

Shapefile Areas

[Edit button](#), [Field arithmetic](#), Geometry, Area of each record will compute the area in square kilometers or square meters.

You might want to look at the database, to see if an area field already exists.

| GEOID10 | NAMLSAD10 | ALAND10 | AWATER10 | SHAPE_LEN | SHAPE_AREA | AREA_KM2 | ALAND_KM2 | AWATER_KM2 |
|-------------|----------------------|----------|----------|---------------|---------------|----------|-----------|------------|
| 24003708001 | Census Tract 7080.01 | 43052413 | 4437846 | 0.34906037583 | 0.00492121591 | 47.4744 | 43.052413 | 4.437846 |
| 24003702702 | Census Tract 7027.02 | 13313012 | 3912599 | 0.17692664827 | 0.00179159896 | 17.2194 | 13.313012 | 3.912599 |
| 24003740702 | Census Tract 7407.02 | 28342894 | 0 | 0.29524178326 | 0.0029485682 | 28.3356 | 28.342894 | 0 |
| 24003702205 | Census Tract 7022.05 | 4651675 | 0 | 0.1124116682 | 0.00048375583 | 4.6504 | 4.651675 | 0 |
| 24003702209 | Census Tract 7022.09 | 2201355 | 0 | 0.06218434894 | 0.00022897227 | 2.2007 | 2.201355 | 0 |
| 24003702206 | Census Tract 7022.06 | 3573936 | 0 | 0.09140841131 | 0.00037169033 | 3.5729 | 3.573936 | 0 |

This is part of a Census Bureau shapefile for tracts.

- ALAND10 and AWATER10 are the areas, in square meters, of the land and water in the tract in 2010. Sometimes these will be ALAND and AWATER. This was computed by the Census Bureau, and used information not present in the shape file to determine the proportions of land and water in the record. ([Edit](#), [Field arithmetic](#), Multiply field by constant, or Divide field by constant will let you create a new field with more understandable units; operate on a copy of the field), or there is an option to automatically create it and convert to square kilometers.
- If you use the ALAND10 field from the shapefiles, you might want to convert the square meters to square kilometers first ([Edit](#), [Field arithmetic](#), Multiply field by constant, or Divide field by constant). You should probably operate on a copy of the field.
- Field SHAPE_AREA is an ArcGIS field that has unclear units (degrees and square degrees), and the value does not match that from either the Census Bureau or MICRODEM, and should probably not be used.
- AREA_KM2 was computed by MICRODEM. It has no way to know about how much of the record is water. When there is no water, its values are very close to ALAND10; otherwise it is the sum of ALAND10 and AWATER10.

- ALAND_KM2 and AWATER_KM2 were computed by MICRODEM in two steps: [Edit, Field arithmetic](#), Copy numeric field to make a new field, and then [Edit, Field arithmetic](#), Multiply field by constant (or divide by constant).

If you want to compute something like population density, you will probably want the area of just the land, and so should use ALAND_KM2.

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