

SAMPLE REPORT · GEOSPATIAL ANALYTICS

Site Selection & Spatial Optimisation Report

Facility Location Analysis — Healthcare Network Expansion

Multi-criteria spatial analysis to identify optimal locations for three new primary healthcare centres across a sample district of 1.2 million population. Criteria: population underservice, road access, flood risk, land availability and cost.

Prepared by	GeoSpatial Analytics
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This document is a sample/illustrative report produced by GeoSpatial Analytics to demonstrate report structure, analytical depth and output format. All figures, coordinates, scores and conclusions are illustrative only and do not represent real assessments.

SECTION 1

Methodology Overview

Objective	Identify top 3 sites for new primary healthcare centres (PHC)
Study area	Sample District — 14 blocks, 1.24M population (Census 2021)
Population data	WorldPop 100m grid (2024) + Census 2021 village-level data
Existing facilities	31 PHCs; 8 community health centres (NHM facility registry)
Access modelling	OpenRouteService API — foot, cycling, car (peak-hour)
Site constraints	Slope <5%, outside 1-in-50yr flood zone, not on forest/water
Scoring method	Weighted multi-criteria evaluation (WLC); 6 criteria
Validation	Cross-checked with Block Medical Officer consultation

SECTION 2

Criterion Weights & Score Summary

Criterion	Weight	Data Source	Rationale
Population underserved (>5km from PHC)	30%	WorldPop + ORS isochrones	Primary equity driver
Road accessibility (travel time)	20%	OpenRouteService API	Operational efficiency
Flood hazard	20%	CWC + SWAT model	Safety & continuity
Land availability (govt. land)	15%	DILRMP cadastral layer	Cost & feasibility
Population growth rate	10%	Census 2011–21 trend	Future demand
Competitor density (private clinics)	5%	NHM + PCPNDT registry	Need supplementation

SECTION 3

Top-10 Candidate Sites — Final Ranking

Rank	Block / Village	WLC Score	Pop. Served	Travel Time	Flood Risk
1	Block F — Nangla Kesar	87.4	38,200	< 20 min	Low
2	Block J — Titawi Mod	84.1	34,700	< 22 min	Low
3	Block B — Mansurpur Bypass	81.6	31,400	< 18 min	Low
4	Block H — Kairana Road	78.3	29,800	< 25 min	Medium
5	Block D — Charthawal East	76.9	28,100	< 28 min	Low
6	Block L — Budhana NH-709	74.2	26,500	< 30 min	Medium
7	Block A — Jalalabad Cross	71.8	24,300	< 35 min	High
8	Block K — Kandhla South	69.5	22,900	< 32 min	Medium
9	Block G — Muzaffarnagar Fringe	66.1	21,200	< 40 min	Low
10	Block C — Bhopa Industrial	62.4	18,700	< 38 min	High

Recommended sites are ranks 1, 2, and 3. Rank 4 (Kairana Road) is recommended as a reserve option if site acquisition at rank 3 is not feasible. Ranks 7 and 10 are excluded from recommendation due to elevated flood risk despite high population coverage scores.

WLC scores are indicative. Site-level ground verification, land title confirmation and structural suitability assessment are required before procurement.