

Population report: Proposed health centre, Ruiru (Kiambu)

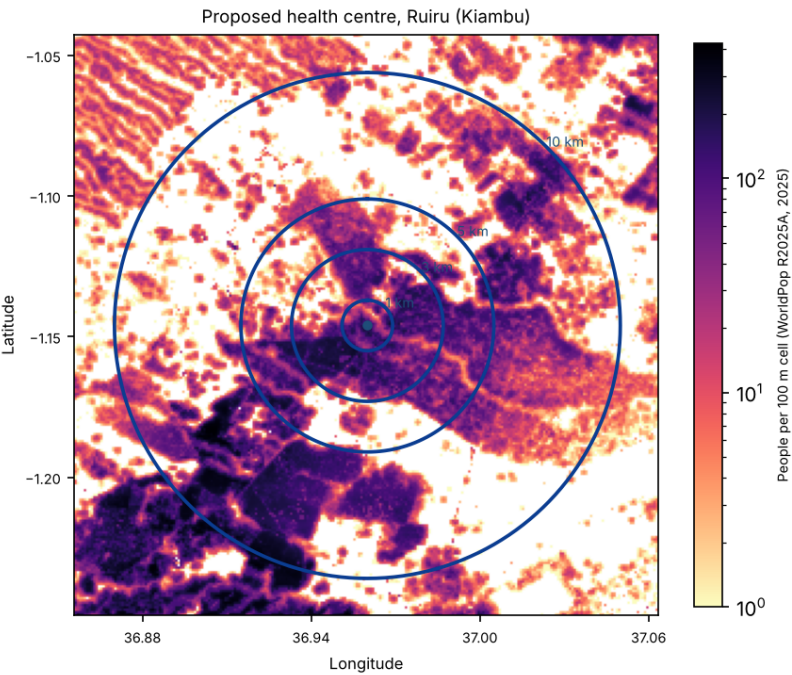
Point -1.14600, 36.96000 · Purpose: impact assessment / service planning · Modelled estimates for 2025

Best estimate: **1,100,000** people live within 10 km of this point in 2025 (two-model range 905,000 to 1,340,000). Within 1 km: about 22,800.

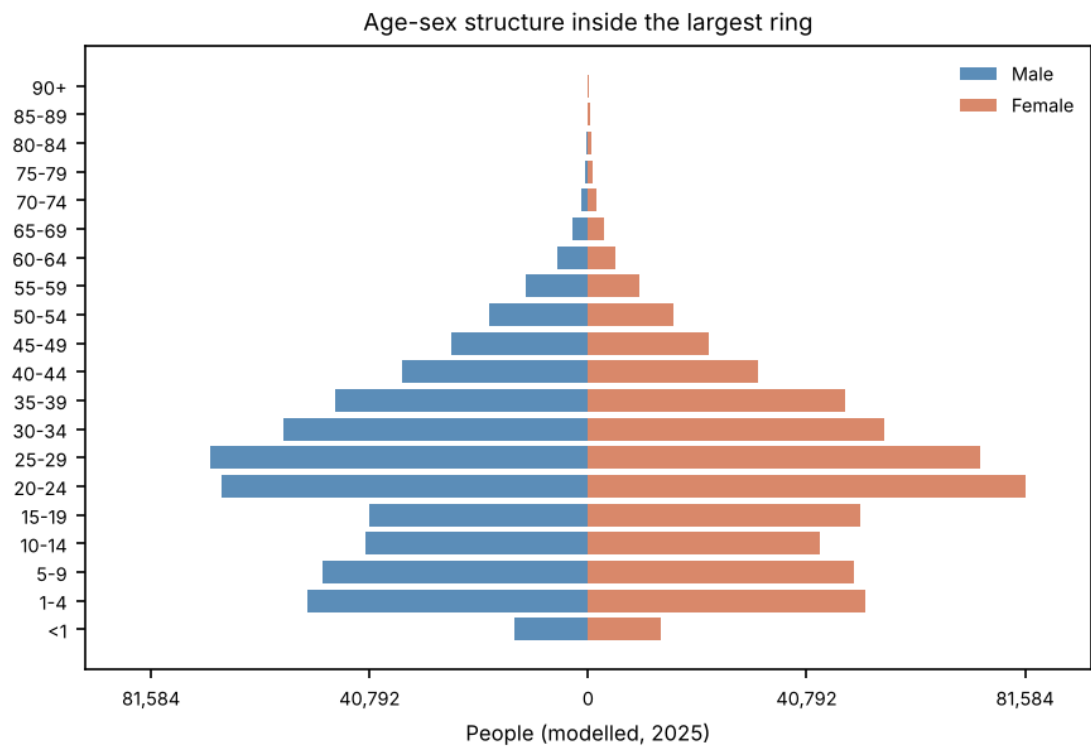
Radius	Area (km²)	Best estimate	Range (two models)	Building check	Reliability
1 km	3.1	22,800	18,400 - 28,300	not shown	Strong: models differ by more than 50%
3 km	28.3	179,000	125,000 - 257,000	not shown	Strong: models differ by more than 50%
5 km	78.5	308,000	207,000 - 457,000	not shown	Strong: models differ by more than 50%
10 km	314.2	1,100,000	905,000 - 1,340,000	not shown	Moderate: models differ by 25 to 50%

Local census benchmark (KNBS 2019, counted, not projected). Ruiru sub-county (Kiambu County): 371,111 people on 201 km². Ruiru urban centre: 490,120. The 10 km ring also reaches Kasarani sub-county in Nairobi City (780,656 on 86 km²).

Building check not shown: Ruiru has many multi-storey blocks, so people per building cannot be estimated reliably from footprints.



Age and sex



Group	People (modelled)	Share
Children under 5	131,479	11.9%
Children 5-14	184,083	16.7%
Working age 15-64	773,943	70.3%
Older people 65+	11,451	1.0%
Women of reproductive age 15-49	363,283	33.0%

Age-sex shares come from WorldPop R2025A age-sex structures at 1 km and are applied to the best estimate for the largest ring. Counts are modelled and carry the same uncertainty as the ring total.

Method and limitations

What these numbers are. Modelled residential population for 2025, not census counts. Model 1: WorldPop Global2 R2025A, constrained, 100 m (alpha release, national totals aligned to UN World Population Prospects 2024). Model 2: GHS-POP R2023A, epoch 2025, 100 m (European Commission JRC).

How rings are computed. Circles are geodesic (true ground distance). Each grid cell counts in proportion to the share of its area inside the circle; people are assumed evenly spread within a cell.

Best estimate rule. Where the two models are within 25% of each other, the best estimate is the WorldPop figure. Where they differ more, it is the geometric midpoint of the two. The rule is fixed in advance and applied the same way to every site. Figures are rounded to three significant digits.

Independent checks. Building check: buildings inside the ring (Google Open Buildings v3, imagery up to about 2023) multiplied by people per building observed in nearby sub-counties in the 2019 census, grown to 2025 at 2.2% a year. It cannot see building height, so it is not shown where multi-storey housing is common. Census benchmark: official 2019 counts for the nearest published units; their boundaries differ from the rings, so they show order of magnitude, not a ring total.

Why the models differ. They allocate people within administrative units differently. Known weak spots: very dense informal settlements (WorldPop tends to undercount) and fast-growing urban edges (WorldPop can overcount, GHSL undercounts). Agreement with census totals at sub-county level does not prove accuracy inside a sub-county, because both models are fitted to official totals.

Reliability flags. "Models agree": within 25%. "Moderate": 25 to 50% apart. "Strong": more than 50% apart; read the range and the independent checks, not only the best estimate.

Sources. WorldPop (2025) Global2 R2025A population counts and age-sex structures, University of Southampton, CC BY 4.0. Schiavina M. et al. GHS-POP R2023A, European Commission JRC, CC BY 4.0. Google Open Buildings v3 (CC BY 4.0). KNBS (2019) Kenya Population and Housing Census, Volume II, Tables 2.3 to 2.5.