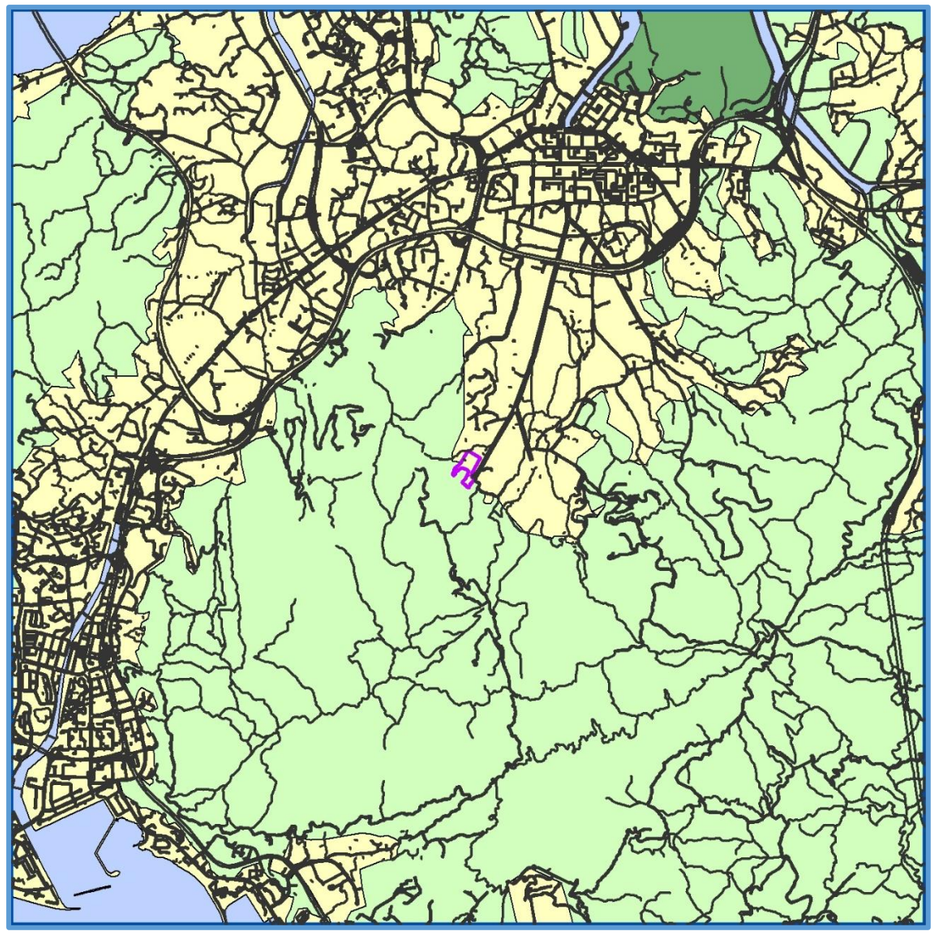
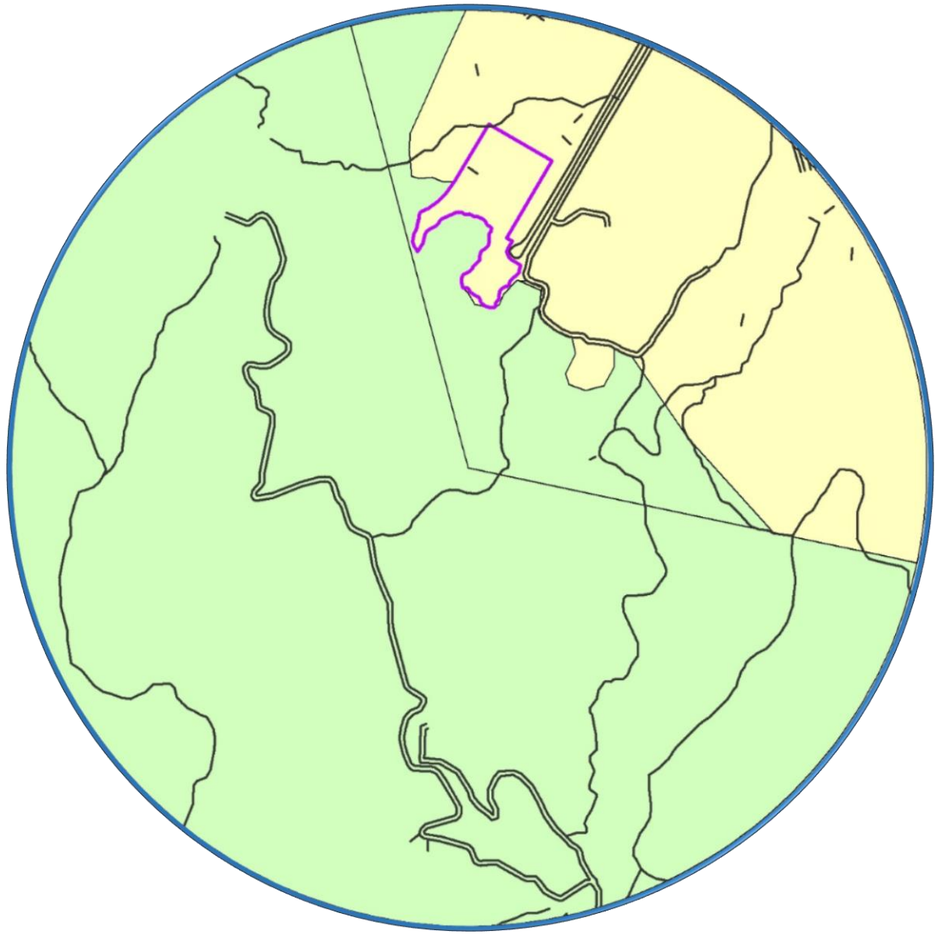
10km by 10km Region Centred on the Project Site



Legend

- 10km by 10km Region Centered on the Project Site
- Project Site

1km Boundary from Grid 2443

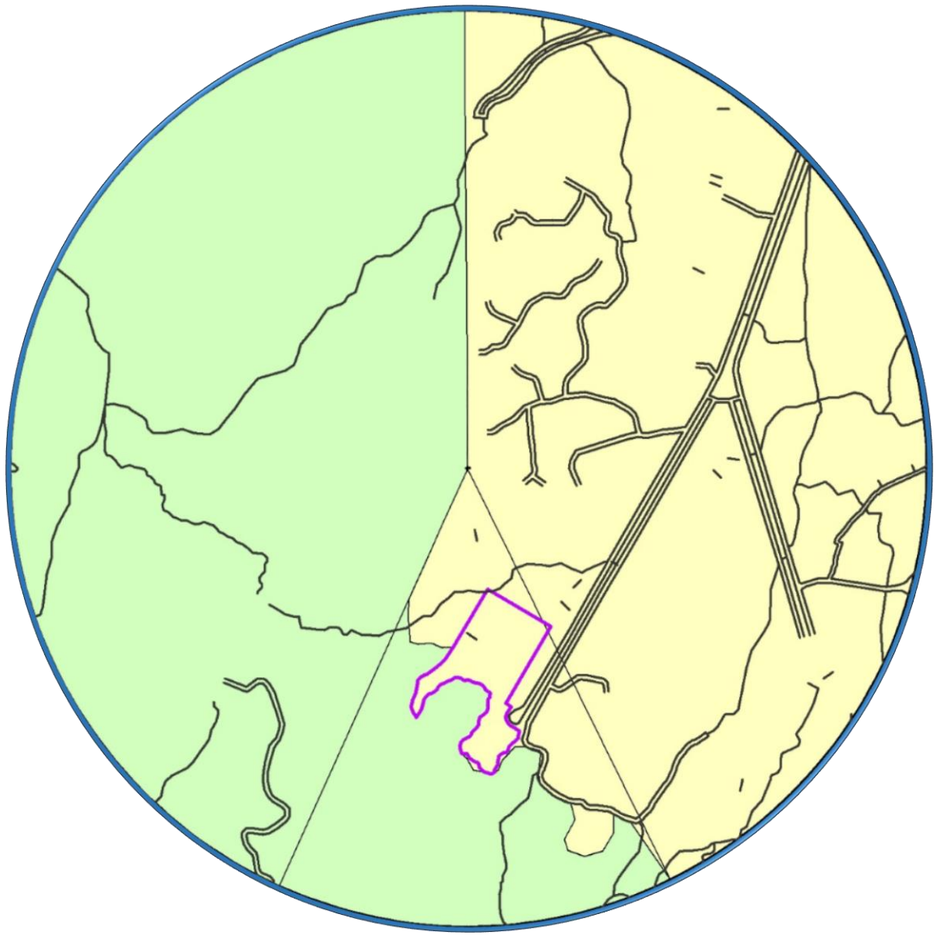


Legend

- Project Site
- 1km boundary from Grid 2443

Note: Pale Yellow area is classified as urban area. Blue area is classified as water area. Pale Green area is classified as grassland area. Dark Green area is classified as swamp area.

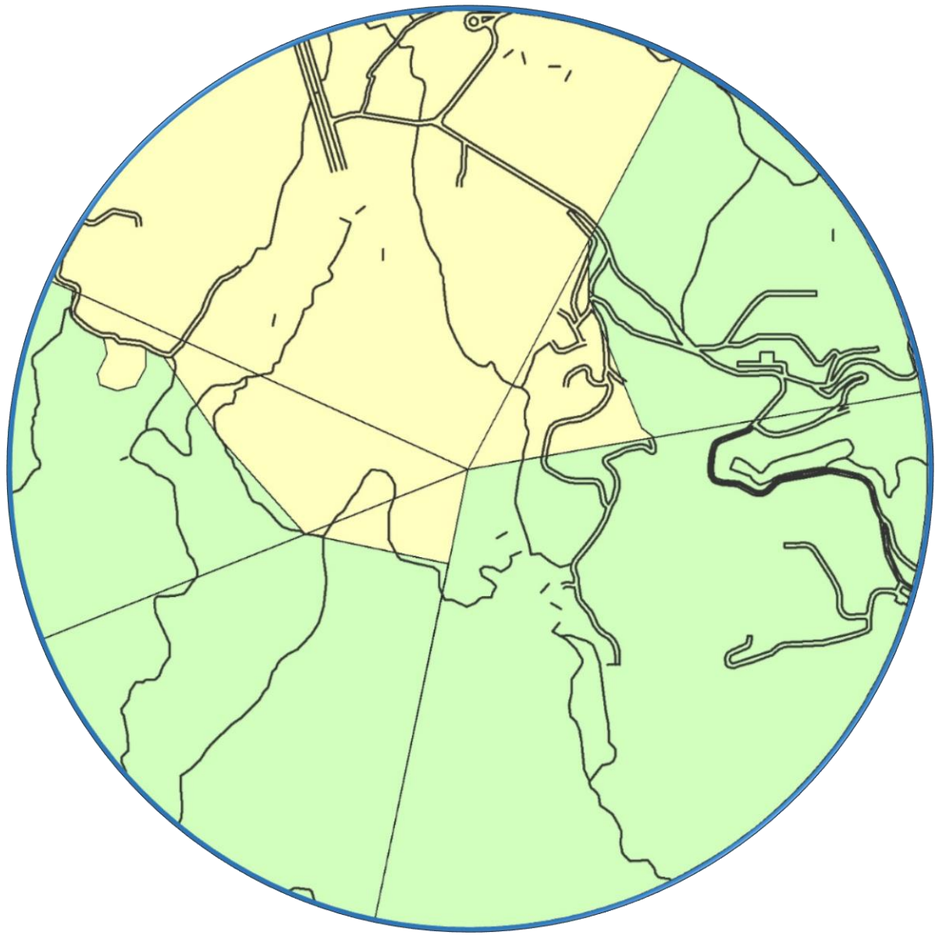
1km Boundary from Grid 2444



Legend

- Project Site
- 1km boundary from Grid 2444

1km Boundary from Grid 2543



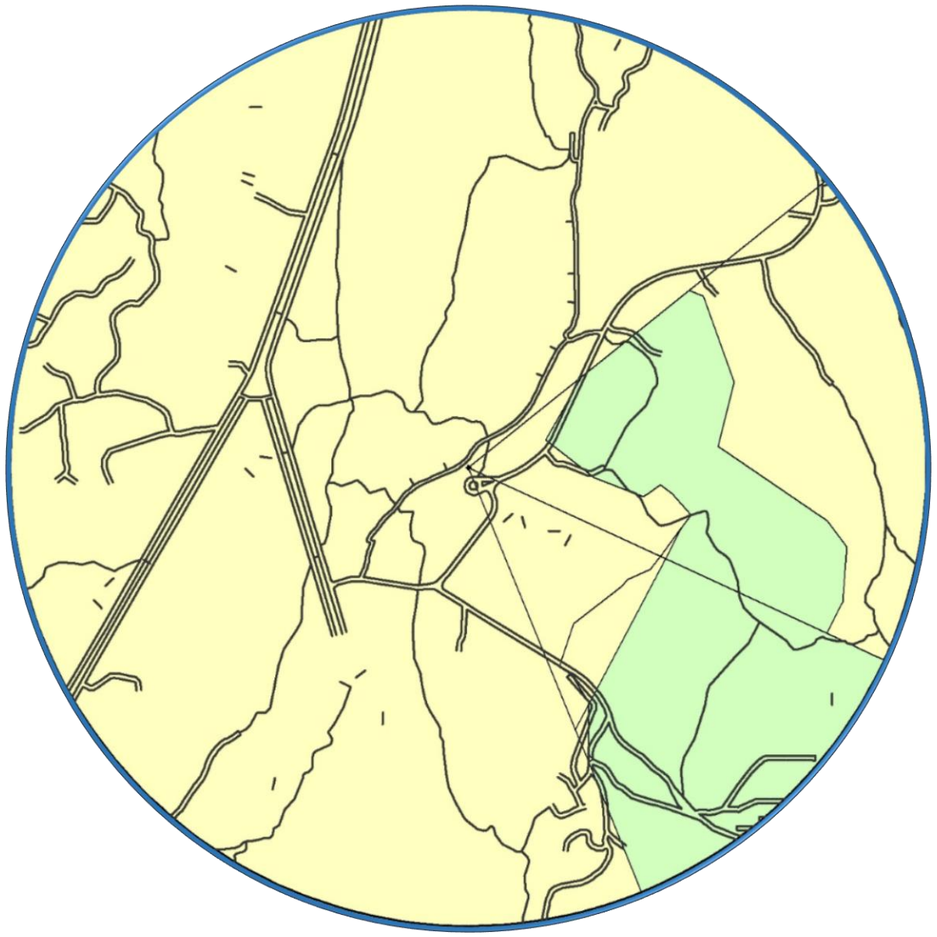
Legend

- Project Site
- 1km boundary from Grid 2543

Note: Pale Yellow area is classified as urban area. Blue area is classified as water area. Green area is classified as grassland area. Dark Green area is classified as swamp area.

Appendix 3.3 Determination of Surface Characteristics

1km Boundary from Grid 2544



Legend

- Project Site
- 1km boundary from Grid 2544

Note: Pale Yellow area is classified as urban area. Blue area is classified as water area. Green area is classified as grassland area. Dark Green area is classified as swamp area.

Appendix 3.3 Determination of Surface Characteristics

Land Type	Season	Default Albedo from AERMET	Default Bowen Ratio from AERMET	Default Surface Roughness(m) from AERMET
Urban	Spring	0.14	1.00	1.0000
	Summer	0.16	2.00	1.0000
	Autumn	0.18	2.00	1.0000
	Average	0.160	1.667	1.0000
Grassland	Spring	0.18	0.40	0.0500
	Summer	0.18	0.80	0.1000
	Autumn	0.20	1.00	0.0100
	Average	0.187	0.733	0.0533
Water	Spring	0.12	0.10	0.0001
	Summer	0.10	0.10	0.0001
	Autumn	0.14	0.10	0.0001
	Average	0.120	0.100	0.0001
Swamp	Spring	0.12	0.10	0.2000
	Summer	0.14	0.10	0.2000
	Autumn	0.16	0.10	0.2000
	Average	0.140	0.100	0.2000

Appendix 3.3 Determination of Surface Characteristics

Grid 2443

Sector (degrees in Clockwise)	Land type	Area (m^2)	Distance	Weighting (Area Fraction/Distance)	Weighting Sum	Albedo	Bowen Ratio	Surface Roughness	Remarks
102-345	Grassland	2121415.8	-	-	-	0.1737	0.8963	0.05333	Grassland from east to north
345-102	Grassland	261670.4	423.90	0.0006053	0.001807			0.37468	Grassland and urban development from north to east
	Urban	758090.9	618.42	0.0012021					

Grid 2444

Sector (degrees in Clockwise)	Land type	Area (m^2)	Distance	Weighting (Area Fraction/Distance)	Weighting Sum	Albedo	Bowen Ratio	Surface Roughness	Remarks
0-154	Urban	1345327.7	-	-	-	0.1737	0.8963	1.00000	Urban development from north to southeast
154-204	Urban	163579.0	460.53	0.0008048	0.001799			0.19789	Grassland and urban development from southeast to southwest
	Grassland	277747.3	632.85	0.0009945					
204-0	Grassland	1354523.1	-	-	-			0.05333	Grassland from southwest to north

Grid 2543

Sector (degrees in Clockwise)	Land type	Area (m^2)	Distance	Weighting (Area Fraction/Distance)	Weighting Sum	Albedo	Bowen Ratio	Surface Roughness	Remarks
27-80	Urban	80628.14958	296.23	0.0005941	0.0016871	0.1737	0.8963	0.14971	Grassland and urban development from north to east
	Grassland	377553.7668	753.86	0.0010931					
80-191	Grassland	971933.6906	-	-	-			0.05333	Grassland from east to south
191-248	Urban	33349.29759	189.14	0.0003576	0.0016754			0.09971	Grassland and urban development from south to southwest
	Grassland	459660.5455	707.56	0.0013177					
248-294	Urban	133806.0126	443.28	0.0007517	0.0016801			0.19794	Grassland and urban development from southwest to west
	Grassland	267772.4919	718.21	0.0009284					
294-27	Urban	816473.0456	-	-	-			1.00000	Urban development from west to north

Grid 2544

Sector (degrees in Clockwise)	Land type	Area (m^2)	Distance	Weighting (Area Fraction/Distance)	Weighting Sum	Albedo	Bowen Ratio	Surface Roughness	Remarks
51-114	Urban 1	55703.6	244.19	0.0004112	0.001832	0.1737	0.8963	0.30901	Grassland and urban development from northeast to east
	Grassland	204172.0	501.32	0.0007342					
	Urban 2	294867.9	773.63	0.0006871					
114-157	Urban	76674.2	343.06	0.0005963	0.001638			0.15503	Grassland and urban development from east to southeast
	Grassland	298156.2	763.61	0.0010417					
157-51	Urban	2211603.0	-	-	-			1.00000	Urban development from south to northeast

Note:
1. Reference to AERMOD Implementation Guide, the determination of the Bowen ratio should be based on a simple unweighted geometric mean (i.e., no direction or distance dependency) for a representative domain, with a default domain defined by a 10km by 10km region centered on the measurement site.
2. Reference to AERMOD Implementation Guide, the determination of the albedo should be based on a simple unweighted arithmetic mean (i.e., no direction or distance dependency) for the same representative domain as defined for Bowen ratio, with a default domain defined by a 10km by 10km region centered on the measurement site.
3. Surface roughness length is based on an upwind distance of 1km relative to the concerned site.
4. Land use within 10km by 10km region centered on the measurement site included 36.91% urban (36912242 km2), 57.95% grassland (57951960 km2), 3.45% water (3448568 km2) and 1.69% swamp (1687230 km2).
5. For the parameters including albedo, Bowen Ratio and surface roughness, the default value for "Winter" is excluded from calculating the representative values.