APPENDIX 3.8

CALCULATION OF LAND USE PARAMETERS FOR AERMET

Appendix 3.8 - Detailed Calculations of Albedo, Bowen Ratio and Surface Roughness

Land Cover	Area (km2)	Fraction of Total Area	Albedo (r)	Bowen Ratio (Bo)
Deciduous Forest	14.0	0.140	0.163	0.750
Grasslands/Herbaceous	31.6	0.316	0.185	0.800
Open Water	32.0	0.320	0.100	0.100
High Intensity Residential	19.0	0.190	0.180	1.500
Commercial/Industrial/Transport (Not at Airport)	1.7	0.017	0.180	1.500
Bare Rock/Sand/Clay (Non-arid Region)	1.6	0.016	0.200	1.500
Quarries/Strip Mines/Gravel (Fill Bank)	0.3	0.003	0.200	1.500
		Average:	**0.154**	**0.470**

Notes:

(a) Albedo was calculated based on the area-weighted arithmetic mean within 10km x 10km area from the Project Site. With reference to Table A-1 of the AERSURFACE User's Guide 2008 (revised in 2013), the albedos for High Intensity Residential (Class 22), Commercial/Industrial/Transport (Not at Airport) (Class 23), Bare Rock/Sand/Clay (Non-arid Region) (Class 31), Quarries/Strip Mines/Gravel (Class 32), Deciduous Forest (Class 41), Grasslands/Herbaceous (Class 71) and Open Water (Class 11) are assumed to be 0.18, 0.18, 0.2, 0.2, 0.163, 0.185 and 0.1, respectively.

(b) Bowen ratio was calculated based on the area-weighted geometric mean within 10km x 10km area from the Project Site. Considering the climate in Hong Kong covers dry and wet season throughout the year, bowen ratios for average moisture conditions have been adopted. With reference to Table A-2 of the AERSURFACE User's Guide 2008 (revised in 2013), the bowen ratios for High Intensity Residential (Class 22), Commercial/Industrial/Transport (Not at Airport) (Class 23), Bare Rock/Sand/Clay (Non-arid Region) (Class 31), Quarries/Strip Mines/Gravel (Class 32), Deciduous Forest (Class 41), Grasslands/Herbaceous (Class 71) and Open Water (Class 11) are assumed to be 1.5, 1.5, 1.5, 1.5, 0.75, 0.8 and 0.1, respectively.

(c) The average of the albedo and bowen ratio values in spring, summer and autumn for each land use was used.

Appendix 3.8 - Detailed Calculations of Albedo, Bowen Ratio and Surface Roughness

PATH Grid	Sector (degree)	Land Use Type	Area (km^2)	Fraction of Section Total Area	Distance (km)	Weighting	Surface Roughness (Zo) [(a)]	Resultant Surface Roughness (Zo) (m) [(a)]	Albedo (r)	Bowen Ratio (Bo)
18, 40	70 - 120	Deciduous Forest	0.154	0.44	0.45	0.98	0.600	0.741	0.154	0.470
		High Intensity Residential	0.195	0.56	0.82	0.69	1.000			
	120 - 150	Deciduous Forest	0.168	0.48	0.46	1.05	0.600	0.725	0.154	0.470
		High Intensity Residential	0.181	0.52	0.84	0.62	1.000			
	150 - 190	Deciduous Forest	0.181	0.52	0.48	1.08	0.600	0.510	0.154	0.470
		Low Intensity Residential	0.168	0.48	0.84	0.57	0.375			
	190 - 240	Grasslands/Herbaceous	0.436		0.65		0.065	0.065	0.154	0.470
	240 - 275	Grasslands/Herbaceous	0.234	0.77	0.58	1.33	0.065	0.083	0.154	0.470
		Quarries/ Strip Mines/ Gravel	0.071	0.23	0.92	0.25	0.300			
	275 - 70	Grasslands/Herbaceous	1.352		0.48		0.065	0.065	0.154	0.470
19, 40	0 - 45	High Intensity Residential	0.047	0.12	0.22	0.53	1.000	0.779	0.154	0.470
		Commercial/Industrial/Transport (Not at Airport)	0.346	0.88	0.71	1.25	0.700			
	45 - 75	High Intensity Residential	0.072	0.28	0.39	0.71	1.000	0.281	0.154	0.470
		Open Water	0.048	0.18	0.59	0.31	0.001			
		High Intensity Residential	0.142	0.54	0.82	0.66	1.000			
	75 - 125	High Intensity Residential	0.018	0.04	0.14	0.31	1.000	0.388	0.154	0.470
		Open Water	0.030	0.07	0.28	0.25	0.001			
		High Intensity Residential	0.387	0.89	0.70	1.27	1.000			
	125 - 160	High Intensity Residential	0.013	0.04	0.14	0.31	1.000	0.079	0.154	0.470
		Open Water	0.024	0.08	0.29	0.26	0.001			
		Commercial/Industrial/Transport (Not at Airport)	0.167	0.55	0.60	0.91	0.700			
		Open Water	0.101	0.33	0.90	0.37	0.001			
	160 - 210	High Intensity Residential	0.107	0.25	0.32	0.76	1.000	0.857	0.154	0.470
		Deciduous Forest	0.147	0.34	0.62	0.54	0.600			
		High Intensity Residential	0.182	0.42	0.86	0.49	1.000			
	210 - 255	Low Intensity Residential	0.164	0.42	0.42	0.99	0.375	0.457	0.154	0.470
		Deciduous Forest	0.229	0.58	0.81	0.72	0.600			
	255 - 300	Deciduous Forest	0.393		0.65		0.600	0.600	0.154	0.470
	300 - 0	Low Intensity Residential	0.250	0.48	0.44	1.09	0.375	0.446	0.154	0.470
		Deciduous Forest	0.273	0.52	0.82	0.64	0.600			
19, 41	0 - 45	Commercial/Industrial/Transport (Not at Airport)	0.393		0.65		0.700	0.700	0.154	0.470
	45 - 80	Deciduous Forest	0.083	0.27	0.36	0.76	0.600	0.301	0.154	0.470
		Open Water	0.033	0.11	0.58	0.19	0.001			
		Deciduous Forest	0.189	0.62	0.80	0.77	0.600			
	80 - 125	Commercial/Industrial/Transport (Not at Airport)	0.051	0.13	0.24	0.55	0.700	0.447	0.154	0.470
		Open Water	0.028	0.07	0.40	0.18	0.001			
		High Intensity Residential	0.313	0.80	0.74	1.08	1.000			
	125 - 180	High Intensity Residential	0.062	0.13	0.23	0.55	1.000	0.340	0.154	0.470
		Open Water	0.060	0.13	0.44	0.29	0.001			
		High Intensity Residential	0.358	0.75	0.75	1.00	1.000			
	180 - 220	High Intensity Residential	0.349		0.65		1.000	1.000	0.154	0.470
	220 - 270	Low Intensity Residential	0.095	0.22	0.30	0.72	0.375	0.496	0.154	0.470
		Deciduous Forest	0.342	0.78	0.74	1.06	0.600			
	270 - 325	Low Intensity Residential	0.133	0.28	0.34	0.82	0.375	0.483	0.154	0.470
		Deciduous Forest	0.347	0.72	0.76	0.95	0.600			
	325 - 0	Low Intensity Residential	0.142	0.46	0.45	1.04	0.375	0.545	0.154	0.470
		High Intensity Residential	0.164	0.54	0.84	0.64	1.000			
19, 42	15 - 105	High Intensity Residential	0.785		0.60		1.000	1.000	0.154	0.470
	105 - 180	Commercial/Industrial/Transport (Not at Airport)	0.654		0.62		0.700	0.700	0.154	0.470
	180 - 220	Deciduous Forest	0.029	0.08	0.19	0.44	0.600	0.707	0.154	0.470
		High Intensity Residential	0.093	0.27	0.45	0.60	1.000			
		Deciduous Forest	0.227	0.65	0.80	0.82	0.600			
	220 - 270	Deciduous Forest	0.169	0.39	0.40	0.96	0.600	0.224	0.154	0.470
		Grasslands/Herbaceous	0.267	0.61	0.80	0.77	0.065			
	270 - 315	Deciduous Forest	0.393		0.65		0.600	0.600	0.154	0.470
	315 - 15	Deciduous Forest	0.140	0.27	0.33	0.81	0.600	0.794	0.154	0.470
		High Intensity Residential	0.384	0.73	0.75	0.98	1.000			
20, 39	5 - 35	Open Water	0.196	0.75	0.57	1.31	0.001	0.003	0.154	0.470
		High Intensity Residential	0.066	0.25	0.92	0.27	1.000			
	35 - 70	Open Water	0.208	0.68	0.54	1.26	0.001	0.004	0.154	0.470
		Low Intensity Residential	0.097	0.32	0.90	0.35	0.375			
	70 - 260	Open Water	1.658		0.40		0.001	0.001	0.154	0.470
	260 - 305	Open Water	0.095	0.24	0.34	0.70	0.001	0.059	0.154	0.470
		High Intensity Residential	0.298	0.76	0.75	1.01	1.000			
	305 - 5	Open Water	0.390	0.74	0.55	1.36	0.001	0.003	0.154	0.470
		Commercial/Industrial/Transport (Not at Airport)	0.134	0.26	0.90	0.29	0.700			

Appendix 3.8 - Detailed Calculations of Albedo, Bowen Ratio and Surface Roughness

PATH Grid	Sector (degree)	Land Use Type	Area (km^2)	Fraction of Section Total Area	Distance (km)	Weighting	Surface Roughness (Zo) [(a)]	Resultant Surface Roughness (Zo) (m) [(a)]	Albedo (r)	Bowen Ratio (Bo)
20, 40	0 - 30	High Intensity Residential	0.130	0.50	0.49	1.02	1.000	0.693	0.154	0.470
		Low Intensity Residential	0.131	0.50	0.83	0.61	0.375			
	30 - 130	High Intensity Residential	0.121	0.14	0.23	0.60	1.000	0.702	0.154	0.470
		Deciduous Forest	0.751	0.86	0.64	1.34	0.600			
	130 - 160	High Intensity Residential	0.262		0.66		1.000	1.000	0.154	0.470
	160 - 190	High Intensity Residential	0.078	0.30	0.36	0.82	1.000	0.027	0.154	0.470
		Open Water	0.184	0.70	0.78	0.90	0.001			
	190 - 235	High Intensity Residential	0.067	0.17	0.27	0.63	1.000	0.012	0.154	0.470
		Open Water	0.325	0.83	0.73	1.14	0.001			
	235 - 280	High Intensity Residential	0.300	0.77	0.57	1.35	1.000	0.944	0.154	0.470
		Commercial/Industrial/Transport (Not at Airport)	0.092	0.23	0.91	0.26	0.700			
	280 - 315	High Intensity Residential	0.241	0.79	0.58	1.35	1.000	0.373	0.154	0.470
		Open Water	0.064	0.21	0.93	0.23	0.001			
	315 - 0	High Intensity Residential	0.393		0.65		1.000	1.000	0.154	0.470
20, 41	30 - 115	High Intensity Residential	0.188	0.13	0.30	0.42	1.000	0.372	0.154	0.470
		High Intensity Residential	0.188	0.13	0.30	0.42	1.000			
		Low Intensity Residential	0.263	0.18	0.59	0.30	0.375			
		Low Intensity Residential	0.263	0.18	0.59	0.30	0.375			
		Grasslands/Herbaceous	0.291	0.20	0.82	0.24	0.065			
		Grasslands/Herbaceous	0.291	0.20	0.82	0.24	0.065			
	115 - 225	High Intensity Residential	0.960	0.50	0.57	0.88	1.000	1.000	0.154	0.470
		High Intensity Residential	0.960	0.50	0.57	0.88	1.000			
	225 - 270	High Intensity Residential	0.056	0.07	0.26	0.28	1.000	0.315	0.154	0.470
		High Intensity Residential	0.056	0.07	0.26	0.28	1.000			
		Open Water	0.048	0.06	0.50	0.12	0.001			
		Open Water	0.048	0.06	0.50	0.12	0.001			
		Commercial/Industrial/Transport (Not at Airport)	0.289	0.37	0.75	0.49	0.700			
		Commercial/Industrial/Transport (Not at Airport)	0.289	0.37	0.75	0.49	0.700			
	270 - 350	High Intensity Residential	0.108	0.08	0.28	0.27	1.000	0.377	0.154	0.470
		High Intensity Residential	0.108	0.08	0.28	0.27	1.000			
		Open Water	0.063	0.05	0.45	0.10	0.001			
		Open Water	0.063	0.05	0.45	0.10	0.001			
		Commercial/Industrial/Transport (Not at Airport)	0.526	0.38	0.71	0.53	0.700			
		Commercial/Industrial/Transport (Not at Airport)	0.526	0.38	0.71	0.53	0.700			
	350 - 30	High Intensity Residential	0.349	0.50	0.65	0.77	1.000	1.000	0.154	0.470
		High Intensity Residential	0.349	0.50	0.65	0.77	1.000			
21, 39	30 - 70	Low Intensity Residential	0.080	0.23	0.31	0.74	0.375	0.524	0.154	0.470
		Commercial/Industrial/Transport (Not at Airport)	0.159	0.46	0.66	0.69	0.700			
		Deciduous Forest	0.110	0.31	0.89	0.35	0.600			
	70 - 120	Open Water	0.039	0.09	0.23	0.41	0.001	0.190	0.154	0.470
		High Intensity Residential	0.378	0.91	0.70	1.30	1.000			
	120 - 320	Open Water	1.765		0.37		0.001	0.001	0.154	0.470
	320 - 350	Low Intensity Residential	0.262		0.66		0.375	0.375	0.154	0.470
	350 - 30	Low Intensity Residential	0.149	0.43	0.44	0.96	0.375	0.458	0.154	0.470
		Deciduous Forest	0.200	0.57	0.81	0.71	0.600			
21, 40	10 - 135	Deciduous Forest	1.091		0.54		0.600	0.600	0.154	0.470
	135 - 165	High Intensity Residential	0.262		0.66		1.000	1.000	0.154	0.470
	165 - 195	High Intensity Residential	0.098	0.38	0.41	0.92	1.000	0.043	0.154	0.470
		Open Water	0.163	0.62	0.81	0.77	0.001			
	195 - 255	High Intensity Residential	0.077	0.15	0.25	0.59	1.000	0.010	0.154	0.470
		Open Water	0.447	0.85	0.70	1.21	0.001			
	255 - 10	High Intensity Residential	1.003		0.56		1.000	1.000	0.154	0.470
21, 41	200 - 260	Deciduous Forest	0.132	0.13	0.33	0.38	0.600	0.802	0.154	0.470
		Deciduous Forest	0.132	0.13	0.33	0.38	0.600			
		High Intensity Residential	0.392	0.37	0.74	0.50	1.000			
		High Intensity Residential	0.392	0.37	0.74	0.50	1.000			
	260 - 310	Deciduous Forest	0.042	0.05	0.21	0.23	0.600	0.639	0.154	0.470
		Deciduous Forest	0.042	0.05	0.21	0.23	0.600			
		Low Intensity Residential	0.129	0.15	0.50	0.30	0.375			
		Low Intensity Residential	0.129	0.15	0.50	0.30	0.375			
		High Intensity Residential	0.266	0.30	0.79	0.39	1.000			
		High Intensity Residential	0.266	0.30	0.79	0.39	1.000			
	310 - 340	Deciduous Forest	0.095	0.18	0.40	0.46	0.600	0.483	0.154	0.470
		Deciduous Forest	0.095	0.18	0.40	0.46	0.600			
		Low Intensity Residential	0.167	0.32	0.81	0.39	0.375			
		Low Intensity Residential	0.167	0.32	0.81	0.39	0.375			
	340 - 200	Deciduous Forest	1.920	0.50	0.33	1.53	0.600	0.600	0.154	0.470
		Deciduous Forest	1.920	0.50	0.33	1.53	0.600			

Note:

(a) With reference to Table A-3 of the AERSURFACE User's Guide 2008 (revised in 2013), the surface roughness values for Commercial/Industrial/Transp (Not at Airport) (Class 23),High Intensity Residential (Class 22), Low Intensity Residential (Class 21) and Open Water (Class 11) are assumed to be 0.7m, 1m, 0.375m and 0.001m respectively. With the height of tree assumed to be 6m on average, the surface roughness value of 0.6m has been adopted for trees (Deciduous Forest) based on the fact that the surface roughness value can be estimated as about 10% of the average height of physical structures. For sector consisting of 2 or more different land use types, the resultant surface roughness length for the sector is calculated based on the inverse-distance weighted geometric mean.

Legend

- Project Site Boundary for Construction Phase
- 10km X 10km Square from the Center of Project Site Boundary

Landuse

- High Intensity Residential
- Grasslands/Herbaceous
- Deciduous Forest
- Open Water
- Commercial/Industrial/Transport (Not at Airport)
- Bare Rock/Sand/Clay (Non-arid Region)
- Quarries/ Strip Mines/ Gravel

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

10km x 10km Area from Project Site

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 26/10/2022	Checked / Approved
Scale 1:40,000 (A3)	Status	

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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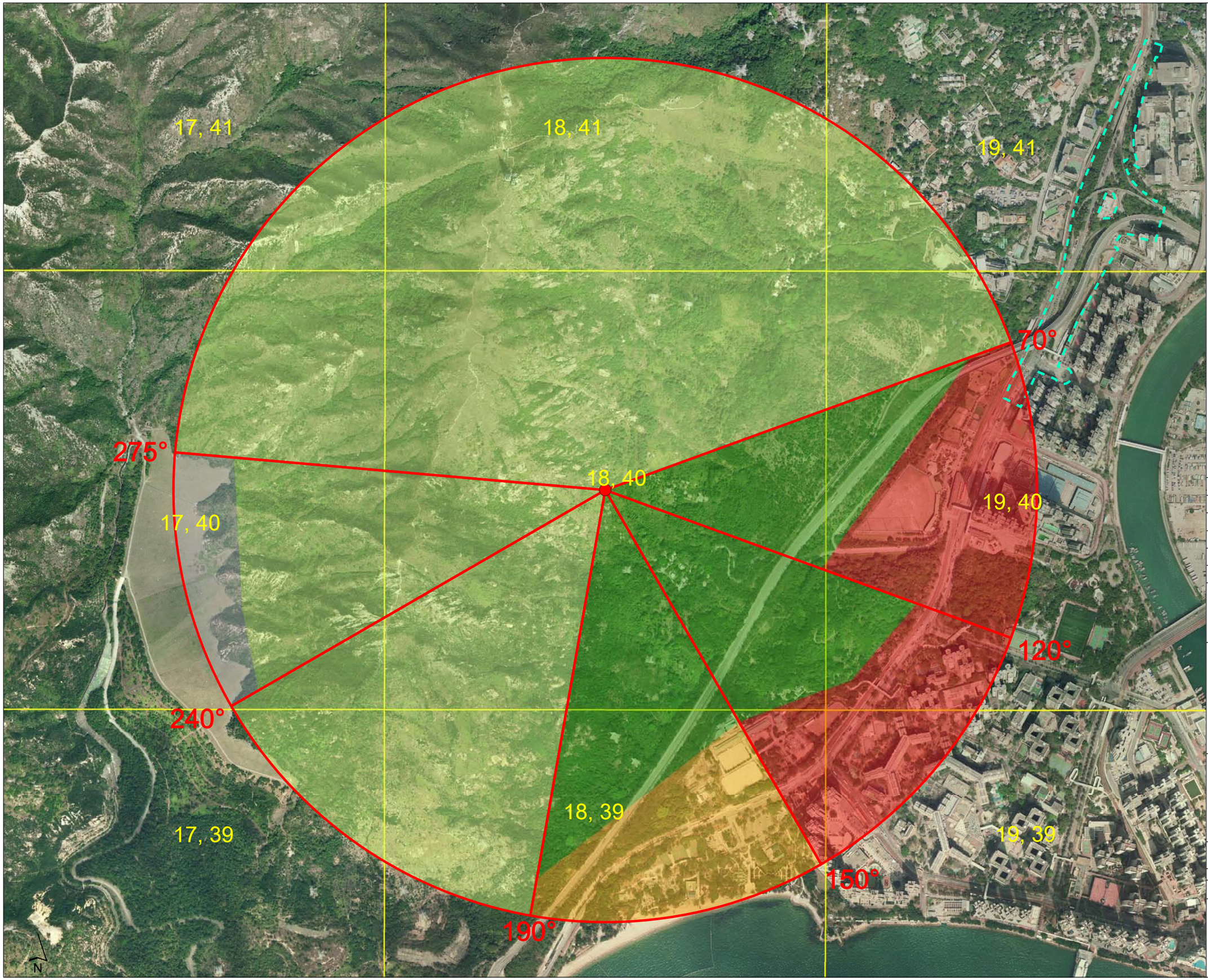

Legend

- Center of Grid
- Project Site Boundary for Construction Phase
- 1km Boundary from Center of Grid

Landuse

- High Intensity Residential
- Low Intensity Residential
- Grasslands/Herbaceous
- Deciduous Forest
- Quarries/ Strip Mines/ Gravel

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 18, 40

Drawing No.			Rev.
Appendix 3.8			
Drawn	Date: 21/3/2023	Checked	Approved
Scale 1:8,000 (A3)		Status	

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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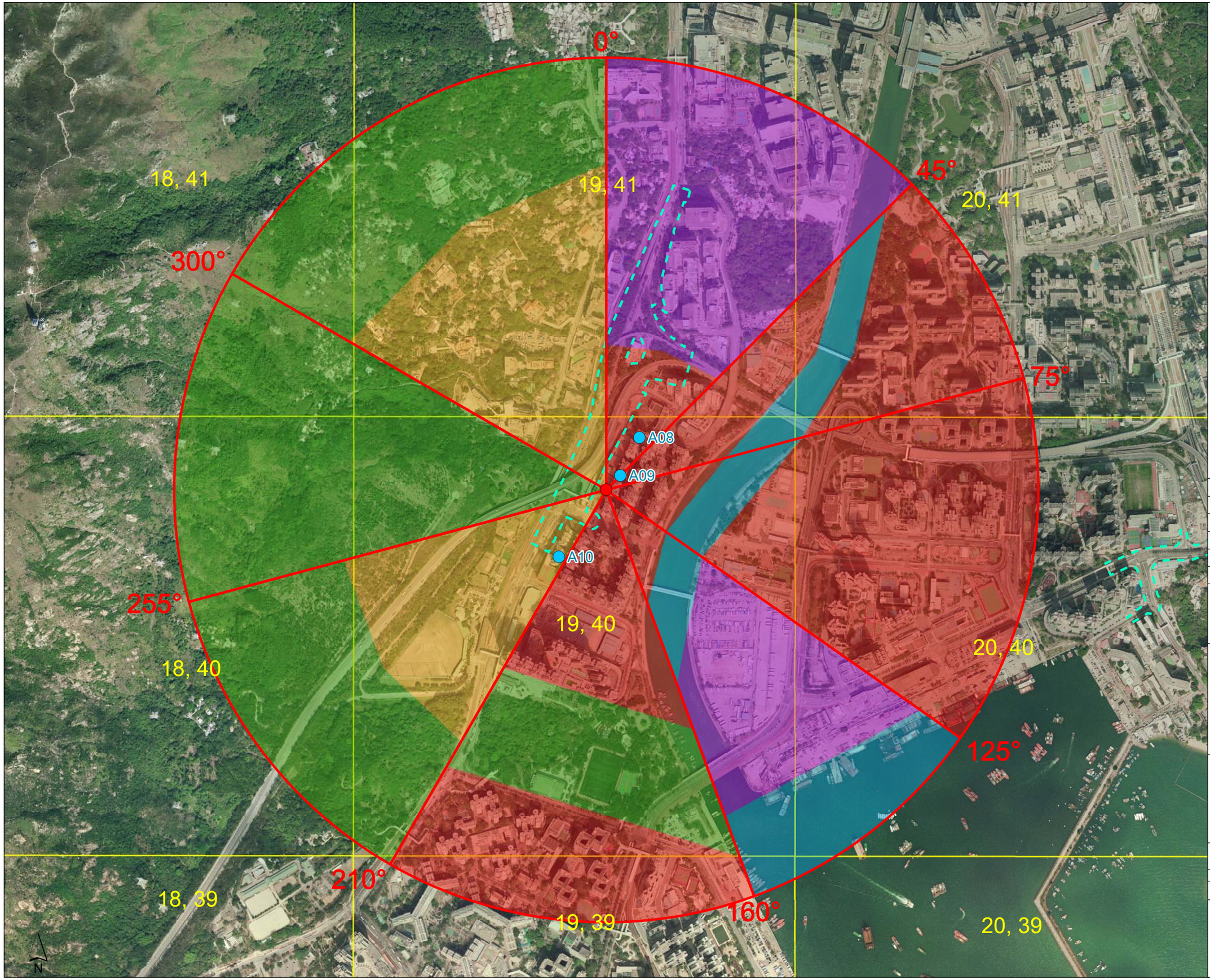

Legend

- Center of ASRs
- Representative Air Sensitive Receivers (Existing)
- Project Site Boundary for Construction Phase

Landuse

- High Intensity Residential
- Low Intensity Residential
- Deciduous Forest
- Open Water
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 19, 40

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 15/2/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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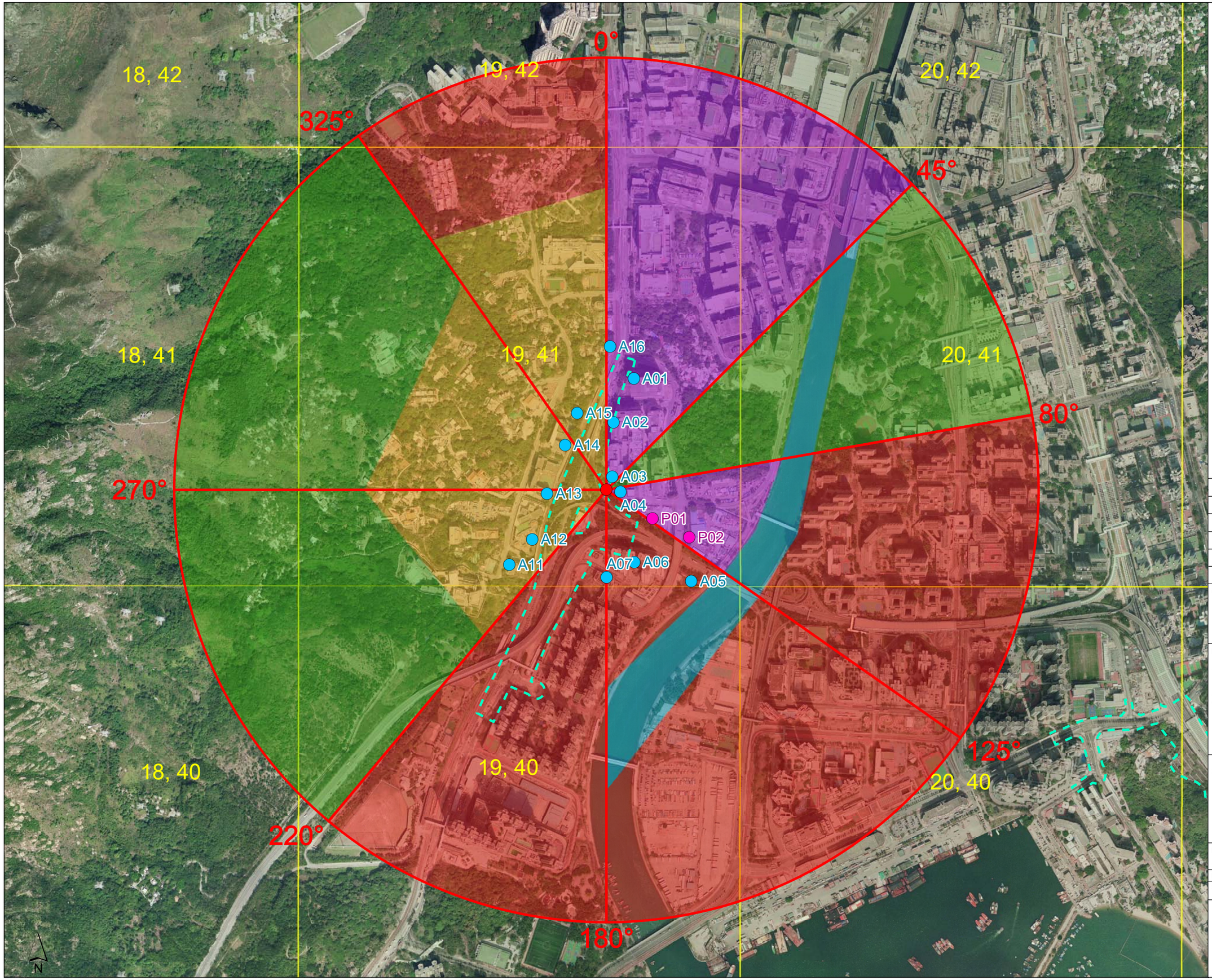

Legend

- Center of ASRs
- Representative Air Sensitive Receivers (Existing)
- Representative Air Sensitive Receivers (Planned)
- Project Site Boundary for Construction Phase

Landuse

- High Intensity Residential
- Low Intensity Residential
- Deciduous Forest
- Open Water
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 19, 41

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 15/2/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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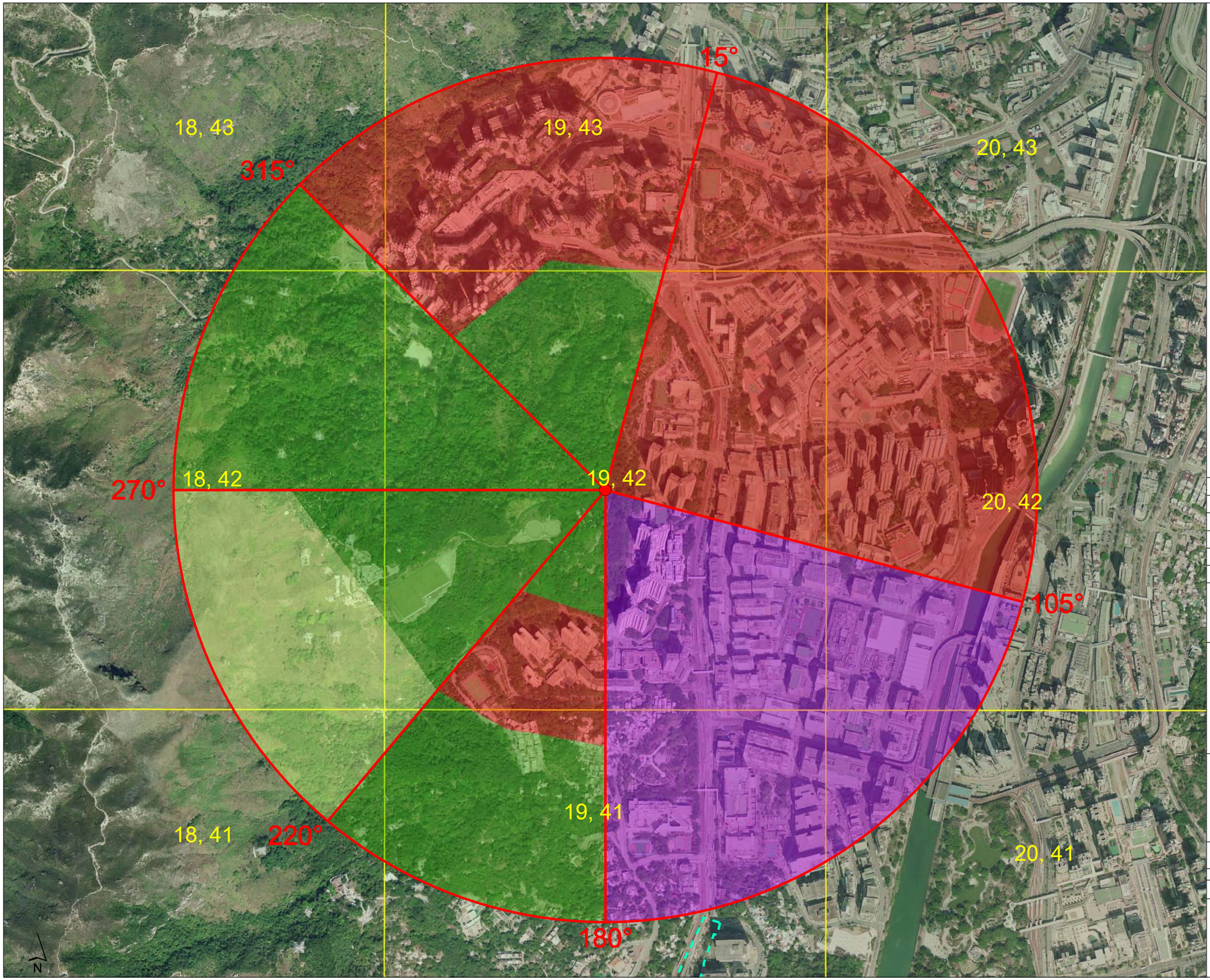

Legend

- Center of Grid
- Project Site Boundary for Construction Phase
- 1km Boundary from Center of Grid

Landuse

- High Intensity Residential
- Grasslands/Herbaceous
- Deciduous Forest
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 19, 42

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 21/3/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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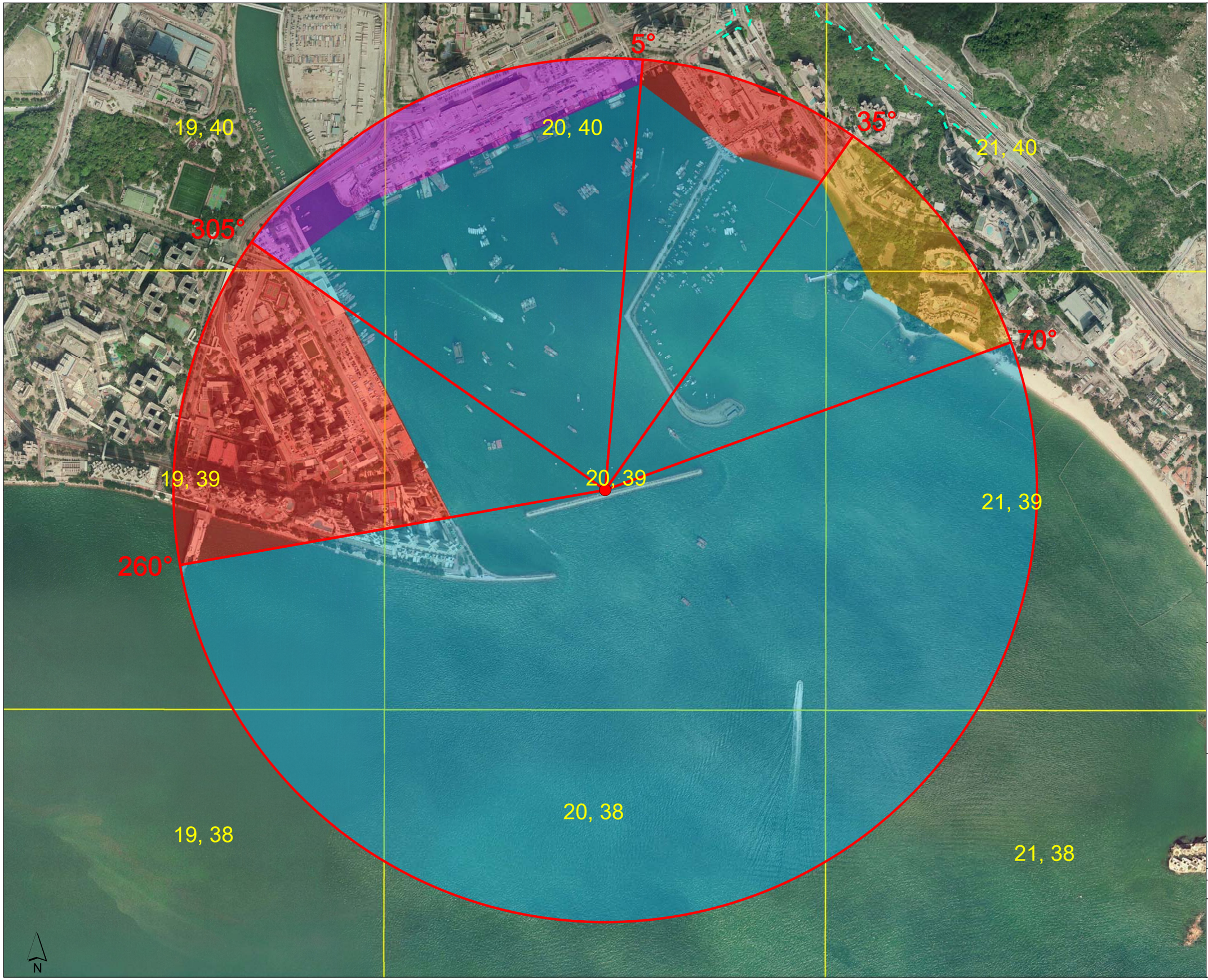

Legend

- Center of Grid
- Project Site Boundary for Construction Phase
- 1km Boundary from Center of Grid

Landuse

- High Intensity Residential
- Low Intensity Residential
- Open Water
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 20, 39

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 21/3/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處(專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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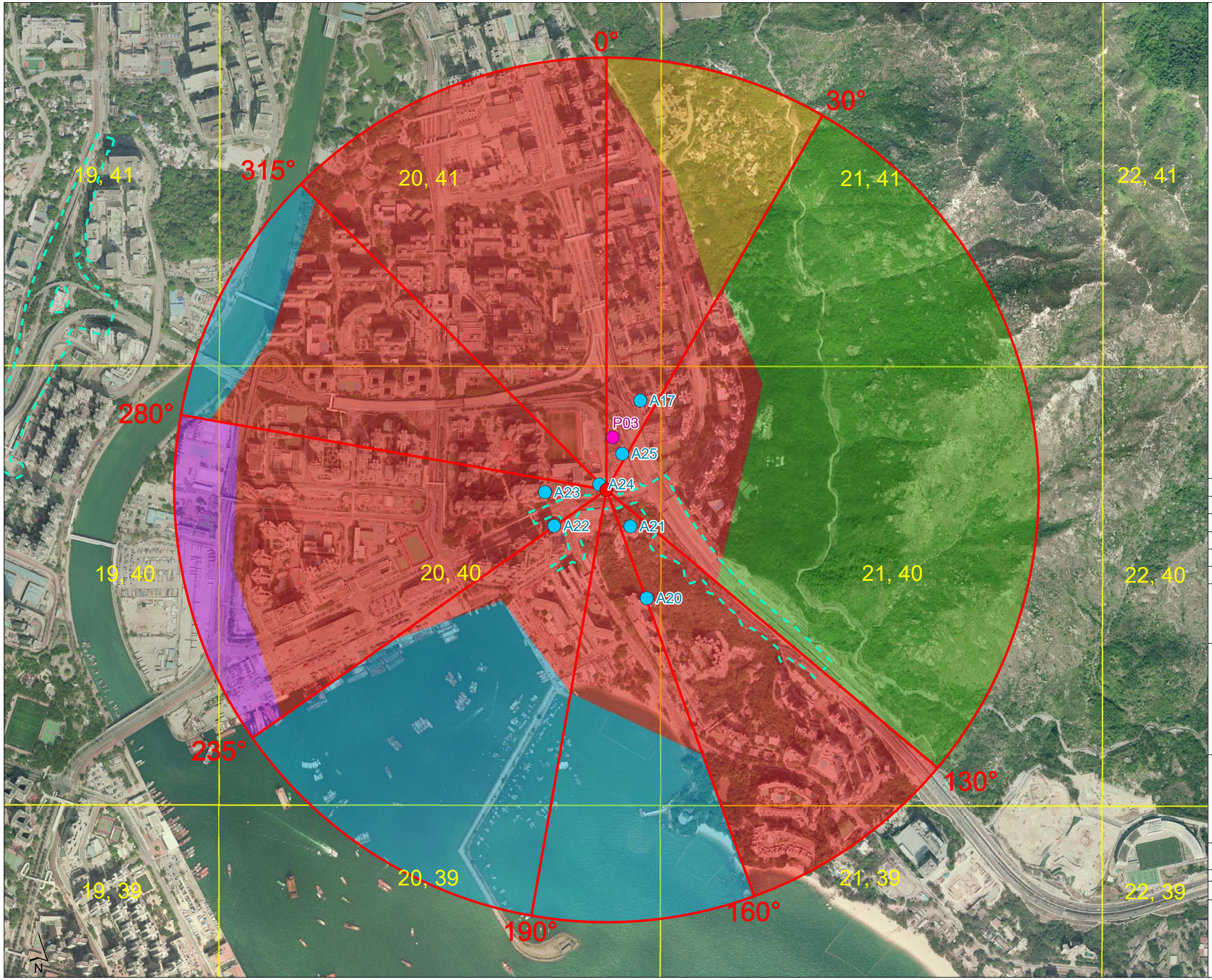

Legend

- Center of ASRs
- Representative Air Sensitive Receivers (Existing)
- Representative Air Sensitive Receivers (Planned)
- Project Site Boundary for Construction Phase

Landuse

- High Intensity Residential
- Low Intensity Residential
- Deciduous Forest
- Open Water
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN - WIDENING AND ADDITION OF SLIP ROADS AT LUNG FU ROAD/ TUEN MUN ROAD/ WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 20, 40

Drawing No.			Rev.
Appendix 3.8			
Drawn	Date: 15/2/2023	Checked	Approved
Scale 1:8,000 (A3)		Status	

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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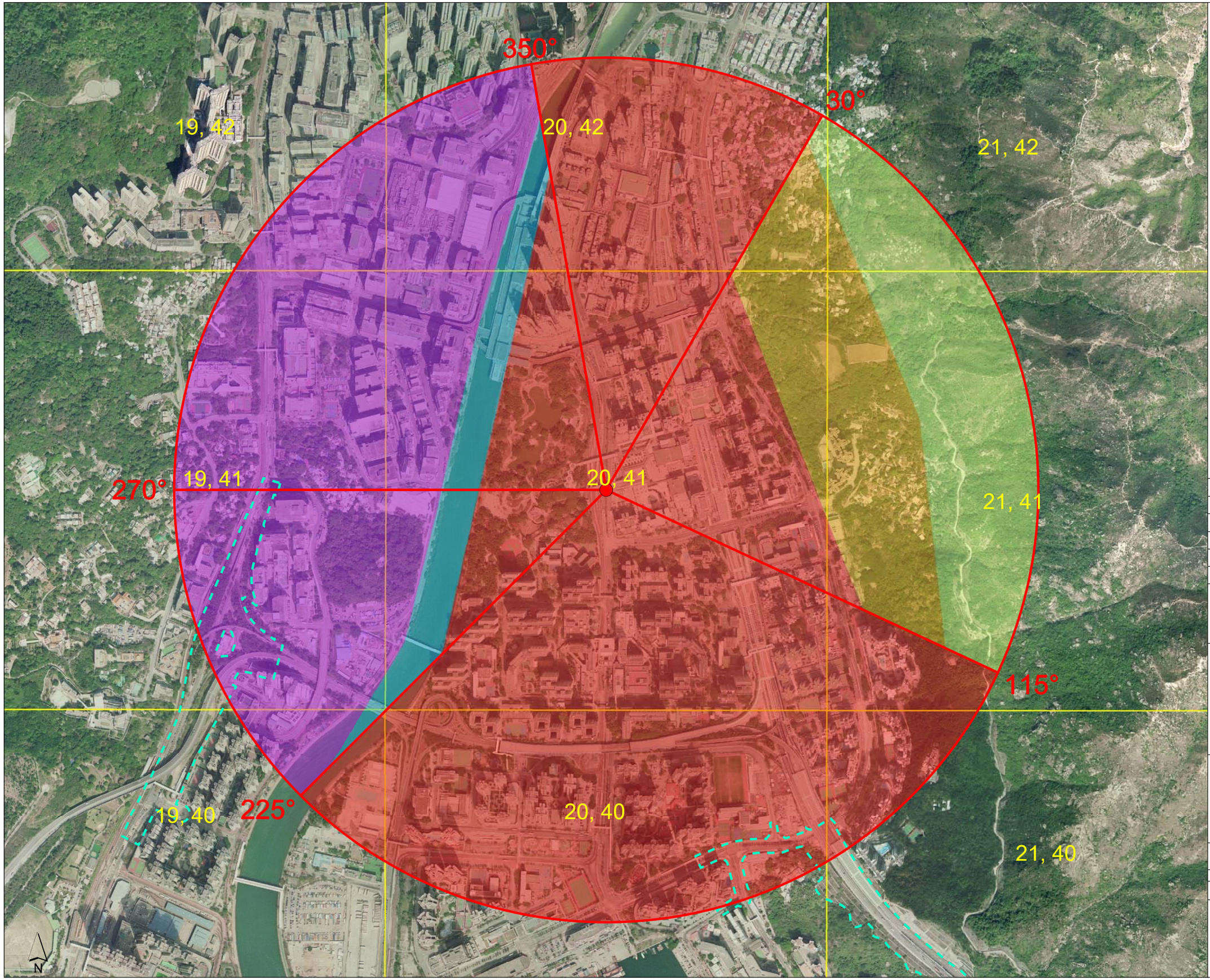

Legend

- Center of Grid
- Project Site Boundary for Construction Phase
- 1km Boundary from Center of Grid

Landuse

- High Intensity Residential
- Low Intensity Residential
- Grasslands/Herbaceous
- Open Water
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 20, 41

Drawing No.			Rev.
Appendix 3.8			
Drawn	Date: 23/2/2023	Checked	Approved
Scale 1:8,000 (A3)		Status	

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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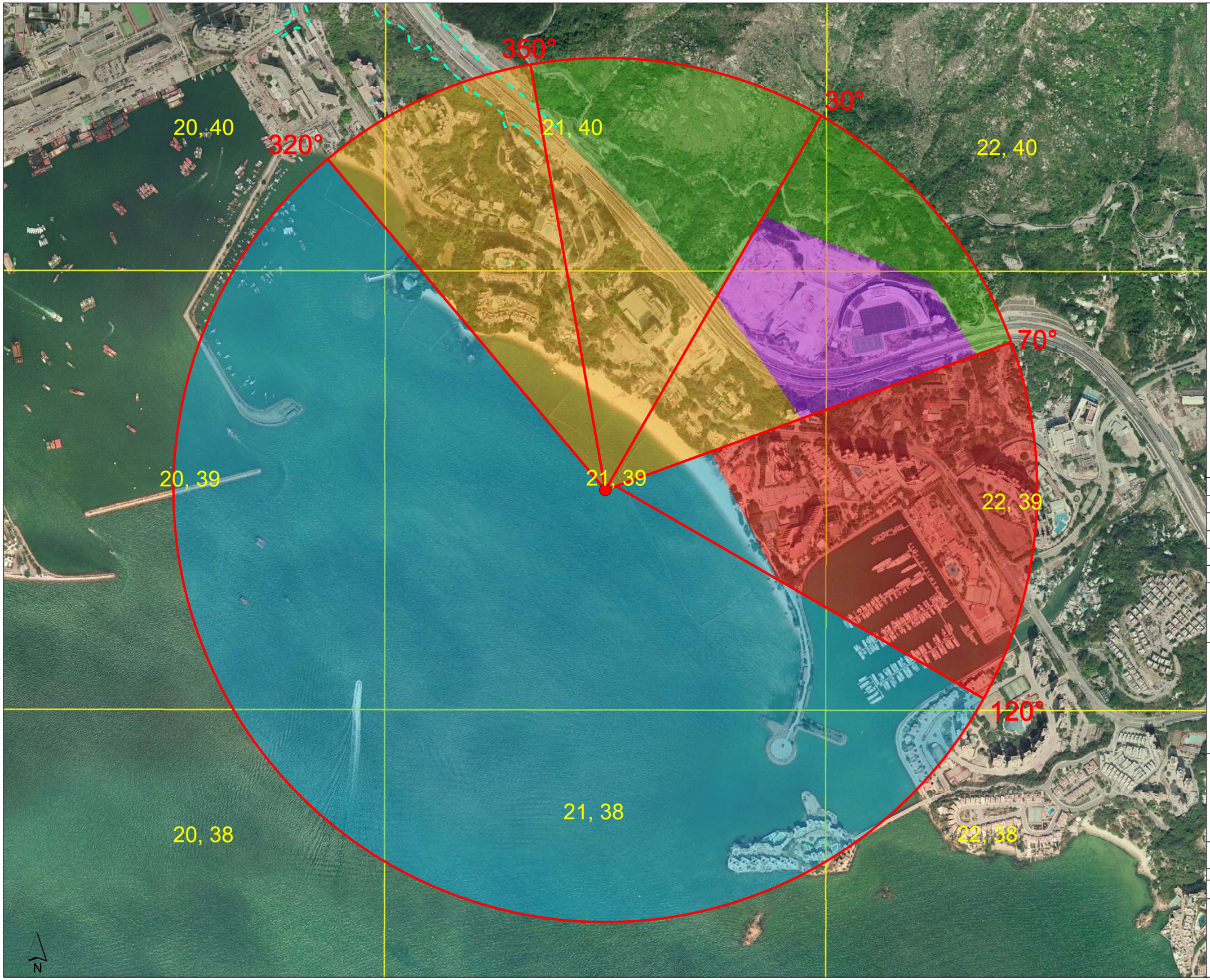

Legend

- Center of Grid
- Project Site Boundary for Construction Phase
- 1km Boundary from Center of Grid

Landuse

- High Intensity Residential
- Low Intensity Residential
- Deciduous Forest
- Open Water
- Commercial/Industrial/Transport (Not at Airport)

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 21, 39

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 21/3/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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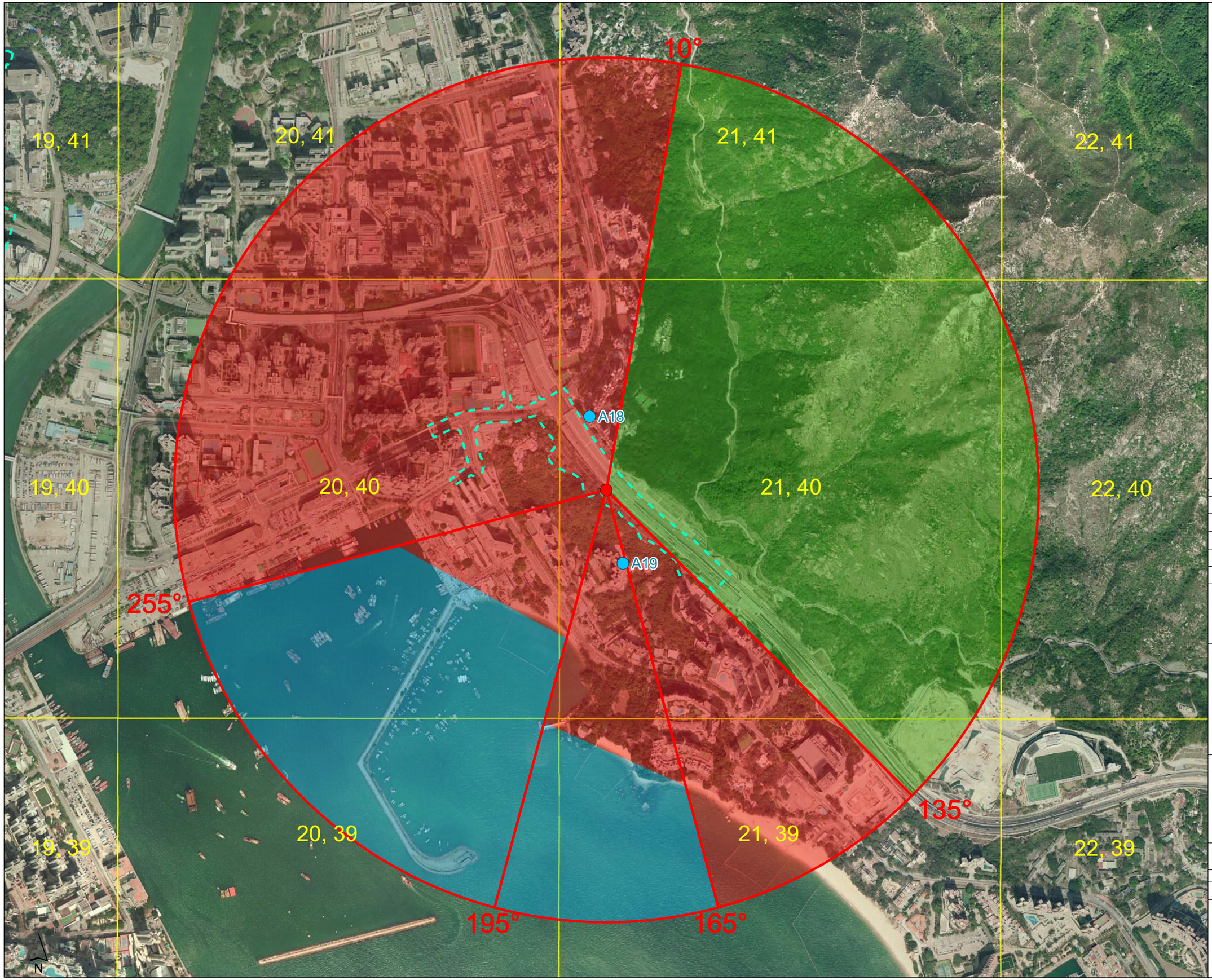

Legend

- Center of ASRs
- Representative Air Sensitive Receivers (Existing)
- Project Site Boundary for Construction Phase

Landuse

- High Intensity Residential
- Deciduous Forest
- Open Water

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 21, 40

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 15/2/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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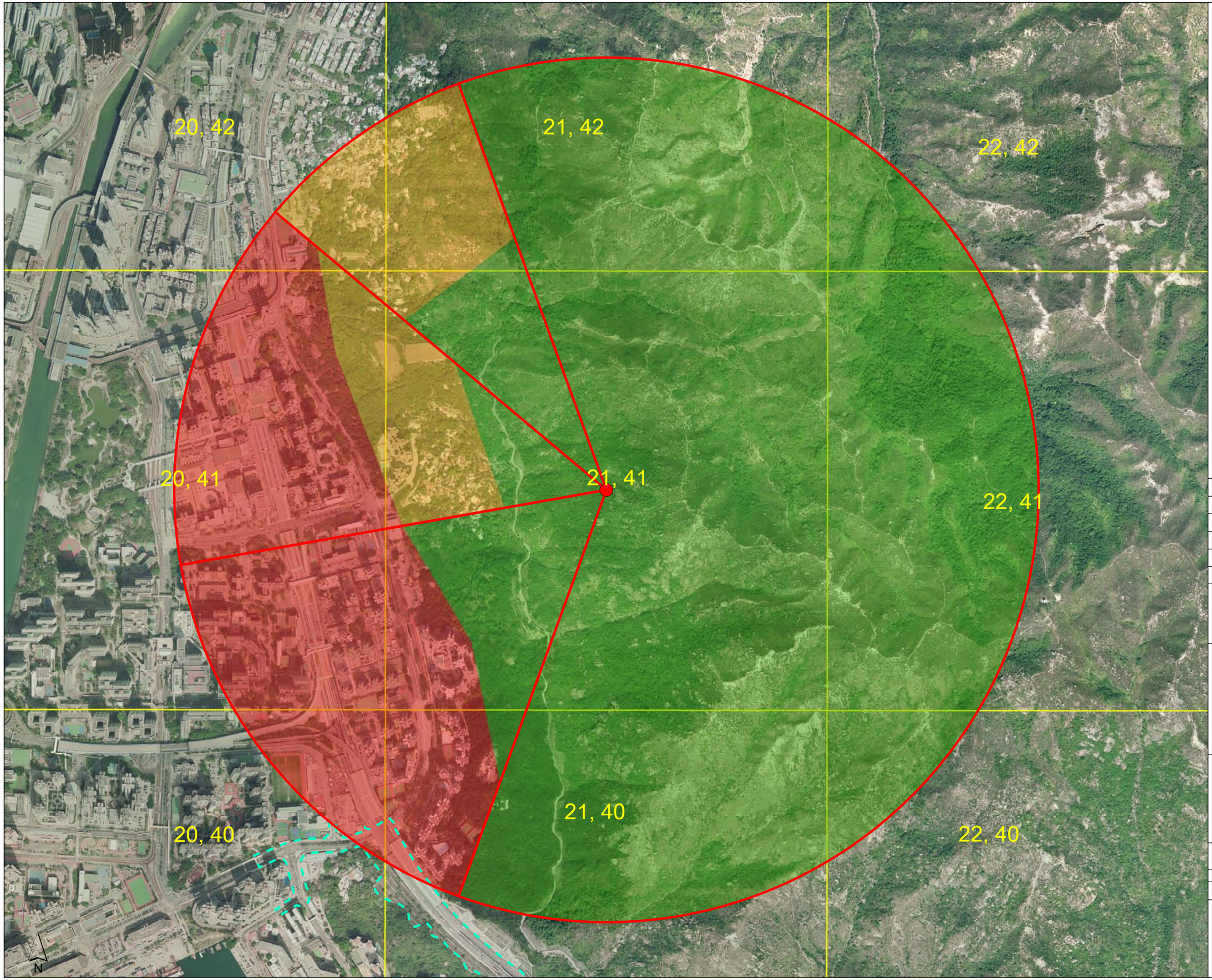

Legend

- Center of Grid
- Project Site Boundary for Construction Phase
- 1km Boundary from Center of Grid

Landuse

- High Intensity Residential
- Low Intensity Residential
- Deciduous Forest

Rev	Description	By	Date

Consultant

wsp

Project Title

TRAFFIC IMPROVEMENT SCHEME IN TUEN MUN
- WIDENING AND ADDITION OF SLIP ROADS
AT LUNG FU ROAD/ TUEN MUN ROAD/
WONG CHU ROAD/ HOI WING ROAD

Title

Sectors of Land Use for PATH Grid 21, 41

Drawing No.		Rev.
Appendix 3.8		
Drawn	Date: 23/2/2023	Checked / Approved
Scale 1:8,000 (A3)		Status

路政署
HIGHWAYS DEPARTMENT
主要工程管理處 (專責事務)
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)

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