Finding optimum route for Metro Rail

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Purpose

Metro Rail transport system is need of the hour especially in developing countries where number of private cars are on the rise and infrastructure is a major bottleneck. Huge delays are common. With optimum Metro Rail system following are some of advantages:

- Solve traffic snarls in Urban cities
- Reduce Pollution and thereby put an effort to Climate Change
- Promote Public Transport for Commuting to and from offices
- Reduce travel time

Area of Interest

- Pune, Maharashtra, India

- Emerged as one of major IT hub in last 10 years

- Urban area expanded exponentially as people from all around India migrated to Pune

- One of most polluted cities in Maharashtra state of India because of huge private vehicle usage

- Infrastructure bottleneck huge issue to meet present traffic situation
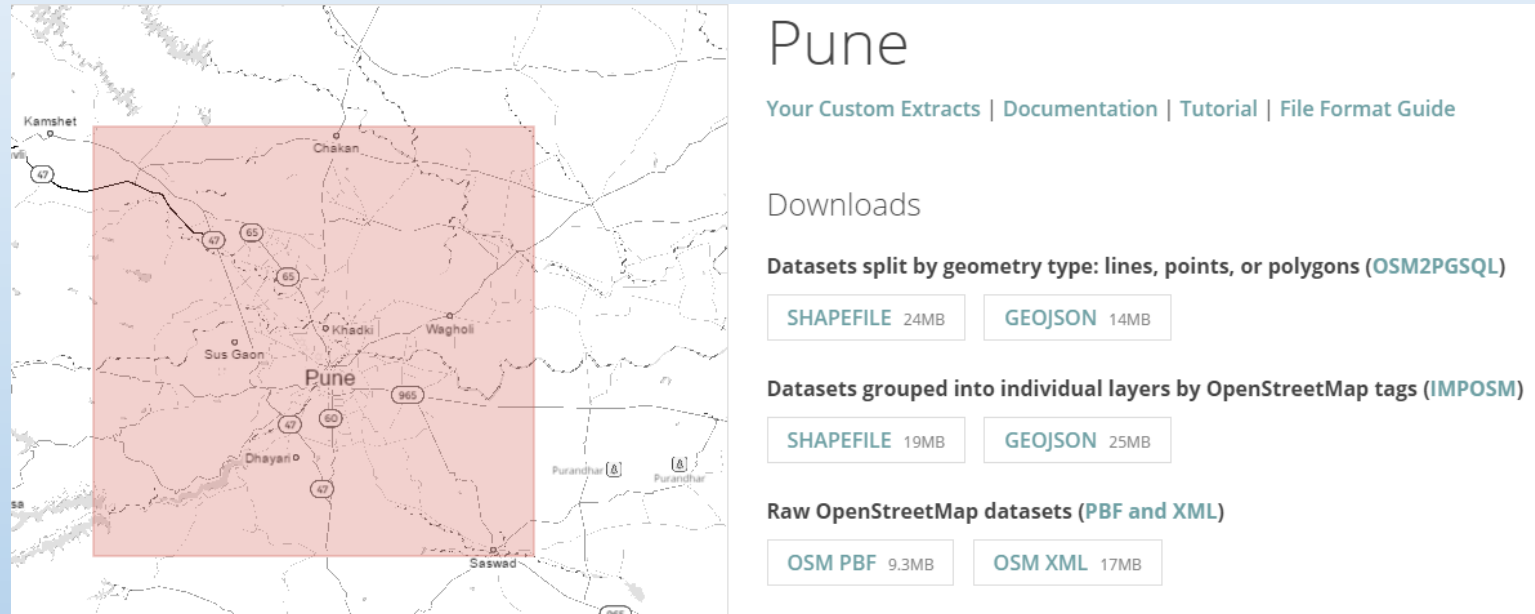
Pune geographical location in India

Proposed Methodology

- Identify major Economic hubs, transport junctions and housing preference around city.

- Rajiv Gandhi IT park is an example of economic hub.

- Mark them as Point Feature Class on map

- Gather existing infrastructure data such as roads, public transport and railway routes.

- Assign weights to identified economic hubs based on parameters as follows:

    1. Population around housing

    2. Road Width

    3. Avg number of people travelling to and from economic hubs

    4. major traffic intersections en-route

Data Collection

- Shapefile of Pune city downloaded from OpenStreetMap via MapZen interface:
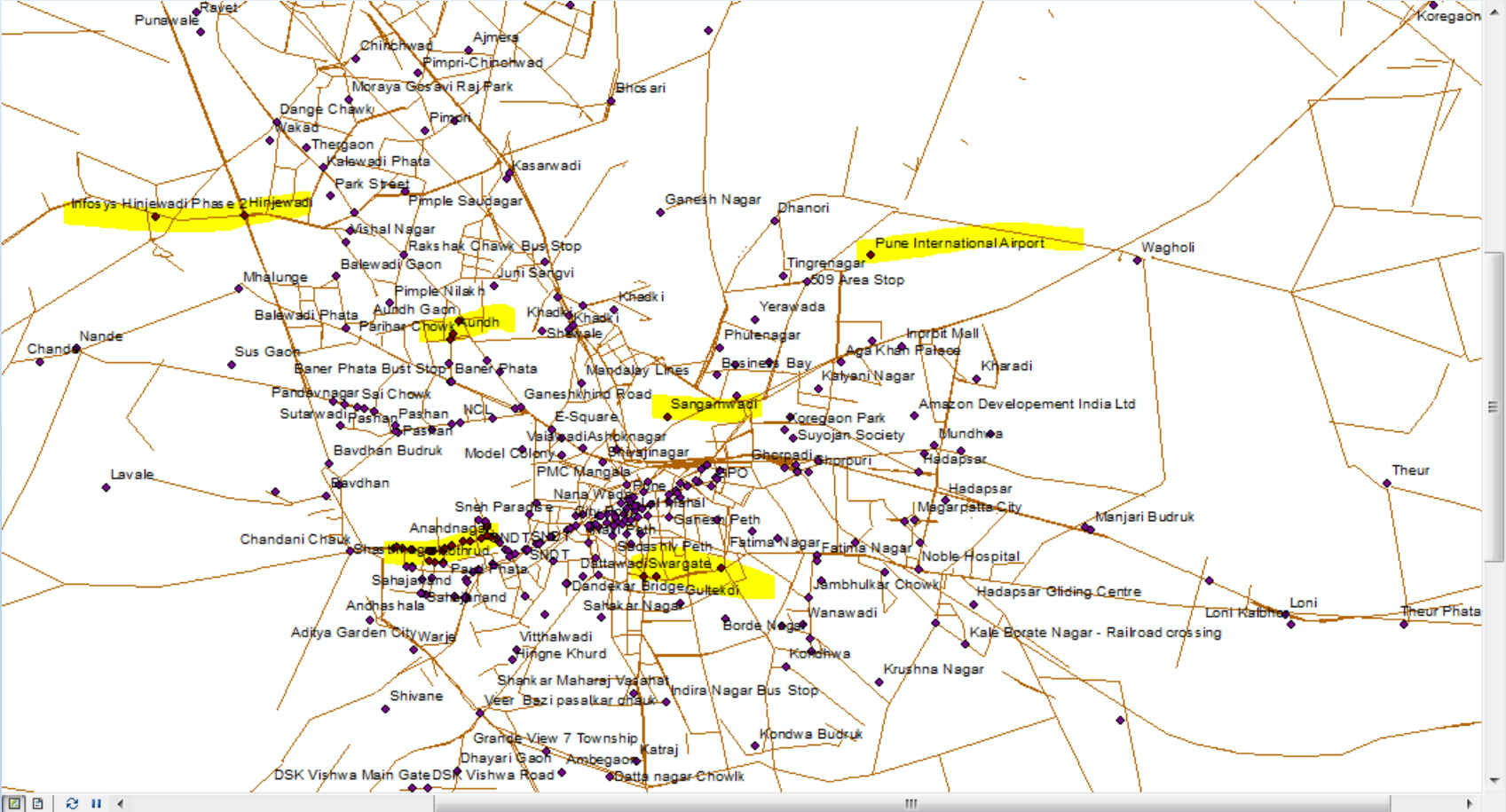 https://mapzen.com/data/metro-extracts/metro/pune_india/

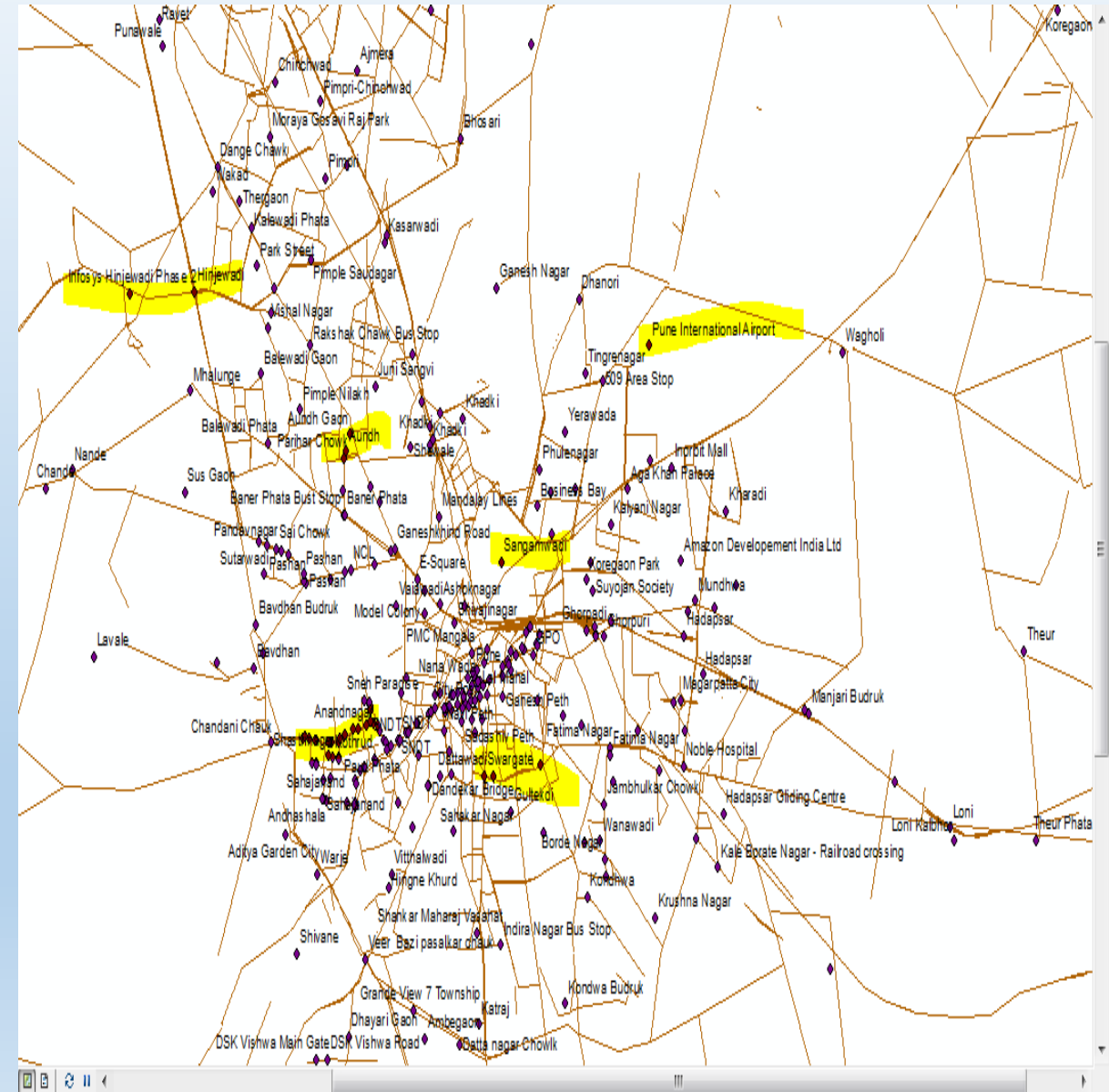- Population data gathering done from Pune Municipal Corporation Fire Hazards Response and Mitigation Plan report

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Working Model Part I

Working Model Part II

Questions?