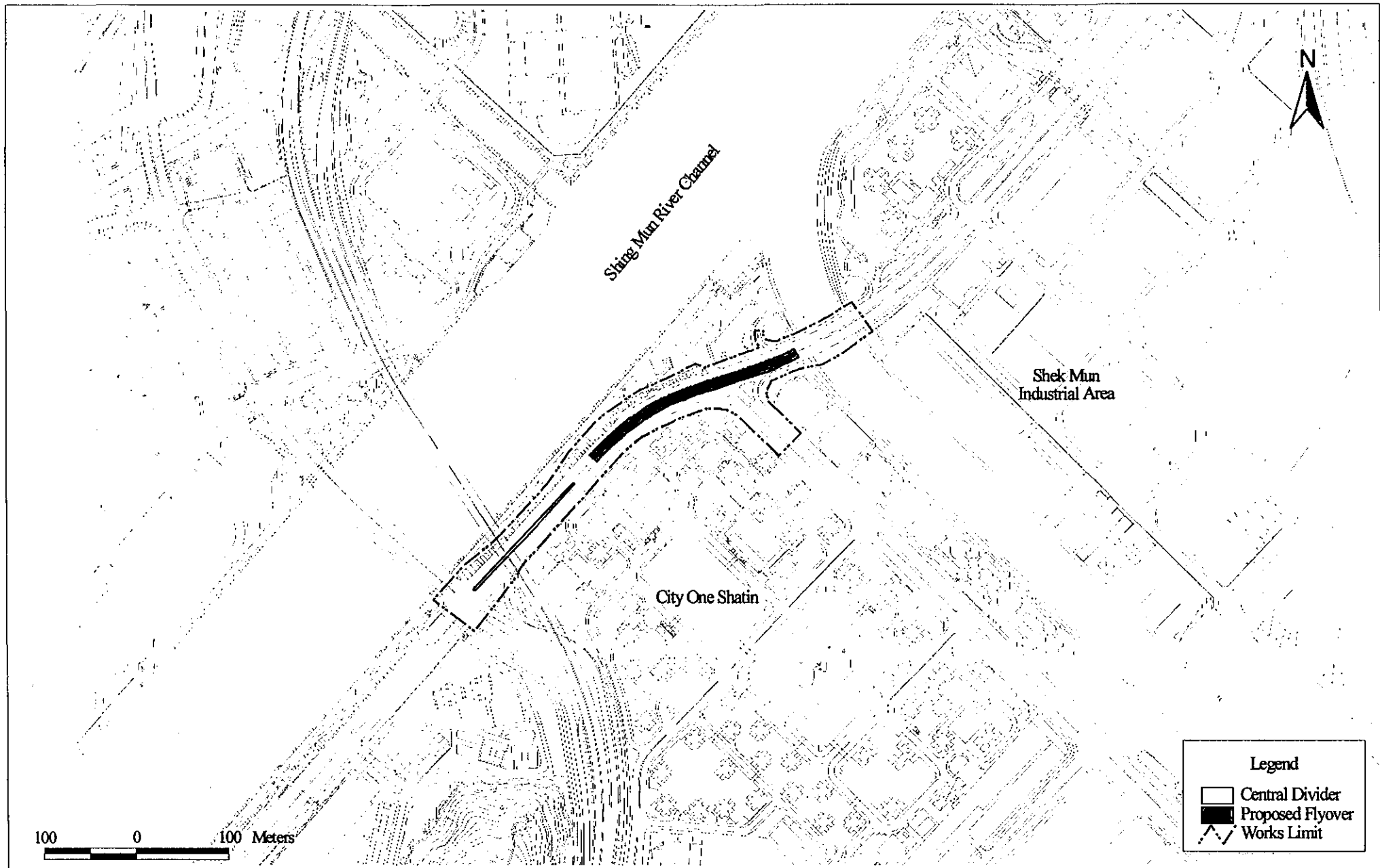
The baseline condition was established at each Noise Sensitive Receiver (NSR), shown on Figure 3.1 by carrying out prediction modelling of traffic noise levels, based on 1997 traffic flows. The predicted results indicated that most NSRs at City One Estate, Belair Garden and Ravana Garden facing Tai Chung Kiu Road are currently exposed to noise levels of 70dB(A) or higher, which exceed the Hong Kong Planning Standards and Guidelines (HKPSG). The worst location affected is on the first floor of Block 6 of Sha Tin City One Estate with a predicted noise level of 79.7dB(A)

On-site baseline noise monitoring was conducted at seven blocks at Sha Tin City One Estate and at the podium level of both Belair Garden and Ravana Garden. The location of these monitoring stations relative to the flyover is shown in Figure 3.2. The results of the modelled data show a reasonable correlation with the monitored data. Overall the measured noise levels indicated that the HKPSG criteria for traffic noise of 70dB(A) are exceeded at City One Estate, with a maximum of 79.7 dB(A). The monitored data fall within the predicted range for each block in most cases. There seems to be an over estimate at Belair Garden, but as this is not significantly affected by the flyover project, this is not a concern. At Ravana Garden there is also an over estimate, this is likely to be due to limitations in the CRTN methodology when dealing with complex geometry. The 1997 traffic noise modelling data can be found in Appendix B. Baseline monitoring results are presented in a separate report.



TITLE  
**General Location Plan**

CES (ASIA) LIMITED			
PROJECT NO.	B180	DATE	March 1998
DESIGNED	Fanny Lau	DRAWING NO.	Figure 1.1



4

100 0 100 Meters

**Legend**

- Central Divider
- Proposed Flyover
- Works Limit

環科 CES

TITLE

Works Layout

CES (ASIA) LIMITED

PROJECT NO.	B180	DATE	August 1997
DESIGNED	Fanny Lau	DRAWING NO.	Figure 1.2

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2      LEGISLATIVE CONTROL AND  
GUIDELINES

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## 2 LEGISLATIVE CONTROL AND GUIDELINES

Details of the legislative framework relating to this study can be found in Appendix A.





### 3 SENSITIVE RECEIVERS

#### 3.1 Operational Phase Traffic Noise

One hundred and thirty-four noise sensitive receivers (NSRs) were selected for traffic noise assessment during the operational phase. Their locations are shown in Figure 3.1. These represented residential flats and two schools, the Baptist Lui Ming Choi Primary School (2 Tak Wing Street, City One, Sha Tin) and the Leung Kui Kau Lutheran Primary School (5 On King Street, Sha Tin). Noise level prediction modelling was carried out at every fourth floor level of each residential block, starting from the first floor (i.e. no modelling of ground floor level flats). For the schools, calculations were undertaken at all floors.

#### 3.2 Construction Phase

##### 3.2.1 Noise Sensitive Receivers

Twenty two representative sensitive receivers were selected for construction noise assessment. These also represented residential flats and the two schools (Baptist Lui Ming Choi Primary School and Leung Kui Kau Lutheran Primary School) in the vicinity of the proposed flyover. In addition, scenarios were modelled for three different heights (ground level, 40m and 80m above ground level) at those high rise sensitive receivers directly overlooking the construction works. The locations of construction phase NSRs for the scheme are indicated in Figure 3.2.

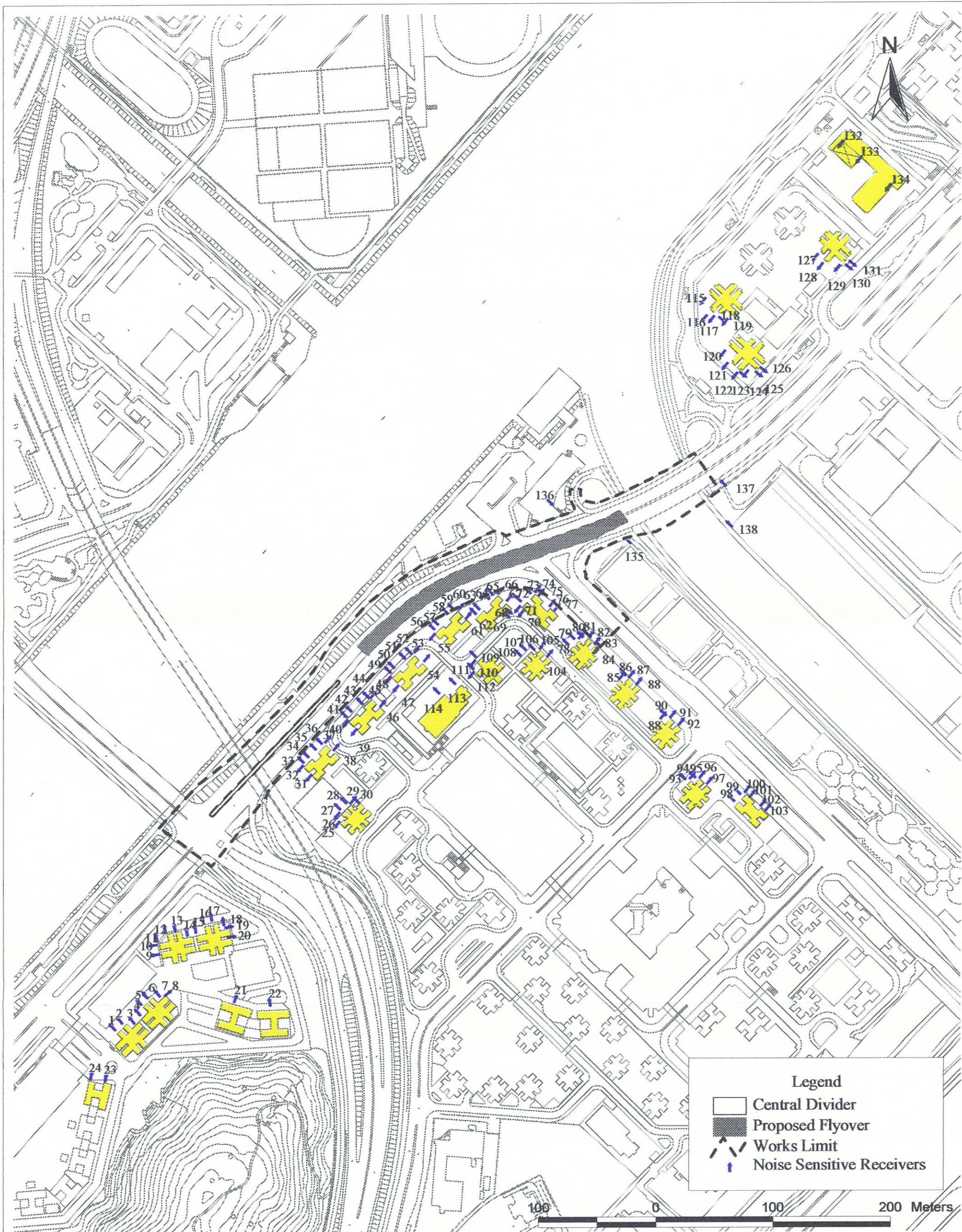
##### 3.2.2 Air Sensitive Receivers

Nine representative air sensitive receivers (ASRs) were selected for the air quality assessment. Their locations are shown in Figure 3.3 and described in Table 3.1.

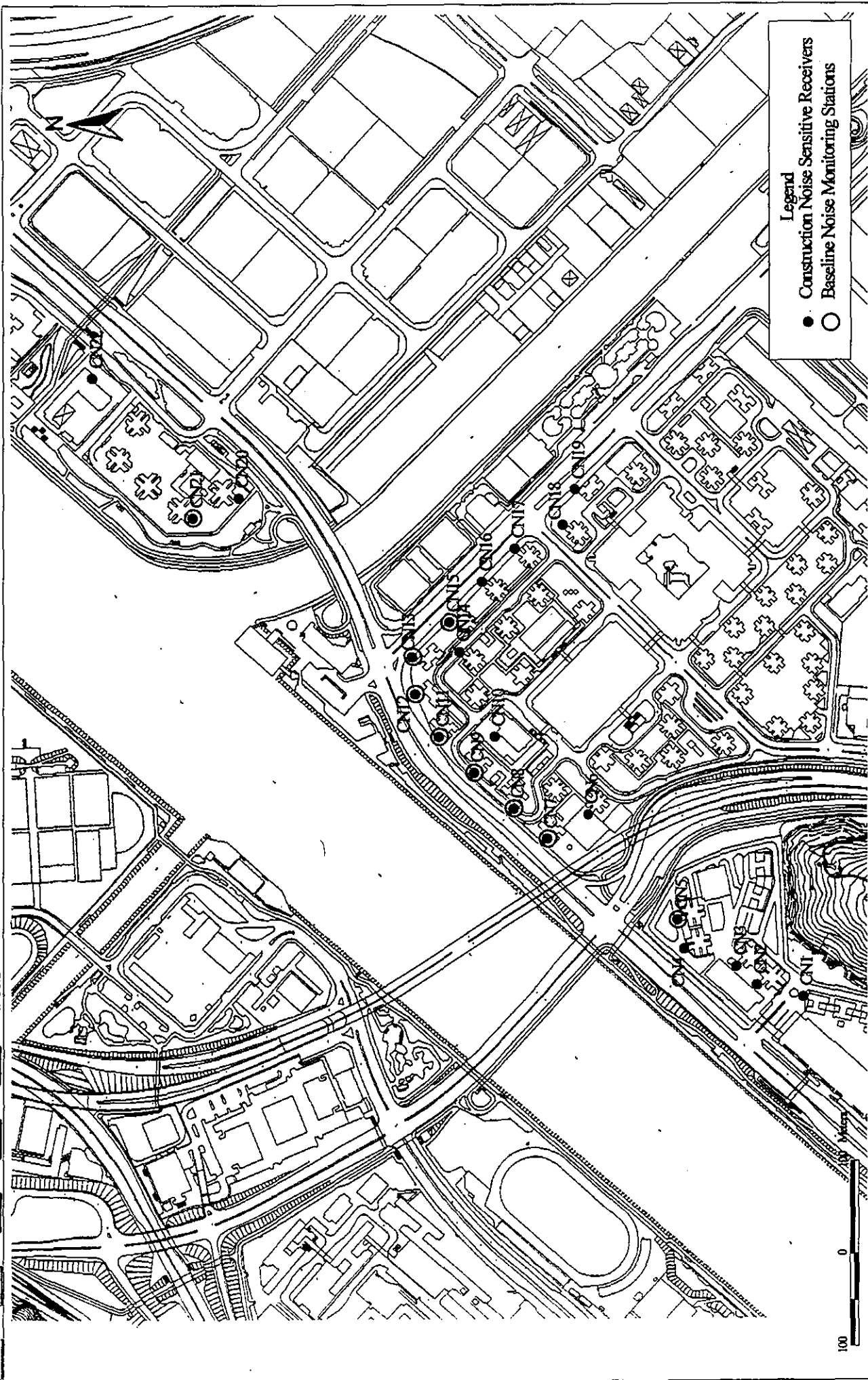
Table 3.1 Locations of Selected Representative Air Sensitive Receivers

ASR	Location Description
A1	Block 15, City One, Sha Tin
A2	Block 14, City One, Sha Tin
A3	Block 13, City One, Sha Tin
A4	Block 6, City One, Sha Tin
A5	Block 5, City One, Sha Tin
A6	Block 4, City One, Sha Tin
A7	Block 3, City One, Sha Tin
A8	Siu Lek Yuen Road Playground
A9	Floating Restaurant Garden



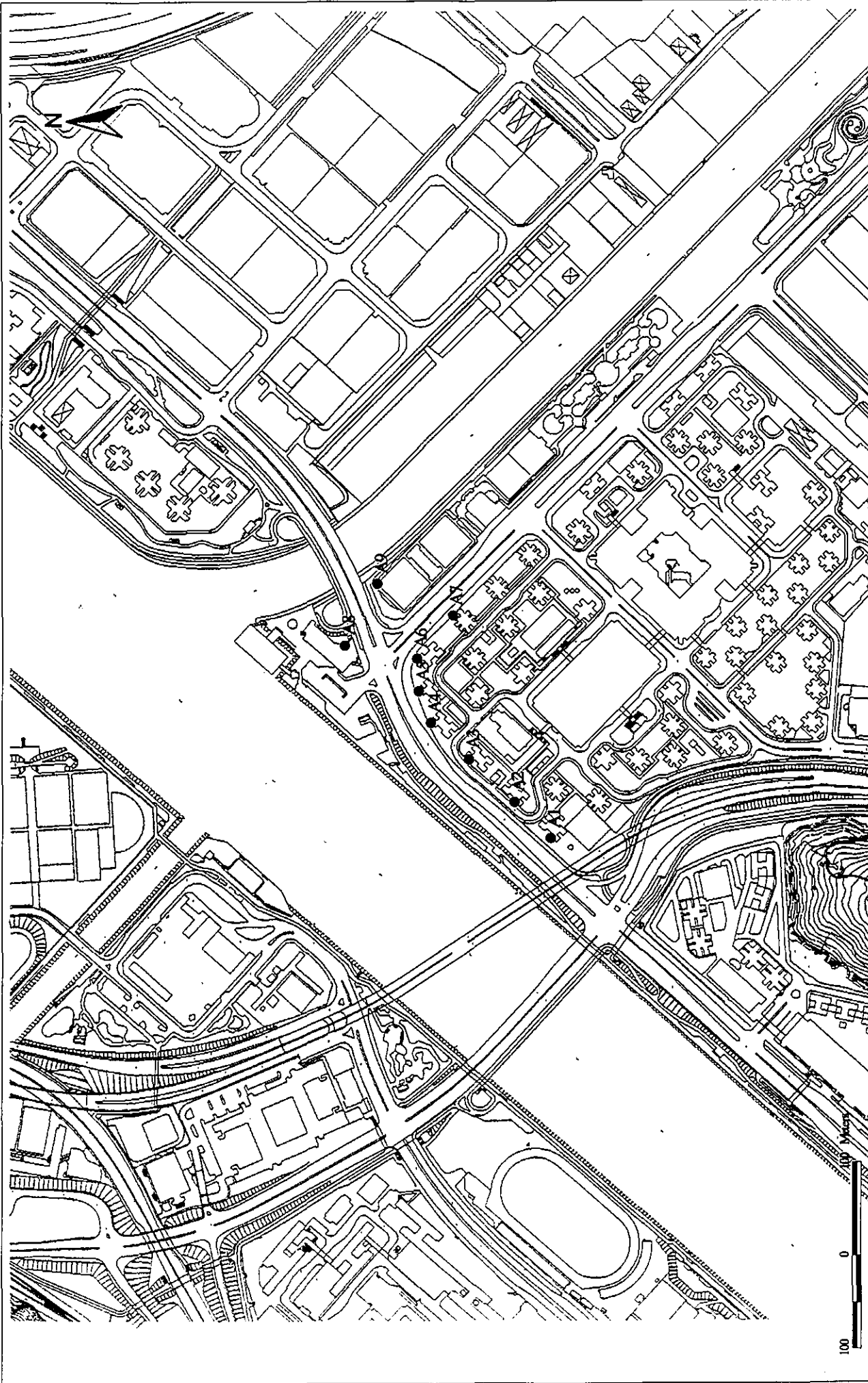






- Legend
- Construction Noise Sensitive Receivers
  - Baseline Noise Monitoring Stations

CES (ASIA) LIMITED	
PROJECT NO B180	DATE Mar. 1998
DESIGNED BY Fanny Lau	DRAWING NO Figure 3.2
<b>環 科</b> <b>C E S</b>	
<b>Construction Noise Sensitive Receiver Locations</b> TITLE	



CES (ASIA) LIMITED

PROJECT NO	BI80	DATE	Mar. 1998
DESIGNED	Fanny Lau	DRAWING NO	Figure 3.3

Locations of Air Quality Sensitive Receivers

TITLE





#### 4 CONSTRUCTION NOISE IMPACTS

##### 4.1 Assessment Methodology

The methodology outlined in the *Technical Memorandum on Noise from Construction Works other than Percussive Piling* was used for the assessment of construction noise. Notional noise sources were assumed in accordance with the *Technical Memorandum*, except in those cases where the actual noise source was known, such as pier construction. All items of powered mechanical equipment (PME) were assumed to be located at these notional, or actual, source positions.

Two scenarios were modelled for each NSR: an 'unmitigated' scenario assuming sound power levels (SWLs) provided in the *Technical Memorandum*, and a 'mitigated' scenario exploiting the use of quieter plant and acoustic screening where this was considered practical. For the 'mitigated' scenario further modelling was carried out to assess the noise levels at higher points of residential blocks which overlook the flyover.

The purpose of this approach was to determine the nature of any benefits derived through the application of mitigation, and the extent of any outstanding residual impacts. To this end, SWLs of PME were taken from both Table 3 of the *Technical Memorandum* and alternative 'quieter plant' SWLs in *BS 5228: Part 1: 1984 Noise Control on Construction and Open Sites* for the unmitigated and mitigated scenarios respectively. Also, in accordance with the *Technical Memorandum*, an attenuation of 10dB(A) was applied where acoustic screens were assumed in the 'mitigated' scenario. A positive correction of 3 dB(A) was made to all calculated results to allow for facade effect. Any percussive piling required for the construction works has been excluded from the following assessment, since this activity is subject to statutory control under the Noise Control Ordinance.

Details of alternative 'quieter' PME and the potential for practical acoustic screening that were used for the 'mitigated' scenario are presented in Table 4.1. Types and numbers of PME used for each construction task, including *Technical Memorandum* SWLs, are presented in Tables 4.2 - 4.11.

Table 4.1 Details of Alternative 'Quieter' Powered Mechanical Equipment and Potential for Practical Acoustic Screening

PME Used Over Duration of Works	Acoustic Screening Practical?	BS 5228: Part 1: 1984	
		SWL, dB(A)	Reference
Generator	Yes	*	-
Air compressor, air flow < 10m	Yes	100	Table 10, Item 28
Breaker, hand held	Yes	*	-
Dump truck	No	110	Table 12, Item 31
Concrete lorry mixer	No	*	-
Poker, vibratory, hand held	No	102	Table 9, Item 20
Crane, mobile	No	109	Table 9, Item 18
Excavator	No	103	Table 11, Item 15
Compactor, vibratory	No	*	-
Bored piling	No	113	Table 8, Item 35
Water pump	Yes	94	Table 10, Item 68
Concrete pump	Yes	106	Table 9, Item 22

\* SWL quoted in BS5228 equal to or greater than TM values

The breakdown of construction activities and PME required were estimated as follows. Construction activities would include general road widening and utility diversion, utility diversion beneath the flyover footprint, temporary nullah bridge works, piling works for nullah widening, nullah bridge widening pile cap construction, pier and superstructure construction for nullah bridge widening, flyover piling, flyover pile cap construction, flyover pier and superstructure construction, and carriageway construction.

**Table 4.2 Powered Mechanical Equipment Used for General Road Widening and Utility Diversion**

PME Item		TM Ref.	No. Items	SWL /Item, dB(A)
Excavation	1. Air compressor	CNP 002	2	102
	Breaker, hand held	CNP 023	2	108
	2. Excavator	CNP 081	2	112
	Dump Truck	CNP 067	2	117
Backfilling	Excavator	CNP 081	2	112
	Compactor, vibratory	CNP 050	2	105
Placing Concrete	Concrete lorry mixer	CNP 044	1	109
	Generator	CNP 103	1	95
	Poker, vibratory, hand held	CNP 170	1	113

Works estimated duration = 8 months

**Table 4.3 Powered Mechanical Equipment Used for Utility Diversion Beneath Flyover Footprint**

PME Item		TM Ref.	No. Items	SWL /Item, dB(A)
Excavation	1. Air compressor	CNP 002	1	102
	Breaker, hand held	CNP 023	2	108
	2. Generator	CNP 103	1	95
	Crane, mobile	CNP 048	1	112
	Excavator	CNP 081	1	112
Diversion of Utility	Crane, mobile	CNP 048	1	112
	Generator	CNP 103	1	95
Backfilling	Excavator	CNP 081	1	112
	Compactor, vibratory	CNP 050	1	105
Placing Concrete	Concrete lorry mixer	CNP 044	1	109
	Generator	CNP 103	1	95
	Poker, vibratory, hand held	CNP 170	2	113

Excludes drop hammer percussive piling equipment subject to control under statutory measures

Works estimated duration = 8 months



Table 4.4 Powered Mechanical Equipment Used for Temporary Nullah Bridge Works

PME Item		TM Ref.	No. Items	SWL /Item, dB(A)
Temporary Work	Excavator	CNP 081	1	112
	Air compressor	CNP 002	1	102
	Generator	CNP 103	1	95
	Crane, mobile	CNP 048	1	112

Works estimated duration = 2 months

Table 4.5 Powered Mechanical Equipment Used for Piling Works for Nullah Widening

PME Item		TM Ref.	No. Items	SWL /Item, dB(A)
Excavation	1. Crane, mobile	CNP 048	1	112
	Large diameter bored, oscillator	CNP 165	1	115
	Large diameter bored, grab & chisel	CNP 164	1	115
	2. Excavator	CNP 081	1	112
	Dump truck	CNP 067	1	117
	3. Crane, mobile	CNP 048	1	95
	Air compressor	CNP 002	1	102
	Generator	CNP 103	1	95
	Water pump	CNP 282	1	103
Placing concrete	Crane, mobile	CNP 048	1	112
	Large diameter bored, oscillator	CNP 165	1	115
	Concrete lorry mixer	CNP 044	1	109
	Generator	CNP 103	1	95
	Poker Vibratory, hand held	CNP 170	1	113

Works estimated duration = 2 months

**Table 4.6 Powered Mechanical Equipment Used for Nullah Bridge Widening Pile Cap Construction**

	PME Item	TM Ref.	No. Items	SWL/ Item, dB(A)
Excavation	1. Air compressor	CNP 002	1	102
	Breaker, hand held	CNP 023	2	108
	2. Excavator	CNP 081	1	112
	Dump truck	CNP 067	1	117
Falsework	Crane, mobile	CNP 048	1	112
	Generator	CNP 103	1	95
	Water pump	CNP 282	1	103
Placing Concrete	Crane mobile	CNP 048	1	112
	Concrete lorry mixer	CNP 044	1	109
	Generator	CNP 103	1	95
	Poker, vibratory, hand held	CNP 170	2	113

Works estimated duration = 2 months

**Table 4.7 Powered Mechanical Equipment Used for Pier and Superstructure Construction for Nullah Bridge Widening**

	PME Item	TM Ref.	No. Items	SWL/ Item, dB(A)
Falsework	Crane, mobile	CNP 048	1	112
	Generator	CNP 103	1	95
Placing Concrete	Concrete pump truck	CNP 047	1	109
	Concrete lorry mixer	CNP 044	1	109
	Generator	CNP 103	1	95
	Poker, vibratory, hand held	CNP 170	2	113

Works estimated duration = 2 months

Table 4.8 Powered Mechanical Equipment Used for Flyover Piling

	PME Item	TM Ref.	No. Items	SWL/Item, dB(A)
Excavation	1. Crane, mobile Large diameter bored, oscillatory Large diameter bored, grab & chisel	CNP 048	1	112
		CNP 165	1	115
		CNP 164	1	115
	2. Excavator Dump truck	CNP 081	1	112
		CNP 067	1	117
	3. Crane, mobile Air compressor Generator Water pump	CNP 048	1	112
		CNP 002	1	102
		CNP 103	1	95
		CNP 282	1	103
	4. Excavator Air compressor Generator	CNP 081	1	112
		CNP 002	1	102
		CNP 103	1	95
Placing Concrete	Crane, mobile Large diameter bored, oscillator Concrete lorry mixer Generator Water pump	CNP 048	1	112
		CNP 165	1	115
		CNP 044	1	109
		CNP 103	1	95
		CNP 282	1	103

Works estimated duration = 5 months

Table 4.9 Powered Mechanical Equipment Used for Flyover Pile Cap Construction

	PME Item	TM Ref.	No. Items	SWL/Item, dB(A)
Excavation	1. Air compressor Breaker, hand held	CNP 002	1	102
		CNP 023	2	108
	2. Excavator Dump truck	CNP 081	1	112
		CNP 067	1	117
Falsework	Crane, mobile Generator Water pump	CNP 048	1	112
		CNP 103	1	95
		CNP 282	1	103
Placing Concrete	Crane, mobile Concrete lorry mixer Generator Poker, vibratory, hand held	CNP 048	1	112
		CNP 044	1	109
		CNP 103	1	95
		CNP 170	3	113

Works estimated duration = 5 months

**Table 4.10 Powered Mechanical Equipment Used for Flyover Pier and Superstructure Construction**

PME Item		TM Ref.	No. Items	SWL/ Item, dB(A)
Falsework	Generator	CNP 103	1	95
	Crane, mobile	CNP 048	2	112
Placing Concrete	Concrete pump, stationary	CNP 047	1	109
	Concrete lorry mixer	CNP 044	1	109
	Poker, vibratory, hand held	CNP 170	3	113
	Generator	CNP 103	1	95

Works estimated duration = 9 months

**Table 4.11 Powered Mechanical Equipment Used for Carriageway Construction**

PME Item		TM Ref.	No. Items	SWL/ Item, dB(A)
Excavation	1. Air compressor	CNP 002	1	102
		Breaker, hand held	CNP 023	2
	2. Excavator	CNP 081	1	112
		Dump truck	CNP 067	1
Backfilling	Excavator	CNP 081	1	112
	Compactor, vibratory	CNP 050	1	105
Placing of Concrete	Concrete lorry mixer	CNP 044	1	109
	Generator	CNP 103	1	95
	Poker, vibratory, hand held	CNP 170	2	113

Works estimated duration = 5 months

## 4.2 Results

Predicted noise levels at NSRs for both unmitigated and mitigated scenarios are presented in Appendix D. The recommended limits of construction noise are no greater than 75 dB(A) for residential users and 70 dB(A) for normal schools activities.

### 4.2.1 Predicted Noise Levels of the Unmitigated Scenario

In summary the predicted noise levels of unmitigated construction noise are as follows:

- General Road widening works - The predicted noise levels exceed the recommended criteria at receivers CN5, CN6, CN7, CN8, CN9, CN10, CN11, CN12, CN13, CN14, CN15, CN16 and CN20.
- Diversion of Utilities works - The predicted noise levels exceed the recommended criteria at receivers CN8, CN9, CN10, CN11, CN12, and CN13.

- Nullah widening works - The predicted noise levels do not exceed the recommended criteria at any of the sensitive receiver locations.
- Flyover piling works - The predicted noise levels exceed the recommended criteria at sensitive receivers CN9, CN10, CN11, CN12, CN13, CN14, and CN15.
- Flyover pile cap works - The predicted noise levels exceed the recommended criteria at sensitive receivers CN9, CN10, CN11, CN12, CN13, CN14 and CN15.
- Flyover pier and superstructure construction - The predicted noise levels exceed the recommended criteria at sensitive receivers CN9, CN10, CN11, CN12, CN13 and CN14.
- Carriageway construction works - The predicted noise levels exceed the recommended criteria at sensitive receivers CN6, CN7, CN8, CN9, CN 10, CN11, CN12, CN13, CN14, and CN15.

#### 4.2.2 Predicted Noise Levels of the Mitigated Scenario

Construction noise can be mitigated by adopting good site practices. Specifically, the use of quieter powered mechanical equipment and mobile acoustic screens can reduce noise levels at the sensitive receivers. The results of the mitigated noise level calculations are provided in Appendix D. These results show that there are exceedances of the criteria predicted at ground and 'mid-level'. No exceedances at the 80m upper level were predicted. The results indicating the mitigated noise levels at ground level are summarised as follows:-

- General Road widening works - The predicted noise levels exceed the recommended criteria at receivers CN7, CN8, CN9, CN10, CN11, CN12, and CN13.
- Diversion of Utilities works - The predicted noise levels exceed the recommended criteria at receivers CN9, CN12, and CN13.
- Nullah widening works - The predicted noise levels do not exceed the recommended criteria at any of the sensitive receiver locations.
- Flyover piling works - The predicted noise levels exceed the recommended criteria at sensitive receivers CN10, CN11, CN12, and CN13.
- Flyover pile cap works - The predicted noise levels exceed the recommended criteria at sensitive receivers CN11, CN12, and CN13.
- Flyover pier and superstructure construction - The predicted noise levels exceed the recommended criteria at sensitive receivers CN11, CN12, and CN13.
- Carriageway construction works - The predicted noise levels exceed the recommended criteria at sensitive receivers CN7, CN8, CN9, CN12 and CN13.

A summary of the noise levels which exceed the recommended criteria is provided in Table 4.12. This table shows the predicted noise levels, including mitigation, at ground level and 40m above ground (for flats which directly overlook the proposed flyover, i.e. NSRs CN7, CN8, CN9, CN 10, CN11, CN12 and CN13).

Table 4.12 Summary of Noise Levels at NSRs Predicted (exposed to Levels greater than the Recommended Criteria), (Mitigated Scenario)

Construction Tasks		CN7		CN8		CN9		CN 10*		CN11		CN12		CN13	
		lower	40m	lower	40m	lower	40m	lower	40m	lower	40m	lower	40m	lower	40m
General Road Widening	Distance (m)	21	45	20	45	20	44	63	38	55	29	49	13	42	
	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Excavation 2	82.4	75.7	82.8	75.7	82.8	75.9	72.8	77.2	-	79.6	-	86.5	76.3	
	Backfilling	78.7	-	79.1	-	79.1	-	-	-	-	75.9	-	82.9	-	
	Placing Concrete	78.4	-	78.8	-	78.8	-	-	-	-	75.6	-	82.5	-	
Diversion of Utilities	Distance (m)	151	180	62	74	20	44	63	38	55	29	49	27	48	
	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Excavation 2	-	-	-	-	79.0	-	-	-	-	75.7	-	76.4	-	
	Diversion Works	-	-	-	-	78.0	-	-	-	-	-	-	-	-	
	Backfilling	-	-	-	-	76.1	-	-	-	-	-	-	-	-	
Placing Concrete	-	-	-	-	79.6	-	-	-	-	76.2	-	76.8	-		
Flyover Piling Works	Distance (m)	176	181	129	135	73	83	87	28	48	24	46	35	53	
	Excavation 1	-	-	-	-	-	-	73.7	83.5	78.8	84.9	79.2	81.6	78.0	
	Excavation 2	-	-	-	-	-	-	-	76.8	-	78.2	-	-	-	
	Excavation 3	-	-	-	-	-	-	-	-	-	76.5	-	-	-	
	Excavation 4	-	-	-	-	-	-	-	78.1	-	79.4	-	76.2	-	
Placing Concrete	-	-	-	-	-	-	72.6	82.5	77.8	83.8	78.2	80.5	76.9		
Flyover Pile cap	Distance (m)	176	181	129	135	73	83	87	28	48	24	46	35	53	
	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Excavation 2	-	-	-	-	-	-	-	-	-	78.2	-	-	-	
	Falsework	-	-	-	-	-	-	-	-	-	76.4	-	-	-	
	Placing Concrete	-	-	-	-	-	-	-	-	-	80.5	-	77.3	-	
Flyover Pier and Superstructure Works	Distance (m)	176	181	129	153	73	83	87	28	48	24	46	35	53	
	Falsework	-	-	-	-	-	-	-	78.1	-	79.4	-	76.1	-	
	Placing Concrete	-	-	-	-	-	-	-	78.3	-	79.6	-	76.3	-	
Carriageway Construction	Distance (m)	21	45	20	45	20	44	63	29	55	13	49	13	42	
	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Excavation 2	79.3	-	79.8	-	79.8	-	-	-	-	76.5	-	83.5	-	
	Backfilling	75.7	-	76.1	-	76.1	-	-	-	-	-	-	79.8	-	
	Placing Concrete	79.0	-	79.5	-	79.5	-	-	-	-	76.2	-	83.2	-	

Notes (-) = no exceedances of recommended criteria and, NSR CN10 is Baptist Lui Ming Choi Primary School

### 4.3 Conclusions and Recommendations

#### 4.3.1 General Road Widening

The assessment indicated that 13 of the 22 selected representative NSRs (59%) would exceed the non-statutory day time criteria for construction noise assuming no mitigation. The highest noise level of 90.9 dB(A) caused by excavation works, would be experienced at NSR CN13, due to the extreme proximity of the works, only 13m distant. When mitigation was assumed, the number of exceedances at NSRs fell to 7 (32%), and the maximum noise level, again at NSR CN13, fell to 86.5 dB(A). The noise levels were predicted to reduce to 76.3 dB(A) at mid-level (40m height) and there were no exceedances at the upper-level of 80m.

#### 4.3.2 Utility Diversion Below Flyover Footprint

The assessment indicated that 6 of the 22 selected representative NSRs (27%) would exceed the non-statutory day time criteria for construction noise assuming no mitigation. The highest noise level of 85.8 dB(A) caused by placing of concrete, would be experienced at NSR CN9, due to the extreme proximity of the works, only 20m distant. When mitigation was assumed, the number of exceedances at NSRs fell to 3 (14%), and the maximum noise level, again at NSR CN13, fell to 79.6 dB(A). There were no exceedances of noise levels at the mid and upper levels.

#### 4.3.3 Nullah Bridge Construction Works

Table 4.12 indicates noise levels predicted to arise from the construction of the nullah bridge widening. These works are some distance from all of the selected NSRs, and this is reflected in the prediction that all nullah bridge works are within acceptable noise levels at all NSRs.

#### 4.3.4 Flyover Construction Works

##### *Piling Works*

Without mitigation, piling works were predicted to cause exceedances at 7 (32%) NSRs, the highest noise level being 86.4 dB(A), caused by excavation works, at NSR CN12. When mitigation was assumed, the number of exceedances at NSRs fell to 5 (23%), and the maximum noise level, again at NSR CN12, fell to 84.9 dB(A). The noise levels were predicted to reduce to 79.2 dB(A) at 'mid-level' and there were no exceedance of the recommended criteria at the 'upper-level'.

##### *Pile Cap Construction*

Pile cap works would cause exceedances at 7 (32%) NSRs without mitigation in place, and the highest noise level would be 86.1 dB(A), caused by the placing of concrete, at NSR CN12. When mitigation was assumed, the number of exceedances at NSRs fell to 3 (14%), and the maximum noise level, again at NSR CN12, fell to 80.5 dB(A). There were no exceedances of the recommended criteria at the mid and upper levels.

Pier and superstructure works would cause exceedances at 6 (27%) NSRs without mitigation in place, and the highest noise level would be 86.2 dB(A), caused by placing of concrete at NSR CN12. When mitigation was assumed, the number of exceedances at NSRs fell to 3 (14%), and the maximum noise level, again at NSR CN12, caused by the placing of concrete was 79.6 dB(A). There were no exceedances predicted at the mid and upper levels.

#### 4.3.5 Carriageway Works

The assessment indicated that 10 of the 22 selected representative NSRs (45%) would exceed the non-statutory day time criteria for construction noise assuming no mitigation. The highest noise level of 90.9 dB(A), caused by excavation, would be experienced at NSR CN13, due to the extreme proximity of the works, only 13m distant. When mitigation was assumed, the number of exceedances at NSRs fell to 5 (23%), and the maximum noise level, again at NSR CN12 was 83.5 dB(A). There were no exceedances of the recommended criteria predicted at the mid and upper levels.

#### 4.3.6 Cumulative Impacts

Due to the necessary sequential nature of most works cumulative construction noise impacts were not considered to be an issue.

#### 4.3.7 Good Site Practice

- There are many good site practices which would serve to reduce noise levels still further. Consequently, it is strongly recommended that any appointed contractor should observe the following measures.
- Noisy equipment and activities should be sited by the contractor as far from sensitive receivers as is practical. Also, temporary site offices etc. should be located, as far as is possible, such that the maximum number of sensitive receivers are screened from the line of sight of the construction areas.
- Intermittent noisy activities should be scheduled to minimize exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled at times coinciding with periods when dwellings are unoccupied. Prolonged operation of noisy equipment close to dwellings should be avoided.
- Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary.
- Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided.
- If possible, the numbers of concurrently operating items of powered mechanical equipment used for a given task should be reduced through sensitive programming.
- Construction plant should be properly maintained and operated. Construction equipment often has silencing measures built in or added on, e.g., bulldozer silencers, compressor panels, and mufflers. Silencing measures should be properly maintained and utilised.

#### 4.4 Duration of predicted exceedances

The likely duration of the exceedances of noise levels have been calculation and are presented in Table 4.13. These indicate that, other than the piling works, the noise levels would not persist throughout the construction programme.



Table 4.13 Duration of Exceedance of noise levels greater than the Recommended Criteria- Mitigated Scenario (number of days)

Construction Tasks		CN7		CN8		CN9		CN10 (2)	CN11		CN12		CN13	
		lower	40m	lower	40m	lower	40m	lower	lower	40m	lower	40m	lower	40m
General Road Widening	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	19	-
	Excavation 2	77	33	77	33	77	37	104	54	-	68	-	82	44
	Backfilling	42	-	44	-	44	-	-	-	-	24	-	51	-
	Placing concrete	39	-	41	-	41	-	-	-	-	19	-	49	-
Diversion of Utilities	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Excavation 2	-	-	-	-	42	-	-	-	-	21	-	28	-
	Diversion Works	-	-	-	-	34	-	-	-	-	-	-	14	-
	Backfilling	-	-	-	-	18	-	-	-	-	-	-	-	-
	Placing concrete	-	-	-	-	46	-	-	-	-	28	-	34	-
Flyover Piling Works (1)	Excavation 1	-	-	-	-	-	-	35	25	20	26	21	24	18
	Excavation 2	-	-	-	-	-	-	-	8	-	10	-	-	-
	Excavation 3	-	-	-	-	-	-	-	2	-	6	-	-	-
	Excavation 4	-	-	-	-	-	-	-	11	-	13	-	8	-
	Placing concrete	-	-	-	-	-	-	32	24	18	25	19	22	16
Flyover Pile Cap Construction (1)	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Excavation 2	-	-	-	-	-	-	-	20	-	25	-	-	-
	Falsework	-	-	-	-	-	-	-	4	-	15	-	-	-
	Placing concrete	-	-	-	-	-	-	-	36	-	39	-	29	-
Flyover Pier and Superstructure	Falsework	-	-	-	-	-	-	-	51	-	57	-	34	-
	Placing concrete	-	-	-	-	-	-	-	54	-	60	-	38	-
Carriageway Construction	Excavation 1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Excavation 2	27	-	28	-	28	-	-	-	-	19	-	32	-
	Backfilling	9	-	11	-	11	-	-	-	-	-	-	19	-
	Placing concrete	26	-	27	-	27	-	-	-	-	16	-	31	-
Total No. of days		220	33	228	33	368	37	171	289	38	471	40	514	78

- Notes (-) = no exceedances of recommended criteria.  
 (1) Works activity is at fixed points  
 (2) CN10 is Baptist Lui Ming Choi Primary School



## 5 CONSTRUCTION DUST IMPACT

### 5.1 Assessment Methodology

This study is concerned with the prediction of impacts likely to affect the Air Sensitive Receivers (ASRs) in the vicinity of the works areas. In the assessment, the whole construction site is divided into three areas. All construction activities are assumed to be concentrated in one area at a time. It is assumed that the dust is generated from one area only during different phases of the construction period and the dust emission rates for other two areas are equal to zero. For the purpose of this assessment, the construction period was divided into three phases namely Phase A, Phase B and Phase C. In addition, dust suppression measures and estimated mitigation efficiencies were incorporated into the dust emission calculations. A 50 percent reduction of the dust generated from wind erosion and general construction activities may be achieved with twice daily watering of the active site area with complete coverage as suggested by AP-42. Other assumptions were made for the assessment, these are listed as follows:

- the major potential air quality impacts during the construction phase include dust from haul road traffic, open site erosion, excavation and filling operations;
- exhaust emissions from site vehicles and construction plant have not been included in this study as, based upon previous studies, they do not contribute significantly as a source of air pollutants;
- no blasting, rock crushing or concrete batching will be permitted on site;
- construction of the flyover is likely to give rise to dust emissions from general construction activities (including ground excavation, cut and fill operations, construction of the facilities and equipment traffic over the site area);
- wind erosion of the exposed site will contribute to the total dust arisings; and
- the construction works will be operated according to a typical ten-hour working day, six-day working week.

### 5.2 Emissions Calculations

The prediction of dust emissions was based on typical values and emission factors from USEPA *Compilation of Air Pollutant Emission Factors* (AP-42), 5th Edition. Details of the emission factor calculations are listed in Table 1 of Appendix C.

The dominant source of dust emissions will be from vehicles moving on unpaved road surfaces. Thus, it was necessary to obtain site specific information relating to particle size distribution. As this information was not available, the unpaved road emission equation from AP-42 5th Edition was considered applicable for this modelling study.

The particle size distribution used in the FDM model was estimated based on the particle size multipliers for the unpaved road emission equation. With particle size classes of 0-2.5 $\mu\text{m}$ , 2.5-5 $\mu\text{m}$ , 5-10 $\mu\text{m}$ , 10-15 $\mu\text{m}$  and 15-30 $\mu\text{m}$ , the percentage in each class was estimated to be 9.5%, 10.5%, 16%, 14% and 50% respectively.

### 5.3 Dispersion Modelling

Dispersion modelling was undertaken using the USEPA approved Fugitive Dust Model (FDM) to assess potential dust impacts arising from the construction activities. Wind data recorded at the closest weather station at Sha Tin were combined with surface observations from the Hong Kong Observatory Headquarters to produce the best available data set for the analysis. Surface roughness was taken as 1 metre in the FDM model to represent the rolling terrain in the vicinity of the study area. The background TSP concentration was taken as  $80 \mu\text{g m}^{-3}$  with reference to the annual average TSP concentration for year 1996 recorded at Sha Tin air quality monitoring station, which corresponds to the worst case.

Dispersion modelling was undertaken to establish Total Suspended Particulate (TSP) concentrations at nine selected representative ASRs (A1-A9) for 1-hour and 24-hour average time periods. The following parameters were adopted in the model:

- a receiver height of 1.5 metres (height of normal human breathing zone);
- duration of the actual construction work shall be in the day-time from 8 a.m. to 6 p.m;
- wind erosion of open sites shall take place over the whole day; and
- incorporation of hourly variations of each dust emission activity.

In addition, modelling was undertaken for two scenarios namely:

- No dust mitigation; and
- 50 percent dust reduction by twice daily watering with complete coverage of active working areas.

A schematic diagram showing the construction areas of the project and the representative ASRs is illustrated in Figure C1 in Appendix C. Sample input and output files of the FDM model are also included in Appendix C.

### 5.4 Predicted Dust Impacts

The predicted maximum 1-hour average and maximum 24-hour average TSP concentrations at the representative ASRs with no mitigation efficiency and 50 % mitigation efficiency are tabulated in Table 5.1 and Table 5.2 respectively.

Table 5.1 Predicted Maximum 1-hour and 24-hour Average TSP Concentrations at the Representative ASRs (No Dust Mitigation)

ASR	1-Hour TSP Concentration ( $\mu\text{gm}^{-3}$ )			24-Hour TSP Concentration ( $\mu\text{gm}^{-3}$ )		
	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C
1	437	200	166	141	95	88
2	539	264	200	164	107	92
3	482	388	271	137	146	104
4	408	467	427	113	187	128
5	257	525	630	99	159	157
6	216	459	718	91	120	194
7	187	238	385	86	92	128
8	145	303	749	86	90	154
9	182	304	611	89	105	175

Table 5.2 Predicted Maximum 1-Hour and 24-Hour Average TSP Concentrations at the Representative ASRs (with 50 % Dust Mitigation)

ASR	1-Hour TSP Concentration ( $\mu\text{gm}^{-3}$ )			24-Hour TSP Concentration ( $\mu\text{gm}^{-3}$ )		
	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C
1	258	140	123	110	88	84
2	310	172	140	122	94	86
3	281	234	175	109	113	92
4	244	273	254	96	134	104
5	169	303	355	89	120	118
6	148	269	399	86	100	137
7	134	159	232	83	86	104
8	113	192	414	83	85	117
9	131	192	346	85	92	127

## 5.5 Assessment of Results

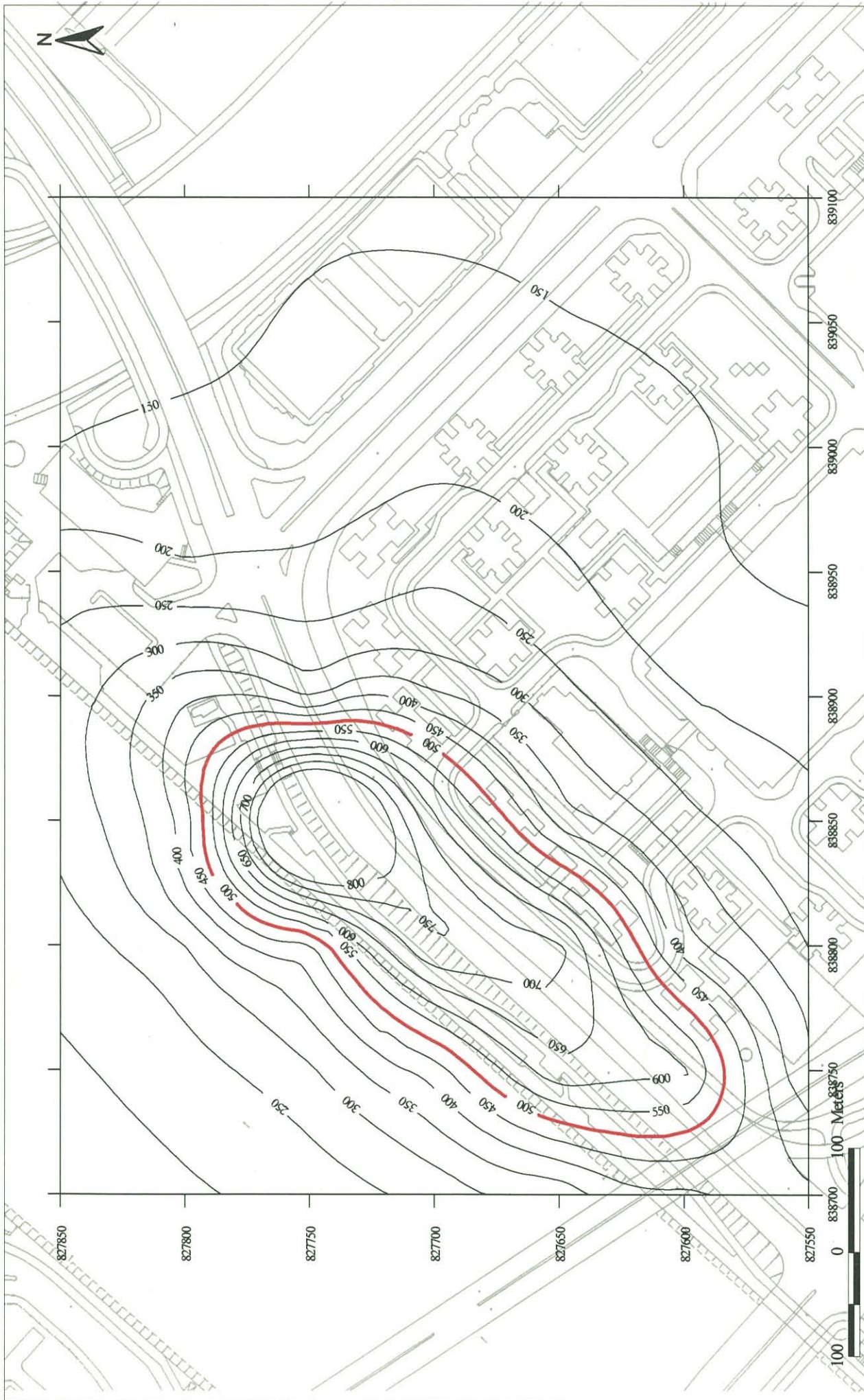
As shown in Table 5.1, the modelling results showed that with no dust mitigation, the 1-hour average TSP guideline level of  $500 \mu\text{gm}^{-3}$  would be exceeded at some representative ASRs during different phases but there would be no exceedance of the 24-hour average AQO for TSP during the three phases. With 50% dust reduction, exceedance of the 1-hour average guideline level and 24-hour average AQO for TSP at the air sensitive receivers would not be expected. The predicted 1-hour average TSP concentration contour plots for the two scenarios during different phases are shown in Figures 5.1 - 5.6.

## 5.6 Recommended Controls and Mitigation Measures

The construction activities of the project were predicted to affect the Air Sensitive Receivers in the vicinity of the study area if there are inadequate mitigation measures for the construction activities. Appropriate controls and mitigation measures should be undertaken wherever practicable to minimize the dust nuisance. A commitment by the contractor to adopt good operational practices for dust minimisation should reduce the dust nuisance to a minimum. A number of practicable measures are as follows:

- Regular watering of unpaved roads and exposed site surfaces to reduce dust emissions. This should be carried out at least twice daily with complete coverage, particularly during dry weather conditions;
- Frequent watering of particularly dusty static construction areas and areas close to air sensitive receivers;
- Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines;
- Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near air sensitive receivers;
- Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations;
- Establishment and use of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary and where practicable;
- Imposition of speed controls for vehicles on unpaved site roads;
- Where feasible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from air sensitive receivers; and
- Instigation of a control programme to monitor the construction process in order to enforce controls and modify methods of work if dusty conditions arise (details of which can be found in the EM&A Manual).



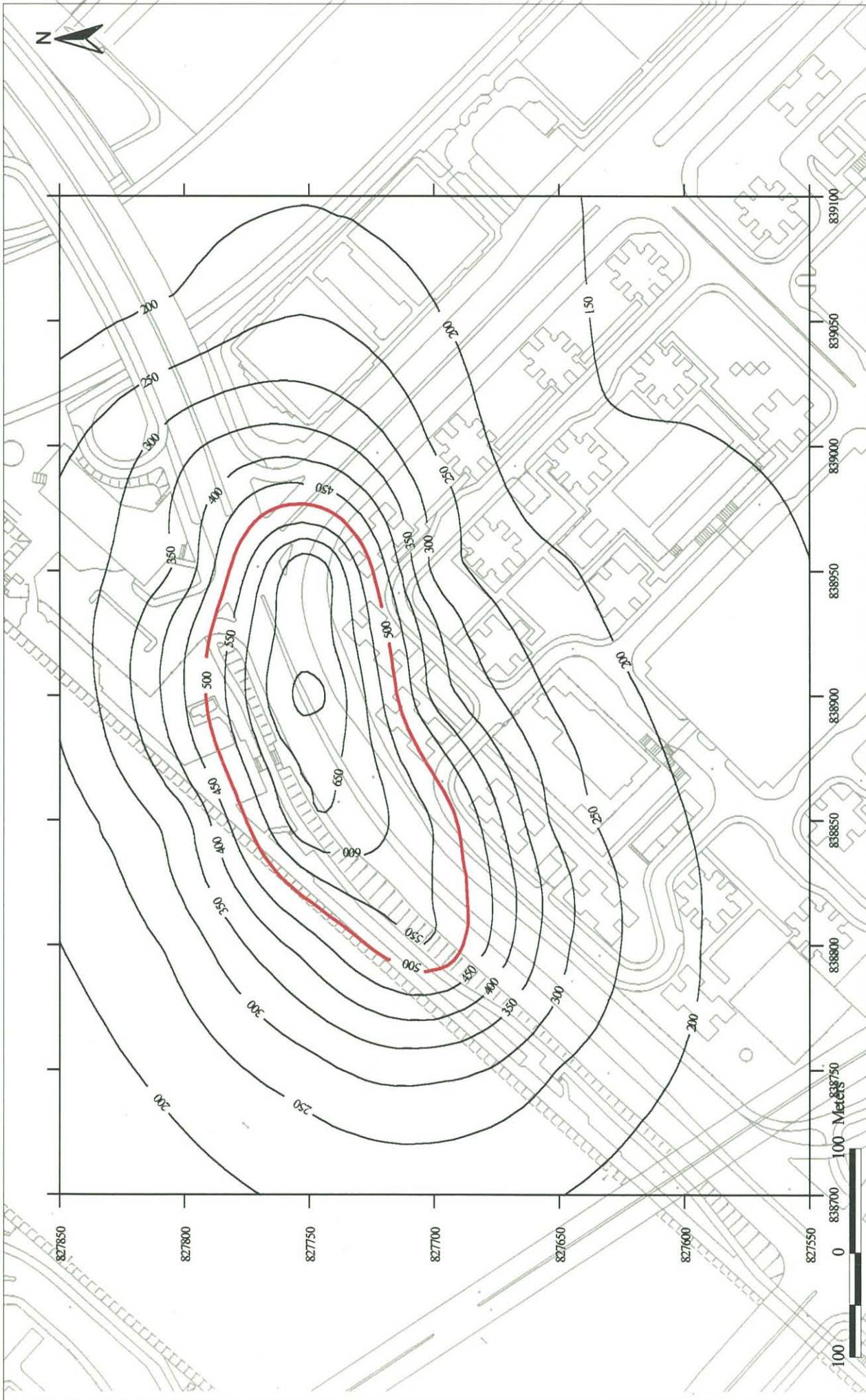


CES (ASIA) LIMITED	
PROJECT NO	DATE
B180	Mar. 1998
DESIGNED	DRAWING NO
Fanny Lau	Figure 5.1

**Predicted Maximum 1-hour Average TSP Concentration Contour**  
**Plot at 1.5m above Ground (Phase A) with No Dust Mitigation**

TITLE



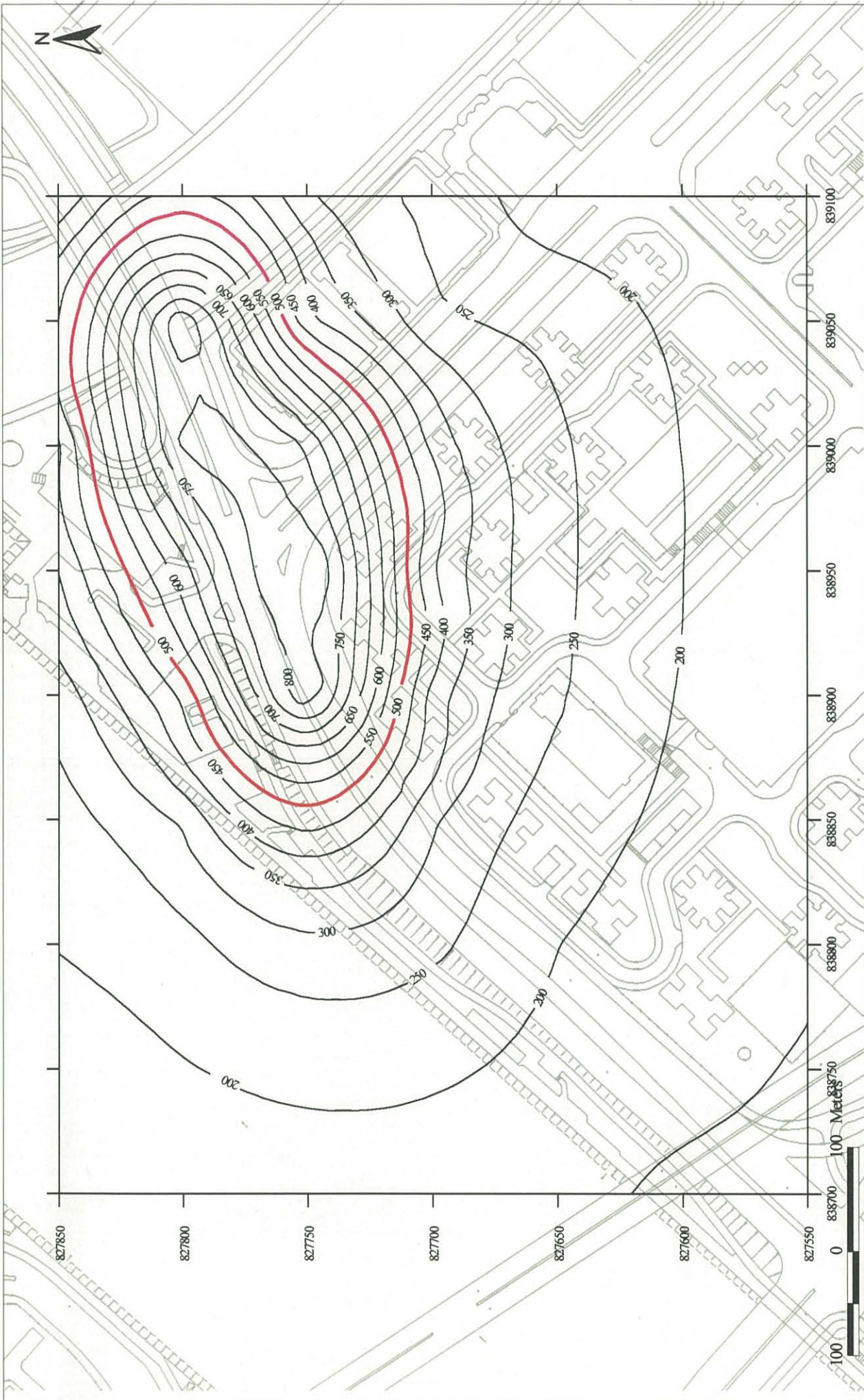


PROJECT NO		DATE	
DESIGNED		DRAWING NO	
CES (ASIA) LIMITED		B180	
Fanny Lau		Mar. 1998	
		Figure 5.2	

**Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase B) with No Dust Mitigation**

TITLE





TITLE

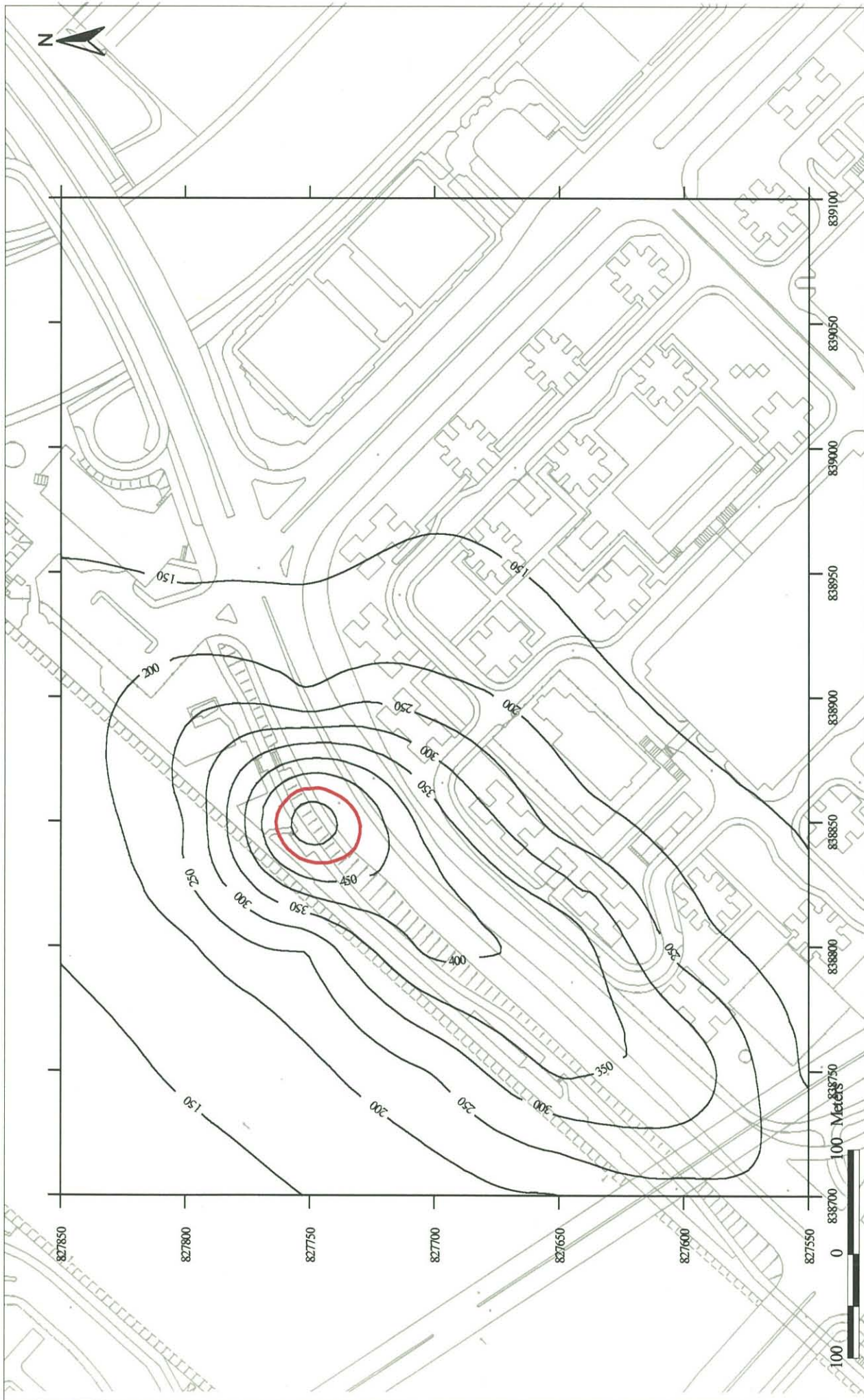


Predicted Maximum 1-hour Average TSP Concentration Contour  
Plot at 1.5m above Ground (Phase C) with No Dust Mitigation

CES (ASIA) LIMITED

PROJECT NO	DATE	DESIGNED	DRAWING NO
B180	Dec. 1997	Fanny Lau	Figure 5.3



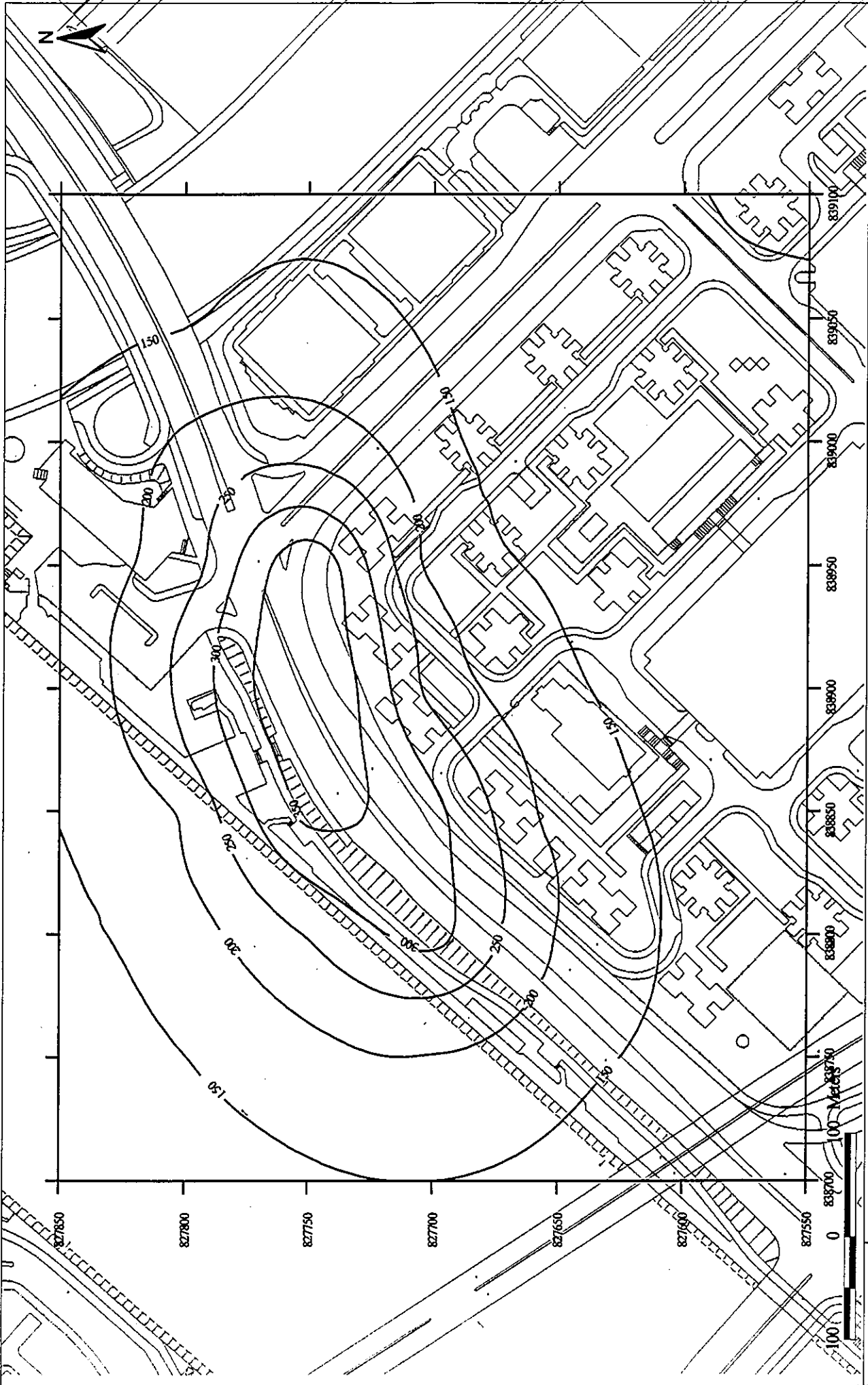


TITLE

Predicted Maximum 1-hour Average TSP Concentration Contour  
Plot at 1.5m above Ground (Phase A) with 50% Dust Mitigation

CES (ASIA) LIMITED

PROJECT NO	DATE	DESIGNED	DRAWING NO
B180	Dec. 1997	Fanny Lau	Figure 5.4

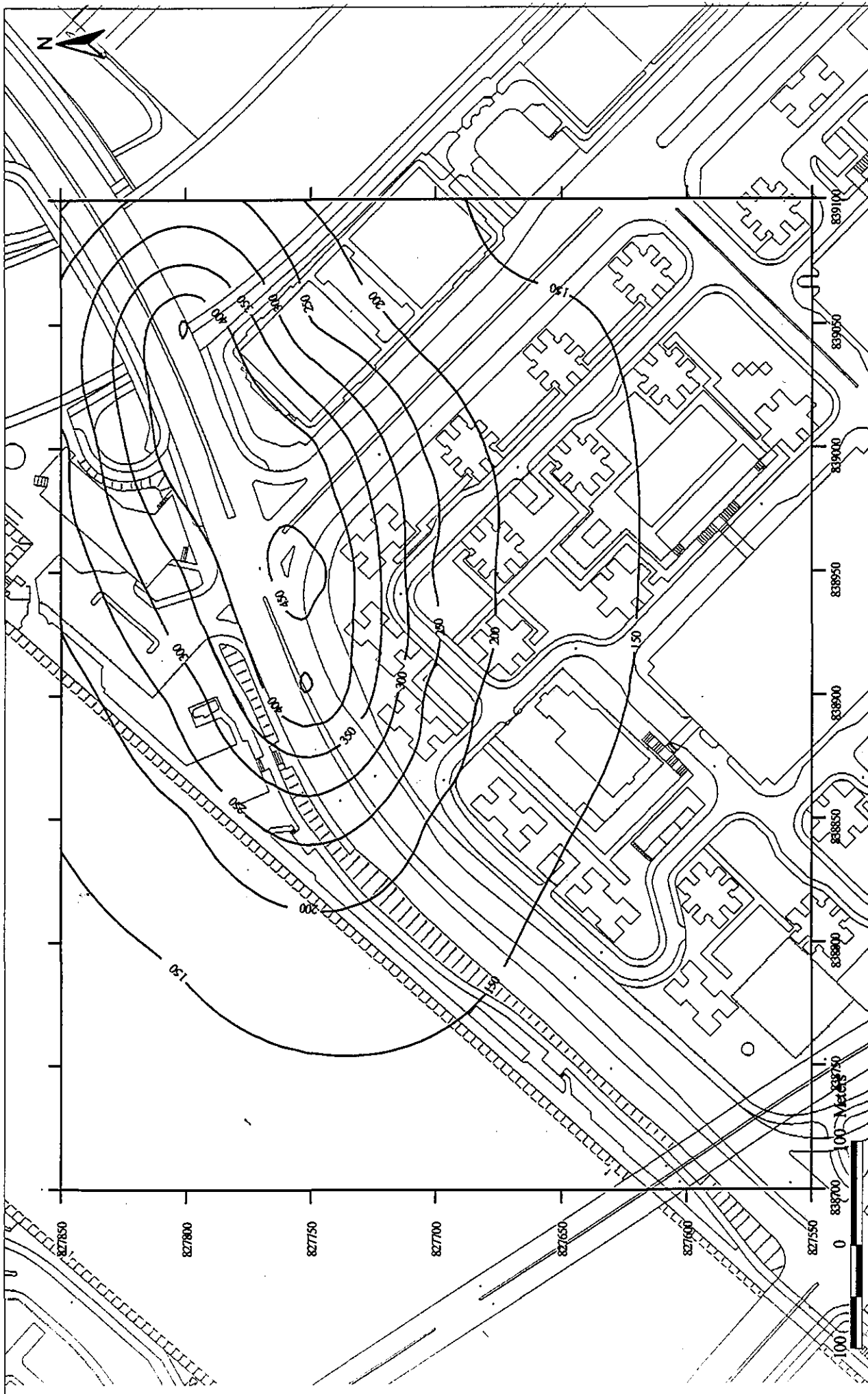



TITLE

Predicted Maximum 1-hour Average TSP Concentration Contour  
Plot at 1.5m above Ground (Phase B) with 50% Dust Mitigation

CES (ASIA) LIMITED

PROJECT NO	DATE	
B180	Dec. 1997	
DESIGNED	DRAWING NO	
Fanny Lau	Figure 5.5	



		<b>TITLE</b> Predicted Maximum 1-hour Average TSP Concentration Contour Plot at 1.5m above Ground (Phase C) with 50% Dust Mitigation		CES (ASIA) LIMITED	
		<b>DESIGNED</b> Fanny Lau	<b>DRAWING NO</b> Figure 5.6		





## 6 OPERATIONAL TRAFFIC NOISE IMPACT

### 6.1 Assessment Methodology

The purpose of this assessment was to evaluate the extent of noise impacts arising from the proposed flyover, and especially to establish if mitigation measures were required. Noise calculations were carried out using the *UK Department of Transport 'Calculation of Road Traffic Noise' 1988 (CRTN)* guidance, which is the method accepted by EPD for use in Hong Kong. The assessment was based on 2016 AM peak hour traffic flow projections. The traffic flows and the vehicle mix are given in Table 6.1 and Figure 6.1. As discussed in Section 1.5, for the purpose of establishing existing conditions and for comparative purposes, year 1997 traffic flows were also used and are shown in Table 6.2 and Figure 6.2. A traffic speed of 50 kmh<sup>-1</sup> and impervious surfacing were assumed for all roads. The following traffic flow figures have been approved by the Transport Department. On the flyover structure a 0.5m parapet wall will be provided as a standard structural/safety requirement. This is not a specific noise mitigation measure, but the additional shielding affect is taken into account in the operational phase traffic noise assessment.

Table 6.1 Year 2016 AM Peak Hour Traffic Flows

Road	Flows Veh/hr	% of HGV
Northbound lane of Sha Tin Rd.	2150	25
Southbound lane of Sha Tin Rd.	1700	25
Northbound lane of Fo Tan Rd. (Banyan Bridge)	1950	25
Southbound lane of Fo Tan Rd. (Banyan Bridge)	1650	25
Eastbound lane of Tai Chung Kiu Rd. (West of Fo Tan Rd.)	1250	25
Eastbound lane of Tai Chung Kiu Rd. (Between Fo Tan Rd. and Tai Chung Kiu Rd. Flyover.)	2150	25
Eastbound lane of Tai Chung Kiu Rd. (Below Tai Chung Kiu Rd. Flyover and West of Siu Lek Yuen Rd.)	1350	25
Eastbound lane of Tai Chung Kiu Rd. (Below Tai Chung Kiu Rd. Flyover and East of Siu Lek Yuen Rd.)	450	25
Eastbound lane of Tai Chung Kiu Rd. (East of Tai Chung Kiu Rd. Flyover)	1250	25
Westbound lane of Tai Chung Kiu Rd. (West of Fo Tan Rd.)	1700	25
Westbound lane of Tai Chung Kiu Rd. (Between Fo Tan Rd. and Tai Chung Kiu Rd. Flyover)	2850	25
Westbound lane of Tai Chung Kiu Rd. (Below Tai Chung Kiu Rd. Flyover and West of Siu Lek Yuen Rd.)	1750	25
Westbound lane of Tai Chung Kiu Rd. (Below Tai Chung Kiu Rd. Flyover and East of Siu Lek Yuen Rd.)	1150	25
Westbound lane of Tai Chung Kiu Rd. (East of Tai Chung Kiu Rd. Flyover)	2250	25
Northbound lane of Siu Lek Yuen Rd. (South of Ngan Shing Rd.)	750	25
Northbound lane of Siu Lek Yuen Rd. (Between Ngan Shing Rd. and Tai Chung Kiu Rd.)	1400	25
Southbound lane of Siu Lek Yuen Rd. (South of Ngan Shing Rd.)	1300	25
Southbound lane of Siu Lek Yuen Rd. (Between Ngan Shing Rd. and Tai Chung Kiu Rd.)	1700	25
Eastbound lane of Ngan Shing Rd.	750	25
Westbound lane of Ngan Shing Rd.	500	25
Eastbound lane of Tai Chung Kiu Road Flyover	800	25
Westbound lane of Tai Chung Kiu Road Flyover	1050	25

Table 6.2 Year 1997 AM Peak Hour Traffic Flows

Road	Flows Veh./hr	% of HGV
Northbound lane of Sha Tin Rd.	700	25
Southbound lane of Sha Tin Rd.	1750	25
Northbound lane of Fo Tan Rd. (Banyan Bridge)	1600	25
Southbound lane of Fo Tan Rd. (Banyan Bridge)	1100	25
Eastbound lane of Tai Chung Kiu Rd. (West of Fo Tan Rd.)	800	25
Eastbound lane of Tai Chung Kiu Rd. (Between Fo Tan Rd. and Siu Lek Yuen Rd.)	1200	25
Eastbound lane of Tai Chung Kiu Rd. (West of Siu Lek Yuen Rd.)	750	25
Westbound lane of Tai Chung Kiu Rd. (West of Fo Tan Rd.)	900	25
Westbound lane of Tai Chung Kiu Rd. (Between Fo Tan Rd. and Siu Lek Yuen Rd.)	1700	25
Westbound lane of Tai Chung Kiu Rd. (West of Siu Lek Yuen Rd.)	1450	25
Northbound lane of Siu Lek Yuen Rd. (South of Ngan Shing Rd.)	300	25
Northbound lane of Siu Lek Yuen Rd. (Between Ngan Shing Rd. and Tai Chung Kiu Rd.)	850	25
Southbound lane of Siu Lek Yuen Rd. (South of Ngan Shing Rd.)	550	25
Southbound lane of Siu Lek Yuen Rd. (Between Ngan Shing Rd. and Tai Chung Kiu Rd.)	1000	25
Eastbound lane of Ngan Shing Rd.	650	25
Westbound lane of Ngan Shing Rd.	450	25

Note: the tentative year of construction is 1999

## 6.2 Impacts on Receivers with No Mitigation

The future worst case scenario, for year 2016, is represented by a scheme which includes no noise mitigation.

The predicted increase in noise levels, in general, results from future growth in traffic levels. The flyover itself would not cause an increase in traffic flows. The flyover will be treated as a new road section in accordance with criteria in the Study Brief. Therefore, it is necessary to consider the maximum practical mitigation measures for the flyover, and at the same time, try to ensure that there are no residual receivers which would meet the criteria for provision of indirect mitigation measures.

Without mitigation, it is estimated that the majority of receivers facing Tai Chung Kiu Road would experience noise levels in exceedance of the HKPSG criteria. The highest predicted noise level is 81.6 dB(A).

To minimise the noise impact from the new flyover, mitigation in the form of noise barriers, including cantilever type barriers, and enclosure were considered and the resultant effects on NSRs were tested. Noise reducing surfacing on the flyover was considered not suitable or effective due to the gradient and speed of the traffic. This is in accordance with the advice given in "Noise mitigation for Public Roads (NOMPRO)", HyD, EPD, 1996.

### 6.3 Mitigation Using Vertical Barriers

#### 6.3.1 Test 1

*1m noise barrier on the City One Estate side of Flyover.*

Subsequent to the adoption of this measure noise levels are still potentially in exceedance of 70dB(A) for the majority of receivers facing Tai Chung Kiu Road. In addition to exceeding 70 dB(A), this would result in some flats experiencing increase in noise levels of more than 1 dB(A) when compared with the prevailing conditions, additional mitigation would therefore be necessary. Results of this assessment are provided in Appendix B.

#### 6.3.2 Test 2

*2m noise barrier on the City One Estate side of Flyover.*

Noise levels are still potentially in exceedance of 70dB(A) for the majority of receivers facing Tai Chung Kiu Road. In addition to exceeding 70 dB(A), some flats would experience noise levels of more than 1 dB(A) when compared with the prevailing conditions, additional mitigation again is required. Results of this assessment are provided in Appendix B.

#### 6.3.3 Test 3

*3m noise barrier on the City One Estate side of Flyover.*

Same as above.

#### 6.3.4 Test 4

*4m noise barrier on the City One Estate side of Flyover.*

Same as above.

#### 6.3.5 Test 5

*5m noise barrier on the City One Estate side of Flyover.*

Same as above.

#### 6.3.6 Test 6

*6m noise barrier on the City One Estate side of Flyover.*

Same as above.

### 6.4 Summary

In accordance with *NOMPRO* 6m is the maximum practical height for consideration on a primary distributor. However, a barrier of this height is not effective in significantly reducing noise levels because the receivers are high rise. District Board members have raised concerns over increased noise



levels hence it was necessary to consider the use of additional mitigation in the form of cantilever structures to shield the sightline at upper storeys

## 6.5 Mitigation with Cantilever Barriers

### 6.5.1 Test 7

*6m noise barrier on the City One Estate side of flyover, with a 1m overhang over the carriageway.*

This results in up to 20 storeys at the affected blocks at City One Estate experiencing an increase in noise levels of less than 1 dB(A) as a result of the contribution from the proposed flyover. However these flats still receive noise levels in exceedance of 70 dB(A).

### 6.5.2 Test 8

*6m noise barrier on the City One Estate side of flyover, with a 2m overhang over the carriageway.*

As above, with up to 25 storeys at the affected blocks at City One Estate experiencing an increase in noise levels of less than 1 dB(A) as a result of the contribution from the proposed flyover. However these flats still receive noise levels in exceedance of 70 dB(A).

### 6.5.3 Test 9

*6m noise barrier on the City One Estate side of flyover, with an overhang over the carriageway to within 1m of the centerline of the road.*

As above, with all storeys of the affected blocks at City One Estate experiencing an increase in noise levels of less than 1 dB(A) as a result of the contribution from the proposed flyover. However, these flats still receive noise levels in exceedance of 70 dB(A).

## 6.6 Mitigation with an Enclosure

The provision of a full enclosure was considered. However, should a full enclosure be incorporated, over 90% of the receivers show no difference in predicted noise levels compared to the preferred option. A full enclosure protects receivers on the eastbound and westbound side of the flyover. Yet there is no sensitive receiver on the eastbound side. The cantilever barriers option on the westbound side is as effective as a full enclosure in protecting the sensitive receivers on the westbound side of the flyover.

Comparing the enclosure option with the 6m cantilever barrier option, predicted noise levels showed no difference at the City One Estate and Belair Garden and a difference of less than 1 dB(A) at Ravana Garden. Noise from the ventilation system of the enclosure, combined with the tunnel effect of the enclosure, would result in increased noise levels at Ravana Garden.

The length of enclosure required would result in an "elevated tunnel", which would be subjected to Tunnel Regulations with restrictions on its use by certain vehicle categories and would have implications for fire safety;

Additional air quality assessment was carried out adopting this enclosure scenario. Results show that under free flowing traffic conditions, there would be compliance with AQOs. A summary report including the modelling data files of this additional assessment is presented in a separate report.

Apart from a noise enclosure, a semi-enclosure was considered which was deemed to provide good noise protection and allow dispersion of air pollutants. The noise assessment of this option, however, shows that noise levels would only be 0.1- 0.2 dB(A) higher than with the 6m cantilever barrier option. Therefore, in terms of noise reduction between these mitigation options there would be an increase in noise levels of less than 1 dB(A) as a result of the contribution from flyover. In view of the problems associated with road enclosures, it is recommended that mitigation measures concentrating on cantilever barriers are adopted.

#### 6.7 Mitigation through Traffic Management

An additional mitigation option involving the prohibition of heavy goods vehicles on the flyover was also tested. This option did not lower the noise levels at the sensitive receiver but, as expected due to there being no noise mitigation on the lower roads, the resultant noise levels were marginally higher. The modelling results can be found in Appendix B.

#### 6.8 Refined Mitigation Option

In order to optimise the effectiveness and to reduce the visual impact of the cantilever barrier, further tests were run to establish the optimum barrier heights along the proposed flyover such that the future noise level caused by the contribution from the flyover is less than 1 dB(A) greater than the existing prevailing conditions. A refined mitigation option was developed comprising the following:

- 6m barrier with a cantilever to within 1m of the flyover centerline on the City One Estate side of the flyover; and
- reduction to a 4m vertical barrier after the road junction, up to Siu Lek Yuen Playground.

The positions of these structures and the elevation of the flyover structure in relation to City One Estate are indicated on Figure 6.3. The modelling study indicated that the extent of the cantilever can be reduced to a 4m vertical barrier without loss of effectiveness. This would result in reduced potential visual impact and reduced cost of the structure.

Comparisons with the refined mitigation option and the other tested measures, in modelling result format, are provided in Appendix B. The noise levels show that there is no significant benefit in increasing the extent of mitigation beyond the refined option, as even with an enclosure noise levels will not be reduced by more than 1 dB(A) at the receivers. The benefits of a barrier on the Nullah side of the flyover were tested, but were found to have minimal effect in reducing noise levels at Ravana Garden. A two metre barrier only reduced noise levels by approximately 0.3 dB(A) which would not represent a detectable reduction in noise.

Once the proposed 6m barrier with cantilever refined mitigation is in place, there would still be exceedance of 70 dB(A) at 2051 flats and 65 dB(A) at 24 classrooms facing Tai Chung Kiu Road, but these exceedances are attributable to the existing ground level roads. Tests to determine eligibility with the ExCo criteria for provision of indirect technical remedies show that no flats would meet all three criteria. Numbers of flats exceeding 70 dB(A) are provided in Appendix B. For comparative purposes noise levels at the worst affected floor of each block of flats assessed are shown in Table 6.3 indicating the effectiveness of the refined mitigation option compared with:

- a) the "do nothing" option (i.e. no provision of flyover);
- b) the full enclosure option; and
- c) the prohibition of heavy vehicles using the Flyover option.

Table 6.3 Comparison of Noise Levels Adopting Different Mitigation Options

Sensitive Receivers Noise Levels (dB(A))	NSR ID	Noise Levels (dB(A))			
		"Do nothing" Option	Cantilever Barrier Option	Enclosure Option	Ban of HGVs on the Flyover
C1- Block 1	89-92	77.2- 80.5	77.2- 80.5	77.2- 80.5	77.3- 80.6
C1- Block 2	85-88	77.2 - 80.8	77.1 - 80.8	77.1 - 80.8	77.3 - 80.8
C1 - Block 3	78-83	75.2 - 81.0	74.9 - 80.9	74.9 - 80.9	75.4 - 81.1
C1- Block 4	70-77	67.1 - 80.6	66.8 - 80.4	66.8 - 80.4	68.5 - 81.1
C1- Block 5	62-69	69.6 - 79.8	68.9 - 79.5	68.9 - 79.5	70.2 - 80.8
C1- Block 6	55-61	75.9 - 81.9	74.5 - 80.6	74.4 - 80.6	75.9 - 79.8
C1- Block 7	109-112	68.6 - 70.1	67.3 - 68.8	67.3 - 68.8	67.9 - 69.5
C1- Block 8	104-108	70.1 - 72.0	70.3 - 72.0	69.0 - 72.0	69.8 - 72.6
C1- Block 13	47-54	73.9 - 80.4	72.0 - 78.4	71.9 - 78.4	72.9 - 79.5
C1-Block 14	39-48	74.2 - 81.1	72.7 - 80.6	72.7 - 80.6	73.1 - 80.6
C1- Block 15	31-38	74.6 - 81.7	74.3 - 81.5	74.2 - 81.5	74.3 - 81.5
C1-Block 17	25-30	64.1 - 78.6	64.0 - 78.6	64.0 - 78.6	64.0 - 78.6
C1 - Block 24	93-97	71.2 - 74.7	71.1 - 74.7	71.1 - 74.7	71.2 - 74.7
C1 - Block 25	98-103	73.9 - 78.4	73.8 - 78.4	73.8 - 78.4	73.9 - 78.4
C1- School	113-114	69.9 - 70.0	68.7 - 69.0	68.7 - 69.0	69.5 - 69.7
RG - School	132-134	66.2 - 73.3	66.2 - 73.3	66.2 - 73.3	66.2 - 73.3
RG- Block 1	115-119	69.0 - 70.8	68.4 - 70.8	68.3 - 70.4	69.1 - 71.0
RG- Block 4	120-126	70.9 - 76.7	70.4 - 76.7	70.4 - 76.6	71.1 - 76.7
RG- Block 5	127-131	71.5 - 75.4	71.5 - 75.4	71.5 - 75.4	71.5 - 75.4
BG- Block H	23-24	69.6 - 72.7	69.6 - 72.7	69.6 - 72.7	69.6 - 72.7
BG- Block I	1-3	65.9 - 74.6	65.9 - 74.6	65.9 - 74.6	65.9 - 74.6
BG- Block J	4-8	65.5 - 74.3	65.5 - 74.3	65.5 - 74.3	65.5 - 74.3
BG- Block K	21	73.4	73.4	73.4	73.2
BG- Block L	22	71.6	71.6	71.6	71.6
BG- Block M	9-14	73.9 - 77.8	73.9 - 77.8	73.9 - 77.8	73.9 - 77.8
BG- Block N	15-20	74.6 - 76.8	74.6 - 76.8	74.6 - 76.8	74.6 - 76.8

- Notes 1. C1= City One Sha Tin, RG = Ravana Garden, BG = Belair Garden  
2. The noise levels quoted above give the range of noise levels predicted for all receiver locations on the first floor

Table 6.3 clearly shows that the enclosure option and the traffic management system of prohibiting heavy goods vehicles using the proposed would not offer any additional benefit already provided by the installation of the cantilever barrier system. Noise levels are presented in Appendix B.

## 6.9 Mitigation on the Existing Ground Level Roads

### 6.9.1 Background

Predicted future noise levels show that there would be exceedances of the recommended 70 dB(A) HKPSG criteria even without the flyover because noise levels are dominated by the ground level traffic.

It should be noted that provision of the flyover would not cause an increase in traffic flow, and with provision of the recommended mitigation on the flyover, there would be up to 2 dB(A) reduction in traffic noise compared with a "do-nothing" option.

Current Government practice is to consider noise mitigation measures for new roads. Guidance for mitigation is provided in the *NOMPRO* guidelines, drafted by the Hong Kong Government Highways Department and Environmental Protection Department. Works on the ground level Tai Chung Kiu Road would be classified only as improvements because there is no increase in numbers of lanes or traffic flow. There are no guidelines on the requirement for mitigation for road improvements. However, in this case because the ground level road will be widened to accommodate the flyover structural elements, it was considered by Highways Department that the provision of mitigation measures on the ground level roads should be explored to offer further noise reduction for City One Estate residents.

### 6.9.2 Traffic Conditions

The traffic conditions in the study area are influential in determining the feasible noise mitigation options. The presence of the signal controlled junction causes the traffic to start and stop with each signal change and in the peak hours often becomes congested. The start-stop traffic conditions causes motorists to throttle their engines, and depending on the engine size and the quantity of load carried, the noise levels will be high compared with free flow traffic conditions. This, plus the busy bus stop which serves the City One Estate, causes the emission of high noise levels as vehicles accelerate as they start away from the junction or bus stops. These conditions constrain the use of low noise surfacing and noise barriers.

### 6.9.3 Mitigation Options for the Ground Level Roads

The following is a list of mitigation options:

Reduction of vehicle noise at source:

- introduction of tighter vehicle noise performance requirements
- change of fuel used by vehicles, in particular diesel fuel, to electric or LPG

Reduction of noise through use of traffic management

- prohibition of heavy vehicles using Tai Chung Kiu Road and Siu Lek Yuen Road
- relocation of the bus stop (away from City One Residents);
- diversion of traffic elsewhere so as to discourage traffic from using Tai Chung Kiu Road/Siu Lek Yuen Road junction
- introduction of 'park and ride' systems thus restricting the use of the road to public vehicles and taxis only;

Reduction of noise by providing infrastructure.

- Use of noise reducing road surfacing
- Provision of semi or full enclosures;
- Provision of road-side barriers,

The first two categories of mitigation are outside the control of Highways Department and in particular outside the control of this project and will not be considered further.

Therefore, the only feasible options under the remit of this project are those related to noise reduction by the implementation of civil engineering measures.

#### *Special Friction Courses*

According to the CRTN guidelines, a friction course is capable of reducing road traffic noise levels by about 2.5 dB(A) when compared with concrete/bitumen road surface.

Highways Department considers that a friction course is suitable for roads with traffic speeds in excess of 70 kmh<sup>-1</sup>, continuous flow and low gradient. The requirements for the road pavement are that it must be durable and resist traffic loading effects over its life. At the moment, there is no durable friction course material available on the market which is suitable for local road conditions. The frequent stopping and braking of vehicles along Tai Chung Kiu Road, resulting from the presence of junctions and bus stops, would lead to rapid deterioration of any friction course. There would be high maintenance costs and frequent maintenance works that would disrupt traffic and would be a nuisance to the local community. Consequently, bituminous wearing course material is recommended along Tai Chung Kiu Road.

Highways Department and EPD are currently conducting trials of modified friction course mixes on local roads to determine whether a more durable and effective low-noise surface can be obtained. The findings of this study are not yet available. However if the materials tested prove effective in reducing noise levels, it is recommended that these should be used in this area. Also, if in future more effective compounds become available these should be considered for noise reduction in this area.

#### *Partial or Full Enclosures*

Partial enclosures (at least one side open) and full enclosures (enclosed top and sides) can be used to reduce traffic noise levels. However, the situation along Tai Chung Kiu Road rules out this option because there is very little capacity in the width of the road to accommodate any structural supporting elements. Plus the clearance height of the structure over the carriageway would be higher than the first floor level of the City One Estate flats. This would cause obstruction of windows at only a few metres distance which is not considered acceptable. Partial or full enclosures are not considered feasible.

#### *Noise Barriers*

##### *Noise Reduction Test Assuming 4.5m barriers*

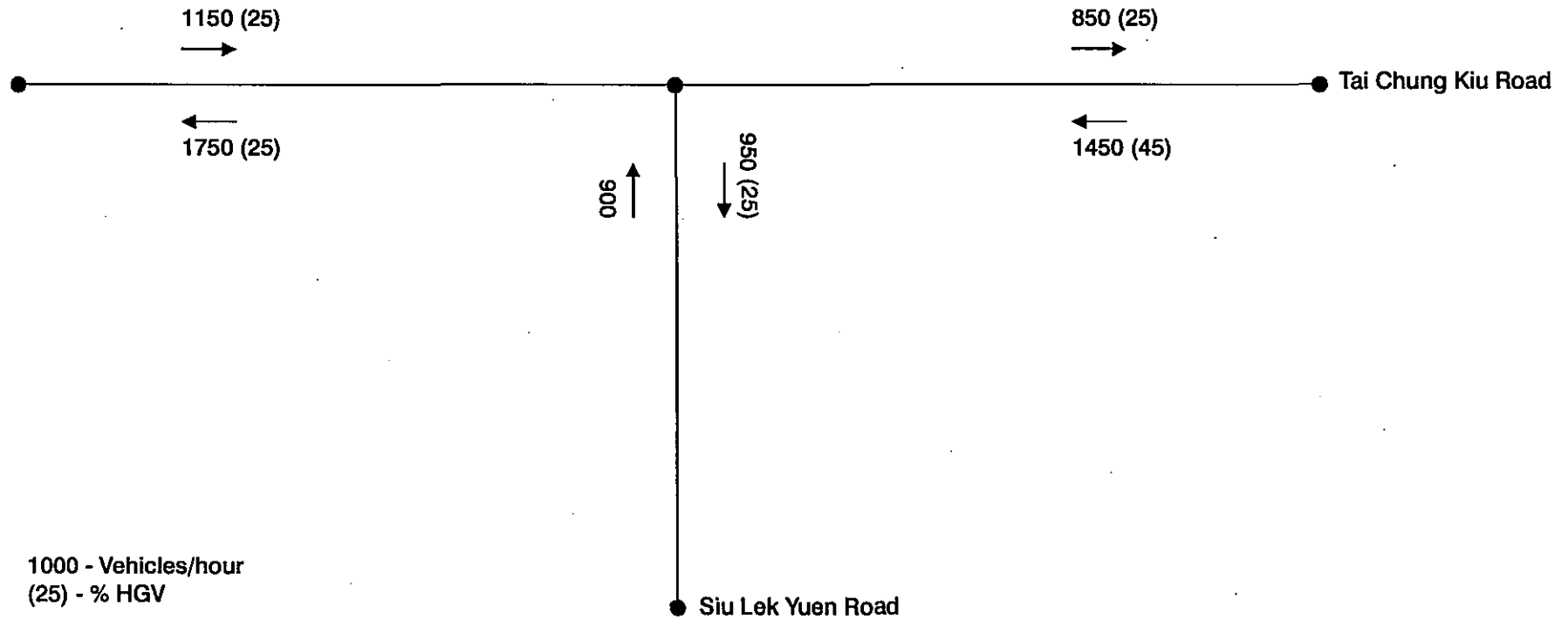
Predictions were made to determine the predicted future traffic noise levels incorporating a 4.5m noise barrier located along Tai Chung Kiu Road between the City Ones Estate and the public pavement (i.e the boundary of the City One Estate). The 4.5m barriers were considered to be the maximum height suitable for this location because higher barriers would obstruct the first floor



windows. Cantilever barriers would not be feasible because the total height of the barrier to meet carriageway clearance would also obstruct windows on the first floor level of flats in City One

The assessment indicated that the barriers would result in more than 1 dB(A) reduction at 48 flats and 39 out of these 48 would experience more than a 2 dB(A) reduction in noise levels.

As there are 540 flats likely to be affected by traffic noise from Tai Chung Kiu Road, the provision of this 4.5m noise barriers on the ground level roads will provide further benefits to approximately 9% of these flats. The approximate cost of this barrier system would be in the region of \$4 million not including design costs or costs for the supporting foundation structure. The location of these noise barriers is shown in Figure 6.3.

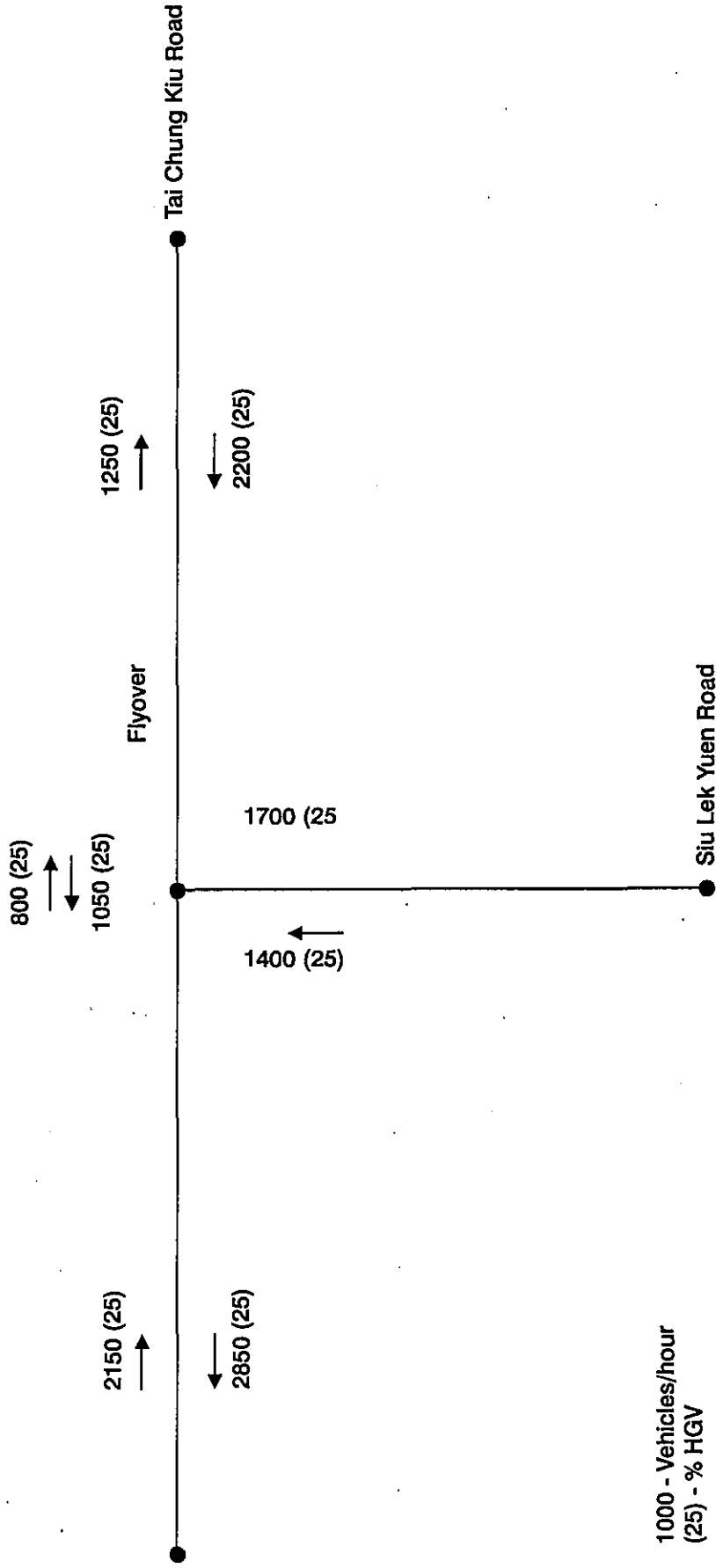


TITLE

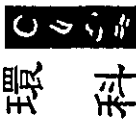
Existing Traffic Flows, Peak hour AM

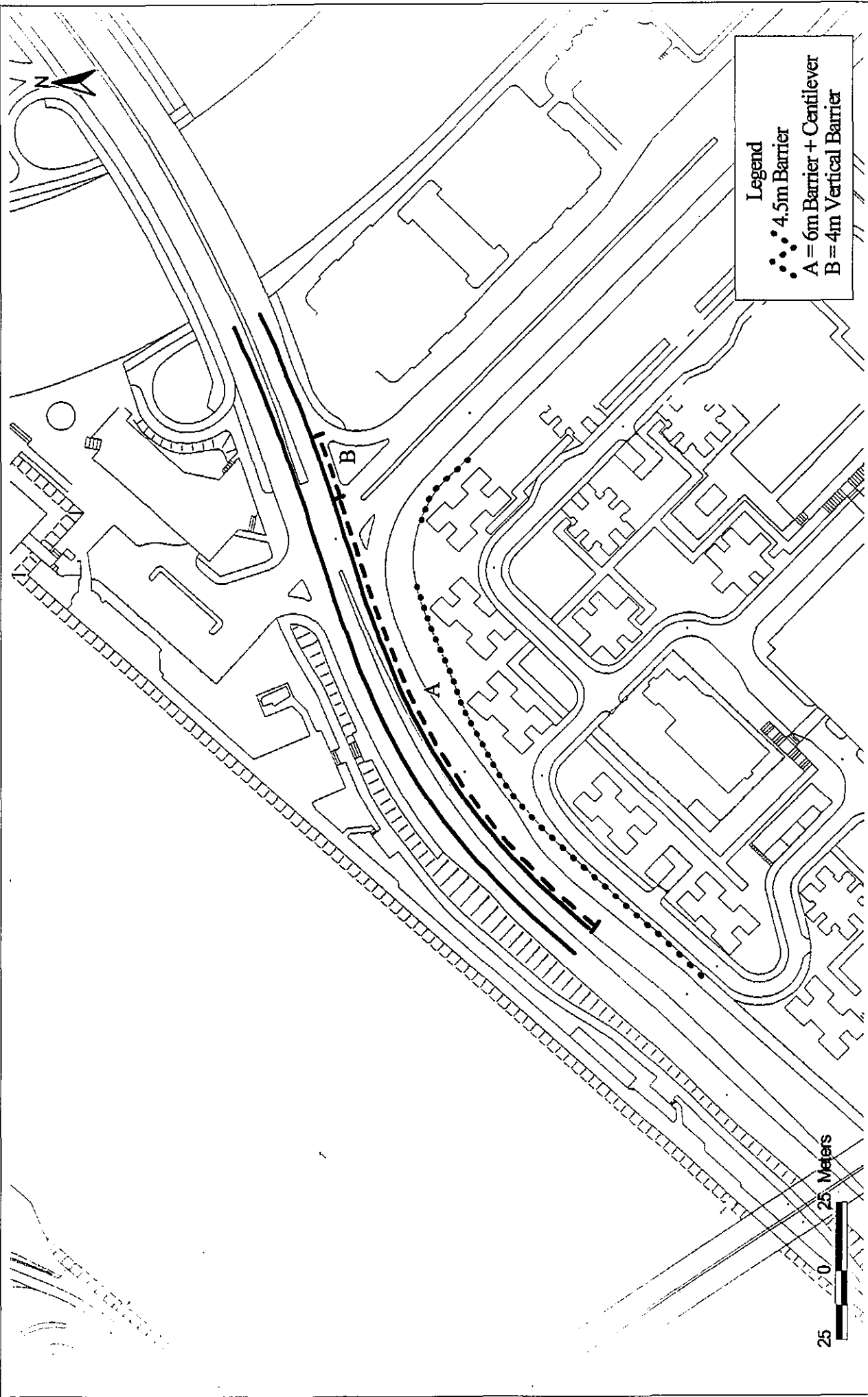
CES (ASIA) LIMITED

PROJECT NO	B180	DATE	October 1997
DESIGNED	Suki Chung	DRAWING NO	Figure 6.1



1000 - Vehicles/hour  
(25) - % HGV

		TITLE <b>2016 Peak AM Traffic Flows</b>		CES (ASIA) LIMITED	
PROJECT NO B180	DATE October 1997				
DESIGNED Suki Chung	DRAWING NO			Figure 6.2	



**Legend**  
 ●●●● 4.5m Barrier  
 A = 6m Barrier + Centilever  
 B = 4m Vertical Barrier

CES (ASIA) LIMITED			
PROJECT NO	B180	DATE	March 1998
DESIGNED	Fanny Lau	DRAWING NO	Figure 6.3

Position of Structures for the Refined Mitigation Option

TITLE  
**環 科**  
**C E S**

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7 VISUAL AND LANDSCAPE IMPACT  
ASSESSMENT

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## 7 VISUAL AND LANDSCAPE IMPACT ASSESSMENT

### 7.1 Background

The landscape and visual impact assessments are concerned with identifying the future effects of new developments and judging the significance of their impacts on the landscape character and visual amenity of the surrounding areas. This, admittedly, involves subjective judgement. However, the assessment can be rationalised and made as objective as possible by adopting a logical study process and clear assessment criteria.

### 7.2 Sensitive Receivers

The limit of the Study Area is defined generally in the project Brief as the area within a 500m radius of the proposed development. However, the identification of sensitive receivers has not been confined to this distance.

The visual envelope takes into account all key positions from where the new flyover will be visible. For example, whilst the visual envelope to the south will be significantly closer than 500m due to the 'wall' effect of the nearby City One Estate, the envelope to the north-west extends up to 1km to Jubilee Garden at Fo Tan due to the relatively low-rise intervening development.

### 7.3 Methodology

This Study is concerned with the landscape and visual impacts arising from the construction of a new flyover at the junction of Tai Chung Kiu Road and Siu Lek Yuen Road and the associated road widening and noise barriers. This portion of the EIA includes two main components, namely; the landscape impacts and visual impacts. The former relates to the effects of new development on the physical characteristics or elements of the existing landscape, e.g. vegetation, topography etc. The latter relates to the effects of new development on individual 'receiver groups', e.g. local residents and their views of the surrounding landscape.

In order to assess these impacts baseline data regarding the landscape and visual character of the Site have been collected and are illustrated in the Landscape and Visual Character Plans in Figures. 7.1 & 7.2.

The assessment of visual impacts is carried out primarily by identifying and describing each of the receiver groups within the visual envelope in turn and considering the quality of the existing views in contrast with those predicted for the new development.

### 7.4 Baseline Data

The baseline data for the landscape impact assessment will include identification and categorisation of existing vegetation, areas of development, topography, watercourses and overall landscape character. Landscape impacts will be predicted based on the magnitude of change to the baseline conditions identified during the assessment and considered at two levels, namely; in terms of the impact on individual landscape features as well as the more subtle, overall impact of the development on the landscape character of the site.

Potential landscape and visual impacts will be considered at two points in time, namely; during construction and upon completion. This will enable a distinction to be drawn between short-term and long-term or permanent effects.

## 7.5 Assessment Criteria

In both the landscape and visual impact assessments the degree of impact will be categorised into high, medium and low.

The impacts on the existing landscape resources of the site and its environs are identified and predicted by assessing the following:

- Character and quality of existing landscape;
- Direct impacts on specific landscape elements;
- Significance and degree of change to the overall landscape character; and
- Ability of the landscape to accommodate change.

The impacts on visual amenity are identified and predicted by assessing the following:

- Quality of existing views;
- Visual compatibility with surroundings;
- Degree of visual obstruction; and
- Proximity and sensitivity of receiver.

Whilst it is not possible to cover all viewpoints a practical selection of key views has been established from the typical positions of major receiver groups, including; housing estates, parks, river promenade footpaths and cycle paths as well as main pedestrian and vehicle routes.

## 7.6 Noise Barrier Design

The design of the flyover and associated noise barriers, road widening etc. will be considered in tandem with the landscape and visual impact assessments to derive alternative design solutions and recommend a preferred option which will minimise or reduce the identified impacts. Wherever possible, a design that would enhance the landscape and visual quality will be adopted.

## 7.7 Existing Landscape and Townscape Character

The study area includes the existing urban development alongside a portion of the Shing Mun River and Siu Lek Yuen Nullah concentrated at the junction of Tai Chung Kiu Road and Siu Lek Yuen Road. The different zones of land use and landscape character for the study area are indicated on the Landscape Character Plan in Figure 7.1 which includes a photograph overview of the site illustrating the existing landscape features in close association with the proposed flyover.

The proposed flyover is located at the busy traffic junction of Tai Chung Kiu Road and Siu Lek Yuen Road. Immediately to the south and east of the junction are the high-rise blocks of City One Estate which dominate the built form of the neighbourhood. To the north-east on the far side of the Siu Lek Yuen Nullah are factory and warehouse buildings of modern design. Between the industrial estate and the Shing Mun River are the high-rise blocks of Ravana Garden. In contrast to the relative enclosure created by the tall buildings to the south and north are the more attractive, open aspects along the length of Siu Lek Yuen Nullah and Siu Lek Yuen Road Playground as far as Hong Lam Court to the east as well as across the Shing Mun River to the west.

Directly across the Shing Mun River are a number of open space recreation facilities as well as relatively low-rise developments including, the riverside promenade, Hong Kong Sports Institute (HKSI), Yuen Wo Road Fire Station, Sha Tin Technical Institute and Sha Tin Sports Ground. The Sha

Tin Road and Fo Tan Road bridges form a boundary to the south. Behind the low-rise land uses near the river are the more distant residential developments of Jubilee Garden, Sui Wo Court and Wo Che Estate.

Immediately to the west of the site is the Floating Restaurant. The architecture of the restaurant building is based on the traditional Chinese style and is a well known landmark in the local area, located at the end of the attractive, well-vegetated riverside promenade. There is only one vacant plot of land in the vicinity of the development, on the opposite bank of Siu Lek Yuen Nullah. The current OZP designates this area as Open Space. However, there is currently no programme for development of this area and it is used for open storage.

## 7.8 Description of the Proposed Flyover

The proposed development comprises a 260m long section of elevated carriageway in the centre lane of Tai Chung Kiu Road serving through traffic between Sha Tin and Ma On Shan. The flyover is intended to reduce traffic congestion at the existing signal controlled junction of Tai Chung Kiu Road and Siu Lek Yuen Road. The deck of the flyover structure will be at a maximum height of around 9.5m above the existing road level at the centre of the junction. In order to mitigate the noise impacts predicted for the traffic using the flyover, a noise barrier of 6m height (including parapet height) and a cantilever will be required along the eastern parapet. In addition, to accommodate the structure in the centre of the existing carriageway, road widening along a portion of Tai Chung Kiu Road and existing road bridge abutment will be required. The proposed layout is illustrated on the Landscape and Visual Character Plans in Figure 7.1.

## 7.9 Landscape Impact Assessment

The townscape is of varied character. The proximity of the Shing Mun River and the well-vegetated and well-maintained promenade and Siu Lek Yuen Road Playground contribute to the overall quality of the surrounding landscape. The dominant element of the townscape is undoubtedly the concentration of City One Estate tower blocks. However, despite the proximity and scale of the tower blocks, what would otherwise be a good quality townscape is seriously degraded by the existing noisy and often congested traffic junction.

The scale of existing highway structures is limited to the grade junction and the road bridge over Siu Lek Yuen Nullah. The 'footprint' of the proposed flyover lies within the existing road system and, therefore, the elevated structure of the proposed flyover will become the dominant element of the road system. The proposed widening of eastbound Tai Chung Kiu Road to accommodate the flyover will require removal of a row of roadside trees which provide a strategic screen between the promenade cyclepath and the road junction. The trees affected have been surveyed and recorded in a Tree Survey Report prepared by Highways Department. The space remaining after the construction of the road widening for replacement tree planting will be limited and a net loss of roadside trees is anticipated.

A portion of the road bridge beyond the Siu Lek Yuen Abutment will be widened to accommodate the new lane for the flyover. This will require breaking out the existing parapet and building a matching extension with supporting column in the nullah. It is not anticipated that this will have any significant landscape or visual impact due to the relatively small scale of works involved and similarity of design to the existing structure.

Thus, although the existing overall landscape character of the Tai Chung Kiu Road / Siu Lek Yuen Road junction will continue to be dominated by traffic, highway structures and City One high-rise

blocks, the specific landscape impacts resulting from loss of the roadside trees on particular user groups, i.e. cyclists and pedestrians using the promenade will be relatively high. The degree of overall landscape impact will vary significantly depending upon the position and proximity of the viewer. For example, when viewed against the background of the City One tower blocks the proposed flyover is expected to have relatively low impact on the surrounding landscape. However, when viewed from close range in the opposite direction, the proposed elevated structure of the flyover will contrast starkly with the low-lying, smaller-scale, lush landscape of the river promenade and the landscape impacts will be relatively high.

#### 7.10 Visually Sensitive Receivers and Visual Envelope

Figures 7.3, 7.4, and 7.5 show a rotational view from the location of the proposed flyover indicating buildings, roads and open space areas surrounding the flyover site. Each of the key sensitive receiver groups are highlighted and the following section describes the visual impacts for each group with photographs of typical views towards the proposed flyover.

The visual envelope is shown on the Visual Character Plan in Figure 7.1 and indicates two main 'layers' of sensitive receivers. The first layer is the street level visual envelope which includes road users and pedestrians. This is the largest sensitive receiver group due to the volume of traffic at the Tai Chung Kiu Road/Siu Lek Yuen Road junction and daily pedestrian movement in the vicinity of City One Estate and adjacent bus stops, riverside promenade, Siu Lek Yuen Road Playground and Floating Restaurant. The visual impacts for this group are for relatively short periods as the receivers are in transit. Nevertheless, the proximity and scale of the structure will create significant visual impacts regardless of the background.

Due to the screening effect of roadside planting, buildings and other highway structures such as the Sha Tin Road and Fo Tan Road bridges, the limit of the visual envelope for the street level receivers is considerably smaller than that of the second 'layer' which comprises the occupants of high-rise residential or industrial blocks who have a clear view of the proposed flyover. Due to the low-lying topography and open space land uses beside the Shing Mun River and alongside the Siu Lek Yuen Nullah, the visual envelope for this group of sensitive receivers is considerably wider. The visual impacts range from high for residents in parts of City One Estate adjacent to the flyover site to low for residents in distant estates such as Jubilee Garden or Sui Wo Court.

A number of land uses falling within the visual envelope are not considered as visual sensitive receivers such as the industrial buildings to the north of Siu Lek Yuen Nullah which generally have little or no external views. Similarly, in buildings such as the, Sha Tin Technical Institute, Sha Tin Fire Station and KCR office building to the west of the river, the occupants' attention is not generally focused on external views. In addition, views from the Floating Restaurant are orientated towards the river rather than the flyover site.

#### 7.11 Visual Impact Assessment

The visual impacts created by the flyover for the following areas and sensitive receivers have been assessed and are illustrated by the accompanying photographs.

##### 7.11.1 Shing Mun River Promenade (Figs.7.6A to 7.6F)

There would be views to the flyover from both sides of the river. South of the Sha Tin Road and Fo Tan Road bridges the views from the promenade are obscured. Between the road bridges and the Floating Restaurant the views are presently partially obscured by the existing riverside planting.

However, the avenue of trees alongside Tai Chung Kiu Road will be removed to accommodate the road widening associated with the flyover. With the loss of this planting screen the visual impact will be relatively high for cyclists and pedestrians as they approach the junction and the Floating Restaurant on the east bank promenade. The visual impacts to cyclists and pedestrians on the west bank promenade as well as from the Rowing Centre, directly opposite the site, will be medium due to the comparative distance from the flyover and the scale of the high-rise blocks as a backdrop. Replanting a line of trees, if space permits, alongside the widened section of Tai Chung Kiu Road would help reduce the long term visual impacts once the trees mature.

#### 7.11.2 Siu Lek Yuen Road Playground (Fig. 7.7)

Due to the position of the management building and tree planting in the open space area, only users of the lawn bowling greens at the western end of the site will have clear views of the flyover. The proximity to the flyover and lack of high-rise backdrop will create high visual impact to bowlers in the short term during construction. However, medium impacts are predicted in the long term once the tree planting within the park matures to create a more effective screen.

#### 7.11.3 Road Users (Figs. 7.8A to 7.8D)

There are three directions from which road users will view the flyover structure. Road users approaching the flyover from both directions of Tai Chung Kiu Road will view the structure end on and the mass of the structure will not be fully apparent until the viewer has reached the junction. The visual impact will be greater for road users approaching on Siu Lek Yuen Road from where most of the flyover elevation can be seen. At present the Floating Restaurant is an attractive landmark visible at the end of Siu Lek Yuen Road. However, once the flyover is built the restaurant building will be largely obscured. Nevertheless, due to the existing volume of traffic and wide carriageway system at the junction, the overall visual impact for road users is predicted to be low to medium depending on proximity to the structure.

#### 7.11.4 Floating Restaurant (Fig. 7.9)

The main views from within the restaurant building are orientated towards the river, away from the road junction. Therefore, once inside the restaurant the visual impacts are predicted to be low. However, the flyover structure will dominate the view from the building entrance, open space sitting area and children's playground adjacent to Tai Chung Kiu Road. The visual impacts for viewers in these areas will be high.

#### 7.11.5 City One Estate (Fig.7.10)

The visual impacts on residents of the blocks immediately adjacent to the existing road junction are predicted to be medium to high depending upon the distance from the junction and floor level of the blocks. That is, the lower floors of the blocks beside the junction will be worst affected and have high impacts as the view of the river will be partly and in some cases wholly obscured by the elevated structure. The impacts on the middle and upper floors will be medium since although the views of the river and promenade are retained, there are permanent clear views of the flyover structure in the foreground. The visual impact on residents of blocks further away from the junction but facing Siu Lek Yuen Road and Tai Chung Kiu Road, will be low as the angle of view towards the flyover is acute and with distance from the junction becomes progressively more obscured by adjacent blocks.



#### 7.11.6 Belair Garden (Fig. 7.11)

City One Estate blocks the view of the junction from Belair Garden with the exception of partial views from the nearest block of the south end of the flyover and road widening/tree removal alongside Tai Chung Kiu Road. Therefore, the visual impacts will be low.

#### 7.11.7 Hong Lam Court (Fig. 7.12)

Residents of Hong Lam Court have distant views along the axis of the Siu Lek Yuen Nullah towards the flyover with the elevated portion of Tate's Cairn Highway in the foreground. Although note is made of this potential receiver group the distance from the flyover (approximately 1.5 km) is considered too great to have a significant visual impact and is, therefore, not included within the visual envelope.

#### 7.11.8 Industrial Estate

The industrial buildings are by their nature not sensitive receivers and do not focus the users' attention on the views to the river and flyover site. Accordingly, the visual impacts are predicted to be low.

#### 7.11.9 Future Open Space to Siu Lek Yuen Nullah Promenade (Fig. 7.13)

Due to the anticipated low-rise development associated with the future Open Space, it is predicted that the visual impacts will be low as there is ample opportunity to design an effective planting screen to the perimeter of the site.

#### 7.11.10 Ravana Garden (Fig. 7.14 to 7.15)

Ravana Garden is located beside the river and therefore views back towards the flyover are seen against the backdrop of City One Estate with the heavily trafficked Tai Chung Kiu Road bridge across the Siu Lek Yuen Nullah in the foreground. In addition, views of the flyover will be mainly end on rather than in elevation. Accordingly, it is predicted that the visual impacts will be low.

#### 7.11.11 Wo Che Estate (Fig. 7.16)

The upper floors of residential blocks in Wo Che Estate have views across the Shing Mun River to the site. However, the foreground view is dominated by the Fo Tan Road and Sha Tin Road bridges and the scale of the proposed flyover in the middle distance is minor by comparison. Therefore, the predicted visual impact for these receivers is low.

#### 7.11.12 Jubilee Garden (Fig. 7.17)

Due to the low topography and mature riverside planting on the western bank of the river users of the HKSI do not have clear views of the site. However, residents of Jubilee Garden estate overlooking the HKSI have a view of the site although the flyover will be partially concealed by the Floating Restaurant. Moreover, due to the distance the scale of the flyover will be minor in comparison with the background mass of City One Estate and the visual impacts are predicted to be low.

#### 7.11.13 Jockey Club Staff Quarters (Fig. 7.18)

The angle of view for the residents of the Jockey Club Staff Quarters will be similar to those from Jubilee Garden although considerably closer. Nevertheless, the foreground view of the playing fields at the HKSI and river in the middle distance remain unchanged. The flyover will be seen as a relatively small structure beyond the east bank promenade and against the backdrop of City One Estate. The visual impacts are predicted to be low.

#### 7.11.14 Sui Wo Court (Fig. 7.19)

The residents of Sui Wo Court enjoy a panoramic view of the Sha Tin Valley from the elevated position of the estate above Fo Tan. The view includes the flyover site. However, due to the distance and the foreground views of the river and promenade areas, the position and scale of the structure among the background high-rise blocks of City One Estate the visual impacts are predicted to be low.

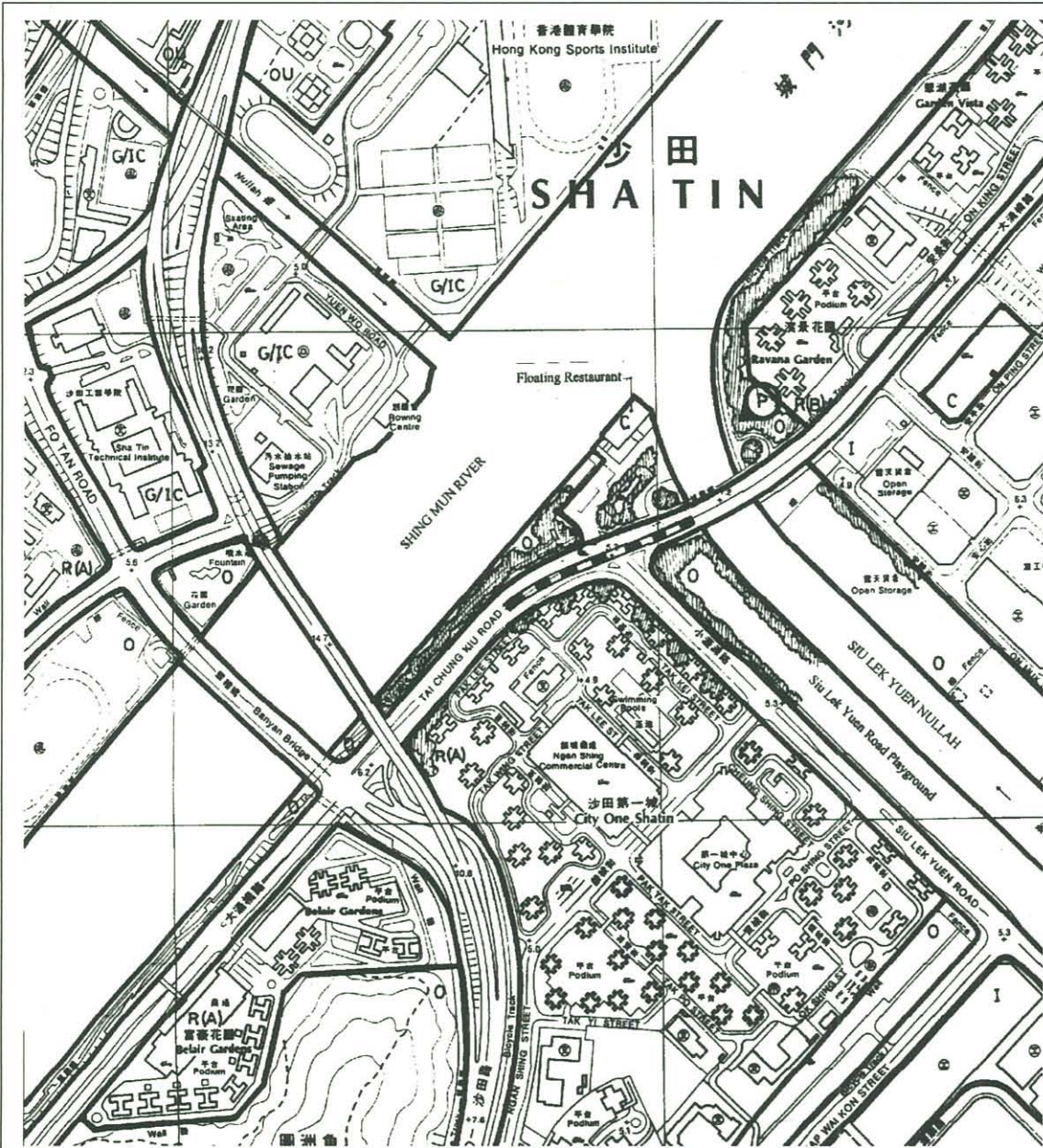
### 7.12 Mitigation Measures

There are a variety of mitigation techniques which are typically used to ameliorate the landscape and visual impacts of road structures, including earth mounding and screen planting as well as the design of the structure and the texture and colour of materials used.

Due to the tight alignment of the proposed flyover, there is little space for landscape or visual impact mitigation by means of earth mounding or screen planting. Providing raised planters beneath portions of the flyover is possible to soften the form of the flyover although these will not screen the overhead structure. Where the road widening of Tai Chung Kiu Road encroaches on the promenade planting, new tree planting should be provided upon completion in the remaining, narrower planting strip wherever possible to replace this strategic screen. As a result, the majority of the visual impacts, unless noted otherwise above are predicted to be permanent.

It is therefore important to ensure that the design of the flyover structure and noise barrier is as sympathetic to the surrounding landscape as possible. To this end the structure and noise barrier will have rounded forms and smooth curves in profile and section, avoiding abrupt, angular detailing. In particular, the noise barrier will comprise a lightweight steel frame with transparent 'Plexiglas' panels to reduce the visual mass of the flyover elevation. It is proposed that a neutral tone similar to the umber tinted 'Plexiglas' is used for the barrier framing with a highlight colour used on the cantilever flashing to emphasise the horizontal and play down the vertical scale of the barrier. The proposed treatment of the structure and noise barrier is illustrated in Figure 7.20 and illustrative sketches (Figs. 7.21 and 7.22).





View From Ravana Garden

LEGEND

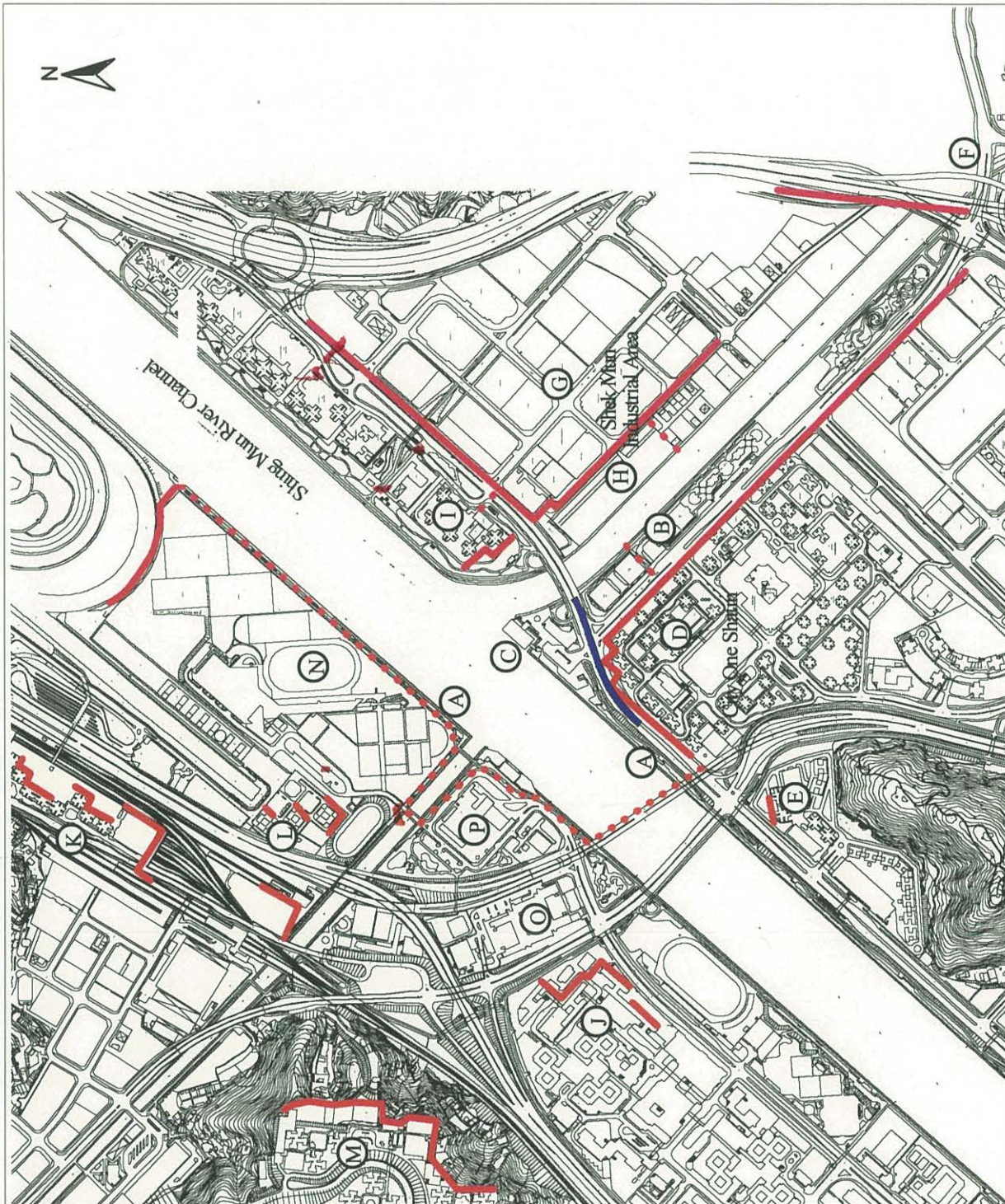
- 1 Promenade (Mature ornamental and roadside planting)
- 2 Floating Restaurant & Garden (Ornamental planting)
- 3 Cyclepath/Footpath (Overgrown amenity planting)
- 4 Siu Lek Yuen Road Playground (recent ornamental planting)
- 5 City One Estate (Mature ornamental and roadside planting)
- 6 Shing Mun River
- 7 Siu Lek Yuen Nullah
- ▬ Proposed Location of Flyover
- ▨ Main areas of vegetation in close proximity to flyover
- ▭ Land Use Classification (Source: ShaTin OZP)
- ⊙ Photograph Location

SCALE 1:5000



PROJECT NO	B180	DATE	August 1997
DESIGNED	Suki Chung	DRAWING NO	Figure 7.1





**Legend**

 Flyover

 Limit of Visual Envelope (High-rise Development)

 Limit of Visual Envelope (Pedestrians/Road Users)

- A Shing Mun River Promenade
- B Siu Lek Yuen Road Playground
- C Floating Restaurant
- D City One Estate
- E Belair Garden
- F Hong Lam Court
- G Industrial Estate
- H Future Open Space
- I Ravana Garden
- J Wo Che Estate
- K Jubilee Garden
- L Jockey Club Staff Quarters
- M Sui Wo Court
- N Hong Kong Sports Institute
- O Sha Tin Technical Institute
- P Yuen Wo Road Fire Station

		TITLE	
		Visual Character Plan	
PROJECT NO.	DATE	DESIGNED	DRAWING NO.
B180	March 1998	Fanny Lau	Figure 7.2
CES (ASIA) LIMITED			

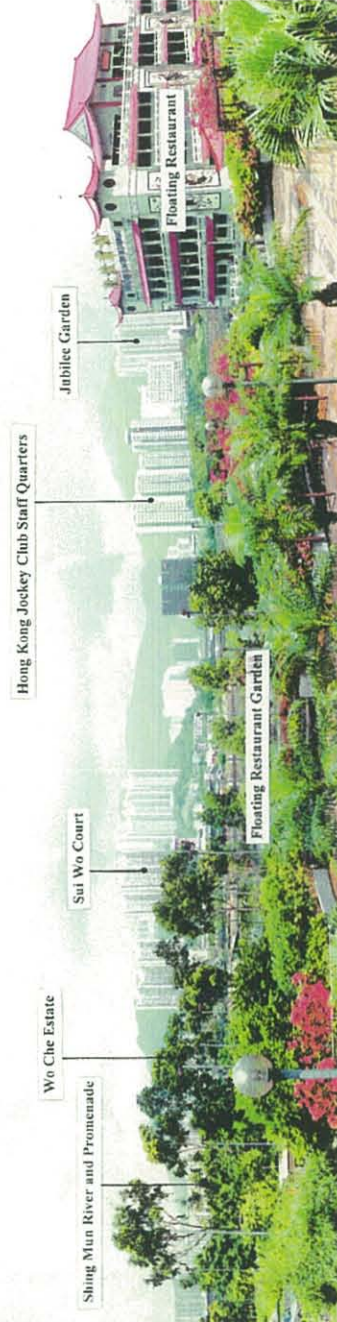




Match Line A



Match Line B



Match Line C

Match Line B

Match Line C

Match Line A

PROJECT NO	B180	DATE	August 1997
DESIGNED	Suki Chung	DRAWING NO	Figure 7.3 to 7.5





Figure 7.6A  
View from promenade cyclepath adjacent to Tai Chung Kiu Road  
Tree screen will be felled (see Fig 6B note)



Figure 7.6B  
Avenue of trees between cyclepath and carriageway to be felled to accommodate lane widening



Figure 7.6C  
Sha Tin and Fo Tan Road bridges block views from southern portion of west bank promenade



Figure 7.6D  
Long distance view from northern portion of west bank promenade mainly obscured by Floating Restaurant



Figure 7.6E  
View from Rowing Centre directly opposite proposed flyover partly screened by east bank promenade trees



Figure 7.6F  
View from southern portion of west bank promenade partly screened by east bank trees





Figure 7.7  
View from Siu Lek Yuen Road  
Playground bowling greens will be  
largely screened once park planting matures



Figure 7.8A  
View west along Siu Lek Yuen  
Road towards the flyover junction



Figure 7.8B  
View south along Tai Chung Kiu  
Road towards the flyover junction



Figure 7.8C  
View north along Tai Chung Kiu  
Road towards the flyover junction



Figure 7.8D  
View north along Tai Chung Kiu  
Road from City One Estate towards  
flyover junction





Figure 7.9  
View from Floating Restaurant Garden and Playground. Flyover is located immediately behind entrance gate



Figure 7.10  
View from top floor of City One Estate residential block



Figure 7.11  
View from top floor of Belair Garden residential block



Figure 7.12  
View from Hong Lam Court. Distance is too great to have significant visual impact



Figure 7.13  
View from future open space area on north bank of Siu Lek Yuen Nullah





Figure 7.14  
View from Ravana Garden podium



Figure 7.15  
View from Ravana Garden top floor



Figure 7.16  
View from Wo Che Estate upper floor



Figure 7.17  
View from Jubilee Garden

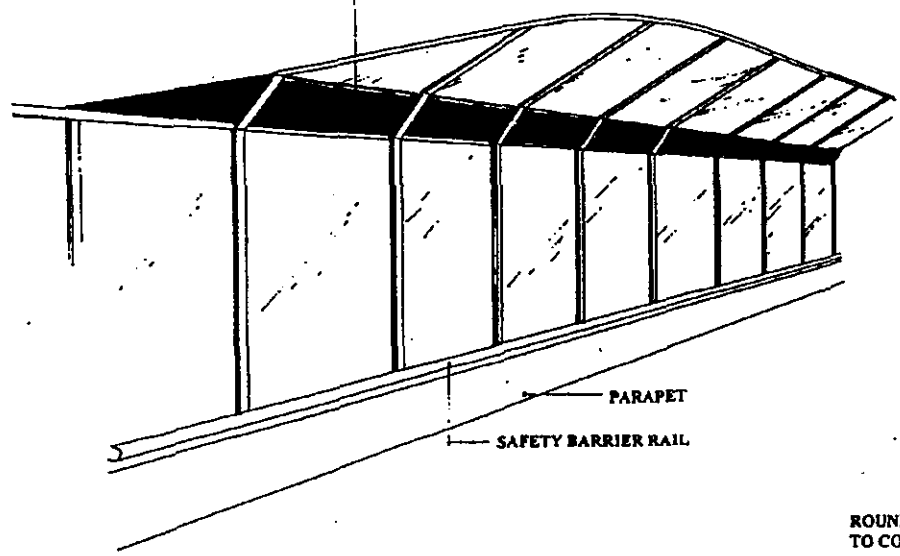


Figure 7.18  
View from Hong Kong Jockey Club Staff Quarters



Figure 7.19  
View from Sui Wo Court

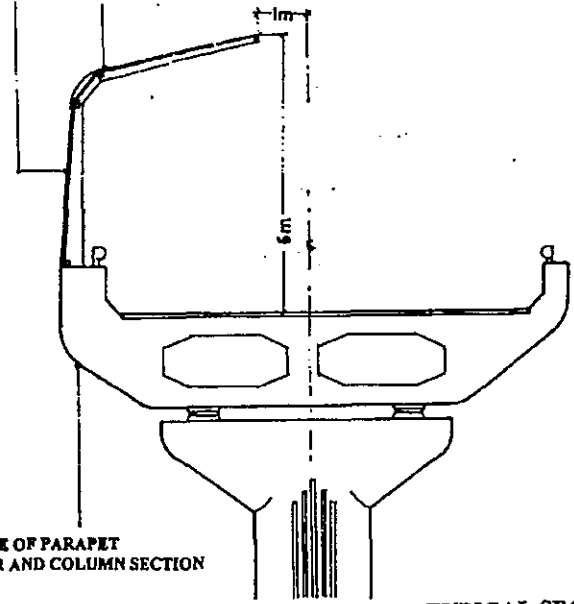
FLASHING PANEL IN ANGLE OF CANTILEVER  
ALSO SERVES TO CONCEAL LIGHT MOUNTING/DUCTING



AXONOMETRIC VIEW OF CANTILEVER  
AND VERTICAL NOISE BARRIER JUNCTION

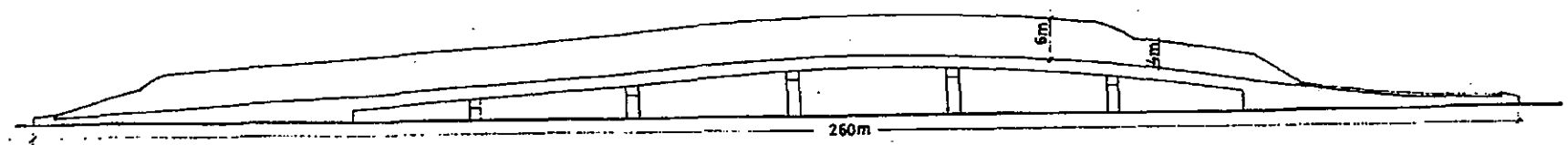
PARAPET MOUNTED CANTILEVER REFLECTIVE BARRIER  
IN 'PLEXIGLAS' PANELS BETWEEN GMS 'T' SECTION POSTS.  
CURVED STEEL FLASHING BETWEEN UPRIGHT AND  
CANTILEVER 'PLEXIGLAS' PANELS.

BARRIER PANELS TO BE 'PLEXIGLAS XT SOUNDSTOP'  
18MM THICK, 2M WIDTH X 3.5M AND 3M LENGTHS  
FOR VERTICAL AND CANTILEVER SECTIONS RESPECTIVELY.



ROUNDED PROFILE TO UNDERSIDE OF PARAPET  
TO COMPLEMENT NOISE BARRIER AND COLUMN SECTION

TYPICAL SECTION  
NOT TO SCALE



FLYOVER ELEVATION  
NOT TO SCALE

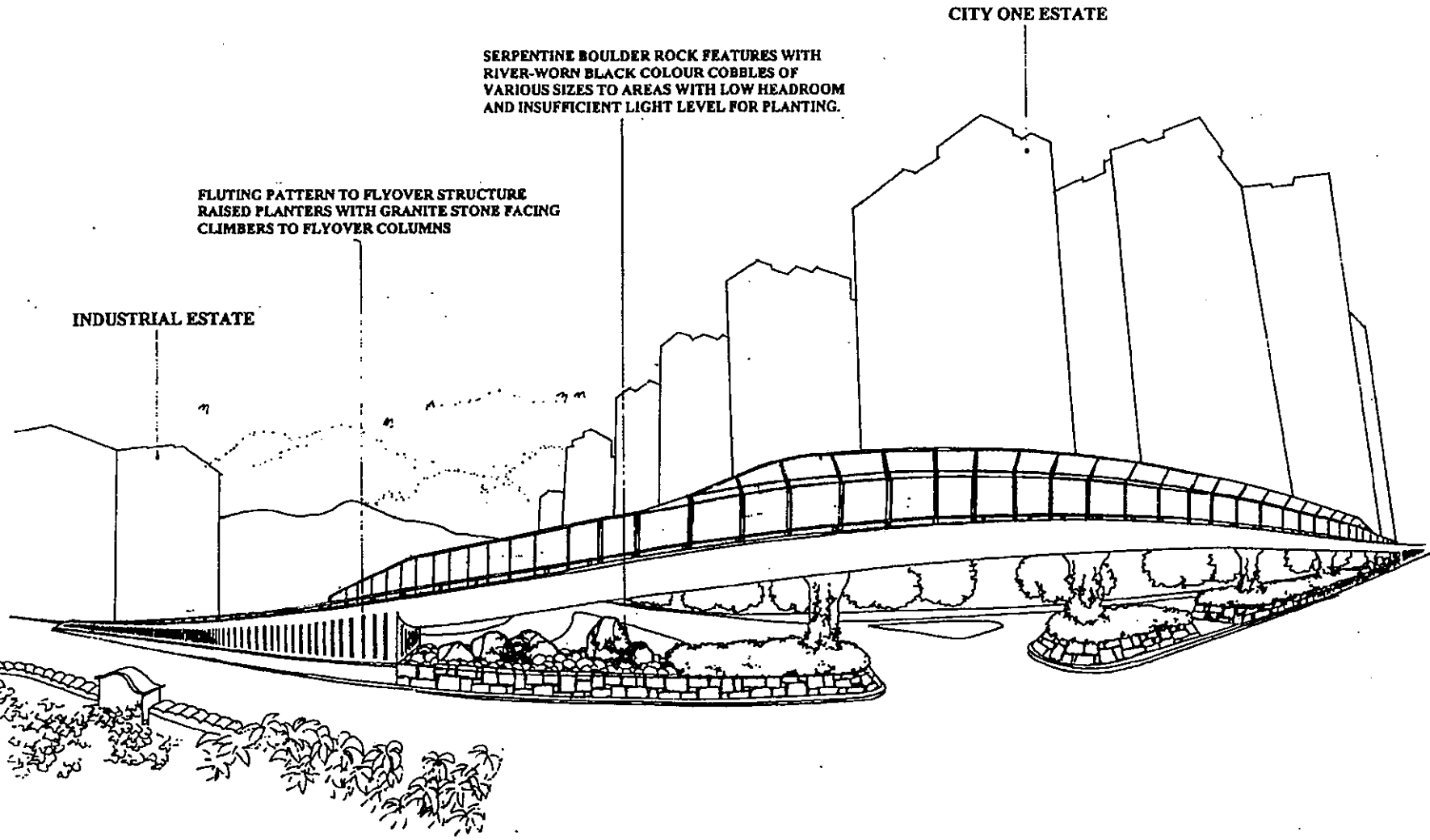


TITLE

Axonometric View of Cantilever and Vertical Barrier Junction

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PROJECT NO	B180	DATE	August 1997
DESIGNED	Suki Chung	DRAWING NO	Figure 7.20

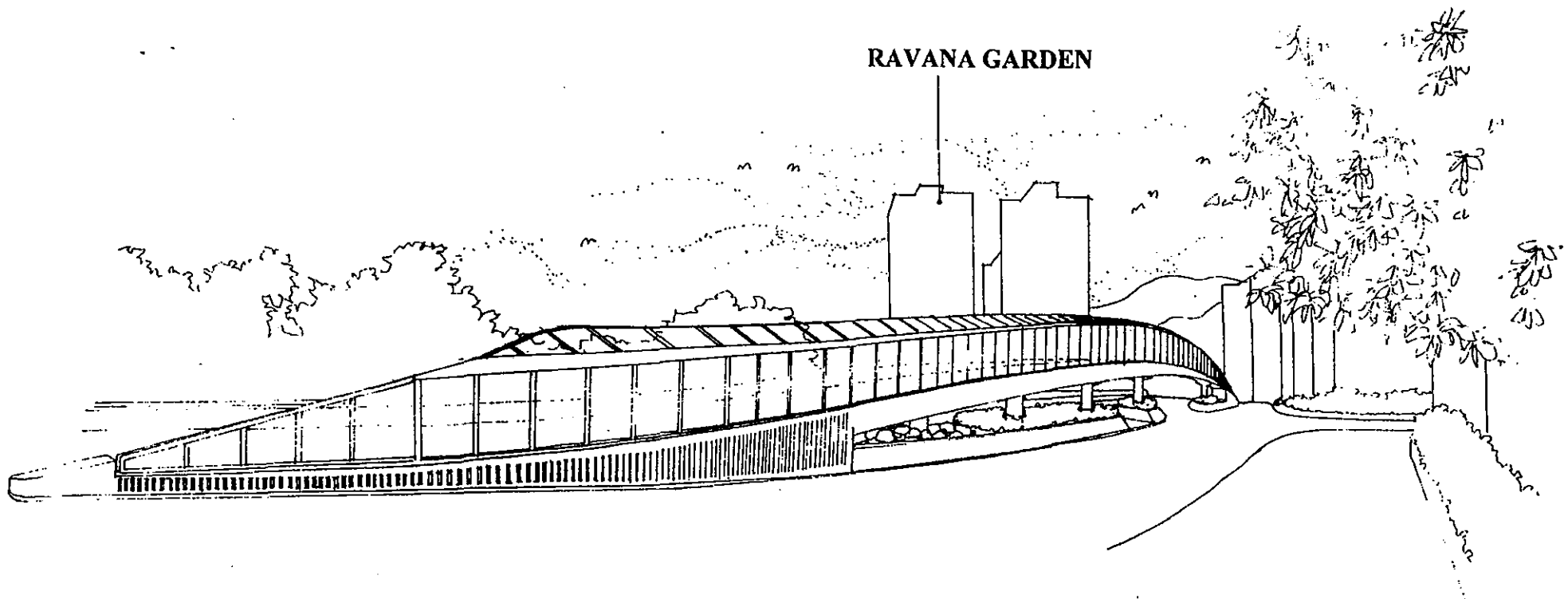


環  
科  
CES

TITLE  
**Illustrative Sketch of Flyover Structure and Noise Barriers View From Floating Restaurant**

CES (ASIA) LIMITED			
PROJECT NO	B180	DATE	August 1997
DESIGNED	Suki Chung	DRAWING NO	Figure 7.21





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科

C  
E  
S

TITLE

Illustrative Sketch of Flyover Structure and Noise Barriers View From City One Estate

CES (ASIA) LIMITED

PROJECT NO	B180	DATE	August 1997
DESIGNED	Suki Chung	DRAWING NO	Figure 7.22



## 8 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

The Study Brief requires an Environmental Monitoring and Audit (EM&A) Manual to be prepared, which the Contractor shall be contractually bound to adopt. This EM&A Manual, which includes the monitoring and audit of construction activities in relation to dust emissions, noise and water quality impacts, can be found under separate cover.



## 9 SUMMARY AND CONCLUSIONS

The following is a summary of the mitigation measures recommended to be incorporated in the design, construction and operation of the Flyover at Tai Chung Kiu Road and Siu Lek Yuen Road.

### 9.1 Operation Phase Noise Impacts

- To reduce noise from the flyover to a level insignificant in comparison with the ground level flows, it is proposed to use a 6m barrier with a cantilever to within 1m of the flyover centreline on the City One Estate side of the flyover with a reduction to a 4m vertical barrier after the road junction. The assessment results are given in Appendix B. This would appear to represent the most feasible effective mitigation measure in meeting the noise reduction. Further measures would not result in any significant benefit.
- To benefit an additional 9% of the flats affected by traffic noise on Tai Chung Kiu Road, a 4.5 m barrier is proposed on the ground level road off City One Block 4, and from Block 5 westward to Block 14. The top of the barrier would be below the balcony of the first floor and therefore should not block the view of these flats.
- With the refined mitigation in place, there would still be exceedance of 70 dB(A) at the majority of receivers facing Tai Chung Kiu Road, but these exceedances are attributable to the existing ground levels roads. Tests to determine eligibility with the ExCo criteria for provision of indirect technical remedies show that no flats would meet all three criteria.

### 9.2 Construction Phase Noise Impacts

Noise level modelling of construction works on site have indicated that Noise Sensitive Receivers would be exposed to high levels of noise.

The worst affected NSRs are those located close to the proposed flyover, especially those on lower floors. Those on upper floors would not experience any noise levels greater than the recommended limits. The activities likely to cause the most disturbance are:

- General road widening and utility diversion;
- Utility diversion below flyover footprint;
- Flyover piling work;
- Flyover pier and superstructure works; and
- Carriageway works.

Noise mitigation is feasible and would include the incorporation of good site practices, such as the use of quieter equipment, siting equipment in locations as far from the sensitive receiver as possible, and, through sensitive construction works programming, noisy works activities should be scheduled to avoid parallel operations. Noise nuisance would be minimised through the implementation of noise mitigation measures and be controlled by the implementation of monitoring and audit procedures.

### 9.3 Construction Phase Dust Impacts

Assessment results showed that with no dust mitigation, the 1-hr average TSP guideline level would be exceeded at some ASRs. There is no predicted exceedance of the guideline level only after



implementing the proposed mitigation measures. The assessment results also showed that the highest predicted 1-hr average TSP level is about 150% (without mitigation) and 83% (with mitigation) of the guideline level; while the highest predicted 24-hr average TSP level is about 75% (without mitigation) and 53% (with mitigation) of the AQO.

To minimise nuisance, controls and mitigation measures such as good site management and adoption of dust suppression measures should be adopted wherever possible, especially during dry weather conditions. Dust nuisance would be minimised through the implementation of dust suppression measures and be controlled by monitoring and audit procedures.

#### 9.4 Landscape and Visual Impacts

A summary of the extent of visual impacts on sensitive receivers is presented in Table 9.1.

As there is little room for landscape or visual impact mitigation by means of earth mounding or screen planting the visual impacts predicted are likely to be permanent. Thus the design of flyover, including the noise barriers, should be sympathetic to the surrounding landscape.

Table 9.1 Extent of Visual Impacts at Sensitive Receiver Locations

Location		Visual Impact		
		High	Medium	Low
<b>Shing Mun River Promenade</b>				
East bank promenade - (cyclists & pedestrians)		✓		
West bank promenade and rowing centre			✓	
<b>Siu Lek Yuen Road</b>				
Lawn bowling greens - short term during construction phase		✓		
Lawn bowling greens - long term during operation phase			✓	
<b>Road Users</b>				
Traffic approaching from both directions of Tai Chung Kiu Road				✓
Traffic approaching from Siu Lek Yuen Road			✓	
<b>Floating Restaurant</b>				
From inside the restaurant				✓
From the building entrance			✓	
<b>City One Estate</b>				
At blocks immediately adjacent to the existing road junction	lower floors	✓		
	upper floors		✓	
At blocks further away from the junction				✓
<b>Belair Garden</b>				
City One Estate blocks the view of Belair Garden except the block nearest the south end of flyover				✓
<b>Future Open Space to Siu Lek Yuen Nullah Promenade</b>				
Low-rise development with planting screening				✓
<b>Ravana Garden</b>				
View is end on of the Flyover				✓
<b>Wo Che Estate</b>				
View possible from upper floors but at some distance				✓
<b>Jubilee Garden</b>				
Viewed from upper flats but at a long distance				✓
<b>Jockey Club Staff Quarters</b>				
Similar view as Jubilee Garden which is at a long distance				✓
<b>Siu Wo Court</b>				
Flats are some distance from flyover but have panoramic views of Sha Tin Valley				✓

APPENDIX A  
LEGISLATION AND GUIDELINES

APPENDIX A  
LEGISLATIVE CONTROL AND GUIDELINES

A1.1 Traffic Noise

There are currently no statutory controls to limit the impacts from road traffic noise, however, the Hong Kong Planning Standards and Guidelines (HKPSG) provide criteria. These are provided in Table A1.1.

Table A1.1 Hong Kong Planning Standards and Guidelines: Road Traffic Noise

Use	Road Traffic Noise dB(A)
Domestic premises	70
Offices	70
Educational institutions including kindergartens and nurseries	65
Hospitals, clinics, convalescences and homes for the aged	55

Notes: The above standards apply to uses which rely on opened windows for ventilation.  
Facade noise levels in terms of  $L_{(10\ 1-hour)}$

In case where practical and effective direct mitigation measures are not available or the identified measures cannot provide adequate protection to reduce the noise levels to within the HKPSG standard, provision of indirect technical remedies in the form of acoustic insulation and air conditioning should be considered under the ExCo directive "Equitable redress for Persons Exposed to Increased noise resulting from the use of New Roads". The eligibility for indirect technical remedies should be tested against the following three criteria and recommendations should be presented to ExCo for approval.

- The predicted overall noise level from the new or improved road together with other traffic noise in the vicinity must be above the HKPSG criteria.
- The predicted noise level must be at least 1.0 dB(A) more than the prevailing noise level, ie the total traffic noise level existing before the works to construct the road were commenced.
- The contribution to the increase in the noise level from the new road must be at least 1.0 dB(A).

A1.2 Construction Noise

The Noise Control Ordinance provides for the control of construction noise. Assessment procedures and standards are set out in two Technical Memoranda associated with the NCO: the *Technical Memorandum on Noise from Construction Work other than Percussive Piling* and the *Technical Memorandum on Noise from Percussive Piling*.

Under the existing provisions, there is no legal restriction on noise generated by construction activities (other than percussive piling) between the hours of 07.00 and 19.00 on normal weekdays. However, EPD's Practice Note for Professional Persons PN 2/93 sets a non-statutory daytime noise limit of 75 dB(A)  $L_{eq}$  (30 min) at the facades of dwellings, and 70 dB(A) at the facades of schools (65 dB(A) during examinations).

Outside the hours of 07.00 to 19.00, the NCO applies, and contractors are required to obtain a Construction Noise Permit (CNP) to carry on works involving powered mechanical equipment. The applicable noise limits depend upon the existing noise environment in which a NSR is located,

reflected in an Area Sensitivity Rating (ASR). The study area comprises a mainly high-rise developments, educational facilities and industrial uses. The majority of receivers will be ASR "B" or "C"; residential indirectly or directly affected by the influencing factors of Tai Chung Kiu Road and Siu Lek Yuen Road.

Table A1.2 Construction Noise: Basic Noise Limits

Time Period	Basic Noise Level dB(A)		
	ASR = A	ASR = B	ASR = C
All days during the evening (19.00-23.00), and general holidays during the daytime and evening (07.00-23.00)	60	65	70
All days during the night-time (23.00-07.00)	45	50	55

Applications for CNP will be assessed by the Noise Control Authority. The CNP is a statutory document issued under the NCO and may include conditions, such as permitted hours of operation, type and number of equipment items allowed to be used, and noise control measures to be adopted, which must be observed.

In addition, the NCO requires that hand-held percussive breakers over 10 kg and air compressors bear Noise Emission Labels, certifying that they comply with noise emission standards.

Percussive piling is subject to controls during the daytime, and is prohibited between 19.00 and 07.00 on normal weekdays and all day on public holidays (including Sunday). Permitted hours of piling depend on the noise levels as received at the worst-affected NSRs. The Acceptable Noise Level (ANL) for piling is 85 dB(A), based on the assumption that the NSRs have windows and no central air-conditioning. The permitted hours of piling are shown in Table A1.3.

Table A1.3 Construction Noise: Permitted Hours of Operation for Piling

Amount by which noise from piling exceeds the ANL	Permitted hours of operation on any day not being a general holiday
More than 10 dB(A)	08.00 - 09.00 and 12.30 - 13.30 and 17.00 - 18.00
1 to 10 dB(A)	08.00 - 09.30 and 12.00 - 14.00 and 16.30 - 18.00
No exceedance	07.00 - 19.00

A CNP is required for percussive piling.

The *Technical Memorandum on Noise from Construction Work in Designated Areas* serves to control noise from construction works conducted inside the boundary of indicated designated areas caused by Specified Powered Mechanical Equipment (SPME) and/or Prescribed Construction Work (PCW). SPME includes particularly noisy items of plant, such as *inter alia* handheld breakers, bulldozers, dump trucks and vibratory pokers. PCW includes activities such as *inter alia* erection or dismantling of formwork or scaffolding, handling rubble and hammering. For any such activities conducted outside the hours of 07:00 to 19:00, the TM applies and contractors are required to obtain a CNP from the Noise Control Authority for all SPME and PCW. CNPs are issued at the discretion of the Noise



Control Authority, and any conditions which may be attached to such CNPs must be strictly complied with.

With regard to construction works subject to the *Technical Memorandum on Noise from Construction Work in Designated Areas*, the applicable acceptable Basic Noise Levels (BNLs) for evening, night-time and holiday works are shown in Table A1.4.

**Table A1.4 Basic Noise Levels Within Designated Areas**

Time Period	Basic Noise Level $L_{eq}$ (dB(A)) at Facade of nearest NSR <sup>2</sup>		
	ASR = A	ASR = B	ASR = C
All days during the evening (19:00 to 23:00 hours) and general holidays during the daytime and evening (07:00 to 23:00 hours) <sup>1</sup>	45	50	55
All days during the night-time (23:00 to 07:00 hours) <sup>1</sup>	30	35	40

NOTES:

<sup>1</sup> From the NCO *Technical Memorandum on Noise from Construction Work in Designated Areas* (measurement period 5 minutes).

<sup>2</sup> Does not apply to noise from percussive piling.

**A1.3 Construction Dust**

The Air Pollution Control Ordinance (APCO) provides powers for controlling air pollutants from a variety of stationary and mobile sources, including fugitive dust emissions from construction sites. It encompasses a number of Air Quality Objectives (AQO) which stipulate concentrations for a range of pollutants. The AQO for total suspended particulates (TSP) which are relevant to this study are tabulate in Table A1.5 below.

**Table A1.5 Hong Kong Air Quality Objectives**

Air Pollutant	Maximum Average Concentration ( $\mu\text{gm}^{-3}$ ) <sup>1</sup>		
	1-Hour	24-Hour <sup>2</sup>	Annual <sup>3</sup>
TSP	500 <sup>4</sup>	260	80

<sup>1</sup> Measured at 298 K and 101.325 kPa.

<sup>2</sup> Not to be exceeded more than once per year.

<sup>3</sup> Arithmetic mean.

<sup>4</sup> Not AQO.

In addition to the above established legislative controls, it is generally accepted that an hourly average TSP concentration of  $500 \mu\text{gm}^{-3}$  should not be exceeded. Such a control limit is particularly relevant to construction work and has been imposed on a number of construction projects in Hong Kong in the form of contract clauses.

For construction dust, it is standard practice to use a TSP limit in air over a 1-hour period of  $500 \mu\text{gm}^{-3}$ . The maximum acceptable TSP concentration averaged over a 24-hour period is  $260 \mu\text{gm}^{-3}$ , as defined in the Air Quality Objectives (AQOs).

**A1.4 Landscape and Visual Assessment**

The requirement to address the landscape and visual impact of the proposals has been undertaken as part of the necessity to address visual issues within the environmental review and assessment process.

Evaluation guidelines are addressed in the following literature: 1) Part 5, Section 3, Vol.11 Design Manual for Roads and Bridges, Transport Department, UK and 2) Guidelines for Landscape and Visual Impact Assessment, the Landscape Institute and Institute of Environmental Assessment, both of which outline the criteria to be considered when assessing landscape and visual impacts.

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APPENDIX B  
TRAFFIC NOISE MODELLING RESULTS

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## CONTENTS

Noise levels in dB(A) with no Mitigation	B1
Noise Levels in dB(A) with a 1m noise barrier on the Flyover	B3
Noise Levels in dB(A) with a 2m noise barrier on the Flyover	B5
Noise Levels in dB(A) with a 3m noise barrier on the Flyover	B7
Noise Levels in dB(A) with a 4m noise barrier on the Flyover	B9
Noise Levels in dB(A) with a 5m noise barrier on the Flyover	B11
Noise Levels in dB(A) with a 6m noise barrier on the Flyover	B13
Noise Levels in dB(A) with a 6m noise barrier on the Flyover with 1m cantilever	B15
Noise Levels in dB(A) with a 6m noise barrier on the Flyover with 2m cantilever	B17
Noise Levels in dB(A) with a 6m noise barrier on the Flyover with 3m cantilever	B19
Noise Levels in dB(A) with a Noise Enclosure	B21
Noise Levels in dB(A) with the preferred option, 6m noise barrier + cantilever to 1m of centreline (reduced to 4m Barrier North of City One Estate)	B23
Difference in Noise Levels between the Preferred Option and No Mitigation	B25
Difference in Noise Levels between the Preferred Option and a 1m Barrier	B27
Difference in Noise Levels between the Preferred Option and a 2m Barrier	B29
Difference in Noise Levels between the Preferred Option and a 3m Barrier	B31
Difference in Noise Levels between the Preferred Option and a 4m Barrier	B33
Difference in Noise Levels between the Preferred Option and a 5m Barrier	B35
Difference in Noise Levels between the Preferred Option and a 6m Barrier	B37
Difference in Noise Levels between the Preferred Option and a 6m Barrier with 1m cantilever	B39
Difference in Noise Levels between the Preferred Option and a 6m Barrier with 2m cantilever	B41
Difference in Noise Levels between the Preferred Option and a 6m Barrier with 3m cantilever	B43
Difference in Noise Levels between the Preferred Option and an Enclosure	B45
Predicted Prevailing Noise Environment Based upon 1997 Traffic Data	B47
2016 Ground Level Contribution Only	B49
2016 Unmitigated Flyover Contribution Only	B52
2016 Preferred Option Flyover Contribution Only (mitigated)	B55
Noise Reduction with Mitigation on the Ground Level Road	B58
"Do Nothing" Scenario	B60
Difference between the Preferred Option and the "Do Nothing" Scenario	B62
Noise Levels in dB(A) with No Heavy Goods Vehicles on the Flyover	B64
Flat Count (Preferred Option - ExCo Test)	B66
Preferred Option Eligibility Test	B68
Flat Count (Unmitigated Option)	B86
Noise Levels of the Preferred Option with a 4.5m Barrier on Ground Level Road	B88
Difference in Noise Levels between No Mitigation and Preferred Option plus 4.5m Barrier on Ground Level Road	B90
Difference in Noise Levels between "Do Nothing" and Preferred Option plus 4.5m Barrier on Ground Level Road	B92
Difference in Noise Levels between "Do Nothing" and No Mitigation on Flyover	B95



Impacts on Receivers with No Mitigation

Receiver	Floor Level						
	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.2	76.7	76.1	75.6	75.2	74.7
14	75.8	75.6	75.2	74.8	74.4	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.1	74.7
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.6	81.1	80.2	79.3	78.5	77.9	77.3
34	81.4	80.9	80.1	79.2	78.4	77.8	77.2
35	81.4	80.8	79.9	79.1	78.3	77.7	77.1
36	81.2	80.7	79.8	78.9	78.2	77.6	77.0
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38	74.5	74.2	73.6	72.9	72.2	71.6	71.0
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.9	80.4	79.5	78.6	77.9	77.3	76.8
42	80.8	80.3	79.4	78.6	77.9	77.3	76.8
43	80.6	80.2	79.3	78.5	77.8	77.2	76.7
44	80.6	80.1	79.3	78.5	77.8	77.2	76.7
45	76.6	76.2	75.4	74.5	73.8	73.1	72.5
46	74.4	74.1	73.6	72.9	72.3	71.6	71.1
47	75.4	75.2	74.8	74.3	73.9	73.5	73.1
48	77.7	77.3	76.7	76.0	75.4	74.9	74.4
49	80.5	80.1	79.2	78.4	77.7	77.1	76.6
50	80.4	80.0	79.2	78.4	77.7	77.1	76.6
51	80.5	80.1	79.3	78.5	77.8	77.2	76.6
52	80.5	80.2	79.3	78.5	77.8	77.2	76.6
53	76.8	76.5	75.8	74.9	74.2	73.5	72.8
54	74.5	74.3	73.8	73.2	72.6	72.0	71.4
55	77.1	77.3	76.6	75.9	75.3	74.7	74.2
56	79.8	80.4	79.5	78.6	77.8	77.1	76.6
57	79.7	80.6	79.6	78.6	77.8	77.1	76.6
58	80.2	80.9	79.7	78.7	77.8	77.1	76.5
59	80.9	81.4	80.1	79.0	78.2	77.4	76.8
60	77.7	78.8	77.6	76.5	75.5	74.7	74.0
61	74.9	76.6	75.9	75.0	74.2	73.5	72.8
62	76.5	78.1	77.2	76.3	75.5	74.8	74.2
63	77.3	78.8	77.9	76.9	76.1	75.4	74.8
64	79.1	80.0	78.8	77.8	76.9	76.2	75.5
65	79.7	80.3	79.1	78.0	77.1	76.4	75.7
66	78.9	79.5	78.3	77.2	76.3	75.5	74.8
67	76.6	77.8	77.0	76.2	75.4	74.7	74.0

Impacts on Receivers with No Mitigation

68	70.8	71.8	71.2	70.4	69.7	69.0	68.4
69	69.3	70.2	69.6	68.9	68.2	67.6	67.0
70	67.1	68.7	68.3	67.7	67.1	66.5	66.0
71	69.3	70.8	70.3	69.6	68.9	68.3	67.7
72	76.6	77.9	77.2	76.4	75.6	74.9	74.3
73	78.7	79.4	78.4	77.5	76.7	75.9	75.3
74	80.5	80.3	79.0	78.0	77.0	76.2	75.6
75	80.0	79.8	78.6	77.6	76.7	75.9	75.3
76	79.8	79.5	78.3	77.4	76.5	75.8	75.1
77	79.8	79.4	78.2	77.2	76.4	75.7	75.0
78	75.1	75.2	74.6	73.9	73.3	72.8	72.3
79	76.5	76.4	75.5	74.8	74.1	73.5	73.0
80	77.8	77.4	76.3	75.5	74.7	74.1	73.5
81	77.8	77.1	76.0	75.1	74.4	73.8	73.2
82	80.8	79.5	78.1	77.0	76.2	75.5	74.9
83	81.0	79.6	78.0	76.9	76.1	75.4	74.8
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.2	76.6	75.5	74.6	73.8	73.2	72.6
86	77.8	76.7	75.3	74.3	73.6	73.0	72.4
87	80.8	79.2	77.7	76.5	75.6	74.9	74.3
88	80.8	79.2	77.6	76.5	75.6	74.9	74.3
89	77.3	76.5	75.3	74.4	73.6	72.9	72.3
90	77.9	76.7	75.3	74.2	73.4	72.8	72.2
91	80.6	79.0	77.4	76.2	75.3	74.6	74.0
92	80.4	78.9	77.3	76.2	75.3	74.5	73.9
93	71.1	71.1	70.9	70.4	70.0	69.6	69.2
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.4	71.9	71.3
97	74.5	74.5	74.1	73.4	72.7	72.1	71.5
98	73.9	73.5	72.8	72.0	71.3	70.8	70.3
99	75.4	74.7	73.5	72.6	71.8	71.2	70.6
100	78.4	77.3	75.9	74.8	73.9	73.1	72.5
101	78.4	77.3	75.9	74.7	73.8	73.1	72.5
102	78.3	77.2	75.8	74.6	73.7	73.0	72.4
103	78.3	77.1	75.7	74.6	73.7	72.9	72.3
104	72.0	72.4	72.0	71.6	71.1	70.6	70.2
105	72.2	72.3	72.0	71.5	71.0	70.5	70.0
106	70.6	70.8	70.5	70.1	69.7	69.3	68.9
107	69.9	70.2	70.0	69.6	69.2	68.8	68.4
108	69.2	69.7	69.5	69.1	68.7	68.3	68.0
109	69.3	70.7	70.5	70.2	69.9	69.6	69.3
110	68.1	69.2	69.1	68.8	68.6	68.3	68.0
111	69.1	70.1	69.9	69.7	69.4	69.1	68.8
112	68.5	69.1	69.0	68.7	68.5	68.2	67.9
113	70.4	70.5	70.4	70.1	69.8	69.5	69.2
114	70.3	70.2	70.2	70.0	69.7	69.3	69.0
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120	71.0	70.9	70.9	70.7	70.5	70.3	70.1
121	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122	74.2	74.0	73.8	73.4	73.0	72.6	72.3
123	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.9	67.9	67.9	67.9	67.9	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with a 1m Barrier

1m	Floor Level						
Receiver	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.2	76.7	76.1	75.6	75.2	74.7
14	75.8	75.6	75.2	74.8	74.4	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.1	74.7
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.6	81.1	80.2	79.3	78.5	77.9	77.3
34	81.4	80.9	80.1	79.2	78.4	77.8	77.2
35	81.3	80.8	79.9	79.1	78.3	77.7	77.1
36	81.2	80.7	79.8	78.9	78.2	77.6	77.0
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38	74.5	74.2	73.6	72.9	72.2	71.6	71.0
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.8	80.4	79.5	78.6	77.9	77.3	76.8
42	80.7	80.3	79.4	78.6	77.9	77.3	76.8
43	80.6	80.2	79.3	78.5	77.8	77.2	76.7
44	80.5	80.1	79.3	78.5	77.8	77.2	76.7
45	76.4	76.2	75.4	74.5	73.8	73.1	72.5
46	73.5	74.1	73.6	72.9	72.3	71.6	71.1
47	75.3	75.2	74.8	74.3	73.9	73.5	73.1
48	77.6	77.3	76.7	76.0	75.4	74.9	74.4
49	79.8	80.0	79.2	78.4	77.7	77.1	76.6
50	79.6	80.0	79.2	78.4	77.7	77.1	76.6
51	79.5	80.1	79.3	78.5	77.8	77.2	76.6
52	79.4	80.1	79.3	78.5	77.8	77.2	76.6
53	74.9	76.5	75.8	74.9	74.2	73.5	72.8
54	72.5	74.3	73.8	73.2	72.6	72.0	71.4
55	76.5	77.3	76.6	75.9	75.3	74.7	74.2
56	79.4	80.4	79.5	78.6	77.8	77.1	76.6
57	79.5	80.6	79.6	78.6	77.8	77.1	76.6
58	80.1	80.9	79.7	78.7	77.8	77.1	76.5
59	80.8	81.3	80.1	79.0	78.2	77.4	76.8
60	77.6	78.5	77.6	76.5	75.5	74.7	74.0
61	74.8	76.4	75.9	75.0	74.2	73.5	72.8
62	76.3	77.9	77.2	76.3	75.5	74.8	74.2
63	77.2	78.6	77.9	76.9	76.1	75.4	74.8
64	79.0	79.8	78.8	77.8	76.9	76.2	75.5
65	79.7	80.3	79.1	78.0	77.1	76.4	75.7
66	78.9	79.5	78.3	77.2	76.3	75.5	74.8
67	76.5	77.2	77.0	76.2	75.4	74.7	74.0

Impacts on Receivers with a 1m Barrier

68	70.7	70.7	71.2	70.4	69.7	69.0	68.4
69	69.1	68.9	69.6	68.9	68.2	67.6	67.0
70	67.0	66.9	68.3	67.7	67.1	66.5	66.0
71	69.2	69.3	70.3	69.6	68.9	68.3	67.7
72	76.5	77.6	77.2	76.4	75.6	74.9	74.3
73	78.6	79.1	78.4	77.5	76.7	75.9	75.3
74	80.5	80.3	79.0	78.0	77.0	76.2	75.6
75	79.9	79.8	78.6	77.6	76.7	75.9	75.3
76	79.7	79.5	78.3	77.4	76.5	75.8	75.1
77	79.7	79.3	78.2	77.2	76.4	75.7	75.0
78	75.0	74.7	74.6	73.9	73.3	72.8	72.3
79	76.4	75.9	75.5	74.8	74.1	73.5	73.0
80	77.7	77.0	76.3	75.5	74.7	74.1	73.5
81	77.7	76.7	76.0	75.1	74.4	73.8	73.2
82	80.7	79.3	78.1	77.0	76.2	75.5	74.9
83	81.0	79.3	78.0	76.9	76.1	75.4	74.8
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.2	76.4	75.5	74.6	73.8	73.2	72.6
86	77.7	76.5	75.3	74.3	73.6	73.0	72.4
87	80.7	79.1	77.7	76.5	75.6	74.9	74.3
88	80.8	79.1	77.6	76.5	75.6	74.9	74.3
89	77.2	76.4	75.3	74.4	73.6	72.9	72.3
90	77.8	76.5	75.3	74.2	73.4	72.8	72.2
91	80.5	78.9	77.4	76.2	75.3	74.6	74.0
92	80.4	78.9	77.3	76.2	75.3	74.5	73.9
93	71.1	71.1	70.9	70.4	70.0	69.6	69.2
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.4	71.9	71.3
97	74.5	74.2	73.6	72.9	72.3	71.7	71.2
98	73.8	73.4	72.7	72.0	71.3	70.8	70.3
99	75.4	74.6	73.4	72.6	71.8	71.2	70.6
100	78.4	77.2	75.8	74.8	73.9	73.1	72.5
101	78.4	77.2	75.8	74.7	73.8	73.1	72.5
102	78.3	77.1	75.7	74.6	73.7	73.0	72.4
103	78.3	77.1	75.6	74.6	73.7	72.9	72.3
104	71.9	71.8	72.0	71.6	71.1	70.6	70.2
105	72.1	72.0	72.0	71.5	71.0	70.5	70.0
106	70.4	70.4	70.5	70.1	69.7	69.3	68.9
107	69.8	69.8	70.0	69.6	69.2	68.8	68.4
108	69.1	69.0	69.5	69.1	68.7	68.3	68.0
109	69.1	69.9	70.5	70.2	69.9	69.6	69.3
110	67.9	69.2	69.1	68.8	68.6	68.3	68.0
111	68.6	69.9	69.9	69.7	69.4	69.1	68.8
112	67.6	69.1	69.0	68.7	68.5	68.2	67.9
113	69.1	70.4	70.4	70.1	69.8	69.5	69.2
114	69.3	70.2	70.2	70.0	69.7	69.3	69.0
115	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120	70.9	70.9	70.9	70.7	70.5	70.2	70.0
121	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122	74.2	74.0	73.8	73.4	73.0	72.6	72.3
123	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	66.2	66.2	66.2	66.2	66.2	66.2	0.0
133	67.9	67.9	67.9	67.9	67.9	67.8	0.0
134	73.3	73.3	73.3	73.2	73.2	73.1	0.0



Impacts on Receivers with a 2m Barrier

2m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.2	76.7	76.1	75.6	75.2	74.7
14	75.7	75.6	75.2	74.8	74.4	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.1	74.7
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.5	81.1	80.2	79.3	78.5	77.9	77.3
34	81.4	80.9	80.0	79.2	78.4	77.8	77.2
35	81.3	80.8	79.9	79.1	78.3	77.7	77.1
36	81.1	80.6	79.8	78.9	78.2	77.6	77.0
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38	74.4	74.2	73.6	72.9	72.2	71.6	71.0
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.7	80.3	79.4	78.6	77.9	77.3	76.8
42	80.6	80.2	79.4	78.6	77.9	77.3	76.8
43	80.3	80.1	79.3	78.5	77.8	77.2	76.7
44	80.2	80.0	79.3	78.5	77.8	77.2	76.7
45	75.7	75.9	75.4	74.5	73.8	73.1	72.5
46	73.4	73.1	73.6	72.9	72.3	71.6	71.1
47	75.3	75.2	74.8	74.3	73.9	73.5	73.1
48	77.6	77.3	76.7	76.0	75.4	74.9	74.4
49	79.6	79.8	79.2	78.4	77.7	77.1	76.6
50	79.5	79.8	79.2	78.4	77.7	77.1	76.6
51	79.3	79.8	79.3	78.5	77.8	77.2	76.6
52	79.2	79.7	79.3	78.5	77.8	77.2	76.6
53	74.6	74.2	75.8	74.9	74.2	73.5	72.8
54	72.2	72.1	73.8	73.2	72.6	72.0	71.4
55	76.4	76.0	76.6	75.9	75.3	74.7	74.2
56	79.2	78.6	79.5	78.6	77.8	77.1	76.6
57	79.4	78.6	79.6	78.6	77.8	77.1	76.6
58	79.9	78.8	79.7	78.7	77.8	77.1	76.5
59	80.7	79.5	80.1	79.0	78.2	77.4	76.8
60	77.5	76.4	77.6	76.5	75.5	74.7	74.0
61	74.6	74.2	75.9	75.0	74.2	73.5	72.8
62	76.2	75.7	77.2	76.3	75.5	74.8	74.2
63	77.1	76.5	77.9	76.9	76.1	75.4	74.8
64	78.9	77.8	78.8	77.8	76.9	76.2	75.5
65	79.6	78.2	79.1	78.0	77.1	76.4	75.7
66	78.8	77.7	78.3	77.2	76.3	75.5	74.8

Impacts on Receivers with a 2m Barrier

67	76.4	76.0	77.0	76.2	75.4	74.7	74.0
68	70.6	70.3	71.2	70.4	69.7	69.0	68.4
69	69.0	68.7	69.6	68.9	68.2	67.6	67.0
70	66.9	66.7	68.3	67.7	67.1	66.5	66.0
71	69.1	68.9	70.3	69.6	68.9	68.3	67.7
72	76.4	76.0	77.2	76.4	75.6	74.9	74.3
73	78.5	77.6	78.4	77.5	76.7	75.9	75.3
74	80.4	79.2	79.0	78.0	77.0	76.2	75.6
75	79.9	78.9	78.6	77.6	76.7	75.9	75.3
76	79.6	78.7	78.3	77.4	76.5	75.8	75.1
77	79.7	78.7	78.1	77.2	76.4	75.7	75.0
78	74.9	74.6	73.8	73.9	73.3	72.8	72.3
79	76.4	75.8	74.8	74.8	74.1	73.5	73.0
80	77.7	76.9	75.7	75.5	74.7	74.1	73.5
81	77.7	76.5	75.2	75.1	74.4	73.8	73.2
82	80.7	79.2	77.6	77.0	76.2	75.5	74.9
83	80.9	79.3	77.7	76.9	76.1	75.4	74.8
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.2	76.4	75.2	74.2	73.8	73.2	72.6
86	77.7	76.4	75.0	73.9	73.6	73.0	72.4
87	80.7	79.1	77.5	76.3	75.6	74.9	74.3
88	80.8	79.1	77.5	76.2	75.6	74.9	74.3
89	77.2	76.4	75.2	74.2	73.4	72.9	72.3
90	77.8	76.5	75.1	74.0	73.1	72.8	72.2
91	80.5	78.9	77.3	76.1	75.1	74.6	74.0
92	80.4	78.9	77.2	76.0	75.1	74.5	73.9
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97	74.5	74.2	73.6	72.9	72.2	71.7	71.1
98	73.8	73.4	72.7	71.9	71.2	70.6	70.1
99	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100	78.4	77.2	75.8	74.7	73.8	73.0	72.4
101	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104	71.9	71.7	71.3	71.3	71.1	70.6	70.2
105	72.0	71.9	71.5	71.5	71.0	70.5	70.0
106	70.4	70.3	70.0	70.1	69.7	69.3	68.9
107	69.8	69.7	69.4	69.5	69.2	68.8	68.4
108	69.0	69.0	68.7	69.0	68.7	68.3	68.0
109	69.0	68.9	68.7	70.2	69.9	69.6	69.3
110	67.7	67.7	67.5	68.8	68.6	68.3	68.0
111	68.4	68.4	68.2	69.7	69.4	69.1	68.8
112	67.4	67.4	67.3	68.7	68.5	68.2	67.9
113	68.8	68.9	68.8	70.0	69.8	69.5	69.2
114	69.1	69.1	68.8	69.7	69.6	69.3	69.0
115	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120	70.9	70.9	70.9	70.7	70.5	70.2	70.0
121	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122	74.2	74.0	73.7	73.4	73.0	72.6	72.3
123	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	66.2	66.2	66.2	66.2	66.2	66.2	0.0
133	67.9	67.9	67.9	67.9	67.9	67.8	0.0
134	73.3	73.3	73.3	73.2	73.2	73.1	0.0

Impacts on Receivers with a 3m Barrier

3m							
	Floor Level						
Receiver	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.1	76.6	76.1	75.6	75.2	74.7
14	75.7	75.5	75.2	74.8	74.4	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.1	74.7
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.5	81.0	80.1	79.3	78.5	77.8	77.3
34	81.4	80.9	80.0	79.2	78.4	77.8	77.2
35	81.3	80.7	79.8	79.0	78.3	77.7	77.1
36	81.1	80.6	79.7	78.9	78.2	77.6	77.0
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38	74.4	74.2	73.6	72.9	72.2	71.6	71.0
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.7	80.1	79.4	78.6	77.9	77.3	76.8
42	80.6	80.0	79.3	78.6	77.9	77.3	76.8
43	80.3	79.8	79.2	78.5	77.8	77.2	76.7
44	80.2	79.7	79.2	78.4	77.8	77.2	76.7
45	75.6	75.1	75.1	74.5	73.8	73.1	72.5
46	73.3	73.1	73.2	72.9	72.3	71.6	71.1
47	75.3	75.2	74.8	74.3	73.9	73.5	73.1
48	77.6	77.2	76.7	76.0	75.4	74.9	74.4
49	79.6	79.1	79.1	78.4	77.7	77.1	76.6
50	79.4	79.0	79.1	78.4	77.7	77.1	76.6
51	79.2	78.8	79.2	78.5	77.8	77.2	76.6
52	79.2	78.7	79.2	78.5	77.8	77.2	76.6
53	74.4	74.1	75.6	74.9	74.2	73.5	72.8
54	72.1	71.9	71.4	73.2	72.6	72.0	71.4
55	76.3	76.0	76.6	75.9	75.3	74.7	74.2
56	79.2	78.5	79.5	78.6	77.8	77.1	76.6
57	79.3	78.6	79.5	78.6	77.8	77.1	76.6
58	79.9	78.7	79.7	78.7	77.8	77.1	76.5
59	80.7	79.1	80.0	79.0	78.2	77.4	76.8
60	77.4	76.3	77.3	76.5	75.5	74.7	74.0
61	74.5	74.1	73.1	75.0	74.2	73.5	72.8
62	76.1	75.6	74.6	76.3	75.5	74.8	74.2
63	77.0	76.4	77.0	76.9	76.1	75.4	74.8
64	78.9	77.7	78.6	77.8	76.9	76.2	75.5
65	79.6	78.1	79.0	78.0	77.1	76.4	75.7
66	78.8	77.7	78.2	77.2	76.3	75.5	74.8

Impacts on Receivers with a 3m Barrier

67	76.4	75.9	75.1	76.2	75.4	74.7	74.0
68	70.6	70.2	69.6	70.4	69.7	69.0	68.4
69	69.0	68.7	68.1	68.9	68.2	67.6	67.0
70	66.8	66.6	66.1	67.7	67.1	66.5	66.0
71	69.1	68.8	68.0	69.6	68.9	68.3	67.7
72	76.3	75.9	75.0	76.4	75.6	74.9	74.3
73	78.4	77.5	76.5	77.5	76.7	75.9	75.3
74	80.4	79.2	77.9	78.0	77.0	76.2	75.6
75	79.9	78.8	77.5	77.6	76.7	75.9	75.3
76	79.6	78.7	77.4	77.4	76.5	75.8	75.1
77	79.6	78.6	77.3	77.0	76.4	75.7	75.0
78	74.9	74.5	73.8	73.1	72.5	72.7	72.2
79	76.3	75.7	74.8	73.9	73.2	73.5	73.0
80	77.6	76.8	75.7	74.7	74.0	74.1	73.5
81	77.7	76.5	75.2	74.2	73.5	73.8	73.2
82	80.7	79.2	77.6	76.5	75.6	75.5	74.9
83	80.9	79.3	77.7	76.5	75.5	75.4	74.8
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.1	76.4	75.2	74.2	73.4	72.7	72.6
86	77.7	76.4	75.0	73.9	73.0	72.4	72.3
87	80.7	79.1	77.5	76.3	75.3	74.6	74.1
88	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89	77.2	76.4	75.2	74.2	73.3	72.6	72.1
90	77.8	76.5	75.1	74.0	73.1	72.4	71.9
91	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97	74.5	74.5	74.0	73.4	72.7	72.0	71.5
98	73.8	73.4	72.6	71.9	71.2	70.6	70.1
99	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104	71.8	71.7	71.3	70.8	70.3	70.6	70.2
105	72.0	71.9	71.5	71.0	70.6	70.5	70.0
106	70.4	70.3	70.0	69.5	69.2	69.2	68.9
107	69.7	69.7	69.4	69.0	68.6	68.8	68.4
108	69.0	68.9	68.7	68.3	67.9	68.3	68.0
109	68.9	68.9	68.7	68.4	69.5	69.6	69.3
110	67.7	67.7	67.5	67.3	68.6	68.3	68.0
111	68.4	68.4	68.2	67.9	69.4	69.1	68.8
112	67.4	67.4	67.2	67.0	68.5	68.2	67.9
113	68.8	68.8	68.6	68.5	69.6	69.4	69.2
114	69.1	69.0	68.8	68.5	69.4	69.3	69.0
115	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120	71.0	70.9	70.9	70.7	70.5	70.3	70.1
121	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122	74.2	74.0	73.7	73.3	73.0	72.6	72.3
123	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.9	67.9	67.9	67.9	67.9	67.9	67.8
134	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with a 4m Barrier

4m							
	Floor Level						
Receiver	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.1	76.6	76.1	75.6	75.2	74.7
14	75.7	75.5	75.2	74.8	74.3	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.1	74.7
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.5	81.0	80.1	79.3	78.5	77.8	77.2
34	81.4	80.9	80.0	79.1	78.4	77.8	77.2
35	81.3	80.7	79.8	79.0	78.3	77.7	77.1
36	81.1	80.6	79.7	78.9	78.2	77.6	77.0
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38	74.4	74.2	73.6	72.9	72.2	71.6	71.0
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.7	80.1	79.3	78.5	77.9	77.3	76.8
42	80.6	80.0	79.2	78.5	77.9	77.3	76.8
43	80.3	79.8	79.1	78.4	77.8	77.2	76.7
44	80.2	79.7	79.0	78.4	77.7	77.2	76.7
45	75.6	75.1	74.2	74.2	73.8	73.1	72.5
46	73.3	73.1	72.4	72.6	72.3	71.6	71.1
47	75.3	75.2	74.8	74.3	73.9	73.5	73.1
48	77.6	77.2	76.5	76.0	75.4	74.9	74.4
49	79.5	79.1	78.6	78.4	77.7	77.1	76.6
50	79.4	78.9	78.1	78.4	77.7	77.1	76.6
51	79.2	78.7	77.9	78.4	77.8	77.2	76.6
52	79.1	78.7	77.8	78.4	77.8	77.2	76.6
53	74.4	74.0	73.2	74.8	74.2	73.5	72.8
54	72.0	71.8	71.3	70.8	72.6	72.0	71.4
55	76.3	75.9	75.2	75.9	75.3	74.7	74.2
56	79.1	78.5	77.5	78.6	77.8	77.1	76.6
57	79.3	78.5	77.4	78.6	77.8	77.1	76.6
58	79.9	78.6	79.1	78.7	77.8	77.1	76.5
59	80.7	79.0	79.7	79.0	78.2	77.4	76.8
60	77.4	76.2	74.8	76.5	75.5	74.7	74.0
61	74.5	74.0	73.1	74.5	74.2	73.5	72.8
62	76.1	75.5	74.5	76.2	75.5	74.8	74.2
63	77.0	76.3	75.2	76.9	76.1	75.4	74.8
64	78.9	77.7	76.3	77.8	76.9	76.2	75.5
65	79.6	78.1	76.6	78.0	77.1	76.4	75.7
66	78.8	77.6	76.3	77.2	76.3	75.5	74.8



Impacts on Receivers with a 4m Barrier

67	76.4	75.9	75.0	75.5	75.4	74.7	74.0
68	70.6	70.2	69.5	69.2	69.7	69.0	68.4
69	69.0	68.7	68.1	67.5	68.2	67.6	67.0
70	66.8	66.6	66.1	65.5	67.1	66.5	66.0
71	69.0	68.7	68.0	67.3	68.9	68.3	67.7
72	76.3	75.8	74.9	74.2	75.6	74.9	74.3
73	78.4	77.5	76.2	77.3	76.7	75.9	75.3
74	80.4	79.2	77.7	78.0	77.0	76.2	75.6
75	79.8	78.8	77.4	76.5	76.7	75.9	75.3
76	79.6	78.6	77.3	76.2	76.5	75.8	75.1
77	79.6	78.6	77.3	76.2	75.8	75.7	75.0
78	74.9	74.5	73.8	73.0	72.4	71.7	72.2
79	76.3	75.7	74.7	73.9	73.1	72.5	73.0
80	77.6	76.8	75.7	74.7	73.9	73.2	73.5
81	77.7	76.5	75.2	74.2	73.4	72.7	73.2
82	80.7	79.2	77.6	76.4	75.5	74.8	74.8
83	80.9	79.3	77.6	76.5	75.5	74.8	74.2
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.1	76.4	75.2	74.2	73.4	72.7	72.1
86	77.7	76.4	75.0	73.9	73.0	72.3	71.8
87	80.7	79.1	77.4	76.2	75.3	74.5	73.9
88	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89	77.2	76.4	75.2	74.2	73.3	72.6	72.0
90	77.8	76.5	75.1	74.0	73.1	72.4	71.9
91	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97	74.5	74.2	73.6	72.9	72.2	71.6	71.1
98	73.8	73.4	72.6	71.9	71.2	70.6	70.1
99	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104	71.8	71.7	71.3	70.8	70.3	69.8	69.4
105	72.0	71.9	71.5	71.0	70.5	69.9	70.0
106	70.4	70.3	69.9	69.5	69.1	68.6	68.8
107	69.7	69.6	69.4	69.0	68.6	68.2	68.3
108	69.0	68.9	68.7	68.3	67.9	67.5	67.8
109	68.9	68.8	68.7	68.4	68.1	69.2	69.3
110	67.6	67.6	67.5	67.3	67.0	67.4	68.0
111	68.3	68.3	68.2	67.9	67.7	67.4	68.8
112	67.3	67.3	67.2	67.0	66.7	66.4	67.9
113	68.7	68.7	68.6	68.3	68.1	67.8	69.0
114	69.0	69.0	68.8	68.5	68.2	69.1	68.7
115	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120	70.9	70.9	70.9	70.7	70.5	70.2	70.0
121	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122	74.2	74.0	73.7	73.3	73.0	72.6	72.3
123	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.9	67.9	67.9	67.9	67.9	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with a 5m Barrier

5m								
				Floor Level				
Receiver	0.0	5.0	10.0	15.0	20.0	25.0	30.0	
1.0	69.1	73.6	74.6	74.2	73.8	73.4	73.1	
2.0	67.2	73.4	74.6	74.2	73.8	73.4	73.0	
3.0	65.9	71.8	73.1	72.8	72.5	72.1	71.8	
4.0	65.5	71.6	73.2	72.8	72.5	72.1	71.8	
5.0	66.8	72.9	74.3	73.9	73.5	73.1	72.7	
6.0	67.7	72.8	74.1	73.7	73.3	72.9	72.6	
7.0	68.3	71.0	72.4	72.1	71.7	71.4	71.0	
8.0	69.9	70.7	71.1	70.9	70.6	70.4	70.1	
9.0	73.9	74.9	74.4	73.8	73.2	72.6	72.2	
10.0	75.5	75.7	75.0	74.3	73.6	73.1	72.6	
11.0	77.5	77.0	76.4	75.7	75.1	74.6	74.2	
12.0	77.8	77.4	76.8	76.2	75.7	75.2	74.8	
13.0	77.5	77.1	76.6	76.1	75.6	75.1	74.7	
14.0	75.7	75.5	75.2	74.8	74.3	73.9	73.5	
15.0	74.7	74.5	74.2	73.8	73.3	72.9	72.5	
16.0	76.8	76.6	76.3	75.9	75.5	75.0	74.6	
17.0	76.9	76.7	76.4	76.0	75.6	75.2	74.8	
18.0	76.1	76.0	75.7	75.4	75.0	74.6	74.2	
19.0	75.5	75.4	75.2	74.9	74.6	74.3	73.9	
20.0	74.6	74.6	74.4	74.2	73.9	73.6	73.2	
21.0	71.6	71.6	71.6	71.6	71.4	71.2	70.9	
22.0	73.4	73.4	73.2	73.1	72.9	72.6	72.3	
23.0	69.6	70.4	71.8	71.6	71.4	71.2	70.9	
24.0	70.2	71.9	72.7	72.5	72.2	71.9	71.6	
25.0	78.6	78.5	78.0	77.4	76.8	76.2	75.6	
26.0	77.5	77.5	77.2	76.7	76.1	75.6	75.1	
27.0	77.0	77.0	76.7	76.2	75.7	75.2	74.8	
28.0	76.2	76.2	75.9	75.5	75.1	74.7	74.2	
29.0	64.0	63.9	63.7	63.5	63.1	62.7	62.4	
30.0	73.7	73.6	73.5	73.2	72.8	72.4	72.1	
31.0	79.6	79.4	78.9	78.3	77.6	76.9	76.4	
32.0	80.5	80.3	79.6	78.8	78.0	77.4	76.8	
33.0	81.5	81.0	80.1	79.2	78.5	77.8	77.2	
34.0	81.4	80.9	80.0	79.1	78.4	77.7	77.2	
35.0	81.3	80.7	79.8	79.0	78.3	77.7	77.1	
36.0	81.1	80.6	79.7	78.9	78.2	77.6	77.0	
37.0	47.3	46.9	46.0	45.3	44.6	44.0	43.5	
38.0	74.4	74.2	73.6	72.9	72.2	71.6	71.0	
39.0	76.5	76.3	75.9	75.4	74.9	74.5	74.1	
40.0	78.2	77.9	77.2	76.6	76.0	75.5	75.0	
41.0	80.7	80.1	79.2	78.5	77.9	77.3	76.8	
42.0	80.6	80.0	79.1	78.4	77.8	77.3	76.7	
43.0	80.3	79.8	78.9	78.3	77.7	77.2	76.7	
44.0	80.2	79.7	78.8	78.3	77.7	77.1	76.7	
45.0	75.6	75.1	74.2	74.0	73.6	73.1	72.5	
46.0	73.3	73.0	72.4	71.7	71.9	71.6	71.1	
47.0	75.3	75.2	74.8	74.3	73.9	73.5	73.1	
48.0	77.6	77.2	76.5	76.0	75.4	74.9	74.4	
49.0	79.5	79.1	78.2	78.2	77.7	77.1	76.6	
50.0	79.4	78.9	78.1	78.1	77.7	77.1	76.6	
51.0	79.2	78.7	77.9	78.1	77.7	77.2	76.6	
52.0	79.1	78.6	77.8	78.3	77.7	77.2	76.6	
53.0	74.4	73.9	73.1	73.8	74.1	73.5	72.8	
54.0	72.0	71.8	71.3	70.7	71.6	72.0	71.4	
55.0	76.3	75.9	75.2	74.6	75.3	74.7	74.2	
56.0	79.1	78.5	77.5	78.4	77.8	77.1	76.6	
57.0	79.3	78.5	77.4	78.5	77.8	77.1	76.6	
58.0	79.9	78.6	77.4	78.7	77.8	77.1	76.5	
59.0	80.7	79.0	77.6	79.0	78.2	77.4	76.8	
60.0	77.4	76.1	74.8	76.2	75.5	74.7	74.0	
61.0	74.5	73.9	73.0	72.1	74.0	73.5	72.8	
62.0	76.1	75.5	74.5	73.6	75.5	74.8	74.2	
63.0	77.0	76.3	75.2	74.3	76.1	75.4	74.8	
64.0	78.8	77.6	76.3	77.3	76.9	76.2	75.5	
65.0	79.5	78.0	76.6	77.8	77.1	76.4	75.7	
66.0	78.8	77.6	76.2	77.1	76.3	75.5	74.8	

Impacts on Receivers with a 5m Barrier

67.0	76.4	75.9	75.0	74.1	75.4	74.7	74.0
68.0	70.5	70.2	69.5	68.7	68.7	69.0	68.4
69.0	68.9	68.7	68.1	67.3	67.4	67.6	67.0
70.0	66.8	66.6	66.1	65.5	64.8	66.5	66.0
71.0	69.0	68.7	68.0	67.3	66.6	68.3	67.7
72.0	76.3	75.8	74.9	74.0	75.5	74.9	74.3
73.0	78.4	77.5	76.2	75.3	76.5	75.9	75.3
74.0	80.4	79.1	77.7	76.5	77.0	76.2	75.6
75.0	79.8	78.8	77.4	76.3	76.7	75.9	75.3
76.0	79.6	78.6	77.3	76.2	75.3	75.8	75.1
77.0	79.6	78.6	77.3	76.2	75.3	74.8	75.0
78.0	74.9	74.5	73.8	73.0	72.3	71.7	71.2
79.0	76.3	75.7	74.7	73.9	73.1	72.4	71.9
80.0	77.6	76.8	75.6	74.7	73.8	73.1	72.5
81.0	77.6	76.5	75.2	74.2	73.4	72.7	72.1
82.0	80.7	79.2	77.6	76.4	75.5	74.8	74.1
83.0	80.9	79.3	77.6	76.5	75.5	74.8	74.1
84.0	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85.0	77.1	76.4	75.2	74.2	73.4	72.7	72.1
86.0	77.7	76.4	74.9	73.9	73.0	72.3	71.7
87.0	80.7	79.1	77.4	76.2	75.3	74.5	73.9
88.0	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89.0	77.2	76.4	75.2	74.2	73.3	72.6	72.0
90.0	77.8	76.5	75.1	74.0	73.1	72.4	71.8
91.0	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92.0	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93.0	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94.0	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95.0	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96.0	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97.0	74.4	74.5	74.0	73.4	72.7	72.0	71.5
98.0	73.8	73.4	72.6	71.9	71.2	70.6	70.0
99.0	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100.0	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101.0	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102.0	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103.0	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104.0	71.8	71.7	71.3	70.8	70.3	69.8	69.3
105.0	72.0	71.9	71.5	71.0	70.5	69.9	69.4
106.0	70.4	70.2	69.9	69.5	69.1	68.6	68.2
107.0	69.7	69.6	69.4	69.0	68.6	68.2	67.8
108.0	69.0	68.9	68.7	68.3	67.9	67.5	67.1
109.0	68.9	68.8	68.6	68.4	68.1	67.8	67.9
110.0	67.6	67.6	67.5	67.3	67.0	66.8	66.6
111.0	68.3	68.3	68.1	67.9	67.7	67.4	67.1
112.0	67.3	67.3	67.2	66.9	66.7	66.4	66.2
113.0	68.7	68.7	68.5	68.3	68.0	67.7	67.5
114.0	69.0	69.0	68.8	68.5	68.2	67.9	67.6
115.0	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116.0	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117.0	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118.0	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119.0	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120.0	71.0	70.9	70.9	70.7	70.5	70.3	70.1
121.0	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122.0	74.2	74.0	73.7	73.3	73.0	72.6	72.3
123.0	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124.0	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125.0	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126.0	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127.0	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128.0	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129.0	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130.0	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131.0	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132.0	66.2	66.2	66.2	66.2	66.2	66.2	
133.0	67.9	67.9	67.9	67.9	67.9	67.8	
134.0	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with a 6m Barrier

6m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.1	76.6	76.1	75.6	75.1	74.7
14	75.7	75.5	75.2	74.8	74.3	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.0	74.6
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.5	81.0	80.1	79.2	78.5	77.8	77.2
34	81.4	80.9	80.0	79.1	78.4	77.7	77.1
35	81.3	80.7	79.8	79.0	78.3	77.6	77.1
36	81.1	80.6	79.7	78.8	78.1	77.5	77.0
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38	74.4	74.2	73.6	72.9	72.2	71.6	71.0
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.7	80.1	79.2	78.5	77.8	77.2	76.8
42	80.6	80.0	79.1	78.4	77.8	77.2	76.7
43	80.3	79.8	78.9	78.1	77.7	77.1	76.7
44	80.2	79.7	78.8	78.0	77.6	77.1	76.6
45	75.6	75.1	74.2	73.3	73.4	72.9	72.5
46	73.3	73.0	72.4	71.7	71.1	71.6	71.1
47	75.3	75.2	74.8	74.3	73.8	73.5	73.1
48	77.6	77.2	76.5	75.9	75.4	74.9	74.4
49	79.5	79.1	78.2	77.4	77.5	77.1	76.6
50	79.4	78.9	78.1	77.3	77.5	77.1	76.6
51	79.2	78.7	77.9	77.1	77.6	77.1	76.6
52	79.1	78.6	77.8	77.0	77.7	77.2	76.6
53	74.4	73.9	73.1	72.3	73.7	73.4	72.8
54	72.0	71.8	71.2	70.6	70.0	71.7	71.4
55	76.3	75.9	75.2	74.6	75.3	74.7	74.2
56	79.1	78.4	77.4	76.6	77.8	77.1	76.6
57	79.2	78.5	77.4	76.5	77.8	77.1	76.6
58	79.8	78.6	77.3	78.1	77.8	77.1	76.5
59	80.6	79.0	77.6	78.7	78.2	77.4	76.8
60	77.4	76.1	74.7	75.3	75.5	74.7	74.0
61	74.5	73.9	73.0	72.1	72.9	73.4	72.8
62	76.1	75.5	74.5	73.6	75.1	74.8	74.2
63	77.0	76.3	75.2	74.3	75.9	75.4	74.8
64	78.8	77.6	76.2	75.2	76.8	76.2	75.5
65	79.5	78.0	76.5	75.5	77.0	76.3	75.7
66	78.8	77.6	76.2	75.2	76.3	75.5	74.8

Impacts on Receivers with a 6m Barrier

67	76.4	75.9	75.0	74.1	73.4	74.7	74.0
68	70.5	70.2	69.5	68.7	68.1	68.9	68.4
69	68.9	68.7	68.1	67.3	66.6	66.9	67.0
70	66.8	66.6	66.1	65.5	64.8	64.3	66.0
71	69.0	68.7	68.0	67.2	66.6	68.3	67.7
72	76.3	75.8	74.9	74.0	73.2	74.8	74.3
73	78.4	77.5	76.2	75.2	74.6	75.9	75.3
74	80.4	79.1	77.7	76.5	75.8	76.2	75.6
75	79.8	78.8	77.4	76.3	75.3	75.9	75.3
76	79.6	78.6	77.3	76.2	75.3	74.5	75.1
77	79.6	78.6	77.3	76.2	75.3	74.5	74.1
78	74.9	74.5	73.8	73.0	72.3	71.7	71.2
79	76.3	75.7	74.7	73.8	73.1	72.4	71.9
80	77.6	76.8	75.6	74.7	73.8	73.1	72.5
81	77.6	76.5	75.2	74.2	73.3	72.7	72.1
82	80.7	79.2	77.6	76.4	75.5	74.8	74.1
83	80.9	79.3	77.6	76.4	75.5	74.8	74.1
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.1	76.4	75.2	74.2	73.4	72.7	72.1
86	77.7	76.4	74.9	73.9	73.0	72.3	71.7
87	80.7	79.1	77.4	76.2	75.3	74.5	73.9
88	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89	77.2	76.4	75.2	74.2	73.3	72.6	72.0
90	77.8	76.5	75.1	74.0	73.1	72.4	71.8
91	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97	74.5	74.2	73.6	72.9	72.2	71.6	71.1
98	73.8	73.4	72.6	71.9	71.2	70.6	70.0
99	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104	71.8	71.7	71.3	70.8	70.3	69.8	69.3
105	72.0	71.9	71.5	71.0	70.5	69.9	69.4
106	70.4	70.2	69.9	69.5	69.1	68.6	68.2
107	69.7	69.6	69.4	69.0	68.6	68.2	67.8
108	69.0	68.9	68.7	68.3	67.9	67.5	67.1
109	68.9	68.8	68.6	68.4	68.1	67.8	67.5
110	67.6	67.6	67.5	67.3	67.0	66.8	66.6
111	68.3	68.3	68.1	67.9	67.7	67.4	67.1
112	67.3	67.3	67.1	66.9	66.7	66.4	66.2
113	68.7	68.7	68.5	68.3	68.0	67.7	67.4
114	69.0	69.0	68.8	68.5	68.2	67.9	67.6
115	69.0	69.0	69.1	69.0	68.9	68.8	68.6
116	70.9	70.9	70.9	70.8	70.6	70.5	70.3
117	70.8	70.8	70.9	70.7	70.6	70.4	70.2
118	70.0	70.0	70.0	69.8	69.6	69.4	69.5
119	69.7	69.7	69.8	69.6	69.4	69.3	69.1
120	70.9	70.9	70.9	70.7	70.5	70.2	70.0
121	73.7	73.6	73.4	73.1	72.8	72.4	72.1
122	74.2	74.0	73.7	73.3	73.0	72.6	72.2
123	74.7	74.5	74.0	73.5	73.0	72.5	72.0
124	74.6	74.3	73.9	73.4	72.9	72.5	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.2	70.8	70.4	70.1
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.9	67.9	67.9	67.9	67.9	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	



Impacts on Receivers with a 6m Barrier + 1m Cantilever

6m +1m							
Receiver	1.0	5.0	10.0	Floor Level			
	15.0	20.0	25.0	30.0			
1.0	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2.0	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3.0	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4.0	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5.0	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6.0	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7.0	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8.0	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9.0	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10.0	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11.0	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12.0	77.8	77.4	76.8	76.2	75.7	75.2	74.7
13.0	77.5	77.1	76.6	76.1	75.6	75.1	74.7
14.0	75.7	75.5	75.2	74.7	74.3	73.9	73.5
15.0	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16.0	76.8	76.6	76.3	75.9	75.5	75.0	74.6
17.0	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18.0	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19.0	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20.0	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21.0	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22.0	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23.0	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24.0	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25.0	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26.0	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27.0	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28.0	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29.0	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30.0	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31.0	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32.0	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33.0	81.5	81.0	80.1	79.2	78.4	77.8	77.2
34.0	81.4	80.9	80.0	79.1	78.4	77.7	77.1
35.0	81.3	80.7	79.8	78.9	78.2	77.6	77.1
36.0	81.1	80.6	79.6	78.8	78.1	77.5	77.0
37.0	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38.0	74.4	74.1	73.5	72.8	72.1	71.5	71.0
39.0	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40.0	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41.0	80.7	80.1	79.2	78.4	77.8	77.2	76.7
42.0	80.5	80.0	79.1	78.3	77.6	77.1	76.6
43.0	80.3	79.8	78.9	78.1	77.4	77.0	76.6
44.0	80.2	79.7	78.8	78.0	77.3	76.9	76.5
45.0	75.5	75.1	74.2	73.3	72.5	72.5	72.2
46.0	73.3	73.0	72.4	71.7	71.1	70.5	70.7
47.0	75.3	75.2	74.8	74.3	73.8	73.4	73.0
48.0	77.6	77.2	76.5	75.9	75.3	74.9	74.4
49.0	79.5	79.1	78.2	77.4	76.7	76.9	76.5
50.0	79.4	78.9	78.1	77.3	76.6	76.8	76.5
51.0	79.2	78.7	77.9	77.1	76.4	77.0	76.6
52.0	79.1	78.6	77.8	77.0	76.3	77.0	76.6
53.0	74.3	73.9	73.0	72.2	71.5	72.4	72.7
54.0	72.0	71.7	71.2	70.6	70.0	69.4	69.0
55.0	76.3	75.9	75.2	74.6	74.0	74.3	74.2
56.0	79.1	78.4	77.4	76.6	75.9	77.1	76.6
57.0	79.2	78.4	77.4	76.5	76.6	77.1	76.6
58.0	79.8	78.6	77.3	76.4	77.6	77.1	76.5
59.0	80.6	79.0	77.6	76.6	77.9	77.4	76.8
60.0	77.4	76.1	74.7	73.6	74.5	74.7	74.0
61.0	74.5	73.9	72.9	72.0	71.2	70.5	72.8
62.0	76.1	75.5	74.4	73.5	72.8	73.2	74.2
63.0	77.0	76.2	75.1	74.2	73.5	75.0	74.8
64.0	78.8	77.6	76.2	75.2	74.4	76.0	75.5
65.0	79.5	78.0	76.5	75.5	76.1	76.2	75.7
66.0	78.8	77.6	76.2	75.1	74.3	75.5	74.8

Impacts on Receivers with a 6m Barrier + 1m Cantilever

67.0	76.4	75.9	75.0	74.1	73.3	72.7	74.0
68.0	70.5	70.2	69.5	68.7	68.0	67.3	67.3
69.0	68.9	68.7	68.1	67.3	66.6	66.0	66.1
70.0	66.8	66.6	66.1	65.5	64.8	64.3	63.8
71.0	69.0	68.7	68.0	67.2	66.6	65.9	65.4
72.0	76.3	75.8	74.9	74.0	73.2	72.5	74.1
73.0	78.4	77.5	76.2	75.2	74.3	73.8	75.1
74.0	80.4	79.1	77.7	76.5	75.5	74.9	75.6
75.0	79.8	78.8	77.4	76.2	75.3	74.5	75.2
76.0	79.6	78.6	77.3	76.2	75.3	74.5	73.8
77.0	79.6	78.6	77.3	76.2	75.3	74.5	73.8
78.0	74.9	74.5	73.8	73.0	72.3	71.7	71.2
79.0	76.3	75.7	74.7	73.8	73.1	72.4	71.9
80.0	77.6	76.8	75.6	74.6	73.8	73.1	72.5
81.0	77.6	76.5	75.2	74.1	73.3	72.7	72.1
82.0	80.7	79.2	77.6	76.4	75.5	74.7	74.1
83.0	80.9	79.3	77.6	76.4	75.5	74.8	74.1
84.0	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85.0	77.1	76.4	75.2	74.2	73.4	72.7	72.1
86.0	77.7	76.4	74.9	73.9	73.0	72.3	71.7
87.0	80.7	79.1	77.4	76.2	75.3	74.5	73.9
88.0	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89.0	77.2	76.4	75.2	74.2	73.3	72.6	72.0
90.0	77.8	76.5	75.1	74.0	73.1	72.4	71.8
91.0	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92.0	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93.0	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94.0	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95.0	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96.0	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97.0	74.4	74.5	74.0	73.4	72.7	72.0	71.5
98.0	73.8	73.4	72.6	71.9	71.2	70.6	70.0
99.0	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100.0	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101.0	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102.0	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103.0	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104.0	71.8	71.7	71.3	70.8	70.3	69.8	69.3
105.0	72.0	71.9	71.5	71.0	70.5	69.9	69.4
106.0	70.4	70.2	69.9	69.5	69.1	68.6	68.2
107.0	69.7	69.6	69.4	69.0	68.6	68.1	67.8
108.0	69.0	68.9	68.6	68.3	67.9	67.5	67.1
109.0	68.9	68.8	68.6	68.4	68.1	67.8	67.5
110.0	67.6	67.6	67.5	67.3	67.0	66.8	66.6
111.0	68.3	68.3	68.1	67.9	67.7	67.4	67.1
112.0	67.3	67.3	67.1	66.9	66.7	66.4	66.2
113.0	68.7	68.7	68.5	68.2	68.0	67.6	67.4
114.0	69.0	69.0	68.8	68.5	68.2	67.9	67.6
115.0	68.4	68.4	68.3	68.7	68.7	68.8	68.6
116.0	70.5	70.4	70.4	70.6	70.5	70.5	70.3
117.0	70.4	70.4	70.4	70.5	70.5	70.4	70.2
118.0	69.5	69.5	69.5	69.6	69.6	69.4	69.5
119.0	69.3	69.2	69.4	69.4	69.3	69.2	69.1
120.0	70.5	70.5	70.7	70.6	70.4	70.2	70.0
121.0	73.5	73.5	73.3	73.1	72.8	72.4	72.1
122.0	74.0	73.9	73.6	73.3	73.0	72.6	72.2
123.0	74.7	74.4	74.0	73.5	73.0	72.5	72.0
124.0	74.4	74.2	73.8	73.4	72.9	72.5	72.2
125.0	76.6	76.3	75.7	75.0	74.4	73.9	73.4
126.0	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127.0	71.9	71.7	71.4	71.1	70.7	70.4	70.1
128.0	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129.0	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130.0	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131.0	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132.0	66.2	66.2	66.2	66.2	66.2	66.2	
133.0	67.8	67.8	67.8	67.8	67.8	67.8	
134.0	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with a 6m Barrier + 2m Cantilever

6m+2m	Floor Level						
Receiver	1.0	5.0	10.0	15.0	20.0	25.0	30.0
1.0	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2.0	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3.0	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4.0	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5.0	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6.0	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7.0	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8.0	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9.0	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10.0	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11.0	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12.0	77.8	77.4	76.8	76.2	75.7	75.2	74.7
13.0	77.4	77.1	76.6	76.1	75.6	75.1	74.7
14.0	75.7	75.5	75.2	74.7	74.3	73.9	73.5
15.0	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16.0	76.8	76.6	76.3	75.9	75.5	75.0	74.6
17.0	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18.0	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19.0	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20.0	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21.0	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22.0	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23.0	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24.0	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25.0	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26.0	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27.0	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28.0	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29.0	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30.0	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31.0	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32.0	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33.0	81.5	81.0	80.1	79.2	78.4	77.7	77.2
34.0	81.4	80.9	80.0	79.1	78.3	77.7	77.1
35.0	81.3	80.7	79.8	78.9	78.2	77.6	77.0
36.0	81.1	80.6	79.6	78.8	78.1	77.4	76.9
37.0	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38.0	74.4	74.1	73.5	72.8	72.1	71.5	70.9
39.0	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40.0	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41.0	80.7	80.1	79.2	78.4	77.7	77.1	76.6
42.0	80.5	80.0	79.1	78.3	77.6	77.0	76.5
43.0	80.3	79.8	78.9	78.1	77.4	76.8	76.3
44.0	80.2	79.7	78.8	78.0	77.3	76.7	76.2
45.0	75.5	75.1	74.2	73.3	72.5	71.8	71.2
46.0	73.3	73.0	72.4	71.7	71.0	70.4	69.9
47.0	75.3	75.2	74.8	74.3	73.8	73.4	73.0
48.0	77.6	77.2	76.5	75.9	75.3	74.8	74.3
49.0	79.5	79.1	78.2	77.4	76.7	76.2	75.7
50.0	79.4	78.9	78.1	77.3	76.6	76.1	75.6
51.0	79.2	78.7	77.8	77.1	76.4	75.8	75.3
52.0	79.1	78.6	77.8	77.0	76.3	75.7	75.2
53.0	74.3	73.9	73.0	72.2	71.4	70.8	70.2
54.0	72.0	71.7	71.2	70.6	70.0	69.4	68.9
55.0	76.3	75.9	75.2	74.5	74.0	73.5	73.1
56.0	79.1	78.4	77.4	76.5	75.9	75.3	75.2
57.0	79.2	78.4	77.4	76.5	75.8	75.2	76.2
58.0	79.8	78.6	77.3	76.4	75.6	75.0	76.3
59.0	80.6	79.0	77.6	76.6	75.9	76.7	76.6
60.0	77.4	76.1	74.7	73.6	72.7	72.0	73.6
61.0	74.5	73.9	72.9	72.0	71.2	70.5	69.9
62.0	76.1	75.5	74.4	73.5	72.8	72.1	71.5
63.0	77.0	76.2	75.1	74.2	73.4	72.8	72.3
64.0	78.8	77.6	76.2	75.2	74.4	73.7	74.0
65.0	79.5	78.0	76.5	75.5	74.6	74.0	75.1
66.0	78.8	77.6	76.2	75.1	74.2	73.4	74.3
67.0	76.4	75.9	75.0	74.0	73.2	72.5	71.9

Impacts on Receivers with a 6m Barrier + 2m Cantilever

68.0	70.5	70.2	69.5	68.7	68.0	67.3	66.7
69.0	68.9	68.7	68.0	67.3	66.6	66.0	65.4
70.0	66.8	66.5	66.1	65.4	64.8	64.3	63.8
71.0	69.0	68.7	68.0	67.2	66.6	65.9	65.4
72.0	76.3	75.8	74.9	74.0	73.2	72.5	71.9
73.0	78.4	77.5	76.2	75.1	74.3	73.6	73.0
74.0	80.4	79.1	77.7	76.5	75.5	74.7	74.0
75.0	79.8	78.8	77.4	76.2	75.3	74.5	73.8
76.0	79.6	78.6	77.3	76.2	75.3	74.5	73.8
77.0	79.6	78.6	77.3	76.2	75.2	74.5	73.8
78.0	74.9	74.5	73.8	73.0	72.3	71.7	71.1
79.0	76.3	75.7	74.7	73.8	73.1	72.4	71.8
80.0	77.6	76.8	75.6	74.6	73.8	73.1	72.5
81.0	77.6	76.5	75.2	74.1	73.3	72.6	72.1
82.0	80.7	79.2	77.6	76.4	75.5	74.7	74.1
83.0	80.9	79.3	77.6	76.4	75.5	74.7	74.1
84.0	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85.0	77.1	76.4	75.2	74.2	73.4	72.7	72.1
86.0	77.7	76.4	74.9	73.9	73.0	72.3	71.7
87.0	80.7	79.1	77.4	76.2	75.3	74.5	73.9
88.0	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89.0	77.2	76.4	75.2	74.2	73.3	72.6	72.0
90.0	77.8	76.5	75.1	74.0	73.1	72.4	71.8
91.0	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92.0	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93.0	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94.0	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95.0	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96.0	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97.0	74.4	74.5	74.0	73.4	72.7	72.0	71.5
98.0	73.8	73.4	72.6	71.9	71.2	70.6	70.0
99.0	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100.0	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101.0	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102.0	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103.0	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104.0	71.8	71.7	71.3	70.8	70.3	69.8	69.3
105.0	72.0	71.9	71.5	71.0	70.5	69.9	69.4
106.0	70.4	70.2	69.9	69.5	69.1	68.6	68.2
107.0	69.7	69.6	69.4	69.0	68.6	68.1	67.7
108.0	69.0	68.9	68.6	68.3	67.9	67.5	67.1
109.0	68.9	68.8	68.6	68.4	68.1	67.8	67.5
110.0	67.6	67.6	67.5	67.3	67.0	66.8	66.6
111.0	68.3	68.3	68.1	67.9	67.6	67.4	67.1
112.0	67.3	67.3	67.1	66.9	66.7	66.4	66.2
113.0	68.7	68.6	68.5	68.2	67.9	67.6	67.3
114.0	69.0	69.0	68.8	68.5	68.2	67.9	67.6
115.0	68.4	68.4	68.3	68.7	68.7	68.7	68.6
116.0	70.5	70.4	70.4	70.6	70.5	70.4	70.3
117.0	70.4	70.4	70.4	70.5	70.5	70.4	70.2
118.0	69.5	69.5	69.5	69.6	69.6	69.4	69.5
119.0	69.3	69.2	69.4	69.4	69.3	69.2	69.1
120.0	70.5	70.5	70.7	70.6	70.4	70.2	70.0
121.0	73.5	73.5	73.3	73.1	72.8	72.4	72.1
122.0	74.0	73.9	73.6	73.3	72.9	72.6	72.2
123.0	74.7	74.4	74.0	73.5	73.0	72.5	72.0
124.0	74.4	74.2	73.8	73.3	72.9	72.4	72.2
125.0	76.6	76.3	75.7	75.0	74.4	73.9	73.4
126.0	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127.0	71.9	71.7	71.4	71.1	70.7	70.4	70.1
128.0	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129.0	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130.0	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131.0	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132.0	66.2	66.2	66.2	66.2	66.2	66.2	
133.0	67.8	67.8	67.8	67.8	67.8	67.8	
134.0	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with a 6m Barrier + 3m Cantilever

6m+3m				Floor Level			
Receiver	1.0	5.0	10.0	15.0	20.0	25.0	30.0
1.0	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2.0	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3.0	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4.0	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5.0	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6.0	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7.0	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8.0	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9.0	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10.0	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11.0	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12.0	77.8	77.4	76.8	76.2	75.7	75.2	74.7
13.0	77.4	77.1	76.6	76.1	75.6	75.1	74.7
14.0	75.7	75.5	75.2	74.7	74.3	73.9	73.5
15.0	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16.0	76.8	76.6	76.3	75.9	75.5	75.0	74.6
17.0	76.9	76.7	76.4	76.0	75.6	75.2	74.8
18.0	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19.0	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20.0	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21.0	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22.0	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23.0	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24.0	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25.0	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26.0	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27.0	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28.0	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29.0	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30.0	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31.0	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32.0	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33.0	81.5	81.0	80.1	79.2	78.4	77.7	77.1
34.0	81.4	80.9	79.9	79.1	78.3	77.7	77.1
35.0	81.3	80.7	79.8	78.9	78.2	77.6	77.0
36.0	81.1	80.6	79.6	78.8	78.1	77.4	76.9
37.0	47.3	46.9	46.0	45.3	44.6	44.0	43.5
38.0	74.4	74.1	73.5	72.8	72.1	71.5	70.9
39.0	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40.0	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41.0	80.6	80.1	79.2	78.4	77.7	77.1	76.5
42.0	80.5	80.0	79.1	78.3	77.6	77.0	76.5
43.0	80.3	79.8	78.9	78.1	77.4	76.8	76.3
44.0	80.2	79.7	78.8	78.0	77.3	76.7	76.2
45.0	75.5	75.0	74.2	73.3	72.5	71.8	71.2
46.0	73.2	73.0	72.4	71.7	71.0	70.4	69.9
47.0	75.3	75.2	74.8	74.3	73.8	73.4	73.0
48.0	77.6	77.2	76.5	75.9	75.3	74.8	74.3
49.0	79.5	79.1	78.2	77.4	76.7	76.2	75.7
50.0	79.4	78.9	78.1	77.3	76.6	76.1	75.6
51.0	79.2	78.7	77.8	77.1	76.4	75.8	75.3
52.0	79.1	78.6	77.8	77.0	76.3	75.7	75.2
53.0	74.3	73.9	73.0	72.2	71.4	70.7	70.1
54.0	72.0	71.7	71.2	70.5	69.9	69.4	68.8
55.0	76.3	75.9	75.2	74.5	74.0	73.5	73.1
56.0	79.1	78.4	77.4	76.5	75.8	75.3	74.8
57.0	79.2	78.4	77.3	76.5	75.8	75.2	74.7
58.0	79.8	78.5	77.3	76.3	75.6	75.0	74.5
59.0	80.6	79.0	77.6	76.6	75.9	75.2	74.7
60.0	77.4	76.1	74.7	73.6	72.7	72.0	71.3
61.0	74.5	73.9	72.9	72.0	71.2	70.5	69.8
62.0	76.1	75.4	74.4	73.5	72.7	72.1	71.5
63.0	77.0	76.2	75.1	74.2	73.4	72.8	72.2
64.0	78.8	77.6	76.2	75.2	74.4	73.7	73.2
65.0	79.5	78.0	76.5	75.4	74.6	74.0	73.4
66.0	78.8	77.6	76.2	75.0	74.1	73.4	72.7
67.0	76.3	75.9	74.9	74.0	73.2	72.5	71.9



Impacts on Receivers with a 6m Barrier + 3m Cantilever

68.0	70.5	70.2	69.5	68.7	68.0	67.3	66.7
69.0	68.9	68.7	68.0	67.3	66.6	66.0	65.4
70.0	66.8	66.5	66.1	65.4	64.8	64.3	63.8
71.0	69.0	68.7	68.0	67.2	66.5	65.9	65.4
72.0	76.3	75.8	74.9	74.0	73.2	72.5	71.9
73.0	78.4	77.4	76.2	75.1	74.3	73.6	73.0
74.0	80.4	79.1	77.7	76.5	75.5	74.7	74.0
75.0	79.8	78.8	77.4	76.2	75.3	74.5	73.8
76.0	79.6	78.6	77.3	76.2	75.3	74.5	73.8
77.0	79.6	78.6	77.3	76.2	75.2	74.5	73.8
78.0	74.9	74.5	73.8	73.0	72.3	71.7	71.1
79.0	76.3	75.7	74.7	73.8	73.1	72.4	71.8
80.0	77.6	76.8	75.6	74.6	73.8	73.1	72.5
81.0	77.6	76.5	75.2	74.1	73.3	72.6	72.0
82.0	80.7	79.2	77.6	76.4	75.5	74.7	74.1
83.0	80.9	79.3	77.6	76.4	75.5	74.7	74.1
84.0	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85.0	77.1	76.4	75.2	74.2	73.4	72.7	72.1
86.0	77.7	76.4	74.9	73.9	73.0	72.3	71.7
87.0	80.7	79.1	77.4	76.2	75.3	74.5	73.9
88.0	80.8	79.1	77.4	76.2	75.3	74.5	73.9
89.0	77.2	76.4	75.2	74.2	73.3	72.6	72.0
90.0	77.8	76.5	75.1	74.0	73.1	72.4	71.8
91.0	80.5	78.9	77.3	76.1	75.1	74.4	73.7
92.0	80.4	78.9	77.2	76.0	75.1	74.3	73.7
93.0	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94.0	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95.0	72.6	72.4	72.0	71.4	70.9	70.4	69.9
96.0	74.7	74.4	73.8	73.1	72.4	71.8	71.3
97.0	74.4	74.5	74.0	73.4	72.7	72.0	71.5
98.0	73.8	73.4	72.6	71.9	71.2	70.6	70.0
99.0	75.3	74.6	73.4	72.4	71.6	71.0	70.4
100.0	78.4	77.2	75.8	74.7	73.7	73.0	72.4
101.0	78.4	77.2	75.8	74.6	73.7	73.0	72.3
102.0	78.3	77.1	75.7	74.5	73.6	72.9	72.2
103.0	78.3	77.1	75.6	74.5	73.5	72.8	72.1
104.0	71.8	71.7	71.3	70.8	70.3	69.8	69.3
105.0	72.0	71.9	71.5	71.0	70.5	69.9	69.4
106.0	70.4	70.2	69.9	69.5	69.1	68.6	68.2
107.0	69.7	69.6	69.4	69.0	68.6	68.1	67.7
108.0	69.0	68.9	68.6	68.3	67.9	67.5	67.1
109.0	68.9	68.8	68.6	68.4	68.1	67.8	67.5
110.0	67.6	67.6	67.5	67.3	67.0	66.8	66.6
111.0	68.3	68.3	68.1	67.9	67.6	67.4	67.1
112.0	67.3	67.3	67.1	66.9	66.7	66.4	66.2
113.0	68.7	68.6	68.5	68.2	67.9	67.6	67.3
114.0	69.0	68.9	68.8	68.5	68.2	67.9	67.6
115.0	68.4	68.4	68.3	68.7	68.7	68.7	68.6
116.0	70.5	70.4	70.4	70.6	70.5	70.4	70.3
117.0	70.4	70.4	70.4	70.5	70.5	70.3	70.2
118.0	69.5	69.5	69.5	69.6	69.6	69.4	69.5
119.0	69.3	69.2	69.4	69.3	69.2	69.1	69.0
120.0	70.5	70.4	70.6	70.6	70.4	70.2	70.0
121.0	73.5	73.5	73.3	73.1	72.7	72.4	72.1
122.0	74.0	73.9	73.6	73.3	72.9	72.6	72.2
123.0	74.7	74.4	74.0	73.5	73.0	72.5	72.0
124.0	74.4	74.2	73.8	73.3	72.9	72.4	72.2
125.0	76.6	76.3	75.7	75.0	74.4	73.9	73.4
126.0	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127.0	71.9	71.7	71.4	71.1	70.7	70.4	70.1
128.0	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129.0	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130.0	75.4	75.1	74.5	73.9	73.4	72.9	72.4
131.0	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132.0	66.2	66.2	66.2	66.2	66.2	66.2	
133.0	67.8	67.8	67.8	67.8	67.8	67.8	
134.0	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with q Noise Enclosure

Receiver	Floor Level						
	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.4	77.0	76.3	75.7	75.1	74.6	74.1
12	77.8	77.4	76.8	76.2	75.6	75.2	74.7
13	77.4	77.1	76.6	76.1	75.6	75.1	74.7
14	75.7	75.5	75.2	74.7	74.3	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.4	75.0	74.6
17	76.8	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.3	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.6	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.5	81.0	80.1	79.2	78.4	77.7	77.1
34	81.3	80.8	79.9	79.1	78.3	77.6	77.1
35	81.2	80.7	79.8	78.9	78.2	77.5	77.0
36	81.1	80.5	79.6	78.8	78.0	77.4	76.9
37	46.9	46.4	45.6	44.7	44.0	43.4	43.0
38	74.2	74.0	73.4	72.7	72.0	71.4	70.8
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.6	80.0	79.1	78.3	77.6	77.0	76.5
42	80.4	79.9	79.0	78.2	77.5	76.9	76.4
43	80.1	79.6	78.7	77.9	77.3	76.7	76.2
44	80.0	79.5	78.6	77.8	77.1	76.6	76.1
45	75.0	74.5	73.6	72.7	72.0	71.3	70.7
46	72.7	72.4	71.8	71.1	70.4	69.8	69.3
47	74.9	74.8	74.4	73.9	73.5	73.1	72.7
48	77.2	76.8	76.2	75.5	74.9	74.4	74.0
49	79.2	78.8	77.9	77.1	76.5	75.9	75.4
50	79.1	78.6	77.8	77.0	76.4	75.8	75.3
51	79.0	78.5	77.6	76.8	76.2	75.6	75.1
52	78.9	78.4	77.6	76.8	76.1	75.6	75.1
53	74.3	73.9	73.0	72.1	71.3	70.7	70.1
54	71.9	71.7	71.1	70.5	69.9	69.3	68.8
55	76.1	75.8	75.0	74.4	73.8	73.3	72.9
56	79.0	78.3	77.3	76.4	75.7	75.2	74.7
57	79.2	78.3	77.2	76.4	75.7	75.1	74.6
58	79.8	78.5	77.2	76.2	75.5	74.9	74.4
59	80.6	78.9	77.5	76.5	75.8	75.2	74.7
60	77.3	76.1	74.6	73.6	72.7	72.0	71.5
61	74.4	73.9	72.9	71.9	71.1	70.4	69.8
62	76.1	75.4	74.4	73.5	72.7	72.0	71.5
63	77.0	76.2	75.1	74.2	73.4	72.7	72.2
64	78.8	77.6	76.2	75.1	74.3	73.7	73.2
65	79.5	78.0	76.5	75.4	74.6	74.0	73.4
66	78.7	77.5	76.1	75.0	74.2	73.5	73.0

Impacts on Receivers with q Noise Enclosure

67	76.3	75.9	75.0	74.1	73.3	72.6	72.0
68	70.5	70.3	69.6	68.8	68.1	67.9	67.3
69	68.9	68.8	68.2	67.4	66.8	66.6	66.1
70	66.8	66.5	66.0	65.4	64.8	64.3	63.8
71	69.0	68.6	67.9	67.2	66.5	65.9	65.4
72	76.3	75.8	74.8	73.9	73.2	72.6	72.0
73	78.4	77.5	76.2	75.1	74.5	73.7	73.2
74	80.4	79.2	77.7	76.5	75.7	74.9	74.2
75	79.8	78.8	77.4	76.3	75.4	74.7	74.0
76	79.6	78.7	77.4	76.3	75.3	74.7	74.1
77	79.6	78.7	77.3	76.2	75.3	74.6	74.1
78	74.9	74.6	73.8	73.1	72.5	71.9	71.3
79	76.3	75.8	74.8	74.0	73.2	72.6	72.0
80	77.6	76.9	75.7	74.8	74.0	73.3	72.7
81	77.6	76.5	75.3	74.3	73.5	72.8	72.2
82	80.7	79.2	77.7	76.5	75.6	74.9	74.2
83	80.9	79.3	77.7	76.5	75.6	74.9	74.2
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.1	76.4	75.2	74.3	73.5	72.8	72.2
86	77.7	76.4	75.0	74.0	73.1	72.5	71.9
87	80.7	79.1	77.5	76.3	75.4	74.6	74.0
88	80.8	79.1	77.5	76.3	75.4	74.6	74.0
89	77.2	76.4	75.2	74.2	73.4	72.7	72.1
90	77.8	76.5	75.1	74.0	73.2	72.5	71.9
91	80.5	78.9	77.3	76.1	75.2	74.4	73.8
92	80.4	78.9	77.2	76.0	75.1	74.4	73.7
93	71.1	71.1	70.9	70.4	69.9	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.5	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.5	71.9	71.3
97	74.5	74.2	73.6	72.9	72.3	71.7	71.2
98	73.8	73.4	72.7	71.9	71.2	70.6	70.1
99	75.3	74.6	73.4	72.5	71.7	71.0	70.5
100	78.4	77.2	75.8	74.7	73.8	73.0	72.4
101	78.4	77.2	75.8	74.7	73.7	73.0	72.4
102	78.3	77.1	75.7	74.6	73.6	72.9	72.3
103	78.3	77.1	75.6	74.5	73.6	72.8	72.2
104	71.8	71.8	71.4	71.0	70.5	70.0	69.6
105	72.0	72.0	71.6	71.2	70.7	70.2	69.7
106	70.3	70.3	70.0	69.6	69.2	68.7	68.3
107	69.6	69.5	69.2	68.9	68.4	68.0	67.6
108	69.0	68.9	68.6	68.3	67.9	67.5	67.1
109	68.8	68.7	68.6	68.3	68.0	67.7	67.5
110	67.6	67.6	67.4	67.2	67.0	66.8	66.5
111	68.3	68.2	68.1	67.9	67.6	67.4	67.1
112	67.3	67.2	67.1	66.9	66.6	66.4	66.1
113	68.7	68.6	68.4	68.2	67.9	67.6	67.2
114	69.0	68.9	68.7	68.5	68.2	67.8	67.5
115	68.3	68.3	68.2	68.5	68.4	68.3	68.2
116	70.4	70.4	70.3	70.4	70.3	70.2	70.0
117	70.4	70.3	70.3	70.4	70.3	70.1	69.9
118	69.5	69.4	69.4	69.4	69.3	69.0	69.2
119	69.2	69.1	69.2	69.2	69.0	68.9	68.8
120	70.4	70.3	70.5	70.3	70.1	69.9	69.7
121	73.4	73.4	73.2	72.9	72.6	72.3	71.9
122	73.9	73.8	73.6	73.2	72.8	72.4	72.1
123	74.6	74.4	74.0	73.5	73.0	72.5	72.1
124	74.4	74.2	73.7	73.2	72.8	72.3	72.0
125	76.6	76.3	75.6	75.0	74.4	73.8	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.7	71.4	71.1	70.7	70.3	70.0
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.8	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.8	67.8	67.8	67.8	67.8	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	

Impacts on Receivers with the Preferred Mitigation Option

Receiver	Preferred Option						
	1	5	10	Floor Level			
				15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.7
13	77.4	77.1	76.6	76.1	75.6	75.1	74.7
14	75.7	75.5	75.2	74.7	74.3	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.4	75.0	74.6
17	76.8	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.5	81.0	80.1	79.2	78.4	77.7	77.1
34	81.3	80.8	79.9	79.1	78.3	77.6	77.1
35	81.2	80.7	79.8	78.9	78.2	77.5	77.0
36	81.1	80.5	79.6	78.8	78.0	77.4	76.9
37	47.2	46.8	45.9	45.1	44.5	43.9	43.4
38	74.3	74.0	73.4	72.7	72.0	71.4	70.8
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0
41	80.6	80.0	79.1	78.3	77.6	77.0	76.5
42	80.4	79.9	79.0	78.2	77.5	76.9	76.4
43	80.1	79.6	78.8	77.9	77.3	76.7	76.2
44	80.0	79.5	78.6	77.8	77.1	76.6	76.1
45	75.0	74.5	73.6	72.8	72.0	71.3	70.7
46	72.7	72.4	71.8	71.1	70.5	69.9	69.3
47	74.9	74.8	74.4	74.0	73.5	73.1	72.7
48	77.2	76.8	76.2	75.5	74.9	74.4	74.0
49	79.2	78.8	77.9	77.1	76.5	75.9	75.4
50	79.1	78.6	77.8	77.0	76.4	75.8	75.3
51	79.0	78.5	77.6	76.9	76.2	75.6	75.2
52	78.9	78.4	77.6	76.8	76.1	75.6	75.1
53	74.3	73.9	73.0	72.1	71.4	70.7	70.1
54	72.0	71.7	71.2	70.5	69.9	69.3	68.8
55	76.2	75.8	75.1	74.4	73.8	73.4	73.0
56	79.0	78.3	77.3	76.5	75.8	75.2	74.7
57	79.2	78.4	77.3	76.4	75.7	75.1	74.6
58	79.8	78.5	77.2	76.3	75.5	74.9	74.4
59	80.6	78.9	77.5	76.6	75.8	75.2	74.7
60	77.3	76.1	74.7	73.6	72.8	72.0	71.4
61	74.5	73.9	72.9	72.0	71.2	70.5	69.8
62	76.1	75.4	74.4	73.5	72.7	72.1	71.5
63	77.0	76.2	75.1	74.2	73.4	72.8	72.2
64	78.8	77.6	76.2	75.2	74.4	73.7	73.2
65	79.5	78.0	76.5	75.4	74.6	74.0	73.4
66	78.8	77.6	76.2	75.1	74.3	73.5	72.9

Impacts on Receivers with the Preferred Mitigation Option

67	76.3	75.9	75.0	74.1	73.4	72.7	72.1
68	70.5	70.3	69.6	68.9	68.2	68.0	67.5
69	68.9	68.8	68.2	67.5	66.9	66.8	66.3
70	66.8	66.5	66.1	65.4	64.8	64.3	63.8
71	69.0	68.7	68.0	67.2	66.5	65.9	65.4
72	76.3	75.8	74.8	74.0	73.2	72.7	72.1
73	78.4	77.5	76.2	75.2	74.5	73.9	73.3
74	80.4	79.2	77.7	76.5	75.7	75.0	74.3
75	79.8	78.8	77.4	76.3	75.4	74.8	74.1
76	79.6	78.7	77.4	76.3	75.4	74.7	74.1
77	79.6	78.7	77.3	76.3	75.3	74.6	74.1
78	74.9	74.6	73.9	73.2	72.5	71.9	71.3
79	76.3	75.8	74.8	74.0	73.2	72.6	72.0
80	77.6	76.9	75.7	74.8	74.0	73.3	72.7
81	77.6	76.5	75.3	74.3	73.5	72.8	72.2
82	80.7	79.2	77.7	76.5	75.6	74.9	74.2
83	80.9	79.3	77.7	76.5	75.6	74.9	74.2
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.1	76.4	75.2	74.3	73.5	72.8	72.2
86	77.7	76.4	75.0	74.0	73.1	72.5	71.9
87	80.7	79.1	77.5	76.3	75.4	74.6	74.0
88	80.8	79.1	77.5	76.3	75.4	74.6	74.0
89	77.2	76.4	75.2	74.2	73.4	72.7	72.1
90	77.8	76.5	75.1	74.0	73.2	72.5	71.9
91	80.5	78.9	77.3	76.1	75.2	74.4	73.8
92	80.4	78.9	77.2	76.0	75.1	74.4	73.7
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.5	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.5	71.9	71.3
97	74.5	74.2	73.6	72.9	72.3	71.7	71.2
98	73.8	73.4	72.7	71.9	71.2	70.6	70.1
99	75.3	74.6	73.4	72.5	71.7	71.0	70.5
100	78.4	77.2	75.8	74.7	73.8	73.0	72.4
101	78.4	77.2	75.8	74.7	73.7	73.0	72.4
102	78.3	77.1	75.7	74.6	73.6	72.9	72.3
103	78.3	77.1	75.6	74.5	73.6	72.8	72.2
104	71.8	71.8	71.4	71.0	70.5	70.0	69.6
105	72.0	72.0	71.6	71.2	70.7	70.2	69.7
106	70.3	70.3	70.0	69.6	69.2	68.7	68.3
107	69.6	69.5	69.3	68.9	68.5	68.0	67.6
108	69.0	68.9	68.6	68.3	67.9	67.5	67.1
109	68.8	68.7	68.6	68.3	68.0	67.8	67.5
110	67.6	67.6	67.5	67.2	67.0	66.8	66.5
111	68.3	68.3	68.1	67.9	67.6	67.4	67.1
112	67.3	67.3	67.1	66.9	66.7	66.4	66.2
113	68.7	68.6	68.5	68.2	67.9	67.6	67.3
114	69.0	68.9	68.8	68.5	68.2	67.9	67.5
115	68.9	68.9	69.0	68.9	68.8	68.6	68.5
116	70.8	70.8	70.8	70.6	70.5	70.4	70.2
117	70.8	70.7	70.7	70.6	70.5	70.3	70.1
118	69.9	69.9	69.9	69.7	69.5	69.3	69.4
119	69.7	69.6	69.6	69.5	69.3	69.1	69.0
120	70.8	70.8	70.7	70.5	70.3	70.1	69.9
121	73.7	73.6	73.3	73.0	72.7	72.4	72.1
122	74.2	74.0	73.7	73.3	72.9	72.5	72.2
123	74.8	74.5	74.0	73.5	73.0	72.5	72.1
124	74.6	74.3	73.8	73.3	72.9	72.4	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.5	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.1	70.8	70.4	70.0
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.8	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
	1	2	3	4	5	6	
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.8	67.9	67.9	67.9	67.8	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	



Difference between Preferred Option and No Mitigation

PO-NoMit							
	Floor Level						
Receiver	1	5	10	15	20	25	30
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
34.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
35.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
36.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
37.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	-0.3	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3
42.0	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
43.0	-0.5	-0.5	-0.6	-0.6	-0.6	-0.5	-0.5
44.0	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
45.0	-1.6	-1.7	-1.7	-1.8	-1.8	-1.8	-1.8
46.0	-1.7	-1.7	-1.8	-1.8	-1.8	-1.8	-1.8
47.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3
48.0	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4
49.0	-1.2	-1.3	-1.3	-1.3	-1.3	-1.2	-1.2
50.0	-1.3	-1.4	-1.4	-1.4	-1.4	-1.3	-1.3
51.0	-1.5	-1.6	-1.7	-1.6	-1.6	-1.5	-1.5
52.0	-1.6	-1.7	-1.8	-1.7	-1.7	-1.6	-1.6
53.0	-2.4	-2.6	-2.7	-2.8	-2.8	-2.8	-2.7
54.0	-2.5	-2.6	-2.6	-2.7	-2.7	-2.6	-2.6
55.0	-0.9	-1.6	-1.6	-1.5	-1.4	-1.4	-1.3
56.0	-0.7	-2.1	-2.2	-2.1	-2.1	-2.0	-1.9
57.0	-0.5	-2.2	-2.3	-2.2	-2.1	-2.0	-2.0
58.0	-0.4	-2.4	-2.5	-2.4	-2.3	-2.2	-2.1
59.0	-0.3	-2.5	-2.6	-2.5	-2.4	-2.2	-2.1
60.0	-0.3	-2.7	-2.9	-2.9	-2.8	-2.7	-2.6
61.0	-0.5	-2.8	-3.0	-3.0	-3.0	-3.0	-3.0
62.0	-0.4	-2.6	-2.8	-2.9	-2.8	-2.7	-2.7
63.0	-0.6	-2.5	-2.7	-2.8	-2.7	-2.6	-2.6
64.0	-0.2	-2.4	-2.6	-2.6	-2.5	-2.5	-2.4
65.0	-0.2	-2.4	-2.6	-2.6	-2.5	-2.4	-2.3
66.0	-0.2	-2.0	-2.2	-2.1	-2.0	-1.9	-1.9

Difference between Preferred Option and No Mitigation

67.0	-0.3	-1.9	-2.1	-2.1	-2.0	-1.9	-1.9
68.0	-0.4	-1.5	-1.5	-1.6	-1.5	-1.0	-0.9
69.0	-0.4	-1.4	-1.4	-1.4	-1.3	-0.8	-0.6
70.0	-0.3	-2.2	-2.2	-2.3	-2.3	-2.2	-2.2
71.0	-0.3	-2.2	-2.3	-2.3	-2.3	-2.3	-2.3
72.0	-0.3	-2.2	-2.3	-2.3	-2.4	-2.2	-2.2
73.0	-0.3	-2.0	-2.2	-2.3	-2.2	-2.1	-2.0
74.0	-0.2	-1.1	-1.3	-1.4	-1.4	-1.3	-1.3
75.0	-0.2	-1.0	-1.2	-1.3	-1.3	-1.2	-1.2
76.0	-0.2	-0.8	-1.0	-1.1	-1.2	-1.1	-1.0
77.0	-0.2	-0.7	-0.8	-1.0	-1.0	-1.1	-1.0
78.0	-0.3	-0.7	-0.7	-0.8	-0.8	-0.9	-0.9
79.0	-0.2	-0.6	-0.7	-0.8	-0.8	-0.9	-1.0
80.0	-0.2	-0.5	-0.6	-0.7	-0.8	-0.8	-0.9
81.0	-0.2	-0.6	-0.7	-0.8	-0.9	-1.0	-1.0
82.0	-0.1	-0.3	-0.4	-0.5	-0.5	-0.6	-0.6
83.0	-0.1	-0.3	-0.3	-0.4	-0.5	-0.5	-0.6
84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4
86.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5
87.0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
88.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3
89.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2
90.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3
91.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2
92.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
93.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.0	0.0	-0.3	-0.5	-0.5	-0.4	-0.4	-0.4
98.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
99.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2
100.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
101.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
102.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
103.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
104.0	-0.2	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
105.0	-0.2	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4
106.0	-0.3	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6
107.0	-0.2	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8
108.0	-0.2	-0.8	-0.8	-0.8	-0.9	-0.9	-0.9
109.0	-0.5	-1.9	-1.9	-1.9	-1.9	-1.8	-1.8
110.0	-0.5	-1.6	-1.6	-1.6	-1.6	-1.5	-1.5
111.0	-0.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.7
112.0	-1.2	-1.9	-1.9	-1.8	-1.8	-1.8	-1.7
113.0	-1.7	-1.8	-1.9	-1.9	-1.9	-1.9	-1.9
114.0	-1.3	-1.3	-1.5	-1.5	-1.5	-1.5	-1.4
115.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119.0	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
121.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
123.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124.0	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132.0	0.0	0.0	0.0	0.0	0.0	0.0	
133.0	0.0	0.0	0.0	0.0	0.0	0.0	
134.0	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 1m Barrier

PO-1m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
34	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
35	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
36	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.3	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3
42	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
43	-0.4	-0.5	-0.6	-0.6	-0.6	-0.5	-0.5
44	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
45	-1.4	-1.7	-1.7	-1.8	-1.8	-1.8	-1.8
46	-0.9	-1.7	-1.8	-1.8	-1.8	-1.8	-1.8
47	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3
48	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4
49	-0.5	-1.3	-1.3	-1.3	-1.3	-1.2	-1.2
50	-0.5	-1.4	-1.4	-1.4	-1.4	-1.3	-1.3
51	-0.5	-1.6	-1.7	-1.6	-1.6	-1.5	-1.5
52	-0.5	-1.7	-1.8	-1.7	-1.7	-1.6	-1.6
53	-0.6	-2.6	-2.7	-2.8	-2.8	-2.8	-2.7
54	-0.6	-2.6	-2.6	-2.7	-2.7	-2.6	-2.6
55	-0.4	-1.6	-1.6	-1.5	-1.4	-1.4	-1.3
56	-0.3	-2.1	-2.2	-2.1	-2.1	-2.0	-1.9
57	-0.3	-2.2	-2.3	-2.2	-2.1	-2.0	-2.0
58	-0.3	-2.4	-2.5	-2.4	-2.3	-2.2	-2.1
59	-0.2	-2.4	-2.6	-2.5	-2.4	-2.2	-2.1
60	-0.2	-2.5	-2.9	-2.9	-2.8	-2.7	-2.6
61	-0.3	-2.5	-3.0	-3.0	-3.0	-3.0	-3.0
62	-0.3	-2.5	-2.8	-2.9	-2.8	-2.7	-2.7
63	-0.2	-2.4	-2.7	-2.8	-2.7	-2.6	-2.6
64	-0.2	-2.2	-2.6	-2.6	-2.5	-2.5	-2.4
65	-0.1	-2.4	-2.6	-2.6	-2.5	-2.4	-2.3
66	-0.1	-1.9	-2.2	-2.1	-2.0	-1.9	-1.9

Difference between Preferred Option and a 1m Barrier

67	-0.2	-1.3	-2.1	-2.1	-2.0	-1.9	-1.9
68	-0.2	-0.4	-1.5	-1.6	-1.5	-1.0	-0.9
69	-0.2	-0.1	-1.4	-1.4	-1.3	-0.8	-0.6
70	-0.2	-0.3	-2.2	-2.3	-2.3	-2.2	-2.2
71	-0.2	-0.6	-2.3	-2.3	-2.3	-2.3	-2.3
72	-0.2	-1.8	-2.3	-2.3	-2.4	-2.2	-2.2
73	-0.2	-1.6	-2.2	-2.3	-2.2	-2.1	-2.0
74	-0.1	-1.1	-1.3	-1.4	-1.4	-1.3	-1.3
75	-0.1	-1.0	-1.2	-1.3	-1.3	-1.2	-1.2
76	-0.1	-0.8	-1.0	-1.1	-1.2	-1.1	-1.0
77	-0.1	-0.6	-0.8	-1.0	-1.0	-1.1	-1.0
78	-0.1	-0.1	-0.7	-0.8	-0.8	-0.9	-0.9
79	-0.1	-0.1	-0.7	-0.8	-0.9	-1.0	-1.0
80	-0.1	-0.1	-0.6	-0.7	-0.8	-0.8	-0.9
81	-0.1	-0.1	-0.7	-0.8	-0.9	-1.0	-1.0
82	0.0	-0.1	-0.4	-0.5	-0.5	-0.6	-0.6
83	0.0	0.0	-0.3	-0.4	-0.5	-0.5	-0.6
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	-0.3	-0.3	-0.3	-0.4	-0.4
86	0.0	0.0	-0.3	-0.4	-0.4	-0.5	-0.5
87	0.0	0.0	-0.2	-0.2	-0.3	-0.3	-0.3
88	0.0	0.0	-0.2	-0.2	-0.2	-0.3	-0.3
89	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2
90	0.0	0.0	-0.2	-0.2	-0.2	-0.3	-0.3
91	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2
92	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
99	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2
100	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
101	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
102	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
103	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
104	-0.1	0.0	-0.6	-0.6	-0.6	-0.6	-0.6
105	-0.1	0.0	-0.4	-0.3	-0.4	-0.4	-0.4
106	-0.2	-0.1	-0.5	-0.5	-0.6	-0.6	-0.6
107	-0.2	-0.2	-0.7	-0.8	-0.8	-0.8	-0.8
108	-0.1	-0.1	-0.8	-0.8	-0.9	-0.9	-0.9
109	-0.3	-1.2	-1.9	-1.9	-1.9	-1.8	-1.8
110	-0.3	-1.6	-1.6	-1.6	-1.6	-1.5	-1.5
111	-0.3	-1.7	-1.8	-1.8	-1.8	-1.8	-1.7
112	-0.4	-1.9	-1.9	-1.8	-1.8	-1.8	-1.7
113	-0.4	-1.7	-1.9	-1.9	-1.9	-1.9	-1.9
114	-0.3	-1.2	-1.4	-1.5	-1.5	-1.5	-1.4
115	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
121	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	1	2	3	4	5	6	
133	0.0	0.0	0.0	0.0	0.0	0.0	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 2m Barrier

PO-2m								
				Floor Level				
Receiver	1	5	10	15	20	25	30	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
14	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
33	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
34	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
35	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	
36	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
41	-0.1	-0.2	-0.3	-0.3	-0.4	-0.3	-0.3	
42	-0.1	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	
43	-0.2	-0.4	-0.5	-0.5	-0.6	-0.5	-0.5	
44	-0.2	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	
45	-0.7	-1.4	-1.7	-1.8	-1.8	-1.8	-1.8	
46	-0.7	-0.7	-1.8	-1.8	-1.8	-1.8	-1.8	
47	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	
48	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	
49	-0.4	-1.1	-1.3	-1.3	-1.3	-1.2	-1.2	
50	-0.4	-1.1	-1.4	-1.4	-1.4	-1.3	-1.3	
51	-0.3	-1.3	-1.6	-1.6	-1.6	-1.5	-1.5	
52	-0.3	-1.3	-1.7	-1.7	-1.7	-1.6	-1.6	
53	-0.2	-0.4	-2.7	-2.8	-2.8	-2.8	-2.7	
54	-0.2	-0.4	-2.6	-2.7	-2.7	-2.6	-2.6	
55	-0.2	-0.3	-1.6	-1.5	-1.4	-1.4	-1.3	
56	-0.2	-0.3	-2.2	-2.1	-2.1	-2.0	-1.9	
57	-0.2	-0.3	-2.3	-2.2	-2.1	-2.0	-2.0	
58	-0.1	-0.3	-2.5	-2.4	-2.3	-2.2	-2.1	
59	-0.1	-0.6	-2.6	-2.5	-2.4	-2.2	-2.1	
60	-0.1	-0.4	-2.9	-2.9	-2.8	-2.7	-2.6	
61	-0.1	-0.3	-3.0	-3.0	-3.0	-3.0	-3.0	
62	-0.1	-0.3	-2.8	-2.9	-2.8	-2.7	-2.7	
63	-0.1	-0.3	-2.7	-2.8	-2.7	-2.6	-2.6	
64	-0.1	-0.2	-2.6	-2.6	-2.5	-2.5	-2.4	
65	-0.1	-0.2	-2.6	-2.6	-2.5	-2.4	-2.3	
66	-0.1	-0.2	-2.2	-2.1	-2.0	-1.9	-1.9	



Difference between Preferred Option and a 2m Barrier

67	-0.1	-0.1	-2.1	-2.1	-2.0	-1.9	-1.9
68	-0.1	0.1	-1.5	-1.6	-1.5	-1.0	-0.9
69	-0.1	0.1	-1.4	-1.4	-1.3	-0.8	-0.6
70	-0.1	-0.2	-2.2	-2.3	-2.3	-2.2	-2.2
71	-0.1	-0.2	-2.3	-2.3	-2.3	-2.3	-2.3
72	-0.1	-0.2	-2.3	-2.4	-2.4	-2.2	-2.2
73	-0.1	-0.1	-2.2	-2.3	-2.2	-2.1	-2.0
74	0.0	-0.1	-1.3	-1.4	-1.4	-1.3	-1.3
75	0.0	0.0	-1.2	-1.3	-1.3	-1.2	-1.2
76	0.0	0.0	-1.0	-1.1	-1.2	-1.1	-1.0
77	0.0	0.0	-0.7	-1.0	-1.0	-1.1	-1.0
78	-0.1	0.0	0.0	-0.8	-0.8	-0.9	-0.9
79	-0.1	0.0	0.0	-0.8	-0.9	-1.0	-1.0
80	0.0	0.0	0.0	-0.7	-0.8	-0.8	-0.9
81	0.0	0.0	0.0	-0.8	-0.9	-1.0	-1.0
82	0.0	0.0	0.0	-0.5	-0.5	-0.6	-0.6
83	0.0	0.0	0.0	-0.4	-0.5	-0.5	-0.6
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.1	-0.3	-0.4	-0.4
86	0.0	0.0	0.0	0.1	-0.4	-0.5	-0.5
87	0.0	0.0	0.0	0.0	-0.3	-0.3	-0.3
88	0.0	0.0	0.0	0.0	-0.2	-0.3	-0.3
89	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2
90	0.0	0.0	0.0	0.0	0.0	-0.3	-0.3
91	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2
92	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	0.0	0.0	0.0	0.0	0.0	0.0	0.1
99	0.0	0.0	0.0	0.0	0.0	0.0	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	-0.2	-0.6	-0.6	-0.6
105	0.0	0.1	0.1	-0.3	-0.4	-0.4	-0.4
106	-0.1	0.1	0.0	-0.4	-0.6	-0.6	-0.6
107	-0.1	-0.1	-0.2	-0.6	-0.8	-0.8	-0.8
108	0.0	-0.1	-0.1	-0.7	-0.9	-0.9	-0.9
109	-0.2	-0.2	-0.1	-1.9	-1.9	-1.8	-1.8
110	-0.1	-0.1	-0.1	-1.6	-1.6	-1.5	-1.5
111	-0.1	-0.2	-0.1	-1.8	-1.8	-1.8	-1.7
112	-0.1	-0.2	-0.1	-1.8	-1.8	-1.8	-1.7
113	-0.2	-0.2	-0.4	-1.8	-1.9	-1.9	-1.9
114	-0.1	-0.1	-0.1	-1.2	-1.5	-1.5	-1.4
115	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
121	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.0	0.0	0.0	0.0	0.0	0.0	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 3m Barrier

PO-3m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
34	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
35	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
36	-0.1	0.0	-0.1	-0.2	-0.2	-0.2	-0.2
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.3	-0.3	-0.3	-0.3	-0.3
42	-0.1	-0.1	-0.3	-0.4	-0.4	-0.4	-0.4
43	-0.2	-0.2	-0.4	-0.5	-0.5	-0.5	-0.5
44	-0.2	-0.2	-0.5	-0.6	-0.6	-0.6	-0.6
45	-0.6	-0.6	-1.5	-1.8	-1.8	-1.8	-1.8
46	-0.7	-0.6	-1.4	-1.8	-1.8	-1.8	-1.8
47	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3
48	-0.4	-0.4	-0.5	-0.5	-0.4	-0.4	-0.4
49	-0.3	-0.3	-1.2	-1.3	-1.3	-1.2	-1.2
50	-0.3	-0.3	-1.3	-1.4	-1.4	-1.3	-1.3
51	-0.3	-0.3	-1.6	-1.6	-1.6	-1.5	-1.5
52	-0.2	-0.3	-1.7	-1.7	-1.7	-1.6	-1.6
53	-0.1	-0.2	-2.6	-2.8	-2.8	-2.8	-2.7
54	-0.1	-0.2	-0.3	-2.7	-2.7	-2.6	-2.6
55	-0.2	-0.2	-1.6	-1.5	-1.4	-1.4	-1.3
56	-0.1	-0.2	-2.2	-2.1	-2.1	-2.0	-1.9
57	-0.1	-0.2	-2.2	-2.2	-2.1	-2.0	-2.0
58	-0.1	-0.2	-2.5	-2.4	-2.3	-2.2	-2.1
59	-0.1	-0.2	-2.5	-2.5	-2.4	-2.2	-2.1
60	-0.1	-0.2	-2.7	-2.9	-2.8	-2.7	-2.6
61	-0.1	-0.2	-0.2	-3.0	-3.0	-3.0	-3.0
62	-0.1	-0.2	-0.2	-2.9	-2.8	-2.7	-2.7
63	-0.1	-0.1	-1.9	-2.8	-2.7	-2.6	-2.6
64	0.0	-0.1	-2.4	-2.6	-2.5	-2.5	-2.4
65	0.0	-0.1	-2.5	-2.6	-2.5	-2.4	-2.3
66	0.0	-0.1	-2.1	-2.1	-2.0	-1.9	-1.9

Difference between Preferred Option and a 3m Barrier

67	-0.1	0.0	-0.1	-2.1	-2.0	-1.9	-1.9
68	-0.1	0.1	0.1	-1.6	-1.5	-1.0	-0.9
69	-0.1	0.1	0.1	-1.4	-1.3	-0.8	-0.6
70	-0.1	-0.1	-0.1	-2.3	-2.3	-2.2	-2.2
71	-0.1	-0.1	-0.1	-2.3	-2.3	-2.3	-2.3
72	-0.1	-0.1	-0.1	-2.4	-2.4	-2.2	-2.2
73	0.0	-0.1	-0.3	-2.3	-2.2	-2.1	-2.0
74	0.0	0.0	-0.2	-1.4	-1.4	-1.3	-1.3
75	0.0	0.0	0.0	-1.3	-1.3	-1.2	-1.2
76	0.0	0.0	0.0	-1.1	-1.2	-1.1	-1.0
77	0.0	0.0	0.0	-0.7	-1.0	-1.1	-1.0
78	0.0	0.0	0.1	0.1	0.0	-0.9	-0.9
79	0.0	0.0	0.1	0.1	0.0	-0.9	-1.0
80	0.0	0.0	0.1	0.1	0.0	-0.8	-0.9
81	0.0	0.0	0.1	0.1	0.0	-1.0	-1.0
82	0.0	0.0	0.0	0.1	0.0	-0.6	-0.6
83	0.0	0.0	0.0	0.1	0.1	-0.5	-0.6
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.1	0.1	0.1	-0.4
86	0.0	0.0	0.1	0.1	0.1	0.1	-0.4
87	0.0	0.0	0.0	0.0	0.1	0.1	-0.1
88	0.0	0.0	0.0	0.0	0.1	0.1	0.1
89	0.0	0.0	0.0	0.0	0.1	0.1	0.1
90	0.0	0.0	0.0	0.0	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.0	0.1
92	0.0	0.0	0.0	0.0	0.0	0.0	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	-0.2	-0.4	-0.4	-0.4	-0.3	-0.3
98	0.0	0.0	0.0	0.0	0.0	0.0	0.1
99	0.0	0.0	0.0	0.0	0.0	0.0	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	-0.6	-0.6
105	0.0	0.1	0.1	0.2	0.1	-0.4	-0.4
106	-0.1	0.1	0.1	0.1	0.0	-0.5	-0.6
107	-0.1	-0.1	-0.1	-0.2	-0.2	-0.8	-0.8
108	0.0	0.0	0.0	0.0	0.0	-0.9	-0.9
109	-0.1	-0.1	-0.1	-0.1	-1.5	-1.8	-1.8
110	-0.1	-0.1	0.0	0.0	-1.6	-1.5	-1.5
111	-0.1	-0.1	-0.1	-0.1	-1.8	-1.8	-1.7
112	-0.1	-0.1	-0.1	-0.1	-1.8	-1.8	-1.7
113	-0.1	-0.1	-0.2	-0.3	-1.7	-1.8	-1.9
114	-0.1	-0.1	-0.1	0.0	-1.2	-1.4	-1.4
115	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
121	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.0	0.0	0.0	0.0	0.0	0.0	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 4m Barrier

PO-4m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
34	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
35	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2
36	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
42	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4
43	-0.2	-0.2	-0.3	-0.5	-0.5	-0.5	-0.5
44	-0.2	-0.2	-0.4	-0.5	-0.6	-0.6	-0.6
45	-0.6	-0.6	-0.6	-1.5	-1.8	-1.8	-1.8
46	-0.6	-0.6	-0.6	-1.4	-1.8	-1.8	-1.8
47	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3
48	-0.4	-0.4	-0.4	-0.5	-0.4	-0.4	-0.4
49	-0.3	-0.3	-0.6	-1.2	-1.3	-1.2	-1.2
50	-0.3	-0.3	-0.3	-1.3	-1.3	-1.3	-1.3
51	-0.2	-0.3	-0.3	-1.6	-1.6	-1.5	-1.5
52	-0.2	-0.2	-0.2	-1.6	-1.7	-1.6	-1.6
53	-0.1	-0.1	-0.2	-2.7	-2.8	-2.8	-2.7
54	-0.1	-0.1	-0.2	-0.3	-2.7	-2.6	-2.6
55	-0.2	-0.2	-0.2	-1.5	-1.4	-1.4	-1.3
56	-0.1	-0.1	-0.2	-2.1	-2.1	-2.0	-1.9
57	-0.1	-0.1	-0.2	-2.2	-2.1	-2.0	-2.0
58	-0.1	-0.1	-1.9	-2.4	-2.3	-2.2	-2.1
59	-0.1	-0.1	-2.1	-2.5	-2.4	-2.2	-2.1
60	0.0	-0.1	-0.2	-2.9	-2.8	-2.7	-2.6
61	0.0	-0.1	-0.2	-2.5	-3.0	-3.0	-3.0
62	0.0	-0.1	-0.1	-2.7	-2.8	-2.7	-2.7
63	0.0	-0.1	-0.1	-2.8	-2.7	-2.6	-2.6
64	0.0	-0.1	-0.1	-2.6	-2.5	-2.5	-2.4
65	0.0	-0.1	-0.1	-2.5	-2.5	-2.4	-2.3
66	0.0	0.0	-0.1	-2.1	-2.0	-1.9	-1.9

Difference between Preferred Option and a 4m Barrier

67	0.0	0.0	0.0	-1.4	-2.0	-1.9	-1.9
68	-0.1	0.1	0.1	-0.3	-1.5	-1.0	-0.9
69	-0.1	0.2	0.2	0.0	-1.3	-0.8	-0.6
70	0.0	-0.1	-0.1	0.0	-2.3	-2.2	-2.2
71	0.0	-0.1	-0.1	0.0	-2.3	-2.3	-2.3
72	0.0	-0.1	-0.1	-0.3	-2.4	-2.2	-2.2
73	0.0	0.0	0.0	-2.1	-2.2	-2.1	-2.0
74	0.0	0.0	0.0	-1.4	-1.4	-1.3	-1.3
75	0.0	0.0	0.0	-0.2	-1.3	-1.2	-1.2
76	0.0	0.0	0.0	0.0	-1.2	-1.1	-1.0
77	0.0	0.0	0.1	0.1	-0.4	-1.1	-1.0
78	0.0	0.0	0.1	0.1	0.1	0.1	-0.9
79	0.0	0.0	0.1	0.1	0.1	0.1	-1.0
80	0.0	0.0	0.1	0.1	0.1	0.1	-0.9
81	0.0	0.0	0.1	0.1	0.1	0.1	-1.0
82	0.0	0.0	0.1	0.1	0.1	0.1	-0.6
83	0.0	0.0	0.0	0.1	0.1	0.1	0.0
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.1	0.1	0.1	0.1	0.1
86	0.0	0.0	0.1	0.1	0.1	0.1	0.1
87	0.0	0.0	0.0	0.1	0.1	0.1	0.1
88	0.0	0.0	0.0	0.0	0.1	0.1	0.1
89	0.0	0.0	0.0	0.0	0.1	0.1	0.1
90	0.0	0.0	0.0	0.1	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.1	0.1
92	0.0	0.0	0.0	0.0	0.0	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	0.0	0.0	0.0	0.0	0.1	0.1
98	0.0	0.0	0.0	0.0	0.0	0.1	0.1
99	0.0	0.0	0.0	0.0	0.0	0.0	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	0.2	0.1
105	0.0	0.1	0.1	0.2	0.2	0.2	-0.4
106	-0.1	0.1	0.1	0.1	0.1	0.1	-0.5
107	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.6
108	0.0	0.0	0.0	0.0	0.0	0.0	-0.7
109	-0.1	-0.1	-0.1	-0.1	-0.1	-1.4	-1.8
110	0.0	0.0	0.0	0.0	0.0	-0.6	-1.5
111	0.0	-0.1	-0.1	0.0	0.0	0.0	-1.7
112	0.0	-0.1	-0.1	-0.1	0.0	0.0	-1.7
113	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-1.7
114	0.0	0.0	0.0	0.0	0.0	-1.2	-1.2
115	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
121	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.0	0.0	0.0	0.0	0.0	0.0	
134	0.0	0.0	0.0	0.0	0.0	0.0	



Difference between Preferred Option and a 5m Barrier

Receiver	Floor Level						
	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
34	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
35	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
36	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3
42	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4
43	-0.2	-0.2	-0.2	-0.4	-0.5	-0.5	-0.5
44	-0.2	-0.2	-0.2	-0.4	-0.5	-0.6	-0.6
45	-0.6	-0.6	-0.6	-1.2	-1.6	-1.8	-1.8
46	-0.6	-0.6	-0.6	-0.6	-1.4	-1.8	-1.8
47	-0.4	-0.4	-0.4	-0.3	-0.4	-0.3	-0.3
48	-0.4	-0.4	-0.4	-0.5	-0.4	-0.4	-0.4
49	-0.3	-0.3	-0.3	-1.0	-1.2	-1.2	-1.2
50	-0.3	-0.3	-0.3	-1.1	-1.3	-1.3	-1.3
51	-0.2	-0.2	-0.2	-1.3	-1.5	-1.5	-1.5
52	-0.2	-0.2	-0.2	-1.5	-1.6	-1.6	-1.6
53	0.0	-0.1	-0.1	-1.7	-2.7	-2.8	-2.7
54	0.0	-0.1	-0.1	-0.1	-1.7	-2.6	-2.6
55	-0.1	-0.2	-0.2	-0.2	-1.4	-1.4	-1.3
56	-0.1	-0.1	-0.1	-2.0	-2.1	-2.0	-1.9
57	-0.1	-0.1	-0.1	-2.1	-2.1	-2.0	-2.0
58	-0.1	-0.1	-0.1	-2.4	-2.3	-2.2	-2.1
59	0.0	-0.1	-0.1	-2.4	-2.4	-2.2	-2.1
60	0.0	-0.1	-0.1	-2.6	-2.8	-2.7	-2.6
61	0.0	-0.1	-0.1	-0.1	-2.9	-3.0	-3.0
62	0.0	0.0	-0.1	-0.1	-2.8	-2.7	-2.7
63	0.0	0.0	-0.1	-0.1	-2.7	-2.6	-2.6
64	0.0	0.0	-0.1	-2.2	-2.5	-2.5	-2.4
65	0.0	0.0	-0.1	-2.3	-2.5	-2.4	-2.3
66	0.0	0.0	-0.1	-2.0	-2.0	-1.9	-1.9

Difference between Preferred Option and a 5m Barrier

67	0.0	0.0	0.0	0.0	-2.0	-1.9	-1.9
68	-0.1	0.1	0.1	0.1	-0.5	-1.0	-0.9
69	-0.1	0.2	0.2	0.2	-0.5	-0.8	-0.6
70	0.0	0.0	0.0	0.0	0.0	-2.2	-2.2
71	0.0	0.0	0.0	0.0	0.0	-2.3	-2.3
72	0.0	0.0	0.0	-0.1	-2.3	-2.2	-2.2
73	0.0	0.0	0.0	-0.1	-2.0	-2.1	-2.0
74	0.0	0.0	0.0	0.0	-1.4	-1.3	-1.3
75	0.0	0.0	0.0	0.0	-1.3	-1.2	-1.2
76	0.0	0.0	0.1	0.1	0.1	-1.1	-1.0
77	0.0	0.0	0.1	0.1	0.1	-0.2	-1.0
78	0.0	0.1	0.1	0.1	0.1	0.1	0.1
79	0.0	0.0	0.1	0.1	0.1	0.1	0.1
80	0.0	0.1	0.1	0.1	0.1	0.1	0.1
81	0.0	0.1	0.1	0.1	0.1	0.1	0.1
82	0.0	0.0	0.1	0.1	0.1	0.1	0.1
83	0.0	0.0	0.1	0.1	0.1	0.1	0.1
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.1	0.1	0.1	0.1	0.1
86	0.0	0.0	0.1	0.1	0.1	0.1	0.1
87	0.0	0.0	0.0	0.1	0.1	0.1	0.1
88	0.0	0.0	0.0	0.0	0.1	0.1	0.1
89	0.0	0.0	0.0	0.1	0.1	0.1	0.1
90	0.0	0.0	0.0	0.1	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.1	0.1
92	0.0	0.0	0.0	0.0	0.0	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	-0.2	-0.4	-0.4	-0.4	-0.3	-0.3
98	0.0	0.0	0.0	0.0	0.0	0.1	0.1
99	0.0	0.0	0.0	0.0	0.0	0.0	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	0.2	0.2
105	0.0	0.1	0.1	0.2	0.2	0.2	0.2
106	-0.1	0.1	0.1	0.1	0.1	0.1	0.1
107	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
108	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
114	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
121	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.0	0.0	0.0	0.0	0.0	0.0	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 6m Barrier

PO-6m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
34	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
35	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
36	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3
42	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3
43	-0.2	-0.2	-0.2	-0.2	-0.4	-0.5	-0.5
44	-0.2	-0.2	-0.2	-0.2	-0.5	-0.5	-0.6
45	-0.6	-0.6	-0.6	-0.6	-1.4	-1.6	-1.8
46	-0.6	-0.6	-0.6	-0.6	-0.6	-1.7	-1.8
47	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3
48	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
49	-0.3	-0.3	-0.3	-0.3	-1.0	-1.2	-1.2
50	-0.3	-0.3	-0.3	-0.3	-1.1	-1.2	-1.3
51	-0.2	-0.2	-0.2	-0.2	-1.4	-1.5	-1.5
52	-0.2	-0.2	-0.2	-0.2	-1.6	-1.6	-1.6
53	0.0	0.0	-0.1	-0.1	-2.3	-2.7	-2.7
54	0.0	0.0	-0.1	-0.1	-0.1	-2.4	-2.6
55	-0.1	-0.2	-0.2	-0.2	-1.4	-1.4	-1.3
56	-0.1	-0.1	-0.1	-0.1	-2.0	-2.0	-1.9
57	-0.1	-0.1	-0.1	-0.1	-2.1	-2.0	-2.0
58	0.0	-0.1	-0.1	-1.8	-2.3	-2.2	-2.1
59	0.0	-0.1	-0.1	-2.2	-2.4	-2.2	-2.1
60	0.0	0.0	-0.1	-1.7	-2.7	-2.7	-2.6
61	0.0	0.0	-0.1	-0.1	-1.7	-3.0	-3.0
62	0.0	0.0	-0.1	-0.1	-2.3	-2.7	-2.7
63	0.0	0.0	0.0	-0.1	-2.5	-2.6	-2.6
64	0.0	0.0	0.0	-0.1	-2.4	-2.4	-2.4
65	0.0	0.0	0.0	-0.1	-2.4	-2.4	-2.3
66	0.0	0.0	0.0	-0.1	-2.0	-1.9	-1.9

Difference between Preferred Option and a 6m Barrier

67	0.0	0.0	0.0	0.0	-0.1	-1.9	-1.9
68	-0.1	0.1	0.1	0.1	0.1	-0.9	-0.9
69	-0.1	0.2	0.2	0.2	0.3	-0.1	-0.6
70	0.0	0.0	0.0	0.0	0.0	0.0	-2.2
71	0.0	0.0	0.0	0.0	0.0	-2.3	-2.3
72	0.0	0.0	0.0	0.0	0.0	-2.2	-2.2
73	0.0	0.0	0.0	0.0	-0.1	-2.0	-2.0
74	0.0	0.0	0.0	0.0	-0.1	-1.3	-1.3
75	0.0	0.0	0.0	0.0	0.1	-1.2	-1.2
76	0.0	0.0	0.1	0.1	0.1	0.1	-1.0
77	0.0	0.0	0.1	0.1	0.1	0.1	-0.1
78	0.0	0.1	0.1	0.1	0.2	0.2	0.2
79	0.0	0.1	0.1	0.1	0.1	0.1	0.1
80	0.0	0.1	0.1	0.1	0.1	0.2	0.2
81	0.0	0.1	0.1	0.1	0.2	0.2	0.2
82	0.0	0.0	0.1	0.1	0.1	0.1	0.1
83	0.0	0.0	0.1	0.1	0.1	0.1	0.1
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.1	0.1	0.1	0.1	0.1
86	0.0	0.0	0.1	0.1	0.1	0.1	0.2
87	0.0	0.0	0.0	0.1	0.1	0.1	0.1
88	0.0	0.0	0.0	0.1	0.1	0.1	0.1
89	0.0	0.0	0.0	0.1	0.1	0.1	0.1
90	0.0	0.0	0.0	0.1	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.1	0.1
92	0.0	0.0	0.0	0.0	0.0	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	0.0	0.0	0.0	0.0	0.1	0.1
98	0.0	0.0	0.0	0.0	0.0	0.1	0.1
99	0.0	0.0	0.0	0.0	0.0	0.1	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	0.2	0.2
105	0.0	0.1	0.1	0.2	0.2	0.2	0.2
106	-0.1	0.1	0.1	0.1	0.1	0.1	0.1
107	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
108	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
114	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
116	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
117	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
118	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
119	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
120	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
121	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
122	0.0	0.0	0.0	0.0	0.0	0.0	0.0
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.0	0.0	0.0	0.0	0.0	0.0	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 6m Barrier with 1m Cantilever

PO-6m+1m							
				Floor Level			
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
34	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
35	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
36	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2
42	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3
43	-0.2	-0.2	-0.2	-0.2	-0.1	-0.3	-0.4
44	-0.2	-0.2	-0.2	-0.2	-0.2	-0.4	-0.4
45	-0.5	-0.6	-0.6	-0.5	-0.5	-1.2	-1.4
46	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-1.4
47	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3
48	-0.4	-0.4	-0.4	-0.4	-0.3	-0.4	-0.4
49	-0.3	-0.3	-0.3	-0.3	-0.3	-1.0	-1.1
50	-0.3	-0.3	-0.3	-0.3	-0.3	-1.0	-1.2
51	-0.2	-0.2	-0.2	-0.2	-0.2	-1.3	-1.4
52	-0.2	-0.2	-0.2	-0.2	-0.2	-1.4	-1.5
53	0.0	0.0	0.0	-0.1	-0.1	-1.7	-2.6
54	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
55	-0.1	-0.1	-0.2	-0.2	-0.1	-1.0	-1.3
56	-0.1	-0.1	-0.1	-0.1	-0.1	-1.9	-1.9
57	-0.1	-0.1	-0.1	-0.1	-0.9	-2.0	-2.0
58	0.0	-0.1	-0.1	-0.1	-2.1	-2.2	-2.1
59	0.0	-0.1	-0.1	-0.1	-2.1	-2.2	-2.1
60	0.0	0.0	-0.1	0.0	-1.8	-2.6	-2.6
61	0.0	0.0	0.0	-0.1	-0.1	-0.1	-3.0
62	0.0	0.0	0.0	-0.1	-0.1	-1.2	-2.7
63	0.0	0.0	0.0	0.0	-0.1	-2.2	-2.6
64	0.0	0.0	0.0	0.0	0.0	-2.3	-2.4
65	0.0	0.0	0.0	0.0	-1.5	-2.3	-2.3
66	0.0	0.0	0.0	0.0	0.0	-1.9	-1.9

Difference between Preferred Option and a 6m Barrier with 1m Cantilever

67	0.0	0.0	0.0	0.0	0.1	0.1	-1.9
68	-0.1	0.1	0.1	0.1	0.2	0.7	0.1
69	-0.1	0.2	0.2	0.2	0.3	0.8	0.2
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.0	0.2	-2.0
73	0.0	0.0	0.0	0.0	0.2	0.0	-1.8
74	0.0	0.0	0.0	0.0	0.1	0.0	-1.3
75	0.0	0.0	0.0	0.0	0.1	0.2	-1.1
76	0.0	0.0	0.1	0.1	0.1	0.2	0.3
77	0.0	0.0	0.1	0.1	0.1	0.1	0.3
78	0.0	0.1	0.1	0.1	0.2	0.2	0.2
79	0.0	0.1	0.1	0.1	0.1	0.1	0.1
80	0.0	0.1	0.1	0.1	0.2	0.2	0.2
81	0.0	0.1	0.1	0.1	0.2	0.2	0.2
82	0.0	0.0	0.1	0.1	0.1	0.1	0.1
83	0.0	0.0	0.1	0.1	0.1	0.1	0.1
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.1	0.1	0.1	0.1	0.1
86	0.0	0.0	0.1	0.1	0.1	0.1	0.2
87	0.0	0.0	0.0	0.1	0.1	0.1	0.1
88	0.0	0.0	0.0	0.1	0.1	0.1	0.1
89	0.0	0.0	0.0	0.1	0.1	0.1	0.1
90	0.0	0.0	0.0	0.1	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.1	0.1
92	0.0	0.0	0.0	0.0	0.0	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	-0.2	-0.4	-0.4	-0.4	-0.3	-0.3
98	0.0	0.0	0.0	0.0	0.0	0.1	0.1
99	0.0	0.0	0.0	0.0	0.0	0.1	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	0.2	0.2
105	0.0	0.1	0.1	0.2	0.2	0.2	0.2
106	-0.1	0.1	0.1	0.1	0.1	0.1	0.1
107	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
108	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
114	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.5	0.6	0.7	0.2	0.1	-0.1	-0.1
116	0.3	0.4	0.4	0.1	0.0	-0.1	-0.1
117	0.3	0.4	0.3	0.1	0.0	-0.1	-0.1
118	0.4	0.4	0.4	0.1	-0.1	-0.1	-0.1
119	0.4	0.4	0.2	0.0	0.0	-0.1	-0.1
120	0.3	0.3	0.1	-0.1	-0.1	-0.1	-0.1
121	0.2	0.1	0.0	0.0	-0.1	-0.1	-0.1
122	0.2	0.1	0.0	0.0	0.0	0.0	0.0
123	0.1	0.0	0.0	0.0	0.0	0.0	0.0
124	0.2	0.1	0.0	-0.1	-0.1	0.0	0.0
125	0.1	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.1	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.1	0.0	0.0	0.1	0.1	0.1	
134	0.0	0.0	0.0	0.0	0.0	0.0	



Difference between Preferred Option and a 6m Barrier with 2m Cantilever

PO-6m+2m							
	Floor Level						
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
36	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
42	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
43	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1
44	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
45	-0.5	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5
46	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
47	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3
48	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3
49	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2
50	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2
51	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
52	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
53	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
54	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
55	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
56	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.6
57	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-1.6
58	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-1.9
59	0.0	0.0	-0.1	-0.1	-0.1	-1.5	-1.9
60	0.0	0.0	0.0	0.0	0.0	0.0	-2.1
61	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0
63	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	-0.9
65	0.0	0.0	0.0	0.0	0.0	0.0	-1.7
66	0.0	0.0	0.0	0.0	0.1	0.1	-1.4

Difference between Preferred Option and a 6m Barrier with 2m Cantilever

67	0.0	0.0	0.0	0.0	0.1	0.2	0.2
68	-0.1	0.1	0.1	0.1	0.2	0.7	0.8
69	-0.1	0.2	0.2	0.2	0.3	0.8	0.9
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.0	0.0	0.2
73	0.0	0.0	0.0	0.0	0.2	0.3	0.3
74	0.0	0.0	0.0	0.0	0.2	0.2	0.3
75	0.0	0.0	0.0	0.0	0.1	0.3	0.3
76	0.0	0.0	0.1	0.1	0.1	0.2	0.3
77	0.0	0.0	0.1	0.1	0.1	0.1	0.3
78	0.0	0.1	0.1	0.1	0.1	0.2	0.2
79	0.0	0.1	0.1	0.1	0.1	0.1	0.2
80	0.0	0.1	0.1	0.1	0.2	0.2	0.2
81	0.0	0.1	0.1	0.1	0.2	0.2	0.2
82	0.0	0.0	0.1	0.1	0.1	0.1	0.1
83	0.0	0.0	0.1	0.1	0.1	0.1	0.1
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.1	0.1	0.1	0.1	0.2
86	0.0	0.0	0.1	0.1	0.1	0.1	0.2
87	0.0	0.0	0.0	0.1	0.1	0.1	0.1
88	0.0	0.0	0.0	0.1	0.1	0.1	0.1
89	0.0	0.0	0.0	0.1	0.1	0.1	0.1
90	0.0	0.0	0.0	0.1	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.0	0.1
92	0.0	0.0	0.0	0.0	0.0	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	-0.2	-0.4	-0.4	-0.4	-0.3	-0.3
98	0.0	0.0	0.0	0.0	0.0	0.1	0.1
99	0.0	0.0	0.0	0.0	0.0	0.1	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	0.2	0.2
105	0.0	0.1	0.1	0.2	0.2	0.2	0.2
106	-0.1	0.1	0.1	0.1	0.1	0.1	0.1
107	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
108	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.5	0.6	0.7	0.2	0.1	-0.1	-0.1
116	0.3	0.4	0.4	0.1	0.0	-0.1	-0.1
117	0.3	0.4	0.3	0.1	0.0	-0.1	-0.1
118	0.4	0.4	0.4	0.1	-0.1	-0.1	-0.1
119	0.4	0.4	0.2	0.1	0.0	-0.1	-0.1
120	0.3	0.3	0.1	-0.1	-0.1	-0.1	-0.1
121	0.2	0.1	0.0	0.0	-0.1	-0.1	-0.1
122	0.2	0.1	0.0	0.0	0.0	0.0	0.0
123	0.1	0.0	0.0	0.0	0.0	0.0	0.0
124	0.2	0.1	0.0	0.0	0.0	0.0	0.0
125	0.1	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.1	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.1	0.0	0.0	0.1	0.1	0.1	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and a 6m Barrier with 3m Cantilever

PO-6m+3m								
				Floor Level				
Receiver	1	5	10	15	20	25	30	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
38	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
42	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
43	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
44	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
45	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
46	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
47	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3
48	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3
49	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2
50	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2
51	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
52	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
56	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
57	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
58	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
59	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2

Difference between Preferred Option and a 6m Barrier with 3m Cantilever

67	0.0	0.0	0.0	0.0	0.1	0.2	0.2
68	-0.1	0.1	0.1	0.1	0.2	0.7	0.8
69	-0.1	0.2	0.2	0.2	0.3	0.8	0.9
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.1	0.2	0.3
73	0.0	0.0	0.0	0.0	0.2	0.3	0.3
74	0.0	0.0	0.0	0.0	0.2	0.3	0.3
75	0.0	0.0	0.1	0.1	0.1	0.3	0.3
76	0.0	0.0	0.1	0.1	0.1	0.2	0.3
77	0.0	0.0	0.1	0.1	0.1	0.1	0.3
78	0.0	0.1	0.1	0.1	0.2	0.2	0.2
79	0.0	0.1	0.1	0.1	0.1	0.2	0.2
80	0.0	0.1	0.1	0.1	0.1	0.2	0.2
81	0.0	0.1	0.1	0.2	0.2	0.2	0.2
82	0.0	0.0	0.1	0.1	0.1	0.1	0.1
83	0.0	0.0	0.1	0.1	0.1	0.1	0.1
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.1	0.1	0.1	0.1	0.2
86	0.0	0.0	0.1	0.1	0.1	0.1	0.2
87	0.0	0.0	0.0	0.1	0.1	0.1	0.1
88	0.0	0.0	0.0	0.1	0.1	0.1	0.1
89	0.0	0.0	0.0	0.1	0.1	0.1	0.1
90	0.0	0.0	0.0	0.1	0.1	0.1	0.1
91	0.0	0.0	0.0	0.0	0.0	0.1	0.1
92	0.0	0.0	0.0	0.0	0.0	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.1	0.1
97	0.0	-0.2	-0.4	-0.4	-0.4	-0.3	-0.3
98	0.0	0.0	0.0	0.0	0.0	0.1	0.1
99	0.0	0.0	0.0	0.0	0.0	0.1	0.1
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.1	0.1	0.2	0.2	0.2	0.2
105	0.0	0.1	0.1	0.2	0.2	0.2	0.2
106	-0.1	0.1	0.1	0.1	0.1	0.1	0.1
107	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
108	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.5	0.6	0.7	0.2	0.1	-0.1	-0.1
116	0.3	0.4	0.4	0.1	0.0	-0.1	-0.1
117	0.3	0.4	0.3	0.1	0.0	0.0	-0.1
118	0.4	0.4	0.4	0.2	0.0	-0.1	-0.1
119	0.4	0.4	0.2	0.1	0.1	0.0	0.0
120	0.3	0.3	0.1	0.0	-0.1	-0.1	-0.1
121	0.2	0.1	0.0	0.0	0.0	0.0	0.0
122	0.2	0.1	0.0	0.0	0.0	0.0	0.0
123	0.1	0.0	0.0	0.0	0.0	0.0	0.0
124	0.2	0.1	0.0	0.0	0.0	0.0	0.0
125	0.1	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.1	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.1	0.1	0.1	0.1	0.1	0.1	
134	0.0	0.0	0.0	0.0	0.0	0.0	

Difference between Preferred Option and an Enclosure

PO-Enclosure.							
Receiver	Floor Level						
	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	0.3	0.3	0.4	0.4	0.4	0.4	0.4
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0
49	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.1	0.0
61	0.0	0.0	0.0	0.0	0.0	0.1	0.0
62	0.0	0.0	0.0	0.0	0.0	0.0	0.0
63	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Difference between Preferred Option and an Enclosure

67	0.0	0.0	0.0	0.0	0.0	0.1	0.1
68	0.0	0.1	0.1	0.1	0.1	0.1	0.2
69	0.0	0.1	0.1	0.1	0.1	0.2	0.3
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.0	0.1	0.1
73	0.0	0.0	0.0	0.0	0.0	0.1	0.1
74	0.0	0.0	0.0	0.0	0.0	0.1	0.1
75	0.0	0.0	0.0	0.0	0.0	0.0	0.1
76	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0
91	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108	0.0	0.0	0.0	0.0	0.0	0.0	0.0
109	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0
111	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112	0.0	0.0	0.0	0.0	0.0	0.0	0.0
113	0.0	0.0	0.0	0.0	0.0	0.0	0.0
114	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.6	0.7	0.8	0.4	0.4	0.4	0.3
116	0.4	0.4	0.5	0.2	0.2	0.2	0.2
117	0.4	0.4	0.4	0.2	0.2	0.2	0.2
118	0.5	0.5	0.5	0.3	0.3	0.3	0.2
119	0.5	0.5	0.4	0.3	0.3	0.3	0.2
120	0.5	0.5	0.2	0.2	0.2	0.2	0.2
121	0.3	0.2	0.1	0.1	0.1	0.1	0.1
122	0.2	0.2	0.1	0.1	0.1	0.1	0.1
123	0.1	0.1	0.0	0.0	0.0	0.0	0.0
124	0.2	0.1	0.1	0.1	0.1	0.1	0.1
125	0.1	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.1	0.1	0.1	0.1	0.1
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	2	3	4	5	6	
132	0.0	0.0	0.0	0.0	0.0	0.0	
133	0.1	0.1	0.1	0.1	0.1	0.1	
134	0.0	0.0	0.0	0.0	0.0	0.0	



1997 Predicted Traffic Noise Levels

TCK 1997 - Prevailing Situation									
Receiver	Floor								
	1	5	10	15	20	25	30	35	40
1	67.6	71.8	72.7	72.3	71.9	71.6	71.2	70.9	70.6
2	66.2	71.6	72.6	72.2	71.9	71.5	71.2	70.8	70.6
3	65.0	70.2	71.3	71.0	70.7	70.4	70.1	69.8	69.5
4	64.8	70.1	71.3	71.0	70.7	70.3	70.0	69.8	69.5
5	65.9	71.3	72.4	72.0	71.6	71.3	70.9	70.6	70.5
6	66.7	71.1	72.2	71.9	71.5	71.1	70.8	70.4	70.4
7	67.1	69.5	70.6	70.3	70.0	69.6	69.3	69.2	69.5
8	68.4	69.1	69.4	69.2	69.0	68.7	68.5	68.8	69.2
9	71.9	72.9	72.4	71.8	71.3	70.8	70.3	70.7	70.6
10	73.5	73.6	73.0	72.3	71.8	71.2	70.8	70.4	70.0
11	75.4	75.0	74.4	73.8	73.2	72.7	72.3	72.1	71.7
12	75.8	75.4	74.9	74.3	73.8	73.4	72.9	72.6	72.2
13	75.5	75.2	74.7	74.2	73.8	73.3	72.9	72.6	72.3
14	73.9	73.7	73.3	72.9	72.5	72.1	71.7	71.4	71.0
15	72.9	72.7	72.4	72.0	71.5	71.1	70.7	70.5	70.1
16	74.9	74.7	74.4	74.0	73.6	73.2	72.8	72.5	72.2
17	75.0	74.8	74.5	74.1	73.7	73.3	72.9	72.6	72.2
18	74.3	74.1	73.9	73.5	73.2	72.8	72.4	72.1	71.7
19	73.6	73.5	73.3	73.0	72.7	72.4	72.0	71.7	71.4
20	72.7	72.7	72.5	72.3	72.0	71.7	71.3	71.0	70.7
21	69.7	69.7	69.7	69.7	69.5	69.3	69.0	68.9	69.7
22	71.6	71.5	71.4	71.2	71.0	70.7	70.4	70.1	70.3
23	68.0	68.8	70.0	69.9	69.6	69.4	69.2	69.2	69.3
24	68.5	70.2	70.9	70.6	70.4	70.1	69.8	69.8	69.6
25	77.0	76.9	76.4	75.8	75.1	74.5	74.0	73.6	73.2
26	75.9	75.9	75.5	75.0	74.4	73.9	73.4	73.1	73.2
27	75.4	75.3	75.0	74.5	74.0	73.5	73.1	72.6	72.5
28	74.5	74.5	74.2	73.8	73.4	72.9	72.5	72.1	72.1
29	61.7	61.6	61.4	61.2	60.8	60.4	60.0	60.4	62.2
30	71.9	71.9	71.7	71.4	71.0	70.6	70.3	70.3	70.9
31	77.9	77.7	77.2	76.5	75.9	75.2	74.7	74.3	73.9
32	78.8	78.5	77.8	77.0	76.3	75.6	75.0	74.5	74.1
33	79.6	79.1	78.2	77.3	76.6	75.9	75.3	74.8	74.4
34	79.5	78.9	78.0	77.2	76.5	75.8	75.2	74.7	74.4
35	79.4	78.8	77.9	77.1	76.3	75.7	75.2	74.7	74.3
36	79.3	78.7	77.7	76.9	76.2	75.6	75.1	74.6	74.2
37	45.2	44.6	43.7	42.9	42.1	41.5	41.1	69.4	69.1
38	72.3	72.0	71.4	70.6	70.0	69.4	68.8	69.0	68.8
39	74.7	74.5	74.1	73.6	73.2	72.8	72.4	72.1	71.9
40	76.4	76.0	75.3	74.7	74.1	73.7	73.2	72.8	72.6
41	78.9	78.3	77.4	76.5	75.8	75.3	74.8	74.3	74.0
42	78.8	78.2	77.3	76.5	75.8	75.2	74.7	74.3	73.9
43	78.6	78.1	77.1	76.3	75.6	75.1	74.6	74.2	73.8
44	78.5	78.0	77.1	76.3	75.6	75.0	74.5	74.1	73.8
45	74.2	73.7	72.8	71.9	71.1	70.5	69.9	69.3	69.0
46	71.9	71.6	71.0	70.3	69.6	69.0	68.5	68.2	67.9
47	73.4	73.3	72.9	72.4	72.0	71.6	71.3	71.0	70.9
48	75.7	75.4	74.7	74.0	73.5	73.0	72.6	72.2	72.0
49	78.2	77.7	76.8	76.1	75.4	74.8	74.3	73.9	73.6
50	78.1	77.6	76.8	76.0	75.3	74.8	74.3	73.8	73.5
51	78.1	77.6	76.7	75.9	75.3	74.7	74.2	73.8	73.5
52	78.1	77.6	76.7	75.9	75.2	74.6	74.1	73.7	73.4
53	74.0	73.5	72.7	71.8	71.0	70.3	69.7	69.2	68.9
54	71.6	71.4	70.8	70.1	69.5	68.9	68.3	68.2	67.9
55	75.2	74.8	74.1	73.4	72.8	72.3	71.9	71.6	71.5
56	78.5	77.8	76.8	75.9	75.1	74.5	74.0	73.5	73.2
57	78.7	77.9	76.8	75.9	75.1	74.5	74.0	73.5	73.2
58	79.2	78.2	77.0	76.0	75.2	74.5	74.0	73.5	73.2
59	79.7	78.6	77.3	76.2	75.4	74.7	74.2	73.7	73.4
60	76.5	75.6	74.4	73.3	72.3	71.6	70.9	70.3	69.9
61	73.9	73.4	72.5	71.6	70.8	70.1	69.4	69.0	68.9
62	75.4	74.9	74.0	73.1	72.4	71.7	71.1	71.2	71.5
63	76.1	75.6	74.7	73.8	73.0	72.3	71.8	71.6	71.7
64	77.4	76.7	75.5	74.5	73.7	73.1	72.5	72.4	72.6
65	77.8	77.0	75.8	74.8	73.9	73.2	72.7	72.2	72.0
66	76.9	76.2	75.0	73.9	73.0	72.2	71.6	71.0	70.6

1997 Predicted Traffic Noise Levels

67	75.1	74.7	73.9	73.1	72.3	71.5	70.9	70.3	69.9
68	69.2	69.0	68.3	67.6	66.9	66.2	65.6	65.2	65.2
69	67.7	67.5	66.9	66.2	65.5	64.9	64.3	63.9	64.9
70	65.2	65.0	64.6	64.1	63.5	63.0	62.5	63.0	66.4
71	67.3	67.1	66.5	65.9	65.3	64.7	64.2	65.3	67.0
72	75.2	74.8	74.0	73.2	72.4	71.7	71.1	70.9	71.1
73	77.1	76.4	75.4	74.5	73.7	73.0	72.4	71.9	71.8
74	78.7	77.7	76.4	75.3	74.4	73.6	72.9	72.3	71.9
75	78.3	77.4	76.1	75.1	74.1	73.4	72.7	72.1	71.7
76	78.2	77.2	76.0	74.9	74.0	73.3	72.6	72.1	71.7
77	78.1	77.1	75.8	74.8	73.9	73.2	72.5	72.0	71.7
78	73.3	72.9	72.2	71.5	70.9	70.3	69.8	69.3	69.2
79	74.6	74.1	73.1	72.3	71.6	71.0	70.5	70.0	69.9
80	75.8	75.1	74.0	73.0	72.3	71.6	71.1	70.6	70.4
81	75.9	74.8	73.6	72.7	71.9	71.3	70.7	70.3	70.1
82	78.7	77.2	75.7	74.6	73.7	73.0	72.4	71.8	71.4
83	78.9	77.2	75.7	74.5	73.7	72.9	72.3	71.8	71.4
84	74.8	74.0	72.7	71.7	70.8	70.0	69.4	69.0	69.7
85	75.1	74.3	73.2	72.2	71.5	70.8	70.3	69.8	69.5
86	75.7	74.4	73.0	72.0	71.2	70.6	70.1	69.6	69.3
87	78.5	76.9	75.3	74.2	73.3	72.5	71.9	71.4	71.0
88	78.6	76.9	75.3	74.1	73.2	72.5	71.9	71.3	71.0
89	75.0	74.3	73.1	72.1	71.3	70.6	70.1	69.6	69.4
90	75.6	74.4	73.0	72.0	71.2	70.5	70.0	69.5	69.2
91	78.2	76.6	75.0	73.8	72.9	72.1	71.5	71.0	70.6
92	78.0	76.5	74.9	73.7	72.8	72.0	71.4	70.9	70.5
93	68.5	68.5	68.4	67.9	67.5	67.1	66.7	66.4	66.2
94	69.5	69.3	68.8	68.3	67.8	67.3	66.8	66.4	66.6
95	69.8	69.6	69.3	68.7	68.2	67.7	67.3	67.1	66.9
96	71.4	71.1	70.5	69.9	69.2	68.7	68.2	67.7	67.4
97	71.1	71.1	70.7	70.1	69.4	68.8	68.3	67.5	67.5
98	70.5	70.1	69.4	68.7	68.1	67.5	67.1	66.7	66.8
99	71.9	71.1	70.1	69.2	68.5	67.9	67.4	67.0	67.0
100	74.7	73.6	72.2	71.2	70.3	69.6	69.1	68.6	68.2
101	74.7	73.6	72.2	71.1	70.3	69.6	69.0	68.5	68.2
102	74.6	73.5	72.1	71.1	70.2	69.5	68.9	68.4	68.1
103	74.6	73.5	72.1	71.0	70.1	69.4	68.8	68.3	68.0
104	70.2	70.1	69.7	69.2	68.8	68.3	67.8	67.4	67.1
105	70.2	70.1	69.7	69.2	68.7	68.2	67.7	67.3	67.1
106	68.7	68.6	68.3	67.9	67.5	67.0	66.6	66.2	66.6
107	68.2	68.1	67.8	67.4	67.0	66.6	66.2	66.0	66.8
108	67.6	67.5	67.3	66.9	66.6	66.1	65.8	65.5	66.6
109	68.2	68.2	68.0	67.8	67.5	67.2	66.9	66.7	67.8
110	67.1	67.1	66.9	66.7	66.5	66.2	66.0	65.8	66.8
111	67.7	67.7	67.5	67.3	67.0	66.8	66.5	66.3	67.7
112	66.7	66.7	66.5	66.3	66.0	65.8	65.5	65.3	66.6
113	67.8	67.7	67.5	67.3	67.0	66.6	66.3	66.0	68.2
114	67.8	67.8	67.6	67.3	67.0	66.7	66.3	66.0	68.6
115	67.3	67.3	67.2	67.2	67.0	66.9	66.8	67.8	67.7
116	69.0	69.0	68.9	68.8	68.6	68.5	68.3	68.2	68.0
117	69.0	68.9	68.9	68.7	68.6	68.4	68.2	68.1	67.9
118	67.9	67.8	67.7	67.5	67.3	67.1	67.3	68.8	68.5
119	67.9	67.8	67.7	67.6	67.4	67.2	67.2	67.6	67.7
120	69.1	69.1	68.9	68.8	68.6	68.3	68.1	68.2	68.5
121	71.8	71.6	71.4	71.1	70.7	70.4	70.1	69.8	69.6
122	72.2	72.0	71.7	71.3	70.9	70.6	70.2	69.9	69.6
123	72.7	72.4	71.9	71.4	70.9	70.4	69.9	70.3	70.2
124	72.5	72.2	71.7	71.2	70.8	70.3	70.1	70.0	69.7
125	74.6	74.2	73.6	72.9	72.3	71.8	71.3	70.9	70.5
126	74.4	74.0	73.4	72.7	72.1	71.6	71.2	71.1	70.7
127	69.4	69.7	69.4	69.0	68.6	68.3	67.9	68.5	68.5
128	69.4	69.2	68.8	68.4	68.0	67.6	67.2	67.6	67.9
129	71.0	70.7	70.3	69.8	69.3	68.9	68.5	68.5	68.6
130	73.3	73.0	72.5	71.9	71.3	70.8	70.3	69.9	69.6
131	73.3	73.0	72.4	71.8	71.3	70.7	70.3	69.8	69.6
132	64.5	64.5	64.5	64.5	64.5	64.5			
133	66.0	66.0	66.0	66.0	66.0	66.0			
134	71.2	71.2	71.2	71.2	71.1	71.1			

2016 Contribution from the Ground Level Roads Only

2016 Ground Level Contrib. Only										
Receiver	1	5	10	Floor	15	20	25	30	35	40
1	69.1	73.6	74.6		74.2	73.8	73.4	73.1	72.7	72.4
2	67.2	73.4	74.6		74.2	73.8	73.4	73.0	72.7	72.3
3	65.9	71.8	73.1		72.8	72.5	72.1	71.8	71.5	71.2
4	65.5	71.6	73.2		72.8	72.5	72.1	71.8	71.5	71.2
5	66.8	72.9	74.3		73.9	73.5	73.1	72.7	72.4	72.2
6	67.7	72.8	74.1		73.7	73.3	72.9	72.6	72.2	72.1
7	68.3	71.0	72.4		72.1	71.7	71.4	71.0	70.8	71.1
8	69.9	70.7	71.1		70.9	70.6	70.4	70.1	70.3	70.8
9	73.9	74.9	74.4		73.8	73.2	72.6	72.2	72.4	72.3
10	75.5	75.7	75.0		74.3	73.6	73.1	72.6	72.1	71.7
11	77.4	77.0	76.3		75.7	75.1	74.6	74.1	73.8	73.4
12	77.8	77.4	76.8		76.2	75.6	75.2	74.7	74.3	74.0
13	77.4	77.1	76.6		76.1	75.6	75.1	74.7	74.3	74.0
14	75.7	75.5	75.2		74.7	74.3	73.9	73.5	73.1	72.8
15	74.7	74.5	74.2		73.8	73.3	72.9	72.5	72.2	71.8
16	76.8	76.6	76.3		75.9	75.4	75.0	74.6	74.3	74.0
17	76.8	76.7	76.4		76.0	75.6	75.2	74.8	74.4	74.0
18	76.1	75.9	75.7		75.3	75.0	74.6	74.2	73.8	73.5
19	75.5	75.4	75.2		74.9	74.6	74.3	73.9	73.6	73.2
20	74.6	74.6	74.4		74.2	73.9	73.6	73.2	72.9	72.6
21	71.6	71.6	71.6		71.6	71.4	71.2	70.9	70.8	71.3
22	73.4	73.4	73.2		73.1	72.9	72.6	72.3	72.0	72.0
23	69.6	70.4	71.8		71.6	71.4	71.2	70.9	70.9	71.0
24	70.2	71.9	72.7		72.5	72.2	71.9	71.6	71.5	71.3
25	78.6	78.5	78.0		77.4	76.8	76.2	75.6	75.2	74.9
26	77.5	77.5	77.2		76.7	76.1	75.6	75.1	74.8	74.9
27	77.0	77.0	76.7		76.2	75.7	75.2	74.8	74.3	74.1
28	76.2	76.2	75.9		75.5	75.1	74.6	74.2	73.8	73.8
29	64.0	63.9	63.7		63.5	63.1	62.7	62.4	62.9	64.2
30	73.7	73.6	73.5		73.2	72.8	72.4	72.1	72.1	72.6
31	79.6	79.4	78.9		78.3	77.6	76.9	76.4	76.0	75.6
32	80.5	80.3	79.6		78.8	78.0	77.4	76.8	76.2	75.8
33	81.5	81.0	80.1		79.2	78.4	77.7	77.1	76.6	76.2
34	81.3	80.8	79.9		79.1	78.3	77.6	77.1	76.5	76.2
35	81.2	80.7	79.8		78.9	78.2	77.5	77.0	76.5	76.1
36	81.1	80.5	79.6		78.8	78.0	77.4	76.9	76.4	76.0
37	46.9	46.4	45.5		44.7	44.0	43.3	42.9	41.1	40.9
38	74.2	74.0	73.4		72.6	72.0	71.4	70.8	70.8	70.6
39	76.5	76.3	75.9		75.4	74.9	74.5	74.1	73.8	73.6
40	78.2	77.9	77.2		76.6	76.0	75.5	75.0	74.6	74.4
41	80.6	80.0	79.1		78.3	77.6	77.0	76.5	76.0	75.7
42	80.4	79.9	79.0		78.2	77.5	76.9	76.4	75.9	75.6
43	80.1	79.6	78.7		77.9	77.3	76.7	76.2	75.7	75.4
44	80.0	79.5	78.6		77.8	77.1	76.6	76.1	75.6	75.3
45	75.0	74.5	73.6		72.7	72.0	71.3	70.7	70.2	69.8
46	72.7	72.4	71.8		71.1	70.4	69.8	69.3	69.0	68.7
47	74.9	74.8	74.4		73.9	73.5	73.1	72.7	72.5	72.3
48	77.2	76.8	76.2		75.5	74.9	74.4	74.0	73.6	73.5
49	79.2	78.8	77.9		77.1	76.5	75.9	75.4	75.0	74.7
50	79.1	78.6	77.8		77.0	76.4	75.8	75.3	74.9	74.6
51	79.0	78.5	77.6		76.8	76.2	75.6	75.1	74.7	74.5
52	78.9	78.4	77.6		76.8	76.1	75.6	75.1	74.6	74.4
53	74.3	73.9	73.0		72.1	71.3	70.7	70.1	69.6	69.4
54	71.9	71.7	71.1		70.5	69.9	69.3	68.8	68.7	68.5
55	76.1	75.8	75.0		74.4	73.8	73.3	72.9	72.6	72.6
56	79.0	78.3	77.3		76.4	75.7	75.1	74.7	74.2	73.9
57	79.2	78.3	77.2		76.4	75.7	75.1	74.6	74.1	73.8
58	79.8	78.5	77.2		76.2	75.5	74.9	74.4	74.0	73.7
59	80.6	78.9	77.5		76.5	75.8	75.2	74.7	74.2	73.9
60	77.3	76.0	74.6		73.5	72.6	71.9	71.3	70.7	70.3
61	74.4	73.9	72.9		71.9	71.1	70.4	69.8	69.3	69.4
62	76.1	75.4	74.4		73.5	72.7	72.0	71.5	71.5	72.1
63	77.0	76.2	75.1		74.2	73.4	72.7	72.2	72.0	72.3
64	78.8	77.6	76.2		75.1	74.3	73.7	73.1	73.0	73.3
65	79.5	78.0	76.5		75.4	74.6	73.9	73.4	72.9	72.7
66	78.7	77.5	76.1		75.0	74.1	73.3	72.7	72.1	71.7

2016 Contribution from the Ground Level Roads Only

2016 Ground Level Contrib. Only									
Receiver	Floor								
	1	5	10	15	20	25	30	35	40
67	76.3	75.8	74.9	74.0	73.2	72.5	71.8	71.3	70.9
68	70.4	70.1	69.4	68.6	67.9	67.2	66.6	66.2	66.4
69	68.8	68.5	67.9	67.2	66.5	65.9	65.3	65.0	66.0
70	66.8	66.5	66.0	65.4	64.8	64.3	63.8	64.0	67.1
71	69.0	68.6	67.9	67.2	66.5	65.9	65.4	66.1	67.9
72	76.3	75.8	74.8	73.9	73.1	72.4	71.8	71.5	71.7
73	78.4	77.4	76.2	75.1	74.3	73.5	72.9	72.5	72.4
74	80.4	79.1	77.6	76.4	75.5	74.7	74.0	73.4	72.9
75	79.8	78.7	77.3	76.2	75.2	74.4	73.8	73.2	72.7
76	79.6	78.6	77.3	76.1	75.2	74.4	73.8	73.2	72.8
77	79.6	78.6	77.2	76.1	75.2	74.4	73.7	73.2	72.9
78	74.8	74.4	73.7	72.9	72.2	71.6	71.0	70.5	70.4
79	76.3	75.7	74.7	73.8	73.0	72.3	71.7	71.2	71.1
80	77.6	76.8	75.6	74.6	73.8	73.1	72.4	71.9	71.8
81	77.6	76.4	75.1	74.1	73.3	72.6	72.0	71.5	71.2
82	80.7	79.2	77.6	76.4	75.5	74.7	74.0	73.5	73.1
83	80.9	79.3	77.6	76.4	75.5	74.7	74.1	73.5	73.1
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6	71.1	71.3
85	77.1	76.3	75.2	74.1	73.3	72.6	72.0	71.5	71.3
86	77.7	76.4	74.9	73.8	73.0	72.3	71.7	71.2	70.8
87	80.7	79.1	77.4	76.2	75.3	74.5	73.9	73.3	72.9
88	80.7	79.1	77.4	76.2	75.3	74.5	73.8	73.3	72.9
89	77.2	76.4	75.2	74.1	73.3	72.6	72.0	71.5	71.4
90	77.7	76.5	75.1	74.0	73.1	72.4	71.8	71.3	70.9
91	80.5	78.9	77.3	76.0	75.1	74.3	73.7	73.1	72.7
92	80.4	78.8	77.2	76.0	75.0	74.3	73.6	73.1	72.7
93	71.1	71.1	70.9	70.4	69.9	69.5	69.1	68.8	68.6
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7	69.2	69.6
95	72.6	72.4	72.0	71.4	70.8	70.3	69.9	69.6	69.3
96	74.7	74.4	73.8	73.1	72.4	71.8	71.3	70.8	70.4
97	74.5	74.2	73.6	72.9	72.2	71.6	71.1	70.6	70.3
98	73.8	73.4	72.6	71.8	71.1	70.5	70.0	69.6	69.5
99	75.3	74.6	73.4	72.4	71.6	70.9	70.4	69.9	69.8
100	78.4	77.2	75.8	74.6	73.7	73.0	72.4	71.8	71.4
101	78.4	77.2	75.8	74.6	73.7	73.0	72.3	71.8	71.4
102	78.3	77.1	75.7	74.5	73.6	72.8	72.2	71.7	71.3
103	78.3	77.1	75.6	74.5	73.5	72.8	72.1	71.6	71.2
104	71.8	71.6	71.2	70.7	70.2	69.7	69.3	68.8	68.6
105	71.9	71.8	71.4	70.9	70.4	69.9	69.4	68.9	68.7
106	70.2	70.1	69.8	69.4	68.9	68.4	68.0	67.6	67.8
107	69.6	69.5	69.2	68.8	68.4	68.0	67.6	67.3	67.9
108	69.0	68.9	68.6	68.3	67.9	67.5	67.1	66.8	67.7
109	68.8	68.7	68.6	68.3	68.0	67.7	67.5	67.3	68.4
110	67.6	67.6	67.4	67.2	67.0	66.8	66.5	66.3	67.4
111	68.3	68.2	68.1	67.9	67.6	67.4	67.1	66.9	68.3
112	67.3	67.2	67.1	66.9	66.6	66.4	66.1	65.9	67.1
113	68.7	68.6	68.4	68.2	67.9	67.6	67.2	66.9	69.1
114	69.0	68.9	68.7	68.5	68.2	67.8	67.5	67.2	69.5
115	67.6	67.6	67.5	67.9	67.9	67.8	67.7	69.1	69.1
116	70.0	69.9	69.9	70.1	70.0	69.8	69.7	69.5	69.4
117	69.9	69.9	69.9	70.0	69.9	69.8	69.6	69.5	69.3
118	68.9	68.8	68.9	69.0	68.8	68.6	68.8	70.5	70.3
119	68.6	68.5	68.6	68.7	68.6	68.5	68.4	69.0	69.1
120	69.9	69.8	70.0	69.9	69.7	69.5	69.3	69.1	68.9
121	73.1	73.1	73.0	72.7	72.4	72.0	71.7	71.4	71.2
122	73.7	73.6	73.3	73.0	72.6	72.2	71.9	71.5	71.2
123	74.5	74.3	73.8	73.3	72.8	72.3	71.9	72.2	72.1
124	74.1	74.0	73.5	73.1	72.6	72.1	71.8	71.7	71.3
125	76.5	76.2	75.5	74.9	74.3	73.7	73.3	72.8	72.4
126	76.4	76.0	75.4	74.8	74.1	73.6	73.2	73.0	72.6
127	71.9	71.7	71.4	71.1	70.7	70.3	70.0	70.4	70.3
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3	69.5	69.7
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5	70.4	70.5
130	75.4	75.1	74.5	73.9	73.4	72.8	72.4	71.9	71.7
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3	71.9	71.7

2016 Contribution from the Ground Level Roads Only

2016 Ground Level Contrib. Only									
				Floor					
Receiver	1	5	10	15	20	25	30	35	40
132	66.2	66.2	66.2	66.2	66.2	66.2			
133	67.7	67.7	67.7	67.7	67.7	67.7			
134	73.3	73.3	73.3	73.2	73.2	73.1			

Noise Levels from the Flyover Only (Unmitigated)

2016 Contribution from flyover (0.5m parapet on flyover)									
	Floor								
Receive	1	5	10	15	20	25	30	35	40
1	27.3	27.2	27.2	27.1	26.9	26.8	29.3	26.5	50.0
2	27.4	27.4	27.3	27.2	27.1	27.0	29.6	26.6	50.3
3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
5	27.9	27.9	27.8	27.7	27.5	27.4	30.3	27.1	51.7
6	28.0	28.0	27.9	27.8	27.7	27.5	30.5	27.2	51.7
7	28.2	28.2	28.1	28.0	27.9	27.7	29.8	27.4	50.7
8	28.2	28.2	28.1	28.0	27.9	27.8	29.1	27.5	49.6
9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
11	52.9	52.7	52.4	51.9	51.4	51.0	50.6	55.0	54.7
12	56.6	56.5	56.2	55.9	55.6	55.3	55.0	54.7	54.4
13	56.2	56.1	55.8	55.5	55.2	54.8	54.5	54.2	53.8
14	55.6	55.5	55.3	55.0	54.7	54.3	54.0	53.7	53.4
15	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
16	54.8	54.7	54.4	54.1	53.7	53.4	53.0	52.6	52.3
17	52.5	52.4	52.1	51.7	51.3	50.9	50.5	50.1	49.7
18	30.0	29.9	29.8	29.7	29.6	29.4	29.3	29.1	28.9
19	30.0	29.9	29.8	29.7	29.6	29.4	29.4	29.1	28.9
20	29.8	29.8	29.7	29.6	29.5	29.3	29.2	29.0	28.8
21	28.7	28.7	28.7	28.6	28.6	28.5	28.4	28.3	28.1
22	28.9	28.9	28.9	28.8	28.8	28.7	28.6	28.5	28.4
23	26.6	26.6	26.5	26.4	26.4	26.3	26.5	26.0	25.9
24	26.5	26.4	26.4	26.3	26.2	26.1	26.9	25.9	25.7
25	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
26	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
27	34.3	34.2	34.1	34.0	33.8	33.6	33.4	33.1	32.9
28	34.5	34.5	34.4	34.2	34.1	33.8	33.7	33.4	33.2
29	34.6	34.6	34.5	34.3	34.1	33.9	33.7	33.5	33.3
30	34.7	34.7	34.6	34.5	34.3	34.1	33.9	33.6	33.4
31	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
32	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
33	64.2	64.1	63.7	63.2	62.7	62.2	61.7	61.3	60.9
34	64.4	64.4	63.9	63.4	62.9	62.4	61.9	61.4	61.1
35	65.2	65.1	64.6	64.1	63.5	63.0	62.4	62.0	61.6
36	65.3	65.1	64.6	64.0	63.4	62.8	62.3	61.8	61.4
37	36.6	36.5	36.1	35.7	35.2	34.7	34.3	61.8	61.6
38	58.3	58.1	57.6	57.0	56.3	55.7	55.2	54.6	54.2
39	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
40	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
41	68.1	68.0	67.4	66.8	66.1	65.5	64.9	64.4	64.0
42	68.4	68.3	67.8	67.1	66.5	65.8	65.3	64.7	64.3
43	69.7	69.6	69.0	68.3	67.6	66.9	66.3	65.8	65.4
44	70.2	70.0	69.4	68.7	68.0	67.3	66.7	66.2	65.8
45	70.1	69.9	69.4	68.7	68.0	67.3	66.7	66.2	65.8
46	68.0	67.9	67.4	66.9	66.2	65.6	65.1	64.6	64.2
47	55.9	55.7	55.2	54.6	53.9	53.3	52.7	52.3	52.0
48	62.4	62.1	61.3	60.5	59.7	59.0	58.4	57.8	57.4
49	73.4	73.2	72.6	71.8	71.0	70.3	69.6	69.1	68.6
50	73.8	73.6	73.0	72.1	71.4	70.6	70.0	69.4	69.0
51	74.7	74.6	73.9	73.1	72.3	71.5	70.9	70.3	69.8
52	75.0	74.9	74.2	73.4	72.5	71.8	71.1	70.5	70.1
53	73.1	73.1	72.5	71.7	70.9	70.2	69.6	69.0	68.7
54	71.0	70.9	70.4	69.9	69.2	68.6	68.0	67.5	67.1
55	69.3	71.8	71.1	70.3	69.4	68.7	68.0	67.5	67.4
56	71.5	76.2	75.4	74.4	73.5	72.7	72.0	71.3	70.9
57	69.7	76.5	75.6	74.6	73.6	72.8	72.1	71.5	71.0
58	69.3	77.1	76.1	75.0	73.9	73.1	72.3	71.7	71.3
59	69.2	77.7	76.7	75.4	74.4	73.5	72.7	72.1	71.6
60	66.3	75.4	74.5	73.4	72.4	71.6	70.8	70.1	69.7
61	65.0	73.4	72.9	72.1	71.2	70.5	69.8	69.2	68.8
62	66.1	74.6	74.0	73.2	72.4	71.6	70.9	70.3	69.8
63	66.4	75.2	74.6	73.7	72.8	72.0	71.3	70.7	70.2
64	66.4	76.2	75.4	74.4	73.4	72.6	71.8	71.3	71.1
65	66.4	76.6	75.7	74.6	73.6	72.7	72.0	71.3	70.9
66	64.9	75.2	74.3	73.2	72.2	71.3	70.6	69.9	69.5



Noise Levels from the Flyover Only (Unmitigated)

2016 Contribution from flyover (0.5m parapet on flyover)									
Receive	Floor								
	1	5	10	15	20	25	30	35	40
67	64.5	73.5	72.9	72.2	71.4	70.6	69.9	69.3	68.9
68	59.2	66.7	66.2	65.5	64.7	64.0	63.4	62.8	62.4
69	57.9	64.9	64.4	63.7	63.0	62.3	61.7	61.1	62.4
70	55.7	64.7	64.4	63.8	63.2	62.6	62.0	61.5	62.7
71	57.6	66.8	66.4	65.8	65.1	64.5	63.8	63.5	63.1
72	65.1	73.9	73.4	72.7	72.0	71.3	70.6	70.0	69.6
73	66.5	75.1	74.6	73.7	72.9	72.2	71.5	70.9	70.4
74	66.2	74.0	73.5	72.6	71.8	71.1	70.4	69.8	69.3
75	65.9	73.1	72.7	72.0	71.2	70.5	69.9	69.3	68.9
76	65.6	72.0	71.7	71.1	70.6	70.0	69.4	68.9	68.5
77	65.4	71.3	71.0	70.6	70.1	69.5	69.0	68.5	68.2
78	62.5	67.1	67.0	66.8	66.5	66.2	65.8	65.5	65.2
79	63.5	68.1	68.0	67.7	67.4	67.1	66.7	66.4	66.1
80	63.7	68.3	68.1	67.9	67.6	67.3	66.9	66.6	66.3
81	63.8	68.5	68.3	68.1	67.8	67.5	67.1	66.7	66.5
82	63.6	68.3	68.1	67.9	67.6	67.3	67.0	66.6	66.3
83	63.1	67.6	67.5	67.3	67.1	66.8	66.5	66.2	65.9
84	37.5	37.5	37.4	37.3	37.1	36.8	37.7	48.3	65.1
85	60.3	64.1	64.1	64.0	63.8	63.6	63.4	63.2	63.0
86	61.9	64.8	64.8	64.6	64.5	64.3	64.1	63.9	63.7
87	63.8	64.8	64.7	64.6	64.4	64.3	64.1	63.9	63.7
88	63.9	64.3	64.2	64.1	64.0	63.8	63.7	63.5	63.3
89	61.0	61.0	61.0	60.9	60.8	60.7	60.6	60.4	60.3
90	62.0	62.2	62.1	62.1	62.0	61.9	61.7	61.6	61.5
91	61.9	62.2	62.2	62.1	62.0	61.9	61.8	61.6	61.5
92	61.5	61.8	61.8	61.7	61.7	61.6	61.4	61.3	61.2
93	42.3	48.5	48.5	48.4	48.4	48.3	48.3	48.5	49.0
94	31.0	31.0	31.0	30.9	30.9	30.8	32.9	37.5	42.4
95	45.9	45.8	45.8	45.8	45.7	45.7	45.7	46.1	47.4
96	52.2	52.2	52.2	52.2	52.1	52.0	52.0	52.0	52.1
97	48.9	53.8	53.8	53.8	53.8	53.7	53.7	53.6	53.6
98	57.3	57.3	57.3	57.2	57.2	57.1	57.1	57.0	57.0
99	58.4	58.4	58.4	58.4	58.3	58.3	58.2	58.2	58.1
100	58.4	58.6	58.6	58.6	58.5	58.5	58.4	58.4	58.3
101	58.2	58.5	58.5	58.5	58.4	58.4	58.3	58.2	58.2
102	57.9	58.1	58.1	58.1	58.1	58.0	58.0	57.9	57.9
103	57.7	57.9	57.9	57.9	57.9	57.8	57.8	57.7	57.7
104	59.2	64.1	63.9	63.7	63.5	63.2	62.8	62.5	62.2
105	58.1	62.6	62.5	62.3	62.0	61.6	61.2	60.9	60.6
106	57.4	61.9	61.8	61.6	61.3	60.9	60.6	60.2	59.9
107	55.0	61.5	61.4	61.2	60.9	60.5	60.2	59.8	59.6
108	55.3	61.9	61.8	61.6	61.3	61.0	60.6	60.3	60.0
109	59.4	66.2	66.0	65.7	65.3	64.9	64.5	64.1	63.8
110	58.5	64.2	64.0	63.7	63.4	63.0	62.6	62.2	61.9
111	61.4	65.5	65.3	65.1	64.7	64.4	64.0	63.6	64.4
112	62.4	64.6	64.4	64.2	63.8	63.5	63.1	62.7	62.5
113	65.6	65.8	66.0	65.8	65.4	65.1	64.7	64.3	64.0
114	64.3	64.4	64.9	64.6	64.3	63.9	63.5	63.1	62.8
115	60.1	60.5	61.7	61.6	61.4	61.2	61.0	60.8	60.5
116	60.5	60.8	62.0	61.8	61.6	61.4	61.2	60.9	60.7
117	60.5	60.8	62.0	61.8	61.6	61.4	61.1	60.9	60.6
118	60.3	60.6	61.8	61.6	61.4	61.2	60.9	60.7	60.4
119	60.3	60.5	61.7	61.5	61.3	61.1	60.8	60.5	60.3
120	61.2	61.4	62.4	62.1	61.9	61.5	61.2	60.9	60.6
121	61.5	61.7	62.7	62.4	62.0	61.7	61.3	61.0	60.6
122	61.5	61.7	62.6	62.3	61.9	61.5	61.2	60.8	60.4
123	58.8	58.7	58.5	58.2	57.8	57.5	57.1	56.7	56.4
124	61.1	61.3	62.2	61.9	61.5	61.1	60.7	60.3	60.0
125	60.1	60.0	59.8	59.5	59.1	58.8	58.8	58.4	58.0
126	53.4	53.2	53.0	52.7	52.3	51.9	51.5	60.1	59.7
127	42.5	37.6	53.9	54.5	54.2	53.9	53.6	53.3	53.0
128	29.5	29.5	29.4	29.2	29.0	28.8	28.6	28.3	51.3
129	29.3	29.2	29.1	29.0	28.8	28.6	28.3	28.1	48.4
130	29.1	29.1	29.0	28.8	28.6	28.4	28.1	27.9	45.4
131	29.0	29.0	28.9	28.8	28.6	28.4	28.2	27.9	27.7

Noise Levels from the Flyover Only (Unmitigated)

2016 Contribution from flyover (0.5m parapet on flyover)									
				Floor					
Receive	1	5	10	15	20	25	30	35	40
132	27.7	27.7	27.7	27.7	27.7	27.7			
133	49.7	49.7	49.7	49.7	49.7	49.7			
134	27.7	27.7	27.7	27.7	27.7	27.7			

Contribution from the Flyover Only (Mitigated)

Flyover Contribution Only, Recommended Option									
Receiver	Floor								
	1	5	10	15	20	25	30	35	40
1	26.9	26.8	26.7	26.6	26.5	26.4	28.6	32.1	34.0
2	27.0	26.9	26.8	26.7	26.6	26.5	28.9	32.6	26.6
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	27.5	27.4	27.3	27.2	27.1	26.9	29.7	35.3	42.9
6	27.6	27.6	27.5	27.3	27.2	27.0	30.0	35.7	44.1
7	27.8	27.7	27.6	27.5	27.4	27.2	29.4	34.3	43.5
8	27.8	27.8	27.7	27.6	27.5	27.3	28.7	33.4	41.3
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	51.2	50.9	50.4	49.9	49.3	48.8	48.4	50.0	49.6
12	48.1	47.9	47.7	47.5	47.5	47.2	46.9	46.6	46.3
13	49.6	49.4	49.0	48.5	48.1	47.7	47.2	46.9	48.0
14	45.6	45.4	44.9	44.3	43.8	43.2	42.8	42.3	41.9
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	48.0	47.8	47.4	46.9	46.4	45.9	45.4	45.0	44.6
17	41.9	41.6	41.1	40.7	40.2	39.8	39.4	39.0	38.9
18	42.4	42.3	42.0	41.7	41.3	40.9	40.5	40.2	40.0
19	43.0	42.9	42.6	42.3	42.0	41.6	41.2	40.9	40.7
20	29.4	29.3	29.3	29.2	29.0	28.9	28.7	28.6	29.2
21	28.3	28.3	28.3	28.2	28.1	28.0	27.9	27.8	27.7
22	28.5	28.5	28.5	28.4	28.3	28.3	28.2	28.1	28.0
23	26.2	26.1	26.1	26.0	25.9	25.8	26.0	28.0	31.4
24	26.0	26.0	25.9	25.9	25.7	25.6	26.3	27.8	31.1
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	33.9	33.8	33.7	33.6	33.4	33.2	32.9	32.9	33.7
28	34.1	34.1	34.0	33.8	33.6	33.4	33.3	33.6	34.7
29	34.2	34.2	34.1	33.9	33.7	33.5	33.3	33.2	33.9
30	34.3	34.3	34.2	34.1	33.9	33.7	33.4	33.4	34.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	52.3	51.8	50.8	49.7	48.8	48.1	47.4	47.5	47.3
34	47.6	47.3	46.2	45.1	44.3	43.7	43.1	43.5	43.1
35	53.2	52.8	51.8	50.8	49.9	49.2	48.5	48.0	47.6
36	49.1	48.7	47.3	46.1	45.1	44.4	43.7	43.1	42.7
37	36.4	36.2	35.8	35.3	34.8	34.3	33.9	46.1	45.9
38	49.9	49.7	49.1	48.4	47.7	47.1	46.5	46.4	47.1
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	53.9	53.6	52.5	51.4	50.5	49.8	49.2	48.6	48.2
42	51.4	51.0	49.6	48.2	47.2	46.5	45.8	45.2	44.8
43	54.0	53.7	52.5	51.2	50.2	49.4	48.8	48.2	47.8
44	53.6	53.4	52.1	50.8	49.7	48.9	48.2	47.6	47.2
45	51.9	51.9	50.6	49.1	47.9	47.1	46.4	46.0	46.1
46	48.7	48.9	48.1	46.8	45.5	44.5	43.7	43.6	44.7
47	41.2	42.7	44.3	45.4	46.1	46.5	46.7	46.8	47.1
48	44.1	46.1	47.8	48.8	49.2	49.2	49.1	48.8	48.6
49	50.7	52.1	52.2	51.7	51.3	50.8	50.4	49.9	49.6
50	50.9	52.3	52.4	51.9	51.4	50.9	50.4	50.0	49.6
51	51.5	53.0	53.2	52.9	52.6	52.3	52.0	51.7	51.5
52	51.7	53.2	53.4	53.0	52.5	52.0	51.5	51.1	50.8
53	49.5	51.0	51.3	51.1	50.8	50.5	50.2	50.5	50.1
54	47.6	48.8	49.5	49.6	49.5	49.3	49.1	49.1	49.9
55	48.5	49.7	49.9	49.7	49.5	49.2	48.9	49.7	50.8
56	52.3	54.0	54.2	53.8	53.2	52.7	52.1	51.6	51.3
57	52.5	54.2	54.4	53.8	53.2	52.5	51.9	51.5	51.4
58	52.9	54.9	55.0	54.5	53.9	53.2	52.6	52.6	51.5
59	53.3	55.4	55.4	54.6	53.9	53.3	52.6	52.1	51.7
60	50.9	53.2	53.9	56.4	57.4	57.4	57.6	57.1	56.7
61	49.2	51.0	52.0	52.0	51.8	51.5	51.0	50.7	50.8
62	50.6	52.3	53.1	53.0	52.7	52.5	52.2	52.3	53.2
63	51.0	52.8	53.4	53.2	52.8	52.3	51.8	51.7	54.1
64	51.7	53.7	54.1	53.7	53.2	52.7	52.1	56.9	58.9
65	51.8	53.9	54.3	54.0	53.6	53.1	52.6	52.1	51.7
66	51.3	55.9	55.7	57.4	59.9	59.9	59.6	59.7	59.4

Contribution from the Flyover Only (Mitigated)

Flyover Contribution Only, Recommended Option									
Receiver	Floor								
	1	5	10	15	20	25	30	35	40
67	51.7	58.2	57.7	56.9	59.3	60.6	60.3	60.2	60.0
68	49.6	57.2	56.4	55.5	56.3	60.0	59.8	59.9	59.5
69	49.1	56.9	56.1	55.2	55.7	59.4	59.4	59.4	59.2
70	42.7	43.7	44.0	43.4	42.2	40.9	39.7	43.7	43.4
71	44.0	45.2	45.7	45.1	43.8	42.4	41.0	42.1	45.1
72	49.9	51.4	51.7	51.4	56.3	60.0	60.3	60.2	60.4
73	52.4	57.6	57.0	56.2	61.6	62.2	62.1	62.1	61.9
74	53.7	60.1	59.9	59.1	62.3	63.1	63.0	62.8	62.7
75	53.9	60.2	60.3	59.5	60.9	63.2	63.1	62.9	62.8
76	54.5	60.6	61.2	60.7	60.1	61.6	63.2	63.0	63.0
77	54.7	60.5	61.6	61.1	60.6	60.3	62.7	63.0	63.0
78	53.9	58.9	59.6	60.2	59.9	59.6	59.2	58.9	59.5
79	54.4	59.5	60.5	60.6	60.3	59.9	59.6	59.2	60.3
80	54.6	59.9	60.5	61.0	60.7	60.3	60.0	59.6	60.4
81	54.9	60.1	60.7	61.1	60.8	60.5	60.1	59.8	60.7
82	54.9	60.1	60.7	61.1	60.8	60.5	60.1	59.8	60.5
83	54.9	59.8	60.4	60.8	60.6	60.3	60.0	59.7	59.5
84	37.2	37.2	37.1	37.0	36.7	36.5	37.5	56.0	59.1
85	53.4	58.1	58.4	58.7	59.1	59.0	58.8	58.6	58.4
86	53.7	58.0	58.7	58.9	59.1	58.9	58.8	58.6	58.4
87	53.6	58.2	58.4	59.0	59.2	59.0	58.8	58.7	58.5
88	53.9	57.8	58.1	58.4	58.7	58.7	58.6	58.4	58.3
89	52.0	56.0	56.4	56.5	56.7	57.0	56.8	56.7	56.6
90	52.8	56.1	56.5	56.6	56.8	57.0	56.9	56.8	56.7
91	52.3	56.1	56.5	56.5	56.8	57.0	56.9	56.8	56.7
92	52.4	55.7	56.1	56.2	56.4	56.7	56.6	56.4	56.3
93	33.2	33.3	33.3	33.3	33.2	33.1	34.5	37.9	41.6
94	39.7	44.1	44.1	44.0	44.0	43.9	44.0	44.5	45.7
95	46.9	51.8	51.7	51.7	51.6	51.6	51.5	51.5	51.8
96	49.3	53.5	53.5	54.0	54.0	54.3	54.3	54.2	54.2
97	49.3	53.3	53.4	53.8	53.8	53.9	54.1	54.1	54.1
98	49.7	52.7	52.7	53.2	53.2	53.2	53.6	53.6	53.5
99	49.7	52.8	52.8	53.3	53.2	53.2	53.7	53.6	53.5
100	49.4	52.9	53.0	53.0	53.5	53.4	53.4	53.8	53.8
101	49.8	52.7	52.7	53.3	53.2	53.2	53.3	53.6	53.5
102	49.7	52.0	52.6	52.6	52.5	53.1	53.0	53.0	52.9
103	49.2	52.1	52.1	52.7	52.7	52.6	52.5	53.1	53.0
104	52.2	57.6	58.0	58.8	58.5	58.2	57.8	57.5	57.4
105	52.0	57.7	58.0	58.9	58.6	58.2	57.8	57.5	58.2
106	51.2	57.7	57.5	57.2	56.9	56.5	56.1	55.8	55.5
107	43.9	47.6	47.6	47.5	47.3	47.2	47.1	47.0	47.2
108	42.2	42.5	42.8	43.1	43.1	43.0	42.9	43.0	43.8
109	44.7	45.2	45.0	44.4	43.7	43.0	42.4	41.9	46.1
110	41.7	42.3	42.3	41.8	40.9	39.7	38.6	37.7	38.0
111	43.9	44.4	44.8	44.8	44.4	43.9	43.3	45.2	42.5
112	41.6	42.3	42.9	43.1	43.1	42.8	42.4	41.9	41.5
113	44.0	44.7	45.3	45.9	46.3	46.6	46.8	47.1	47.7
114	43.4	44.0	44.1	43.9	43.4	42.8	42.0	41.4	41.8
115	60.2	60.5	61.3	61.2	61.0	60.8	60.6	60.4	60.2
116	60.6	60.7	61.2	61.0	60.9	60.9	60.6	60.4	60.2
117	60.7	60.7	61.4	61.2	61.0	60.8	60.6	60.4	60.1
118	60.4	60.4	61.4	61.2	61.0	60.8	60.6	60.3	60.1
119	60.3	60.3	61.0	60.9	60.7	60.4	60.2	60.0	59.7
120	61.2	61.1	61.6	61.4	61.1	60.9	60.7	60.4	60.1
121	61.7	61.8	62.1	61.9	61.6	61.3	61.0	60.6	60.3
122	61.6	61.8	62.1	61.8	61.5	61.1	60.7	60.3	60.0
123	59.8	59.7	59.4	59.1	58.7	58.3	57.9	57.5	57.2
124	61.3	61.5	61.7	61.4	61.0	60.8	60.4	60.1	59.7
125	60.5	60.4	60.1	59.8	59.4	59.0	58.9	58.5	58.2
126	56.3	56.1	55.8	55.4	55.0	54.6	54.2	59.4	59.1
127	42.6	43.4	53.5	53.2	53.1	52.9	52.6	52.3	52.0
128	29.3	29.3	29.1	29.0	28.8	28.6	29.6	32.9	44.8
129	29.1	29.1	29.0	28.8	28.6	28.4	28.7	30.4	48.0
130	29.0	28.9	28.8	28.7	28.5	28.2	29.0	32.3	44.6
131	28.9	28.8	28.7	28.6	28.4	28.2	28.6	30.6	42.8

Contribution from the Flyover Only (Mitigated)

Flyover Contribution Only, Recommended Option										
Receiver	1	5	10	Floor	15	20	25	30	35	40
132	27.4	27.4	27.4	27.4	27.4	27.4	27.4			
133	49.1	49.1	49.1	49.1	49.1	49.1	49.1			
134	27.5	27.5	27.5	27.5	27.5	27.5	27.5			

Noise Reduction with Mitigation on the Ground Level Road

Mitigation on Ground Level Road				Floor Level			
Receiver	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
28	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0
29	-11.7	-3.8	-1.6	0.0	0.0	0.0	0.0
30	-0.4	-0.3	-0.1	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
34	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
35	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
36	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
37	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	-2.5	-0.5	0.0	0.0	0.0	0.0	0.0
39	-1.4	-0.3	0.0	0.0	0.0	0.0	0.0
40	-2.0	0.0	0.0	0.0	0.0	0.0	0.0
41	-4.8	0.0	0.0	0.0	0.0	0.0	0.0
42	-5.3	0.0	0.0	0.0	0.0	0.0	0.0
43	-6.4	-0.1	0.0	0.0	0.0	0.0	0.0
44	-6.7	-0.1	0.0	0.0	0.0	0.0	0.0
45	-11.0	-0.1	0.0	0.0	0.0	0.0	0.0
46	-11.0	-2.1	0.0	0.0	0.0	0.0	0.0
47	-5.9	-1.2	0.0	0.0	0.0	0.0	0.0
48	-6.3	-0.1	0.0	0.0	0.0	0.0	0.0
49	-7.6	-0.1	0.0	0.0	0.0	0.0	0.0
50	-7.6	-0.1	0.0	0.0	0.0	0.0	0.0
51	-7.9	-0.1	0.0	0.0	0.0	0.0	0.0
52	-7.9	-0.1	0.0	0.0	0.0	0.0	0.0
53	-10.1	-0.2	0.0	0.0	0.0	0.0	0.0
54	-9.3	-1.1	0.0	0.0	0.0	0.0	0.0
55	-8.0	0.0	0.0	0.0	0.0	0.0	0.0
56	-8.5	0.0	0.0	0.0	0.0	0.0	0.0
57	-8.7	0.0	0.0	0.0	0.0	0.0	0.0
58	-9.0	0.0	0.0	0.0	0.0	0.0	0.0
59	-8.4	0.0	0.0	0.0	0.0	0.0	0.0
60	-5.3	0.0	0.0	0.0	0.0	0.0	0.0
61	-3.3	-1.2	0.0	0.0	0.0	0.0	0.0
62	-2.5	-0.6	0.0	0.0	0.0	0.0	0.0
63	-1.9	-0.3	0.0	0.0	0.0	0.0	0.0
64	-0.6	0.0	0.0	0.0	0.0	0.0	0.0
65	-0.3	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Noise Reduction with Mitigation on the Ground Level Road

67	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0
91	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0
104	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0	0.0	0.0
106	-0.3	-0.1	-0.1	0.0	0.0	0.0	0.0
107	-0.4	-0.2	-0.2	-0.1	0.0	0.0	0.0
108	-0.4	-0.2	-0.2	-0.1	0.0	0.0	0.0
109	-3.8	-1.5	-0.3	-0.3	0.0	0.0	0.0
110	-5.5	-1.8	0.0	0.0	0.0	0.0	0.0
111	-6.6	-2.2	-0.2	-0.2	-0.1	0.0	0.0
112	-7.1	-2.3	-0.1	0.0	0.0	0.0	0.0
113	-6.4	-2.5	-0.9	-0.1	0.0	0.0	0.0
114	-5.2	-2.2	-0.7	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117	0.0	0.0	0.0	0.0	0.0	0.0	0.0
118	0.0	0.0	0.0	0.0	0.0	0.0	0.0
119	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0
121	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122	0.0	0.0	0.0	0.0	0.0	0.0	0.0
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.0	0.0	0.0	0.0	0.0	0.0	0.0

"Do-nothing" Scenario

Do Nothing				Floor			
Receiver	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.4	77.0	76.3	75.7	75.1	74.6	74.1
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8
13	77.5	77.2	76.6	76.1	75.6	75.1	74.7
14	75.8	75.6	75.2	74.8	74.3	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.5	75.0	74.6
17	76.8	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	75.9	75.7	75.3	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.5	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.7
26	77.6	77.5	77.2	76.7	76.1	75.6	75.1
27	77.0	77.0	76.7	76.3	75.8	75.3	74.8
28	76.2	76.2	75.9	75.6	75.1	74.7	74.2
29	64.1	64.0	63.8	63.5	63.1	62.8	62.4
30	73.7	73.7	73.5	73.2	72.9	72.5	72.1
31	79.6	79.5	79.0	78.3	77.6	77.0	76.4
32	80.6	80.3	79.6	78.8	78.1	77.4	76.8
33	81.7	81.2	80.2	79.3	78.5	77.8	77.2
34	81.6	81.0	80.1	79.2	78.4	77.8	77.2
35	81.5	80.9	79.9	79.1	78.3	77.7	77.1
36	81.4	80.8	79.8	79.0	78.2	77.6	77.0
37	47.5	46.9	46.0	45.1	44.4	43.8	43.3
38	74.6	74.3	73.6	72.9	72.2	71.6	71.0
39	76.6	76.4	76.0	75.5	75.0	74.6	74.1
40	78.5	78.1	77.3	76.6	76.0	75.5	75.0
41	81.1	80.5	79.5	78.6	77.9	77.3	76.8
42	81.0	80.4	79.4	78.6	77.8	77.2	76.7
43	80.8	80.2	79.3	78.4	77.7	77.1	76.6
44	80.7	80.2	79.2	78.4	77.7	77.1	76.5
45	76.5	76.0	75.1	74.2	73.4	72.7	72.1
46	74.2	73.9	73.3	72.6	71.9	71.3	70.7
47	75.4	75.2	74.8	74.3	73.9	73.4	73.0
48	77.8	77.4	76.7	76.0	75.4	74.9	74.4
49	80.4	79.9	79.0	78.2	77.5	76.9	76.3
50	80.3	79.8	79.0	78.1	77.4	76.8	76.3
51	80.3	79.8	78.9	78.1	77.4	76.7	76.2
52	80.3	79.8	78.9	78.1	77.3	76.7	76.2
53	76.3	75.8	75.0	74.1	73.3	72.6	72.0
54	73.9	73.7	73.1	72.4	71.8	71.2	70.6
55	77.3	76.9	76.1	75.4	74.8	74.3	73.8
56	80.7	80.0	78.9	78.0	77.2	76.6	76.0
57	80.9	80.1	79.0	78.0	77.2	76.6	76.0
58	81.4	80.4	79.1	78.1	77.2	76.6	76.0
59	81.9	80.8	79.4	78.3	77.5	76.8	76.2
60	78.6	77.7	76.5	75.4	74.5	73.7	73.0
61	75.9	75.5	74.6	73.8	72.9	72.2	71.6
62	77.4	76.9	76.1	75.2	74.4	73.7	73.1
63	78.1	77.6	76.7	75.8	75.0	74.3	73.7
64	79.3	78.6	77.5	76.5	75.7	75.0	74.4
65	79.8	79.0	77.7	76.7	75.9	75.2	74.6
66	78.9	78.1	76.9	75.9	74.9	74.2	73.5

"Do-nothing" Scenario

67	77.1	76.7	75.9	75.0	74.2	73.5	72.9
68	71.1	70.9	70.2	69.5	68.7	68.1	67.5
69	69.6	69.4	68.8	68.1	67.4	66.8	66.2
70	67.1	67.0	66.6	66.0	65.5	64.9	64.5
71	69.3	69.1	68.5	67.9	67.2	66.6	66.1
72	77.1	76.8	76.0	75.1	74.4	73.7	73.1
73	79.0	78.4	77.3	76.4	75.5	74.8	74.2
74	80.6	79.7	78.3	77.2	76.3	75.5	74.8
75	80.2	79.3	78.0	76.9	76.0	75.2	74.5
76	80.1	79.1	77.8	76.8	75.9	75.2	74.5
77	80.0	79.0	77.7	76.7	75.8	75.1	74.4
78	75.2	74.8	74.1	73.4	72.8	72.2	71.7
79	76.6	76.0	75.1	74.3	73.6	73.0	72.4
80	77.9	77.1	76.0	75.0	74.3	73.6	73.0
81	77.9	76.8	75.5	74.6	73.9	73.2	72.7
82	80.8	79.3	77.8	76.7	75.8	75.1	74.5
83	81.0	79.4	77.8	76.7	75.8	75.1	74.5
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.2	76.5	75.3	74.4	73.6	72.9	72.4
86	77.8	76.6	75.2	74.1	73.3	72.7	72.1
87	80.8	79.2	77.6	76.4	75.5	74.8	74.2
88	80.8	79.2	77.6	76.4	75.5	74.7	74.1
89	77.2	76.4	75.3	74.3	73.5	72.8	72.2
90	77.8	76.6	75.2	74.1	73.3	72.6	72.1
91	80.5	79.0	77.4	76.2	75.2	74.5	73.9
92	80.4	78.9	77.3	76.1	75.2	74.4	73.8
93	71.2	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.3	70.7	70.2	69.7
95	72.6	72.5	72.1	71.5	70.9	70.4	70.0
96	74.7	74.4	73.8	73.1	72.5	71.9	71.3
97	74.5	74.2	73.6	72.9	72.3	71.7	71.2
98	73.9	73.5	72.7	72.0	71.3	70.7	70.2
99	75.4	74.6	73.5	72.5	71.7	71.1	70.6
100	78.4	77.3	75.8	74.7	73.8	73.1	72.5
101	78.4	77.2	75.8	74.7	73.8	73.1	72.4
102	78.3	77.2	75.7	74.6	73.7	72.9	72.3
103	78.3	77.1	75.7	74.5	73.6	72.9	72.2
104	72.1	72.0	71.6	71.2	70.7	70.2	69.7
105	72.2	72.0	71.6	71.2	70.7	70.1	69.7
106	70.6	70.5	70.2	69.8	69.4	68.9	68.5
107	70.1	70.0	69.8	69.4	69.0	68.6	68.2
108	69.6	69.5	69.3	68.9	68.5	68.1	67.7
109	70.1	70.0	69.8	69.5	69.2	68.9	68.6
110	68.9	68.8	68.7	68.4	68.1	67.9	67.6
111	69.5	69.5	69.3	69.1	68.8	68.5	68.2
112	68.6	68.5	68.4	68.1	67.8	67.5	67.3
113	69.9	69.8	69.6	69.4	69.0	68.7	68.4
114	70.0	69.9	69.7	69.4	69.1	68.8	68.4
115	69.0	68.9	68.9	68.8	68.6	68.5	68.4
116	70.9	70.8	70.7	70.6	70.4	70.3	70.1
117	70.8	70.8	70.7	70.5	70.4	70.2	70.0
118	70.0	69.9	69.8	69.6	69.4	69.2	69.3
119	69.7	69.7	69.5	69.4	69.2	69.0	68.9
120	70.9	70.8	70.7	70.5	70.2	70.0	69.8
121	73.7	73.6	73.3	73.0	72.6	72.3	72.0
122	74.2	74.0	73.6	73.2	72.8	72.5	72.1
123	74.7	74.4	74.0	73.4	72.9	72.5	72.0
124	74.6	74.3	73.8	73.3	72.8	72.3	72.1
125	76.7	76.3	75.6	75.0	74.4	73.8	73.4
126	76.5	76.1	75.4	74.8	74.2	73.6	73.2
127	71.9	71.8	71.5	71.1	70.8	70.4	70.0
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	70.9	70.5
130	75.4	75.1	74.5	73.9	73.4	72.8	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.8	67.8	67.8	67.8	67.8	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	

Difference Between the Preferred Option and the "Do Nothing" Scenario

Preferred Option - Do Nothing							
Receiver	Floor Level						
	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0
33	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
34	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
35	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
36	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
37	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1
38	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2
39	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0.0
40	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.0
41	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	-0.3
42	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3
43	-0.7	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4
44	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5
45	-1.5	-1.5	-1.5	-1.5	-1.5	-1.4	-1.4
46	-1.5	-1.5	-1.5	-1.5	-1.5	-1.4	-1.4
47	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3
48	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4
49	-1.1	-1.1	-1.1	-1.0	-1.0	-0.9	-0.9
50	-1.2	-1.2	-1.1	-1.1	-1.0	-1.0	-1.0
51	-1.3	-1.3	-1.3	-1.2	-1.2	-1.1	-1.1
52	-1.3	-1.3	-1.3	-1.3	-1.2	-1.1	-1.1
53	-1.9	-2.0	-2.0	-1.9	-1.9	-1.9	-1.9
54	-1.9	-1.9	-1.9	-1.9	-1.9	-1.8	-1.8
55	-1.1	-1.1	-1.1	-1.0	-1.0	-0.9	-0.8
56	-1.6	-1.6	-1.6	-1.5	-1.5	-1.4	-1.3
57	-1.7	-1.7	-1.7	-1.6	-1.5	-1.5	-1.4
58	-1.6	-1.9	-1.9	-1.8	-1.7	-1.6	-1.5
59	-1.3	-1.8	-1.9	-1.8	-1.7	-1.6	-1.5
60	-1.2	-1.7	-1.8	-1.8	-1.7	-1.6	-1.6
61	-1.5	-1.6	-1.8	-1.8	-1.8	-1.8	-1.8
62	-1.3	-1.5	-1.7	-1.7	-1.7	-1.6	-1.6
63	-1.1	-1.4	-1.5	-1.6	-1.5	-1.5	-1.5
64	-0.5	-1.0	-1.3	-1.3	-1.3	-1.3	-1.2
65	-0.3	-1.0	-1.2	-1.3	-1.3	-1.2	-1.2
66	-0.1	-0.6	-0.8	-0.8	-0.7	-0.6	-0.6

Difference Between the Preferred Option and the "Do Nothing" Scenario

67	-0.7	-0.8	-0.9	-0.9	-0.9	-0.8	-0.8
68	-0.7	-0.5	-0.6	-0.6	-0.5	-0.1	0.0
69	-0.7	-0.5	-0.6	-0.6	-0.5	0.0	0.1
70	-0.4	-0.4	-0.5	-0.6	-0.6	-0.7	-0.7
71	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.7
72	-0.8	-1.0	-1.1	-1.2	-1.1	-1.0	-0.9
73	-0.6	-0.9	-1.1	-1.2	-1.0	-1.0	-0.9
74	-0.3	-0.5	-0.6	-0.7	-0.6	-0.5	-0.5
75	-0.4	-0.5	-0.6	-0.6	-0.6	-0.5	-0.4
76	-0.5	-0.4	-0.5	-0.5	-0.6	-0.5	-0.4
77	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.4
78	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3
79	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4
80	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4
81	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5
82	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3
83	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
86	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
87	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
88	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
89	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
90	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
91	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
92	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
99	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
100	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
101	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
102	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
103	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
104	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2
105	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
106	-0.4	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
107	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6
108	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
109	-1.3	-1.3	-1.2	-1.2	-1.2	-1.2	-1.1
110	-1.3	-1.2	-1.2	-1.2	-1.1	-1.1	-1.0
111	-1.3	-1.2	-1.2	-1.2	-1.2	-1.1	-1.1
112	-1.3	-1.3	-1.2	-1.2	-1.2	-1.1	-1.1
113	-1.2	-1.2	-1.2	-1.2	-1.1	-1.1	-1.1
114	-1.0	-1.0	-1.0	-1.0	-0.9	-0.9	-0.9
115	0.0	0.0	0.1	0.1	0.2	0.2	0.2
116	0.0	0.0	0.1	0.1	0.1	0.1	0.1
117	0.0	0.0	0.1	0.1	0.1	0.1	0.1
118	0.0	0.0	0.1	0.1	0.1	0.1	0.1
119	0.0	0.0	0.1	0.1	0.1	0.1	0.1
120	0.0	0.0	0.1	0.1	0.1	0.1	0.1
121	0.0	0.0	0.0	0.1	0.1	0.1	0.1
122	0.0	0.0	0.0	0.1	0.1	0.1	0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.1	0.1	0.1	0.1	0.1
125	0.0	0.0	0.0	0.0	0.0	0.0	0.1
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Noise Levels with No Heavy Good Vehicles on the Flyover

No Heavies Permitted on the Flyover									
Receiver	Floor Level								
	1	5	10	15	20	25	30		
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1	72.7	72.4
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0	72.7	72.4
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8	71.5	71.2
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8	71.5	71.2
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7	72.4	72.2
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6	72.2	72.2
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0	70.8	71.1
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1	70.3	70.8
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2	72.4	72.3
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6	72.1	71.7
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2	73.9	73.5
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8	74.4	74.0
13	77.5	77.1	76.6	76.1	75.6	75.1	74.7	74.4	74.1
14	75.7	75.5	75.2	74.8	74.3	73.9	73.5	73.1	72.8
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5	72.2	71.8
16	76.8	76.6	76.3	75.9	75.5	75.0	74.6	74.3	74.0
17	76.8	76.7	76.4	76.0	75.6	75.2	74.8	74.4	74.0
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2	73.9	73.5
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9	73.6	73.2
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2	72.9	72.6
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9	70.8	71.3
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3	72.0	72.0
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9	70.9	71.0
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6	71.5	71.3
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6	75.2	74.9
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1	74.8	74.9
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8	74.3	74.2
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2	73.8	73.8
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4	62.9	64.2
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1	72.1	72.6
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4	76.0	75.6
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8	76.2	75.8
33	81.5	81.0	80.1	79.2	78.5	77.8	77.2	76.6	76.3
34	81.4	80.9	80.0	79.1	78.4	77.7	77.1	76.6	76.3
35	81.3	80.7	79.8	79.0	78.2	77.6	77.0	76.5	76.2
36	81.1	80.6	79.7	78.8	78.1	77.5	76.9	76.4	76.1
37	47.1	46.7	45.8	45.0	44.3	43.7	43.3	71.3	71.1
38	74.3	74.0	73.4	72.7	72.0	71.4	70.9	70.9	70.7
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1	73.8	73.6
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0	74.6	74.4
41	80.6	80.1	79.2	78.4	77.7	77.1	76.6	76.1	75.8
42	80.5	80.0	79.1	78.3	77.6	77.0	76.5	76.1	75.7
43	80.3	79.8	78.9	78.1	77.4	76.8	76.3	75.9	75.6
44	80.1	79.6	78.8	78.0	77.3	76.8	76.3	75.8	75.5
45	75.4	74.9	74.1	73.3	72.5	71.9	71.3	70.8	70.4
46	73.1	72.8	72.2	71.6	70.9	70.4	69.8	69.5	69.2
47	75.0	74.8	74.4	74.0	73.5	73.1	72.7	72.5	72.3
48	77.2	76.9	76.2	75.5	75.0	74.5	74.0	73.6	73.5
49	79.5	79.1	78.3	77.5	76.8	76.3	75.8	75.3	75.1
50	79.4	79.0	78.2	77.4	76.8	76.2	75.7	75.3	75.0
51	79.4	78.9	78.1	77.3	76.7	76.1	75.6	75.2	74.9
52	79.4	78.9	78.1	77.3	76.7	76.1	75.6	75.2	74.9
53	75.3	74.8	74.1	73.3	72.5	71.9	71.3	70.8	70.6
54	72.9	72.7	72.2	71.6	71.0	70.5	69.9	69.8	69.5
55	76.5	76.1	75.4	74.8	74.2	73.7	73.3	73.0	72.9
56	79.7	79.0	78.1	77.2	76.5	75.9	75.4	75.0	74.7
57	79.8	79.1	78.1	77.2	76.5	75.9	75.4	75.0	74.6
58	80.5	79.4	78.2	77.2	76.5	75.9	75.4	74.9	74.6
59	81.3	79.8	78.5	77.6	76.8	76.2	75.7	75.2	74.8
60	78.5	77.5	76.2	75.1	74.3	73.5	72.9	72.3	71.9
61	75.9	75.4	74.6	73.7	72.9	72.2	71.6	71.1	71.0
62	77.5	76.9	76.0	75.1	74.3	73.7	73.1	73.0	73.4
63	78.3	77.7	76.7	75.8	75.0	74.3	73.8	73.5	73.6
64	80.1	79.1	77.8	76.8	75.9	75.3	74.7	74.5	74.7
65	80.8	79.5	78.1	77.0	76.2	75.5	74.9	74.4	74.2
66	80.1	79.1	77.7	76.6	75.7	74.9	74.3	73.7	73.3



Noise Levels with No Heavy Good Vehicles on the Flyover

67	77.8	77.4	76.5	75.6	74.8	74.1	73.5	72.9	72.5
68	71.8	71.5	70.8	70.0	69.2	68.6	68.0	67.6	67.6
69	70.2	69.9	69.3	68.6	67.9	67.2	66.6	66.3	67.2
70	68.5	68.3	67.8	67.2	66.6	66.1	65.6	65.5	68.1
71	70.8	70.4	69.8	69.1	68.4	67.8	67.3	67.6	68.9
72	77.8	77.3	76.5	75.6	74.9	74.2	73.6	73.2	73.3
73	79.7	78.8	77.7	76.7	75.9	75.2	74.6	74.1	73.9
74	81.1	80.0	78.6	77.5	76.6	75.8	75.1	74.5	74.1
75	80.5	79.6	78.3	77.2	76.3	75.5	74.8	74.3	73.9
76	80.1	79.3	78.1	77.1	76.2	75.5	74.8	74.3	73.9
77	80.1	79.2	78.0	77.0	76.1	75.4	74.7	74.2	73.9
78	75.4	75.1	74.4	73.8	73.1	72.6	72.0	71.6	71.4
79	76.8	76.3	75.4	74.6	73.9	73.3	72.8	72.3	72.1
80	78.0	77.3	76.2	75.3	74.6	74.0	73.4	72.9	72.7
81	78.1	77.0	75.9	75.0	74.2	73.6	73.1	72.6	72.4
82	80.9	79.5	78.0	76.9	76.1	75.4	74.7	74.2	73.8
83	81.1	79.5	78.0	76.9	76.0	75.3	74.7	74.2	73.8
84	77.1	76.3	75.1	74.0	73.2	72.4	71.8	71.4	72.1
85	77.3	76.6	75.5	74.6	73.8	73.2	72.6	72.1	71.9
86	77.9	76.7	75.3	74.3	73.6	72.9	72.4	71.9	71.6
87	80.8	79.2	77.7	76.5	75.6	74.9	74.3	73.8	73.4
88	80.8	79.2	77.6	76.5	75.6	74.9	74.3	73.7	73.4
89	77.3	76.5	75.4	74.4	73.6	72.9	72.4	71.9	71.7
90	77.9	76.7	75.3	74.3	73.4	72.8	72.3	71.8	71.4
91	80.6	79.0	77.4	76.2	75.3	74.6	74.0	73.5	73.1
92	80.4	78.9	77.3	76.2	75.3	74.5	73.9	73.4	73.0
93	71.2	71.1	70.9	70.5	70.0	69.6	69.2	68.9	68.7
94	72.5	72.4	71.9	71.3	70.8	70.3	69.8	69.4	69.7
95	72.7	72.5	72.1	71.5	71.0	70.5	70.1	69.8	69.5
96	74.7	74.5	73.9	73.2	72.5	71.9	71.4	71.0	70.6
97	74.6	74.3	73.7	73.0	72.4	71.8	71.3	70.8	70.5
98	73.9	73.5	72.8	72.0	71.4	70.8	70.3	69.9	69.8
99	75.4	74.7	73.6	72.6	71.8	71.2	70.7	70.2	70.1
100	78.4	77.3	75.9	74.8	73.9	73.2	72.5	72.0	71.7
101	78.4	77.3	75.9	74.7	73.8	73.1	72.5	72.0	71.6
102	78.3	77.2	75.8	74.6	73.7	73.0	72.4	71.9	71.5
103	78.3	77.1	75.7	74.6	73.7	72.9	72.3	71.8	71.4
104	72.5	72.4	72.1	71.6	71.2	70.7	70.2	69.8	69.6
105	72.6	72.5	72.2	71.7	71.2	70.7	70.2	69.8	69.5
106	71.1	71.0	70.7	70.3	69.8	69.4	69.0	68.6	68.7
107	70.4	70.3	70.0	69.7	69.2	68.8	68.4	68.1	68.6
108	69.8	69.7	69.5	69.1	68.8	68.4	68.0	67.7	68.4
109	69.5	69.5	69.3	69.0	68.7	68.4	68.1	67.9	68.9
110	68.0	68.0	67.8	67.6	67.4	67.1	66.9	66.7	67.7
111	68.9	68.9	68.7	68.5	68.3	68.0	67.7	67.5	68.9
112	67.9	67.8	67.7	67.5	67.2	67.0	66.7	66.5	67.5
113	69.5	69.5	69.3	69.0	68.7	68.4	68.1	67.8	69.6
114	69.7	69.6	69.5	69.2	68.9	68.6	68.2	67.9	69.9
115	69.2	69.2	69.1	69.1	69.0	68.8	68.7	69.8	69.7
116	71.0	71.0	70.9	70.8	70.7	70.5	70.4	70.2	70.0
117	71.0	70.9	70.9	70.8	70.6	70.5	70.3	70.2	70.0
118	70.2	70.1	70.0	69.9	69.7	69.5	69.6	71.0	70.8
119	69.9	69.9	69.8	69.7	69.5	69.3	69.2	69.7	69.7
120	71.1	71.0	70.9	70.8	70.5	70.3	70.1	69.9	69.7
121	73.8	73.7	73.5	73.2	72.8	72.5	72.2	71.9	71.6
122	74.3	74.1	73.8	73.4	73.0	72.7	72.3	72.0	71.7
123	74.8	74.6	74.1	73.6	73.1	72.6	72.2	72.5	72.4
124	74.7	74.4	73.9	73.4	73.0	72.5	72.2	72.0	71.7
125	76.7	76.3	75.7	75.1	74.5	73.9	73.5	73.1	72.7
126	76.5	76.1	75.5	74.9	74.3	73.7	73.3	73.3	72.9
127	71.9	71.8	71.5	71.1	70.8	70.4	70.0	70.4	70.4
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3	69.5	69.7
129	73.1	72.8	72.4	71.9	71.4	71.0	70.6	70.4	70.6
130	75.4	75.1	74.6	74.0	73.4	72.9	72.4	72.0	71.7
131	75.4	75.0	74.5	73.9	73.4	72.8	72.4	71.9	71.7
132	66.2	66.2	66.2	66.2	66.2	66.2			
133	67.8	67.8	67.8	67.8	67.8	67.8			
134	73.3	73.3	73.3	73.2	73.2	73.1			

Flat Counts under the Recommended Option

Receiver	Flat Count							No. of Floors			Total Flats	
	1st	2-5	6-10	Floor Level 11-15	16-20	21-25	26-top flat	>70 dB(A)	<70dB(A)	of block		No. of Flats
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1	25	1	27	1	25
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0	26	1	27	1	26
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8	26	1	27	1	26
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8	26	1	27	1	26
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7	26	1	27	1	26
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6	26	1	27	1	26
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0	26	1	27	1	26
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1	26	1	27	1	26
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2	27	0	27	1	27
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6	27	0	27	1	27
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2	27	0	27	0	0
12	77.8	77.4	76.8	76.2	75.7	75.2	74.7	27	0	27	1	27
13	77.4	77.1	76.6	76.1	75.6	75.1	74.7	27	0	27	1	27
14	75.7	75.5	75.2	74.7	74.3	73.9	73.5	27	0	27	1	27
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5	27	0	27	1	27
16	76.8	76.6	76.3	75.9	75.4	75.0	74.6	27	0	27	1	27
17	76.8	76.7	76.4	76.0	75.6	75.2	74.8	27	0	27	1	27
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2	27	0	27	1	27
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9	27	0	27	0	0
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2	27	0	27	1	27
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9	25	0	25	1	25
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3	25	0	25	1	25
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9	25	1	27	1	25
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6	27	0	27	1	27
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6	27	0	27	1	27
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1	27	0	27	1	27
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8	27	0	27	0	0
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2	27	0	27	1	27
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4	0	27	27	0	0
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1	27	0	27	1	27
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4	27	0	27	1	27
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8	27	0	27	0	0
33	81.5	81.0	80.1	79.2	78.4	77.7	77.1	27	0	27	1	27
34	81.3	80.8	79.9	79.1	78.3	77.6	77.1	27	0	27	0	0
35	81.2	80.7	79.8	78.9	78.2	77.5	77.0	27	0	27	0	0
36	81.1	80.5	79.6	78.8	78.0	77.4	76.9	27	0	27	1	27
37	47.2	46.8	45.9	45.1	44.5	43.9	43.4	0	27	27	0	0
38	74.3	74.0	73.4	72.7	72.0	71.4	70.8	27	0	27	1	27
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1	33	0	33	1	33
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0	33	0	33	0	0
41	80.6	80.0	79.1	78.3	77.6	77.0	76.5	33	0	33	1	33
42	80.4	79.9	79.0	78.2	77.5	76.9	76.4	33	0	33	0	0
43	80.1	79.6	78.8	77.9	77.3	76.7	76.2	33	0	33	0	0
44	80.0	79.5	78.6	77.8	77.1	76.6	76.1	33	0	33	1	33
45	75.0	74.5	73.6	72.8	72.0	71.3	70.7	33	0	33	0	0
46	72.7	72.4	71.8	71.1	70.5	69.9	69.3	20	13	33	1	20
47	74.9	74.8	74.4	74.0	73.5	73.1	72.7	33	0	33	1	33
48	77.2	76.8	76.2	75.5	74.9	74.4	74.0	33	0	33	0	0
49	79.2	78.8	77.9	77.1	76.5	75.9	75.4	33	0	33	1	33
50	79.1	78.6	77.8	77.0	76.4	75.8	75.3	33	0	33	0	0
51	79.0	78.5	77.6	76.9	76.2	75.6	75.2	27	0	27	0	0
52	78.9	78.4	77.6	76.8	76.1	75.6	75.1	27	0	27	1	27
53	74.3	73.9	73.0	72.1	71.4	70.7	70.1	27	0	27	0	0
54	72.0	71.7	71.2	70.5	69.9	69.3	68.8	15	12	27	1	15
55	76.2	75.8	75.1	74.4	73.8	73.4	73.0	27	0	27	0	0
56	79.0	78.3	77.3	76.5	75.8	75.2	74.7	27	0	27	1	27
57	79.2	78.4	77.3	76.4	75.7	75.1	74.6	27	0	27	0	0
58	79.8	78.5	77.2	76.3	75.5	74.9	74.4	27	0	27	0	0
59	80.6	78.9	77.5	76.6	75.8	75.2	74.7	27	0	27	1	27
60	77.3	76.1	74.7	73.6	72.8	72.0	71.4	27	0	27	0	0
61	74.5	73.9	72.9	72.0	71.2	70.5	69.8	25	2	27	1	25
62	76.1	75.4	74.4	73.5	72.7	72.1	71.5	27	0	27	1	27
63	77.0	76.2	75.1	74.2	73.4	72.8	72.2	27	0	27	0	0
64	78.8	77.6	76.2	75.2	74.4	73.7	73.2	27	0	27	0	0
65	79.5	78.0	76.5	75.4	74.6	74.0	73.4	27	0	27	1	27
66	78.8	77.6	76.2	75.1	74.3	73.5	72.9	27	0	27	0	0
67	76.3	75.9	75.0	74.1	73.4	72.7	72.1	27	0	27	1	27
68	70.5	70.3	69.6	68.9	68.2	68.0	67.5	5	22	27	1	5
69	68.9	68.8	68.2	67.5	66.9	66.8	66.3	0	27	27	0	0
70	68.8	66.5	65.1	64.4	64.8	64.3	63.8	0	27	27	0	0
71	68.0	68.7	68.0	67.2	66.5	65.9	65.4	0	27	27	0	0
72	76.3	75.8	74.8	74.0	73.2	72.7	72.1	27	0	27	1	27
73	78.4	77.5	76.2	75.2	74.5	73.9	73.3	27	0	27	0	0
74	80.4	79.2	77.7	76.5	75.7	75.0	74.3	27	0	27	1	27
75	79.8	78.8	77.4	76.3	75.4	74.8	74.1	27	0	27	0	0
76	79.6	78.7	77.4	76.3	75.4	74.7	74.1	27	0	27	1	27
77	79.6	78.7	77.3	76.3	75.3	74.6	74.1	27	0	27	0	0
78	74.9	74.6	73.9	73.2	72.5	71.9	71.3	25	0	25	1	25
79	76.3	75.8	74.8	74.0	73.2	72.6	72.0	25	0	25	0	0
80	77.6	76.9	75.7	74.8	74.0	73.3	72.7	25	0	25	1	25
81	77.6	76.5	75.3	74.3	73.5	72.8	72.2	25	0	25	0	0
82	80.7	79.2	77.7	76.5	75.6	74.9	74.2	25	0	25	1	25
83	80.9	79.3	77.7	76.5	75.6	74.9	74.2	25	0	25	0	0
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6	25	0	25	1	25
85	77.1	76.4	75.2	74.3	73.5	72.8	72.2	27	0	27	1	27
86	77.7	76.4	75.0	74.0	73.1	72.5	71.9	27	0	27	1	27
87	80.7	79.1	77.5	76.3	75.4	74.6	74.0	27	0	27	0	0
88	80.8	79.1	77.5	76.3	75.4	74.6	74.0	27	0	27	1	27
89	77.2	76.4	75.2	74.2	73.4	72.7	72.1	27	0	27	1	27
90	77.8	76.5	75.1	74.0	73.2	72.5	71.9	27	0	27	0	0
91	80.5	78.9	77.3	76.1	75.2	74.4	73.8	27	0	27	1	27
92	80.4	78.9	77.2	76.0	75.1	74.4	73.7	27	0	27	0	0
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1	20	7	27	1	20
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7	25	2	27	0	0
95	72.6	72.4	72.0	71.5	70.9	70.4	69.9	25	2	27	1	25
96	74.7	74.4	73.8	73.1	72.5	71.9	71.3	27	0	27	0	0
97	74.5	74.2	73.6	72.9	72.3	71.7	71.2	27	0	27	1	27
98	73.8	73.4	72.7	71.9	71.2	70.6	70.1	27	0	27	1	27
99	75.3	74.6	73.4	72.5	71.7	71.0	70.5	27	0	27	1	27
100	78.4	77.2	75.8	74.7	73.8	73.0	72.4	27	0	27	0	0
101	78.4	77.2	75.8	74.7	73.7	73.0	72.4	27	0	27	0	0
102	78.3	77.1	75.7	74.6	73.6	72.9	72.3	27	0	27	1	27
103	78.3	77.1	75.6	74.5	73.6	72.8	72.2	27	0	27	0	0
104	71.8	71.8	71.4	71.0	70.5	70.0	69.6	25	2	27	1	25
105	72.0	72.0	71.6	71.2	70.7	70.2	69.7	25	2	27	1	25
106	70.3	70.3	70.0	69.6	69.2	68.7	68.3	10	17	27	0	0



ExCo Eligibility Test on the Preferred Option

Preferred Option		ExCo Test					
NSR	Floors	1997	2016	>70dB(A)	Test 2	Test 3	Eligible
1	1	67.6	69.1		1.5	0.0	
1	5	71.7	73.6	Y	1.8	0.0	
1	10	72.6	74.6	Y	2.0	0.0	
1	15	72.2	74.2	Y	2.0	0.0	
1	20	71.9	73.8	Y	2.0	0.0	
1	25	71.5	73.4	Y	1.9	0.0	
1	30	71.1	73.1	Y	1.9	0.0	
1	35	70.8	72.7	Y	1.9	0.0	
1	40	70.5	72.4	Y	1.9	0.0	
2	1	66.1	67.2		1.2	0.0	
2	5	71.6	73.4	Y	1.8	0.0	
2	10	72.5	74.6	Y	2.0	0.0	
2	15	72.2	74.2	Y	2.0	0.0	
2	20	71.8	73.8	Y	2.0	0.0	
2	25	71.4	73.4	Y	1.9	0.0	
2	30	71.1	73.0	Y	1.9	0.0	
2	35	70.8	72.7	Y	1.9	0.0	
2	40	70.5	72.3	Y	1.9	0.0	
3	1	64.9	65.9		1.0	0.0	
3	5	70.2	71.8	Y	1.6	0.0	
3	10	71.3	73.1	Y	1.9	0.0	
3	15	71.0	72.8	Y	1.8	0.0	
3	20	70.7	72.5	Y	1.8	0.0	
3	25	70.3	72.1	Y	1.8	0.0	
3	30	70.0	71.8	Y	1.8	0.0	
3	35	69.7	71.5	Y	1.8	0.0	
3	40	69.5	71.2	Y	1.7	0.0	
4	1	64.7	65.5		0.9	0.0	
4	5	70.1	71.6	Y	1.6	0.0	
4	10	71.3	73.2	Y	1.9	0.0	
4	15	71.0	72.8	Y	1.9	0.0	
4	20	70.6	72.5	Y	1.8	0.0	
4	25	70.3	72.1	Y	1.8	0.0	
4	30	70.0	71.8	Y	1.8	0.0	
4	35	69.7	71.5	Y	1.8	0.0	
4	40	69.4	71.2	Y	1.8	0.0	
5	1	65.8	66.8		1.0	0.0	
5	5	71.2	72.9	Y	1.7	0.0	
5	10	72.3	74.3	Y	1.9	0.0	
5	15	72.0	73.9	Y	1.9	0.0	
5	20	71.6	73.5	Y	1.9	0.0	
5	25	71.2	73.1	Y	1.9	0.0	
5	30	70.9	72.7	Y	1.8	0.0	
5	35	70.6	72.4	Y	1.8	0.0	
5	40	70.4	72.2	Y	1.8	0.0	
6	1	66.6	67.7		1.1	0.0	
6	5	71.1	72.8	Y	1.7	0.0	
6	10	72.2	74.1	Y	1.9	0.0	
6	15	71.8	73.7	Y	1.9	0.0	
6	20	71.5	73.3	Y	1.9	0.0	
6	25	71.1	72.9	Y	1.9	0.0	
6	30	70.7	72.6	Y	1.8	0.0	
6	35	70.4	72.2	Y	1.8	0.0	
6	40	70.3	72.1	Y	1.8	0.0	
7	1	67.0	68.3		1.3	0.0	
7	5	69.5	71.0	Y	1.6	0.0	
7	10	70.5	72.4	Y	1.9	0.0	
7	15	70.2	72.1	Y	1.8	0.0	
7	20	69.9	71.7	Y	1.8	0.0	
7	25	69.6	71.4	Y	1.8	0.0	
7	30	69.3	71.0	Y	1.8	0.0	
7	35	69.1	70.8	Y	1.7	0.0	
7	40	69.4	71.1	Y	1.8	0.0	
8	1	68.2	69.9		1.7	0.0	
8	5	68.9	70.7	Y	1.8	0.0	
8	10	69.2	71.1	Y	1.8	0.0	
8	15	69.0	70.9	Y	1.8	0.0	

ExCo Eligibility Test on the Preferred Option

8	20	68.8	70.6	Y	1.8	0.0
8	25	68.6	70.4		1.8	0.0
8	30	68.3	70.1		1.8	0.0
8	35	68.5	70.3		1.8	0.0
8	40	68.9	70.8	Y	1.9	0.0
9	1	71.9	73.9	Y	1.9	0.0
9	5	72.9	74.9	Y	2.0	0.0
9	10	72.4	74.4	Y	2.0	0.0
9	15	71.8	73.8	Y	1.9	0.0
9	20	71.3	73.2	Y	1.9	0.0
9	25	70.8	72.6	Y	1.9	0.0
9	30	70.3	72.2	Y	1.8	0.0
9	35	70.6	72.4	Y	1.8	0.0
9	40	70.6	72.3	Y	1.8	0.0
10	1	73.5	75.5	Y	2.0	0.0
10	5	73.6	75.7	Y	2.1	0.0
10	10	73.0	75.0	Y	2.0	0.0
10	15	72.3	74.3	Y	2.0	0.0
10	20	71.7	73.6	Y	1.9	0.0
10	25	71.2	73.1	Y	1.9	0.0
10	30	70.7	72.6	Y	1.8	0.0
10	35	70.3	72.1	Y	1.8	0.0
10	40	69.9	71.7	Y	1.8	0.0
11	1	75.3	77.5	Y	2.2	0.0
11	5	74.9	77.0	Y	2.1	0.0
11	10	74.3	76.4	Y	2.1	0.0
11	15	73.7	75.7	Y	2.0	0.0
11	20	73.1	75.1	Y	2.0	0.0
11	25	72.6	74.6	Y	2.0	0.0
11	30	72.2	74.2	Y	2.0	0.0
11	35	71.9	73.8	Y	1.9	0.0
11	40	71.6	73.5	Y	1.9	0.0
12	1	75.6	77.8	Y	2.1	0.0
12	5	75.3	77.4	Y	2.1	0.0
12	10	74.7	76.8	Y	2.1	0.0
12	15	74.2	76.2	Y	2.0	0.0
12	20	73.7	75.7	Y	2.0	0.0
12	25	73.2	75.2	Y	2.0	0.0
12	30	72.8	74.7	Y	2.0	0.0
12	35	72.4	74.3	Y	1.9	0.0
12	40	72.0	74.0	Y	1.9	0.0
13	1	75.3	77.4	Y	2.1	0.0
13	5	75.0	77.1	Y	2.1	0.0
13	10	74.6	76.6	Y	2.1	0.0
13	15	74.1	76.1	Y	2.0	0.0
13	20	73.6	75.6	Y	2.0	0.0
13	25	73.1	75.1	Y	2.0	0.0
13	30	72.7	74.7	Y	2.0	0.0
13	35	72.4	74.4	Y	2.0	0.0
13	40	72.1	74.0	Y	2.0	0.0
14	1	73.7	75.7	Y	2.0	0.0
14	5	73.5	75.5	Y	2.0	0.0
14	10	73.2	75.2	Y	2.0	0.0
14	15	72.7	74.7	Y	2.0	0.0
14	20	72.3	74.3	Y	2.0	0.0
14	25	71.9	73.9	Y	2.0	0.0
14	30	71.5	73.5	Y	2.0	0.0
14	35	71.1	73.1	Y	2.0	0.0
14	40	70.8	72.8	Y	1.9	0.0
15	1	72.7	74.7	Y	2.0	0.0
15	5	72.6	74.5	Y	2.0	0.0
15	10	72.2	74.2	Y	2.0	0.0
15	15	71.8	73.8	Y	2.0	0.0
15	20	71.4	73.3	Y	1.9	0.0
15	25	71.0	72.9	Y	1.9	0.0
15	30	70.5	72.5	Y	1.9	0.0
15	35	70.3	72.2	Y	1.9	0.0
15	40	69.9	71.8	Y	1.9	0.0
16	1	74.7	76.8	Y	2.1	0.0
16	5	74.5	76.6	Y	2.1	0.0

ExCo Eligibility Test on the Preferred Option

16	10	74.2	76.3	Y	2.1	0.0
16	15	73.8	75.9	Y	2.1	0.0
16	20	73.4	75.4	Y	2.1	0.0
16	25	73.0	75.0	Y	2.1	0.0
16	30	72.6	74.6	Y	2.0	0.0
16	35	72.3	74.3	Y	2.0	0.0
16	40	71.9	74.0	Y	2.0	0.0
17	1	74.8	76.8	Y	2.1	0.0
17	5	74.6	76.7	Y	2.1	0.0
17	10	74.3	76.4	Y	2.1	0.0
17	15	73.9	76.0	Y	2.1	0.0
17	20	73.5	75.6	Y	2.1	0.0
17	25	73.1	75.2	Y	2.1	0.0
17	30	72.7	74.8	Y	2.1	0.0
17	35	72.3	74.4	Y	2.1	0.0
17	40	72.0	74.0	Y	2.1	0.0
18	1	74.0	76.1	Y	2.1	0.0
18	5	73.9	76.0	Y	2.1	0.0
18	10	73.6	75.7	Y	2.1	0.0
18	15	73.2	75.4	Y	2.1	0.0
18	20	72.9	75.0	Y	2.1	0.0
18	25	72.5	74.6	Y	2.1	0.0
18	30	72.1	74.2	Y	2.1	0.0
18	35	71.7	73.8	Y	2.1	0.0
18	40	71.4	73.5	Y	2.1	0.0
19	1	73.2	75.5	Y	2.3	0.0
19	5	73.1	75.4	Y	2.3	0.0
19	10	72.9	75.2	Y	2.3	0.0
19	15	72.6	74.9	Y	2.3	0.0
19	20	72.3	74.6	Y	2.3	0.0
19	25	71.9	74.3	Y	2.3	0.0
19	30	71.6	73.9	Y	2.3	0.0
19	35	71.2	73.6	Y	2.3	0.0
19	40	70.9	73.2	Y	2.3	0.0
20	1	72.3	74.6	Y	2.4	0.0
20	5	72.2	74.6	Y	2.4	0.0
20	10	72.0	74.4	Y	2.4	0.0
20	15	71.8	74.2	Y	2.4	0.0
20	20	71.5	73.9	Y	2.4	0.0
20	25	71.2	73.6	Y	2.4	0.0
20	30	70.9	73.2	Y	2.4	0.0
20	35	70.5	72.9	Y	2.4	0.0
20	40	70.2	72.6	Y	2.4	0.0
21	1	69.3	71.6	Y	2.3	0.0
21	5	69.3	71.6	Y	2.3	0.0
21	10	69.3	71.6	Y	2.3	0.0
21	15	69.3	71.6	Y	2.3	0.0
21	20	69.1	71.4	Y	2.3	0.0
21	25	68.9	71.2	Y	2.3	0.0
21	30	68.6	70.9	Y	2.3	0.0
21	35	68.5	70.8	Y	2.2	0.0
21	40	69.3	71.3	Y	2.0	0.0
22	1	71.1	73.4	Y	2.3	0.0
22	5	71.1	73.4	Y	2.3	0.0
22	10	70.9	73.2	Y	2.3	0.0
22	15	70.8	73.1	Y	2.3	0.0
22	20	70.6	72.9	Y	2.3	0.0
22	25	70.3	72.6	Y	2.3	0.0
22	30	70.0	72.3	Y	2.3	0.0
22	35	69.7	72.0	Y	2.3	0.0
22	40	70.0	72.0	Y	2.1	0.0
23	1	67.8	69.6		1.8	0.0
23	5	68.7	70.4		1.7	0.0
23	10	69.9	71.8	Y	1.9	0.0
23	15	69.7	71.6	Y	1.9	0.0
23	20	69.5	71.4	Y	1.9	0.0
23	25	69.3	71.2	Y	1.9	0.0
23	30	69.1	70.9	Y	1.8	0.0
23	35	69.1	70.9	Y	1.8	0.0
23	40	69.2	71.0	Y	1.8	0.0



ExCo Eligibility Test on the Preferred Option

24	1	68.4	70.2		1.8	0.0
24	5	70.1	71.9	Y	1.8	0.0
24	10	70.8	72.7	Y	2.0	0.0
24	15	70.5	72.5	Y	1.9	0.0
24	20	70.3	72.2	Y	1.9	0.0
24	25	70.0	71.9	Y	1.9	0.0
24	30	69.7	71.6	Y	1.9	0.0
24	35	69.6	71.5	Y	1.9	0.0
24	40	69.4	71.3	Y	1.9	0.0
25	1	76.5	78.6	Y	2.1	0.0
25	5	76.4	78.5	Y	2.1	0.0
25	10	75.9	78.0	Y	2.1	0.0
25	15	75.3	77.4	Y	2.1	0.0
25	20	74.6	76.8	Y	2.1	0.0
25	25	74.1	76.2	Y	2.1	0.0
25	30	73.5	75.6	Y	2.1	0.0
25	35	73.2	75.2	Y	2.1	0.0
25	40	72.8	74.9	Y	2.1	0.0
26	1	75.4	77.5	Y	2.1	0.0
26	5	75.4	77.5	Y	2.1	0.0
26	10	75.0	77.2	Y	2.1	0.0
26	15	74.5	76.7	Y	2.1	0.0
26	20	74.0	76.1	Y	2.1	0.0
26	25	73.5	75.6	Y	2.1	0.0
26	30	73.0	75.1	Y	2.1	0.0
26	35	72.7	74.8	Y	2.1	0.0
26	40	72.8	74.9	Y	2.1	0.0
27	1	74.9	77.0	Y	2.1	0.0
27	5	74.9	77.0	Y	2.1	0.0
27	10	74.6	76.7	Y	2.1	0.0
27	15	74.1	76.2	Y	2.1	0.0
27	20	73.6	75.7	Y	2.1	0.0
27	25	73.2	75.2	Y	2.1	0.0
27	30	72.7	74.8	Y	2.1	0.0
27	35	72.3	74.3	Y	2.1	0.0
27	40	72.1	74.2	Y	2.0	0.0
28	1	74.1	76.2	Y	2.1	0.0
28	5	74.1	76.2	Y	2.1	0.0
28	10	73.8	75.9	Y	2.1	0.0
28	15	73.4	75.5	Y	2.1	0.0
28	20	73.0	75.1	Y	2.1	0.0
28	25	72.6	74.7	Y	2.1	0.0
28	30	72.1	74.2	Y	2.1	0.0
28	35	71.7	73.8	Y	2.1	0.0
28	40	71.8	73.8	Y	2.0	0.0
29	1	61.8	64.0		2.2	0.0
29	5	61.7	63.9		2.2	0.0
29	10	61.5	63.7		2.2	0.0
29	15	61.2	63.5		2.3	0.0
29	20	60.9	63.1		2.3	0.0
29	25	60.5	62.7		2.3	0.0
29	30	60.1	62.4		2.3	0.0
29	35	60.5	62.9		2.3	0.0
29	40	62.1	64.2		2.1	0.0
30	1	71.5	73.7	Y	2.1	0.0
30	5	71.5	73.6	Y	2.1	0.0
30	10	71.3	73.5	Y	2.1	0.0
30	15	71.0	73.2	Y	2.1	0.0
30	20	70.7	72.8	Y	2.1	0.0
30	25	70.3	72.4	Y	2.1	0.0
30	30	69.9	72.1	Y	2.1	0.0
30	35	70.0	72.1	Y	2.1	0.0
30	40	70.7	72.6	Y	1.9	0.0
31	1	77.4	79.6	Y	2.2	0.0
31	5	77.3	79.4	Y	2.2	0.0
31	10	76.8	78.9	Y	2.2	0.0
31	15	76.1	78.3	Y	2.2	0.0
31	20	75.4	77.6	Y	2.1	0.0
31	25	74.8	76.9	Y	2.1	0.0
31	30	74.3	76.4	Y	2.1	0.0

ExCo Eligibility Test on the Preferred Option

31	35	73.9	76.0	Y	2.1	0.0
31	40	73.5	75.6	Y	2.1	0.0
32	1	78.4	80.5	Y	2.2	0.0
32	5	78.1	80.3	Y	2.2	0.0
32	10	77.4	79.6	Y	2.2	0.0
32	15	76.6	78.8	Y	2.2	0.0
32	20	75.9	78.0	Y	2.2	0.0
32	25	75.2	77.4	Y	2.1	0.0
32	30	74.7	76.8	Y	2.1	0.0
32	35	74.1	76.2	Y	2.1	0.0
32	40	73.8	75.8	Y	2.1	0.0
33	1	79.4	81.5	Y	2.1	0.0
33	5	78.9	81.0	Y	2.1	0.0
33	10	77.9	80.1	Y	2.1	0.0
33	15	77.1	79.2	Y	2.1	0.0
33	20	76.3	78.4	Y	2.1	0.0
33	25	75.6	77.7	Y	2.1	0.0
33	30	75.1	77.1	Y	2.1	0.0
33	35	74.6	76.6	Y	2.0	0.0
33	40	74.2	76.2	Y	2.0	0.0
34	1	79.3	81.3	Y	2.1	0.0
34	5	78.7	80.8	Y	2.1	0.0
34	10	77.8	79.9	Y	2.1	0.0
34	15	77.0	79.1	Y	2.1	0.0
34	20	76.2	78.3	Y	2.1	0.0
34	25	75.6	77.6	Y	2.1	0.0
34	30	75.0	77.1	Y	2.0	0.0
34	35	74.5	76.5	Y	2.0	0.0
34	40	74.2	76.2	Y	2.0	0.0
35	1	79.3	81.2	Y	2.0	0.0
35	5	78.7	80.7	Y	2.0	0.0
35	10	77.7	79.8	Y	2.1	0.0
35	15	76.9	78.9	Y	2.1	0.0
35	20	76.1	78.2	Y	2.0	0.0
35	25	75.5	77.5	Y	2.0	0.0
35	30	75.0	77.0	Y	2.0	0.0
35	35	74.5	76.5	Y	2.0	0.0
35	40	74.1	76.1	Y	2.0	0.0
36	1	79.2	81.1	Y	1.9	0.0
36	5	78.6	80.5	Y	2.0	0.0
36	10	77.6	79.6	Y	2.0	0.0
36	15	76.8	78.8	Y	2.0	0.0
36	20	76.0	78.0	Y	2.0	0.0
36	25	75.4	77.4	Y	2.0	0.0
36	30	74.9	76.9	Y	2.0	0.0
36	35	74.4	76.4	Y	1.9	0.0
36	40	74.1	76.0	Y	1.9	0.0
37	1	45.3	47.2		2.0	0.4
37	5	44.7	46.8		2.1	0.4
37	10	43.8	45.9		2.2	0.4
37	15	42.9	45.1		2.2	0.5
37	20	42.2	44.5		2.3	0.5
37	25	41.6	43.9		2.3	0.5
37	30	41.1	43.4		2.3	0.5
37	35	69.4	71.1	Y	1.7	0.0
37	40	69.1	70.9	Y	1.8	0.0
38	1	72.4	74.3	Y	1.9	0.0
38	5	72.1	74.0	Y	1.9	0.0
38	10	71.4	73.4	Y	2.0	0.0
38	15	70.7	72.7	Y	2.0	0.0
38	20	70.0	72.0	Y	2.0	0.0
38	25	69.4	71.4	Y	2.0	0.0
38	30	68.8	70.8	Y	2.0	0.0
38	35	68.9	70.8	Y	1.9	0.0
38	40	68.8	70.7	Y	1.9	0.0
39	1	74.5	76.5	Y	2.0	0.0
39	5	74.3	76.3	Y	2.0	0.0
39	10	73.9	75.9	Y	2.0	0.0
39	15	73.4	75.4	Y	2.0	0.0
39	20	72.9	74.9	Y	2.0	0.0

ExCo Eligibility Test on the Preferred Option

39	25	72.5	74.5	Y	2.0	0.0
39	30	72.1	74.1	Y	2.0	0.0
39	35	71.9	73.8	Y	1.9	0.0
39	40	71.7	73.6	Y	1.9	0.0
40	1	76.3	78.2	Y	2.0	0.0
40	5	75.9	77.9	Y	2.0	0.0
40	10	75.2	77.2	Y	2.0	0.0
40	15	74.5	76.6	Y	2.0	0.0
40	20	73.9	76.0	Y	2.0	0.0
40	25	73.4	75.5	Y	2.0	0.0
40	30	73.0	75.0	Y	2.0	0.0
40	35	72.6	74.6	Y	2.0	0.0
40	40	72.4	74.4	Y	2.0	0.0
41	1	78.9	80.6	Y	1.7	0.0
41	5	78.3	80.0	Y	1.7	0.0
41	10	77.3	79.1	Y	1.8	0.0
41	15	76.4	78.3	Y	1.8	0.0
41	20	75.7	77.6	Y	1.8	0.0
41	25	75.2	77.0	Y	1.8	0.0
41	30	74.7	76.5	Y	1.8	0.0
41	35	74.2	76.0	Y	1.8	0.0
41	40	73.9	75.7	Y	1.8	0.0
42	1	78.8	80.4	Y	1.6	0.0
42	5	78.2	79.9	Y	1.7	0.0
42	10	77.2	79.0	Y	1.8	0.0
42	15	76.4	78.2	Y	1.8	0.0
42	20	75.7	77.5	Y	1.8	0.0
42	25	75.1	76.9	Y	1.8	0.0
42	30	74.6	76.4	Y	1.8	0.0
42	35	74.2	75.9	Y	1.8	0.0
42	40	73.8	75.6	Y	1.8	0.0
43	1	78.6	80.1	Y	1.5	0.0
43	5	78.0	79.6	Y	1.6	0.0
43	10	77.1	78.8	Y	1.7	0.0
43	15	76.3	77.9	Y	1.7	0.0
43	20	75.6	77.3	Y	1.7	0.0
43	25	75.0	76.7	Y	1.7	0.0
43	30	74.5	76.2	Y	1.7	0.0
43	35	74.0	75.7	Y	1.7	0.0
43	40	73.7	75.4	Y	1.7	0.0
44	1	78.5	80.0	Y	1.5	0.0
44	5	78.0	79.5	Y	1.5	0.0
44	10	77.0	78.6	Y	1.6	0.0
44	15	76.2	77.8	Y	1.6	0.0
44	20	75.5	77.1	Y	1.6	0.0
44	25	74.9	76.6	Y	1.6	0.0
44	30	74.4	76.1	Y	1.6	0.0
44	35	74.0	75.6	Y	1.6	0.0
44	40	73.7	75.3	Y	1.6	0.0
45	1	74.2	75.0	Y	0.8	0.0
45	5	73.8	74.5	Y	0.8	0.0
45	10	72.9	73.6	Y	0.8	0.0
45	15	72.0	72.8	Y	0.8	0.0
45	20	71.2	72.0	Y	0.8	0.0
45	25	70.5	71.3	Y	0.8	0.0
45	30	69.9	70.7	Y	0.8	0.0
45	35	69.3	70.2		0.8	0.0
45	40	69.0	69.8		0.9	0.0
46	1	71.9	72.7	Y	0.8	0.0
46	5	71.6	72.4	Y	0.8	0.0
46	10	71.0	71.8	Y	0.8	0.0
46	15	70.3	71.1	Y	0.8	0.0
46	20	69.7	70.5		0.8	0.0
46	25	69.0	69.9		0.8	0.0
46	30	68.5	69.3		0.8	0.0
46	35	68.2	69.0		0.9	0.0
46	40	67.9	68.8		0.9	0.0
47	1	73.3	74.9	Y	1.6	0.0
47	5	73.2	74.8	Y	1.6	0.0
47	10	72.8	74.4	Y	1.6	0.0

ExCo Eligibility Test on the Preferred Option

47	15	72.3	74.0	Y	1.6	0.0
47	20	71.9	73.5	Y	1.6	0.0
47	25	71.5	73.1	Y	1.6	0.0
47	30	71.1	72.7	Y	1.6	0.0
47	35	70.9	72.5	Y	1.6	0.0
47	40	70.8	72.3	Y	1.6	0.0
48	1	75.7	77.2	Y	1.5	0.0
48	5	75.3	76.8	Y	1.5	0.0
48	10	74.6	76.2	Y	1.6	0.0
48	15	73.9	75.5	Y	1.6	0.0
48	20	73.3	74.9	Y	1.6	0.0
48	25	72.9	74.4	Y	1.6	0.0
48	30	72.4	74.0	Y	1.6	0.0
48	35	72.1	73.6	Y	1.6	0.0
48	40	71.9	73.5	Y	1.6	0.0
49	1	78.2	79.2	Y	1.1	0.0
49	5	77.7	78.8	Y	1.1	0.0
49	10	76.8	77.9	Y	1.1	0.0
49	15	76.0	77.1	Y	1.1	0.0
49	20	75.3	76.5	Y	1.2	0.0
49	25	74.7	75.9	Y	1.2	0.0
49	30	74.2	75.4	Y	1.2	0.0
49	35	73.8	75.0	Y	1.2	0.0
49	40	73.5	74.7	Y	1.2	0.0
50	1	78.1	79.1	Y	1.0	0.0
50	5	77.6	78.6	Y	1.0	0.0
50	10	76.8	77.8	Y	1.0	0.0
50	15	76.0	77.0	Y	1.1	0.0
50	20	75.3	76.4	Y	1.1	0.0
50	25	74.7	75.8	Y	1.1	0.0
50	30	74.2	75.3	Y	1.1	0.0
50	35	73.8	74.9	Y	1.2	0.0
50	40	73.4	74.6	Y	1.2	0.0
51	1	78.0	79.0	Y	0.9	0.0
51	5	77.6	78.5	Y	0.9	0.0
51	10	76.7	77.6	Y	0.9	0.0
51	15	75.9	76.9	Y	1.0	0.0
51	20	75.2	76.2	Y	1.0	0.0
51	25	74.6	75.6	Y	1.0	0.0
51	30	74.1	75.2	Y	1.0	0.0
51	35	73.7	74.7	Y	1.1	0.0
51	40	73.4	74.5	Y	1.1	0.0
52	1	78.0	78.9	Y	0.9	0.0
52	5	77.6	78.4	Y	0.9	0.0
52	10	76.7	77.6	Y	0.9	0.0
52	15	75.9	76.8	Y	0.9	0.0
52	20	75.2	76.1	Y	1.0	0.0
52	25	74.6	75.6	Y	1.0	0.0
52	30	74.1	75.1	Y	1.0	0.0
52	35	73.6	74.7	Y	1.0	0.0
52	40	73.3	74.4	Y	1.1	0.0
53	1	74.0	74.3	Y	0.4	0.0
53	5	73.5	73.9	Y	0.4	0.0
53	10	72.6	73.0	Y	0.4	0.0
53	15	71.8	72.1	Y	0.4	0.0
53	20	71.0	71.4	Y	0.4	0.0
53	25	70.3	70.7	Y	0.4	0.0
53	30	69.6	70.1		0.5	0.0
53	35	69.1	69.7		0.5	0.1
53	40	68.9	69.4		0.5	0.1
54	1	71.6	72.0	Y	0.4	0.0
54	5	71.3	71.7	Y	0.4	0.0
54	10	70.8	71.2	Y	0.4	0.0
54	15	70.1	70.5	Y	0.4	0.0
54	20	69.5	69.9		0.4	0.0
54	25	68.9	69.3		0.5	0.0
54	30	68.3	68.8		0.5	0.0
54	35	68.2	68.8		0.6	0.0
54	40	67.9	68.5		0.6	0.1
55	1	75.1	76.2	Y	1.0	0.0

ExCo Eligibility Test on the Preferred Option

55	5	74.7	75.8	Y	1.0	0.0
55	10	74.0	75.1	Y	1.1	0.0
55	15	73.3	74.4	Y	1.1	0.0
55	20	72.7	73.8	Y	1.1	0.0
55	25	72.2	73.4	Y	1.1	0.0
55	30	71.8	73.0	Y	1.2	0.0
55	35	71.5	72.6	Y	1.2	0.0
55	40	71.4	72.6	Y	1.2	0.0
56	1	78.4	79.0	Y	0.6	0.0
56	5	77.8	78.3	Y	0.6	0.0
56	10	76.7	77.3	Y	0.6	0.0
56	15	75.8	76.5	Y	0.7	0.0
56	20	75.0	75.8	Y	0.7	0.0
56	25	74.4	75.2	Y	0.8	0.0
56	30	73.9	74.7	Y	0.8	0.0
56	35	73.4	74.2	Y	0.8	0.0
56	40	73.1	74.0	Y	0.8	0.0
57	1	78.6	79.2	Y	0.5	0.0
57	5	77.9	78.4	Y	0.5	0.0
57	10	76.8	77.3	Y	0.5	0.0
57	15	75.8	76.4	Y	0.6	0.0
57	20	75.1	75.7	Y	0.6	0.0
57	25	74.4	75.1	Y	0.7	0.0
57	30	73.9	74.6	Y	0.7	0.0
57	35	73.4	74.2	Y	0.7	0.0
57	40	73.1	73.9	Y	0.8	0.0
58	1	79.2	79.8	Y	0.6	0.0
58	5	78.2	78.5	Y	0.3	0.0
58	10	76.9	77.2	Y	0.3	0.0
58	15	75.9	76.3	Y	0.4	0.0
58	20	75.1	75.5	Y	0.4	0.0
58	25	74.4	74.9	Y	0.5	0.0
58	30	73.9	74.4	Y	0.6	0.0
58	35	73.4	74.0	Y	0.6	0.0
58	40	73.1	73.7	Y	0.6	0.0
59	1	79.7	80.6	Y	0.9	0.0
59	5	78.6	78.9	Y	0.3	0.0
59	10	77.2	77.5	Y	0.3	0.0
59	15	76.2	76.6	Y	0.4	0.0
59	20	75.4	75.8	Y	0.4	0.0
59	25	74.7	75.2	Y	0.5	0.0
59	30	74.1	74.7	Y	0.6	0.1
59	35	73.7	74.3	Y	0.6	0.0
59	40	73.3	73.9	Y	0.6	0.0
60	1	76.5	77.3	Y	0.8	0.0
60	5	75.7	76.1	Y	0.4	0.0
60	10	74.4	74.7	Y	0.3	0.0
60	15	73.3	73.6	Y	0.3	0.1
60	20	72.4	72.8	Y	0.4	0.1
60	25	71.6	72.0	Y	0.5	0.2
60	30	70.9	71.4	Y	0.5	0.2
60	35	70.3	70.9	Y	0.5	0.2
60	40	69.9	70.5		0.5	0.2
61	1	73.9	74.5	Y	0.6	0.0
61	5	73.4	73.9	Y	0.5	0.0
61	10	72.6	72.9	Y	0.3	0.0
61	15	71.6	72.0	Y	0.3	0.0
61	20	70.8	71.2	Y	0.3	0.1
61	25	70.1	70.5		0.3	0.1
61	30	69.5	69.8		0.4	0.1
61	35	69.0	69.3		0.4	0.1
61	40	68.9	69.4		0.5	0.1
62	1	75.4	76.1	Y	0.7	0.0
62	5	74.9	75.4	Y	0.5	0.0
62	10	74.0	74.4	Y	0.4	0.0
62	15	73.1	73.5	Y	0.3	0.0
62	20	72.4	72.7	Y	0.4	0.0
62	25	71.7	72.1	Y	0.4	0.0
62	30	71.1	71.5	Y	0.4	0.1
62	35	71.1	71.6	Y	0.5	0.1

ExCo Eligibility Test on the Preferred Option

62	40	71.5	72.2	Y	0.7	0.1
63	1	76.1	77.0	Y	0.9	0.0
63	5	75.6	76.2	Y	0.6	0.0
63	10	74.7	75.1	Y	0.4	0.0
63	15	73.8	74.2	Y	0.4	0.0
63	20	73.0	73.4	Y	0.4	0.0
63	25	72.3	72.8	Y	0.4	0.0
63	30	71.8	72.2	Y	0.5	0.0
63	35	71.5	72.1	Y	0.5	0.0
63	40	71.7	72.4	Y	0.7	0.1
64	1	77.4	78.8	Y	1.5	0.0
64	5	76.7	77.6	Y	0.9	0.0
64	10	75.5	76.2	Y	0.7	0.0
64	15	74.5	75.2	Y	0.7	0.0
64	20	73.7	74.4	Y	0.7	0.0
64	25	73.0	73.7	Y	0.7	0.0
64	30	72.5	73.2	Y	0.7	0.0
64	35	72.3	73.1	Y	0.8	0.1
64	40	72.5	73.4	Y	0.9	0.2
65	1	77.8	79.5	Y	1.7	0.0
65	5	77.0	78.0	Y	1.0	0.0
65	10	75.8	76.5	Y	0.7	0.0
65	15	74.7	75.4	Y	0.7	0.0
65	20	73.9	74.6	Y	0.7	0.0
65	25	73.2	74.0	Y	0.7	0.0
65	30	72.6	73.4	Y	0.7	0.0
65	35	72.2	72.9	Y	0.8	0.0
65	40	72.0	72.8	Y	0.8	0.0
66	1	77.0	78.8	Y	1.8	0.0
66	5	76.2	77.6	Y	1.3	0.0
66	10	75.0	76.2	Y	1.1	0.0
66	15	74.0	75.1	Y	1.1	0.1
66	20	73.1	74.3	Y	1.2	0.2
66	25	72.3	73.5	Y	1.2	0.2
66	30	71.6	72.9	Y	1.2	0.2
66	35	71.1	72.3	Y	1.3	0.2
66	40	70.7	72.0	Y	1.3	0.2
67	1	75.1	76.3	Y	1.2	0.0
67	5	74.8	75.9	Y	1.1	0.1
67	10	74.0	75.0	Y	1.0	0.1
67	15	73.1	74.1	Y	1.0	0.1
67	20	72.3	73.3	Y	1.0	0.2
67	25	71.6	72.7	Y	1.1	0.3
67	30	71.0	72.1	Y	1.2	0.3
67	35	70.4	71.6	Y	1.2	0.3
67	40	70.0	71.2	Y	1.2	0.3
68	1	69.3	70.5		1.1	0.0
68	5	69.1	70.3		1.2	0.2
68	10	68.4	69.6		1.1	0.2
68	15	67.7	68.8		1.1	0.1
68	20	67.0	68.1		1.2	0.2
68	25	66.3	67.9		1.6	0.7
68	30	65.7	67.4		1.7	0.8
68	35	65.3	67.1		1.8	0.9
68	40	65.3	67.2		1.8	0.8
69	1	67.8	68.9		1.1	0.0
69	5	67.6	68.8		1.2	0.2
69	10	67.0	68.2		1.1	0.2
69	15	66.3	67.4		1.1	0.2
69	20	65.6	66.8		1.2	0.3
69	25	65.0	66.7		1.7	0.8
69	30	64.4	66.3		1.9	1.0
69	35	64.0	66.0		2.0	1.0
69	40	65.0	66.8		1.8	0.8
70	1	65.2	66.8		1.6	0.0
70	5	65.0	66.5		1.6	0.0
70	10	64.6	66.1		1.5	0.0
70	15	64.0	65.4		1.4	0.0
70	20	63.5	64.8		1.4	0.0
70	25	63.0	64.3		1.3	0.0



ExCo Eligibility Test on the Preferred Option

70	30	62.5	63.8		1.3	0.0
70	35	63.0	64.0		1.0	0.0
70	40	66.3	67.1		0.9	0.0
71	1	67.3	69.0		1.7	0.0
71	5	67.1	68.7		1.6	0.0
71	10	66.5	68.0		1.4	0.0
71	15	65.9	67.2		1.4	0.0
71	20	65.2	66.5		1.3	0.0
71	25	64.6	65.9		1.3	0.0
71	30	64.1	65.4		1.3	0.0
71	35	65.2	66.1		0.9	0.0
71	40	66.9	67.9		1.0	0.0
72	1	75.2	76.3	Y	1.1	0.0
72	5	74.8	75.8	Y	1.0	0.0
72	10	74.0	74.8	Y	0.8	0.0
72	15	73.2	74.0	Y	0.7	0.0
72	20	72.4	73.2	Y	0.8	0.1
72	25	71.8	72.7	Y	0.9	0.2
72	30	71.2	72.1	Y	1.0	0.3
72	35	70.9	71.8	Y	0.9	0.3
72	40	71.1	72.1	Y	1.0	0.3
73	1	77.1	78.4	Y	1.3	0.0
73	5	76.5	77.5	Y	1.0	0.0
73	10	75.4	76.2	Y	0.8	0.1
73	15	74.5	75.2	Y	0.7	0.1
73	20	73.7	74.5	Y	0.8	0.2
73	25	73.0	73.9	Y	0.9	0.3
73	30	72.4	73.3	Y	0.9	0.3
73	35	71.9	72.8	Y	0.9	0.4
73	40	71.8	72.8	Y	1.0	0.4
74	1	78.7	80.4	Y	1.6	0.0
74	5	77.8	79.2	Y	1.4	0.1
74	10	76.5	77.7	Y	1.2	0.1
74	15	75.4	76.5	Y	1.1	0.1
74	20	74.5	75.7	Y	1.2	0.2
74	25	73.7	75.0	Y	1.3	0.3
74	30	73.0	74.3	Y	1.3	0.3
74	35	72.4	73.7	Y	1.3	0.4
74	40	72.0	73.3	Y	1.4	0.4
75	1	78.3	79.8	Y	1.5	0.0
75	5	77.4	78.8	Y	1.4	0.1
75	10	76.2	77.4	Y	1.2	0.1
75	15	75.1	76.3	Y	1.2	0.1
75	20	74.2	75.4	Y	1.2	0.2
75	25	73.4	74.8	Y	1.3	0.3
75	30	72.7	74.1	Y	1.4	0.4
75	35	72.1	73.5	Y	1.4	0.4
75	40	71.7	73.2	Y	1.4	0.4
76	1	78.2	79.6	Y	1.4	0.0
76	5	77.3	78.7	Y	1.4	0.1
76	10	76.0	77.4	Y	1.4	0.1
76	15	75.0	76.3	Y	1.3	0.1
76	20	74.1	75.4	Y	1.3	0.1
76	25	73.3	74.7	Y	1.3	0.2
76	30	72.7	74.1	Y	1.4	0.4
76	35	72.2	73.6	Y	1.5	0.4
76	40	71.8	73.3	Y	1.5	0.4
77	1	78.2	79.6	Y	1.5	0.0
77	5	77.2	78.7	Y	1.5	0.1
77	10	75.9	77.3	Y	1.5	0.1
77	15	74.8	76.3	Y	1.4	0.1
77	20	74.0	75.3	Y	1.4	0.1
77	25	73.2	74.6	Y	1.3	0.2
77	30	72.6	74.1	Y	1.5	0.3
77	35	72.1	73.6	Y	1.5	0.4
77	40	71.8	73.3	Y	1.5	0.4
78	1	73.4	74.9	Y	1.5	0.0
78	5	73.0	74.6	Y	1.6	0.1
78	10	72.3	73.8	Y	1.5	0.2
78	15	71.6	73.2	Y	1.6	0.2

ExCo Eligibility Test on the Preferred Option

78	20	71.0	72.5	Y	1.5	0.2
78	25	70.4	71.9	Y	1.5	0.3
78	30	69.9	71.3	Y	1.4	0.3
78	35	69.4	70.8	Y	1.4	0.3
78	40	69.3	70.8	Y	1.5	0.3
79	1	74.8	76.3	Y	1.6	0.0
79	5	74.2	75.8	Y	1.6	0.1
79	10	73.2	74.8	Y	1.6	0.2
79	15	72.4	74.0	Y	1.5	0.2
79	20	71.7	73.2	Y	1.5	0.2
79	25	71.1	72.6	Y	1.4	0.2
79	30	70.6	72.0	Y	1.4	0.3
79	35	70.1	71.5	Y	1.4	0.3
79	40	70.0	71.5	Y	1.4	0.3
80	1	75.9	77.6	Y	1.7	0.0
80	5	75.2	76.9	Y	1.7	0.1
80	10	74.1	75.7	Y	1.7	0.1
80	15	73.1	74.8	Y	1.6	0.2
80	20	72.4	74.0	Y	1.6	0.2
80	25	71.7	73.3	Y	1.6	0.2
80	30	71.2	72.7	Y	1.5	0.2
80	35	70.7	72.2	Y	1.5	0.2
80	40	70.5	72.1	Y	1.6	0.3
81	1	76.0	77.6	Y	1.6	0.0
81	5	74.9	76.5	Y	1.6	0.1
81	10	73.7	75.3	Y	1.6	0.2
81	15	72.7	74.3	Y	1.5	0.2
81	20	72.0	73.5	Y	1.5	0.2
81	25	71.4	72.8	Y	1.4	0.3
81	30	70.8	72.2	Y	1.4	0.3
81	35	70.4	71.7	Y	1.4	0.3
81	40	70.2	71.6	Y	1.4	0.4
82	1	78.8	80.7	Y	1.9	0.0
82	5	77.3	79.2	Y	1.9	0.0
82	10	75.8	77.7	Y	1.9	0.1
82	15	74.7	76.5	Y	1.8	0.1
82	20	73.8	75.6	Y	1.8	0.1
82	25	73.1	74.9	Y	1.8	0.2
82	30	72.5	74.2	Y	1.7	0.2
82	35	72.0	73.7	Y	1.7	0.2
82	40	71.6	73.3	Y	1.7	0.2
83	1	79.0	80.9	Y	1.9	0.0
83	5	77.4	79.3	Y	1.9	0.0
83	10	75.8	77.7	Y	1.9	0.1
83	15	74.7	76.5	Y	1.9	0.1
83	20	73.8	75.6	Y	1.8	0.1
83	25	73.1	74.9	Y	1.8	0.2
83	30	72.4	74.2	Y	1.8	0.2
83	35	71.9	73.7	Y	1.8	0.2
83	40	71.5	73.3	Y	1.7	0.2
84	1	74.9	77.1	Y	2.1	0.0
84	5	74.1	76.2	Y	2.1	0.0
84	10	72.8	75.0	Y	2.2	0.0
84	15	71.8	73.9	Y	2.2	0.0
84	20	70.9	73.0	Y	2.2	0.0
84	25	70.1	72.3	Y	2.2	0.0
84	30	69.5	71.6	Y	2.2	0.0
84	35	69.1	71.3	Y	2.1	0.1
84	40	69.8	71.6	Y	1.8	0.2
85	1	75.2	77.1	Y	1.9	0.0
85	5	74.4	76.4	Y	2.0	0.1
85	10	73.3	75.2	Y	2.0	0.1
85	15	72.3	74.3	Y	1.9	0.1
85	20	71.6	73.5	Y	1.9	0.2
85	25	70.9	72.8	Y	1.9	0.2
85	30	70.4	72.2	Y	1.9	0.2
85	35	69.9	71.7	Y	1.8	0.2
85	40	69.6	71.5	Y	1.9	0.2
86	1	75.8	77.7	Y	1.9	0.0
86	5	74.5	76.4	Y	1.9	0.1

ExCo Eligibility Test on the Preferred Option

86	10	73.1	75.0	Y	1.9	0.1
86	15	72.1	74.0	Y	1.9	0.1
86	20	71.3	73.1	Y	1.8	0.2
86	25	70.7	72.5	Y	1.8	0.2
86	30	70.1	71.9	Y	1.8	0.2
86	35	69.7	71.4	Y	1.7	0.2
86	40	69.4	71.1	Y	1.7	0.2
87	1	78.7	80.7	Y	2.0	0.0
87	5	77.1	79.1	Y	2.0	0.0
87	10	75.4	77.5	Y	2.0	0.1
87	15	74.3	76.3	Y	2.0	0.1
87	20	73.4	75.4	Y	2.0	0.1
87	25	72.7	74.6	Y	2.0	0.1
87	30	72.0	74.0	Y	2.0	0.1
87	35	71.5	73.4	Y	1.9	0.1
87	40	71.1	73.1	Y	1.9	0.2
88	1	78.7	80.8	Y	2.0	0.0
88	5	77.1	79.1	Y	2.1	0.0
88	10	75.4	77.5	Y	2.1	0.1
88	15	74.2	76.3	Y	2.0	0.1
88	20	73.3	75.4	Y	2.0	0.1
88	25	72.6	74.6	Y	2.0	0.1
88	30	72.0	74.0	Y	2.0	0.1
88	35	71.5	73.4	Y	2.0	0.1
88	40	71.1	73.0	Y	1.9	0.1
89	1	75.2	77.2	Y	2.0	0.0
89	5	74.4	76.4	Y	2.0	0.0
89	10	73.2	75.2	Y	2.0	0.1
89	15	72.2	74.2	Y	2.0	0.1
89	20	71.4	73.4	Y	2.0	0.1
89	25	70.7	72.7	Y	2.0	0.1
89	30	70.1	72.1	Y	2.0	0.1
89	35	69.7	71.7	Y	2.0	0.1
89	40	69.5	71.5	Y	2.0	0.1
90	1	75.8	77.8	Y	2.0	0.0
90	5	74.5	76.5	Y	2.0	0.0
90	10	73.1	75.1	Y	2.0	0.1
90	15	72.1	74.0	Y	2.0	0.1
90	20	71.2	73.2	Y	2.0	0.1
90	25	70.6	72.5	Y	1.9	0.1
90	30	70.0	71.9	Y	1.9	0.1
90	35	69.6	71.5	Y	1.9	0.2
90	40	69.2	71.1	Y	1.9	0.2
91	1	78.4	80.5	Y	2.1	0.0
91	5	76.8	78.9	Y	2.2	0.0
91	10	75.1	77.3	Y	2.2	0.0
91	15	73.9	76.1	Y	2.2	0.0
91	20	73.0	75.2	Y	2.1	0.1
91	25	72.3	74.4	Y	2.1	0.1
91	30	71.7	73.8	Y	2.1	0.1
91	35	71.1	73.2	Y	2.1	0.1
91	40	70.8	72.8	Y	2.1	0.1
92	1	78.3	80.4	Y	2.1	0.0
92	5	76.7	78.9	Y	2.2	0.0
92	10	75.0	77.2	Y	2.2	0.0
92	15	73.8	76.0	Y	2.2	0.0
92	20	72.9	75.1	Y	2.2	0.1
92	25	72.2	74.4	Y	2.2	0.1
92	30	71.6	73.7	Y	2.1	0.1
92	35	71.0	73.2	Y	2.1	0.1
92	40	70.7	72.8	Y	2.1	0.1
93	1	68.9	71.1	Y	2.3	0.0
93	5	68.8	71.1	Y	2.3	0.0
93	10	68.6	70.9	Y	2.3	0.0
93	15	68.1	70.4		2.3	0.0
93	20	67.7	70.0		2.3	0.0
93	25	67.3	69.5		2.3	0.0
93	30	66.9	69.1		2.2	0.0
93	35	66.5	68.8		2.2	0.0
93	40	66.4	68.6		2.2	0.0

ExCo Eligibility Test on the Preferred Option

94	1	70.0	72.5	Y	2.5	0.0
94	5	69.8	72.3	Y	2.5	0.0
94	10	69.3	71.8	Y	2.5	0.0
94	15	68.8	71.2	Y	2.5	0.0
94	20	68.2	70.7	Y	2.5	0.0
94	25	67.7	70.2		2.5	0.0
94	30	67.2	69.7		2.5	0.0
94	35	66.8	69.3		2.5	0.0
94	40	67.0	69.6		2.7	0.0
95	1	70.3	72.6	Y	2.3	0.0
95	5	70.1	72.4	Y	2.4	0.0
95	10	69.7	72.0	Y	2.4	0.0
95	15	69.1	71.5	Y	2.4	0.0
95	20	68.5	70.9	Y	2.4	0.1
95	25	68.0	70.4		2.4	0.1
95	30	67.6	69.9		2.3	0.1
95	35	67.3	69.7		2.3	0.1
95	40	67.1	69.4		2.3	0.1
96	1	72.2	74.7	Y	2.5	0.0
96	5	71.9	74.4	Y	2.5	0.0
96	10	71.2	73.8	Y	2.6	0.0
96	15	70.5	73.1	Y	2.6	0.1
96	20	69.9	72.5	Y	2.6	0.1
96	25	69.3	71.9	Y	2.6	0.1
96	30	68.7	71.3	Y	2.6	0.1
96	35	68.3	70.9	Y	2.6	0.1
96	40	68.0	70.5	Y	2.6	0.1
97	1	72.0	74.5	Y	2.5	0.0
97	5	71.7	74.2	Y	2.5	0.0
97	10	71.0	73.6	Y	2.6	0.0
97	15	70.3	72.9	Y	2.6	0.1
97	20	69.7	72.3	Y	2.6	0.1
97	25	69.1	71.7	Y	2.6	0.1
97	30	68.6	71.2	Y	2.6	0.1
97	35	68.1	70.7	Y	2.6	0.1
97	40	67.8	70.4		2.6	0.1
98	1	71.4	73.8	Y	2.5	0.0
98	5	70.9	73.4	Y	2.5	0.0
98	10	70.1	72.7	Y	2.5	0.0
98	15	69.4	71.9	Y	2.5	0.1
98	20	68.7	71.2	Y	2.5	0.1
98	25	68.1	70.6	Y	2.5	0.1
98	30	67.6	70.1		2.5	0.1
98	35	67.2	69.7		2.5	0.1
98	40	67.2	69.6		2.4	0.1
99	1	73.0	75.3	Y	2.4	0.0
99	5	72.1	74.6	Y	2.5	0.0
99	10	70.9	73.4	Y	2.6	0.0
99	15	69.9	72.5	Y	2.6	0.1
99	20	69.1	71.7	Y	2.5	0.1
99	25	68.5	71.0	Y	2.5	0.1
99	30	68.0	70.5		2.5	0.1
99	35	67.6	70.0		2.4	0.1
99	40	67.5	69.9		2.4	0.1
100	1	76.1	78.4	Y	2.3	0.0
100	5	74.8	77.2	Y	2.4	0.0
100	10	73.3	75.8	Y	2.6	0.0
100	15	72.1	74.7	Y	2.6	0.0
100	20	71.2	73.8	Y	2.6	0.0
100	25	70.5	73.0	Y	2.6	0.0
100	30	69.9	72.4	Y	2.5	0.1
100	35	69.4	71.9	Y	2.5	0.1
100	40	69.0	71.5	Y	2.5	0.1
101	1	76.1	78.4	Y	2.3	0.0
101	5	74.8	77.2	Y	2.4	0.0
101	10	73.3	75.8	Y	2.5	0.0
101	15	72.1	74.7	Y	2.6	0.0
101	20	71.2	73.7	Y	2.6	0.0
101	25	70.5	73.0	Y	2.5	0.0
101	30	69.8	72.4	Y	2.5	0.1

ExCo Eligibility Test on the Preferred Option

101	35	69.3	71.8	Y	2.5	0.1
101	40	69.0	71.5	Y	2.5	0.1
102	1	76.1	78.3	Y	2.2	0.0
102	5	74.8	77.1	Y	2.4	0.0
102	10	73.2	75.7	Y	2.5	0.0
102	15	72.0	74.6	Y	2.5	0.0
102	20	71.1	73.6	Y	2.5	0.0
102	25	70.4	72.9	Y	2.5	0.0
102	30	69.8	72.3	Y	2.5	0.1
102	35	69.3	71.7	Y	2.5	0.1
102	40	68.9	71.3	Y	2.5	0.1
103	1	76.1	78.3	Y	2.2	0.0
103	5	74.7	77.1	Y	2.4	0.0
103	10	73.1	75.6	Y	2.5	0.0
103	15	72.0	74.5	Y	2.5	0.0
103	20	71.0	73.6	Y	2.5	0.0
103	25	70.3	72.8	Y	2.5	0.0
103	30	69.7	72.2	Y	2.5	0.0
103	35	69.2	71.6	Y	2.5	0.1
103	40	68.8	71.3	Y	2.5	0.1
104	1	70.3	71.8	Y	1.5	0.0
104	5	70.1	71.8	Y	1.6	0.1
104	10	69.8	71.4	Y	1.6	0.2
104	15	69.3	71.0	Y	1.7	0.2
104	20	68.9	70.5	Y	1.7	0.3
104	25	68.4	70.0		1.7	0.3
104	30	67.9	69.6		1.6	0.3
104	35	67.5	69.1		1.6	0.3
104	40	67.2	68.9		1.6	0.3
105	1	70.3	72.0	Y	1.7	0.0
105	5	70.1	72.0	Y	1.8	0.2
105	10	69.8	71.6	Y	1.8	0.2
105	15	69.3	71.2	Y	1.9	0.3
105	20	68.8	70.7	Y	1.9	0.3
105	25	68.3	70.2		1.9	0.3
105	30	67.8	69.7		1.9	0.3
105	35	67.3	69.2		1.9	0.3
105	40	67.1	69.1		1.9	0.4
106	1	68.8	70.3		1.5	0.1
106	5	68.7	70.3		1.6	0.2
106	10	68.4	70.0		1.6	0.3
106	15	68.0	69.6		1.6	0.3
106	20	67.5	69.2		1.6	0.3
106	25	67.1	68.7		1.6	0.3
106	30	66.7	68.3		1.6	0.3
106	35	66.3	67.9		1.6	0.3
106	40	66.6	68.0		1.4	0.3
107	1	68.2	69.6		1.4	0.0
107	5	68.1	69.5		1.4	0.0
107	10	67.8	69.3		1.4	0.0
107	15	67.5	68.9		1.4	0.0
107	20	67.1	68.5		1.4	0.0
107	25	66.6	68.0		1.4	0.0
107	30	66.2	67.6		1.4	0.0
107	35	66.0	67.4		1.4	0.0
107	40	66.8	67.9		1.2	0.0
108	1	67.7	69.0		1.3	0.0
108	5	67.6	68.9		1.3	0.0
108	10	67.3	68.6		1.3	0.0
108	15	67.0	68.3		1.3	0.0
108	20	66.6	67.9		1.3	0.0
108	25	66.2	67.5		1.3	0.0
108	30	65.8	67.1		1.3	0.0
108	35	65.5	66.8		1.3	0.0
108	40	66.6	67.7		1.1	0.0
109	1	68.2	68.8		0.6	0.0
109	5	68.1	68.7		0.6	0.0
109	10	68.0	68.6		0.6	0.0
109	15	67.7	68.3		0.6	0.0
109	20	67.4	68.0		0.6	0.0

ExCo Eligibility Test on the Preferred Option

109	25	67.1	67.8		0.6	0.0
109	30	66.8	67.5		0.7	0.0
109	35	66.7	67.3		0.6	0.0
109	40	67.7	68.5		0.7	0.0
110	1	67.0	67.6		0.6	0.0
110	5	67.0	67.6		0.6	0.0
110	10	66.8	67.5		0.6	0.0
110	15	66.6	67.2		0.6	0.0
110	20	66.4	67.0		0.6	0.0
110	25	66.1	66.8		0.7	0.0
110	30	65.9	66.5		0.7	0.0
110	35	65.7	66.3		0.7	0.0
110	40	66.7	67.4		0.7	0.0
111	1	67.6	68.3		0.7	0.0
111	5	67.6	68.3		0.7	0.0
111	10	67.4	68.1		0.7	0.0
111	15	67.2	67.9		0.7	0.0
111	20	66.9	67.6		0.7	0.0
111	25	66.7	67.4		0.7	0.0
111	30	66.4	67.1		0.7	0.0
111	35	66.1	66.9		0.7	0.0
111	40	67.6	68.3		0.7	0.0
112	1	66.6	67.3		0.7	0.0
112	5	66.6	67.3		0.7	0.0
112	10	66.4	67.1		0.7	0.0
112	15	66.2	66.9		0.7	0.0
112	20	65.9	66.7		0.7	0.0
112	25	65.7	66.4		0.7	0.0
112	30	65.4	66.2		0.7	0.0
112	35	65.1	65.9		0.8	0.0
112	40	66.5	67.1		0.6	0.0
113	1	67.7	68.7		1.0	0.0
113	5	67.7	68.6		1.0	0.0
113	10	67.5	68.5		1.0	0.0
113	15	67.2	68.2		1.0	0.0
113	20	66.9	67.9		1.0	0.0
113	25	66.6	67.6		1.0	0.0
113	30	66.3	67.3		1.0	0.0
113	35	65.9	67.0		1.0	0.0
113	40	68.2	69.1		1.0	0.0
114	1	67.8	69.0		1.2	0.0
114	5	67.7	68.9		1.2	0.0
114	10	67.5	68.8		1.2	0.0
114	15	67.3	68.5		1.2	0.0
114	20	66.9	68.2		1.2	0.0
114	25	66.6	67.9		1.3	0.0
114	30	66.3	67.5		1.3	0.0
114	35	66.0	67.2		1.3	0.0
114	40	68.4	69.5		1.1	0.0
115	1	67.3	68.9		1.6	0.6
115	5	67.3	68.9		1.7	0.7
115	10	67.2	69.0		1.8	0.8
115	15	67.1	68.9		1.8	0.8
115	20	67.0	68.8		1.8	0.8
115	25	66.9	68.6		1.8	0.8
115	30	66.8	68.5		1.8	0.8
115	35	67.9	69.7		1.8	0.5
115	40	67.8	69.6		1.8	0.5
116	1	69.1	70.8	Y	1.7	0.4
116	5	69.0	70.8	Y	1.8	0.4
116	10	69.0	70.8	Y	1.8	0.5
116	15	68.8	70.6	Y	1.8	0.5
116	20	68.7	70.5	Y	1.8	0.5
116	25	68.5	70.4		1.8	0.5
116	30	68.4	70.2		1.8	0.5
116	35	68.2	70.0		1.8	0.5
116	40	68.0	69.9		1.8	0.5
117	1	69.0	70.8	Y	1.7	0.4
117	5	69.0	70.7	Y	1.7	0.5
117	10	68.9	70.7	Y	1.8	0.5

ExCo Eligibility Test on the Preferred Option

117	15	68.8	70.6	Y	1.8	0.5
117	20	68.6	70.5		1.8	0.5
117	25	68.5	70.3		1.8	0.5
117	30	68.3	70.1		1.8	0.5
117	35	68.2	70.0		1.8	0.5
117	40	68.0	69.8		1.8	0.5
118	1	68.0	69.9		1.9	0.5
118	5	67.9	69.9		1.9	0.5
118	10	67.8	69.9		2.1	0.7
118	15	67.6	69.7		2.1	0.7
118	20	67.4	69.5		2.1	0.7
118	25	67.2	69.3		2.1	0.7
118	30	67.3	69.4		2.1	0.6
118	35	68.9	70.9	Y	2.0	0.4
118	40	68.7	70.7	Y	2.0	0.4
119	1	67.9	69.7		1.7	0.5
119	5	67.9	69.6		1.7	0.5
119	10	67.8	69.6		1.9	0.6
119	15	67.6	69.5		1.9	0.6
119	20	67.4	69.3		1.9	0.6
119	25	67.3	69.1		1.9	0.6
119	30	67.2	69.0		1.8	0.6
119	35	67.7	69.5		1.8	0.5
119	40	67.7	69.6		1.8	0.5
120	1	69.1	70.8	Y	1.7	0.5
120	5	69.1	70.8	Y	1.7	0.5
120	10	68.9	70.7	Y	1.8	0.6
120	15	68.8	70.5	Y	1.8	0.6
120	20	68.5	70.3		1.8	0.6
120	25	68.3	70.1		1.8	0.6
120	30	68.1	69.9		1.8	0.6
120	35	67.9	69.7		1.8	0.5
120	40	67.7	69.5		1.8	0.5
121	1	71.9	73.7	Y	1.8	0.3
121	5	71.8	73.6	Y	1.8	0.3
121	10	71.5	73.3	Y	1.8	0.3
121	15	71.2	73.0	Y	1.8	0.3
121	20	70.9	72.7	Y	1.8	0.3
121	25	70.5	72.4	Y	1.9	0.4
121	30	70.2	72.1	Y	1.9	0.4
121	35	69.9	71.8	Y	1.9	0.3
121	40	69.7	71.5	Y	1.8	0.3
122	1	72.4	74.2	Y	1.8	0.3
122	5	72.2	74.0	Y	1.8	0.3
122	10	71.8	73.7	Y	1.8	0.3
122	15	71.5	73.3	Y	1.8	0.3
122	20	71.1	72.9	Y	1.9	0.3
122	25	70.7	72.5	Y	1.9	0.3
122	30	70.3	72.2	Y	1.9	0.3
122	35	70.0	71.9	Y	1.8	0.3
122	40	69.7	71.6	Y	1.8	0.3
123	1	72.9	74.8	Y	1.9	0.1
123	5	72.6	74.5	Y	1.9	0.1
123	10	72.1	74.0	Y	1.9	0.2
123	15	71.6	73.5	Y	1.9	0.2
123	20	71.1	73.0	Y	1.9	0.2
123	25	70.6	72.5	Y	1.9	0.2
123	30	70.1	72.1	Y	1.9	0.2
123	35	70.4	72.4	Y	1.9	0.1
123	40	70.4	72.3	Y	1.9	0.1
124	1	72.7	74.6	Y	1.9	0.2
124	5	72.4	74.3	Y	1.9	0.2
124	10	71.9	73.8	Y	1.9	0.3
124	15	71.4	73.3	Y	1.9	0.3
124	20	70.9	72.9	Y	1.9	0.3
124	25	70.5	72.4	Y	2.0	0.3
124	30	70.3	72.2	Y	1.9	0.3
124	35	70.1	71.9	Y	1.9	0.3
124	40	69.8	71.6	Y	1.9	0.3
125	1	74.8	76.7	Y	1.9	0.1



ExCo Eligibility Test on the Preferred Option

125	5	74.4	76.3	Y	1.9	0.1	
125	10	73.8	75.7	Y	1.9	0.1	
125	15	73.1	75.0	Y	1.9	0.1	
125	20	72.5	74.4	Y	1.9	0.1	
125	25	72.0	73.9	Y	1.9	0.1	
125	30	71.5	73.4	Y	1.9	0.2	
125	35	71.1	73.0	Y	1.9	0.2	
125	40	70.7	72.6	Y	1.9	0.2	
126	1	74.7	76.5	Y	1.8	0.0	
126	5	74.2	76.1	Y	1.8	0.0	
126	10	73.6	75.5	Y	1.8	0.0	
126	15	72.9	74.8	Y	1.9	0.1	
126	20	72.3	74.2	Y	1.9	0.1	
126	25	71.8	73.6	Y	1.9	0.1	
126	30	71.4	73.2	Y	1.9	0.1	
126	35	71.3	73.2	Y	1.9	0.2	
126	40	70.9	72.8	Y	1.9	0.2	
127	1	70.0	71.9	Y	1.9	0.0	
127	5	69.8	71.7	Y	1.9	0.0	
127	10	69.6	71.5	Y	1.9	0.1	
127	15	69.2	71.1	Y	1.9	0.1	
127	20	68.8	70.8	Y	1.9	0.1	
127	25	68.4	70.4		2.0	0.1	
127	30	68.1	70.0		2.0	0.1	
127	35	68.6	70.4		1.8	0.1	
127	40	68.6	70.4		1.8	0.1	
128	1	69.6	71.5	Y	1.9	0.0	
128	5	69.4	71.3	Y	1.9	0.0	
128	10	69.0	70.9	Y	1.9	0.0	
128	15	68.6	70.5	Y	1.9	0.0	
128	20	68.2	70.1		1.9	0.0	
128	25	67.8	69.7		1.9	0.0	
128	30	67.4	69.3		1.9	0.0	
128	35	67.8	69.5		1.8	0.0	
128	40	68.0	69.7		1.7	0.0	
129	1	71.2	73.0	Y	1.8	0.0	
129	5	70.9	72.8	Y	1.9	0.0	
129	10	70.5	72.4	Y	1.9	0.0	
129	15	70.0	71.9	Y	1.9	0.0	
129	20	69.5	71.4	Y	1.9	0.0	
129	25	69.1	71.0	Y	1.9	0.0	
129	30	68.7	70.5	Y	1.9	0.0	
129	35	68.6	70.4		1.8	0.0	
129	40	68.8	70.5	Y	1.8	0.0	
130	1	73.6	75.4	Y	1.8	0.0	
130	5	73.2	75.1	Y	1.8	0.0	
130	10	72.7	74.5	Y	1.8	0.0	
130	15	72.1	73.9	Y	1.8	0.0	
130	20	71.5	73.4	Y	1.9	0.0	
130	25	71.0	72.8	Y	1.9	0.0	
130	30	70.5	72.4	Y	1.9	0.0	
130	35	70.1	71.9	Y	1.9	0.0	
130	40	69.8	71.7	Y	1.9	0.0	
131	1	73.5	75.4	Y	1.8	0.0	
131	5	73.2	75.0	Y	1.8	0.0	
131	10	72.6	74.5	Y	1.8	0.0	
131	15	72.0	73.9	Y	1.8	0.0	
131	20	71.5	73.3	Y	1.9	0.0	
131	25	70.9	72.8	Y	1.9	0.0	
131	30	70.5	72.3	Y	1.9	0.0	
131	35	70.0	71.9	Y	1.9	0.0	
131	40	69.8	71.7	Y	1.9	0.0	
132	1	64.6	66.2		1.6	0.0	
132	5	64.6	66.2		1.6	0.0	
132	10	64.6	66.2		1.6	0.0	
132	15	64.6	66.2		1.6	0.0	
132	20	64.6	66.2		1.6	0.0	
132	25	64.6	66.2		1.6	0.0	
133	1	66.1	67.8		1.7	0.0	
133	5	66.2	67.8		1.7	0.0	

ExCo Eligibility Test on the Preferred Option

133	10	66.2	67.8		1.7	0.0	
133	15	66.2	67.8		1.6	0.0	
133	20	66.1	67.8		1.6	0.0	
133	25	66.1	67.8		1.6	0.0	
134	1	71.4	73.3	Y	1.8	0.0	
134	5	71.4	73.3	Y	1.8	0.0	
134	10	71.4	73.3	Y	1.8	0.0	
134	15	71.4	73.2	Y	1.8	0.0	
134	20	71.3	73.2	Y	1.8	0.0	
134	25	71.3	73.1	Y	1.8	0.0	

Fiat Counts under the Unmitigated Option

Receiver	Flat Count							>70 dB(A)	No. of Floors		No. of Flats	Total Flats
	1st	2-5	6-10	Floor Level			<70dB(A)		of block			
				11-15	16-20	21-25	26-top flat					
1	69.1	73.6	74.6	74.2	73.6	73.4	73.1	26	1	27	1	26
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0	26	1	27	1	26
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8	26	1	27	1	26
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8	26	1	27	1	26
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7	26	1	27	1	26
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6	26	1	27	1	26
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0	26	1	27	1	26
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1	26	1	27	1	26
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2	27	0	27	1	27
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6	27	0	27	1	27
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2	27	0	27	0	0
12	77.8	77.4	76.8	76.2	75.7	75.2	74.8	27	0	27	1	27
13	77.5	77.2	76.7	76.1	75.6	75.2	74.7	27	0	27	1	27
14	75.8	75.6	75.2	74.8	74.4	73.9	73.5	27	0	27	1	27
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5	27	0	27	1	27
16	76.8	76.6	76.3	75.9	75.5	75.1	74.7	27	0	27	1	27
17	76.9	76.7	76.4	76.0	75.6	75.2	74.8	27	0	27	1	27
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2	27	0	27	1	27
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9	27	0	27	0	0
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2	27	0	27	1	27
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9	25	0	25	1	25
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3	25	0	25	1	25
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9	26	1	27	1	26
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6	27	0	27	1	27
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6	27	0	27	1	27
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1	27	0	27	1	27
27	77.0	77.0	76.7	76.2	75.7	75.2	74.8	27	0	27	0	0
28	76.2	76.2	75.9	75.5	75.1	74.7	74.2	27	0	27	1	27
29	64.0	63.9	63.7	63.5	63.1	62.7	62.4	0	27	27	0	0
30	73.7	73.6	73.5	73.2	72.8	72.4	72.1	27	0	27	1	27
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4	27	0	27	1	27
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8	27	0	27	0	0
33	81.6	81.1	80.2	79.3	78.5	77.9	77.3	27	0	27	1	27
34	81.4	80.9	80.1	79.2	78.4	77.8	77.2	27	0	27	0	0
35	81.4	80.8	79.9	79.1	78.3	77.7	77.1	27	0	27	0	0
36	81.2	80.7	79.8	78.9	78.2	77.6	77.0	27	0	27	1	27
37	47.3	46.9	46.0	45.3	44.6	44.0	43.5	0	27	27	0	0
38	74.5	74.2	73.6	72.9	72.2	71.6	71.0	27	0	27	1	27
39	76.5	76.3	75.9	75.4	74.9	74.5	74.1	33	0	33	1	33
40	78.2	77.9	77.2	76.6	76.0	75.5	75.0	33	0	33	0	0
41	80.9	80.4	79.5	78.6	77.9	77.3	76.8	33	0	33	1	33
42	80.8	80.3	79.4	78.6	77.9	77.3	76.8	33	0	33	0	0
43	80.6	80.2	79.3	78.5	77.8	77.2	76.7	33	0	33	0	0
44	80.6	80.1	79.3	78.5	77.8	77.2	76.7	33	0	33	1	33
45	76.6	76.2	75.4	74.5	73.8	73.1	72.5	33	0	33	0	0
46	74.4	74.1	73.6	72.9	72.3	71.6	71.1	20	13	33	1	20
47	75.4	75.2	74.8	74.3	73.9	73.5	73.1	33	0	33	1	33
48	77.7	77.3	76.7	76.0	75.4	74.9	74.4	33	0	33	0	0
49	80.5	80.1	79.2	78.4	77.7	77.1	76.6	33	0	33	1	33
50	80.4	80.0	79.2	78.4	77.7	77.1	76.6	33	0	33	0	0
51	80.5	80.1	79.3	78.5	77.8	77.2	76.6	27	0	27	0	0
52	80.5	80.2	79.3	78.5	77.8	77.2	76.6	27	0	27	1	27
53	76.8	76.5	75.8	74.9	74.2	73.5	72.8	27	0	27	0	0
54	74.5	74.3	73.8	73.2	72.6	72.0	71.4	15	12	27	1	15
55	77.1	77.3	76.8	76.9	76.3	75.7	75.1	27	0	27	1	27
56	79.8	79.4	78.5	78.6	77.8	77.1	76.5	27	0	27	1	27
57	79.7	79.6	79.6	78.6	77.8	77.1	76.5	27	0	27	0	0
58	80.2	80.9	79.7	78.7	77.8	77.1	76.5	27	0	27	0	0
59	80.9	81.4	80.1	79.0	78.2	77.4	76.8	27	0	27	1	27
60	77.7	78.8	77.6	76.5	75.5	74.7	74.0	27	0	27	0	0
61	74.9	76.6	75.9	75.0	74.2	73.5	72.8	25	2	27	1	25
62	76.5	76.1	77.2	76.3	75.5	74.8	74.2	27	0	27	1	27
63	77.3	76.8	77.9	76.9	76.1	75.4	74.8	27	0	27	0	0
64	79.1	80.0	78.8	77.6	76.9	76.2	75.5	27	0	27	0	0
65	79.7	80.3	79.1	78.0	77.1	76.4	75.7	27	0	27	1	27
66	78.9	79.5	78.3	77.2	76.3	75.5	74.8	27	0	27	0	0
67	76.6	77.8	77.0	76.2	75.4	74.7	74.0	27	0	27	1	27
68	70.8	71.8	71.2	70.4	69.7	69.0	68.4	5	22	27	1	5
69	69.3	70.2	69.6	68.9	68.2	67.6	67.0	0	27	27	0	0
70	67.1	68.7	68.3	67.7	67.1	66.5	66.0	0	27	27	1	0
71	69.3	70.8	70.3	69.6	68.9	68.3	67.7	0	27	27	0	0
72	76.6	77.9	77.2	76.4	75.6	74.9	74.3	27	0	27	1	27
73	78.7	79.4	78.4	77.5	76.7	75.9	75.3	27	0	27	0	0
74	80.5	80.3	79.0	78.0	77.0	76.2	75.6	27	0	27	1	27
75	80.0	79.8	78.6	77.6	76.7	75.9	75.3	27	0	27	0	0
76	79.8	79.5	78.3	77.4	76.5	75.8	75.1	27	0	27	1	27
77	79.8	79.4	78.2	77.2	76.4	75.7	75.0	27	0	27	0	0
78	75.1	75.2	74.6	73.9	73.3	72.8	72.3	25	0	25	1	25
79	76.5	76.4	75.5	74.8	74.1	73.5	73.0	25	0	25	0	0
80	77.8	77.4	76.3	75.5	74.7	74.1	73.5	25	0	25	1	25
81	77.8	77.1	76.0	75.1	74.4	73.8	73.2	25	0	25	0	0
82	80.8	79.5	78.1	77.0	76.2	75.5	74.9	25	0	25	1	25
83	81.0	79.8	78.0	76.9	76.1	75.4	74.8	25	0	25	0	0
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6	25	0	25	1	25
85	77.2	76.6	75.5	74.6	73.8	73.2	72.6	27	0	27	1	27
86	77.8	76.7	75.3	74.3	73.6	73.0	72.4	27	0	27	1	27
87	80.8	79.2	77.7	76.5	75.6	74.9	74.3	27	0	27	0	0
88	80.8	79.2	77.6	76.5	75.6	74.9	74.3	27	0	27	1	27
89	77.3	76.5	75.3	74.4	73.6	72.9	72.3	27	0	27	1	27
90	77.9	76.7	75.3	74.2	73.4	72.6	72.2	27	0	27	0	0
91	80.6	79.0	77.4	76.2	75.3	74.6	74.0	27	0	27	1	27
92	80.4	78.9	77.3	76.2	75.3	74.5	73.9	27	0	27	0	0
93	71.1	71.1	70.9	70.4	70.0	69.6	69.2	20	7	27	1	20
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7	25	2	27	0	0
95	72.6	72.4	72.0	71.4	70.9	70.4	69.9	25	2	27	1	25
96	74.7	74.4	73.8	73.1	72.4	71.9	71.3	27	0	27	0	0
97	74.5	74.5	74.1	73.4	72.7	72.1	71.5	27	0	27	1	27
98	73.9	73.5	72.8	72.0	71.3	70.8	70.3	27	0	27	1	27
99	75.4	74.7	73.5	72.6	71.8	71.2	70.6	27	0	27	1	27
100	78.4	77.3	75.9	74.8	73.9	73.1	72.5	27	0	27	0	0
101	76.4	77.3	75.9	74.7	73.8	73.1	72.5	27	0	27	0	0
102	78.3	77.2	75.8	74.6	73.7	73.0	72.4	27	0	27	1	27
103	78.3	77.1	75.7	74.6	73.7	72.9	72.3	27	0	27	0	0
104	72.0	72.4	72.0	71.6	71.1	70.6	70.2	25	2	27	1	25
105	72.2	72.3	72.0	71.5	71.0	70.5	70.0	25	2	27	1	25
106	70.6	70.8	70.5	70.1	69.7	69.3	68.9	10	17	27	0	0



Preferred mitigation Option with 4.5m Noise Barrier Along Tai Chung Kiu Road							
Receiver	Floor						
	1	5	10	15	20	25	30
1	69.1	73.6	74.6	74.2	73.8	73.4	73.1
2	67.2	73.4	74.6	74.2	73.8	73.4	73.0
3	65.9	71.8	73.1	72.8	72.5	72.1	71.8
4	65.5	71.6	73.2	72.8	72.5	72.1	71.8
5	66.8	72.9	74.3	73.9	73.5	73.1	72.7
6	67.7	72.8	74.1	73.7	73.3	72.9	72.6
7	68.3	71.0	72.4	72.1	71.7	71.4	71.0
8	69.9	70.7	71.1	70.9	70.6	70.4	70.1
9	73.9	74.9	74.4	73.8	73.2	72.6	72.2
10	75.5	75.7	75.0	74.3	73.6	73.1	72.6
11	77.5	77.0	76.4	75.7	75.1	74.6	74.2
12	77.8	77.4	76.8	76.2	75.7	75.2	74.7
13	77.4	77.1	76.6	76.1	75.6	75.1	74.7
14	75.7	75.5	75.2	74.7	74.3	73.9	73.5
15	74.7	74.5	74.2	73.8	73.3	72.9	72.5
16	76.8	76.6	76.3	75.9	75.4	75.0	74.6
17	76.8	76.7	76.4	76.0	75.6	75.2	74.8
18	76.1	76.0	75.7	75.4	75.0	74.6	74.2
19	75.5	75.4	75.2	74.9	74.6	74.3	73.9
20	74.6	74.6	74.4	74.2	73.9	73.6	73.2
21	71.6	71.6	71.6	71.6	71.4	71.2	70.9
22	73.4	73.4	73.2	73.1	72.9	72.6	72.3
23	69.6	70.4	71.8	71.6	71.4	71.2	70.9
24	70.2	71.9	72.7	72.5	72.2	71.9	71.6
25	78.6	78.5	78.0	77.4	76.8	76.2	75.6
26	77.5	77.5	77.2	76.7	76.1	75.6	75.1
27	76.9	76.9	76.6	76.2	75.7	75.2	74.8
28	76.0	76.0	75.9	75.5	75.1	74.7	74.2
29	52.3	60.1	62.2	63.4	63.1	62.8	62.4
30	73.2	73.4	73.3	73.2	72.8	72.4	72.1
31	79.6	79.4	78.9	78.3	77.6	76.9	76.4
32	80.5	80.3	79.6	78.8	78.0	77.4	76.8
33	81.4	81.0	80.1	79.2	78.4	77.7	77.1
34	81.2	80.8	79.9	79.1	78.3	77.6	77.1
35	81.0	80.7	79.8	78.9	78.2	77.5	77.0
36	80.7	80.5	79.6	78.8	78.0	77.4	76.9
37	47.2	46.8	45.9	45.1	44.5	43.9	43.4
38	71.8	73.5	73.4	72.7	72.0	71.4	70.8
39	75.1	76.0	75.9	75.4	74.9	74.5	74.1
40	76.2	77.8	77.2	76.6	76.0	75.5	75.0
41	75.8	80.0	79.1	78.3	77.6	77.0	76.5
42	75.1	79.9	79.0	78.2	77.5	76.9	76.4
43	73.8	79.6	78.8	78.0	77.3	76.7	76.2
44	73.3	79.4	78.6	77.8	77.2	76.6	76.1
45	64.0	74.4	73.6	72.8	72.0	71.3	70.7
46	61.6	70.3	71.8	71.1	70.5	69.9	69.3
47	69.0	73.6	74.4	74.0	73.5	73.1	72.8
48	70.8	76.7	76.2	75.5	75.0	74.5	74.0
49	71.6	78.7	77.9	77.2	76.5	75.9	75.4
50	71.5	78.5	77.8	77.0	76.4	75.8	75.4
51	71.1	78.4	77.6	76.9	76.2	75.7	75.2
52	71.0	78.4	77.6	76.8	76.1	75.6	75.1
53	64.2	73.6	73.0	72.1	71.4	70.7	70.1
54	62.6	70.6	71.2	70.5	69.9	69.3	68.8
55	68.1	75.7	75.1	74.4	73.9	73.4	73.0
56	70.5	78.3	77.3	76.5	75.8	75.2	74.7
57	70.5	78.3	77.3	76.4	75.7	75.1	74.6
58	70.8	78.5	77.2	76.3	75.6	75.0	74.5
59	72.2	78.9	77.5	76.6	75.8	75.2	74.7
60	72.1	76.0	74.7	73.6	72.8	72.1	71.4
61	71.1	72.7	72.9	72.0	71.2	70.5	69.8
62	73.6	74.8	74.4	73.5	72.7	72.1	71.5
63	75.1	75.9	75.1	74.2	73.4	72.8	72.2
64	78.3	77.6	76.2	75.2	74.4	73.7	73.2
65	79.2	78.0	76.5	75.4	74.6	74.0	73.4
66	78.8	77.6	76.2	75.1	74.3	73.5	72.9

67	76.3	75.9	75.0	74.1	73.4	72.7	72.1
68	70.5	70.3	69.6	68.9	68.2	68.0	67.5
69	68.9	68.8	68.2	67.5	66.9	66.8	66.3
70	66.8	66.5	66.1	65.4	64.8	64.3	63.8
71	69.0	68.7	68.0	67.2	66.5	65.9	65.4
72	76.3	75.8	74.8	74.0	73.2	72.7	72.1
73	78.4	77.5	76.2	75.2	74.5	73.9	73.3
74	80.4	79.2	77.7	76.5	75.7	75.0	74.3
75	79.8	78.8	77.4	76.3	75.4	74.8	74.1
76	79.6	78.7	77.4	76.3	75.4	74.7	74.1
77	79.6	78.7	77.3	76.3	75.3	74.6	74.1
78	74.8	74.5	73.8	73.1	72.5	71.9	71.3
79	76.3	75.7	74.8	74.0	73.2	72.6	72.0
80	77.6	76.9	75.7	74.8	74.0	73.3	72.7
81	77.6	76.5	75.2	74.3	73.5	72.8	72.2
82	80.7	79.2	77.7	76.5	75.6	74.9	74.2
83	80.9	79.3	77.7	76.5	75.6	74.9	74.2
84	77.1	76.2	75.0	73.9	73.0	72.3	71.6
85	77.1	76.4	75.2	74.3	73.5	72.8	72.2
86	77.7	76.4	75.0	74.0	73.1	72.5	71.9
87	80.7	79.1	77.5	76.3	75.4	74.6	74.0
88	80.8	79.1	77.5	76.3	75.4	74.6	74.0
89	77.2	76.4	75.2	74.2	73.4	72.7	72.1
90	77.8	76.5	75.1	74.0	73.2	72.5	71.9
91	80.5	78.9	77.3	76.1	75.2	74.4	73.8
92	80.4	78.9	77.2	76.0	75.1	74.4	73.7
93	71.1	71.1	70.9	70.4	70.0	69.5	69.1
94	72.5	72.3	71.8	71.2	70.7	70.2	69.7
95	72.6	72.4	72.0	71.5	70.9	70.4	69.9
96	74.7	74.4	73.8	73.1	72.5	71.9	71.3
97	74.5	74.2	73.6	72.9	72.3	71.7	71.2
98	73.8	73.4	72.7	71.9	71.2	70.6	70.1
99	75.3	74.6	73.4	72.5	71.7	71.0	70.5
100	78.4	77.2	75.8	74.7	73.8	73.0	72.4
101	78.4	77.2	75.8	74.7	73.7	73.0	72.4
102	78.3	77.1	75.7	74.6	73.6	72.9	72.3
103	78.3	77.1	75.6	74.5	73.6	72.8	72.2
104	71.8	71.8	71.4	71.0	70.5	70.0	69.6
105	72.0	72.0	71.6	71.2	70.7	70.2	69.7
106	70.0	70.2	69.9	69.6	69.2	68.7	68.3
107	69.2	69.4	69.1	68.9	68.5	68.0	67.6
108	68.6	68.7	68.5	68.2	67.9	67.5	67.1
109	65.0	67.2	68.3	68.0	68.1	67.8	67.5
110	62.1	65.8	67.5	67.2	67.0	66.8	66.6
111	61.7	66.1	67.9	67.7	67.5	67.4	67.1
112	60.2	64.9	67.0	66.9	66.6	66.4	66.2
113	62.3	66.1	67.5	68.1	67.9	67.6	67.3
114	63.8	66.8	68.1	68.5	68.2	67.9	67.6
115	68.9	68.9	69.0	68.9	68.8	68.6	68.5
116	70.8	70.8	70.8	70.6	70.5	70.4	70.2
117	70.8	70.7	70.7	70.6	70.5	70.3	70.1
118	69.9	69.9	69.9	69.7	69.5	69.3	69.4
119	69.6	69.6	69.6	69.5	69.3	69.1	69.0
120	70.8	70.8	70.7	70.5	70.3	70.1	69.9
121	73.7	73.6	73.3	73.0	72.7	72.4	72.1
122	74.2	74.0	73.7	73.3	72.9	72.5	72.2
123	74.8	74.5	74.0	73.5	73.0	72.5	72.1
124	74.6	74.3	73.8	73.3	72.9	72.4	72.2
125	76.7	76.3	75.7	75.0	74.4	73.9	73.4
126	76.5	76.1	75.5	74.8	74.2	73.6	73.2
127	71.9	71.7	71.5	71.1	70.8	70.4	70.0
128	71.5	71.3	70.9	70.5	70.1	69.7	69.3
129	73.0	72.8	72.4	71.9	71.4	71.0	70.5
130	75.4	75.1	74.5	73.9	73.4	72.8	72.4
131	75.4	75.0	74.5	73.9	73.3	72.8	72.3
132	66.2	66.2	66.2	66.2	66.2	66.2	
133	67.8	67.9	67.9	67.9	67.8	67.8	
134	73.3	73.3	73.3	73.2	73.2	73.1	

2016, no mitigation - 2016 with Preferred Mitigation Option and Mitigation							
on Ground Level Road							
Receiver	Floor Level						
	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.1	0.1	0.0	0.0	0.0	0.1	0.1
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.1	0.1	0.0	0.0	0.0	0.0	0.0
28	0.2	0.1	0.1	0.0	0.0	0.0	0.0
29	11.7	3.8	1.6	0.0	0.0	0.0	0.0
30	0.4	0.3	0.1	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.2	0.1	0.1	0.1	0.1	0.1	0.1
34	0.2	0.1	0.1	0.1	0.1	0.1	0.1
35	0.3	0.1	0.2	0.2	0.2	0.2	0.2
36	0.5	0.2	0.2	0.2	0.2	0.2	0.2
37	0.1	0.1	0.1	0.1	0.1	0.1	0.1
38	2.7	0.7	0.2	0.2	0.2	0.2	0.2
39	1.4	0.3	0.0	0.0	0.0	0.0	0.0
40	2.0	0.0	0.0	0.0	0.0	0.0	0.0
41	5.1	0.4	0.4	0.3	0.3	0.3	0.3
42	5.7	0.4	0.4	0.4	0.4	0.4	0.4
43	6.9	0.6	0.6	0.5	0.5	0.5	0.5
44	7.3	0.7	0.6	0.6	0.6	0.6	0.6
45	12.6	1.8	1.7	1.8	1.8	1.8	1.8
46	12.7	3.8	1.8	1.8	1.8	1.8	1.8
47	6.3	1.6	0.4	0.4	0.3	0.3	0.3
48	6.8	0.6	0.5	0.5	0.4	0.4	0.4
49	8.9	1.4	1.3	1.3	1.3	1.2	1.2
50	9.0	1.5	1.4	1.4	1.3	1.3	1.3
51	9.4	1.7	1.7	1.6	1.6	1.5	1.5
52	9.5	1.8	1.7	1.7	1.7	1.6	1.5
53	12.5	2.9	2.8	2.8	2.8	2.7	2.7
54	11.9	3.7	2.7	2.7	2.7	2.6	2.6
55	8.9	1.6	1.5	1.5	1.4	1.3	1.3
56	9.3	2.1	2.2	2.1	2.0	2.0	1.9
57	9.2	2.2	2.3	2.2	2.1	2.0	1.9
58	9.4	2.4	2.5	2.4	2.3	2.2	2.1
59	8.7	2.5	2.6	2.5	2.3	2.2	2.1
60	5.6	2.7	2.9	2.9	2.8	2.7	2.6
61	3.8	3.9	3.0	3.0	3.0	3.0	3.0
62	2.9	3.3	2.8	2.8	2.8	2.7	2.7
63	2.3	2.8	2.7	2.8	2.7	2.6	2.6
64	0.8	2.4	2.6	2.6	2.5	2.5	2.4
65	0.5	2.4	2.6	2.6	2.5	2.4	2.3



70	0.3	2.2	2.2	2.3	2.3	2.2	2.2
71	0.3	2.2	2.3	2.3	2.3	2.3	2.3
72	0.3	2.2	2.3	2.4	2.4	2.2	2.2
73	0.3	2.0	2.2	2.3	2.2	2.1	2.0
74	0.2	1.1	1.3	1.4	1.4	1.3	1.3
75	0.2	1.0	1.2	1.3	1.3	1.2	1.2
76	0.2	0.8	1.0	1.1	1.2	1.1	1.0
77	0.2	0.7	0.8	1.0	1.0	1.1	1.0
78	0.3	0.7	0.7	0.8	0.8	0.9	0.9
79	0.3	0.7	0.7	0.8	0.9	1.0	1.0
80	0.2	0.5	0.6	0.7	0.8	0.8	0.9
81	0.2	0.6	0.7	0.8	0.9	1.0	1.0
82	0.1	0.3	0.4	0.5	0.5	0.6	0.6
83	0.1	0.3	0.3	0.4	0.5	0.5	0.5
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.1	0.2	0.3	0.3	0.3	0.4	0.4
86	0.1	0.2	0.3	0.4	0.4	0.5	0.5
87	0.1	0.1	0.2	0.2	0.3	0.3	0.3
88	0.1	0.1	0.2	0.2	0.2	0.3	0.3
89	0.1	0.1	0.1	0.1	0.2	0.2	0.2
90	0.1	0.1	0.2	0.2	0.2	0.3	0.3
91	0.1	0.1	0.1	0.1	0.2	0.2	0.2
92	0.1	0.1	0.1	0.1	0.1	0.2	0.2
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	0.0	0.3	0.5	0.5	0.4	0.4	0.4
98	0.1	0.1	0.1	0.1	0.1	0.1	0.1
99	0.1	0.1	0.1	0.1	0.2	0.2	0.2
100	0.0	0.0	0.1	0.1	0.1	0.1	0.1
101	0.0	0.0	0.1	0.1	0.1	0.1	0.1
102	0.0	0.0	0.1	0.1	0.1	0.1	0.1
103	0.0	0.0	0.1	0.1	0.1	0.1	0.1
104	0.2	0.6	0.6	0.6	0.6	0.6	0.6
105	0.2	0.4	0.4	0.3	0.4	0.4	0.4
106	0.6	0.6	0.6	0.5	0.5	0.6	0.6
107	0.7	0.9	0.9	0.8	0.8	0.8	0.8
108	0.6	1.0	1.0	0.9	0.9	0.9	0.9
109	4.3	3.5	2.2	2.2	1.9	1.8	1.8
110	6.0	3.5	1.6	1.6	1.6	1.5	1.4
111	7.3	4.0	2.0	2.0	1.9	1.7	1.7
112	8.3	4.2	2.0	1.8	1.8	1.8	1.7
113	8.1	4.4	2.9	2.0	1.9	1.9	1.9
114	6.4	3.5	2.2	1.5	1.5	1.5	1.4
115	0.0	0.1	0.1	0.1	0.1	0.1	0.1
116	0.0	0.1	0.1	0.1	0.1	0.1	0.1
117	0.0	0.1	0.1	0.1	0.1	0.1	0.1
118	0.1	0.1	0.1	0.1	0.1	0.1	0.1
119	0.1	0.1	0.2	0.1	0.1	0.1	0.1
120	0.1	0.2	0.2	0.2	0.2	0.2	0.2
121	0.0	0.0	0.1	0.1	0.1	0.1	0.1
122	0.0	0.0	0.1	0.1	0.1	0.1	0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.1	0.1	0.1	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Difference between Do Nothing and the Preferred Mitigation plus 4.5 m Barrier on the Ground Level Road							
	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0
28	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0
29	-11.7	-3.9	-1.6	-0.1	0.0	0.0	0.0
30	-0.5	-0.3	-0.2	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32							
33							
34	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
35							
36	-0.7	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
37							
38	-2.8	-0.8	-0.3	-0.2	-0.2	-0.2	-0.2
39	-1.5	-0.4	-0.1	-0.1	-0.1	0.0	0.0
40							
41							
42							
43							
44	-7.4	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5
45	-12.5	-1.6	-1.5	-1.5	-1.4	-1.4	-1.4
46	-12.5	-3.6	-1.5	-1.5	-1.4	-1.4	-1.4
47	-6.4	-1.7	-0.4	-0.4	-0.3	-0.3	-0.3
48							
49							
50							
51							
52	-9.3	-1.4	-1.3	-1.2	-1.2	-1.1	-1.1
53	-12.0	-2.2	-2.0	-1.9	-1.9	-1.9	-1.8
54	-11.3	-3.0	-1.9	-1.9	-1.9	-1.8	-1.8
55							
56							
57							
58	-10.6	-1.9	-1.9	-1.8	-1.7	-1.6	-1.5
59							
60	-6.5	-1.7	-1.8	-1.8	-1.7	-1.6	-1.6
61	-4.8	-2.8	-1.8	-1.8	-1.8	-1.8	-1.8

62	-3.8	-2.1	-1.7	-1.7	-1.7	-1.6	-1.6
63							
64							
65	-0.6	-1.0	-1.2	-1.3	-1.2	-1.2	-1.2
66							
67							
68	-0.7	-0.5	-0.6	-0.6	-0.5	-0.1	0.0
69	-0.7	-0.5	-0.6	-0.6	-0.5	0.0	0.1
70							
71							
72	-0.8	-1.0	-1.1	-1.2	-1.1	-1.0	-0.9
73	-0.6	-0.9	-1.1	-1.2	-1.0	-1.0	-0.9
74							
75							
76	-0.5	-0.4	-0.5	-0.5	-0.6	-0.5	-0.4
77							
78	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
79	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4
80							
81							
82							
83	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
86							
87	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
88	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
89	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
90	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
91							
92	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
98	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
99	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
100							
101	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
102							
103	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
104	-0.3	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2
105	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
106	-0.6	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2
107	-0.9	-0.7	-0.7	-0.5	-0.5	-0.6	-0.6
108	-1.0	-0.8	-0.8	-0.7	-0.7	-0.7	-0.7
109							
110							
111	-7.8	-3.4	-1.4	-1.4	-1.3	-1.1	-1.1
112	-8.4	-3.6	-1.4	-1.2	-1.2	-1.1	-1.1
113	-7.6	-3.7	-2.1	-1.2	-1.1	-1.1	-1.1
114	-6.1	-3.2	-1.7	-1.0	-0.9	-0.9	-0.9
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.1	0.1	0.2	0.2	0.2
116	0.0	0.0	0.1	0.1	0.1	0.1	0.1
117	0.0	0.0	0.1	0.1	0.1	0.1	0.1
118	-0.1	0.0	0.1	0.1	0.1	0.1	0.1
119	-0.1	0.0	0.1	0.1	0.1	0.1	0.1
120	-0.1	0.0	0.1	0.1	0.1	0.1	0.1
121	0.0	0.0	0.0	0.1	0.1	0.1	0.1

122	0.0	0.0	0.0	0.1	0.1	0.1	0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.1	0.1	0.1	0.1	0.1
125	0.0	0.0	0.0	0.0	0.0	0.0	0.1
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2016 with Flyover Unmitigated Scenario - Do Nothing							
Receiver	Floor Level						
	1	5	10	15	20	25	30
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0
33	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
34	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
35	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
36	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0
37	-0.1	0.0	0.1	0.1	0.2	0.2	0.2
38	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
39	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0.0
40	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.0
41	-0.2	-0.1	0.0	0.0	0.0	0.1	0.1
42	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1
43	-0.2	-0.1	0.0	0.1	0.1	0.1	0.1
44	-0.1	0.0	0.0	0.1	0.1	0.1	0.1
45	0.1	0.2	0.3	0.3	0.3	0.4	0.4
46	0.2	0.2	0.3	0.3	0.3	0.4	0.4
47	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
48	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0
49	0.1	0.2	0.2	0.3	0.3	0.3	0.3
50	0.2	0.2	0.3	0.3	0.3	0.3	0.3
51	0.2	0.3	0.4	0.4	0.4	0.4	0.4
52	0.2	0.4	0.4	0.5	0.5	0.5	0.5
53	0.5	0.7	0.8	0.8	0.9	0.9	0.9
54	0.6	0.6	0.7	0.8	0.8	0.8	0.8
55	-0.2	0.4	0.5	0.5	0.5	0.5	0.4
56	-0.9	0.5	0.6	0.6	0.6	0.6	0.6
57	-1.2	0.5	0.6	0.6	0.6	0.6	0.6
58	-1.2	0.5	0.6	0.6	0.6	0.6	0.5
59	-1.0	0.6	0.7	0.7	0.7	0.7	0.6
60	-0.9	1.0	1.1	1.1	1.1	1.1	1.0
61	-1.0	1.1	1.2	1.2	1.2	1.2	1.2
62	-0.9	1.1	1.2	1.2	1.1	1.1	1.1
63	-0.8	1.2	1.2	1.2	1.2	1.1	1.1
64	-0.3	1.3	1.3	1.3	1.2	1.2	1.2
65	-0.1	1.4	1.4	1.3	1.3	1.2	1.2
66	0.1	1.4	1.4	1.4	1.3	1.3	1.3
67	-0.4	1.1	1.2	1.2	1.2	1.1	1.1
68	-0.3	1.0	0.9	0.9	0.9	0.9	0.9
69	-0.3	0.8	0.8	0.8	0.8	0.8	0.8

70	-0.1	1.7	1.7	1.7	1.6	1.6	1.5
71	0.0	1.8	1.7	1.7	1.7	1.6	1.6
72	-0.5	1.2	1.2	1.2	1.2	1.2	1.2
73	-0.3	1.1	1.1	1.1	1.1	1.1	1.1
74	-0.1	0.6	0.7	0.7	0.8	0.8	0.8
75	-0.2	0.5	0.6	0.7	0.7	0.7	0.7
76	-0.3	0.4	0.5	0.6	0.6	0.6	0.6
77	-0.3	0.3	0.5	0.5	0.6	0.6	0.6
78	-0.1	0.4	0.5	0.5	0.6	0.6	0.6
79	-0.1	0.4	0.5	0.5	0.5	0.6	0.6
80	-0.1	0.3	0.4	0.4	0.5	0.5	0.5
81	-0.1	0.3	0.4	0.5	0.5	0.5	0.5
82	0.0	0.2	0.2	0.3	0.3	0.3	0.3
83	0.0	0.1	0.2	0.2	0.3	0.3	0.3
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.2	0.2	0.2	0.2	0.2	0.3
86	0.0	0.1	0.2	0.2	0.2	0.3	0.3
87	0.0	0.1	0.1	0.1	0.1	0.2	0.2
88	0.0	0.1	0.1	0.1	0.1	0.1	0.1
89	0.0	0.1	0.1	0.1	0.1	0.1	0.1
90	0.0	0.1	0.1	0.1	0.1	0.1	0.1
91	0.0	0.0	0.1	0.1	0.1	0.1	0.1
92	0.0	0.0	0.0	0.1	0.1	0.1	0.1
93	0.0	0.0	0.0	0.0	0.0	0.0	0.0
94	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0
96	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97	-0.1	0.3	0.4	0.5	0.4	0.4	0.3
98	0.0	0.0	0.0	0.1	0.1	0.1	0.1
99	0.0	0.0	0.1	0.1	0.1	0.1	0.1
100	0.0	0.0	0.0	0.0	0.0	0.1	0.1
101	0.0	0.0	0.0	0.0	0.0	0.1	0.1
102	0.0	0.0	0.0	0.0	0.0	0.1	0.1
103	0.0	0.0	0.0	0.0	0.0	0.0	0.1
104	-0.1	0.4	0.4	0.4	0.5	0.5	0.5
105	0.0	0.3	0.3	0.4	0.4	0.4	0.4
106	-0.1	0.3	0.3	0.3	0.3	0.3	0.3
107	-0.3	0.2	0.2	0.2	0.2	0.2	0.2
108	-0.5	0.2	0.2	0.2	0.2	0.2	0.2
109	-0.8	0.7	0.7	0.7	0.7	0.7	0.7
110	-0.8	0.4	0.4	0.4	0.4	0.4	0.4
111	-0.5	0.6	0.6	0.6	0.6	0.6	0.6
112	-0.1	0.6	0.6	0.6	0.6	0.6	0.6
113	0.5	0.6	0.8	0.8	0.8	0.8	0.8
114	0.3	0.3	0.5	0.5	0.5	0.5	0.5
115	0.0	0.1	0.3	0.3	0.3	0.3	0.3
116	0.0	0.1	0.2	0.2	0.2	0.2	0.2
117	0.0	0.0	0.2	0.2	0.2	0.2	0.2
118	0.0	0.1	0.2	0.2	0.2	0.2	0.2
119	0.0	0.1	0.2	0.2	0.2	0.2	0.2
120	0.1	0.1	0.3	0.3	0.3	0.3	0.3
121	0.0	0.0	0.1	0.1	0.1	0.1	0.1
122	0.0	0.0	0.1	0.1	0.1	0.1	0.1
123	0.0	0.0	0.0	0.0	0.0	0.0	0.0
124	0.0	0.0	0.1	0.1	0.1	0.1	0.1
125	0.0	0.0	0.0	0.0	0.0	0.0	0.1
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0	0.0
129	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0
131	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132	0.0	0.0	0.0	0.0	0.0	0.0	0.0
133	0.0	0.0	0.0	0.0	0.0	0.0	0.0
134	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX C  
FUGITIVE DUST MODELLING RESULTS



Table C1 EIA Studies for Flyover at Tai Chung Kiu Rd/Siu Lek Yuen Road, Air Quality Assessment - Calculations of Dust Emission Factors

Estimated total construction area (sq.m)

5982

Item	Description		Remarks
1	General Construction Activities		
	TSP emission factor (Mg/hectare/month)	2.69	from AP-42 5th edition (S13.2.3.3)
	Percentage area actively operating (%)	100	
	Assuming no dust mitigation:-		
	TSP emission factor (kg/day)	54	
	TSP emission factor (g/sq.m/sec)	1.0378E-04	
	Assuming 50% dust reduction:-		for twice daily watering with complete coverage (AP-42 4th edition S11.2.4.4)
	TSP emission factor (kg/day)	27	calculated
	TSP emission factor (g/sq.m/sec)	5.1890E-05	calculated
2	Site Erosion		
	TSP emission factor (Mg/hectare/yr)	0.85	from AP-42 5th edition (Table 11.9-4)
	Percentage area actively operating (%)	100	
	Assuming no dust mitigation:-		
	TSP emission factor (kg/day)	1.393	
	TSP emission factor (g/sq.m/sec)	2.6953E-06	
	Assuming 50% dust reduction:-		for twice daily watering with complete coverage (AP-42 4th edition S11.2.4.4)
	TSP emission factor (kg/day)	1	calculated
	TSP emission factor (g/sq.m/sec)	1.3477E-06	calculated

C-1





Appendix C  
Sample FDM Output File

TYPE	ENTERED EMIS. RATE (G/SEC, G/SEC/M OR G/SEC/M**2)	TOTAL EMISSION RATE (G/SEC)	WIND SPEED FAC.	X1 (M)	Y1 (M)	X2 (M)	Y2 (M)	HEIGHT (M)	WIDTH (M)
7.00	2	-1.000000000	-1.00000	0.000	838734.	827603.	838806.	827680.	0.50
11.00	2	-1.000000000	-1.00000	0.000	838804.	827682.	838841.	827718.	0.50
1.00	2	-1.000000000	-1.00000	0.000	838741.	827629.	838771.	827662.	0.50
4.00	2	-1.000000000	-1.00000	0.000	838771.	827662.	838795.	827689.	0.50
7.00	2	-1.000000000	-1.00000	0.000	838795.	827689.	838846.	827744.	0.50
2.00	2	-1.000000000	-1.00000	0.000	838803.	827658.	838843.	827700.	0.50
7.00	2	-1.000000000	-1.00000	0.000	838734.	827603.	838806.	827680.	0.50
11.00	2	-1.000000000	-1.00000	0.000	838804.	827682.	838841.	827718.	0.50
1.00	2	-1.000000000	-1.00000	0.000	838741.	827629.	838771.	827662.	0.50
4.00	2	-1.000000000	-1.00000	0.000	838771.	827662.	838795.	827689.	0.50
7.00	2	-1.000000000	-1.00000	0.000	838795.	827689.	838846.	827744.	0.50
2.00	2	-1.000000000	-1.00000	0.000	838803.	827658.	838843.	827700.	0.50

SHORT DISTANCE (5,000 M) MASS CONSERVATION CORRECTION FACTORS USED

1  
8784 HOUR AVERAGE FOR HOUR ENDING 8784  
CONCENTRATIONS IN MICROGRAMS/M\*\*3  
AVERAGE EMISSIONS FOR THIS PERIOD = 0.84997E-01 GRAMS/SEC  
(838766., 827596., 14.383) (838805., 827634., 17.334) (838851., 827681., 7.804)  
(838890., 827721., 2.685) (838924., 827734., 1.271) (838959., 827736., 0.752)  
(839005., 827698., 0.553) (839039., 827781., 0.274) (838974., 827813., 0.607)

1  
8784 HOUR AVERAGE FOR HOUR ENDING 8784  
DEPOSITION RATE IN MICROGRAMS/M\*\*2/SEC  
(838766., 827596., \*\*\*\*\*) (838805., 827634., \*\*\*\*\*) (838851., 827681., \*\*\*\*\*)  
(838890., 827721., \*\*\*\*\*) (838924., 827734., \*\*\*\*\*) (838959., 827736., \*\*\*\*\*)  
(839005., 827698., \*\*\*\*\*) (839039., 827781., \*\*\*\*\*) (838974., 827813., \*\*\*\*\*)  
\*\*\*\*\* NOTE: FOR RECEPTORS WITH Z UNEQUAL 0, DEPOSITION IS SET TO 999999.999

TOP 50 TABLE FOR 1 HOUR AVERAGES

RANK	RECEPTOR	X-COORDINATE	Y-COORDINATE	ENDING HOUR	CONCENTRATION	DEPOSITION
1	2	838805.0	827634.0	2144	459.0482	6.3999
2	2	838805.0	827634.0	1976	458.2303	6.3914
3	2	838805.0	827634.0	6178	457.4057	6.6107
4	2	838805.0	827634.0	32	456.9462	6.4520
5	2	838805.0	827634.0	1044	454.9602	6.1311
6	2	838805.0	827634.0	2529	453.6911	6.5275
7	2	838805.0	827634.0	5627	453.0376	6.6138
8	2	838805.0	827634.0	4594	452.9575	6.3804
9	2	838805.0	827634.0	1259	450.7418	6.3891
10	2	838805.0	827634.0	3826	449.4883	6.5552
11	2	838805.0	827634.0	1282	431.3208	6.2295
12	2	838805.0	827634.0	3251	430.2212	6.3788
13	2	838805.0	827634.0	1041	412.0848	6.0116
14	2	838805.0	827634.0	8408	412.0263	6.0196
15	2	838805.0	827634.0	6584	410.8329	6.1842
16	2	838805.0	827634.0	4113	410.6155	6.2143

Appendix C  
Sample FDM Output File

17	2	838805.0	827634.0	5576	410.5618	6.2218
18	3	838851.0	827681.0	3082	402.4518	6.4849
19	3	838851.0	827681.0	3922	397.3870	6.5460
20	3	838851.0	827681.0	6152	397.0389	6.5736
21	3	838851.0	827681.0	106	389.9471	6.3468
22	2	838805.0	827634.0	8652	389.6837	5.1059
23	3	838851.0	827681.0	107	388.8466	6.1067
24	2	838805.0	827634.0	3992	387.3560	5.9135
25	3	838851.0	827681.0	8651	384.6523	6.2485
26	3	838851.0	827681.0	5674	380.9564	6.3339
27	3	838851.0	827681.0	6179	375.8500	6.1060
28	3	838851.0	827681.0	3923	366.2739	7.5021
29	3	838851.0	827681.0	2316	362.5732	7.2720
30	2	838805.0	827634.0	7644	361.1482	6.6352
31	2	838805.0	827634.0	5628	360.3250	6.7863
32	1	838766.0	827596.0	1376	356.5505	4.0276
33	1	838766.0	827596.0	4089	354.3021	4.2745
34	3	838851.0	827681.0	7976	354.2444	5.5136
35	3	838851.0	827681.0	5170	353.2199	5.6675
36	3	838851.0	827681.0	1258	349.9834	5.5562
37	1	838766.0	827596.0	3200	348.7568	3.9799
38	1	838766.0	827596.0	8652	344.8092	4.1850
39	1	838766.0	827596.0	7832	342.5677	3.7861
40	3	838851.0	827681.0	7305	338.1561	5.4812
41	3	838851.0	827681.0	1280	337.5150	5.1581
42	3	838851.0	827681.0	947	337.4276	5.1709
43	3	838851.0	827681.0	1785	336.9545	5.2407
44	3	838851.0	827681.0	6128	336.4165	5.3204
45	3	838851.0	827681.0	4835	336.2173	5.3500
46	2	838805.0	827634.0	968	332.3130	5.2917
47	2	838805.0	827634.0	1569	331.8288	5.3595
48	2	838805.0	827634.0	3944	331.5838	5.5774
49	2	838805.0	827634.0	6105	331.3266	5.6278
50	2	838805.0	827634.0	1112	330.9592	5.2442

1

HIGHEST AND SECOND HIGHEST VALUES FOR 1 HOUR AVERAGES

RECEPTOR ENDING HOUR	X-COORDINATE DEPOSITION	Y-COORDINATE	HIGHEST VALUE	ENDING HOUR	DEPOSITION	SECOND HIGH
1	838766.0	827596.0	356.5505	1376.	4.0276	354.3021
4089.	4.2745					
2	838805.0	827634.0	459.0482	2144.	6.3999	458.2303
1976.	6.3914					
3	838851.0	827681.0	402.4518	3082.	6.4849	397.3870
3922.	6.5460					
4	838890.0	827721.0	328.4897	2099.	4.3168	317.5273
6560.	4.2923					
5	838924.0	827734.0	177.3626	2099.	1.9173	169.2103
5961.	2.1439					
6	838959.0	827736.0	135.7700	2099.	1.2340	127.0582
6560.	1.2036					
7	839005.0	827698.0	107.1952	4305.	0.8930	106.5986
1280.	0.8303					
8	839039.0	827781.0	65.4892	5961.	0.6091	51.6910
2985.	0.4520					
9	838974.0	827813.0	102.0707	5097.	1.0247	94.3966
5120.	2.0898					

1

TOP 50 TABLE FOR 24 HOUR AVERAGES

RANK	RECEPTOR	X-COORDINATE	Y-COORDINATE	ENDING HOUR	CONCENTRATION	DEPOSITION
1	2	838805.0	827634.0	1056	83.7858	1.3929

Appendix C  
Sample FDM Output File

2	2	838805.0	827634.0	984	79.8452	1.5017
3	2	838805.0	827634.0	48	73.9781	1.3192
4	2	838805.0	827634.0	3840	68.1887	1.3969
5	2	838805.0	827634.0	888	66.2139	1.5379
6	2	838805.0	827634.0	1272	65.1308	1.2615
7	2	838805.0	827634.0	8448	63.0776	1.5294
8	1	838766.0	827596.0	1056	60.9550	1.0031
9	1	838766.0	827596.0	984	60.1900	1.1148
10	2	838805.0	827634.0	432	60.0893	1.4987
11	2	838805.0	827634.0	8424	59.8381	1.2996
12	2	838805.0	827634.0	3912	59.1189	1.1982
13	2	838805.0	827634.0	3264	57.9934	1.0682
14	2	838805.0	827634.0	5952	57.9921	1.3636
15	3	838851.0	827681.0	5952	57.4946	1.4362
16	2	838805.0	827634.0	6528	56.9380	1.4590
17	1	838766.0	827596.0	48	55.0781	0.9641
18	2	838805.0	827634.0	5640	54.2646	1.0019
19	3	838851.0	827681.0	5784	53.0178	1.5679
20	2	838805.0	827634.0	5472	52.9167	1.3454
21	2	838805.0	827634.0	456	52.2819	1.2383
22	2	838805.0	827634.0	1584	51.4458	1.3037
23	2	838805.0	827634.0	1608	51.3741	1.1258
24	1	838766.0	827596.0	888	50.9238	1.1874
25	2	838805.0	827634.0	6192	50.8305	0.9163
26	2	838805.0	827634.0	7440	50.5782	1.1905
27	1	838766.0	827596.0	3840	50.2247	1.0999
28	2	838805.0	827634.0	2472	50.1350	1.1033
29	1	838766.0	827596.0	8448	49.6780	1.2090
30	2	838805.0	827634.0	2712	49.6428	1.4236
31	2	838805.0	827634.0	7848	49.3713	1.1627
32	3	838851.0	827681.0	3912	49.2306	1.0116
33	2	838805.0	827634.0	3216	49.1405	1.2448
34	2	838805.0	827634.0	7584	49.0230	1.2484
35	1	838766.0	827596.0	7440	48.8529	1.0881
36	2	838805.0	827634.0	7704	48.2734	1.3454
37	1	838766.0	827596.0	8424	48.2706	1.0938
38	1	838766.0	827596.0	3216	47.9351	1.0940
39	3	838851.0	827681.0	5832	47.8430	1.6459
40	2	838805.0	827634.0	2280	47.4241	1.1715
41	1	838766.0	827596.0	1272	46.9900	0.9700
42	3	838851.0	827681.0	2328	46.8787	1.0591
43	2	838805.0	827634.0	1320	46.0368	1.1371
44	1	838766.0	827596.0	3912	46.0181	0.9235
45	2	838805.0	827634.0	8184	45.9775	0.8861
46	2	838805.0	827634.0	2136	45.7898	1.2798
47	1	838766.0	827596.0	7272	45.3066	1.1819
48	1	838766.0	827596.0	7968	45.2000	1.0901
49	2	838805.0	827634.0	8088	45.1455	1.2777
50	3	838851.0	827681.0	1584	44.9055	1.3096

1

HIGHEST AND SECOND HIGHEST VALUES FOR 24 HOUR AVERAGES

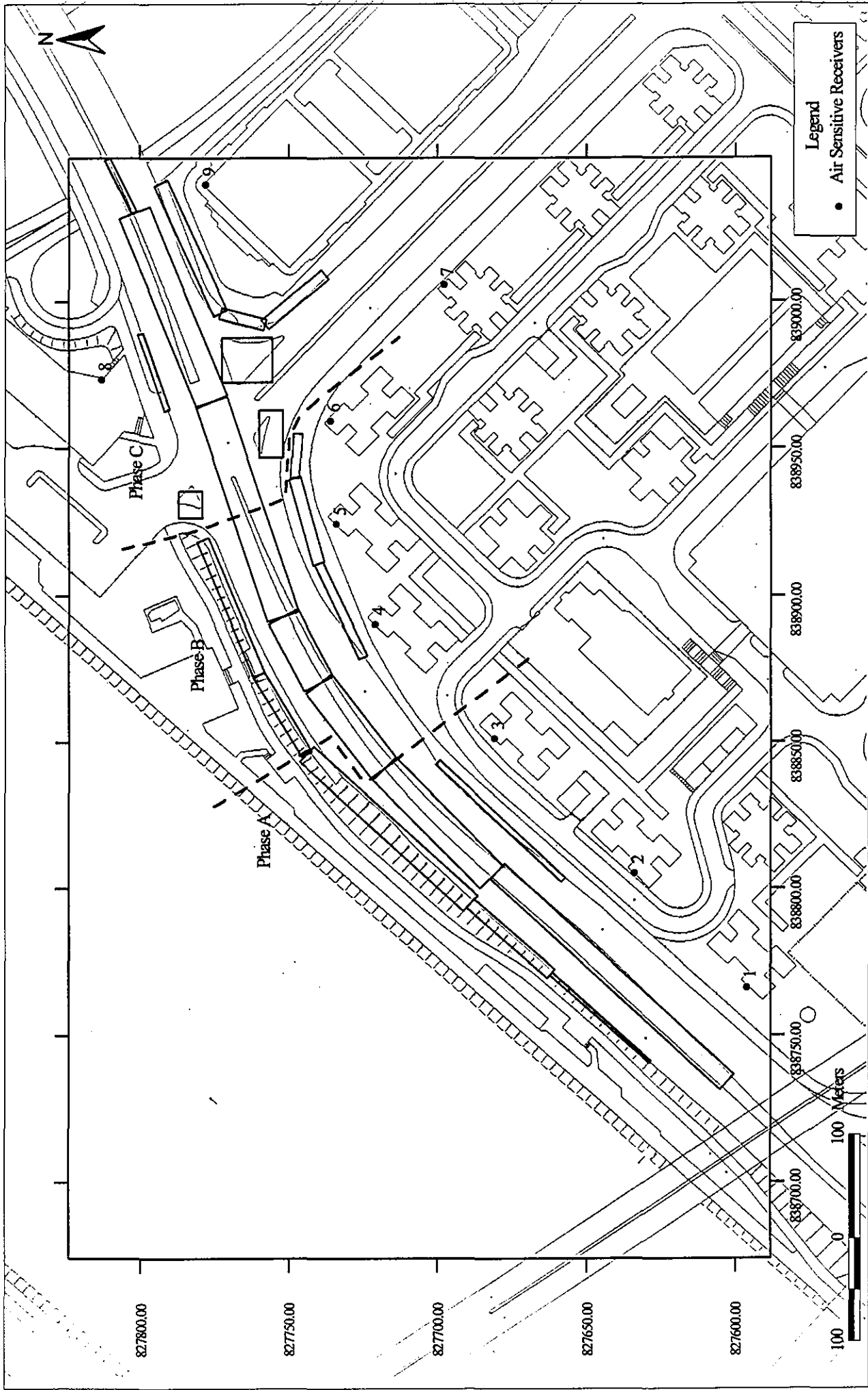
RECEPTOR ENDING HOUR	X-COORDINATE DEPOSITION	Y-COORDINATE	HIGHEST VALUE	ENDING HOUR	DEPOSITION	SECOND HIGH
1	838766.0	827596.0	60.9550	1056.	1.0031	60.1900
984.	1.1148					
2	838805.0	827634.0	83.7858	1056.	1.3929	79.8452
984.	1.5017					
3	838851.0	827681.0	57.4946	5952.	1.4362	53.0178
5784.	1.5679					
4	838890.0	827721.0	32.6773	5976.	0.9678	16.8422
5856.	0.7080					
5	838924.0	827734.0	18.8879	5976.	0.5186	7.9851
3000.	0.1192					
6	838959.0	827736.0	11.2960	5976.	0.2969	5.6574
2112.	0.0514					
7	839005.0	827698.0	6.0878	5184.	0.0713	5.7488

Appendix C  
Sample FDM Output File

4848.	0.0742					
8	839039.0	827781.0	6.2721	5976.	0.1475	2.6743
3000.	0.0301					
9	838974.0	827813.0	9.1249	6000.	0.3583	7.4139
5112.	0.1366					

DATE AT END OF RUN: 12/02/97	TIME AT END OF RUN: 09:37:00.85
ELAPSED TIME FOR THIS RUN:	0.29621E+03 SECONDS
OR 0 HOURS 4 MINUTES	56.21 SECONDS





Legend  
 • Air Sensitive Receivers

PROJECT NO		DATE	
DESIGNED		DRAWING NO	
B180		Fanny Lau	
CES (ASIA) LIMITED		Dec. 1997	

Schematic Diagram of the Modelled Construction Area and Locations of the Representative ASRs

TITLE

**CES**  
 環科

APPENDIX D  
CONSTRUCTION NOISE DATA

Construction Task - General Road Widening (no mitigation)

Sensitive Reciever	Distance (m)	Tasks	SPL of equipment used			Total SPL at NSR
NSR 1	257	Excavation 1	45.8	54.8		58.3
	257	Excavation 2	55.8	60.8		65.0
	257	Backfilling	55.8	48.8		59.6
	257	Placing conc	52.8	56.8	38.8	61.3
NSR 2	207	Excavation 1	47.7	56.7		60.2
	207	Excavation 2	57.7	62.7		66.9
	207	Backfilling	57.7	50.7		61.5
	207	Placing conc	54.7	58.7	40.7	63.2
NSR3	178	Excavation 1	49.0	58.0		61.5
	178	Excavation 2	59.0	64.0		68.2
	178	Backfilling	59.0	52.0		62.8
	178	Placing conc	56.0	60.0	42.0	64.5
NSR4	120	Excavation 1	52.4	61.4		64.9
	120	Excavation 2	62.4	67.4		71.6
	120	Backfilling	62.4	55.4		66.2
	120	Placing conc	59.4	63.4	45.4	67.9
NSR5	102	Excavation 1	53.8	62.8		66.4
	102	Excavation 2	63.8	68.8		73.0
	102	Backfilling	63.8	56.8		67.6
	102	Placing conc	60.8	64.8	46.8	69.3
NSR6	65	Excavation 1	57.7	66.8		70.3
	65	Excavation 2	67.7	72.7		76.9
	65	Backfilling	67.7	60.7		71.5
	65	Placing conc	64.7	68.7	50.7	73.2
NSR 7	21	Excavation 1	67.6	76.6		80.1
	21	Excavation 2	77.6	82.6		86.7
	21	Backfilling	77.6	70.6		81.3
	21	Placing conc	74.6	78.6	60.6	83.1
NSR 8	20	Excavation 1	68.0	77.0		80.5
	20	Excavation 2	78.0	83.0		87.2
	20	Backfilling	78.0	71.0		81.8
	20	Placing conc	75.0	79.0	61.0	83.5
NSR9	20	Excavation 1	68.0	77.0		80.5
	20	Excavation 2	78.0	83.0		87.2
	20	Backfilling	78.0	71.0		81.8
	20	Placing conc	75.0	79.0	61.0	83.5
NSR10	63	Excavation 1	58.0	67.0		70.5
	63	Excavation 2	68.0	73.0		77.2
	63	Backfilling	68.0	61.0		71.8
	63	Placing conc	65.0	69.0	51.0	73.5
NSR11	38	Excavation 1	62.4	71.4		74.9
	38	Excavation 2	72.4	77.4		81.6
	38	Backfilling	72.4	65.4		76.2

Construction Task - General Road Widening (no mitigation)

	38	Placing conc	69.4	73.4	55.4	77.9	#
NSR 12	29	Excavation 1	64.8	73.8		77.3	#
	29	Excavation 2	74.8	79.8		83.9	#
	29	Backfilling	74.8	67.8		78.5	#
	29	Placing conc	71.8	75.8	57.8	80.3	#
NSR 13	13	Excavation 1	71.7	80.7		84.2	#
	13	Excavation 2	81.7	86.7		90.9	#
	13	Backfilling	81.7	74.7		85.5	#
	13	Placing conc	78.7	82.7	64.7	87.2	#
NSR14	61	Excavation 1	58.3	67.3		70.8	#
	61	Excavation 2	68.3	73.3		77.5	#
	61	Backfilling	68.3	61.3		72.1	#
	61	Placing conc	65.3	69.3	51.3	73.8	#
NSR 15	60	Excavation 1	58.4	67.4		71.0	#
	60	Excavation 2	68.4	73.4		77.6	#
	60	Backfilling	68.4	61.4		72.2	#
	60	Placing conc	65.4	69.4	51.4	73.9	#
NSR 16	114	Excavation 1	52.9	61.9		65.4	#
	114	Excavation 2	62.9	67.9		72.1	#
	114	Backfilling	62.9	55.9		66.7	#
	114	Placing conc	59.9	63.9	45.9	68.4	#
NSR 17	163	Excavation 1	49.8	58.8		62.3	#
	163	Excavation 2	59.8	64.8		68.9	#
	163	Backfilling	59.8	52.8		63.5	#
	163	Placing conc	56.8	60.8	42.8	65.3	#
NSR 18	218	Excavation 1	47.2	56.2		59.8	#
	218	Excavation 2	57.2	62.2		66.4	#
	218	Backfilling	57.2	50.2		61.0	#
	218	Placing conc	54.2	58.2	40.2	62.7	#
NSR 19	252	Excavation 1	46.0	55.0		58.5	#
	252	Excavation 2	56.0	61.0		65.2	#
	252	Backfilling	56.0	49.0		59.8	#
	252	Placing conc	53.0	57.0	39.0	61.5	#
NSR 20	92	Excavation 1	54.7	63.7		67.2	#
	92	Excavation 2	64.7	69.7		73.9	#
	92	Backfilling	64.7	57.7		68.5	#
	92	Placing conc	61.7	65.7	47.7	70.2	#
NSR 21	135	Excavation 1	51.4	60.4		63.9	#
	135	Excavation 2	61.4	66.4		70.6	#
	135	Backfilling	61.4	54.4		65.2	#
	135	Placing conc	58.4	62.4	44.4	66.9	#
NSR 22	290	Excavation 1	44.8	53.8		57.3	#
	290	Excavation 2	54.8	59.8		63.9	#
	290	Backfilling	54.8	47.8		58.5	#
	290	Placing conc	51.8	55.8	37.8	60.3	#

Sensitive Receiver	Distance (m)	Tasks	SPL of equipment used			Total SPL at NSR
NSR 1	430	Excavation 1	41.3	50.3		53.9
		Excavation 2	34.3	51.3	51.3	57.4
		Diversion	51.3	34.3		54.4
		Backfilling	51.3	44.3		55.1
		Placing conc	48.3	55.3	34.3	59.2
NSR 2	382	Excavation 1	42.4	51.4		54.9
		Excavation 2	35.4	52.4	52.4	58.4
		Diversion	52.4	35.4		55.4
		Backfilling	52.4	45.4		56.1
		Placing conc	49.4	56.4	35.4	60.2
NSR3	353	Excavation 1	43.0	52.1		55.6
		Excavation 2	36.0	53.0	53.0	59.1
		Diversion	53.0	36.0		56.1
		Backfilling	53.0	46.0		56.8
		Placing conc	50.0	57.1	36.0	60.9
NSR4	296	Excavation 1	44.6	53.6		57.1
		Excavation 2	37.6	54.6	54.6	60.6
		Diversion	54.6	37.6		57.7
		Backfilling	54.6	47.6		58.4
		Placing conc	51.6	58.6	37.6	62.4
NSR5	272	Excavation 1	45.3	54.3		57.8
		Excavation 2	38.3	55.3	55.3	61.4
		Diversion	55.3	38.3		58.4
		Backfilling	55.3	48.3		59.1
		Placing conc	52.3	59.3	38.3	63.1
NSR6	138	Excavation 1	51.2	60.2		63.7
		Excavation 2	44.2	61.2	61.2	67.3
		Diversion	61.2	44.2		64.3
		Backfilling	61.2	54.2		65.0
		Placing conc	58.2	65.2	44.2	69.0
NSR 7	108	Excavation 1	53.3	62.3		65.9
		Excavation 2	46.3	63.3	63.3	69.4
		Diversion	63.3	46.3		66.4
		Backfilling	63.3	56.3		67.1
		Placing conc	60.3	67.3	46.3	71.2
NSR 8	62	Excavation 1	58.2	67.2		70.7
		Excavation 2	51.2	68.2	68.2	74.2
		Diversion	68.2	51.2		71.2
		Backfilling	68.2	61.2		71.9
		Placing conc	65.2	72.2	51.2	76.0
NSR9	20	Excavation 1	68.0	77.0		80.5
		Excavation 2	61.0	78.0	78.0	84.0
		Diversion	78.0	61.0		81.1
		Backfilling	78.0	71.0		81.8
		Placing conc	75.0	82.0	61.0	85.8
NSR10	63	Excavation 1	58.0	67.0		70.5
		Excavation 2	51.0	68.0	68.0	74.1
		Diversion	68.0	51.0		71.1
		Backfilling	68.0	61.0		71.8
		Placing conc	65.0	72.0	51.0	75.8
NSR11	38	Excavation 1	62.4	71.4		74.9
		Excavation 2	55.4	72.4	72.4	78.5
		Diversion	72.4	55.4		75.5
		Backfilling	72.4	65.4		76.2

		Placing conc	69.4	76.4	55.4	80.2
NSR 12	29	Excavation 1	64.8	73.8		77.3
		Excavation 2	57.8	74.8	74.8	80.8
		Diversion	74.8	57.8		77.8
		Backfilling	74.8	67.8		78.5
		Placing conc	71.8	78.8	57.8	82.6
NSR 13	27	Excavation 1	65.4	74.4		77.9
		Excavation 2	58.4	75.4	75.4	81.4
		Diversion	75.4	58.4		78.5
		Backfilling	75.4	68.4		79.2
		Placing conc	72.4	79.4	58.4	83.2
NSR14	77	Excavation 1	56.3	65.3		68.8
		Excavation 2	49.3	66.3	66.3	72.3
		Diversion	66.3	49.3		69.4
		Backfilling	66.3	59.3		70.1
		Placing conc	63.3	70.3	49.3	74.1
NSR 15	79	Excavation 1	56.0	65.1		68.6
		Excavation 2	49.0	66.0	66.0	72.1
		Diversion	66.0	49.0		69.1
		Backfilling	66.0	59.0		69.8
		Placing conc	63.0	70.1	49.0	73.9
NSR 16	133	Excavation 1	51.5	60.5		64.0
		Excavation 2	44.5	61.5	61.5	67.6
		Diversion	61.5	44.5		64.6
		Backfilling	61.5	54.5		65.3
		Placing conc	58.5	65.5	44.5	69.4
NSR 17	182	Excavation 1	48.8	57.8		61.3
		Excavation 2	41.8	58.8	58.8	64.9
		Diversion	58.8	41.8		61.9
		Backfilling	58.8	51.8		62.6
		Placing conc	55.8	62.8	41.8	66.6
NSR 18	237	Excavation 1	46.5	55.5		59.0
		Excavation 2	39.5	56.5	56.5	62.6
		Diversion	56.5	39.5		59.6
		Backfilling	56.5	49.5		60.3
		Placing conc	53.5	60.5	39.5	64.3
NSR 19	271	Excavation 1	45.3	54.4		57.9
		Excavation 2	38.3	55.3	55.3	61.4
		Diversion	55.3	38.3		58.4
		Backfilling	55.3	48.3		59.1
		Placing conc	52.3	59.4	38.3	63.2
NSR 20	159	Excavation 1	50.0	59.0		62.5
		Excavation 2	43.0	60.0	60.0	66.0
		Diversion	60.0	43.0		63.1
		Backfilling	60.0	53.0		63.8
		Placing conc	57.0	64.0	43.0	67.8
NSR 21	191	Excavation 1	48.4	57.4		60.9
		Excavation 2	41.4	58.4	58.4	64.4
		Diversion	58.4	41.4		61.5
		Backfilling	58.4	51.4		62.2
		Placing conc	55.4	62.4	41.4	66.2
NSR 22	361	Excavation 1	42.8	51.9		55.4
		Excavation 2	35.8	52.8	52.8	58.9
		Diversion	52.8	35.8		55.9
		Backfilling	52.8	45.8		56.6
		Placing conc	49.8	56.9	35.8	60.7

Sensitive Receiver	Distance (m)		Tasks	SPL of equipment used					Total SPL at NSR
NSR 1	667	Temp. works	Temp works	47.5	37.5	30.5	47.5		53.8
	667	Piling works	Excavation 1	47.5	50.5	50.5			57.5
	667	Piling works	Excavation 2	47.5	52.5				56.7
	667	Piling works	Excavation 3	47.5	50.5	44.5	30.5	38.5	56.1
	667	Piling works	placing conc	47.5	50.5	44.5	48.5	30.5	57.3
	667	pile cap	Excavation 1	37.5	46.5				50.0
	667	pile cap	Excavation 2	47.5	52.5				56.7
	667	pile cap	Falsework	47.5	30.5	38.5			51.1
	667	pile cap	Placing conc	47.5	44.5	30.5	51.5		56.6
	667	pier & super.	falsework	47.5	30.5				50.6
	667	pier & super.	placing conc	44.5	44.5	30.5	51.5		56.0
	NSR 2	624	Temp. works	Temp works	48.1	38.1	31.1	48.1	
624		Piling works	Excavation 1	48.1	51.1	51.1			58.1
624		Piling works	Excavation 2	48.1	53.1				57.3
624		Piling works	Excavation 3	48.1	51.1	45.1	31.1	39.1	56.7
624		Piling works	placing conc	48.1	51.1	45.1	49.1	31.1	57.9
624		pile cap	Excavation 1	38.1	47.1				50.6
624		pile cap	Excavation 2	48.1	53.1				57.3
624		pile cap	Falsework	48.1	31.1	39.1			51.7
624		pile cap	Placing conc	48.1	45.1	31.1	52.1		57.2
624		pier & super.	falsework	48.1	31.1				51.2
624		pier & super.	placing conc	45.1	45.1	31.1	52.1		56.6
NSR 3		594	Temp. works	Temp works	48.5	38.5	31.5	48.5	
	594	Piling works	Excavation 1	48.5	51.5	51.5			58.5
	594	Piling works	Excavation 2	48.5	53.5				57.7
	594	Piling works	Excavation 3	48.5	51.5	45.5	31.5	39.5	57.1
	594	Piling works	placing conc	48.5	51.5	45.5	49.5	31.5	58.3
	594	pile cap	Excavation 1	38.5	47.5				51.0
	594	pile cap	Excavation 2	48.5	53.5				57.7
	594	pile cap	Falsework	48.5	31.5	39.5			52.1
	594	pile cap	Placing conc	48.5	45.5	31.5	52.5		57.6
	594	pier & super.	falsework	48.5	31.5				51.6
	594	pier & super.	placing conc	45.5	45.5	31.5	52.5		57.0
	NSR 4	542	Temp. works	Temp works	49.3	39.3	32.3	49.3	
542		Piling works	Excavation 1	49.3	52.3	52.3			59.3
542		Piling works	Excavation 2	49.3	54.3				58.5
542		Piling works	Excavation 3	49.3	52.3	46.3	32.3	40.3	57.9
542		Piling works	placing conc	49.3	52.3	46.3	50.3	32.3	59.1
542		pile cap	Excavation 1	39.3	48.3				51.8
542		pile cap	Excavation 2	49.3	54.3				58.5
542		pile cap	Falsework	49.3	32.3	40.3			52.9
542		pile cap	Placing conc	49.3	46.3	32.3	53.3		58.4
542		pier & super.	falsework	49.3	32.3				52.4
542		pier & super.	placing conc	46.3	46.3	32.3	53.3		57.8
NSR 5		514	Temp. works	Temp works	49.8	39.8	32.8	49.8	
	514	Piling works	Excavation 1	49.8	52.8	52.8			59.8
	514	Piling works	Excavation 2	49.8	54.8				59.0
	514	Piling works	Excavation 3	49.8	52.8	46.8	32.8	40.8	58.4
	514	Piling works	placing conc	49.8	52.8	46.8	50.8	32.8	59.6
	514	pile cap	Excavation 1	39.8	48.8				52.3
	514	pile cap	Excavation 2	49.8	54.8				59.0
	514	pile cap	Falsework	49.8	32.8	40.8			53.4
	514	pile cap	Placing conc	49.8	46.8	32.8	53.8		58.8
	514	pier & super.	falsework	49.8	32.8				52.9
	514	pier & super.	placing conc	46.8	46.8	32.8	53.8		58.3
	NSR 6	365	Temp. works	Temp works	52.8	42.8	35.8	52.8	
365		Piling works	Excavation 1	52.8	55.8	55.8			62.7
365		Piling works	Excavation 2	52.8	57.8				61.9
365		Piling works	Excavation 3	52.8	55.8	49.8	35.8	43.8	61.4



	365	Piling works	placing conc	52.8	55.8	49.8	53.8	35.8	62.5	
	365	pile cap	Excavation 1	42.8	51.8				55.3	
	365	pile cap	Excavation 2	52.8	57.8				61.9	
	365	pile cap	Falsework	52.8	35.8	43.8			56.3	
	365	pile cap	Placing conc	52.8	49.8	35.8	56.8		61.8	
	365	pier & super.	falsework	52.8	35.8				55.8	
	365	pier & super.	placing conc	49.8	49.8	35.8	56.8		61.2	
NSR 7	357	Temp. works	Temp works	52.9	42.9	35.9	52.9		59.2	
	357	Piling works	Excavation 1	52.9	55.9	55.9			62.9	
	357	Piling works	Excavation 2	52.9	57.9				62.1	
	357	Piling works	Excavation 3	52.9	55.9	49.9	35.9	43.9	61.6	
	357	Piling works	placing conc	52.9	55.9	49.9	53.9	35.9	62.7	
	357	pile cap	Excavation 1	42.9	52.0				55.5	
	357	pile cap	Excavation 2	52.9	57.9				62.1	
	357	pile cap	Falsework	52.9	35.9	43.9			56.5	
	357	pile cap	Placing conc	52.9	49.9	35.9	57.0		62.0	
	357	pier & super.	falsework	52.9	35.9				56.0	
	357	pier & super.	placing conc	49.9	49.9	35.9	57.0		61.4	
NSR 8	311	Temp. works	Temp works	54.1	44.1	37.1	54.1		60.4	
	311	Piling works	Excavation 1	54.1	57.1	57.1			64.1	
	311	Piling works	Excavation 2	54.1	59.1				63.3	
	311	Piling works	Excavation 3	54.1	57.1	51.1	37.1	45.1	62.8	
	311	Piling works	placing conc	54.1	57.1	51.1	55.1	37.1	63.9	
	311	pile cap	Excavation 1	44.1	53.2				56.7	
	311	pile cap	Excavation 2	54.1	59.1				63.3	
	311	pile cap	Falsework	54.1	37.1	45.1			57.7	
	311	pile cap	Placing conc	54.1	51.1	37.1	58.2		63.2	
	311	pier & super.	falsework	54.1	37.1				57.2	
	311	pier & super.	placing conc	51.1	51.1	37.1	58.2		62.6	
NSR 9	255	Temp. works	Temp works	55.9	45.9	38.9	55.9		62.1	
	255	Piling works	Excavation 1	55.9	58.9	58.9			65.9	
	255	Piling works	Excavation 2	55.9	60.9				65.1	
	255	Piling works	Excavation 3	55.9	58.9	52.9	38.9	46.9	64.5	
	255	Piling works	placing conc	55.9	58.9	52.9	56.9	38.9	65.7	
	255	pile cap	Excavation 1	45.9	54.9				58.4	
	255	pile cap	Excavation 2	55.9	60.9				65.1	
	255	pile cap	Falsework	55.9	38.9	46.9			59.5	
	255	pile cap	Placing conc	55.9	52.9	38.9	59.9		64.9	
	255	pier & super.	falsework	55.9	38.9				59.0	
	255	pier & super.	placing conc	52.9	52.9	38.9	59.9		64.4	
NSR 10	238	Temp. works	Temp works	56.5	46.5	39.5	56.5		62.7	
	238	Piling works	Excavation 1	56.5	59.5	59.5			66.4	
	238	Piling works	Excavation 2	56.5	61.5				65.7	
	238	Piling works	Excavation 3	56.5	59.5	53.5	39.5	47.5	65.1	
	238	Piling works	placing conc	56.5	59.5	53.5	57.5	39.5	66.3	
	238	pile cap	Excavation 1	46.5	55.5				59.0	
	238	pile cap	Excavation 2	56.5	61.5				65.7	
	238	pile cap	Falsework	56.5	39.5	47.5			60.1	
	238	pile cap	Placing conc	56.5	53.5	39.5	60.5		65.5	
	238	pier & super.	falsework	56.5	39.5				59.6	
	238	pier & super.	placing conc	53.5	53.5	39.5	60.5		65.0	
NSR 11	204	Temp. works	Temp works	57.8	47.8	40.8	57.8		64.1	
	204	Piling works	Excavation 1	57.8	60.8	60.8			67.8	
	204	Piling works	Excavation 2	57.8	62.8				67.0	
	204	Piling works	Excavation 3	57.8	60.8	54.8	40.8	48.8	66.4	
	204	Piling works	placing conc	57.8	60.8	54.8	58.8	40.8	67.6	
	204	pile cap	Excavation 1	47.8	56.8				60.3	
	204	pile cap	Excavation 2	57.8	62.8				67.0	
	204	pile cap	Falsework	57.8	40.8	48.8			61.4	
	204	pile cap	Placing conc	57.8	54.8	40.8	61.8		66.9	
	204	pier & super.	falsework	57.8	40.8				60.9	

	204	pier & super.	placing conc	54.8	54.8	40.8	61.8		66.3	
NSR 12	151	Temp. works	Temp works	60.4	50.4	43.4	60.4		66.7	
	151	Piling works	Excavation 1	60.4	63.4	63.4			70.4	
	151	Piling works	Excavation 2	60.4	65.4				69.6	
	151	Piling works	Excavation 3	60.4	63.4	57.4	43.4	51.4	69.0	
	151	Piling works	placing conc	60.4	63.4	57.4	61.4	43.4	70.2	
	151	pile cap	Excavation 1	50.4	59.4				62.9	
	151	pile cap	Excavation 2	60.4	65.4				69.6	
	151	pile cap	Falsework	60.4	43.4	51.4			64.0	
	151	pile cap	Placing conc	60.4	57.4	43.4	64.4		69.5	
	151	pier & super.	falsework	60.4	43.4				63.5	
	151	pier & super.	placing conc	57.4	57.4	43.4	64.4		68.9	
NSR 13	116	Temp. works	Temp works	62.7	52.7	45.7	62.7		69.0	
	116	Piling works	Excavation 1	62.7	65.7	65.7			72.7	
	116	Piling works	Excavation 2	62.7	67.7				71.9	
	116	Piling works	Excavation 3	62.7	65.7	59.7	45.7	53.7	71.3	
	116	Piling works	placing conc	62.7	65.7	59.7	63.7	45.7	72.5	
	116	pile cap	Excavation 1	52.7	61.7				65.2	
	116	pile cap	Excavation 2	62.7	67.7				71.9	
	116	pile cap	Falsework	62.7	45.7	53.7			66.3	
	116	pile cap	Placing conc	62.7	59.7	45.7	66.7		71.8	
	116	pier & super.	falsework	62.7	45.7				65.8	
	116	pier & super.	placing conc	59.7	59.7	45.7	66.7		71.2	
NSR 14	147	Temp. works	Temp works	60.7	50.7	43.7	60.7		66.9	
	147	Piling works	Excavation 1	60.7	63.7	63.7			70.6	
	147	Piling works	Excavation 2	60.7	65.7				69.8	
	147	Piling works	Excavation 3	60.7	63.7	57.7	43.7	51.7	69.3	
	147	Piling works	placing conc	60.7	63.7	57.7	61.7	43.7	70.4	
	147	pile cap	Excavation 1	50.7	59.7				63.2	
	147	pile cap	Excavation 2	60.7	65.7				69.8	
	147	pile cap	Falsework	60.7	43.7	51.7			64.2	
	147	pile cap	Placing conc	60.7	57.7	43.7	64.7		69.7	
	147	pier & super.	falsework	60.7	43.7				63.7	
	147	pier & super.	placing conc	57.7	57.7	43.7	64.7		69.1	
NSR 15	121	Temp. works	Temp works	62.3	52.3	45.3	62.3		68.6	
	121	Piling works	Excavation 1	62.3	65.3	65.3			72.3	
	121	Piling works	Excavation 2	62.3	67.3				71.5	
	121	Piling works	Excavation 3	62.3	65.3	59.3	45.3	53.3	71.0	
	121	Piling works	placing conc	62.3	65.3	59.3	63.3	45.3	72.1	
	121	pile cap	Excavation 1	52.3	61.4				64.9	
	121	pile cap	Excavation 2	62.3	67.3				71.5	
	121	pile cap	Falsework	62.3	45.3	53.3			65.9	
	121	pile cap	Placing conc	62.3	59.3	45.3	66.4		71.4	
	121	pier & super.	falsework	62.3	45.3				65.4	
	121	pier & super.	placing conc	59.3	59.3	45.3	66.4		70.8	
NSR 16	141	Temp. works	Temp works	61.0	51.0	44.0	61.0		67.3	
	141	Piling works	Excavation 1	61.0	64.0	64.0			71.0	
	141	Piling works	Excavation 2	61.0	66.0				70.2	
	141	Piling works	Excavation 3	61.0	64.0	58.0	44.0	52.0	69.6	
	141	Piling works	placing conc	61.0	64.0	58.0	62.0	44.0	70.8	
	141	pile cap	Excavation 1	51.0	60.0				63.5	
	141	pile cap	Excavation 2	61.0	66.0				70.2	
	141	pile cap	Falsework	61.0	44.0	52.0			64.6	
	141	pile cap	Placing conc	61.0	58.0	44.0	65.0		70.1	
	141	pier & super.	falsework	61.0	44.0				64.1	
	141	pier & super.	placing conc	58.0	58.0	44.0	65.0		69.5	
NSR17	176	Piling works	Excavation 1	59.1	62.1	62.1			69.1	
	176	Piling works	Excavation 2	59.1	64.1				68.3	
	176	Piling works	Excavation 3	59.1	62.1	56.1	42.1	50.1	67.7	
	176	Piling works	placing conc	59.1	62.1	56.1	60.1	42.1	68.9	
	176	pile cap	Excavation 1	49.1	58.1				61.6	

	176	pile cap	Excavation 2	59.1	64.1				68.3
	176	pile cap	Falsework	59.1	42.1	50.1			62.7
	176	pile cap	Placing conc	59.1	56.1	42.1	63.1		68.2
	176	pier & super.	falsework	59.1	42.1				62.2
	176	pier & super.	placing conc	56.1	56.1	42.1	63.1		67.6
NSR 18	231	Temp. works	Temp works	56.7	46.7	39.7	56.7		63.0
	231	Piling works	Excavation 1	56.7	59.7	59.7			66.7
	231	Piling works	Excavation 2	56.7	61.7				65.9
	231	Piling works	Excavation 3	56.7	59.7	53.7	39.7	47.7	65.3
	231	Piling works	placing conc	56.7	59.7	53.7	57.7	39.7	66.5
	231	pile cap	Excavation 1	46.7	55.7				59.3
	231	pile cap	Excavation 2	56.7	61.7				65.9
	231	pile cap	Falsework	56.7	39.7	47.7			60.3
	231	pile cap	Placing conc	56.7	53.7	39.7	60.7		65.8
	231	pier & super.	falsework	56.7	39.7				59.8
	231	pier & super.	placing conc	53.7	53.7	39.7	60.7		65.2
NSR 19	253	Temp. works	Temp works	55.9	45.9	38.9	55.9		62.2
	253	Piling works	Excavation 1	55.9	58.9	58.9			65.9
	253	Piling works	Excavation 2	55.9	60.9				65.1
	253	Piling works	Excavation 3	55.9	58.9	52.9	38.9	46.9	64.6
	253	Piling works	placing conc	55.9	58.9	52.9	56.9	38.9	65.7
	253	pile cap	Excavation 1	45.9	54.9				58.5
	253	pile cap	Excavation 2	55.9	60.9				65.1
	253	pile cap	Falsework	55.9	38.9	46.9			59.5
	253	pile cap	Placing conc	55.9	52.9	38.9	59.9		65.0
	253	pier & super.	falsework	55.9	38.9				59.0
	253	pier & super.	placing conc	52.9	52.9	38.9	59.9		64.4
NSR 20	141	Temp. works	Temp works	61.0	51.0	44.0	61.0		67.3
	141	Piling works	Excavation 1	61.0	64.0	64.0			71.0
	141	Piling works	Excavation 2	61.0	66.0				70.2
	141	Piling works	Excavation 3	61.0	64.0	58.0	44.0	52.0	69.6
	141	Piling works	placing conc	61.0	64.0	58.0	62.0	44.0	70.8
	141	pile cap	Excavation 1	51.0	60.0				63.5
	141	pile cap	Excavation 2	61.0	66.0				70.2
	141	pile cap	Falsework	61.0	44.0	52.0			64.6
	141	pile cap	Placing conc	61.0	58.0	44.0	65.0		70.1
	141	pier & super.	falsework	61.0	44.0				64.1
	141	pier & super.	placing conc	58.0	58.0	44.0	65.0		69.5
NSR 21.	176	Temp. works	Temp works	59.1	49.1	42.1	59.1		65.4
	176	Piling works	Excavation 1	59.1	62.1	62.1			69.1
	176	Piling works	Excavation 2	59.1	64.1				68.3
	176	Piling works	Excavation 3	59.1	62.1	56.1	42.1	50.1	67.7
	176	Piling works	placing conc	59.1	62.1	56.1	60.1	42.1	68.9
	176	pile cap	Excavation 1	49.1	58.1				61.6
	176	pile cap	Excavation 2	59.1	64.1				68.3
	176	pile cap	Falsework	59.1	42.1	50.1			62.7
	176	pile cap	Placing conc	59.1	56.1	42.1	63.1		68.2
	176	pier & super.	falsework	59.1	42.1				62.2
	176	pier & super.	placing conc	56.1	56.1	42.1	63.1		67.6
NSR 22	342	Temp. works	Temp works	53.3	43.3	36.3	53.3		59.6
	342	Piling works	Excavation 1	53.3	56.3	56.3			63.3
	342	Piling works	Excavation 2	53.3	58.3				62.5
	342	Piling works	Excavation 3	53.3	56.3	50.3	36.3	44.3	61.9
	342	Piling works	placing conc	53.3	56.3	50.3	54.3	36.3	63.1
	342	pile cap	Excavation 1	43.3	52.3				55.8
	342	pile cap	Excavation 2	53.3	58.3				62.5
	342	pile cap	Falsework	53.3	36.3	44.3			56.9
	342	pile cap	Placing conc	53.3	50.3	36.3	57.3		62.4
	342	pier & super.	falsework	53.3	36.3				56.4
	342	pier & super.	placing conc	50.3	50.3	36.3	57.3		61.8

Sensitive Receiver	Distance (m)	Tasks	SPL of equipment used					Total SPL at NSR
NSR 1	498	Piling works	Excavation 1	50.1	53.1	53.1		60.0
	498	Piling works	Excavation 2	50.1	55.1			59.2
	498	Piling works	Excavation 3	53.1	40.1	33.1	41.1	56.6
	498	Piling works	Excavation 4	50.1	40.1	33.1		53.5
	498	Piling works	placing con	53.1	53.1	47.1	41.1	59.7
	498	pile cap	Excavation	40.1	49.1			52.6
	498	pile cap	Excavation	50.1	55.1			59.2
	498	pile cap	Falsework	50.1	33.1	41.1		53.6
	498	pile cap	Placing con	50.1	47.1	33.1	55.8	60.3
	498	pier & super.	falsework	53.1	33.1			56.1
NSR 2	498	pier & super.	placing con	47.1	47.1	33.1	55.8	59.9
	451	Piling works	Excavation 1	50.9	53.9	53.9		60.9
	451	Piling works	Excavation 2	50.9	55.9			60.1
	451	Piling works	Excavation 3	53.9	40.9	33.9	41.9	57.4
	451	Piling works	Excavation 4	50.9	40.9	33.9		54.4
	451	Piling works	placing con	53.9	53.9	47.9	41.9	60.6
	451	pile cap	Excavation	40.9	49.9			53.4
	451	pile cap	Excavation	50.9	55.9			60.1
	451	pile cap	Falsework	50.9	33.9	41.9		54.5
	451	pile cap	Placing con	50.9	47.9	33.9	56.7	61.2
NSR 3	451	pier & super.	falsework	53.9	33.9			57.0
	451	pier & super.	placing con	47.9	47.9	33.9	56.7	60.7
	421	Piling works	Excavation 1	51.5	54.5	54.5		61.5
	421	Piling works	Excavation 2	51.5	56.5			60.7
	421	Piling works	Excavation 3	54.5	41.5	34.5	42.5	58.0
	421	Piling works	Excavation 4	51.5	41.5	34.5		55.0
	421	Piling works	placing con	54.5	54.5	48.5	42.5	61.2
	421	pile cap	Excavation	41.5	50.5			54.0
	421	pile cap	Excavation	51.5	56.5			60.7
	421	pile cap	Falsework	51.5	34.5	42.5		55.1
NSR 4	421	pile cap	Placing con	51.5	48.5	34.5	57.3	61.8
	421	pier & super.	falsework	54.5	34.5			57.6
	421	pier & super.	placing con	48.5	48.5	34.5	57.3	61.3
	365	Piling works	Excavation 1	52.8	55.8	55.8		62.7
	365	Piling works	Excavation 2	52.8	57.8			61.9
	365	Piling works	Excavation 3	55.8	42.8	35.8	43.8	59.3
	365	Piling works	Excavation 4	52.8	42.8	35.8		56.2
	365	Piling works	placing con	55.8	55.8	49.8	43.8	62.4
	365	pile cap	Excavation	42.8	51.8			55.3
	365	pile cap	Excavation	52.8	57.8			61.9
NSR 5	365	pile cap	Falsework	52.8	35.8	43.8		56.3
	365	pile cap	Placing con	52.8	49.8	35.8	58.5	63.0
	365	pier & super.	falsework	55.8	35.8			58.8
	365	pier & super.	placing con	49.8	49.8	35.8	58.5	62.6
	340	Piling works	Excavation 1	53.4	56.4	56.4		63.4
	340	Piling works	Excavation 2	53.4	58.4			62.6
	340	Piling works	Excavation 3	56.4	43.4	36.4	44.4	59.9
	340	Piling works	Excavation 4	53.4	43.4	36.4		56.9
	340	Piling works	placing con	56.4	56.4	50.4	44.4	63.0
	340	pile cap	Excavation	43.4	52.4			55.9
NSR 6	340	pile cap	Excavation	53.4	58.4			62.6
	340	pile cap	Falsework	53.4	36.4	44.4		57.0
	340	pile cap	Placing con	53.4	50.4	36.4	59.1	63.6
	340	pier & super.	falsework	56.4	36.4			59.4
	340	pier & super.	placing con	50.4	50.4	36.4	59.1	63.2
	201	Piling works	Excavation 1	57.9	60.9	60.9		67.9
	201	Piling works	Excavation 2	57.9	62.9			67.1
	201	Piling works	Excavation 3	60.9	47.9	40.9	48.9	64.4
	201	Piling works	Excavation 4	57.9	47.9	40.9		61.4
	201	Piling works	placing con	60.9	60.9	54.9	48.9	67.6
NSR 7	201	pile cap	Excavation	47.9	56.9			60.5
	201	pile cap	Excavation	57.9	62.9			67.1
	201	pile cap	Falsework	57.9	40.9	48.9		61.5
	201	pile cap	Placing con	57.9	54.9	40.9	63.7	68.2
	201	pier & super.	falsework	60.9	40.9			64.0
	201	pier & super.	placing con	54.9	54.9	40.9	63.7	67.7
	176	Piling works	Excavation 1	59.1	62.1	62.1		69.1
	176	Piling works	Excavation 2	59.1	64.1			68.3
	176	Piling works	Excavation 3	62.1	49.1	42.1	50.1	65.6
	176	Piling works	Excavation 4	59.1	49.1	42.1		62.6
NSR 8	176	Piling works	placing con	62.1	62.1	56.1	50.1	68.8
	176	pile cap	Excavation	49.1	58.1			61.6
	176	pile cap	Excavation	59.1	64.1			68.3
	176	pile cap	Falsework	59.1	42.1	50.1		62.7
	176	pile cap	Placing con	59.1	56.1	42.1	64.9	69.3
	176	pier & super.	falsework	62.1	42.1			65.1
	176	pier & super.	placing con	56.1	56.1	42.1	64.9	68.9
	129	Piling works	Excavation 1	61.8	64.8	64.8		71.8
	129	Piling works	Excavation 2	61.8	66.8			71.0
	129	Piling works	Excavation 3	64.8	51.8	44.8	52.8	68.3
129	Piling works	Excavation 4	61.8	51.8	44.8		65.3	

129	Piling works	placing con	64.8	64.8	58.8	44.8	71.5
129	pile cap	Excavation	51.8	60.8			64.3
129	pile cap	Excavation	61.8	66.8			71.0
129	pile cap	Falsework	61.8	44.8	52.8		65.4
129	pile cap	Placing con	61.8	58.8	44.8	67.6	72.0
129	pier & super.	falsework	64.8	44.8			67.8
129	pier & super.	placing con	58.8	58.8	44.8	67.6	71.6
73	Piling works	Excavation 1	66.7	69.7	69.7		76.7
73	Piling works	Excavation 2	66.7	71.7			75.9
73	Piling works	Excavation 3	69.7	56.7	49.7	97.7	73.2
73	Piling works	Excavation 4	66.7	56.7	49.7		70.2
73	Piling works	placing con	69.7	69.7	63.7	97.7	76.4
73	pile cap	Excavation	56.7	65.7			69.3
73	pile cap	Excavation	66.7	71.7			75.9
73	pile cap	Falsework	66.7	49.7	97.7		70.3
73	pile cap	Placing con	66.7	63.7	49.7	72.5	77.0
73	pier & super.	falsework	69.7	49.7			72.8
73	pier & super.	placing con	63.7	63.7	49.7	72.5	76.5
87	Piling works	Excavation 1	65.2	68.2	68.2		75.2
87	Piling works	Excavation 2	65.2	70.2			74.4
87	Piling works	Excavation 3	68.2	55.2	48.2	56.2	71.7
87	Piling works	Excavation 4	65.2	56.2	48.2		68.7
87	Piling works	placing con	68.2	68.2	62.2	56.2	74.9
87	pile cap	Excavation	55.2	64.2			67.7
87	pile cap	Excavation	65.2	70.2			74.4
87	pile cap	Falsework	65.2	48.2	56.2		68.8
87	pile cap	Placing con	68.2	62.2	48.2	71.0	75.5
87	pier & super.	falsework	68.2	48.2			71.3
87	pier & super.	placing con	62.2	62.2	48.2	71.0	75.0
28	Piling works	Excavation 1	75.1	78.1	78.1		85.0
28	Piling works	Excavation 2	75.1	80.1			84.3
28	Piling works	Excavation 3	78.1	65.1	58.1	66.1	81.6
28	Piling works	Excavation 4	75.1	65.1	58.1		78.5
28	Piling works	placing con	78.1	78.1	72.1	66.1	84.7
28	pile cap	Excavation	65.1	74.1			77.6
28	pile cap	Excavation	75.1	80.1			84.3
28	pile cap	Falsework	75.1	58.1	66.1		78.6
28	pile cap	Placing con	75.1	72.1	58.1	80.8	85.3
28	pier & super.	falsework	78.1	58.1			81.1
28	pier & super.	placing con	72.1	72.1	58.1	80.8	84.9
24	Piling works	Excavation 1	76.4	79.4			86.4
24	Piling works	Excavation 2	76.4	81.4			85.6
24	Piling works	Excavation 3	79.4	66.4	59.4	67.4	82.9
24	Piling works	Excavation 4	76.4	66.4	59.4		79.9
24	Piling works	placing con	79.4	79.4	73.4	67.4	86.1
24	pile cap	Excavation	66.4	75.4			78.9
24	pile cap	Excavation	76.4	81.4			85.6
24	pile cap	Falsework	76.4	59.4	67.4		80.0
24	pile cap	Placing con	76.4	73.4	59.4	82.2	86.6
24	pier & super.	falsework	78.4	59.4			82.4
24	pier & super.	placing con	73.4	73.4	59.4	82.2	86.2
35	Piling works	Excavation 1	73.1	76.1	76.1		83.1
35	Piling works	Excavation 2	73.1	78.1			82.3
35	Piling works	Excavation 3	76.1	63.1	56.1	64.1	79.6
35	Piling works	Excavation 4	73.1	63.1	56.1		76.6
35	Piling works	placing con	76.1	76.1	70.1	64.1	82.8
35	pile cap	Excavation	63.1	72.1			75.6
35	pile cap	Excavation	73.1	78.1			82.3
35	pile cap	Falsework	73.1	56.1	64.1		76.7
35	pile cap	Placing con	73.1	70.1	56.1	78.9	83.4
35	pier & super.	falsework	76.1	56.1			79.2
35	pier & super.	placing con	70.1	70.1	56.1	78.9	82.9
82	Piling works	Excavation 1	65.7	68.7	68.7		75.7
82	Piling works	Excavation 2	65.7	70.7			74.9
82	Piling works	Excavation 3	68.7	55.7	48.7	56.7	72.2
82	Piling works	Excavation 4	65.7	55.7	48.7		69.2
82	Piling works	placing con	68.7	68.7	62.7	48.7	75.4
82	pile cap	Excavation	55.7	64.7			68.2
82	pile cap	Excavation	65.7	70.7			74.9
82	pile cap	Falsework	65.7	48.7	56.7		69.3
82	pile cap	Placing con	65.7	62.7	48.7	71.5	76.0
82	pier & super.	falsework	68.7	48.7			71.8
82	pier & super.	placing con	62.7	62.7	48.7	71.5	78.3
88	Piling works	Excavation 1	65.1	68.1	68.1		75.1
88	Piling works	Excavation 2	65.1	70.1			74.3
88	Piling works	Excavation 3	68.1	55.1	48.1	56.1	71.6
88	Piling works	Excavation 4	65.1	55.1	48.1		68.6
88	Piling works	placing con	68.1	68.1	62.1	56.1	74.8
88	pile cap	Excavation	55.1	64.1			67.6
88	pile cap	Excavation	65.1	70.1			74.3
88	pile cap	Falsework	65.1	48.1	56.1		68.7
88	pile cap	Placing con	65.1	62.1	48.1	70.9	75.4



Sensitive Receiver	Distance (m)	Tasks	SPL of equipment used			Total SPL at NSR
NSR 1	257	Excavation 1	45.8	54.8		58.3
	257	Excavation 2	60.8	55.8		65.0
	257	Backfilling	55.8	48.8		59.6
	257	Placing conc	52.8	59.8	38.8	63.6
NSR 2	207	Excavation 1	47.7	56.7		60.2
	207	Excavation 2	62.7	57.7		66.9
	207	Backfilling	57.7	50.7		61.5
	207	Placing conc	54.7	61.7	40.7	65.5
NSR 3	178	Excavation 1	49.0	58.0		61.5
	178	Excavation 2	64.0	59.0		68.2
	178	Backfilling	59.0	52.0		62.8
	178	Placing conc	56.0	63.0	42.0	66.8
NSR 4	120	Excavation 1	52.4	61.4		64.9
	120	Excavation 2	67.4	62.4		71.6
	120	Backfilling	62.4	55.4		66.2
	120	Placing conc	59.4	66.4	45.4	70.2
NSR 5	102	Excavation 1	53.8	62.8		66.4
	102	Excavation 2	68.8	63.8		73.0
	102	Backfilling	63.8	56.8		67.6
	102	Placing conc	60.8	67.8	46.8	71.7
NSR 6	65	Excavation 1	57.7	66.8		70.3
	65	Excavation 2	72.7	67.7		76.9
	65	Backfilling	67.7	60.7		71.5
	65	Placing conc	64.7	71.8	50.7	75.6
NSR 7	21	Excavation 1	67.6	76.6		80.1
	21	Excavation 2	82.6	77.6		86.7
	21	Backfilling	77.6	70.6		81.3
	21	Placing conc	74.6	81.6	60.6	85.4
NSR 8	20	Excavation 1	68.0	77.0		80.5
	20	Excavation 2	83.0	78.0		87.2
	20	Backfilling	78.0	71.0		81.8
	20	Placing conc	75.0	82.0	61.0	85.8
NSR9	20	Excavation 1	68.0	77.0		80.5
	20	Excavation 2	83.0	78.0		87.2
	20	Backfilling	78.0	71.0		81.8
	20	Placing conc	75.0	82.0	61.0	85.8
NSR10	63	Excavation 1	58.0	67.0		70.5
	63	Excavation 2	73.0	68.0		77.2
	63	Backfilling	68.0	61.0		71.8
	63	Placing conc	65.0	72.0	51.0	75.8
NSR11	38	Excavation 1	62.4	71.4		74.9
	38	Excavation 2	77.4	72.4		81.6
	38	Backfilling	72.4	65.4		76.2



Carriageway Construction (no mitigation)

	38	Placing conc	69.4	76.4	55.4	80.2
NSR12	29	Excavation 1	64.8	73.8		77.3
	29	Excavation 2	79.8	74.8		83.9
	29	Backfilling	74.8	67.8		78.5
	29	Placing conc	71.8	78.8	57.8	82.6
NSR 13	13	Excavation 1	71.7	80.7		84.2
	13	Excavation 2	86.7	81.7		90.9
	13	Backfilling	81.7	74.7		85.5
	13	Placing conc	78.7	85.7	64.7	89.5
NSR14	61	Excavation 1	58.3	67.3		70.8
	61	Excavation 2	73.3	68.3		77.5
	61	Backfilling	68.3	61.3		72.1
	61	Placing conc	65.3	72.3	51.3	76.1
NSR 15	60	Excavation 1	58.4	67.4		71.0
	60	Excavation 2	73.4	68.4		77.6
	60	Backfilling	68.4	61.4		72.2
	60	Placing conc	65.4	72.4	51.4	76.3
NSR 16	114	Excavation 1	52.9	61.9		65.4
	114	Excavation 2	67.9	62.9		72.1
	114	Backfilling	62.9	55.9		66.7
	114	Placing conc	59.9	66.9	45.9	70.7
NSR 17	163	Excavation 1	49.8	58.8		62.3
	163	Excavation 2	64.8	59.8		68.9
	163	Backfilling	59.8	52.8		63.5
	163	Placing conc	56.8	63.8	42.8	67.6
NSR 18	218	Excavation 1	47.2	56.2		59.8
	218	Excavation 2	62.2	57.2		66.4
	218	Backfilling	57.2	50.2		61.0
	218	Placing conc	54.2	61.2	40.2	65.1
NSR 19	252	Excavation 1	46.0	55.0		58.5
	252	Excavation 2	61.0	56.0		65.2
	252	Backfilling	56.0	49.0		59.8
	252	Placing conc	53.0	60.0	39.0	63.8
NSR 20	92	Excavation 1	54.7	63.7		67.2
	92	Excavation 2	69.7	64.7		73.9
	92	Backfilling	64.7	57.7		68.5
	92	Placing conc	61.7	68.7	47.7	72.6
NSR 21	135	Excavation 1	51.4	60.4		63.9
	135	Excavation 2	66.4	61.4		70.6
	135	Backfilling	61.4	54.4		65.2
	135	Placing conc	58.4	65.4	44.4	69.2
NSR 22	290	Excavation 1	44.8	53.8		57.3
	290	Excavation 2	59.8	54.8		63.9
	290	Backfilling	54.8	47.8		58.5
	290	Placing conc	51.8	58.8	37.8	62.6

Construction Task - General Road Widening (mitigated - BS 5228 PME and screening where applicable) - lower level

NSR 7	21	Excavation 1	60.6	66.6		70.5	
	21	Excavation 2	71.6	78.6		82.4	#
	21	Backfilling	71.6	73.6		78.7	#
	21	Placing conc	74.6	67.6	50.6	78.4	#
NSR 8	20	Excavation 1	61.0	67.0		71.0	
	20	Excavation 2	72.0	79.0		82.8	#
	20	Backfilling	72.0	74.0		79.1	#
	20	Placing conc	75.0	68.0	51.0	78.8	#
NSR9	20	Excavation 1	61.0	67.0		71.0	
	20	Excavation 2	72.0	79.0		82.8	#
	20	Backfilling	72.0	74.0		79.1	#
	20	Placing conc	75.0	68.0	51.0	78.8	#
NSR10	63	Excavation 1	51.0	57.0		61.0	
school	63	Excavation 2	62.0	69.0		72.8	#
	63	Backfilling	62.0	64.0		69.1	
	63	Placing conc	65.0	58.0	41.0	68.8	
NSR11	38	Excavation 1	55.4	61.4		65.4	
	38	Excavation 2	66.4	73.4		77.2	#
	38	Backfilling	66.4	68.4		73.5	
	38	Placing conc	69.4	62.4	45.4	73.2	
NSR 12	29	Excavation 1	57.8	63.8		67.7	
	29	Excavation 2	68.8	75.8		79.6	#
	29	Backfilling	68.8	70.8		75.9	#
	29	Placing conc	71.8	64.8	47.8	75.6	#
NSR 13	13	Excavation 1	64.7	70.7		74.7	
	13	Excavation 2	75.7	82.7		86.5	#
	13	Backfilling	75.7	77.7		82.9	#
	13	Placing conc	78.7	71.7	54.7	82.5	#

NSR 7	108	Excavation 1	41.3	52.3		55.7	
	108	Excavation 2	36.3	54.3	60.3	64.3	
	108	Diversion	60.3	36.3		63.3	
	108	Backfilling	54.3	56.3		61.5	
	108	Placing conc	60.3	56.3	36.3	64.8	
NSR 8	62	Excavation 1	46.2	57.2		60.5	
	62	Excavation 2	41.2	59.2	65.2	69.1	
	62	Diversion	65.2	41.2		68.2	
	62	Backfilling	59.2	61.2		66.3	
	62	Placing conc	65.2	61.2	41.2	69.6	
NSR9	20	Excavation 1	56.0	67.0		70.3	
	20	Excavation 2	51.0	69.0	75.0	79.0	#
	20	Diversion	75.0	51.0		78.0	#
	20	Backfilling	69.0	71.0		76.1	#
	20	Placing conc	75.0	71.0	51.0	79.5	#
NSR10	63	Excavation 1	46.0	57.0		60.4	
	63	Excavation 2	41.0	59.0	65.0	69.0	
	63	Diversion	65.0	41.0		68.0	
	63	Backfilling	59.0	61.0		66.1	
	63	Placing conc	65.0	61.0	41.0	69.5	
NSR11	38	Excavation 1	50.4	61.4		64.7	
	38	Excavation 2	45.4	63.4	69.4	73.4	
	38	Diversion	69.4	45.4		72.4	
	38	Backfilling	63.4	65.4		70.5	
	38	Placing conc	69.4	65.4	45.4	73.9	
NSR 12	29	Excavation 1	52.8	63.8		67.1	
	29	Excavation 2	47.8	65.8	71.8	75.7	#
	29	Diversion	71.8	47.8		74.8	
	29	Backfilling	65.8	67.8		72.9	
	29	Placing conc	71.8	67.8	47.8	76.2	#
NSR 13	27	Excavation 1	53.4	64.4		67.7	
	27	Excavation 2	48.4	66.4	72.4	76.4	#
	27	Diversion	72.4	48.4		75.4	#
	27	Backfilling	66.4	68.4		73.5	
	27	Placing conc	72.4	68.4	48.4	76.8	#

	A	B	C	D	E	F	G	H	I	J	K
128	NSR 7	176	Piling works	Excavation 1	59.1	60.1	60.1			67.6	
129		176	Piling works	Excavation 2	50.1	57.1				60.9	
130		176	Piling works	Excavation 3	56.1	37.1	32.1	31.1		59.2	
131		176	Piling works	Excavation 4	59.1	37.1	32.1			62.1	
132		176	Piling works	placing conc	59.1	60.1	56.1	31.1	32.1	66.5	
133		176	pile cap	Excavation 1	37.1	48.1				51.4	
134		176	pile cap	Excavation 2	50.1	57.1				60.9	
135		176	pile cap	Falsework	56.1	32.1	31.1			59.1	
136		176	pile cap	Placing conc	56.1	56.1	32.1	53.9		63.2	
137		176	pier & super.	falsework	59.1	32.1				62.1	
138		176	pier & super.	placing conc	53.1	56.1	32.1	53.9		62.3	
139	NSR 8	129	Piling works	Excavation 1	61.8	62.8	62.8			70.3	
140		129	Piling works	Excavation 2	52.8	59.8				63.6	
141		129	Piling works	Excavation 3	58.8	39.8	34.8	33.8		61.9	
142		129	Piling works	Excavation 4	61.8	39.8	34.8			64.8	
143		129	Piling works	placing conc	61.8	62.8	58.8	33.8	34.8	69.2	
144		129	pile cap	Excavation 1	39.8	50.8				54.1	
145		129	pile cap	Excavation 2	52.8	59.8				63.6	
146		129	pile cap	Falsework	58.8	34.8	33.8			61.8	
147		129	pile cap	Placing conc	58.8	58.8	34.8	56.6		65.9	
148		129	pier & super.	falsework	61.8	34.8				64.8	
149		129	pier & super.	placing conc	55.8	58.8	34.8	56.6		65.0	
150	NSR 9	73	Piling works	Excavation 1	66.7	67.7	67.7			75.2	#
151		73	Piling works	Excavation 2	57.7	64.7				68.5	
152		73	Piling works	Excavation 3	63.7	44.7	39.7	38.7		66.8	
153		73	Piling works	Excavation 4	66.7	44.7	39.7			69.8	
154		73	Piling works	placing conc	66.7	67.7	63.7	38.7	39.7	74.2	
155		73	pile cap	Excavation 1	44.7	55.7				59.1	
156		73	pile cap	Excavation 2	57.7	64.7				68.5	
157		73	pile cap	Falsework	63.7	39.7	38.7			66.8	
158		73	pile cap	Placing conc	63.7	63.7	39.7	61.5		70.9	
159		73	pier & super.	falsework	66.7	39.7				69.8	
160		73	pier & super.	placing conc	60.7	63.7	39.7	61.5		70.0	
161	NSR 10	87	Piling works	Excavation 1	65.2	66.2	66.2			73.7	#
162	school	87	Piling works	Excavation 2	56.2	63.2				67.0	
163		87	Piling works	Excavation 3	62.2	43.2	38.2	37.2		65.3	
164		87	Piling works	Excavation 4	65.2	43.2	38.2			68.2	
165		87	Piling works	placing conc	65.2	66.2	62.2	37.2	38.2	72.6	#
166		87	pile cap	Excavation 1	43.2	54.2				57.6	
167		87	pile cap	Excavation 2	56.2	63.2				67.0	
168		87	pile cap	Falsework	62.2	38.2	37.2			65.2	
169		87	pile cap	Placing conc	62.2	62.2	38.2	60.0		69.4	
170		87	pier & super.	falsework	65.2	38.2				68.2	
171		87	pier & super.	placing conc	59.2	62.2	38.2	60.0		68.4	
172	NSR 11	28	Piling works	Excavation 1	75.1	76.1	76.1			83.5	#
173		28	Piling works	Excavation 2	66.1	73.1				76.8	#
174		28	Piling works	Excavation 3	72.1	53.1	48.1	47.1		75.1	#
175		28	Piling works	Excavation 4	75.1	53.1	48.1			78.1	#
176		28	Piling works	placing conc	75.1	76.1	72.1	47.1	48.1	82.5	#
177		28	pile cap	Excavation 1	53.1	64.1				67.4	
178		28	pile cap	Excavation 2	66.1	73.1				76.8	#
179		28	pile cap	Falsework	72.1	48.1	47.1			75.1	#
180		28	pile cap	Placing conc	72.1	72.1	48.1	69.8		79.2	#
181		28	pier & super.	falsework	75.1	48.1				78.1	#
182		28	pier & super.	placing conc	69.1	72.1	48.1	69.8		78.3	#
183	NSR 12	24	Piling works	Excavation 1	76.4	77.4	77.4			84.9	#
184		24	Piling works	Excavation 2	67.4	74.4				78.2	#
185		24	Piling works	Excavation 3	73.4	54.4	49.4	48.4		76.5	#
186		24	Piling works	Excavation 4	76.4	54.4	49.4			79.4	#
187		24	Piling works	placing conc	76.4	77.4	73.4	48.4	49.4	83.8	#

	A	B	C	D	E	F	G	H	I	J	K
188		24	pile cap	Excavation 1	54.4	65.4				68.7	
189		24	pile cap	Excavation 2	67.4	74.4				78.2	#
190		24	pile cap	Falsework	73.4	49.4	48.4			76.4	#
191		24	pile cap	Placing conc	73.4	73.4	49.4	71.2		80.5	#
192		24	pier & super.	falsework	76.4	49.4				79.4	#
193		24	pier & super.	placing conc	70.4	73.4	49.4	71.2		79.6	#
194	NSR 13	35	Piling works	Excavation 1	73.1	74.1	74.1			81.6	#
195		35	Piling works	Excavation 2	64.1	71.1				74.9	
196		35	Piling works	Excavation 3	70.1	51.1	46.1	45.1		73.2	
197		35	Piling works	Excavation 4	73.1	51.1	46.1			76.2	#
198		35	Piling works	placing conc	73.1	74.1	70.1	45.1	46.1	80.5	#
199		35	pile cap	Excavation 1	51.1	62.1				65.5	
200		35	pile cap	Excavation 2	64.1	71.1				74.9	
201		35	pile cap	Falsework	70.1	46.1	45.1			73.1	
202		35	pile cap	Placing conc	70.1	70.1	46.1	67.9		77.3	#
203		35	pier & super.	falsework	73.1	46.1				76.1	#
204		35	pier & super.	placing conc	67.1	70.1	46.1	67.9		76.3	#

Carriageway construction  
(mitigated with silenced equipment and screening where applicable))- lower level

NSR 7	21	Excavation 1	55.6	66.6		69.9	
	21	Excavation 2	75.6	68.6		79.3	#
	21	Backfilling	68.6	70.6		75.7	#
	21	Placing conc	74.6	70.6	50.6	79.0	#
NSR 8	20	Excavation 1	56.0	67.0		70.3	
	20	Excavation 2	76.0	69.0		79.8	#
	20	Backfilling	69.0	71.0		76.1	#
	20	Placing conc	75.0	71.0	51.0	79.5	#
NSR9	20	Excavation 1	56.0	67.0		70.3	
	20	Excavation 2	76.0	69.0		79.8	#
	20	Backfilling	69.0	71.0		76.1	#
	20	Placing conc	75.0	71.0	51.0	79.5	#
NSR10	63	Excavation 1	46.0	57.0		60.4	
school	63	Excavation 2	66.0	59.0		69.8	
	63	Backfilling	59.0	61.0		66.1	
	63	Placing conc	65.0	61.0	41.0	69.5	
NSR11	38	Excavation 1	50.4	61.4		64.7	
	38	Excavation 2	70.4	63.4		74.2	
	38	Backfilling	63.4	65.4		70.5	
	38	Placing conc	69.4	65.4	45.4	73.9	
NSR12	29	Excavation 1	52.8	63.8		67.1	
	29	Excavation 2	72.8	65.8		76.5	#
	29	Backfilling	65.8	67.8		72.9	
	29	Placing conc	71.8	67.8	47.8	76.2	#
NSR 13	13	Excavation 1	59.7	70.7		74.1	
	13	Excavation 2	79.7	72.7		83.5	#
	13	Backfilling	72.7	74.7		79.8	#
	13	Placing conc	78.7	74.7	54.7	83.2	#
NSR14	61	Excavation 1	46.3	57.3		60.6	
	61	Excavation 2	66.3	59.3		70.1	
	61	Backfilling	59.3	61.3		66.4	
	61	Placing conc	65.3	61.3	41.3	69.8	

Construction Task - General Road Widening (mitigated - BS 5228 PME and screening where applicable) - mid-level

NSR 7	45	Excavation 1	53.9	63.0		66.5	
	45	Excavation 2	64.9	71.9		75.7	#
	45	Backfilling	64.9	66.9		72.1	
	45	Placing conc	67.9	60.9	43.9	71.7	
NSR 8	45	Excavation 1	53.9	63.0		66.5	
	45	Excavation 2	64.9	71.9		75.7	#
	45	Backfilling	64.9	66.9		72.1	
	45	Placing conc	67.9	60.9	43.9	71.7	
NSR9	44	Excavation 1	54.1	63.2		66.7	
	44	Excavation 2	65.1	72.1		75.9	#
	44	Backfilling	65.1	67.1		72.3	
	44	Placing conc	68.1	61.1	44.1	71.9	
NSR11	55	Excavation 1	52.2	61.2		64.7	
	55	Excavation 2	63.2	70.2		74.0	
	55	Backfilling	63.2	65.2		70.3	
	55	Placing conc	66.2	59.2	42.2	70.0	
NSR 12	49	Excavation 1	53.2	62.2		65.7	
	49	Excavation 2	64.2	71.2		75.0	
	49	Backfilling	64.2	66.2		71.3	
	49	Placing conc	67.2	60.2	43.2	71.0	
NSR 13	42	Excavation 1	54.5	63.6		67.1	
	42	Excavation 2	65.5	72.5		76.3	#
	42	Backfilling	65.5	67.5		72.7	
	42	Placing conc	68.5	61.5	44.5	72.3	



NSR 7	115	Excavation 1	40.8	51.8		55.1
	115	Excavation 2	35.8	53.8	59.8	63.8
	115	Diversion	59.8	35.8		62.8
	115	Backfilling	53.8	55.8		60.9
	115	Placing conc	59.8	55.8	35.8	64.3
NSR 8	74	Excavation 1	44.6	55.6		59.0
	74	Excavation 2	39.6	57.6	63.6	67.6
	74	Diversion	63.6	39.6		66.6
	74	Backfilling	57.6	59.6		64.7
	74	Placing conc	63.6	59.6	39.6	68.1
NSR9	44	Excavation 1	49.1	60.1		63.5
	44	Excavation 2	44.1	62.1	68.1	72.1
	44	Diversion	68.1	44.1		71.1
	44	Backfilling	62.1	64.1		69.3
	44	Placing conc	68.1	64.1	44.1	72.6
NSR11	55	Excavation 1	47.2	58.2		61.5
	55	Excavation 2	42.2	60.2	66.2	70.2
	55	Diversion	66.2	42.2		69.2
	55	Backfilling	60.2	62.2		67.3
	55	Placing conc	66.2	62.2	42.2	70.7
NSR 12	49	Excavation 1	48.2	59.2		62.5
	49	Excavation 2	43.2	61.2	67.2	71.2
	49	Diversion	67.2	43.2		70.2
	49	Backfilling	61.2	63.2		68.3
	49	Placing conc	67.2	63.2	43.2	71.7
NSR 13	48	Excavation 1	48.4	59.4		62.7
	48	Excavation 2	43.4	61.4	67.4	71.4
	48	Diversion	67.4	43.4		70.4
	48	Backfilling	61.4	63.4		68.5
	48	Placing conc	67.4	63.4	43.4	71.8

Sensitive Reciever	Distance (m)		Tasks	SPL of equipment used					Total SPL at NSR	
NSR 9	83	Piling works	Excavation 1	65.6	66.6	66.6			74.1	
	83	Piling works	Excavation 2	56.6	63.6				67.4	
	83	Piling works	Excavation 3	65.6	43.6	38.6	37.6		68.7	
	83	Piling works	Excavation 4	65.6	43.6	38.6			68.7	
	83	Piling works	placing conc	65.6	66.6	62.6	37.6	38.6	73.0	
	83	pile cap	Excavation 1	43.6	54.6				58.0	
	83	pile cap	Excavation 2	56.6	63.6				67.4	
	83	pile cap	Falsework	62.6	38.6	37.6			65.6	
	83	pile cap	Placing conc	62.6	62.6	38.6	60.4		69.8	
	83	pier & super.	falsework	65.6	38.6				68.6	
	83	pier & super.	placing conc	59.6	62.6	38.6	60.4		68.8	
	NSR 11	48	Piling works	Excavation 1	70.4	71.4	71.4			78.8
48		Piling works	Excavation 2	61.4	68.4				72.2	
48		Piling works	Excavation 3	70.4	48.4	43.4	42.4		73.4	
48		Piling works	Excavation 4	70.4	48.4	43.4			73.4	
48		Piling works	placing conc	70.4	71.4	67.4	42.4	43.4	77.8	#
48		pile cap	Excavation 1	48.4	59.4				62.7	
48		pile cap	Excavation 2	61.4	68.4				72.2	
48		pile cap	Falsework	67.4	43.4	42.4			70.4	
48		pile cap	Placing conc	67.4	67.4	43.4	65.1		74.5	
48		pier & super.	falsework	70.4	43.4				73.4	
NSR 12	46	Piling works	Excavation 1	70.7	71.7	71.7			79.2	#
	46	Piling works	Excavation 2	61.7	68.7				72.5	
	46	Piling works	Excavation 3	70.8	48.7	43.7	42.7		73.8	
	46	Piling works	Excavation 4	70.7	48.7	43.7			73.8	
	46	Piling works	placing conc	70.8	71.7	67.7	42.7	43.7	78.2	#
	46	pile cap	Excavation 1	48.7	59.8				63.1	
	46	pile cap	Excavation 2	61.7	68.7				72.5	
	46	pile cap	Falsework	67.7	43.7	42.7			70.8	
	46	pile cap	Placing conc	67.7	67.7	43.7	65.5		74.9	
	46	pier & super.	falsework	70.8	43.7				73.8	
NSR 13	53	Piling works	Excavation 1	69.5	70.5	70.5			78.0	#
	53	Piling works	Excavation 2	60.5	67.5				71.3	
	53	Piling works	Excavation 3	69.5	47.5	42.5	41.5		72.6	
	53	Piling works	Excavation 4	69.5	47.5	42.5			72.6	
	53	Piling works	placing conc	69.5	70.5	66.5	41.5	42.5	76.9	#
	53	pile cap	Excavation 1	47.5	58.5				61.9	
	53	pile cap	Excavation 2	60.5	67.5				71.3	
	53	pile cap	Falsework	66.5	42.5	41.5			69.5	
	53	pile cap	Placing conc	66.5	66.5	42.5	64.3		73.7	
	53	pier & super.	falsework	69.5	42.5				72.5	
53	pier & super.	placing conc	63.5	66.5	42.5	64.3		72.7		

Carriageway construction  
(mitigated with silenced equipment and screening where applicable))- mid-level

Sensitive Reciever	Distance (m)	Tasks	SPL of equipment used			Total SPL at NSR
NSR 7	45	Excavation 1	48.9	59.9		63.3
	45	Excavation 2	68.9	61.9		72.7
	45	Backfilling	61.9	63.9		69.1
	45	Placing conc	67.9	63.9	43.9	72.4
NSR 8	45	Excavation 1	48.9	59.9		63.3
	45	Excavation 2	68.9	61.9		72.7
	45	Backfilling	61.9	63.9		69.1
	45	Placing conc	67.9	63.9	43.9	72.4
NSR9	44	Excavation 1	49.1	60.1		63.5
	44	Excavation 2	69.1	62.1		72.9
	44	Backfilling	62.1	64.1		69.3
	44	Placing conc	68.1	64.1	44.1	72.6
NSR11	55	Excavation 1	47.2	58.2		61.5
	55	Excavation 2	67.2	60.2		71.0
	55	Backfilling	60.2	62.2		67.3
	55	Placing conc	66.2	62.2	42.2	70.7
NSR12	49	Excavation 1	48.2	59.2		62.5
	49	Excavation 2	68.2	61.2		72.0
	49	Backfilling	61.2	63.2		68.3
	49	Placing conc	67.2	63.2	43.2	71.7
NSR 13	42	Excavation 1	49.5	60.5		63.9
	42	Excavation 2	69.5	62.5		73.3
	42	Backfilling	62.5	64.5		69.7
	42	Placing conc	68.5	64.5	44.5	73.0