

# Map description and analysis

## Introduction

Surat is a city in Indian state of Gujarat. It is used to be large seaport and is now commercial and economic centre in south Gujarat. It is the administrative capital of the Surat district. The city is located 284 kilometres (176 mi) south of the state capital, Gandhinagar; 265 kilometres (165 mi) south of Ahmedabad; and 289 kilometres (180 mi) north of Mumbai. The city centre is located on the Tapti River, close to Arabian Sea.

## Road hierarchy

Surat city includes 19 state highways, 9 national highways, and bamroli althan express way. It is generally 6 lanes wide (3 lanes in each direction). It is an east-west artery of surat connecting the Bamroli to Althan.

Total area covered by surat city is 472 km<sup>2</sup>.

## Population

Population is being divided based on area's in surat city listed below

Area	Males	Females	Child 0-6 (males)	Child 0-6 (females)	Total population
Bardoli	1,13,967	1,10,197	12,827	11,645	2,48,636
Chorasi	1,39,773	89,504	14,095	12,403	2,55,775
Kamrej	97,277	87,277	11,890	10,771	2,07,215
Mahuva	1,09,589	99,465	13,035	12,124	2,34,213
Mangrol	98,124	97,286	10,421	10,008	2,15,839
Mandvi	73,547	71,359	7,390	7,021	1,59,317
Olpad	1,03,259	93,587	11,959	10,887	2,19,692
Palsana	8,972	64,080	9,836	8,846	1,63,734

## Hospitals connectivity

Total number of hospitals covered by surat city is 1045.

The numbers of hospitals are being divided based on area's in surat city listed below

Area	Hospital covered
Bardoli	56
Chorasi	821
Kamrej	44
Mahuva	9
Mangrol	35
Mandvi	22
Olpad	22
Palsana	36

## Steps in GIS:

Step 1: Visit [gadm.org](http://gadm.org) then select country(India) and download the shape file

Step 2: Add shape file:select layer menu -> add layer->add vector layer

Step 3: Goto layer section on left of screen->open attribute table->select menu 'select by expression'->select expression tab->run query "column\_name"='value' ("NAME\_3"='surat')->hit select features button.

Step 4: Select your map name from layer section->right click->goto to export option->select 'save selected features as'->window opens->write file name->shape file will be created then select file from layers option->you will done with area want to select.

Step 5: visit [div-gis.org](http://div-gis.org), then download 'roads,river\_lines,water area' shape file then follow step 3 and 4

Step 6: select shape file from layer option->goto to vector tab->geoprocessing tools->select clip->select input layer as road,overlay layer as surat(the selected area)->in clipped option select 'save file'->hit run button.

For other data like(river\_lines,water area) follow the same step

Step 7: for hospital visit [healthsites.io](http://healthsites.io) download the file name as 'world.zip' to get the shape file then follow the above steps to add the hospitals to map  
for population visit [censusindia.gov.in](http://censusindia.gov.in)

## Use of this map

This map will play a major role while distributing the covid vaccine as the map shows the population, hospitals, etc which will help to find out the vaccine distributing center as fast as possible will be providing very ease to the distributor and the one who buy's this vaccine.