

# 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

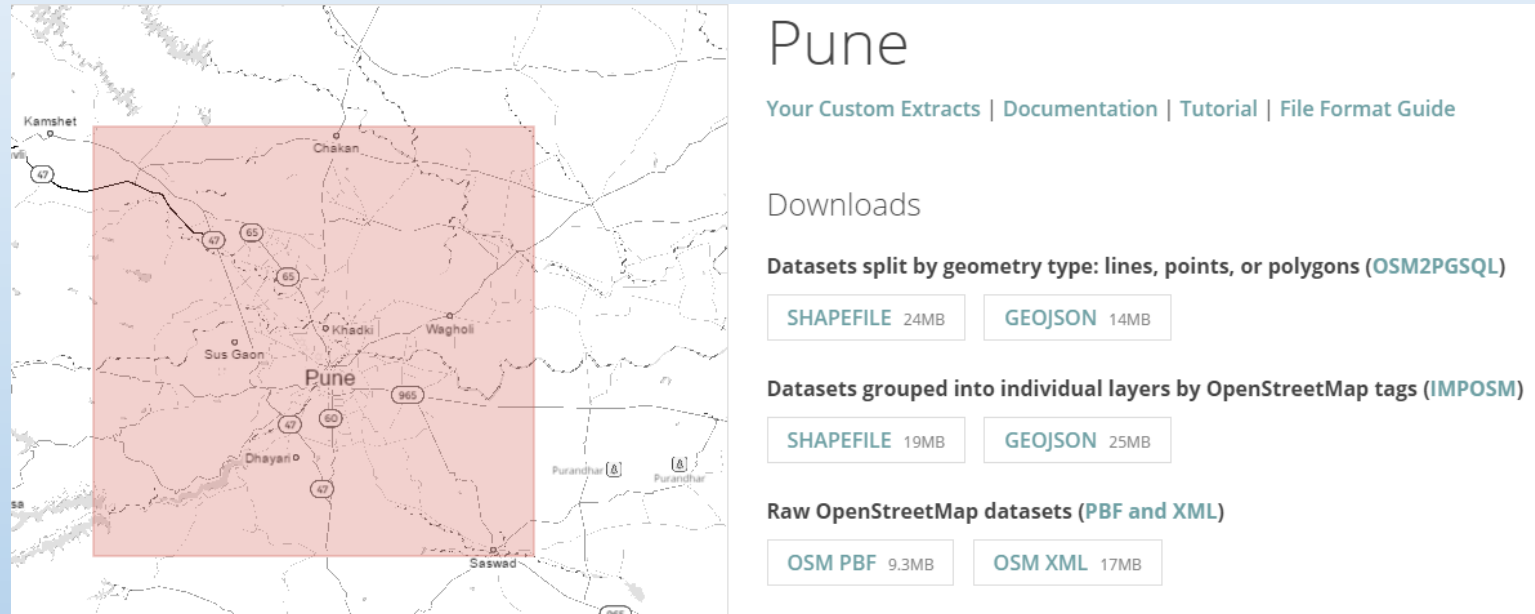


# Proposed Methodology

- 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/](https://mapzen.com/data/metro-extracts/metro/pune_india/)

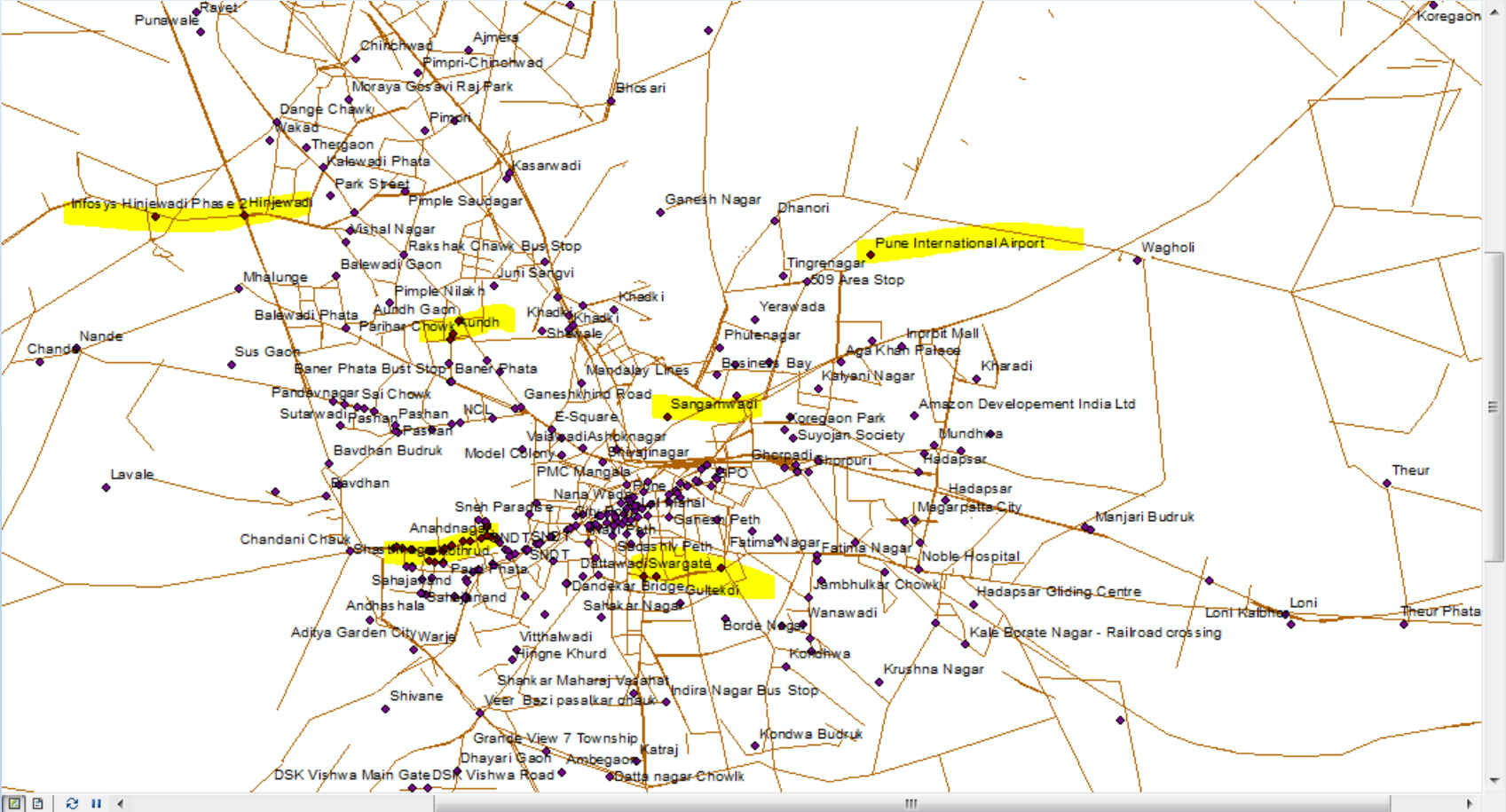


- Population data gathering done from Pune Municipal Corporation Fire Hazards Response and Mitigation Plan report

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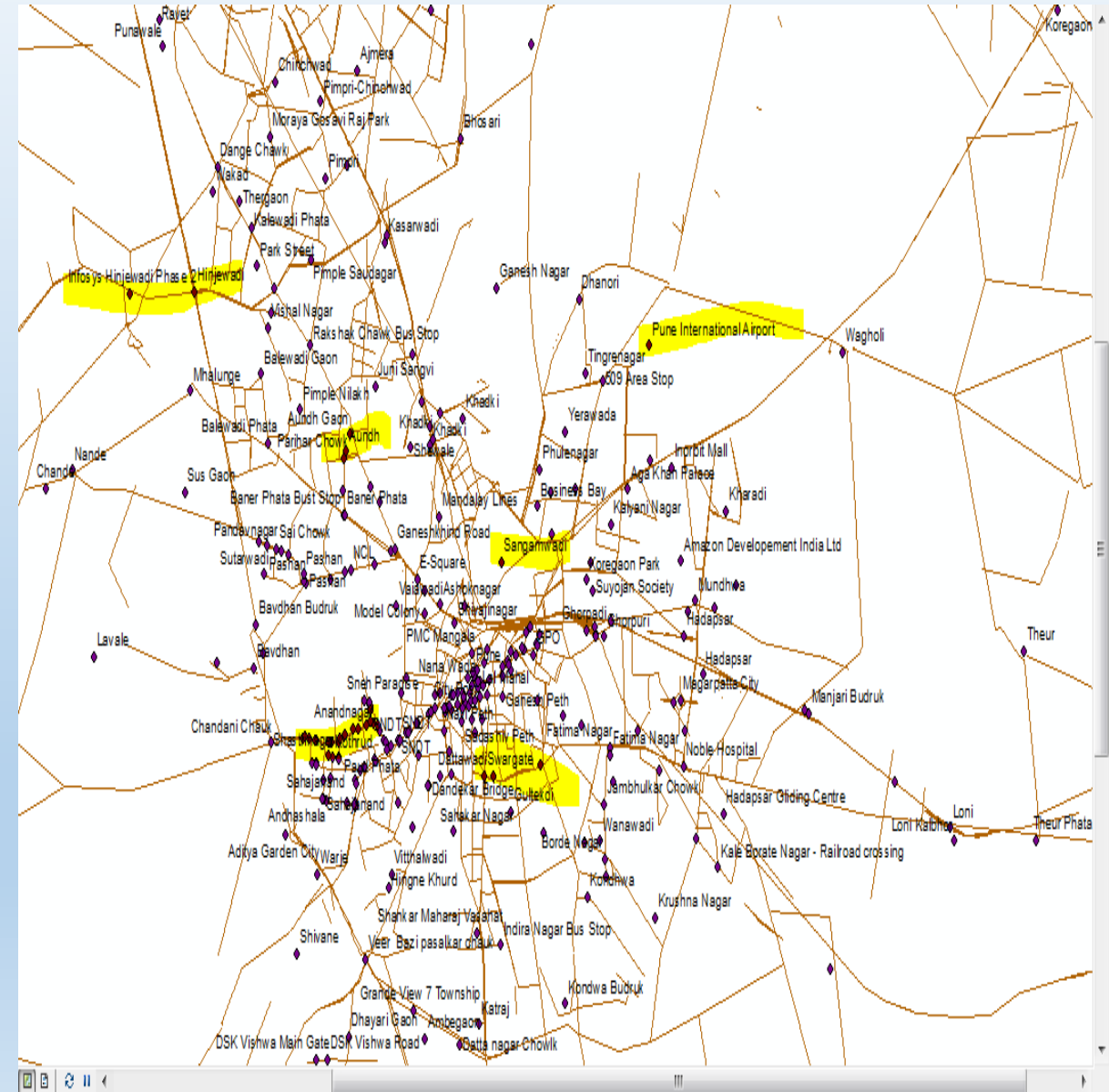


# Working Model Part I



A map of Pune, India, illustrating the spatial distribution of Economic Centers and Transport Centers. The map features a network of roads and several shaded regions representing these centers:

- Economic Center 1 (Kothrud):** Located in the central-western part of the city.
- Economic Center 2 (Old City):** Located in the central-eastern part of the city.
- Economic Center 3 (Viman Nagar):** Located in the northern part of the city.
- Economic Center 4 (Hinjewadi):** Located in the western part of the city.
- Economic Center 5 (Jagtap Dairy):** Located in the northwestern part of the city.
- Transport Center 1 (Sangamwadi):** Located in the central-eastern part of the city, near the Old City.
- Transport Center 2 (Swargate):** Located in the central part of the city, near the Old City.





# Questions?