

## ROAD NETWORK OF WASHIM DISTRICT

The consignment undertaken by our team was to do the mapping and comprehensive study of the road network in Washim district. In order to accomplish this task, we needed data, and we used data from ISRO's geoportal Bhuvan for the same. The procedure undertaken by us is as follows:

1. Open data Achieve// Satellite/Sensor// Resourcesat-1/Resourcesat-2: LISS III//Tiles.
2. Bhuvan-2D Map, Satellite, Hybrid data.
3. India Districts Boundary .shp file.
4. QGIS plugins like Quick OSM.

The steps followed to represent the acquired data with the help of GIS are as follows:

1. Digitalization of district boundary.
2. Imposing Raster layer (TILES) obtained from Bhuvan.
3. Digitization of road network using toggle editing line feature by creating different vector layers for different types of roads like National Highways (NH), State Highways (SH), Major District Roads (MDR).
4. Validating it with open street map and quick map services (QGIS Plugins).
5. Point layer to show the nearby important places around and in the district.

It was our first hands on experience on the software part of the GIS and hence it was a challenging and enriching experience for us. We did face a few challenges and overcoming them gave us an opportunity to increase our learning curve to a great extent. The complexities we faced in the course of this project are as follows:

1. Identification of roads on low resolution maps.
2. Identification and downloading of useful data tiles from Bhuvan.

The potential application of the map according to us are as follows:

1. We can have a look at a particular type of Road network by shifting to different layers.
2. It can be used by government bodies and private industries to ensure the new developments are located in locations such that maximum people get benefited which will lead to overall development of this region which is deprived to certain extent.
3. Warehousing and cold storages are new lucrative business model due to recent rise in demand in the e-commerce sector. The map will help identify places which would be imperative for penetration to a greater extent in Tier 2 and Tier 3 cities nearby.
4. The shortest path to be travelled for efficient transportation can be determined and hence help the health care sector in recent times and ensure the efficient procurement and distribution of the vaccine by building around a robust supply chain model.
5. Disaster management planning can be done with better on ground reality and probable hazards can be handled with greater coordination.
6. Vidharbha is a drought prone region and maps can be used to identify land which is highly prone to droughts and other development projects like greenfield roads and railways tracks can be laid so that the land is utilised for development and the land acquisition is a win-win situation for everyone and the fertile land over is intact for the agricultural use.