ANALYSIS

The point data was projected and displayed in the ArcGIS software, the points were thereafter interpolated by using the Inverse distance weighting tool in the Geostatistical tool, the extent of the study area was specified for the interpolation process. The resultant raster data was later reclassified using the reclassify too under spatial analyst tool, places with low Elevation were assigned the value of 3, places with moderate Elevation were assigned the value of 2 and places with high Elevation were assigned the value of 1. The reclassified raster dataset was converted to vector data for overlay operation.

Overlay (Intersection)

The converted reclassified raster dataset now in vector format was overlaid with the already classified land use/land cover map of the study area which was also ready converted to vector data, the intersection tool under Geoprocessing was used to extract areas that has low, moderate or high risk of flooding.

Land use/Land cover Analysis Table

Class Name	Area (ha)	Percentage (%)
Built up	2410.05	8.59
Dense Vegetation	11728.68	41.81
Forest	1558.54	5.56
Open space	5162.87	18.40
Sparse Vegetation	5468.25	19.49
Waterbody	1724.58	6.15
Total	**28052.97**	**100.00**

Flood risk Analysis Table

Level of Risk	Class Name	Area (ha)	Percentage (%)
	Built up		
Low risk	1	1629.26	5.82
Moderate risk	2	686.61	2.45
High risk	3	89.88	0.32
Total		**2405.74**	**8.60**
	Dense Vegetation		
Low risk	1	6252.53	22.35
Moderate risk	2	5421.91	19.38
High risk	3	12.99	0.05
Total		**11687.43**	**41.78**
	Forest		
Low risk	1	795.11	2.84

Moderate risk	2	692.25	2.47
High risk	3	67.43	0.24
Total		1554.79	5.56
Open space			
Low risk	1	2569.29	9.19
Moderate risk	2	2390.97	8.55
High risk	3	192.44	0.69
Total		**2569.28**	**18.42**
Sparse Vegetation			
Low risk	1	2906.07	10.39
Moderate risk	2	2483.91	8.88
High risk	3	62.26	0.22
Total		**5452.24**	**19.49**
Water body			
Low risk	1	380.33	1.36
Moderate risk	2	1253.15	4.48
High risk	3	85.72	0.31
Total		**1719.19**	**6.15**

Final Flood Risk Map

Weighted Overlay

The weighted Overlay tool in the ArcGIS spatial Analyst toolset was used to overlay both the reclassified Elevation and the Landuse /Landcover.

Elevation was given an influence level of 40%, with the level of risk measured on a scale of 1 to 10, On the Interpolated map, 1 represent High elevation area and was given a scale of 2, 2 represent moderate elevated areas and was given a scale of 5, while 3 represent High Elevation areas and was given a scale of 10.

Land use/Land cover was given an influence of 60%, Built up areas was given a scale of 8 sparse vegetation was given a scale of 5, Dense vegetation was given a scale of 2, water body was given a scale of 10, open space was given a scale of 9, while forest was given a scale of 1. A flood risk map was generated based on this criteria.