Additional File 4: Association between urban metrics and mortality from all causes and mortality due to CVD and traffic accidents.

Shown are differences in relative risk (RR) for 2nd tertile (T2) and 3rd tertile (T3) in relation to the reference category (1st tertile)

| Urban metrics       | Model 1 (adjusted for age) RR (95% CI) | Model 2 (additionally adjusted for deprivation and lung cancer mortality) RR (95% CI) |
|---------------------|----------------------------------------|----------------------------------------------------------------------------------|
|                     | Female (all ages) | Male (all ages) | Female (all ages) | Male (all ages) |
| All-cause mortality |                         |                     |                         |                     |
| Population density  | 1.04 [1.04 – 1.05]* | 1.06 [1.06 – 1.07]* | 0.97 [0.97 – 0.98]* | 0.98 [0.97 – 0.99]* |
| T2                  |                         | 1.06 [1.06 – 1.07]* | 1.01 [1.01 – 1.02]* | 1.02 [1.01 – 1.03]* |
| T3                  |                         | 1.09 [1.09 – 1.10]* |                       |                     |
| Minor Road Density  | 1.08 [1.07 – 1.08]* | 1.09 [1.08 – 1.10]* | 0.98 [0.97 – 0.99]* | 1.00 [0.99 – 1.01] |
| T2                  |                         | 1.09 [1.08 – 1.10]* | 1.01 [1.00 – 1.02]* | 1.01 [1.00 – 1.02]* |
| T3                  |                         | 1.12 [1.11 – 1.23]* |                       |                     |
| Junction Density    | 1.08 [1.07 – 1.08]* | 1.07 [1.06 – 1.08]* | 1.07 [1.06 – 1.07]* | 1.05 [1.04 – 1.06]* |
| T2                  |                         | 1.13 [1.12 – 1.13]* | 1.07 [1.07 – 1.09]* | 1.05 [1.04 – 1.06]* |
| T3                  |                         | 1.14 [1.13 – 1.15]* |                       |                     |
| % pop close to road  | 0.98 [0.98 – 0.99]* | 1.01 [1.01 – 1.02]* | 0.98 [0.97 – 0.99]* | 1.02 [1.01 – 1.03]* |
| T2                  |                         | 1.07 [1.06 – 1.07]* | 0.90 [1.01 – 1.02]  | 1.03 [1.02 – 1.04]* |
| T3                  |                         | 1.10 [1.09 – 1.10]* |                       |                     |
| Shannon Diversity   | 0.99 [0.98 – 0.99]* | 1.01 [1.00 – 1.02]* | 0.96 [0.96 – 0.97]  | 0.98 [0.98 – 0.99]* |
| T2                  |                         | 0.98 [0.97 – 0.98]* | 0.99 [0.99 – 1.00]  |                     |
| T3                  |                         | 0.98 [0.97 – 0.99]* |                       |                     |
| Altitude            | 1.04 [1.03 – 1.05]* | 1.06 [1.05 – 1.06]* | 1.00 [1.00 – 1.00]  |                     |
| T2                  |                         | 1.06 [1.05 – 1.07]* |                       |                     |
| T3                  |                         | 1.07 [1.06 – 1.07]* |                       |                     |
| CVD mortality       |                         |                     |                         |                     |
| Population density  | 1.01 [1.00 – 1.02] | 1.07 [1.05 – 1.08]* | 0.95 [0.94 – 0.96]* | 0.99 [0.98 – 1.00] |
| T2                  |                         | 1.02 [1.01 – 1.03]* | 0.97 [0.96 – 0.98]* | 1.01 [0.99 – 1.02] |
| T3                  |                         | 1.08 [1.06 – 1.09]* |                       |                     |
| Minor Road Density  | 1.05 [1.03 – 1.06]* | 1.09 [1.08 – 1.11]* | 0.97 [0.95 – 0.98]* | 1.00 [0.99 – 1.01] |
| T2                  |                         | 1.06 [1.04 – 1.07]* | 0.98 [0.97 – 0.99]* | 1.00 [0.99 – 1.01] |
| T3                  |                         | 1.11 [1.09 – 1.12]* |                       |                     |
| Junction Density    | 1.08 [1.07 – 1.09]* | 1.08 [1.06 – 1.09]* | 1.07 [1.06 – 1.09]  | 1.05 [1.05 – 1.06]* |
| T2                  |                         | 1.11 [1.10 – 1.12]* | 1.07 [1.06 – 1.09]  | 1.05 [1.04 – 1.07]* |
| T3                  |                         | 1.14 [1.13 – 1.15]* |                       |                     |
| % pop close to road  | 0.97 [0.96 – 0.98]* | 1.00 [0.98 – 1.01]  | 0.97 [0.96 – 0.98]* | 1.00 [0.99 – 1.01] |
|                | T3          | T2          | T3          | T2          |
|----------------|-------------|-------------|-------------|-------------|
| Shannon Diversity | 1.18 [1.00 – 1.01]* | 0.99 [0.98 – 1.00] | 1.13 [1.05 – 1.28]* | 0.81 [0.74 – 0.89]* |
| Altitude       | 0.93 [0.86 – 1.02] | 0.90 [0.76 – 1.07] | 0.96 [0.82 – 1.00] | 0.94 [0.89 – 1.04] |
| Population density | 0.91 [0.83 – 1.11] | 0.91 [0.83 – 1.11] | 1.00 [0.92 – 1.09] | 0.96 [0.82 – 1.10] |
| Minor Road Density | 1.09 [0.95 – 1.00] | 0.94 [0.82 – 1.00] | 1.11 [0.95 – 1.27] | 0.95 [0.80 – 1.14] |
| Junction Density | 0.93 [0.86 – 1.01] | 0.94 [0.86 – 1.01] | 0.97 [0.88 – 1.07] | 0.83 [0.75 – 0.92]* |
| % pop close to road | 0.79 [0.67 – 0.92]* | 0.95 [0.82 – 1.00] | 0.74 [0.63 – 0.88]* | 0.93 [0.86 – 1.02] |
| Shannon Diversity | 1.10 [0.95 – 1.26] | 1.09 [0.95 – 1.26] | 1.11 [0.95 – 1.27] | 0.95 [0.82 – 1.12] |
| Altitude       | 0.97 [0.88 – 1.05] | 0.97 [0.88 – 1.05] | 0.96 [0.82 – 1.12] | 0.93 [0.86 – 1.02] |
| Population density | 0.87 [0.74 – 1.02] | 0.96 [0.88 – 1.05] | 0.88 [0.75 – 1.05] | 0.80 [0.72 – 0.88]* |
| Minor Road Density | 0.98 [0.90 – 1.06] | 0.98 [0.90 – 1.06] | 0.85 [0.71 – 1.02] | 0.89 [0.80 – 0.99]* |
| Junction Density | 1.03 [0.95 – 1.12] | 1.03 [0.95 – 1.12] | 0.92 [0.77 – 1.10] | 0.97 [0.88 – 1.07] |
| % pop close to road | 0.93 [0.82 – 1.10] | 0.96 [0.89 – 1.04] | 0.96 [0.82 – 1.12] | 0.93 [0.86 – 1.02] |
| Shannon Diversity | 1.11 [1.03 – 1.20]* | 1.09 [0.95 – 1.26] | 1.10 [0.95 – 1.27] | 0.80 [0.68 – 0.95]* |
| Altitude       | 0.84 [0.73 – 0.98]* | 0.84 [0.73 – 0.98]* | 0.84 [0.72 – 0.99]* | 0.96 [0.88 – 1.05] |

* indicates significance at p < 0.05.
