

National Space Research and Development Agency

Development of Digital Geospatial Database for Disaster Risk Reduction and Effective Response in Wuse II District, Abuja, Nigeria.

By

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Sendai Framework for Disaster Risk Reduction 2015 - 2030

- The Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted at the third United Nations world conference in Sendai, Japan, on the 18th of March 2015.
- Reducing disaster risk is a cost-effective investment in preventing future losses.
- Reducing disaster risks decreases the potential impact of a hazardous event, thus preventing damage, injuries and casualties.
- **Priority 4:** Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.





Geospatial Database Development

- The Geodatabase was developed for Wuse II district in Abuja, Federal Capital Territory.
- The district is a mixed landuse (Private homes as well as commercial buildings).
- It is a medium density district.
- There is a river network around the district.



Geospatial Database Development

Example of a Commercial Landuse in the Project Area





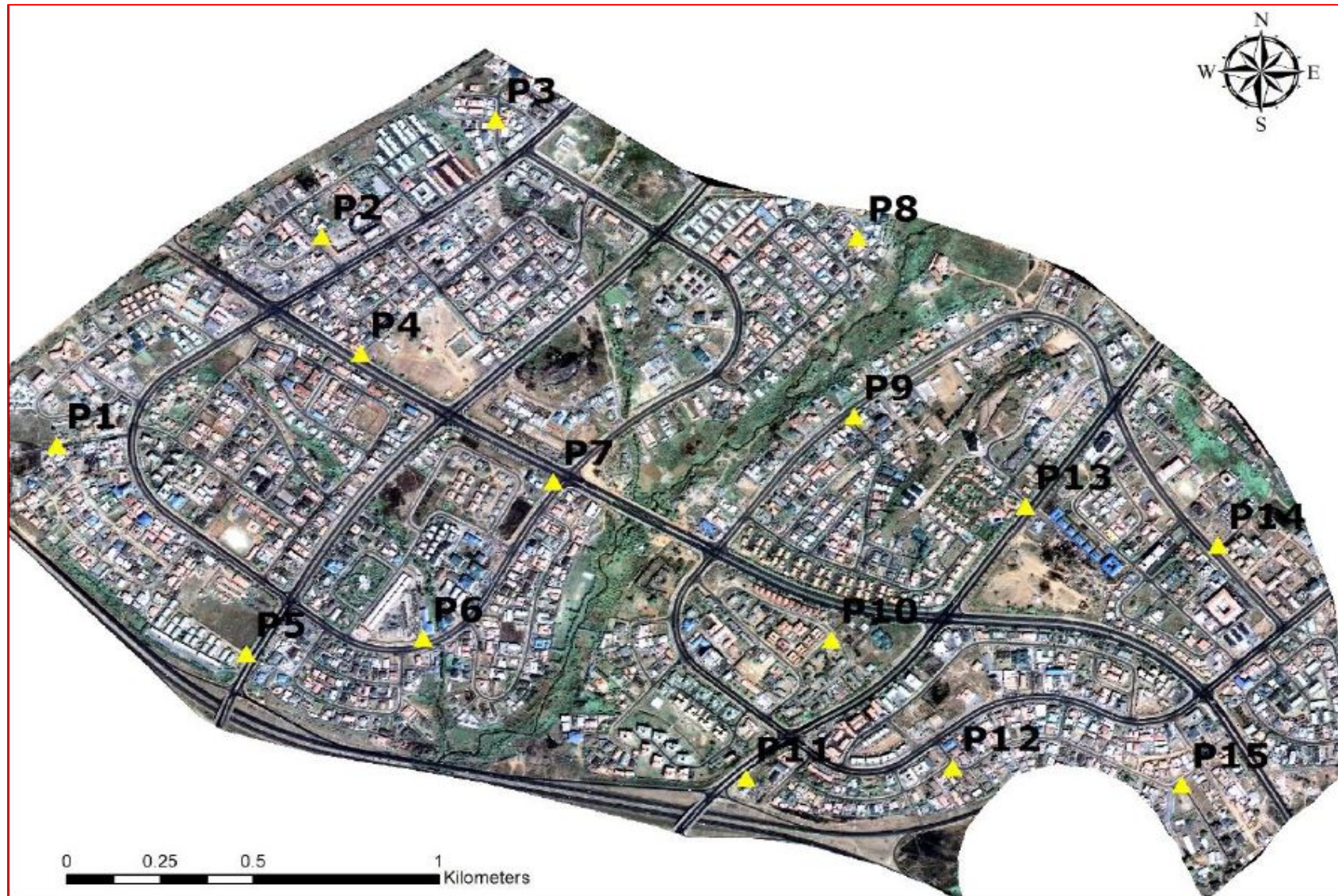
Geospatial Database Development

Example of a Residential Landuse in the Project Area





Geospatial Database Development

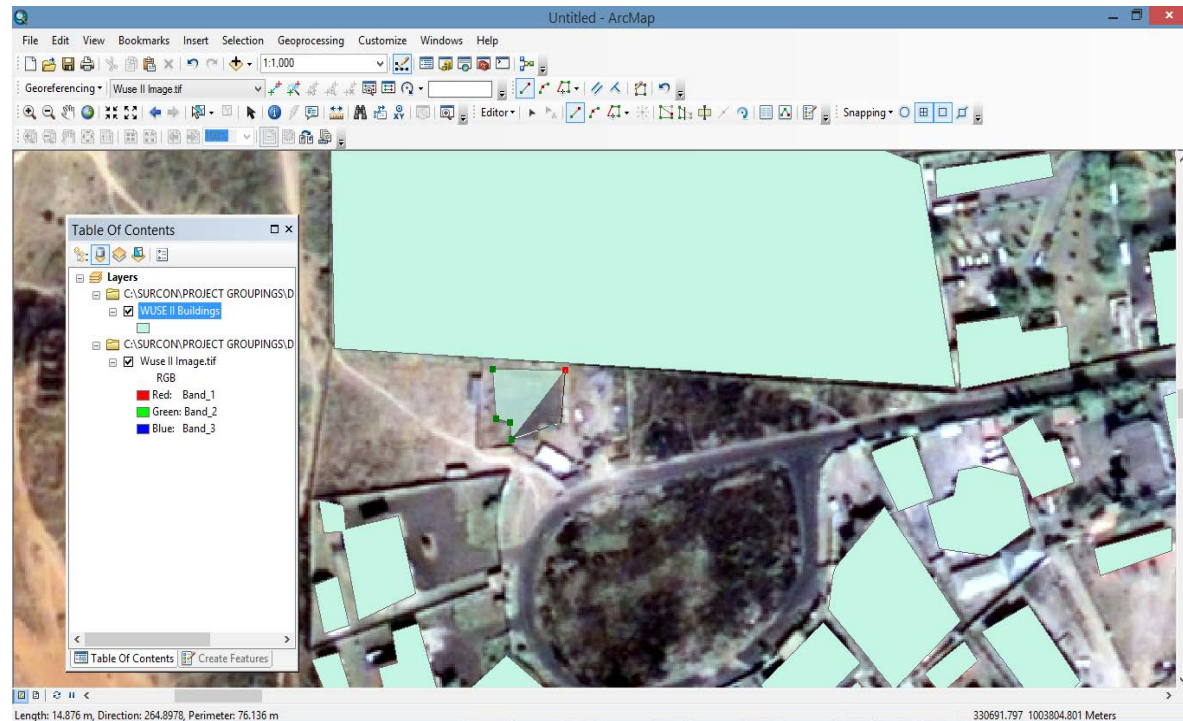




Geospatial Database Development

Thematic Layers

- Building (captured as polygon features),
- Access roads (captured as linear features),
- Dual carriage roads (captured as linear features),
- Rivers (captured as linear features).





Geospatial Database Development

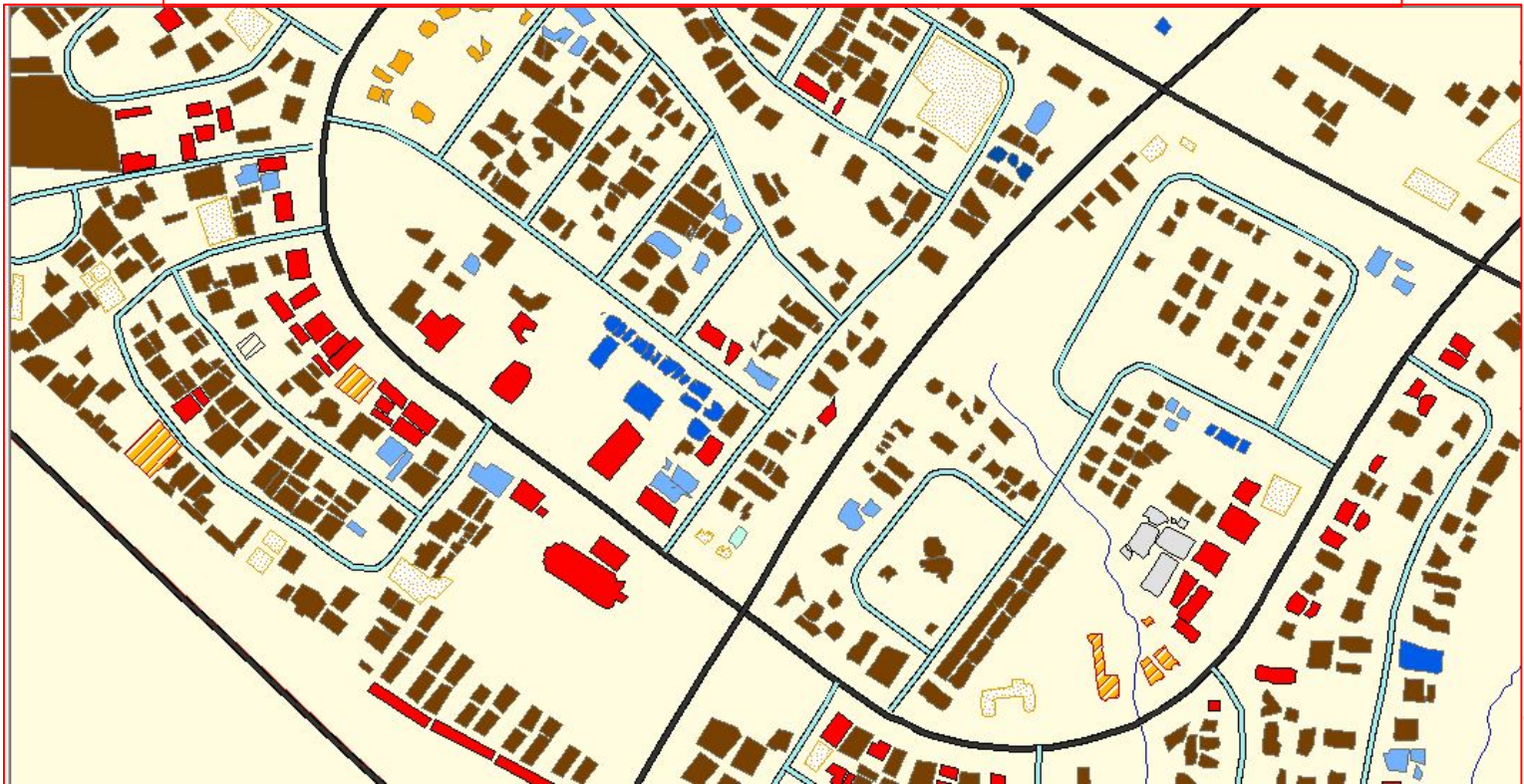
Digitized Features





Geospatial Database Development

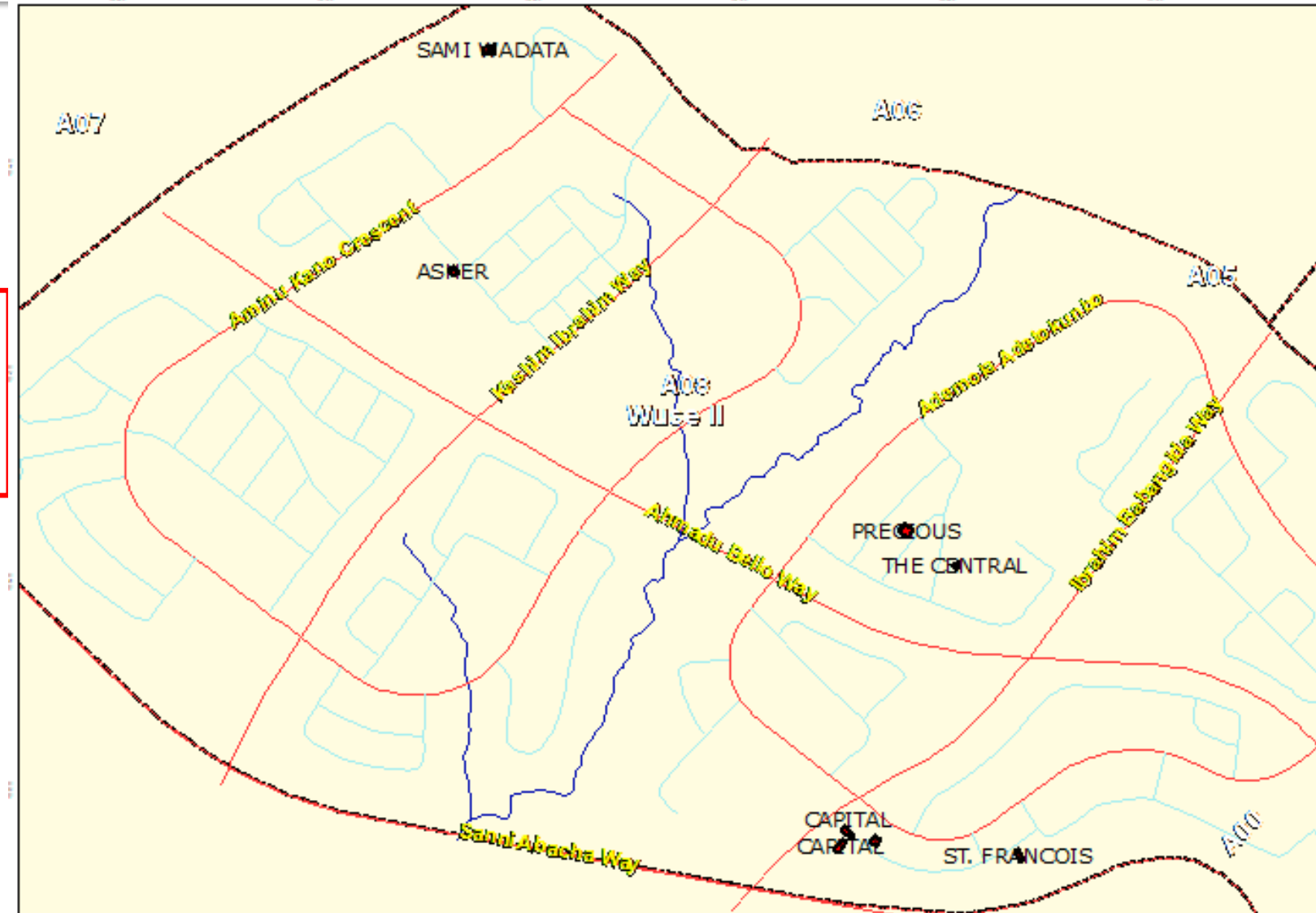
Digitized
Features





Geospatial Database Development

- Linear Features
- Hospitals





Geospatial Database Development

Digitized Features

Building Usage	Frequency (Units)	Description
Residential	996	Houses use as residence
Commercial	179	Houses used for commercial activities
Office	108	Houses used for Office complexes
Under Construction	67	Houses under construction
School	18	School Buildings
Incomplete	18	Abandoned uncompleted houses
Church	8	Church buildings
Hospital	7	Buildings used for hospitals
Demolished	5	Demolished structures
Open Space	3	No Building is present
Court	2	Court Houses
Mosque	2	Mosque Buildings
Estate	1	An Estate comprising of other houses
Total	1414	





Geospatial Database Development

Database

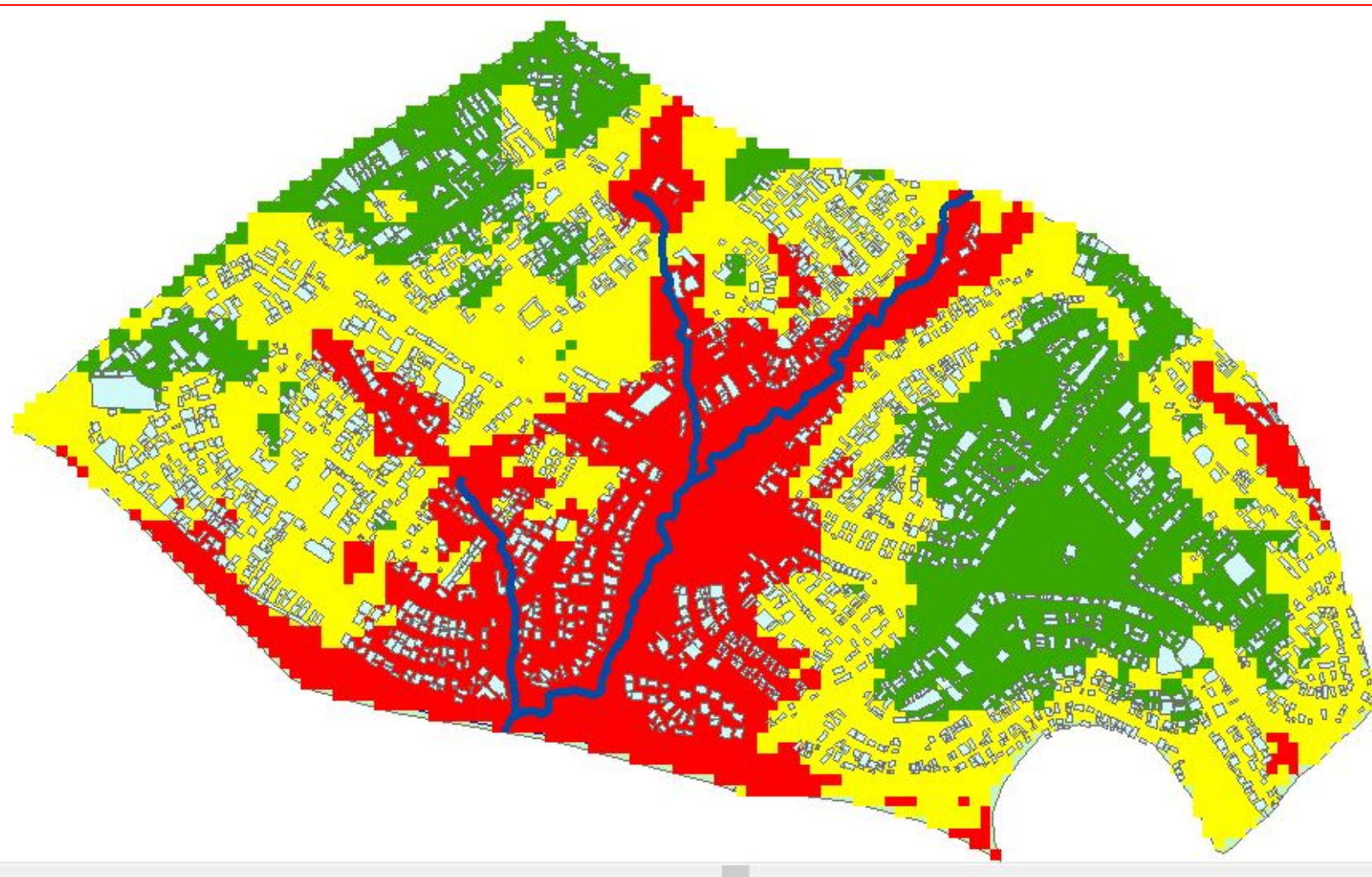
- A questionnaire was developed to capture information on each digitized record and each digitized record was visited on the field to administer the questionnaire.
- The information was used to populate the database of each captured record.

FID	Shape	District	TYPE	HSE_NO	ADDRESS	NO_FLRS	REMARKS	Z_Mean
0	Polygon	Wuse II	RESIDENTIAL	NO 9	LUANDA CRESCENT	3	CUSTOM SERVICE RESIDENCE	472.413703
1	Polygon	Wuse II	RESIDENTIAL	NO 21	NIAFOUNKE STREET	1	BLOCKS OF FLATS	476.784545
2	Polygon	Wuse II	UNDER CONSTRUCTION	NO 17	NIAFOUNKE STREET	0	UNDER CONSTRUCTION	478.879984
3	Polygon	Wuse II	RESIDENTIAL	NO 15	NIAFOUNKE STREET	1	DUPLEX	477.052166
4	Polygon	Wuse II	RESIDENTIAL	NO 13	NIAFOUNKE STREET	1	DUPLEX	476.990085
5	Polygon	Wuse II	RESIDENTIAL	NO 11	NIAFOUNKE STREET	1	DUPLEX	479.609002
6	Polygon	Wuse II	RESIDENTIAL	NO 9	NIAFOUNKE STREET	1	DUPLEX	481.66833
7	Polygon	Wuse II	RESIDENTIAL	NO 12	LIBREVILLE STREET	1	FLATS	478.170939
8	Polygon	Wuse II	RESIDENTIAL	NO 14	LIBREVILLE STREET	1	DUPLEX	478.139133
9	Polygon	Wuse II	RESIDENTIAL	NO 2	ODIENA CLOSE	1	FLATS	478.320035
10	Polygon	Wuse II	RESIDENTIAL	NO 6	ODIENA CLOSE	1	DUPLEX	480.51853
11	Polygon	Wuse II	RESIDENTIAL	NO 4	ODIENA CLOSE	1	DUPLEX	481.258003
12	Polygon	Wuse II	RESIDENTIAL	NO 5	ODIENNA CLOSE	1	MULTIPLE DUPLEX	476.960031
13	Polygon	Wuse II	RESIDENTIAL	NO 18	LIBREVILLE STREET	1	DUPLEX	479.809525
14	Polygon	Wuse II	RESIDENTIAL	NO 20	LIBREVILLE STREET	1	DUPLEX	475.62348
15	Polygon	Wuse II	RESIDENTIAL	NO 22	LIBREVILLE STREET	0	BUNGALOW	473.883423
16	Polygon	Wuse II	RESIDENTIAL	NO 17	LIBREVILLE STREET	0	FLATS	474.687362
17	Polygon	Wuse II	RESIDENTIAL	NO 2	BUJUMBURA STREET	1	DUPLEX	474.903925
18	Polygon	Wuse II	RESIDENTIAL	NO 4	BOJUMBURA	1	FLATS	475.372945
19	Polygon	Wuse II	RESIDENTIAL	NO 21	LIBREVILLE STREET	1	FLATS	474.97414
20	Polygon	Wuse II	RESIDENTIAL	NO 6	BUJUMBURA STREET	1	FLATS	476.210086
21	Polygon	Wuse II	RESIDENTIAL	NO 23	LIBREVILLE STREET	1	FLATS	474.538299
22	Polygon	Wuse II	RESIDENTIAL	NO 8	BUJUMBURA STREET	1	DUPLEX	475.868138
23	Polygon	Wuse II	COMMERCIAL	NO 25	LIBREVILLE STREET	1	TOTAL HEALTH FITNESS	472.955786
24	Polygon	Wuse II	RESIDENTIAL	NO 10	BUJUMBURA STREET	1	DUPLEX	475.489382
25	Polygon	Wuse II	RESIDENTIAL	NO 12	BUJUMBURA STREET	1	DUPLEX	474.223625
26	Polygon	Wuse II	RESIDENTIAL	NO 27	LIBREVILLE STREET	0	FLATS	473.245323
27	Polygon	Wuse II	RESIDENTIAL	NO 29	LIBREVILLE STREET	2	FLATS	472.41238
28	Polygon	Wuse II	RESIDENTIAL	NO 31	LIBREVILLE STREET	0	FLATS	472.038707





Flood Risk Scenario



- High Flood Risk
- Medium Flood Risk
- Low Flood Risk

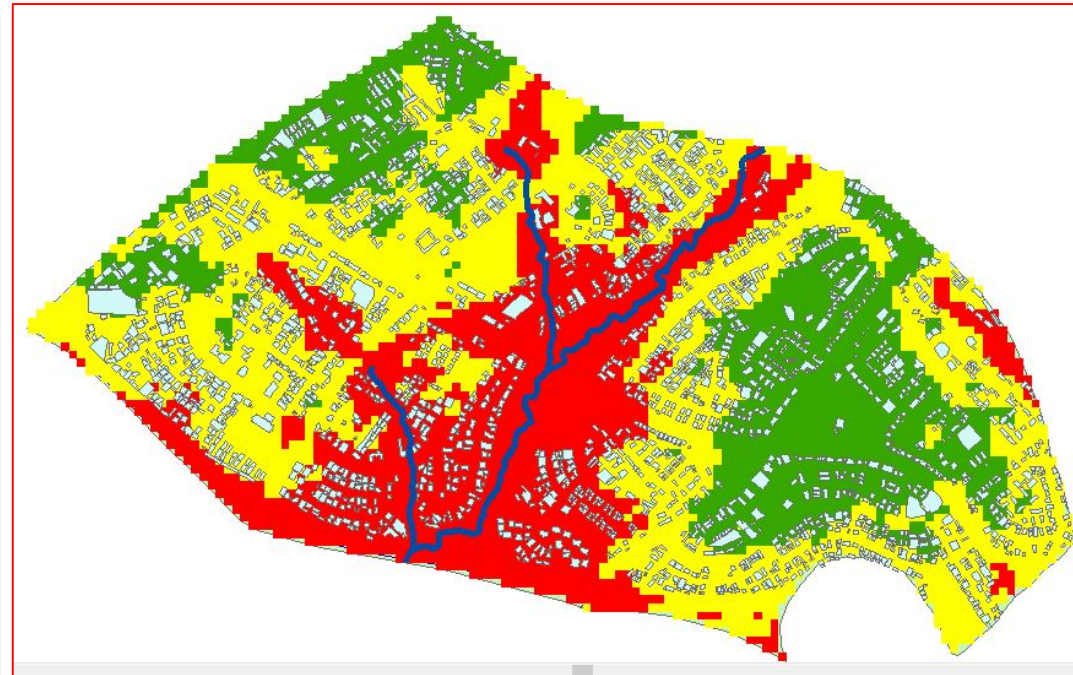




Flood Risk Scenario

High Flood Risk (278 Structures)

- 214 Residential,
- 28 Commercial,
- 15 Under construction,
- 10 Office Complex
- 6 Schools,
- 3 Churches,
- 1 Demolished,
- 1 Incomplete.



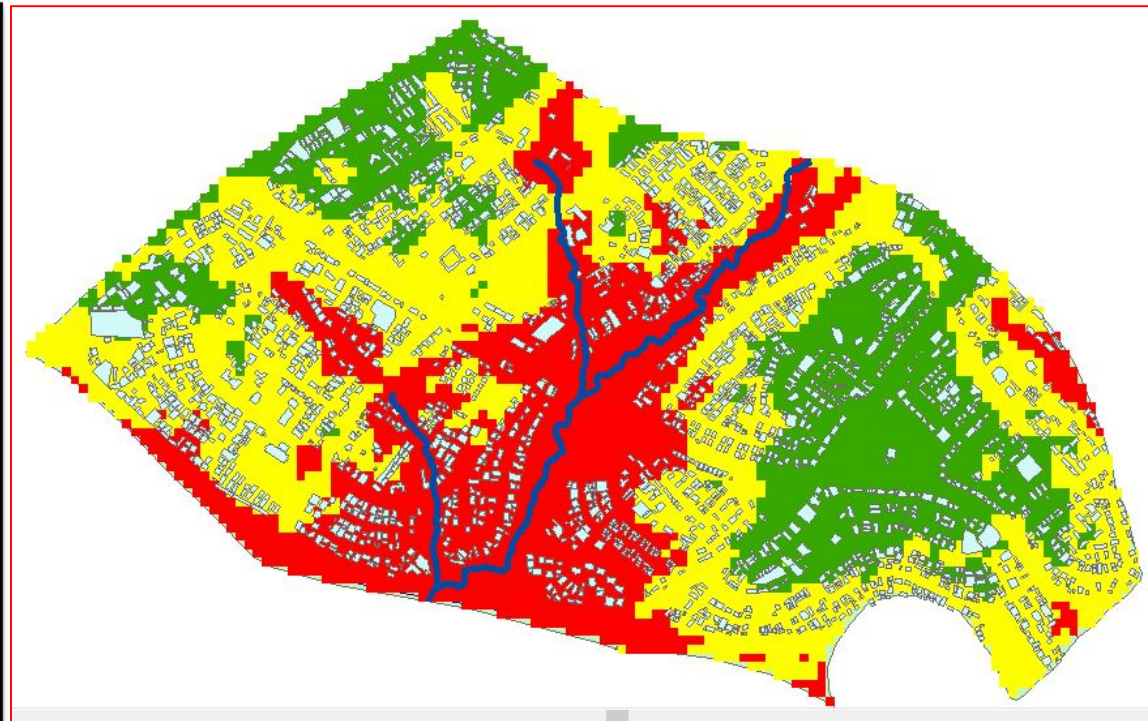
■ High Flood Risk
■ Medium Flood Risk
■ Low Flood Risk



Flood Risk Scenario

Medium Flood Risk (766 Structures)

- 547 Residential,
- 83 Commercial,
- 59 Office,
- 36 Under construction,
- 12 Incomplete,
- 11 Schools,
- 6 Hospitals,
- 4 Demolished ,
- 2 Churches,
- 2 Courts,
- 1 Mosques,
- 3 Open Spaces



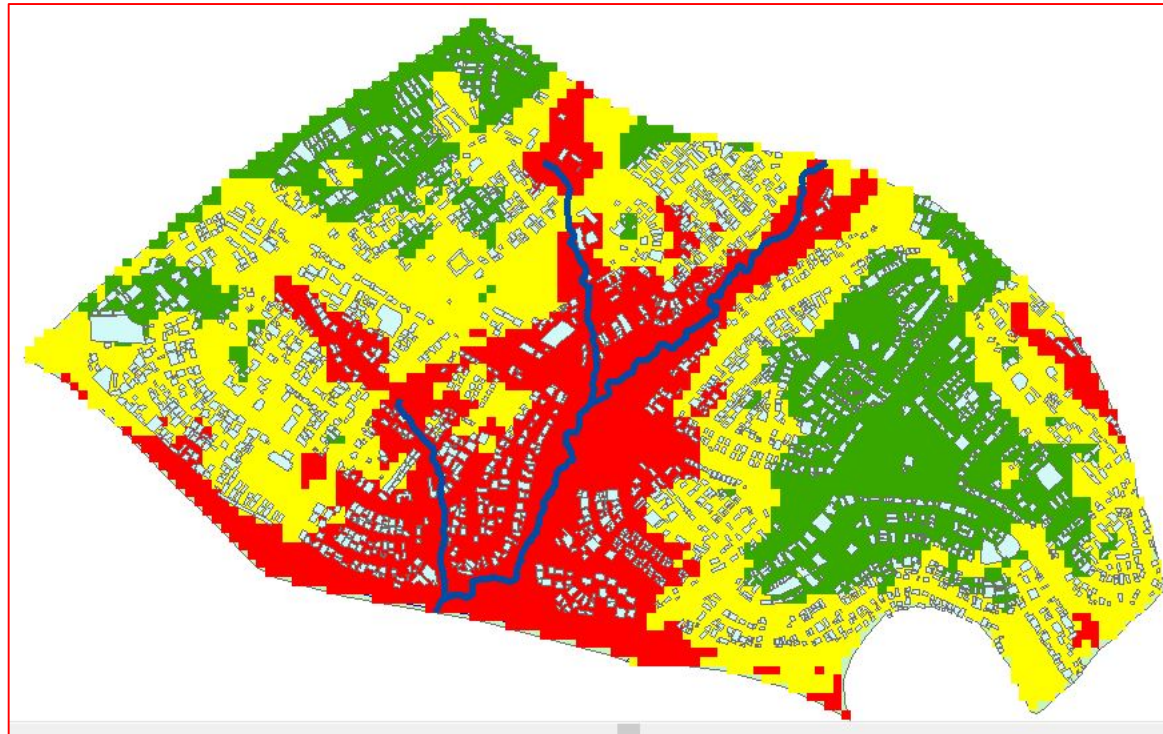
- High Flood Risk
- Medium Flood Risk
- Low Flood Risk



Flood Risk Scenario

Low Flood Risk (370 Structures)

- 235 Residential,
- 68 Commercials,
- 39 Offices,
- 16 Under construction,
- 6 Incomplete,
- 3 Churches,
- 1 School,
- 1 Hospital,
- 1 Mosque.



- High Flood Risk
- Medium Flood Risk
- Low Flood Risk



Thank You for Listening





445-469	High
469-485	Medium
485-521	Low