

## National Dissemination Workshop on

# Electrification of Public Transport and Intermediate Public Transport in Indian Cities

26<sup>th</sup> April, 2022

Session 2: IPT Electrification Strategy for Mahesana

## Overview of IPT Operations in Mahesana

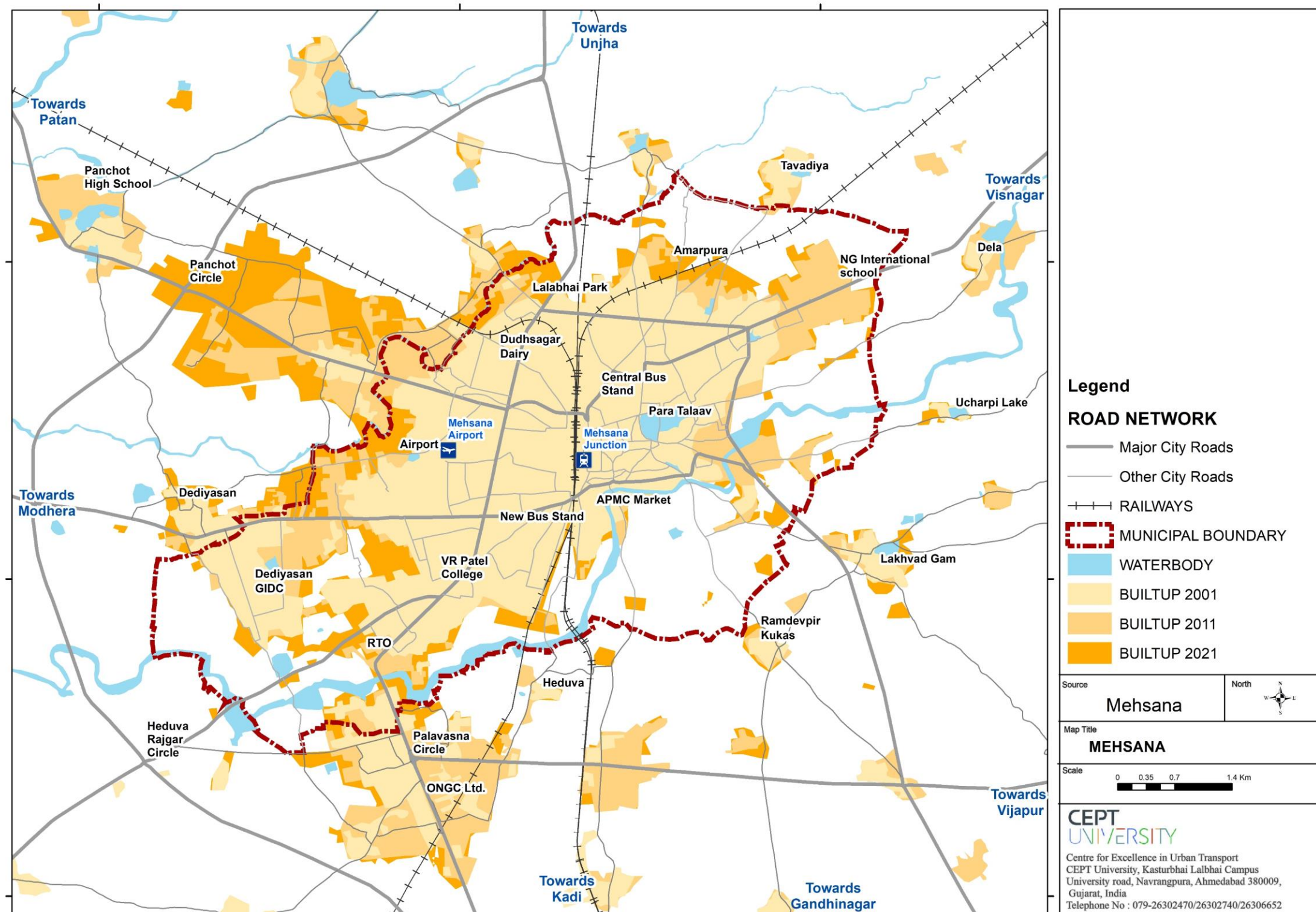
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# Structure

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1. IPT operations in Mahesana
2. Perspectives of IPT Operators on 3W electrification
3. Electric 3-W market and financial analysis
4. Strategy for 3W electrification

# Overview of Mahesana city



Industrial and commercial town, 90 km north of Ahmedabad

Population 0.25 million (2021)

Mode shares:

- Non motorized modes – 32%
- Private vehicles – 39%
- Intermediate PT – 17%

## Existing Public Transport System

- Auto-rickshaws (local) – around 1800 vehicles
- Taxis (regional) – around 600 vehicles



# Intermediate Public Transport in Mahesana

## Intra City Service

### Auto Rickshaw (CNG) - Shared & Pvt

Capacity – Pvt. (3+1), Shared (5+1)

Operations - Intra-City

Fare - Rs. 5- Rs. 20

Driver Earnings per month - INR 12000



Shared Auto Rickshaw Service

## Intercity Service

### Eeco (CNG) - Shared Service

Capacity - – 6+1 seater, Shared (10- 12 pass.)

Operations - Inter-city

Fare - Rs. 30- Rs. 80

Driver Earnings per month - INR 24000

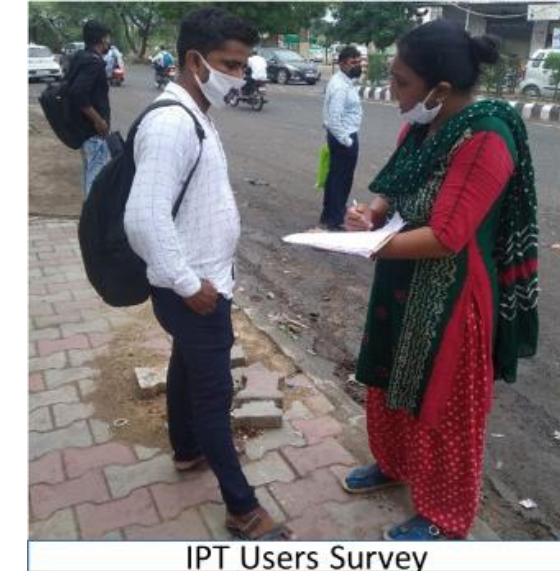


Taxi (Eeco) Service



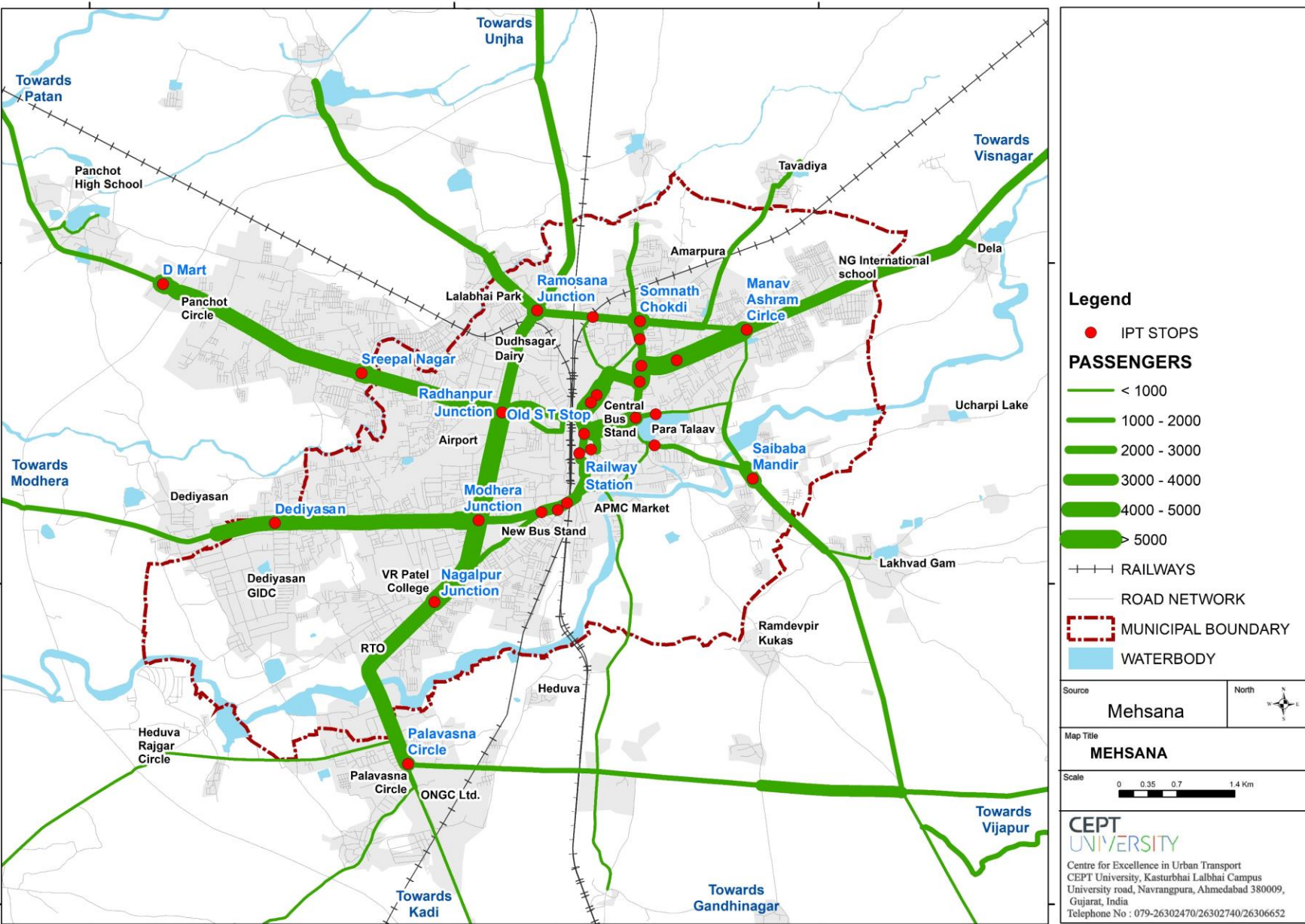
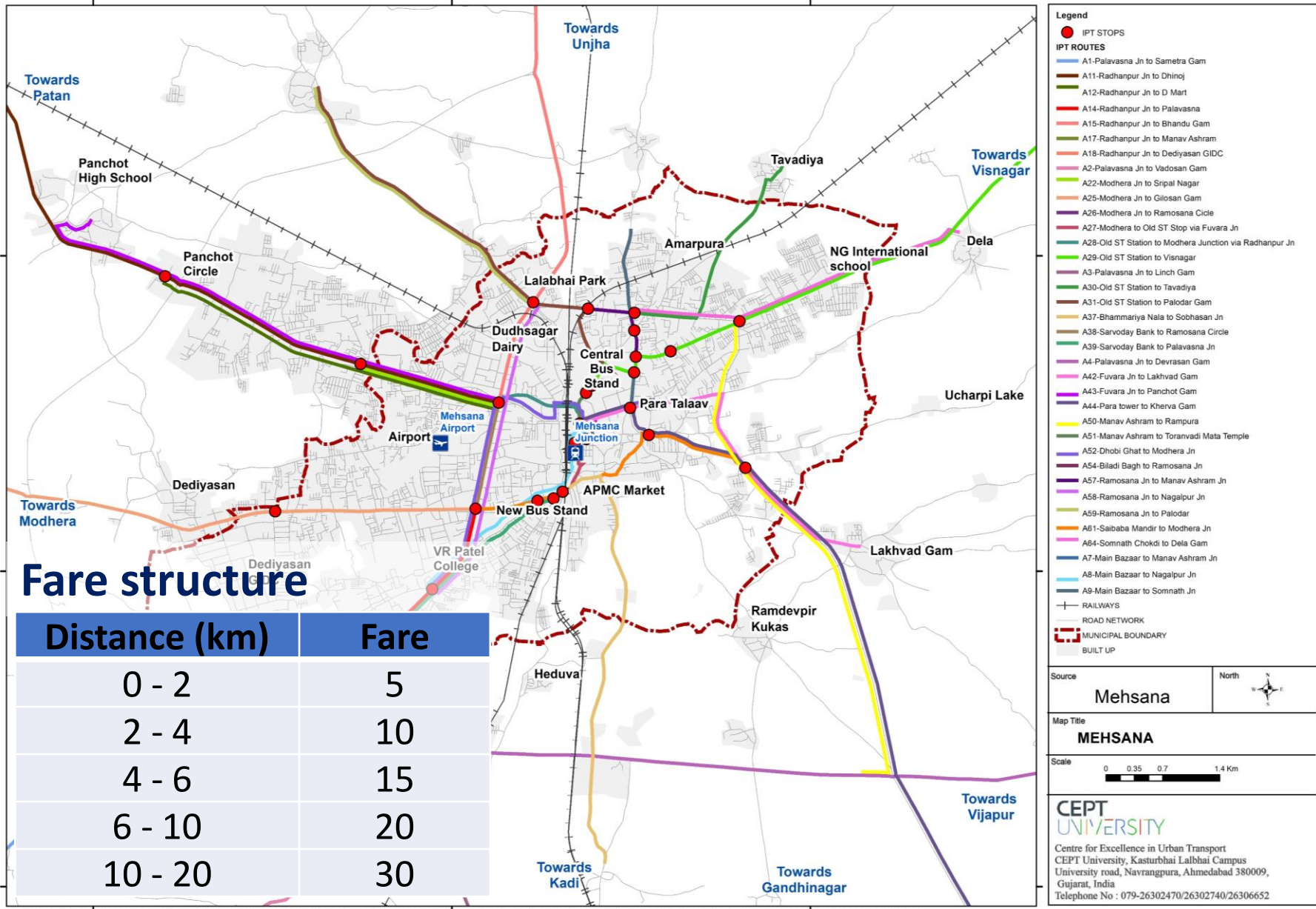
# Data collection

Sr. No.	Name of Survey	Details
1	Mapping of Auto and Eeco Stand and Routes	<ul style="list-style-type: none"> <li>36 Shared Auto Routes</li> <li>13 Eeco Routes</li> <li>36 Auto rickshaw Stand</li> </ul>
2	IPT Drivers Survey	<ul style="list-style-type: none"> <li>300 Surveys at 15 locations</li> </ul>
3	Auto rickshaw number plate surveys	<ul style="list-style-type: none"> <li>All most all major junctions</li> </ul>
4	Users Perception Survey	<ul style="list-style-type: none"> <li>300 Surveys at 36 locations</li> </ul>
5	Interview with IPT Users Women	<ul style="list-style-type: none"> <li>Auto rickshaw and Eeco users</li> </ul>
6	Interview with IPT Association Leaders	<ul style="list-style-type: none"> <li>Auto rickshaw and Eeco Leaders</li> </ul>





# Shared Auto Operations



- ❑ Total number of shared auto operating in City: 1800
- ❑ Routes with predominant demand: 18
- ❑ Predominantly operates up to 20-25 km

Source: Primary Surveys, CoE-UT, CRDF, June 2021

- ❑ Total IPT passengers – 75,000 daily
  - OD within Mahesana – 40,000 (53%)
  - Outside Mahesana – 35,000 (47%)

# IPT Drivers' Surveys – Operational Characteristics

**80 km**

Operated Daily

Minimum - 60 km  
Maximum - 130 km

**30%**

Drivers started  
operating autos in last 5  
years.

**Rs. 1500**

**Monthly Maintenance  
Cost**

(Lubes, Oil, Spares, periodic  
Maintenance)

**25%**

Use Auto for Goods  
transport in morning

(Earn 200/day)

**18kmph**

avg. speed

**24kmph**

avg. running speed  
(max speed – 42kmph)

**Rs. 100**

**Fuel (CNG) Cost daily**

**Rs 10,000 –  
Rs 13,000**

**Avg. monthly income**  
(earning after deducting all  
operational expense – expense also  
includes EMI)

**Rs. 150**

**Daily Rent**

**10%**

Operates for School trip  
– Pre Covid

**27kmpl**

avg. mileage

**60%**

**Driver take Insurance**

**Rs. 8,000**

**Average Cost**



# Awareness of electric vehicles of 3W drivers/operators

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- Low awareness of drivers on e-vehicles and subsidies available (30% of 300 sampled drivers/operators)
- Driver concerns:
  - Market feasibility
  - Operational feasibility
  - Financial feasibility



# Passenger Perception Surveys – Outputs



*Over crowding in the shared auto*



*Waiting for autos*



*No provision of infrastructure at stops*



*Poor condition of the footpath*

- Passengers satisfied with the services – easy availability and affordable
- High access time as these services ply only on major city corridors
- Lack of pedestrian facilities like footpaths, pedestrian phasing at junctions
- Safety issues for women – Generally avoid traveling late evening – prefer to travel in groups, overcrowding in vehicles

# Summary

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- Auto-rickshaws /3-Wheelers operating as shuttle services in small cities in India including Mahesana
- Offering a convenient travel alternative to city residents including people not having access to a personal mode
- Major corridors as routes, shared fare makes it affordable
- User concerns – crowding, safety (women); last mile connectivity, lack of waiting areas
- 3W operators' concerns – informal operations, parking areas not defined, declining incomes (COVID and fuel prices)