CapaCITIES

Technical Study of the existing BRTS corridor for the last mile connectivity and pre-feasibility of potential electrification of the corridor

10 April 2018

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1 Background

Swiss Agency for Development and Cooperation (SDC) is supporting the CAPACITIES project in 4 Indian cities including Rajkot .The project aims at strengthening the capacities of Indian cities to identify, plan and implement measures for achieving lower greenhouse gas emissions growth path and enhancing resilience to climate change in an integrated manner. CAPACITIES project is offering to assist the city improve the reach of BRT corridor.

ICLEI Local Governments for Sustainability ,South Asia (ICLEI South Asia) on behalf of Rajkot Municipal Corporation and CapaCITIES implementation team invited proposal for involvement of national as well as international mobility expert for “technical study of the existing BRT corridor for the last mile connectivity and pre-feasibility of potential electrification of the corridor” Under CAPACITIES Project supported by SDC.

The project aims to appraise the operational Bus Rapid Transit System in Rajkot added with an effective last mile connectivity. Additionally, exploring potential of electric mobility i.e. electrification of existing BRT buses in the city, to reduce its carbon footprint and to make it more sustainable. To achieve this, aim the primary objectives which are required to be addressed are:

- Suggest improvements in the existing BRT system to help reaching out to larger population for each available BRT station based on demand assessment
- To provide last mile improved connectivity between different modes (existing and envisaged) as well as safe pedestrian and non-motorized access to public transport.
- To propose enhancements, add on for improving the system including new technology aspects and looking at the feasibility of scaling up such initiatives more widely in the city.
- Delineate influence area over which ridership enhancement measures need be considered.
- Identify various last mile connectivity modes such as E-rickshaw /Auto rickshaws as well as
- NMT modes that need promotion.
- Identify implementation pattern to promote the finalized modes for last mile connectivity improvement including the financial aspects such as cost, revenue etc.

1.1 Introduction to BRT

Bus Rapid Transit System (BRTS) is a high capacity bus based public transit system. It is a total/complete system; is safe, fast, comfortable, and comparatively affordable and makes the best use of the available road space. The system is designed and engineered with dedicated bus lanes on which no other vehicles encroach. Likewise, there are separate lanes for cyclists, motorized vehicles and pedestrians. The segregated bus lanes make for faster travel of commuters in the BRTS; it improves traffic management in general and as such, improves the driving conditions of all other vehicles on the road as well. This system leads to reduced pollution. Security, cleanliness, easy access, customer comfort, and minimal stoppage time, all are qualities of the system which result in increased efficiency and attractiveness both for the passenger and the operator. In India, BRT system is adopted in many cities such as, Ahmedabad, Surat, Rajkot, Pune, Jaipur, Indore, Bhopal, Vijayawada and Vishakhapatnam (Table 1).

TABLE 1: OPERATIONAL BRTS CORRIDORS IN INDIA

Nos.	City	Operational corridor length (km)	Corridor Name
1	Ahmedabad	97	Total 17 Routes
2	Pune	17	Hadpsar-Swargate-Katraj
3	Surat	10.2	Udhana Darwaja to Sachin GIDC Naka

4	Jaipur	7	Sikar Road to Tonk Road
5	Indore	11.5	AB road corridor
6	Bhopal	21.7	
7	Vishakhapatnam	20	Pendurthi Transit Corridor
8	Vijayawada	15.5	Green Corridor: Loop Road
9	**Rajkot**	**10.7**	**Gondal Chowk to Madhapar chowk**

1.2 City Profile

BRT system was developed in Rajkot on a 10.7km stretch of the ring road. The planning for the corridor started in 2007 and the corridor became operational in 2010. Rajkot is the fourth-largest city in the state of Gujarat. Managed by Rajkot Municipal Corporation (RMC), the area of Rajkot city is around 104.85 sq.km. The larger metropolitan region, which is under the jurisdiction of Rajkot Urban Development Authority (RUDA), has an area of about 686.30 sq.km. As per Census 2011, the population of RMC is 1.29 million. Administrative boundary map of RUDA is presented in Figure 1.

The city has a dense road network. The city is regionally connected with National highway NH-8B, State Highways (SH-26, SH-27, and SH-42) and district roads.

The climate of the city is hot and dry. The average maximum and minimum temperatures recorded over the last 40 years are 43.5°C and 24.2°C respectively. The average annual rainfall is 500mm.

Rajkot is located 245km from Gandhinagar, the state capital, at the centre of Saurashtra peninsula in the central plains of Gujarat State, located in western India at a height of 138m above mean sea level, and located on the banks of the Aji River and Nyari River. It lies between latitude 20.18 N and longitude 70.51 E. Rajkot is the biggest city in terms of population in the Saurashtra-Kutch region, bustling with commercial activity, spurred by new global economic and industrial policies.

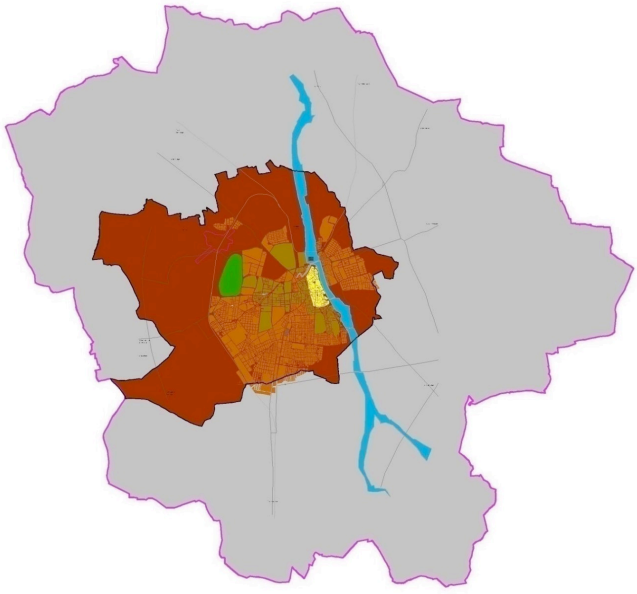


FIGURE 1: ADMINISTRATIVE BOUNDARY OF RUDA

Source: (RUDA, 2015)

1.3 Rajpath BRTs

Rajkot BRT (Figure 2) was planned in year 2007-09, by SGArchitects (SGA) for Urban Mass Transit Corporation (UMTC), who were contracted by Rajkot Municipal Corporation to plan and implement the project under funding from Ministry of Urban Development (MoUD) as a part of its flagship program, known as the Jawahar Lal Nehtu Urban Renewal Mission (JnNURM). RMC had identified the two potential BRT corridors:

1. One on the Ring Road around the city
2. Other bisecting it and linking the city to the periphery.

Rajkot has proposed BRTS network of total 63.5kms (Figure 3). Out of which 10.7 km BRTS corridor i.e. from Gondal Road to Jamnagar road is operational at present.

FIGURE 2: OPERATIONAL RAJKOT BRTS

Source: (Rajpath, 2017)

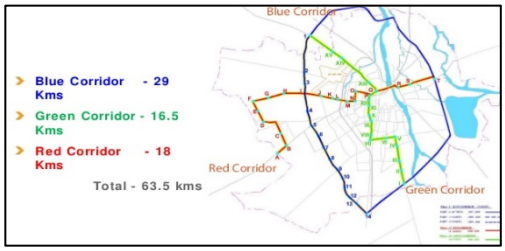


FIGURE 3: RAJKOT BRTS NETWORK PLAN

Source: (RUDA)

The section of the Ring road was developed as the 10.7 km long first phase BRT corridor. The available ROW is 45m and the corridor was designed with two vehicular lanes, a parking lane, dedicated bus lanes, a continuous cycle track and a continuous and barrier free footpath along the length of the corridor. As a first for any BRT in the country, the corridor was designed with semi-signalized (three-phase signal, for buses, pedestrians and other motor vehicles) roundabout junctions. Broad deatails for the Rajkot BRTS corridors are presented in Table 2.

TABLE 2: RAJKOT BRTS CORRIDOR DETAILS

Rajkot BRTS operational Corridor Details	
System type	Closed (However Initially planned as open)
Transit type	Bus rapid transit
Number of lines	1
Vehicle type	High floor diesel bus fleet
Number of stations	18
Daily ridership	15000-17000 daily average
Operator(s)	Rajkot Rajpath Limited
System length	10.5 kilometers (6.5 mi)

Source: (Rajpath, 2017)

The selected corridor was planned towards the outskirts of the city, and attracted limited ridership because of limited demand (due to minimal origin-destinations on the corridor). Additionally, like most Indian cities, Rajkot has:

- Very low average trip length of under 4km.
- High mode share of NMT and motorized two wheelers.
- Informal though very strong IPT presence.

These factors point to a high sensitivity to access time, journey time and journey cost. As closed transit systems are known to have limited attractiveness for cities with low trip length (because of high access time and cost involved, Rajkot was originally planned as an open system - with bus routes connecting city core with BRT through critical nodes and important junctions on the corridor. However, the system was changed to closed system to cash on the high operational control, comfort, reliability and attractiveness offered by closed systems (Gandhi, 2015). This may have contributed to current reduced demand than planned for (Rajkot Municipal Corporation, 2007)[1]. Reduced demand is partly reflected in the peak ridership numbers of between 800 to 1200 trips per hour per direction[2]. Rajkot BRTS ridership is assessed as low when compared against other BRTS corridors, in India and globally (Hidalgo and Gurtierrez, 2013) & (Tiwari, 2010). Thus, to address this lack ridership on the BRT system, this project aims to identify solutions/measures to increase its attractiveness and demand. This study shall evaluate the effectiveness of different short and/or long-term measures to achieve these goals, and suggest a broad implementation strategy for the same. These measures include exploring different options to increase last mile connectivity including IPT integration, NMT integration, route modifications, BRT fleet expansion, etc. Other suggestions to improve attractiveness of the system, such as improved technology for ticketing, vehicle information, vehicle tracking etc. shall also be explored.

1.4 RMTS

Rajkot has city bus service named as Rajkot Municipal Transport Service (RMTS). Rajkot Municipal Corporation (RMC) started city bus service on 10th Oct'2013. In order to run and to operate RMTS Bus Service, RMC has incorporated "Special Purpose Vehicle" (SPV) called Rajkot Rajpath Ltd (RRL). There are 60+6 Marco Polo Midi Busses with 32 seating capacity and 30+3 tata standard busses with 42 seating capacity which are plying on 57 routes. Out of which, 31 routes are passing through BRTs corridor. The detailed city bus tube map of Rajkot city is presented in Figure 4.

[1] As per estimations included in the detailed project report for BRT, the daily ridership on Rajkot BRTS should be 1,44,036 trips in 2017 and 1,70,981 trips in 2018, as against an average of around 19,000 trips in August 2017

[2] Peak hour and direction ridership number are derived from daily ridership numbers listed in MIS data from October 2016 to August 2017, as shared by Rajkot Rajpath Limited

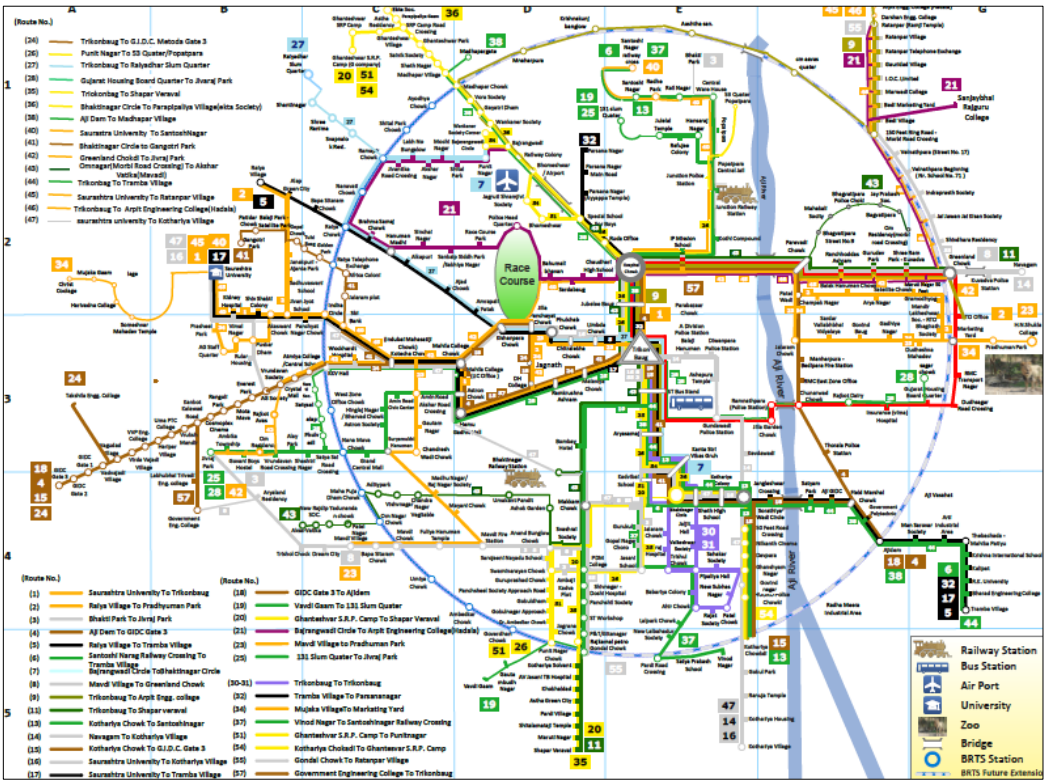


FIGURE 4: RAJKOT CITY BUS TUBE MAP

Source: *(RUDA)*

1.5 Travel Characteristics

In this section, travel characteristics like mode share, number of trips, purpose of trips and average trip length of the Rajkot City is discussed.

1.5.1 Mode Share

Mode share is defined as the percentage of modes used by a person for a trip. It was observed that trips in the city are made largely by walking and two-wheelers, i.e. 38 per cent and 35 per cent respectively. The share of non-motorized mode is high, which is 48 per cent including walking and cycling shares. Like most medium-sized cities of India, Rajkot also has a very high mode share of non-motorized transport and public transport, i.e. 60 per cent. Figure 5 shows the composition of different modes used for travel in the city.

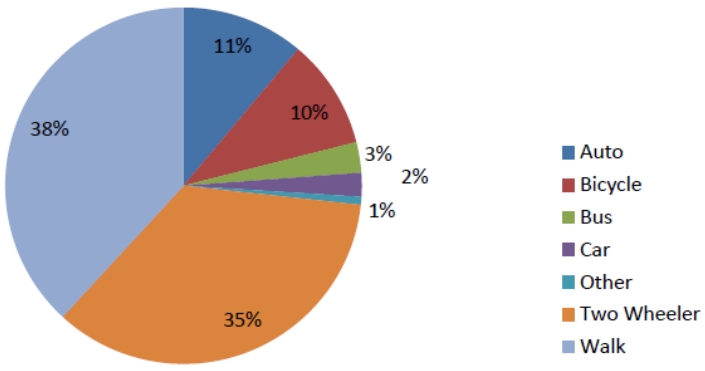


FIGURE 5: MODE SHARE OF RAJKOT CITY

Source: (LCMP, 2014)

1.5.2 Trip Characteristics

The per capita trip rate including walk trips is 1.30 trips/day, and when walk trips are excluded it is 0.81 trips/day. The city has a very low average trip length (inclusive of walking trips) of under 4 km. Trip distribution by purpose shows that most trips are made for work and education, i.e. 53 and 26 per cent respectively. Figure 6 shows the composition of trips by purpose in the city.

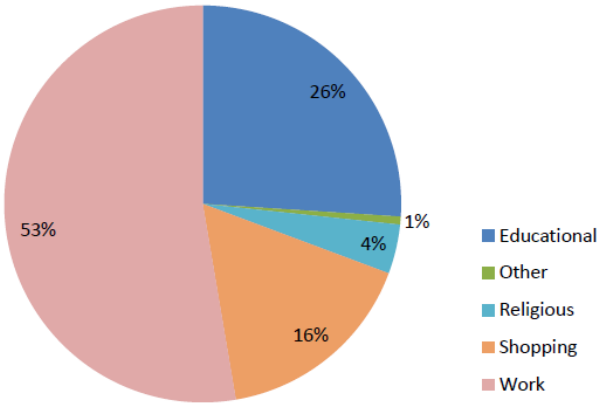


FIGURE 6: TRIP PURPOSE

Source: (LCMP, 2014)

1.6 Introduction of electrification in Mobility

The use of electric motors for propulsion dates back to the mid-19th century. The electric motor was invented before the internal combustion engine. Nevertheless, the internal combustion engine has been the dominant propulsion method for motor vehicles for almost 100 years and remains the dominant propulsion method today (the worldwide share of EVs was estimated to be around 0.15% at the end of 2016 (Wikipedia, 2018). However, in recent years, electric vehicles (EVs) saw a resurgence due to a variety of different reasons. Technological improvements led to better and more affordable batteries. Improvements in battery capacity have significantly increased the range and flexibility of EVs. Another reason is the foreseeable end of non-renewable (fossil) energy sources such as petroleum oil and gas and a better understanding of climate change and therefore a higher awareness of the need to reduce CO_2 and other greenhouse gas emissions. Depending on the source of the electricity (and energy mix) used to charge the batteries, EVs have little to zero CO_2 and other greenhouse gas emissions. EVs can also contribute to a reduction of air pollution, noise level and energy demand. Furthermore, some governments have started to actively push electric vehicles with specific incentives or subsidies.

1.6.1 Electric Mobility for Rajkot city

Among all urban service sectors, the transport sector is the most energy intensive sector in Rajkot. For 2015-2016, road transport accounts for 49% of the total energy consumption and results in 27% of the total greenhouse gas emissions in the city (CapaCITIES, 2018). In 2015-2016, greenhouse gas emissions accumulated to more than 0.5 Million tons of CO_2 equivalents. According to the Low-Carbon Comprehensive Mobility Plan (LCMP, 2014), carbon monoxide levels at many places are higher than the prescribed standards of 4000 $\mu g/m^3$. Besides the negative health effects of air pollution, semi-arid areas such as the state of Gujarat are particularly vulnerable to climate change. This stresses the importance of mitigating greenhouse gas emissions furthermore.

Besides improving the existing BRT-corridor and thereby increasing the ridership of public transit, the electrification of the BRT-corridor can also help to reduce Rajkot's carbon footprint and make the city more sustainable.

1.6.2 Advantages and disadvantages of electric vehicles

The following table summarizes the main advantages and disadvantages of electric vehicles.

TABLE 3: ADVANTAGES AND DISADVANTAGES OF ELECTRIC VEHICLES

Advantages	**Disadvantages**
Zero CO_2 and other greenhouse gas emissions (tank-to-wheel)	Smaller range or flexibility
Improvement of air quality	Longer charging (=refuelling) time
Comfort enhancement (reduction of vibration and noise)	Different/additional infrastructure and maintenance requirements
Smaller energy demand (ca. 25% less)	Bigger investment costs for vehicles

The premise of zero CO_2 and other greenhouse gas emissions is of course only valid, if the electricity used is generated entirely from renewable sources. However, in practice electricity is usually drawn from an electric grid being fed by several power generation methods using fossil and renewable sources. The potential to reduce CO_2-emissions therefore relies strongly on the effective energy mix. This stresses the need to analyse the present and future methods of generation of electricity (see chapter 3.2.3.11).

2 Literature Review

This section provides findings and understanding on last mile connectivity as gathered from literature review. It attempts to build an understanding of the importance of Last Mile Connectivity (LMC) planning for Public Transport (PT) systems like BRTS/Metro. The understanding of objectives, planning strategies and principles required to choose suitable last mile connectivity option for given PT system, can be consolidated by combining the findings and inferences from the various Last mile connectivity studies, thesis, research papers etc.

The literatures presented in the Table 4 have been followed to get the better understanding of Last mile connectivity planning for transit.

TABLE 4: LITERATURE STUDIES

S.No	Literature Study
1	Last Mile Connectivity Study. Author: Gresham Smith and Partners in collaboration with Sprinkle and vhb for PCID, Atlanta city.
2	First Last Mile Strategic Plan & Planning Guidelines. Authors: Los Angeles County Metropolitan Transportation Authority & SCAG, Los Angeles.
3	Last Mile Connectivity (LMC) For Enhancing Accessibility of Rapid Transit Systems. Author: Chidambara, Department of Urban Planning, School of Planning and Architecture, New Delhi, India
4	Best Practices: First-Last Mile Strategies, Article-Mass Transit, August 15, 2016.
5	Fist mile-Last mile, Intermodalism, And Making Public Transit More Attractive. Author: Steven Polzin, Blog Post, PLANETIZEN.
6	First/Last Mile Strategies Study. Author: FEHR & PEERS and NELSON NYGAARD
7	Access-egress and other Travel Characteristics of Metro users in Delhi and its Satellite Cities. Author: Rahul Goel and Geetam Tiwari, TRIPP, IIT Delhi.

The chapter focuses on extracting findings from the above-mentioned literature reviews which shall be useful tin proposing a viable Last Mile connectivity option for Rajkot BRTS.

2.1 Last Mile Connectivity

Originally, the phrase last mile connectivity has been used in telecommunications and technology industries to describe the technologies and processes used to connect the end customer to a communications network. For PT Last mile trips help commuters to easily access/egress and transfer between origin and transit station (Chidambara). Commuters must complete the first and last portion of the trip on their own, as public transit agencies only provide bus and rail services connecting designated stops or stations on a specific corridor or a route. To complete the first and last trips, commuters are required to walk or drive themselves to the nearest transit station. These first and last segments of a trip feeding the transit (or other mode) trip are known as the “first” or “last mile” of the commuter’s trip (First Last Mile Strategic Plan & Planning Guidelines , March 2014).

2.1.1 What is last mile connectivity?

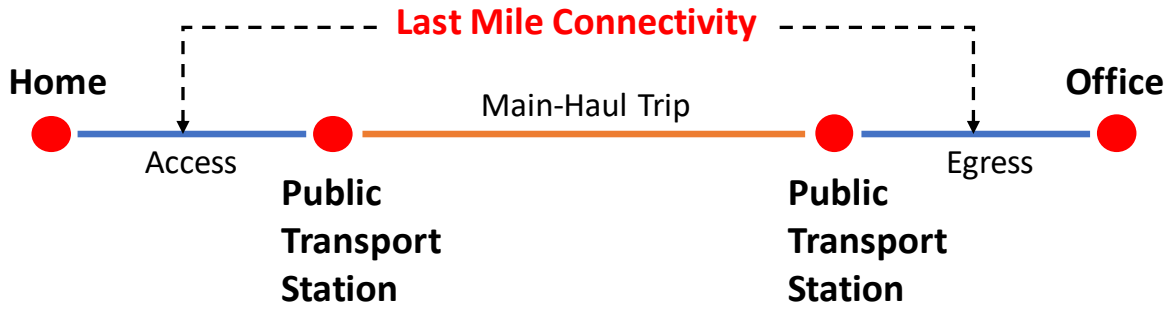


FIGURE 7: LAST MILE CONNECTIVITY

For commuters who use PT, trips so not simply start or end when they board or alight the train (in case of metro) or bus (including BRTS). Trips starts from home (by walk, by non-motorized vehicles or by motorized vehicles) to PT station, and conclude through a similar trip from station to the work place. These connecting trips before and after transit, which are "last mile" as shown in Figure 7, are the most challenging and thus critical for ensuring PT ridership. For example, for work trips, if a commuter travels with BRTS to get to work, then the "first mile" and the "last mile" of that trip would be the distance between home to BRTS station or BRTS station to office. It could also refer to the trip made between a shopping center and the nearest PT station, for commuters with shopping as the purpose of the trip (Gresham Smith and Partners, March 2017).

First and last mile connections are undertaken in one or more of the following ways:

- Walking
- Bicycling
- Private automobile like two-wheelers, cars, etc.
- Para-transit modes like auto rickshaws, taxies, cycle rickshaw and e-rickshaw
- Shuttles or mini buses
- Bus
- Private rideshare or ride-hailing services like Uber, Ola, etc.

2.1.2 The importance of last mile connectivity for ensuring Public Transport (PT) ridership?

Ridership of BRTS or any PT system, is highly dependent on the quality of last mile connectivity present in PT catchment area and also highly dependent on the time people spend during its access and egress parts and the level and quality of access. These are the weakest parts of a PT trip since these stages involve much physical effort and occur in an outdoor environment. Therefore, with an increase in access and egress time, the usage of public transport decreases. (Goel & Tiwari, 2013)

Elements of geography, topology, street network and design, or a lack of available transportation options create a first and last mile gap which is a barrier that discourages potential riders from using transit because a station cannot be easily accessed from home, work, or other destinations. (Nelson\Nygaard, APRIL 2015)

Improvements to last mile connectivity can help improve congestion and provide viable travel alternatives to personal vehicles for workers, residents, and visitors. Better facilities for walking, parking of rickshaws, and safe bicycle tracks may increase PT ridership and reduce dependence on motorized modes for access and egress trips. Also, enhancing non-motorizing facilities like bicycle and pedestrian facilities can help to improve community health and well-being by planning it easier for PT commuters to choose active transportation modes and make healthier choices with regard to how they get around. It is also observed that investing in last mile connectivity can help ensure the economic competitiveness of the area by maintaining it as a desirable destination for workers, residents, and visitors. (Gresham Smith and Partners, March 2017)

2.2 Last Mile Connectivity Planning

The growing motivation for providing first mile-last mile connections derives from the logical desire to increase the accessibility to Public Transportation for more homes and destinations (Polzin, 2017). Over time, the population will continue to grow as cities modify their land-use plans to provide more housing and jobs near stations, consistent with market demand and regional goals for more sustainable communities. Planning a last mile infrastructure improvement strategy is aimed at facilitating easy, safe, and efficient access to the PT system (First Last Mile Strategic Plan & Planning Guidelines , March 2014), thereby increasing its attractiveness, eventually leading to increased ridership and overall lower dependence of the city on private modes of transport.

2.2.1 Objectives for planning last mile connectivity

An individual's trip is understood as the entire journey from origin to destination. Individuals may use a number of modes of transport to complete the journey; they may walk, drive, ride a bicycle, take a train, or in many cases combine a number of modes (First Last Mile Strategic Plan & Planning Guidelines , March 2014). It is important to minimize the use of motorised modes to access PT since a higher share of these modes also has important implications in terms of emissions.

Therefore, the three main objectives of planning a last mile connectivity are (Gresham Smith and Partners, March 2017):

- To provide safe, faster and comfortable access and egress option for short-distance trips;
- To make it easier and more convenient for commuters to take advantage of existing PT system for travel between the origin and destinations;
- To provide commuters with choices other than a personal automobile for completing short-distance trips within PT catchment area.

2.2.2 Strategies for planning PT last mile connectivity?

To achieve above objectives, the last mile connectivity planning should focus on the safety, comfort and convenience of commuters. Therefore, the strategies for planning last mile connectivity modes should be commuter's behaviour oriented.

Essentially, facilities that improve last mile connectivity may include wide sidewalks, safe pedestrian crossings, direct connections between buildings and sidewalks, shared-use paths, bicycle lanes, private rideshare services, short-term carshare or car rental, and to some extent, local circulating transit service, like shuttles. Other improvements may include wayfinding, bike parking, short-term bike rental or bikeshare. (Gresham Smith and Partners, March 2017).

To improve the quality of last mile connectivity, city transport department should implement the following strategies (Gresham Smith and Partners, March 2017):

- Ensure the safe connection between PT system and destinations for the pedestrians, cyclist and other transit users.
- Improve mobility to reduce congestion, improve traffic flow by managing vehicular traffic, and makes it easy for commuters to interchange modes.
- Provide different last mile connectivity options for commuters to travel up to transit, so that commuters can travel easily and comfortably without having to use a personal vehicle. These modes include paratransit, walking, bicycling, etc.
- Identify non-motorized transit corridors or shortcuts in the PT catchment system which can attract more walking and cycling commuters, and avoid implications in terms of emissions.
- Enhance the economic competitiveness of the area by providing a range of transportation options, making the area more attractive to business and employees.

- Enhance the sense of place and quality of life within the transit area by providing a transportation system that encourages active living, human interaction, and enjoyment of assets in the transit area.

In addition, the last mile planning should prioritize the non-motorized transit users by providing separate planning strategies for them. Following are the strategies considered by Perimeter Community Improvement Districts (PCIDs) in last mile connectivity planning for the bicycle and pedestrian network (Gresham Smith and Partners, March 2017).

- Enhance pedestrian facilities and circulation at major origins and destinations, including transit stations, office complexes, hospitals, and large retail developments.
- Implement Programs and facilities to Encourage Bicycle Usage in the Perimeter Area-
    - Provide supportive equipment and facilities such as bicycle racks and repair stand.
    - Work with major employers to implement employer incentive programs to encourage cycling to work.
    - Sponsor bicycle safety campaigns to teach cyclists and motorists how to safely interact on the roads.
- Foster an Interconnected Network of Bicycle Routes

Transit cannot be successful on its own. There are many factors that affect the ridership, including the physical characteristics of the transit area, but also the behavior of locals and how transportation decisions are made. Wide range of approaches supporting the last mile planning including high level policies (for example supporting mixed-use density in station areas) to specific infrastructure investments (for example providing additional bike racks at stations). Public transportation agencies, at the time of PT system like BRTS/Metro planning can allow for 'coordinated bundling' of first last mile strategies by identifying access networks that partner agencies and alternative transportation providers can build from and/or plug into (First Last Mile Strategic Plan & Planning Guidelines , March 2014).

2.2.3 Principles for planning PT last mile connectivity?

Successful PT system always rely on direct alignments along or adjacent to higher-density corridors, and it may not be practical or cost-effective to expand coverage or increase frequency of service to increase ridership. Other efforts may be needed to improve first and last mile connections. The suitability or efficiency of Last mile trips hugely hinge on three main principles. (Gresham Smith and Partners, March 2017):

1. **Distance**: the distance a commuter must travel between PT station and origins or destinations. Last mile connectivity mode mostly depends on the distance of last mile trip. Most of the cases, Commuters choose walking or bicycle as a commuting mode for short-distance trips and for long last mile trips commuter would prefer para-transit modes or buses. An average person can walk more than a kilometre on flat, well-maintained surfaces in about 17 to 20 minutes.
   A general rule of thumb is that people are willing to walk close to 400m to local bus stops and a 800m to a rail or rapid transit station. However, in some cases, many people are willing to walk more than 1.5k or cycle, if the conditions are conducive to safe, comfortable trips (Gresham Smith and Partners, March 2017).
2. **Modal integration**: Modal integration refers to the ease (or difficulty) of combining multiple modes, such as cycling, walking, or ridesharing, with transit trips. It is very important that the commuter can easily transfer from one last mile mode to transit, in order to facilitate convenient, comfortable last mile connectivity and make seamless transitions between trips. For example, commuter travelling by bicycle should be able to park his/her bicycle in bicycle racks at all transit hubs. Also, he/she would get a parking area at office and residential buildings, so that person could easily ride a bike from home, get on a bus, and then ride a bike to his/her final destination. (Gresham Smith and Partners, March 2017). Modal integration may not be limited to just physical integration but should also include fare integration where transfer between different PT/transit modes or/and IPT is involved.
3. **Network quality**: Network quality refers to quality environment and infrastructure for commuters in transit area and routes between origins and destinations. Effective last mile strategies depend upon high-quality facilities and routes that make trips safe and comfortable for travellers. Level sidewalks, even topography, well maintained

motorized carriageway and non-motorized pathways, street lighting and pedestrian lighting, shade tree and other green covers, or covered walkways, dedicated hawking spaces are the most important factors that make last mile commuters more safe and comfortable (Gresham Smith and Partners, March 2017).

4. **Increasing the average speed of active transportation users**: This is achieved by decreasing wait times at intersections and by increasing speed and capacity along walking/rolling routes. Pedestrian prioritized Signal timing improvements decrease waiting times for pedestrians; reduced crossing distances reduce average street crossing time; and the provision of improved walking and rolling facilities that cater to a growing range of mobility devices increases the average speed of users. Personal sense of safety, security, and comfort along access routes all play a role in an individual's choice to utilize public transportation. (Gresham Smith and Partners, March 2017). Here it is also critical to understand that by simply providing pedestrian walkways which are level, wide and free from encroachments can result in a 40% improvement in commuter walking speeds leading to up to 20% reduction in journey time, making the public transport that much more attractive (Gandhi, 2013).

5. **Decreasing point to point distances**: This is achieved through the utilization of strategic short-cuts and increased crossing opportunities. Provision of raised crossing at junctions and mid-block can be used to significantly reduce point to point distances (Gresham Smith and Partners, March 2017).

It is observed that the most important factors for deciding last mile mode is reduced wait time and reduced journey time. Since wait time contributes to the journey time, it can be inferred that journey time is the most important factor for the commuter over vehicle comfort, attractive stations, low fares, etc. These findings have been derived from transportation surveys of residents, employees and visitors conducted in 2013 by Perimeter Community Improvement Districts (PCIDs), in coordination with ARC (Figure 8). This effort included a mail home travel survey of residents, intercept surveys at major Perimeter employment centers, and intercept surveys at three MARTA Stations (Gresham Smith and Partners, March 2017).

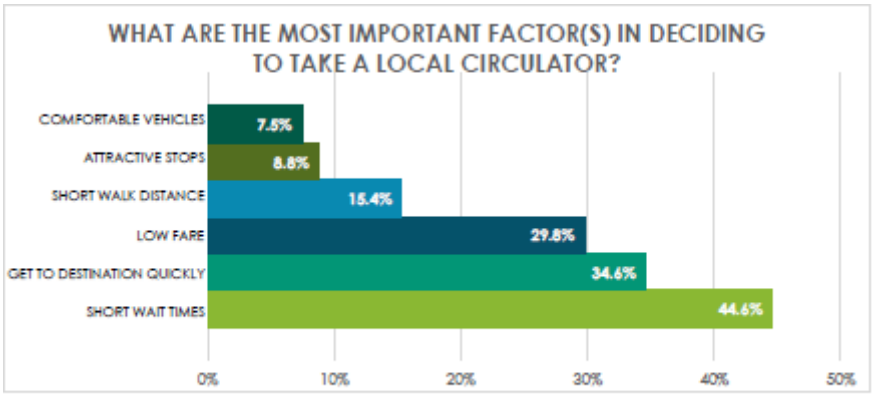


FIGURE 11. LOCAL CIRCULATOR FACTORS*

*Note, participants were able to select more than one important factor, therefore percentages do not add up to 100%

FIGURE 8: TRIP PURPOSE

2.2.4 Options of PT last mile connectivity

Commuters can complete the last mile trip with either of the two types of modes; motorized last mile mode or non-motorized last mile modes. Motorized last mile mode consists of private vehicles (like cars, bikes, etc.), para-transit vehicles (like auto rickshaws, shared auto rickshaws, etc.), public transport vehicles (like arterial buses, mini buses, etc.). While non-motorized last mile mode consists of bicycle and walking, non-motorized para-transit modes (like cycle rickshaws, etc.)

Usage of last mile modes or options highly depend on availability, climate, quality of environment and infrastructure within transit area, travel distance and journey time and finally journey cost. It is observed that stations with high ridership attract a large number of para-

transit operators (Goel & Tiwari, 2013). With large number of passengers, it is also profitable for them to operate.

According to 2011 metro on-board survey in Los Angeles, 91% of commuters uses walk, bike, buses or para-transit modes and only 9% of commuters drive their own vehicle to PT stations (First Last Mile Strategic Plan & Planning Guidelines , March 2014) as shown in Figure 9. This is because of extra out-of-pocket cost due to parking charges and vehicle operations, or street accidents or because this may block the vehicle from being used by any other family member for as long it is parked at metro stations. (First Last Mile Strategic Plan & Planning Guidelines , March 2014). In India, 87% of commuters use walk, bicycle, buses and para-transit while only 13% commuters uses private vehicles to PT station (Goel & Tiwari, 2013).

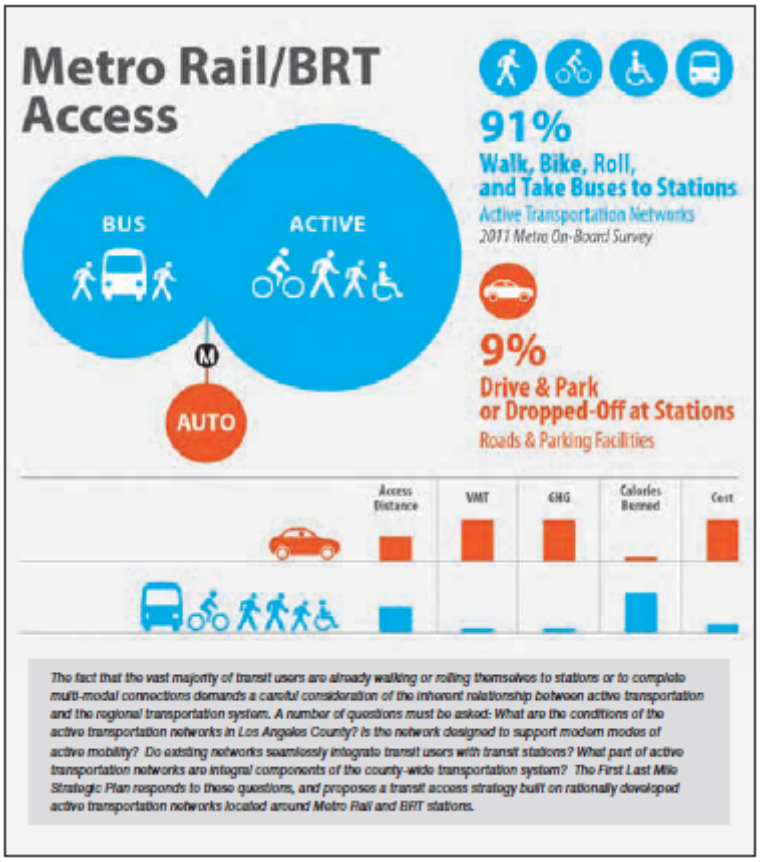


FIGURE 9: PERCENTAGE OF METRO RAIL/BRT ACCESS

In addition to accommodating the efficient flow of vehicles, streets must accommodate safe and efficient multi-modal transfer activity and support a wide range of mobility options. Also, transport planner need to ensure that active transportation networks should get a priority during last mile connectivity planning. Special attention must be paid for pedestrian improvements located within 2-2.5km and all bicycle improvements located within 4 to 5km of a public transportation stop to have de facto physical relationship to public transportation.

2.2.5 Pros and cons of different last mile connectivity

Walking, bicycling, para-transit, buses, etc. are the options available for the last mile connectivity trips. Every mode has some advantage and some disadvantage in terms of time cost, time, comfort, safety, etc. Table 5 below showing the Pros and Cons for each available mode.

TABLE 5: OPERATIONAL BRTS CORRIDORS IN INDIA

Nos.	Last Mile Connectivity Mode	Desirable distance	Pros	Cons
1	Walking and Bicycling	½ miles or 800m (walking) 3 miles or 5km (bicycling)	• Reduces on street vehicles and vehicle emission, Active mode of transport • Help commuter to stay health, • Keep environment healthy, • No travel cost • Point to point connectivity	• Physical exertion for commuters, • Journey time and speed as compared to motorized modes, • Comfort & Safety in case of low street lighting, irregular and dis-continues footpath, absence of hawkers, etc. • Problem availability of bicycle parking at PT stations
2	Para-transit	Medium distance trips	• Discourage private vehicle trips • Point to point connectivity • Easily available/flexible timing and faster than walk, bicycles	• Higher travel cost as compared to shared para-transit or buses • Capacity 3-4 passengers • Not eco-friendly, source of greenhouse gas emissions
3	Shared para-transit	Medium distance trips	• Discourage private vehicle trips • Low travel cost as compared to Para transit and personal vehicles	• Fixed route service • Capacity 5-7 passengers
4	Buses	Long distance trips	• Comfortable and safe • Low travel cost as compared to Para transit and personal vehicles • Discourage private vehicle trips	• Fixed route service • Unacceptable for shorter trips in terms of cost and time
5	Private vehicles	All type of trips	• Comfortable and safe • Point to point connectivity • Easily available/flexible timing and faster than walk, bicycles	• High travel cost • Not eco-friendly, source of greenhouse gas emissions • Consume parking space at PT station for whole day

2.2.6 Methodology for planning PT last mile connectivity

Successful Public Transport system depends upon a good last mile connectivity planning. Methodology for planning a optimum last mile connectivity includes a review of previously approved plans and studies, as well regional and mobility plans within transit area. The process also consists of existing transit area facilities and services mapping, demographic study, and understanding of travel behavior of commuters in transit area (as shown in Figure 10). Identification of planning gaps and areas of overlap between projects and finding new projects and recommendations to fill those gaps.

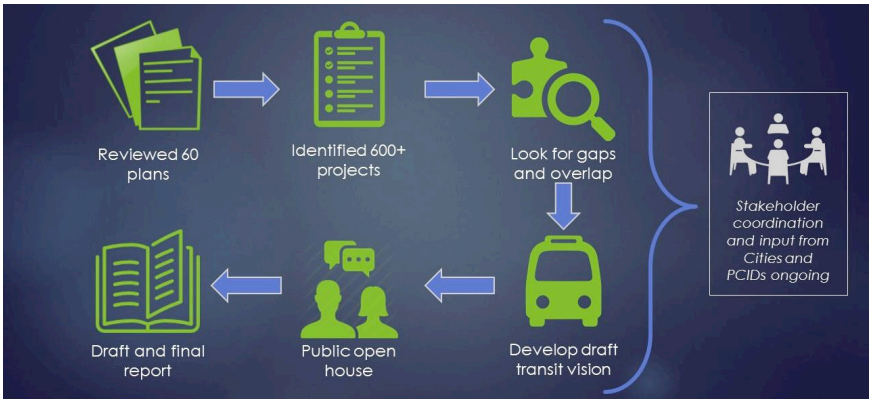


FIGURE 10: METHODOLOGY

Next step is consolidating all the projects in to a unified project list and identified possible sources of funding, criteria to help prioritize projects in the future, benefits, and probable costs. (Gresham Smith and Partners, March 2017)

After analysis of existing mobility plans, methodology of planning last mile connectivity, further include three major steps: Site area definition, analysis of existing condition, and planning last mile connectivity options (First Last Mile Strategic Plan & Planning Guidelines , March 2014).

1. Site area definition: The fist step in planning for any given station area is to determine the location and limits of the network. Conducting traffic volume, origin-destination surveys to identify the travel behaviour of commuter in transit area. Demographic, Boarding-alighting, ticketing and other data of PT system to understand demand at every transit station.
2. Analysis of existing condition: The given site should be studied at both a macro and micro level, to get the better understand the unique challenges of an individual station area chosen for last mile connectivity development. The intent of the analysis is to evaluate the existing condition and characteristics of the station area, and information related road network, existing feeder modes and routes. The analysis includes mapping, data compilation and analysis, station specific data, travel behaviour analysis data mapping, population density and origin-destination mapping, etc. This can help to find out the suitable last mile modes for given transit system.
3. Planning last mile connectivity option: Planning last mile connectivity option include following tasks: With help of data analysis, finalize the road network for identified last mile connectivity options. Listing of requirements for implementing the identified last mile options along the corridor. Development of a financial plan and action plan for implementation.

2.3 Best practices of planning PT last mile connectivity

To understand the last mile connectivity planning strategies, best practices of planning PT last mile connectivity has been analysed. This section presents the three best practices in last mile connectivity planning from different countries and cities.

2.3.1 First and last mile connectivity planning for Baltimore city:

Average trip length in Baltimore city is about 19km (Harvey S. Bloom, 2005). Baltimore city has different kinds of transit systems including local bus, light rail, metro subway, commuter bus and MARC train service. But longest running challenge for Baltimore city was how to effectively get commuters from their front door to transit station, as commuters often have encountered numerous challenges while attempting to reach to transit stations. Disconnected sidewalks, poor crosswalks, inadequate bike facilities and lack of modern car sharing options create real hurdles for commuters (Comfort, 2016).

To solve these problems, Maryland Transit Administration (MTA) have launched BaltimoreLink: a $135 million comprehensive transit improvement plan. The plan identifies how people in

Baltimore get to job, entertainment and life's opportunities, and analyse job trends, ridership and route performance data using current and projected population (Comfort, 2016).

In BaltimoreLink, improving pedestrian infrastructure was the start point. Improvement was done by planting better way-finders and signages around stations and also by replacing all 6,500 of bus stops sign with new, easy-to-read information signages. To make commuter trips safer and more enjoyable, MTA improve crosswalks and sidewalks around junctions and key transfer facilities (Comfort, 2016).

Second key part of the BaltimoreLink was strengthening biking, healthy alternative, by bridging the gap between home and nearest transit station. This was done by installing bike share docks at 10 light rail and metro subway stations in downtown Baltimore and also by boosting the amount of bicycle parking options by installing bicycle racks at all 83 MTA railway stations as well as promoting proper bike locking techniques through signage on bike racks. To ensure a bike-friendly fleet, MTA allowed passenger bicycles on all light rail and metro subway stations as well as on 100% local bus fleet with the help of bike racks. It not only allowed folding bicycle but also standard bikes. To achieve this MARC retrofitted many of their train car with bike racks that serve all MARC Penn Line weekend trains between Baltimore and Washington DC (Comfort, 2016).

Third step was introducing new last mile connectivity options, i.e. modern car-sharing service, to commuters. MTA partnered with Baltimore city and private property owners to establish Zipcar facilities at railway stations. In addition, MTA was also developed a micro-transit pilot program to make mass transit more appealing to tech-savvy riders (Comfort, 2016).

2.3.2 Last mile connectivity for Suburban commuters in America:

While buses, walking, and cycling help solve the last-mile problem for some, many suburban commuters must travel several miles to access a station, making those options impractical (Castor, 2016). "Lyft" on-demand transportation company (Lyft, 2018), actively collaborating with transit agencies around the country to solve last mile connectivity problems, helping more commuters to give up their private cars entirely and minimizing the congestion on transit station parking lots.

In Colorado, free (grant-subsidized) Lyft rides to and from a suburban light rail station has been provided for residents and workers. Similarly, in Portland, Lyft recently launched a partnership with TriMet to integrate real-time Lyft availability and pricing information directly into the TriMet Tickets app, enabled by moovel's RideTap (Castor, 2016). The app provides Lyft information in the same app where riders buy transit tickets, this partnership reduces friction for multimodal travellers, encouraging commuters to leave their cars at home.

The next step Lyft's first-last mile transit partnerships will likely see even deeper integration between Lyft and transit fare systems which includes expanding access for the unbanked and extending Lyft's network to those without smartphones (Castor, 2016). In the meantime, transit agencies may begin to redesign the stations for less parking and easier pickups and drop-offs.

But in Indian context, as more than 50% of trips are less than 3km and 85% of trips are less than 10km long (Tiwari & Jain, 2015), promoting similar last mile connectivity options may not yield the same results.

2.3.3 The Pathway: Last Mile Connectivity option for Los Angeles Metro:

Los Angeles County Metropolitan Transportation Authority (Metro) is developing a world-class rail system with stations that will be a short distance (three miles or less) from the homes of 7.8 million Los Angeles County residents (First Last Mile Strategic Plan & Planning Guidelines , March 2014).

The Pathway is introduced for commuters to travel from their origins to stations and from stations to destinations, which can help to reduce the distance and time to access the transit network, and simultaneously improving the user experience in Los Angeles. The Pathway is proposed along specific access routes selected to shorten trip length and seamlessly connect transit riders with intermodal facilities.

In so doing, the Pathway aims to support broader policy directives related to clean air, health, and economic sustainability. Additionally, by improving transit access and effectiveness, more

people will likely opt into public transportation which in turn will reduce vehicle miles travelled (VMTs) and greenhouse gas emissions (GHGs), integrate physical activity into daily commute patterns, and improve economic vitality by connecting people to regional markets (First Last Mile Strategic Plan & Planning Guidelines , March 2014). The Pathway planning strategies includes five major important features, which are safety, efficiency, fun, intuitive and universal accessibility.

This last mile connectivity option is viable option for Indian cities, as the cities has more short trips and presently, more than 30% trips are made by walking in all mega, large, medium and small cities in India (Tiwari & Jain, 2015).

2.4 PT last mile connectivity in Indian context

Mass transit systems in India consist of majorly Bus Rapid Transit System (BRTS) and Metro. There are total 23 Bus Rapid Transit Systems (BRTS) available in India. Out of which, Ahmedabad, Amritsar, Bhopal, Bhubaneshwar, Indore, Jaipur, Pune, Raipur, Rajkot, Surat, Vijayawada and Visakhapatnam cities have operational BRT systems and Chennai, Coimbatore, Guwahati, Hubli-Dharwad, Hyderabad, Jodhpur, Kolkata, Ludhiana, Madurai and Mumbai cities have BRTS which are in planning/under construction processes (Bus rapid transit in India, 2017). While total 10 major cities (including Kolkata, Delhi, Bengaluru, Gurugram, Mumbai, Jaipur, Chennai, Kochi, Lucknow and Hyderabad) in India has operational metro projects. (Urban rail transit in India, 2018)

In Indian scenario, usage any PT system, is highly dependent on the time people spend during its access and egress parts i.e. last mile connectivity and the level and quality of access (Goel & Tiwari, 2013). Last mile (including access and egress) is the weakest parts of a PT trip since this stage also involve much physical effort, often under harsh climatic conditions in an outdoor environment. As a result, with an increase in access and egress time, the usage of public transport decreases (Goel & Tiwari, 2013).

Last mile (access and egress to PT station) modes available in Indian cities consist of walking, bicycling, cycle rickshaws, auto rickshaws, mini bus, arterial bus, private bikes and cars. For example, in Delhi, an access trip to metro involves seven different modes- walk, cycle, cycle-rickshaw, auto-rickshaw, motorized two wheeler (MTW), car and bus. Out of total trips, 44% trips are by walking, 1% by bicycling, 9.6% by cycle rickshaw, 21% by auto rickshaw, 11% by buses, 4% by MTW and 9.4% by cars (Goel & Tiwari, 2013).

URBAN transport systems and city patterns have a natural interdependency. Land use patterns, population densities and socioeconomic characteristics influence the choice of transport systems (Tiwari, Geetam, 2007). Urban travel in Indian cities is dominated by walking, cycling and public transport trips, including those by intermediate public transport (IPT).

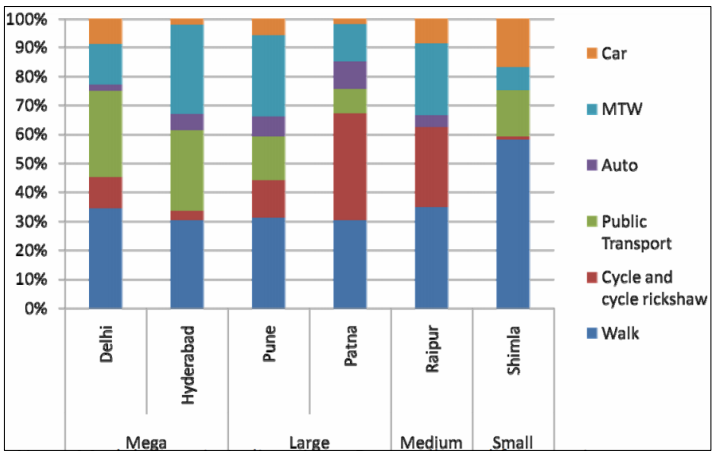


FIGURE 11: MODAL SHARE IN INDIAN CITIES

Source: (Data Collected from various sources)

Unlike cities in the developed world, majority of Indian cities has nearly 50% mode share of non-motorized transport which includes walking and bicycling (Figure 11). Indian cities have a medium density development of middle income groups and mixed land use patterns, which results in short trip lengths (Tiwari, Geetam, 2007). Therefore, more than half last mile trips have been carried out using non-motorized modes (i.e. walking, bicycling and cycle rickshaws) (Tiwari & Jain, 2015).

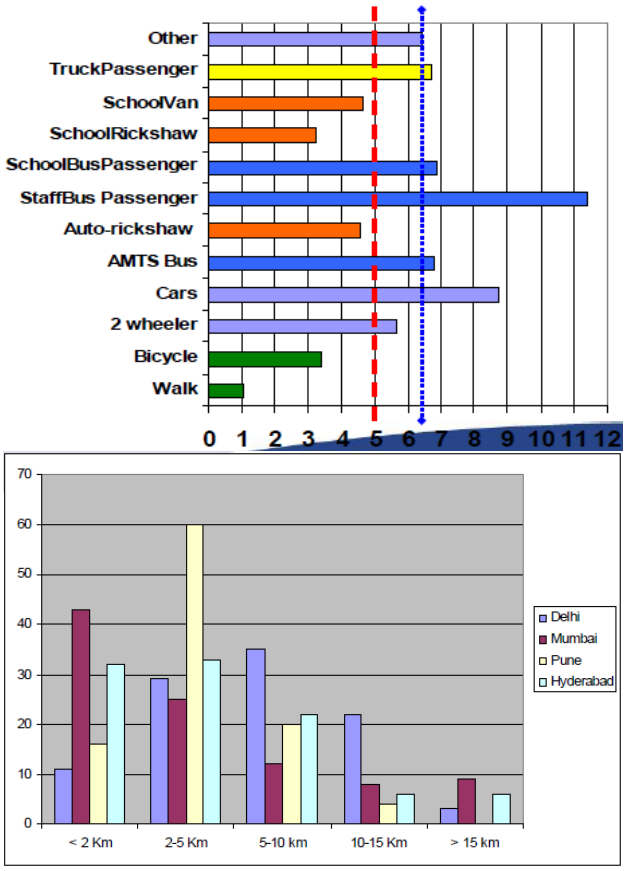


FIGURE 12: MODE-WISE AVERAGE TRIP LENGTH

Trip lengths in major Indian cities are shown in Figure 12. The graph indicates that more than 50% of trips are less than 3km and 85% of trips are less than 10km long (Tiwari & Jain, 2015). According to a survey of households conducted by RITES in 2007-08, only 20% of all the trips in Delhi are more than 10 km long. Figure on the right above shows the mode wise average trip length. Therefore, for trips which are less than 3km which are also more than 50% of total trips, walking and bicycling are the most suitable mode of transport (Tiwari & Jain, 2015). Despite a high share of walk trips and by non-motorised trips, the transport infrastructure does not include any facilities for these modes in any city transport plans (Tiwari, Geetam, 2007).

Also, vehicle ownership in India clearly shows that 35-60% of population owns the bicycle and 25% - 35% population owns no vehicle. (bicycle: 35% – 60%, 2W: 32% – 55%, 4W: 2% – 8%, no vehicle: 25% – 35% (Census, 2011)). Higher bicycle ownership is because, unlike cities from the developed countries, bicycle users in India are mostly captive users. They don't have any other choice, but to use bicycle for their daily trips. A large proportion of the urban population living in informal settlements is a captive user of low cost travel modes (walking and bicycles) because many of these residents cannot afford to pay for their trips (Tiwari, Geetam, 2007).

Therefore, planning non-motorized infrastructure (for bicycling and walking modes) along the transit stations, for last mile connectivity, may be the most suitable option in Indian scenario.

Additionally, modifying transit operations to suit short trip lengths may attract higher usage. Bus Rapid Transit System (BRTS) has two kinds of operations open BRTS and closed BRTS. Bus operational speed in open BRTS are approximately 25% less than closed BRTS, but higher

operational speeds do not help offset passenger transfer delays for short trips (Gandhi, Tiwari, & Fazio, 2013). Therefore, for shorter trips (less than 10km), changing from closed system to open system can help to achieve higher passenger speed and reduction in journey time by minimizing transfer delays. Open BRTS system also helps to increase the catchment area of transit system and further reduces dependency on feeder system.

2.5 Proposed Last Mile Connectivity Strategies for Rajkot

A number of proposed urban transport strategies for Rajkot have been listed in existing reports such as the Low Corbon Mobility Plan (LCMP, 2014), and the proposal for development of bicycle sharing plan for the city (ICLEI, 2015). Off these, last mile connectivity strategies need to be evaluated in the light of both Indian and International experiences and in the light of expected outcome of analysis of data that has been collected so far (presented in the following sections of the report).

'Prefeasibility Study and Business Plan for Public Bicycle Sharing System in Rajkot City' report was prepared by ICLEI, SA for Rajkot Municipal corporation. The report focused on Public bicycle sharing planning for Rajkot city. Methodology of the report comprized of understanding the existing traffic scenario and existing public transit systems/modes including Rajpath Bus Rapid Transit System (BRTS), Rajkot Municipal Transport Service (RMTS), existing Public bicycle sharing (PBS) in the city. The report focused on bicycle demand analysis on various roads and junctions in the city. With help of area wise bicycle demand analysis, physiscal planning for Public bicycle sharing has been recommended in the report including location of stations, placement of stations, PBS technology, etc. The report also recomended the financial proposal for PBS projects including capital cost, operational cost, revenue generation, advertisement revenue, net cost and profit for Rajkot city.The last part of the report suggested the Business models for PBS projects including different types of models like Non-profit organization, City owned and operated model, Government owned private operated model, Annuity concession model, etc.

Rajkot as one of the emerging urban centers has begun exploring various measures to reduce the stress on transport infrastructure like providing high quality bus system (Rajkot Rajpath Limited) including BRT, NMT facilities like cycle tracks and recent Bicycle rental scheme. Approximately 10% of trips made in Rajkot are by bicycle, this can become basis to assume potential for future shift towards higher bicycle usage (ICLEI, 2015).

The pre-feasibility and business plan report for bicycle sharing in Rajkot includes a number of recommendations for developing, financing and perating a bicycle sharing system in the city. However it does not dub this system as a specific last mile option for Rajkot BRTS. It proposes the system as a standalone mobility solution for the entire city. The study does propose development of bicyce sharing stations along the Kalawad road, which is one of the major streets connecting the BRT corridor to the core city. This leaves the possibility open that the proposed bicycle sharing system may be used as a last mile connectivity option for Rajkot BRTS along atleast one corridor. Brief recommendations from these proposal have been listed below.

Recommendations for PBS in Rajkot

Total four recommendations have been mentioned in the report including Phase wise implementation, Station locations, Site selection criterias for stations, Bicycle locking systems for PBS and Bicycle and station design for PBS.

1. *Phase wise implementation:* PBS system is proposed for RMC with an area of 129 sq.m. Details of phase wise development has been presented in Table 6 below.

TABLE 6: PHASING PLAN FOR PUBLIC BICYCLE SHARING (ICLEI, 2015)

Phase of the system	Pan city (Single phase)	Phase 1	Phase 2	Phase 3	Phase 4
Demand for bicycles (trips	11540	500	4000	3000	3000

Phase of the system	Pan city (Single phase)	Phase 1	Phase 2	Phase 3	Phase 4
and supply generated)					
Average Density of stations (per sq km)	13	2.5 (majority of stations located in central area)	10	12	13
Cost	INR 1,195,283,050	INR 58,521,250	INR 468,170,000	INR 351,127,500	INR 351,127,500
Implementation Timeline	6 Months	3 months	3 Months	3 Months	2 Months

2. *PBS station locations:* Out of total 75 proposed PBS stations, 40 stations have been proposed to be developed as a part of phase 1 development. Location of these stations has been identified based on availability of land space and can be potentially located on Municipal corporation premises along bus stations or parks or near shopping centers. These stations are located in major wards with important locations like central markets, bus stations, railways station and on average each station is located every 300 meters in the city. Name and their Locations of proposed 40 PBS stations has been presented in Table 7 and Figure 13 respectively.

TABLE 7: PROPOSED 40 PBS STOPS IN RAJKOT

Station code	Station name	Station code	Station name
1	Bigbazaar or RMC BRT Bicycle station	21	Astron Chowk Bicycle station
2	Mahadev Temple garden Bicycle station	22	Rajkumar college Bicycle station – near vivekanand statue, yagnik road junction
3	Atmiya college Bicycle station	23	Moti tanki chowk Bicycle station
4	Crystal mall station	24	Bhaktinagar circle Bicycle station
5	Kalawad road BRT Bicycle station	25	Hotel sarovar Bicycle station
6	Jaddus and Regenta Hotel Bicycle station	26	Civil hospital Bicycle station
7	Indira circle Bicycle station	27	Grand Thakar Bicycle station
8	Natraj Nagar park Bicycle station	28	Race course road station – jilla panchayat chowk
9	Panchyat Chowk	29	Passport sevakendra Bicycle station (nagrik bank chowk)
10	Akashvani chown near SNK school	30	AV parekh technical institute Bicycle station
11	Swami narayan mandir or Mahila college Bicycle station	31	Raiya Telephone exchange Bicycle station
12	Kotecha circle station	32	Ramdev pir chowk Bicycle station
13	Reliance mart Bicycle station	33	Existing rental station@Gondal Chowk
14	State transport bus stand Bicycle station	34	Sorathiawadi Circle Harihar Chowk Bicycle station
15	Trikon Baug Bicycle station	35	Malviya Chowk Bicycle station
16	Kishanpara chowk Bicycle station(existing rental station)	36	Astron society Bicycle station
17	Jubilee baug Bicycle station	37	Goverdhan chowk Bicycle station

Station code	Station name	Station code	Station name
18	Rajkot Railway station Bicycle station	38	Ambedkar chowk Bicycle station
19	Hotel imperial palace Bicycle station	39	Bakti nagar society Bicycle station
20	Dharmendra Arts college Station	40	Hotel Grand Regency Bicycle station

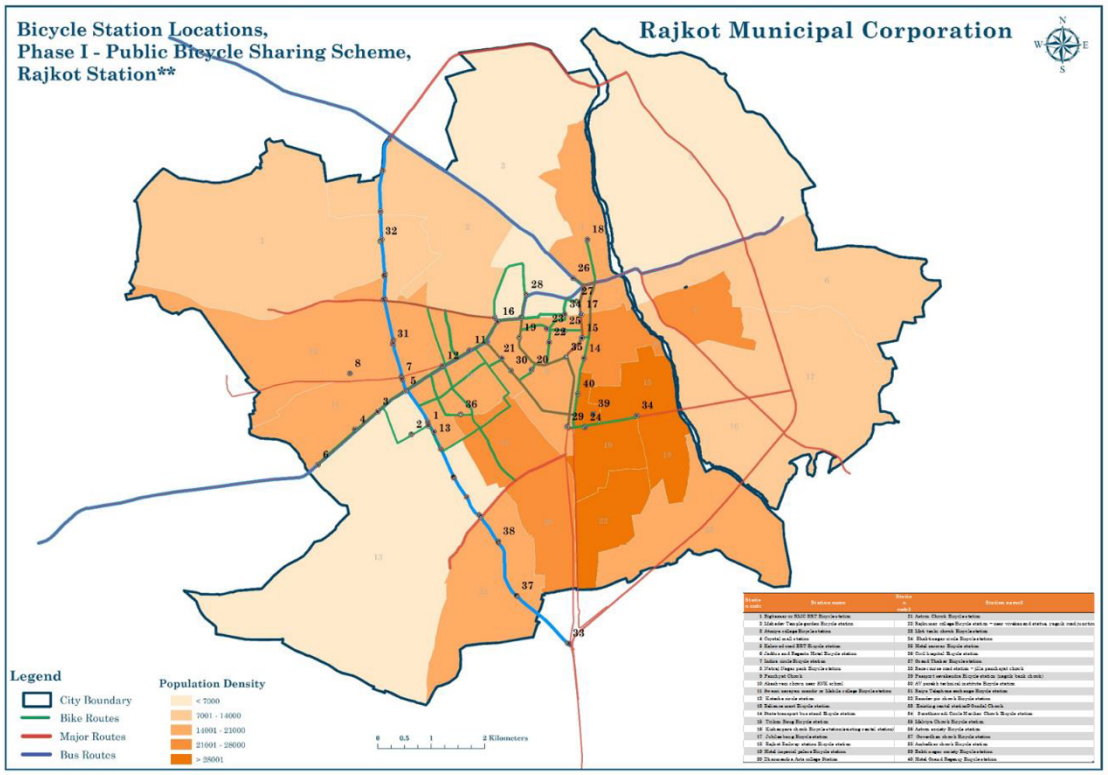


FIGURE 13: LOCATION MAP FOR IDENTIFIED POTENTIAL BICYCLE STATIONS IN RAJKOT (ICLEI, 2015)

3. *Placement of Stations:* Placement of PBS stations has been determined according to visibility and availability of land space. Most of the PBS stations have been proposed by crating extra space along footpath which makes them more visible to the commuters. Recommendations for placement of PBS stations has been listed below *(ICLEI, 2015)*:
   - Sites should have unrestricted public access at all times.
   - Sites should ensure maximum visibility and access.
   - Sites must not impede any existing modes including sidewalks, traffic lanes, bus stops and emergency access.
   - Sites need to meet the necessary solar (or non-solar) and cellular signal requirements specified by the equipment vendor.
   - Sites should consider access for installation and for regular maintenance and rebalancing.
4. *PBS Technology:* Study recommended the fully automated Bicycle sharing system to achieve safe, efficient, reliable and seamless PBS system for city population. Automated system included locking system having dock out and sock in bicycles with use of smartcards or smart sticks. Payments will be paid through online and all the grievances can be resolved through mobile app or similar software.
   System also allows to collect usage and performance data which help operator to identify gaps, issues in system and also helps in dynamic demand of bicycles where operator can quickly realize the absence of bicycle at docks and add them through maintenance van.

5. *Project components:* The study provided recommendations for the uni-sex bicycles design, PBS shelter design and Terminal/kiosk design.

Project cost and revenue estimation:

Project cost and revenue generation estimate has calculated in the report. Details of the cost and revenue has been discussed below.

1. *Capital Cost:* Cost estimation for proposed PBS system has been provided in the report. Cost has been calculated, for construction and maintenance for 5 years, based on actual demand and phase wise implementation strategy. Capital cost for PBS system has been presented in Table 8.

TABLE 8: CAPITAL COST FOR RAJKOT PBS SCHEME (ICLEI, 2015)

Component	**Number** (Total demand)	**Rate* (INR)**	**Amount (INR)**	**Number (Phase 1)**	**Rate* (INR)**	**Amount (INR)**
Cycles	11540	8,000	92,320,000	500	8,000	4,000,000
Docking station with docking points and advertising space and security cabin	1731	500,000	865,500,000	75	500,000	37,500,000
Control centre and maintenance centre	6	3,500,000	21,000,000	1	3,500,000	3,500,000
Software, website and mobile app design and maintenance for 5 years	1	2,000,000	2,000,000	1	2,000,000	2,000,000
Access cards	11540	250	2,885,000	500	250	125,000
Total equipment cost			983,705,000			47,125,000
Redistribution and maintenance vehicles	10	500,000	5,000,000	3	500,000	1,500,000
Marketing expenses	1	1% of total equip cost	9,837,050	1	1%	471,250
VAT	1	5% of total cost	49,185,250	1	5%	2,356,250
Installation	1	5% of total cost	49,185,250	1	5%	2,356,250
Transport	1	10% of total cost	98,370,500	1	10%	4,712,500
Total Capital cost			**1,195,283,050**			**58,521,250**

2. *User fee and membership fare:* User fee and membership fare for Rajkot bicycle share has been divided into three parts which are One Annual membership option, monthly membership option and option for non member or one-time users. Details of user fee and membership fare has been presented in Table 9.

TABLE 9: USER FEE AND MEMBERSHIP SUBSCRIPTION FOR RAJKOT PBS (ICLEI, 2015)

Category	Annual membership	Monthly subscription	Non-members or one time users
User charges	800	100	300 as refundable security deposit
1st Hour	Free	Free	Free
2nd Hour	5	5	10
Additional hours	10	10	15
5% increase in tariff after 5 years for every year			

3. *Advertisement Revenue:* The proposed PBS station area can enable an average of 100 to 150 sq ft of advertisement panel space with one side dedicated to Bicycle sharing station map in each station with rest of space available for commercial advertisement. Based on assumption advertisement revenue has been calculated and same has been presented in Table 10.

TABLE 10: ADVERTISEMENT REVENUE FROM BICYCLE STATIONS (ICLEI, 2015)

	Number of total stations	Space available at each station (Sq ft)	Cost per sq.ft per month basis (INR)	Revenue per station per month (INR)	Revenue per station per year (INR)	Total revenue per year (INR)
Ideal demand scenario	1731	100	150	15,000	180,000	311,580,000
Phase 1	75	100	150	15,000	180,000	13,500,000

2.6 Case studies and best practices of electric mobility in developing countries

2.6.1 Electric bus market in India

The following projects with electric buses have been sanctioned in India (UITP India, 2018):

1. Navi Mumbai Municipal Transport: NMMT has placed an order with Volvo to procure 8400 Hybrid City Bus. Volvo has delivered 5 buses under this contract to NMMT. The Volvo 8400 Hybrid Bus also complies with the central government's Faster Adoption & Manufacturing of Electric and hybrid vehicle (FAME) scheme that has helped provide a subsidy of ₹ 6.1 million (US$ 100,000) on the total cost of ₹ 23 million (US$ 375,000)

2. Mumbai Metropolitan Region Development Authority: MMRDA is procuring 25 Hybrid buses from Tata Motors. Tata Starbus Diesel Series Hybrid Electric Bus can run without the requirement of external charging infrastructures, due to integration of on-board charging, via a BSIV compliant engine and energy storage through advanced Lithium Ion Nano-Phosphate Batteries.

3. BEST Mumbai has received funding for the retro-fitment of 6 buses and procurement of 30 seater six electric busses with a range of 210 km. BEST has placed an order for retro-fitment with AV Motors and Impact Automotive Solutions Limited (a subsidiary of KPIT) with a grant of ₹ 100 million from the Brihanmumbai Municipal Corporation (BMC). Further, the corporation has placed an order with BYD-Goldstone and will be used the buses as feeder services to the train and metro stations.

4. Himachal Road Transport Corporation has received sanction from DHI to produce 25 full electric 6 seater busses. The corporation has conducted 10 days trial of midi electric bus in Manali-Rohtang pass and is quite convinced with electric bus technology at such high altitude of 13,000 ft. The state has also granted exemption from token tax,

registration charges and value-added tax on all electric vehicles for five years to promote eco-friendly transport services in the state.

5. Bangalore Metropolitan Transport Corporation's: BMTC has also submitted proposal with DHI to procure 150 electric buses on PPP model. BMTC has proposed to set up an exclusive depot for the electric buses with the required infrastructure, which would include battery rechargeable points and well-equipped workshops. According to the Hindu, the bidding process to select a private operator for 150 e-buses has been completed. The fist phase will see the introduction of 40 e-buses. The buses will have a seating capacity of 42 and operate for 200 km per day (The Hindu, 2018).
6. Thane Municipal Transport: TMT has approved the plan to introduce 100 electric buses on PPP model. The private operator will purchase and operate these buses for 10 year on selected routes. The operator will have the first right to select the routes. TMT banner and the ticket rates will be the same as approved by the Metropolitan Transport Authority. According to times of India, tests are running. Service will start with 10 buses and later expand to 100 vehicles with a seating capacity of 32 over a period of five years (The Times of India, 2018).

FIGURE 14: ELECTRIC BUSES IN INDIA (UITP India, 2018)

According to the ZeEUS eBus report (UITP Europe, 2017), in June 2017, India's leading bus and truck manufacturer, Ashok Leyland, tested 'Circuit', the first fully-electric bus made in India for the Metropolitan Transport Corporation (MTC) in Chennai. As of July 2017, Ashok Leyland also announced a strategic partnership with SUN Mobility to develop a battery-swapping system for e-buses in an initial step for intra-city buses. Tata Motors completed its first commercial pilot of an electric bus in April 2017. JBM Solaris, the joint vernture between JBM Auto and Solaris is planning to manufacture India's first 100% electric buses, called Ecolife (UITP Europe, 2017). Production will commence in 2017 at Kosi, Uttar Pradesh. In Nagpur (Maharashtra), the leading utitlity vehicle manufacture Mahindra and app-based taxi service provider Ola Caps entered into a partnership with the Indian government to introduce 200 electric vehicles (buses, cars, taxis and rickshaws) using the Ola platform. The pilot project also includes installation of over 50 charging stations across the city to support the pilot (UITP Europe, 2017). In September 2017, Shri Nitin Gadkari, Union Minister for Road Transport and Highways, announced the launch of a fleet of electric buses, taxis, cars and rickshaws in Gurgaon by the end of the year. The fleet will be operated by Treasure Vase Ventures Private Ltd, in partnership with Delhi Metro (UITP Europe, 2017).

2.6.2 Electric bus market in other developing countries

The last decade has seen progressive and positive developments in e-bus technology, led mainly by China, closely followed by Europe and the USA (UITP Europe, 2017). However, various developing countries are also joining the transistion to the electrification of bus systems. Ivory Coast, Uruguay and Brazil are expected to be the early adopters of electric buses in developing countries in Africa and Latin-America regions. In Brazil, the city of Campinas acquired 10 electric buses, making it the largest fleet in Brazil. Besides Campinas, Curitiba and the Federal District of Brazil also operate electric buses (UITP Europe, 2017).

2.7 Case studies and best practices in electrification of last mile modes

2.7.1 PubliBike (bike sharing)

PubliBike is a bike sharing system in Switzerland that provides bike sharing facilities which are typically close to public transportation stations. Besides conventional bikes, e-bikes are also available to slightly higher prices. The national railway as well as one of the main bus companies are involved in the project allowing for an optimal connection of the bike sharing network to public transport (PubliBike, 2018).

2.7.2 Mobility (car sharing)

Mobility is a car sharing concept in Switzerland at 1'500 public transport stations which includes electric cars and electric motor bikes. Vehicles can be reserved via internet, smartphone app or via phone at any time. Vehicles are being unlocked by a keycard. The same keycard can also be used as a subscription for public transport throughout all of Switzerland (mobility, 2018).

2.8 Case studies and best practices in electrification of BRT fleet

Although fully battery driven electric buses are a relatively new technology and market shares of electric buses are still small, in recent years many bus operators have launched pilots with electric buses or have already replaced parts of their diesel bus fleet with electric buses. To allow for a comprehensive view of this young and very dynamic market, the following case studies vary regarding charging strategy, technology or vehicle and fleet size. However, to narrow down the case studies, all examples are at least regarding one aspect comparable to Rajkot. The italic aspects are comparable to Rajkot.

TABLE 11: BEST PRACTICE - LONDON. SOURCE: (UITP Europe, 2017)

London, UK – Regular Operation			
Vehicle specifications		**Line specifications**	
Brand and model:	BYD / ADL Enviro 200EV	Route number	507 / 521
Length:	12m	Typology of the line	*flat*
Passenger capacity:	86	Length of the bus line	*11 km*
Charging strategy	Overnight charging at the depot	Average speed	12 km / h
Charging technology	Plug-in	Total km driven / vehicle / day:	*150-250 km*
Battery capacity	324 kWh	Total daily hours of operation	*16 h*

TABLE 12: BEST PRACTICE – BRAUNSCHWEIG. SOURCE: (UITP Europe, 2017)

Braunschweig, Germany – Research Project			
Vehicle specifications		**Line specifications**	
Brand and model:	Solaris Urbino	Route number	1
Length:	12m and 18m	Typology of the line	moderate
Passenger capacity:	78 and 123	Length of the bus line	*12 km*
Charging strategy	Opportunity charging at the terminal (8-10') and at selected bus stops (1-2')	Average speed	*23 km / h*
Charging technology	inductive charging	Total km driven / vehicle / day:	*250 km*
Battery capacity	60 and 90 kWh	Total daily hours of operation	*18h*

TABLE 13: BEST PRACTICE – COPENHAGEN. SOURCE: (UITP Europe, 2017)

Copenhagen, Denmark - Pilot			
Vehicle specifications		**Line specifications**	
Brand and model:	BYD K9	Route number	141/149
Length:	12m	Typology of the line	*flat*
Passenger capacity:	61	Length of the bus line	*10.8 km / 9.1 km*
Charging strategy	Overnight charging at the depot	Average speed	*22 km / h*
Charging technology	Plug-in	Total km driven / vehicle / day:	*210 - 260 km*
Battery capacity	324 kWh	Total daily hours of operation	*17h*

TABLE 14: BEST PRACTICE – WARSAW. SOURCE: (UITP Europe, 2017)

Warsaw, Poland - Pilot			
Vehicle specifications		**Line specifications**	
Brand and model:	Solaris Urbino and BYD K9	Route number	222
Length:	12m	Typology of the line	moderate
Passenger capacity:	70 and 60	Length of the bus line	*10 km*
Charging strategy	Overnight charging at the depot	Average speed	12 km / h
Charging technology	Plug-in	Total km driven / vehicle / day:	*160 - 200 km*
Battery capacity	208 and 324 kWh	Total daily hours of operation	*15 - 17h*

Electric buses for BRT are either being tested or already in operation in the following cities:

1. Albuquerque, USA: The city of Albuquerque launched an all-electric BRT-line in February 2018 with a fleet of 18 e-buses with the goal to become a pioneer for a more sustainable, efficient and affordable means of urban mass transit (Curbed, 2017).
2. Kuala Lumpur, Malaysia: The BRT-Sunway Line in the city of Kuala Lumpur has 3 miles of elevated route through the city and will be operated by 15 electric busesa supplied by BYD. The BYD buses can go up to about 250 km on a single charge, taking up to 67 passengers (InsideEVs, 2015).
3. Boston, USA: The Silver Line ist the BRT system of the Massachusetts Bay Transportation Authority (MBTA). In addition to the operating trolleybuses, MBTA plans to introduce five additional all-electric battery-powered buses in 2018 for the Chelsea extension of the Silver Line (Wikipedia, 2018).
4. Stockton, USA: San Joaquin Regional Transit District has announced the launch of America's first 100% electric BRT route in August 2017 and plans to launch a second all-electric BRT route in January 2018. By 2025, all routes serving the city of Stockton are planned to be converted to 100 percent electric buses (InsideEVs, 2017).

3 Data Collection and Analyaia

In line with the recommendations on last mile connectivity strategizing and planning process as listed in the literature review presented above, a host of data for capturing current commuter demographics, trip characteristics and catchment area details along the BRT corridor. This section provides the details of the data collected through primary surveys and secondary sources. It also presents the preliminary findings from the collected data.

3.1 Study Area

The project study area is limited to the BRT corridor and its catchment area. The catchment area of BRT corridor has two definitins. The first definition referes to the immediate zone of influence with walk access to the corridor – this zone is 0.5km on either side of the corridor along the length of the stretch. The second definition is the area wich attracts commuting trips on the BRT corridor either as a aprt or a whole. This area is more difficult to delineate and the same is attempted through an origin-destination (O-D survey) as presented in the subsequent sections of the corridor. Considering this, the study is limited to understanding of traffic demand and characteristic on the corridor and on the (formal) feeder network, i.e. RMTS routes to the corridor. For this purpose only the reoutes that intersect or run parallel to the corridor have been considered as a part of the study area and hus data collection has been limited to these only.

3.2 Secondary Data

Secondary data of BRTS buses and city buses was sought for BRTS and city buses from RMC with the help of Mr. Ankit Makwana, who is the local resource from ICLEI South East Asia at Rajkot. Of the sought data 100% has been provided so far by RRL. Additionally, components of secondary data requirements which were a part of the original task list of the project have been reviewed and replaced primary surveys. Additionally secondary, observation based or anecdotal data (from the list of taks provided by the client) considered redundant for the purpose of this study have also been replaced by more robust primary data, to strengthen the findings of the study. Notable change here is the replacement of baseline for current pedestrian and cycling movement (which is evidently a replication of stretch network information) by pedestrian and cycling pedestrian numbers (direction wise) at each junction, estimated from video recording of these junctions. All such primary data has been presented in section 3.3 of this report.

3.2.1 Data Collection and Compilation

The bus data was sought for routes travelling on or across the existing BRT corridor. These include the BRT route and 31 RMTS routes. The objective of collecting this data was to generate an understand of the potential BRT commuters through the following:

- Trip length of bus commuters
- Major catchment area for existing bus commuters
- Demand of potential feeder trips by buses to BRT

To create this understanding the following data was sought from RRL

a) Daily or monthly Passenger trips with breakup as per trip length or ticket category, and journey start point (ticket sale point/station).
b) Any one peak hour Passenger trips data with breakup as per direction, trip length or ticket category, and journey start point (ticket sale point).
c) Any other BRT passenger related studies or data available, such as that which contains information on passenger and trip characteristics.

Of the sought data, nearly 100% has been collected and analyzed. The details of the data sought from RRL and RMTS and the data already collected is presented in Table 15.

TABLE 15: LIST OF SECONDARY DATA COLLECTED

S. No.	Data Type	Data Sought from RMC	Data Collected so far
1.	Secondary Data from RMTS	Route-wise Ticketing Information - RMTS	All collected
2.	Secondary Data from RMTS	Daily Route wise – Station wise Ridership RMTS	All collected
3.	Secondary Data from RMTS	Daily Route-wise Ridership RMTS	All collected
4	Secondary Data from RMTS	Route-wise Ridership RMTS	All collected
5	Secondary Data from RMTS	Route-wise RMTS Details	All collected
6	Secondary Data from RMTS	Speed Analysis Report - RMTS	All collected
7	Secondary Data from RMTS & RRL	Route-wise Fare Matrix - RMTS	All collected
8	Secondary Data from RMTS & RRL	Route-wise time schedule - RMTS	All collected
9	Secondary Data from RRL	Passenger Information - RMTS	All collected
9	Secondary Data from RRL	Route-wise Fare Matrix - BRTS	All collected
10	Secondary Data from RRL	Route-wise time schedule - BRTS	All collected
11	Secondary Data from RRL	Speed Analysis Report - BRTS	All collected
12	Secondary Data from RRL	Daily Ridership RMTS	All collected
13	Secondary Data from RRL	Ticketing Information - BRTS	All collected

3.2.2 Data Collection and Compilation of Electrification of Buses

The choice of the appropriate charging strategy and technology depends on various factors, such as vehicle size, fleet size, required range etc. The following Table 16 contains the most important characteristics of the BRTS in Rajkot regarding a potential electrification.

TABLE 16: RELEVANT FACTORS FOR ELECTRIFICATION OF BRT-CORRIDOR

Bus length	12 m
Fleet size	10+1
Daily distance per vehicle and day	Ca. 250 km
Number of bus stations	18
Bus depot	1
Operating hours	6 am – 11 pm (17 hours)
Frequency:	7/8 min (peak hours) 10 min (off peak)

3.2.3 Analysis

The secondary data collected is primarily operational data for RMTS and RRL. The project team has started analyzing the data and in the ticketing information. The team now has the knowledge about the total tickets that are being sold daily from each bus stop, for the routes for which data has been provided. Distance between the stops on each of the routes has been determined and included in the analysis. The location of stops/stations has been marked on Google Earth, to provide a spatial understanding of the catchment area. Ticketing data for each day has been arranged in a matrix with station names in rows and columns in Figure 15.

Inclusion of number of boarding and alighting passengers in this matrix, provides a clear picture of average trip length, loading between stations and major catchment areas.

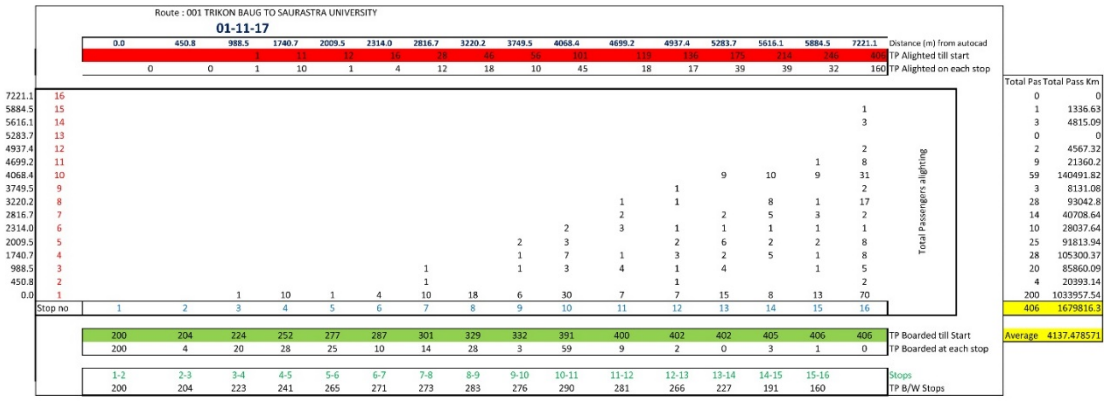


FIGURE 15: PASSENGER MATRIX

The same has been analyzed for 31 routes, passing through BRTS. The next step would be to derive total trips for the same three working days i.e. 1.11.2017 - 3.11.2017, to calculate route wise per day passenger volume between the bus stops. This data divided by the number of trips undertaken, yields route wise average per trip passenger volume, occupancy between stations, average trip length and boarding/alighting volumes at each station. This provides an assessment of catchment area for the BRT corridor and also provides details of trip length specific to station or catchment area.

In the speed information data, we were provided with the speed of bus at particular time and location for four consecutive working days. From this, we analyzed the hourly average speed and the daily average speed of the bus for a particular route. The same will be done for all the routes once we get the data. The findings for each of these have been presented below:

3.2.3.1 Route Length and Distance Between Stations

BRT corridor and RMTS routes of interest (31 routes crossing BRT corridor) have been plotted on Google earth along with the location of their stations. This provides the details of route length and average station spacing. The average route length for the 31 RMTS routes is 16.28 km. The lowest route length is 6.29 km for route number 27, while the highest route length is 31.76 km for route number 9. The route length for BRT is the same as the corridor length which is 10.7 km. Table 17 Presents the details of all RMTS and RRL (BRT) routes with information of the end (terminating) points, total number of station and the route length.

TABLE 17: RMTS ROUTES

Route No.	Origin	Destination	Route length	No. of Stops
RMTS				
1	Trikon Bag	Saurashtra University	7.22	16
2	Raiya Gaam	Shree S.N Shukla College	16.47	32
3	Madhapar Chokdi	Jivraj Park	18.78	39
5	Raiya Gaam	Tramba Gaam	22.00	36
7	Bhaktinagar Circle	Bajarangvadi Circle	9.66	25
8	Labhubhai Trivedi College	Greenland Chowkdi	14.01	24
9	Saurashtra University	Arpit Eng. College	31.76	45
11	Trikon Baug	Shapar Veraval	15.61	18
16	Kothariya Gaam	Saurashtra University	16.55	35
17	Saurashtra University	Tramba Gaam	22.49	36

Route No.	Origin	Destination	Route length	No. of Stops
19	Vavdi Gaam	Slum Quarter	12.17	27
20	Ghanteshvar SRP Camp	Shapar Veraval	25.65	38
21	Bajrangwadi Circle	Ratanpar Gaam	24.27	38
23	Mavadi Gaam	Shree H.N Shukla College	16.26	30
24	Trikon Baug	GIDC Gate-3	16.56	29
25	Julelal Mandir	Jivraj Park	12.81	30
26	Punit Nagar	Quarter	10.54	25
27	Trikon Baug	Raiyadhar Slum Quarter	6.29	18
28	Gujarat Housing Board Quarter	Jivraj Park	14.45	31
35	Trikon Baug	Shapar Veraval	15.79	22
38	Aaji Dam	Madhapar Gaam Gate	15.20	29
40	Saurashtra University	Santoshi Nagar	13.63	27
41	Bhakti Nagar Circle	Gangotri Park	9.66	22
42	Greenland Chowkdi	Jivraj Park	13.61	28
43	OM Residency	Akshar Vatika	14.93	31
45	Saurashtra University	Ratanpar Gaam	24.67	36
47	Kothariya Gaam	Saurashtra University	13.94	29
51	G-Company SRP	Punit Nagar	17.58	37
54	Kothariya Chowkdi	SRP Camp G-Company	17.60	39
55	Gondal Chowkdi	Ratanpar Gaam	22.88	32
57	Trikon Baug	Govt. Eng. College	11.63	21
BRTS				
Gondal Chowkdi		Madhapar Chowk	10.70	18

Average spacing between RMTS stations (average for all routes) is 560m. The lowest average station spacing is for route no. 27 which is at 370m from Trikon baug to Raiyadhar slum quarter, while the highest average station spacing is for route number 11 which is 918m from Trikon baug to Shapar veraval Stations. The lowest distance between stations is 100m between OM Residency to Akshar Vatika stations on route number 43. Similarly, the average station spacing on BRT corridor is 615m. The maximum distance is between West Zone and Indira Circle stations at 950m, while the minimum distance is between Mavdi chowk and Om Nagar stations at 400m. The average, minimum and maximum station spacing for both RMTS routes and BRT corridor has been presented in Table 18. Figure 16 presents the routes and the BRT corridor marked on Google Earth map.

TABLE 18: RMTS STATION SPACING

RMTS			
Route No	Average Spacing	Maximum	Minimum
1	481	1340	240
2	531	2680	121
3	494	1300	158
5	629	3550	120
7	402	720	230

RMTS			
Route No	Average Spacing	Maximum	Minimum
8	609	1650	162
9	722	2400	160
11	918	2060	206
16	487	1310	224
17	643	3560	128
19	468	1300	200
20	693	2100	120
21	656	2400	170
23	561	2700	160
24	591	1400	150
25	442	850	170
26	439	1400	190
27	370	650	130
28	482	1000	160
35	752	2100	260
38	543	2000	120
40	524	1700	170
41	460	1000	240
42	504	1200	160
43	498	2500	100
45	705	2400	160
47	498	1300	240
51	488	1600	120
54	463	1400	120
55	738	2400	160
57	582	2700	240
BRTS			
BRTS	615	950	400

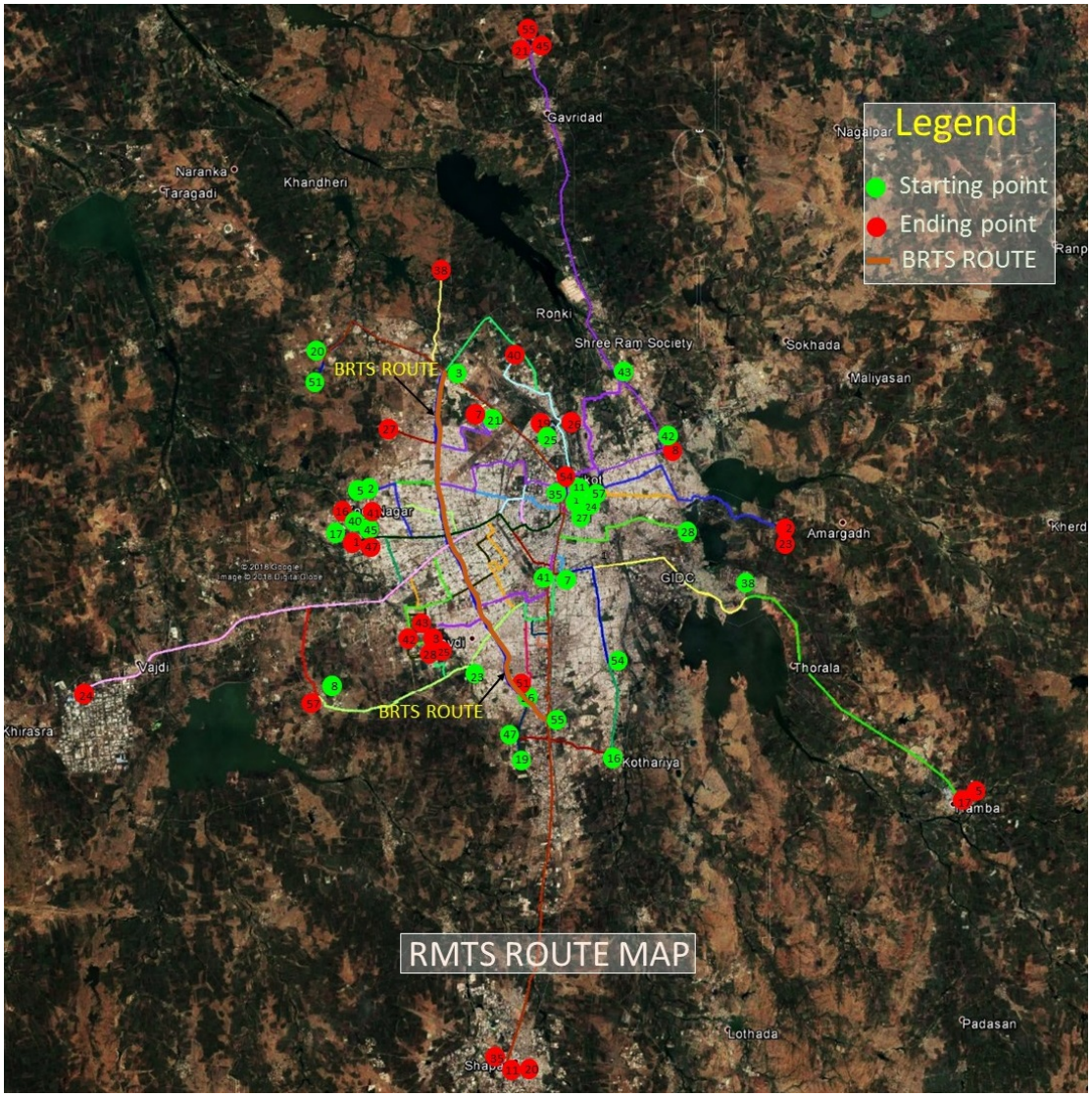


FIGURE 16: RMTS AND BRTS ROUTE MAP

3.2.3.2 Average Passenger Trip Length for RMTS Routes

Detailed electronic ticketing machine (ETM) data has been made available by RMTS for 31 routes. The analysis of this information has been carried out by organizing the data in a bus stop to bus stop matrix. The analysis of this data provides information of occupancy of the vehicles between stops for each direction of travel. It also provides the station wise demand and allows us to estimate average trip length of RMTS passengers on these studied routes. The analysis of this data suggests that average trip length of passengers between all routes is 6.43 km. The lowest average passenger trip length is at 3.34 on route number 27, while the highest is 11.44 m on route number 9. Average passenger trip length on each of the studies RMTS routes has been presented in Table 19.

TABLE 19: RMTS ROUTES

Route No.	Origin	Destination	Route length	No. of Stops	Avg. Trip Length
RMTS					
1	Trikon Bag	Saurashtra University	7.22	16	4.03
2	Raiya Gaam	Shree S.N Shukla College	16.47	32	5.61

Route No.	Origin	Destination	Route length	No. of Stops	Avg. Trip Length
3	Madhapar Chokdi	Jivraj Park	18.78	39	5.17
5	Raiya Gaam	Tramba Gaam	22.00	36	7.89
7	Bhaktinagar Circle	Bajarangvadi Circle	9.66	25	4.39
8	Labhubhai Trivedi College	Greenland Chowkdi	14.01	24	5.84
9	Saurashtra University	Arpit Eng. College	3.76	45	11.44
11	Trikon Baug	Shapar Veraval	15.61	18	10.41
16	Kothariya Gaam	Saurashtra University	16.55	35	6.51
17	Saurashtra University	Tramba Gaam	22.49	36	7.73
19	Vavdi Gaam	Slum Quarter	12.17	27	5.19
20	Ghanteshvar SRP Camp	Shapar Veraval	25.65	38	7.98
21	Bajrangwadi Circle	Ratanpar Gaam	24.27	38	7.16
23	Mavadi Gaam	Shree H.N Shukla College	16.26	30	6.05
24	Trikon Baug	GIDC Gate-3	16.56	29	8.73
25	Julelal Mandir	Jivraj Park	12.81	30	4.64
26	Punit Nagar	Quarter	10.54	25	3.49
27	Trikon Baug	Raiyadhar Slum Quarter	6.29	18	3.34
28	Gujarat Housing Board Quarter	Jivraj Park	14.45	31	6.00
35	Trikon Baug	Shapar Veraval	15.79	22	10.36
38	Aaji Dam	Madhapar Gaam Gate	15.20	29	5.19
40	Saurashtra University	Santoshi Nagar	13.63	27	4.93
41	Bhakti Nagar Circle	Gangotri Park	9.66	22	4.09
42	Greenland Chowkdi	Jivraj Park	13.61	28	5.78
43	OM Residency	Akshar Vatika	14.93	31	5.19
45	Saurashtra University	Ratanpar Gaam	24.67	36	7.55
47	Kothariya Gaam	Saurashtra University	13.94	29	5.39
51	G-Company SRP	Punit Nagar	17.58	37	6.34
54	Kothariya Chowkdi	SRP Camp G-Company	17.60	39	6.51
55	Gondal Chowkdi	Ratanpar Gaam	22.88	32	9.71
57	Trikon Baug	Govt. Eng. College	11.63	21	6.80

3.2.3.3 Average Passenger Trip Length and occupancy for BRTS Routes

BRTS electronic ticketing machine (ETM) data has been provided by RRL during the second site visit to Rajkot. Given data comprized of ticketing and passenger boarding and alighting information for each bus stop. Total length of BRTS corridor from Gondal bus station to Madhapar bus station is 10.7 km including 18 bus stations. The analysis of this data provides information of passenger trip lengths between each BRTS stations, distance between stations, daily passengers, etc. Overall average distance between the stations is 638 m. The highest distance between stations is 1140 m between West zone office and Indira circle bus station. And the lowest distance between the stations is 350 m between Mavdi and Om Nagar bus station. Analysised data also indicates that average trip length of passengers on BRTS corridor is 3.83 km. The highest and lowest passenger trip length on the corridor are 2.86 km and 6.03

km respectively. The analysis of station wise demand also alllows us to estimate the statio wise occupancy. Average passenger occupancy on BRTS corridor is 33.71. This indicates that on an average BRTS buses currently operate at an occupancy ratio of 0.75 (33.71/45). Highest occupancy is observed at Nana Mava bus station i.e. 44.76 with occupancy ratio of 0.99 (44.76/45). Lowest occupancy is observed at Madhapar bus station i.e. 13.00 with occupancy ratio of 0.29 (13.00/45). Average distances between stations, average passenger trip lengths and average passenger occupancy on the BRTS corridor has been presented in Table 20.

TABLE 20: AVERAGE PASSENGER TRIP LENGTHS AND OCCUPANCY ON BRTS CORRIDOR

BRTS Bus Stations	Distances (m)	Avg Trip Length (km)	Average Ocupancy
Gondal Chowk	0	5.62	14.46
Punit Nagar Society	600	4.83	28.39
Goverdhan Chowk	640	3.46	31.77
Ambedkar Nagar	500	2.86	34.22
Umiya Chowk	600	3.81	34.51
Mavadi Chowk	600	3.32	38.99
Om Nagar Chowk	350	3.36	42.26
Mahapuja Dham Chowk	540	3.40	44.15
Nana Mava Chowk	600	3.87	44.76
West Zone Office RMC	550	3.33	44.47
Indira Circle	1140	3.61	41.80
Raiya Telephone Exchange	650	3.10	41.16
Raiya Chowk	850	3.40	39.62
Nanavati Chowk	500	3.52	35.21
Ramadevpir Chowk	700	3.67	28.89
Shital Park	500	3.33	25.42
Ayodhya Chowk	840	4.48	23.60
Madhapar Chowk	680	6.03	13.00
	10700		

3.2.3.4 Average Occupancy for RMTS Routes

Average occupancy for RMTS routes crossing the BRT corridor has been derived for 31 routes for which data is available, using the matrix generated (above) for each route. These 31 routes have been selected as they have the potential to serve as feeder to the BRT corridor. The analysis shows that the average occupancy (per trip averaged for a day) for all routes analyzed is 18.30. This implies that on an average RMTS routes currently operate at an occupancy ratio of 0.57 (18.30/32). The highest average occupancy is observed for route number 57 at 46.79, which is suggests an occupancy ratio of 1.46 (46.79/32), while the lowest occupancy is observed for route number 26 at 1.58, which suggests an occupancy ratio of 0.05 (1.58/32). The detailed occupancy data for each route has been presented in Table 21. A graphical representation of occupancy on each of the analyzed routes has been included in Annexure 8.5.

TABLE 21: RMTS OCCUPANCY DATA

Route No.	Origin	Destination	Route length	No. of Stops	Average Occupancy
RMTS					
1	Trikon Bag	Saurashtra University	7.22	16	15.59

Route No.	Origin	Destination	Route length	No. of Stops	Average Occupancy
2	Raiya Gaam	Shree S.N Shukla College	16.47	32	16.09
3	Madhapar Chokdi	Jivraj Park	18.78	39	8.55
5	Raiya Gaam	Tramba Gaam	22.00	36	32.90
7	Bhaktinagar Circle	Bajarangvadi Circle	9.66	25	15.96
8	Labhubhai Trivedi College	Greenland Chowkdi	14.01	24	18.56
9	Saurashtra University	Arpit Eng. College	31.76	45	21.18
11	Trikon Baug	Shapar Veraval	15.61	18	19.76
16	Kothariya Gaam	Saurashtra University	16.55	35	19.62
17	Saurashtra University	Tramba Gaam	22.49	36	25.14
19	Vavdi Gaam	Slum Quarter	12.17	27	9.12
20	Ghanteshvar SRP Camp	Shapar Veraval	25.65	38	20.90
21	Bajrangwadi Circle	Ratanpar Gaam	24.27	38	3.58
23	Mavadi Gaam	Shree H.N Shukla College	16.26	30	17.69
24	Trikon Baug	GIDC Gate-3	16.56	29	20.97
25	Julelal Mandir	Jivraj Park	12.81	30	8.32
26	Punit Nagar	Quarter	10.54	25	1.58
27	Trikon Baug	Raiyadhar Slum Quarter	6.29	18	13.56
28	Gujarat Housing Board Quarter	Jivraj Park	14.45	31	16.50
35	Trikon Baug	Shapar Veraval	15.79	22	32.76
38	Aaji Dam	Madhapar Gaam Gate	15.20	29	11.18
40	Saurashtra University	Santoshi Nagar	13.63	27	14.15
41	Bhakti Nagar Circle	Gangotri Park	9.66	22	12.04
42	Greenland Chowkdi	Jivraj Park	13.61	28	19.43
43	OM Residency	Akshar Vatika	14.93	31	14.96
45	Saurashtra University	Ratanpar Gaam	24.67	36	23.32
47	Kothariya Gaam	Saurashtra University	13.94	29	21.27
51	G-Company SRP	Punit Nagar	17.58	37	22.16
54	Kothariya Chowkdi	SRP Camp G-Company	17.60	39	23.80
55	Gondal Chowkdi	Ratanpar Gaam	22.88	32	20.54
57	Trikon Baug	Govt. Eng. College	11.63	21	46.79

3.2.3.5 Average Station Demand on RMTS Routes

Average station demand on RMTS routes has been estimated using the ETM matrix generated (above). This analysis has been broken in to a bus stop based analysis and a route based analysis. Bus stop based analysis suggests that each station caters to an average of 2.7 routes. Maximum routes served by a single bus stop is 27, at Trikon Bagh. Average sum of boarding and alighting commuters at all bus stop in a day is 91.3 (for the analysed RMTS

routes). Average boarding per day for these bus stops is 44.6 commuters whereas average alighting passengers per day was recorded to be 46.6 commuters. The minimum sum total of boarding and alighting passengers at a bus-stop was observed at '53 quarter' bus stop at 0.7 commuters per day. Maximum sum total of boarding and alighting passengers was recorded at 'Trikon-bagh' bus-stop at 3489 commuters per day. Maximum boarding and alighting commuters recorded separately at a station is also at Trikon Bagh, i.e. 1886 boarding and 1603 alighting commuters per day. Minimum boarding commuters in a day is 0 at 53 quarters, whereas the minimum alighting commuters in a day is recorded at 0 at a number of bus stops. Per trip Boarding and Alighting details for RMTS is presented in Table 22.

Route based analysis suggests that the overall average sum, of boarding and alighting commuters per trip (averaged for all trips on all routes) is 2.82 commuters. Sum total of boarding and alighting per trip for a route at a station is 37.74 at Government Engineering College on route number 57, whole the minimum sum total of boarding and alighting commuters per trip on a route at a station is 0 commuters at 'Popatpara Central Jail' bus stop on route number 26. Average boarding per trip per station for all stations on all routes is 1.43 passengers, while average number of alighting passengers per trip per station (for all stations and routes) is 1.39 commuter. The highest recorded boarding per trip at a station is 22.11 on route 20, bus stop 'Ghanteshwar SRP Camp', while maximum alighting per trip at a station is 25.81 passengers at 'Government Engineering College' on Route number 57. Minimum boarding and alighting have been observed to be zero at 'Popatpara Central Jail' Bus stop on route number 26. Per day boarding & alighting and route serves by each bus stop details is presented in Annexure 8.1.

TABLE 22: RMTS BOARDING & ALIGHTING OUTPUTS

S.No.	Particular	Boarding	Alighting	Total
1.	Average	1.43	1.39	2.82
2.	Max	22.11	25.81	37.74
3.	Min	0.00	0.00	0.00

3.2.3.6 Average Station demand on BRTS route

Station wise demand on BRTS corridor has been estimated with the help of ETM matrix. The analysis suggests that Indira circle has maximum number of boarding and alighting per day commuters i.e. 3577 boarding and 3703 alighting passenger per day. And minimum boarding and alighting per day has been observed on two different bus stations, i.e. 131 boarding per day at Umiya station while 331 alighting per day at Ayodhya chowk staton. Bus stop based analysis suggests that Average sum of boarding and alighting commuters at all bus stop in a day is 2451. The minimum sum total of boarding and alighting passengers at a bus-stop was observed at 'Ayodhya chowk' bus stop at 658 commuters per day. Maximum sum total of boarding and alighting passengers was recorded at 'Indira circle' busstation at 7280 commuters per day. Per day boarding & alighting at each bus stop details is presented in Table 23.

TABLE 23: STATION WISE PASSENGER BOARDING AND ALIGHTING ON BRTS CORRIDOR

Station	Distances (m)	Daily Boarding	Daily Alighting
Gondal Chowk	0	3441	2805
Punit Nagar Society	600	614	620
Goverdhan Chowk	640	603	620
Ambedkar Nagar	500	782	730
Umiya Chowk	600	131	921
Mavadi Chowk	600	1591	1684
Om Nagar Chowk	350	652	686
Mahapuja Dham Chowk	540	878	791
Nana Mava Chowk	600	820	860

Station	Distances (m)	Daily Boarding	Daily Alighting
West Zone Office RMC	550	1265	1260
Indira Circle	1140	3577	3703
Raiya Telephone Exchange	650	840	770
Raiya Chowk	850	1011	1207
Nanavati Chowk	500	1060	1163
Ramadevpir Chowk	700	970	1195
Shital Park	500	407	464
Ayodhya Chowk	840	327	331
Madhapar Chowk	680	3094	2253

3.2.3.7 Average Operational Speed on RMTS Routes

Average operational speed for 30 RMTS routes (passing BRTS corridor) has been calculated with help of RMTS time schedule data provided by RRL and RMTS. Time schedule data comprised of number of trips per day and starting and end time for each trip for both directions for each route. Average operational speed for each route has been then calculated with the help of journey distance and journey time. . The analysis of this data suggests that the average speed (over a day) of RMTS buses for all 30 routes is 18.32 km/h. The minimum average speed is observed at 11.86 Km/h on route number 41, while the maximum speed is observed at 21.57 km/h on route number 9. Table 24 presents the route wise operational speed variation during the day for RMTS buses.

TABLE 24: AVERAGE OPERATIONAL SPEED OF RMTS BUSES

Route No.	Origin	Destination	Route length (km)	Avg. Bus Speed (km/hr)
1	Trikon Bag	Saurashtra University	7.22	15.06
2	Raiya Gaam	Shree S.N Shukla College	16.47	18.81
3	Madhapar Chokdi	Jivraj Park	18.78	17.69
5	Raiya Gaam	Tramba Gaam	22.00	18.00
7	Bhaktinagar Circle	Bajarangvadi Circle	9.66	16.31
8	Labhubhai Trivedi College	Greenland Chowkdi	14.01	20.52
9	Saurashtra University	Arpit Eng. College	31.76	21.57
11	Trikon Baug	Shapar Veraval	15.61	18.95
16	Kothariya Gaam	Saurashtra University	16.55	21.39
17	Saurashtra University	Tramba Gaam	22.49	20.27
19	Vavdi Gaam	Slum Quarter	12.17	18.65
20	Ghanteshvar SRP Camp	Shapar Veraval	25.65	18.17
21	Bajrangwadi Circle	Ratanpar Gaam	24.27	
23	Mavadi Gaam	Shree H.N Shukla College	16.26	16.97
24	Trikon Baug	GIDC Gate-3	16.56	20.49
25	Julelal Mandir	Jivraj Park	12.81	19.57
26	Punit Nagar	Quarter	10.54	16.46
27	Trikon Baug	Raiyadhar Slum Quarter	6.29	16.71

Route No.	Origin	Destination	Route length (km)	Avg. Bus Speed (km/hr)
28	Gujarat Housing Board Quarter	Jivraj Park	14.45	17.91
35	Trikon Baug	Shapar Veraval	15.79	20.28
38	Aaji Dam	Madhapar Gaam Gate	15.20	19.89
40	Saurashtra University	Santoshi Nagar	13.63	18.17
41	Bhakti Nagar Circle	Gangotri Park	9.66	11.86
42	Greenland Chowkdi	Jivraj Park	13.61	18.35
43	OM Residency	Akshar Vatika	14.93	18.44
45	Saurashtra University	Ratanpar Gaam	24.67	20.86
47	Kothariya Gaam	Saurashtra University	13.94	17.10
51	G-Company SRP	Punit Nagar	17.58	18.72
54	Kothariya Chowkdi	SRP Camp G-Company	17.60	18.05
55	Gondal Chowkdi	Ratanpar Gaam	22.88	16.75
57	Trikon Baug	Govt. Eng. College	11.63	17.48

3.2.3.8 Average Operational Speed on BRTS Routes

With help of time schedule data provided by RRL, per trip speed of buses on BRTS corridor has been calculated. The derived data indicates that the average speed (over a day) of BRTS buses is 18.48 km/hr. The maximum speed of the bus is observed at 22.93 km/hr between 6:30 AM and 7:02 AM in the morning on the corridor. The minimum speed of the bus is observed at 15.29 km/hr between 3:33 PM and 4:19 PM in the afternoon on the corridor. Table 25 presents the trip wise operational speed variation during the day on the BRTS corridor.

TABLE 25: TRIP WISE OPERATIONAL SPEED ON BRTS CORRIDOR

Station Name	Bus Schedule	Travel Time (min)	Actual Travel Time (min)	Distance (km)	Average Speed (km/hr)
Gondal Chowk	06:30	00:32	00:28	10.7	22.93
Madhapar chowk	07:02	00:37	00:33	10.7	19.45
Gondal Chowk	07:39	00:42	00:38	10.7	16.89
Madhapar chowk	08:21	00:40	00:36	10.7	17.83
Gondal Chowk	09:01	00:40	00:36	10.7	17.83
Madhapar chowk	09:41	00:40	00:36	10.7	17.83
Gondal Chowk	10:21	00:40	00:36	10.7	17.83
Madhapar chowk	11:01	00:40	00:36	10.7	17.83
Gondal Chowk	11:41	00:35	00:31	10.7	20.71
Madhapar chowk	12:16	00:35	00:31	10.7	20.71
Gondal Chowk	12:51	00:38	00:34	10.7	18.88
Madhapar chowk	13:29	00:44	00:40	10.7	16.05
Gondal Chowk	14:13	00:40	00:36	10.7	17.83
Madhapar chowk	14:53	00:40	00:36	10.7	17.83
Gondal Chowk	15:33	00:46	00:42	10.7	15.29
Madhapar chowk	16:19	00:40	00:36	10.7	17.83

Station Name	Bus Schedule	Travel Time (min)	Actual Travel Time (min)	Distance (km)	Average Speed (km/hr)
Gondal Chowk	16:59	00:37	00:33	10.7	19.45
Madhapar chowk	17:36	00:35	00:31	10.7	20.71
Gondal Chowk	18:11	00:36	00:32	10.7	20.06
Madhapar chowk	18:47	00:40	00:36	10.7	17.83
Gondal Chowk	19:27	00:43	00:39	10.7	16.46
Madhapar chowk	20:10				

3.2.3.9 Average Monthly Trip Demand on BRT Corridor

Detailed ticket sale data for BRTS routes has not yet been analyzed. However daily ridership for past 11 months has been made available by RRL. This data for the last month (for which data is available), i.e. August 2017 suggests that the average daily ridership (for both up and down direction) in that month was 19,407. The average ridership for working days in that month was 20,342 and average for non-working days (including Saturday, Sunday and public holidays) was 17,706. The minimum ridership was on Monday, 07 August 2017 at 11,302 and the maximum was on Saturday, 05 August 2017 at 24,209. The detailed daily ridership figures on Rajkot BRT corridor in August 2017 have been presented in Table 26 and Figure 17.

TABLE 26: BRTS DAILY RIDERSHIP

BRTS Ridership in August 2017			
Date	**Passengers**	**Date**	**Passengers**
1 Aug 17, Tuesday	22479	17 Aug 17, Thursday	17277
2 Aug 17, Wednesday	21837	18 Aug 17, Friday	19506
3 Aug 17, Thursday	23392	19 Aug 17, Saturday	18122
4 Aug 17, Friday	23057	20 Aug 17, Sunday	17081
5 Aug 17, Saturday	24209	21 Aug 17, Monday	21210
6 Aug 17, Sunday	19375	22 Aug 17, Tuesday	19249
7 Aug 17, Monday	11302	23 Aug 17, Wednesday	19893
8 Aug 17, Tuesday	15316	24 Aug 17, Thursday	22346
9 Aug 17, Wednesday	21136	25 Aug 17, Friday	18587
10 Aug 17, Thursday	20972	26 Aug 17, Saturday	21813
11 Aug 17, Friday	20674	27 Aug 17, Sunday	18109
12 Aug 17, Saturday	19489	28 Aug 17, Monday	23691
13 Aug 17, Sunday	16037	29 Aug 17, Tuesday	18792
14 Aug 17, Monday	15848	30 Aug 17, Wednesday	18256
15 Aug 17, Tuesday	13376	31 Aug 17, Thursday	21109
16 Aug 17, Wednesday	18062		

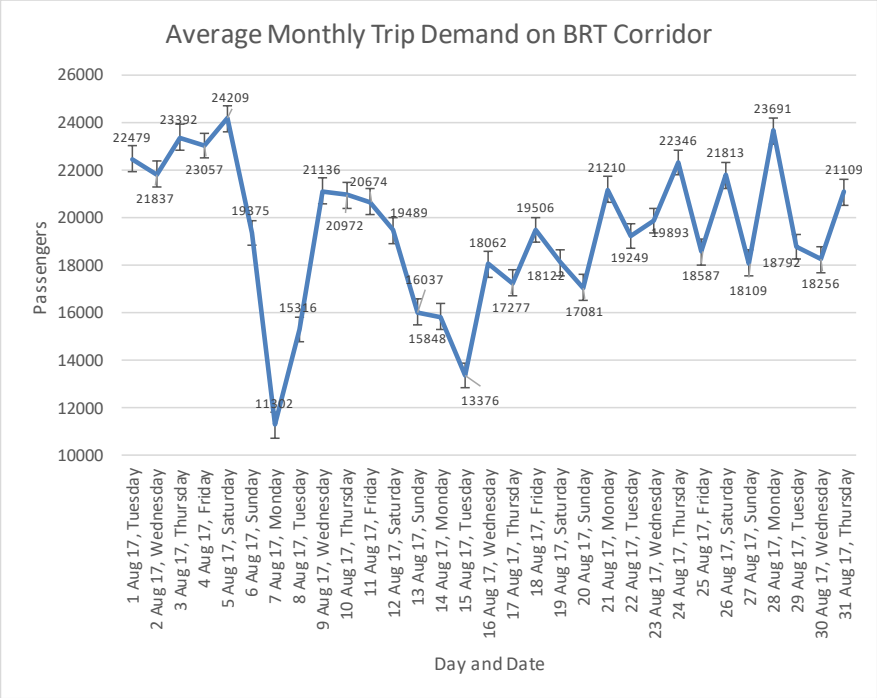


FIGURE 17: BRTS AVERAGE MONTHLY TRIP DEMAND

3.2.3.10 Fare Structure

RMTS and RRL have provided the fare structure for both city bus services and RMTS. The analysis of this fare structure suggests that the average per kilometer cost of using RMTS buses is Rs. 1, while that for BRTS is Rs. 1.5. Figure 18 and Figure 19 present the fare structure of BRTS and RMTS services respectively.

	Sr.	Station Name	Kms.																		
0.00	1	Gondal Chowk	0.00	0																	
0.60	2	Punit Nagar Society	0.60	4	0																
0.60	3	Goverdhan Chowk	1.20	4	4	0															
0.50	4	Ambedkar Nagar	1.70	4	4	4	0														
0.60	5	Shree Umiya Chowk	2.30	7	4	4	4	0													
0.70	6	Mavadi Chowk	3.00	7	7	4	4	4	0												
0.40	7	Om Nagar	3.40	7	7	7	4	4	4	0											
0.40	8	Mahapuja Dham Chowk	3.80	7	7	7	7	4	4	4	0										
0.60	9	Nana Mava Chowk	4.40	8	7	7	7	7	4	4	4	0									
0.50	10	West Zone Office RMC	4.90	8	8	7	7	7	4	4	4	4	0								
1.00	11	Indira Circle	5.90	8	8	8	8	7	7	7	7	4	4	0							
0.70	12	Raiya Telephone Exchange	6.60	11	8	8	8	8	7	7	7	7	4	4	0						
0.80	13	Raiya Chowk	7.40	11	11	11	8	8	8	7	7	7	7	4	4	0					
0.50	14	Nanavati Chowk	7.90	11	11	11	11	8	8	8	8	7	7	4	4	4	0				
0.70	15	Ramadevpir Chowk	8.60	12	11	11	11	11	8	8	8	8	7	7	4	4	4	0			
0.60	16	Shital Park	9.20	12	12	11	11	11	11	8	8	8	8	7	7	4	4	4	0		
0.80	17	Ayodhya Chowk	10.00	12	12	12	12	11	11	11	11	8	8	8	7	7	7	4	4	0	
0.70	18	Madhapar Chowk	10.70	15	15	12	12	12	11	11	11	11	8	8	8	7	7	7	4	4	0
				Gondal Chowk	Punit Nagar Society	Goverdhan Chowk	Ambedkar Nagar	Shree Umiya Chowk	Mavadi Chowk	Om Nagar	Mahapuja Dham Chowk	Nana Mava Chowk	West Zone Office RMC	Indira Circle	Raiya Telephone Exchange	Raiya Chowk	Nanavati Chowk	Ramadevpir Chowk	Shital Park	Ayodhya Chowk	Madhapar Chowk
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

FIGURE 18: BRTS FARE STRUCTURE

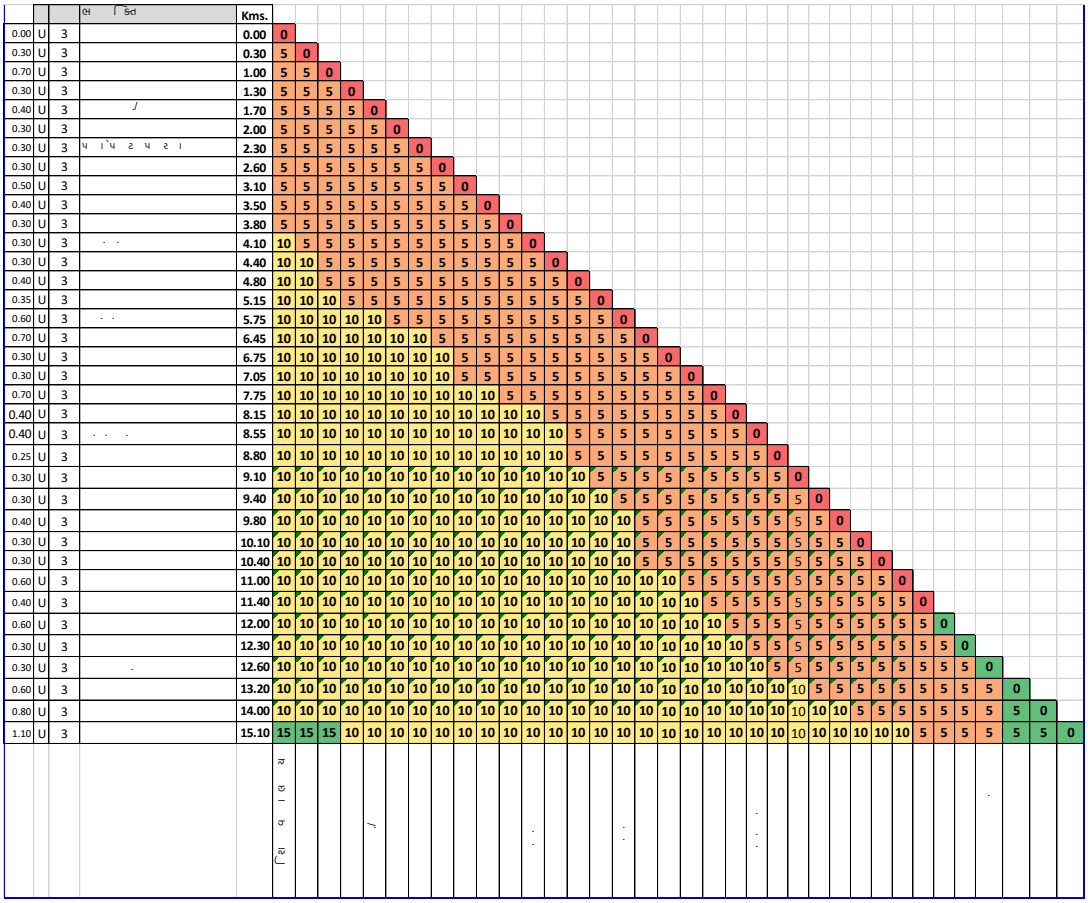


FIGURE 19: RMTS FARE STRUCTURE

3.2.3.11 Present and future electricity sources and distribution infrastructure in Rajkot

According to the Energy Statistics 2017 (Government of India, 2017), more than three quarters of the installed capacity in the state of Gujarat is generated from thermal power plants which comprise conventional thermal plants of all types and typically use fossil fuel (e.g. coal, gas or diesel) as a heat source. Renewable energy sources (RES; mainly wind power and solar energy) contribute to around 20% of the installed generating capacity in Gujarat. With more than one GW of installed solar capacity, the state of Gujarat is accounting for more than a quarter of India's total solar energy (International Energy Agency, 2015).

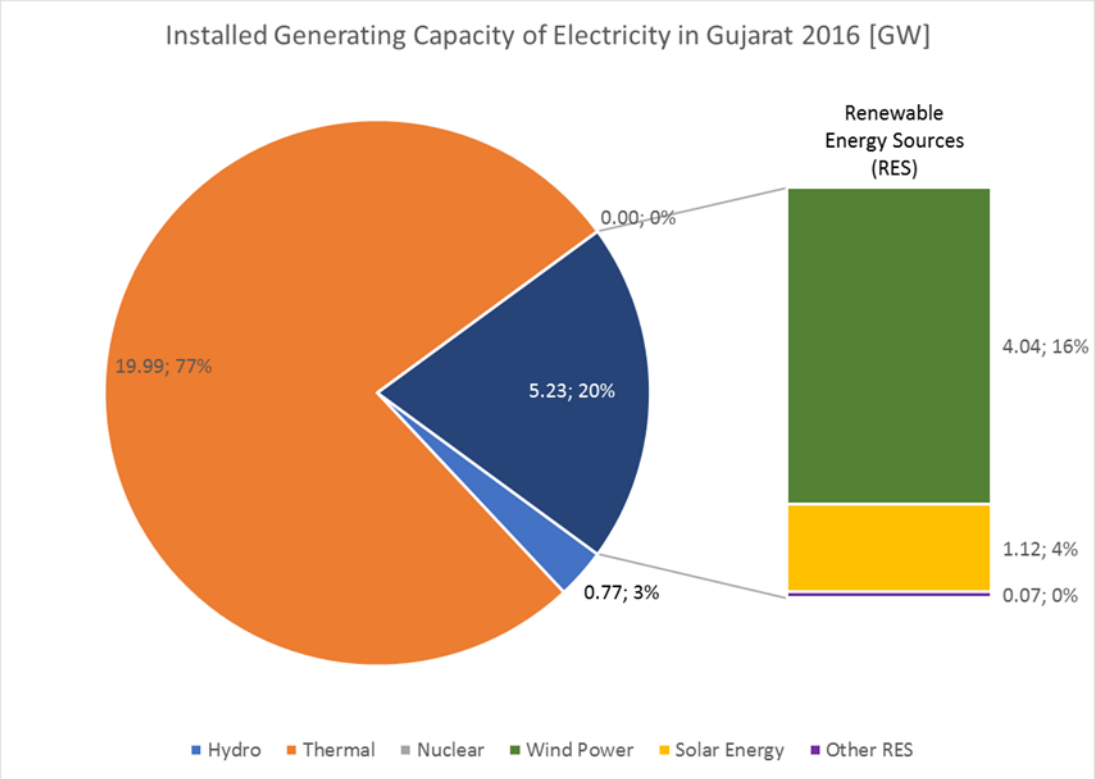


FIGURE 20: INSTALLED GENERATING CAPACITY OF ELECTRICITY. SOURCE: (GOVERNMENT OF INDIA, 2017)

According to the Energy Statistics, there is a very high potential of Renewable Power, especially regarding wind and solar power. It is therefore not surprising that with the 500 MW Charanka solar park, Gujarat has one of the largest solar plants in the world (International Energy Agency 2015).

TABLE 27: INSTALLED CAPACITY AND POTENTIAL OF RENEWABLE POWER. SOURCE: (GOVERNMENT OF INDIA, 2017)

	Wind Power	Solar Energy	Biomass	Small Hydro Power	Other RES	Total
Installed Capacity of Renewable Power 2016 [GW]	4.04	1.12	0.06	0.02	0.00	**5.23**
Estimated Potential of Renewable Power [GW]	119.50	35.77	1.22	0.20	0.46	**157.16**

According to RMC, the total electricity consumption in Rajkot from January 2015 to December 2015 was around 1.5 Mio. MWh or 1'500 GWh per year. Since 2009, Gujarat has had a power surplus, and this is expected to be also the case for the near future (Government of Gujarat 2017).

3.2.3.12 Present and future electricity demand in Rajkot

SNZ Chapter

3.3 Primary Data

As part of the primary data collection, surveys were conducted on the corridor including junctions and BRT stations. This included origin-destination (O-D) surveys through interviews, traffic surveys through video-graphy and average speed data (on Rajkot Road network) by different modes using hand held (mobile) GPS devices. The data was collected over a period of five working days from December 12, 2017 till December 19, 2017. This data has been analyzed to reveal the trip characteristics of any potential BRT users. The details of data compilation and findings from its analysis has been presented in sections below.

3.3.1 Data Collection and Compilation

The data collection included traffic volume survey (videos) on total 19 junctions and (O-D) survey on total 19 junctions and 18 bus stops and mode-wise average speed on the corridor and off the corridor. A total of approximately 523 respondents have been surveyed for junction O-D survey and 196 respondents were interviewed for bus station O-D survey. Both junction traffic data collection and O-D surveys were conducted during peak hours, i.e. from 8:30am to 11:30am and 5:00pm and 7:00pm. The detail of data collected has been presented in Table 28.

TABLE 28: LIST OF PRIMARY DATA COLLECTED

S.No.	Type of Survey	Sample Size/Period	Total locations/Bus stops/Junctions
1.	Traffic Volume Counts	15 minutes	19
2.	Junction O-D Survey	523	19
3.	Bus Station O-D Survey	196	18
4.	Mode-wise Average Speed on the corridor and off the corridor	42	--

The collected data through primary surveys has been derived (from videos and interviews) and digitized. The collected O-D data is presented in Annexure 8.3.1.

Also, during second site visit to Rajkot, two major surveys has been conducted including 'Land use survey' along the BRTS corridor and willingness to use BRTS Perception survey. Land use of 500m on either side of BRTS corridor has been surveyed and marked on the google earth print outs. A total of 36 respondents including BRTS users, RRL officials, other mode users, etc. have been surveyed for 'willingness to use BRTS Perception survey'. The collected data for Land use is presented in Annexure 8.3.3.

3.3.2 Analysis

The primary survey data has been analyzed to understand the average trip length, average occupancy, major generators as well attractors (O-D) for modes other than buses. It also creates an understanding of average vehicular speeds of modes other than buses, both on and off the BRT corridor. Additionally, it provides an understanding of traffic composition and load on the BRT corridor and on the cross roads. This analysis has been presented in the sections below.

3.3.2.1 Land use analysis

Land use survey has been conducted along the BRTS corridor during second site visit to Rajkot. Area for survey has been selected by offsetting BRTS corridor by 500m on both side. Survey has been done by visiting the places and marking the exact land use of the place on Google earth sheets (Annexure 8.3.3). Land use distribution along the BRTS corridor is presented in Figure 21. The analysis of land use survey data clearly indicates that the majority of land 500m on both side of the corridor has Residential land use (nearly 80%). While the land use along the corridor has mojorly Mixed (residential + commerial) land use (nealy 40%). The land use along the corridor is favorable for shorter and non-motorized trips. Land use along the corridor is presented in Figure 22. Figure 23 and Figure 23 showing the analysis of land use

distribution of 500m along both side of corridor and land use distribution along the corridor respectively.

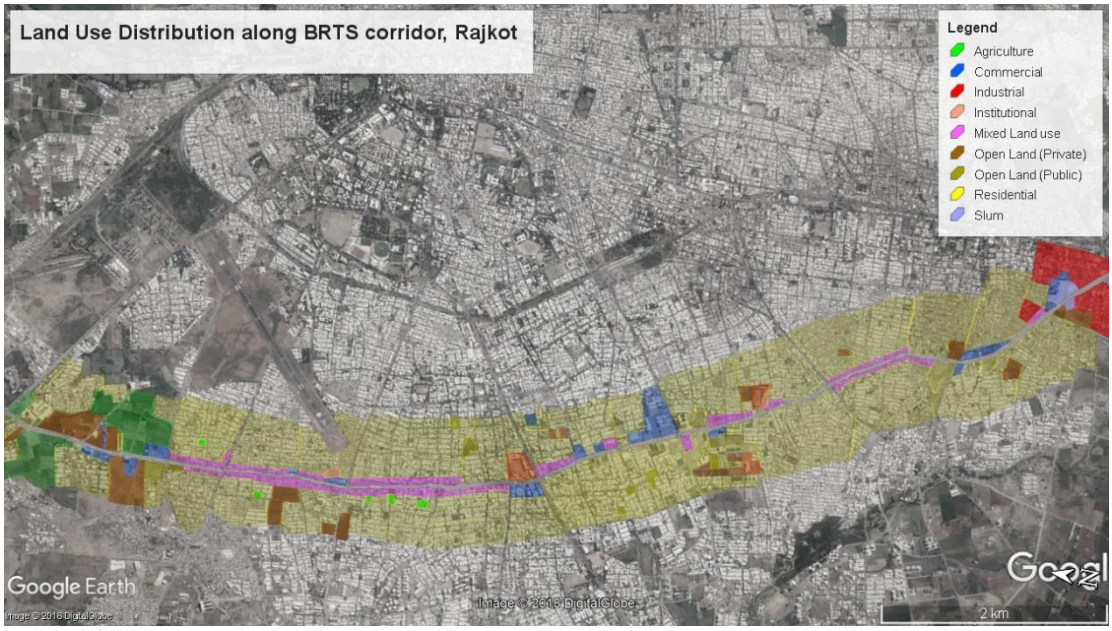


FIGURE 21: LAND USE DISTRIBUTION ALONG CORRIDOR

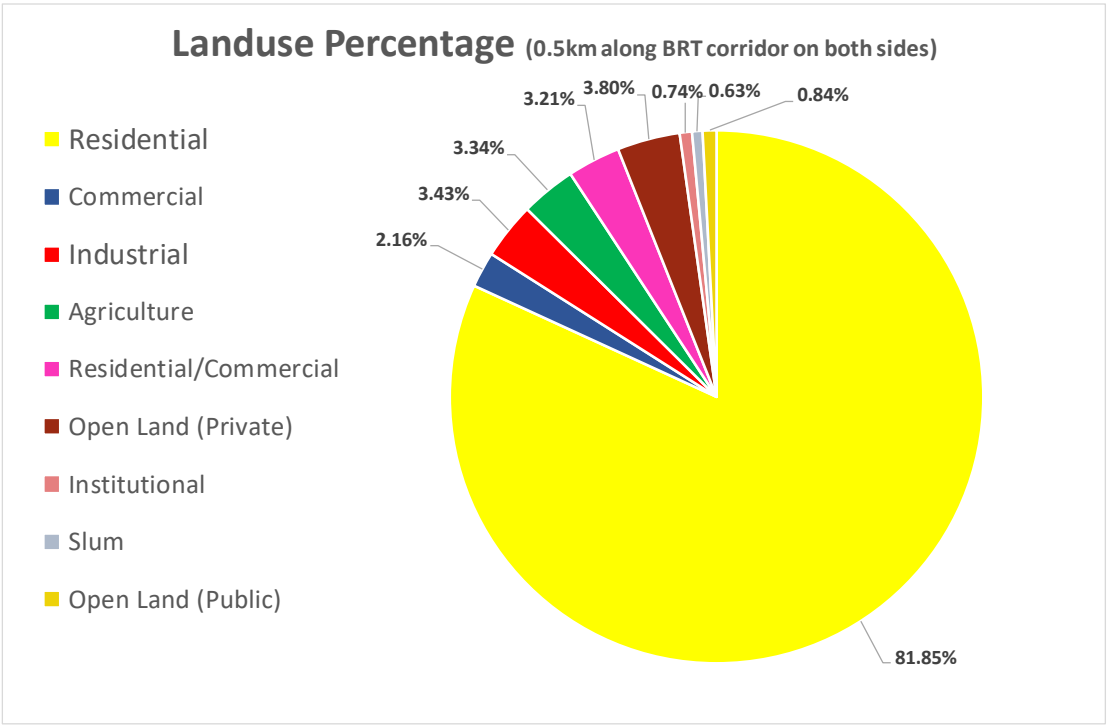


FIGURE 22: LANDU USE DISTRIBUTION ANALYSIS OF 0.5KM ON BOTH SIDE OF CORRIDOR

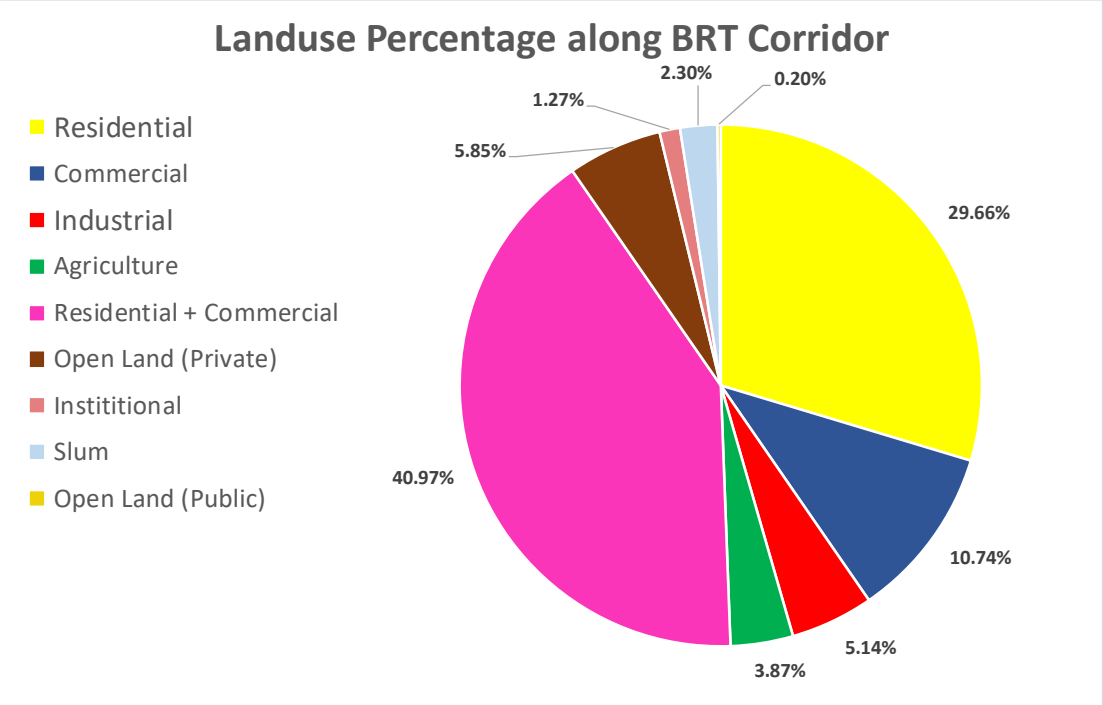


FIGURE 23: LAND USE DISTRIBUTION ANALYSIS ALONG THE CORRIDOR

3.3.2.2 Origin-Destination and Catchment Area for Passengers other than Bus and BRT

A total of 523 respondents were interviewed for the junction O-D survey, involving all commuters, including those walking, cycling, taking an auto, using a two-wheeler, and auto rickshaw or a car. Commuters were randomly interviewed and data such as origin destination, trip purpose, no. of occupants, mode used, and route taken was captured on a survey form. The analysis of the origin and destination data from this survey was plotted on Google Earth. Also in Google Earth, Traffic Analysis zones (TAZ) were created on the basis of expected walking distance from major roads and BRT. These zones measure approximately 600m to 1200m by 600m to 1200m. Based on this Rajkot city has been divided in to a total of 177 zones. Origin destination data points plotted on the map were overlapped on these zones and number of O-D points on each zone were calculated. It was found that the lowest number of data points in a zone was 0. While the maximum data points 88 in zone number 109 which is approximately 500m radius around KKV Chowk. Accordingly the zones were colour coded as red for more than 12 O-D data points, blue for 9 to 12 O-D data points, magenta for 5 to 8 data points, grey for 1 to 4 and white for less than 1 data point. Figure 24 presents the zones wise details of O-D survey conducted around the BRT corridor. This data does not differentiate between Origin and destination, and clubs them all together in a single map for visualization. The analysis of this zone wise data suggests that majority of interviewed commuters are concentrated in red color coded zone which is majorly adjacent to the existing BRTs corridor within the range of half a km on either side of the corridor and E-W direction.

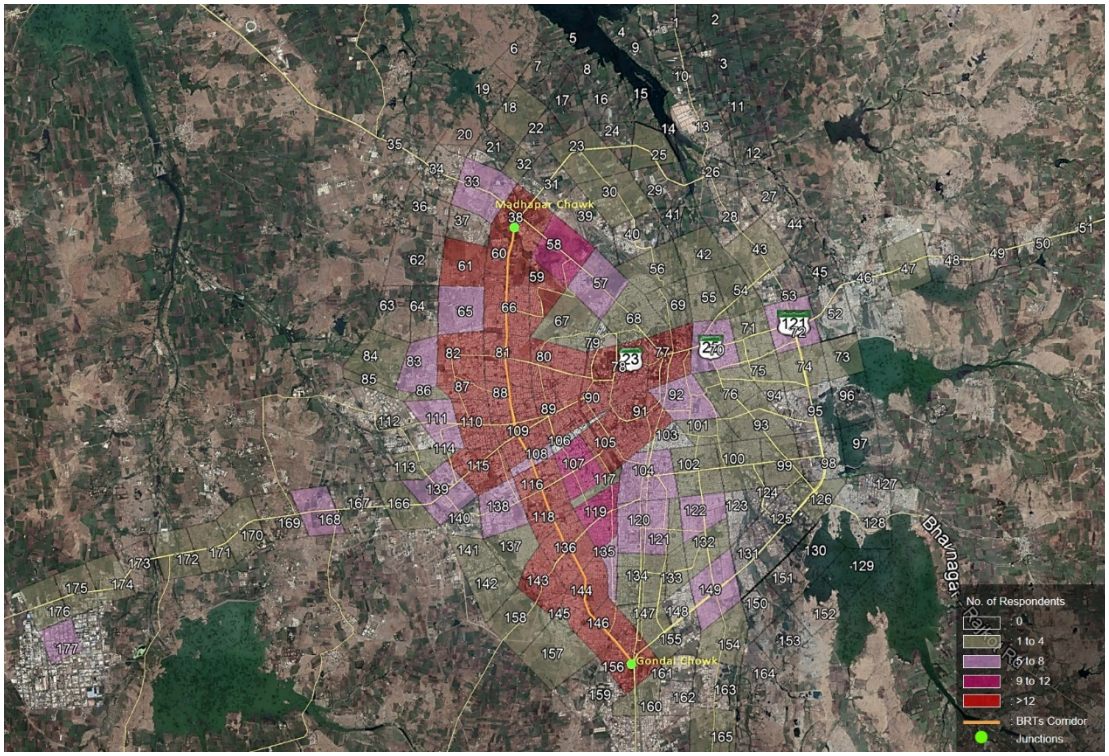


FIGURE 24: ZONE-WISE ANALYSIS OF PASSENGERS OTHER THAN BUSES

3.3.2.3 Origin-Destination and Catchment Area of BRT bus Commuters

Commuters at all 18 BRT bus stations were interviewed for understanding their origin destination of the journey, for which this BRT trip is a part. Data for the mode used for the first and last mile connectivity to the BRT corridor and the purpose of their trip. A total of 196 respondents were interviewed for this survey, of which 58% were men and 42% were women. The O-D data points from this interview were plotted on Google Earth, overlapping with defined TAZ. This allowed an assessment of catchment area of BRT based on current usage. This analysis has been presented in Figure 25. The analysis suggests that majority of BRT commuters have their O-D at zone 66, color coded red having more than 14 data points clusterted within half a km of BRT corridor around Ramdev Pir Chowkdi junction. Minimum number of Bus BRT commuters from a zone is zero, while the maximum number of BRT commuters coming from a zone is 23 (from zone number 66) and the same come from zone number 81, 88, 109 and 144 clustered in area around raiya chowk, raiya telephone exchange, KKV chowk - Indira circle and Ambedkar Nagar Chowk within 500 metres adjacent to BRTs corridor. The data of respondents for both Bus and Other than Bus O-D has been presented in Annexure 8.3.1 and 8.3.2 respectively.

Notably there are a number of activity centres in the 1km catchment zone oft he BRT corridor. The current influence of these activity centres in reflecet in the O-D data collected. However the specific links of these activity nodes tot he traffic generated is currently beeing studied. Alongside the details of vacant plots in viscinity oft h corridor is being collected, along with their proposed land use. In the following stages oft he study when ridership shall be projected fort he horizone year, the expected trips attracted by these undeveloped land parcels shall also be accounted for.

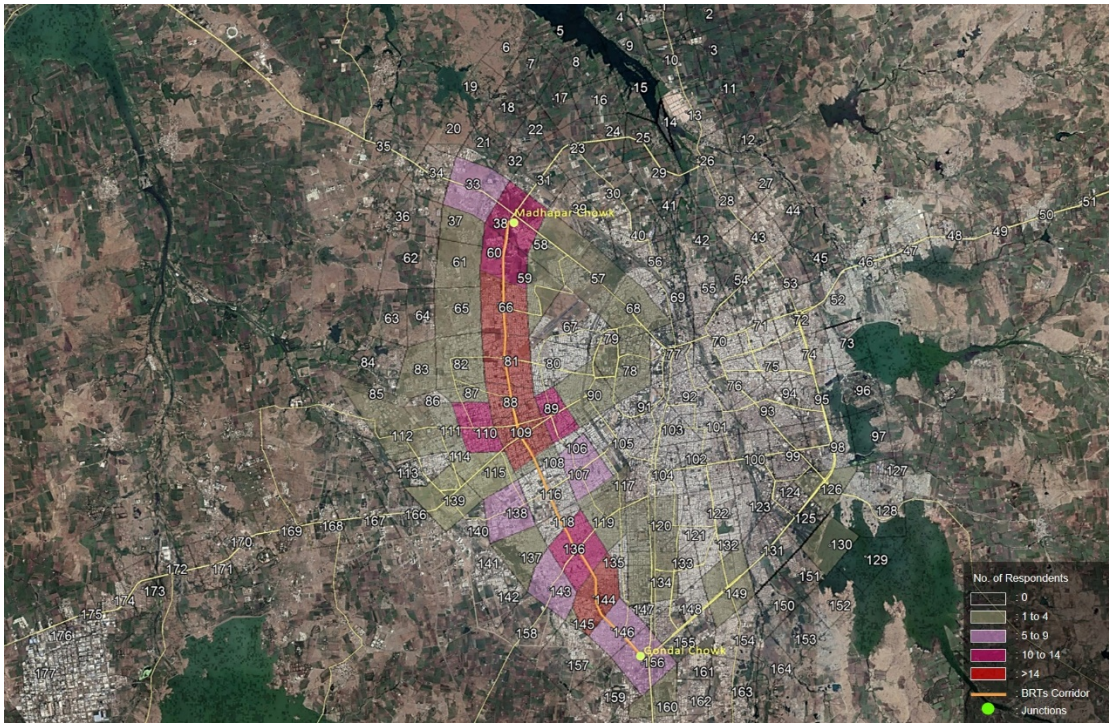


FIGURE 25: ZONE-WISE ANALYSIS OF BRTS COMMUTERS

3.3.2.4 Last mile connectivity modes used by current BRT commuters

Bus stops O-D survey data was analyzed to generate an understanding of the current modes used by current commuters for accessing the BRT in Rajkot. The analysis suggests that a large majority of commuters interviewed, i.e. 77% (first mile), 71% (last mile) walk to BRT station. 10% commuters use city bus as the mode for first mile connectivity and 11% commuters use city buses as the mode for last mile connectivity. Table 29 presents the details of last mile connectivity of current BRT commuters interviewed for this study.

TABLE 29: LAST MILE CONNECTIVITY MODES

S. No.	Mode	Access numbers	%age	Egress number	%age	Total number	Total
1	Auto	12	6%	17	9%	29	7%
2	Shared Auto	2	1%	7	4%	9	2%
3	2W	3	2%	0	0%	3	1%
4	Bicycle	2	1%	4	2%	6	2%
5	City Bus	19	10%	22	11%	41	10%
6	BRT	3	2%	2	1%	5	1%
7	Car	2	1%	1	1%	3	1%
8	Walk	150	77%	139	71%	289	74%
9	Drop/ picked up	3	2%	4	2%	7	2%
Total		196	100%	196	100%	392	100%

3.3.2.5 Trip Purpose for Modes other than RMTS buses

Respondents were asked about the purpose of trip during the interviews. The analysis of this data suggest that 35% of trips made by BRT were work trips, while 34% were educational trips and the rest, i.e. 31 % were non-work, non-education trips. For all other modes including private motorized vehicles and auto rickshaws, 60% of trips were work trips, 5% were education trips and 36% were non-work, non-education trips. Table 30 presents the total number of work, non-work and educational trips by mode.

TABLE 30: MODE-WISE TOTAL NUMBER OF TRIPS

S.No.	Modes	Number of trips					
		Work		Education		Non-work	
		No. of trips	%age	No. of trips	%age	No. of trips	%age
1	All Modes (on BRT)	69	35%	67	34%	60	31%
2	All Modes (other than buses)	312	60%	24	5%	187	36%

3.3.2.6 Occupancy of Modes other than Bus and BRT

O-D survey of commuters conducted at junctions of the BRT corridor was analyzed to assess the average occupancy of modes other than buses on the BRT. The average occupancy of the modes using BRT corridor other than buses has been presented in Table 31.

TABLE 31: LAST MILE CONNECTIVITY MODES

S. No.	Mode	Average Occupancy
1	Bicycle	1.03
2	Two Wheeler	1.28
3	Auto Rickshaw	1.22
4	Shared Auto Rickshaw	1.57
5	Car	1.54

3.3.2.7 Trip length of Modes other than Bus and BRT

O-D survey of commuters at junctions was analyzed to generate an understanding of trip lengths by commuters crossing and/or using parts of the BRT corridor. The data suggests that the average trip length of commuters using modes other than buses, walk and cycle is 7.63 km. Frequency distribution of trip length suggests that 3.54% of trips on the corridor are less than 1km, 37% are more than one and less than 5km, 34% are more than 5 km and less than 10km while 25% is more than 10km.

Table 32 and Figure 26 presents the frequency distribution (aggregated for all modes other than buses, walk and cycle) of trip length.

Similarly, O-D survey of commuters at junctions was analyzed to generate the percentage of commuters travelled on the corridor. The analysis suggests that 61.95% commuters travelled on the corridor having trip length upto 1km, 46.64% upto 5km, 44.89% upto 10km and 40.57% for less than 40km (refer Table 33 and Figure 27).

TABLE 32: FREQUENCY DISTRIBUTION OF TRIP LENGTHS OTHER THAN BUS

S.No.	Range (km)	Number of Respondents	Frequency (range) %	Cumulative %
1	<1	18	3.54%	3.54%
2	<5	190	37%	40.94%

3	<10	174	34%	75.20%
4	<40	126	25%	100.00%

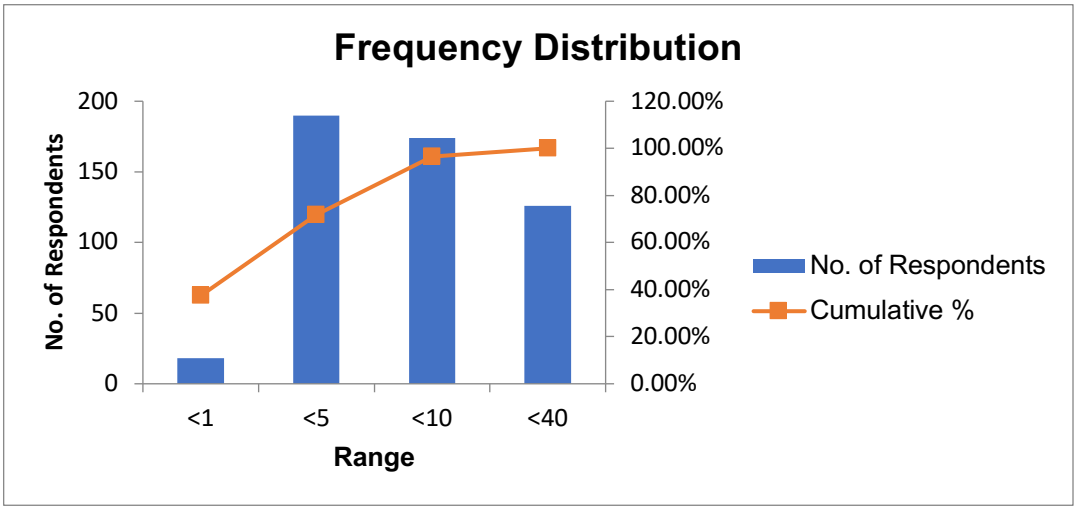


FIGURE 26: FREQUENCY DISTRIBUTION GRAPH OF TRIP LENGTHS OTHER THAN BUS

TABLE 33: % DISTANCE TRAVELLED ON THE CORRIDOR (OTHER THAN BUS)

Range (Km)	No. of Respondents	% distance travelled on the corridor (range)
Upto 1	20	61.95%
Upto 5	210	46.64%
Upto 10	384	44.89%
Upto 40	491	40.57%

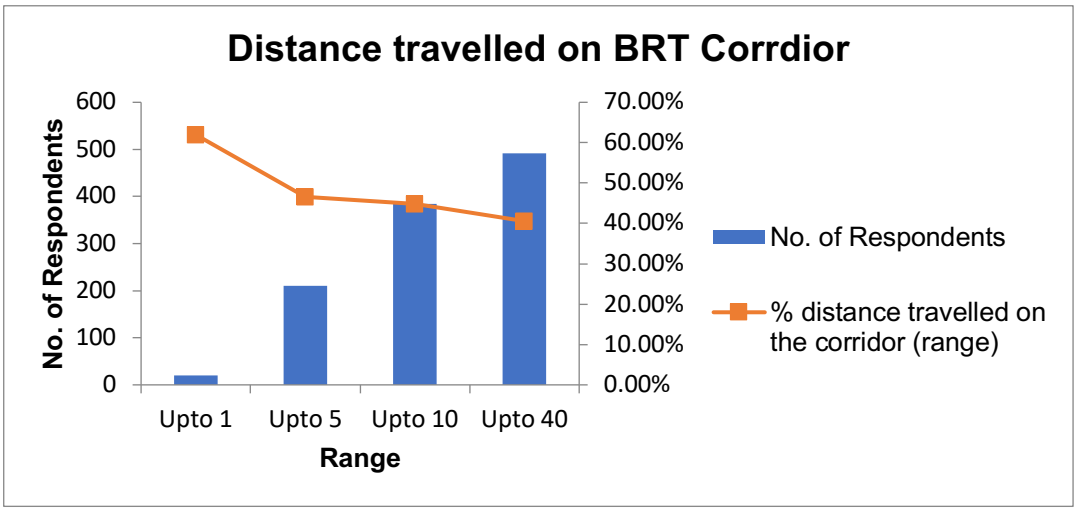


FIGURE 27: DISTANCE TRAVELLED ON THE CORRIDOR (OTHER THAN BUS)

3.3.2.8 Trip length of Current BRT Commuters

O-D survey of BRT commuters was analyzed to generate an understanding of trip length by current BRT commuters. This analysis suggests that the average trip length of BRT commuters is 6.04 km. When trip length is analyzed on the basis of last mile mode used, the results suggest that average trip length of commuters walking to BRT stations is. 5.6 km, those using an auto rickshaw is 6.67 km, those using 2w is 6.47 km, those using car is 6.6 km and those using shared auto is 7.1 km. The frequency distribution of trip length suggests that 1.53% commuters

have trip length less than 1km, 30.1% have trip length more than 1km and less than 5km, 51.02 % have trip length more than 5km and less than 10km and 17.35% have trip length more than 10km. Table 34 and Figure 28 presents the frequency distribution of trip length for BRT commuters.

Similarly, data was analyzed to generate the percentage of commuters travelled on the corridor. The analysis suggests that 81% commuters travelled on the corridor having trip length upto 1km, 66% upto 5km, 77% upto 10km and 64% for less than 40km (refer Table 35 and Figure 29).

TABLE 34: FREQUENCY DISTRIBUTION OF TRIP LENGTHS OF BRT COMMUTERS

Range (Km)	No. of Respondents	Frequency % (range)	Cumulative %
<1	3	1.53%	1.53%
<5	100	30.10%	52.55%
<10	59	51.02%	82.65%
<40	34	17.35%	100.00%

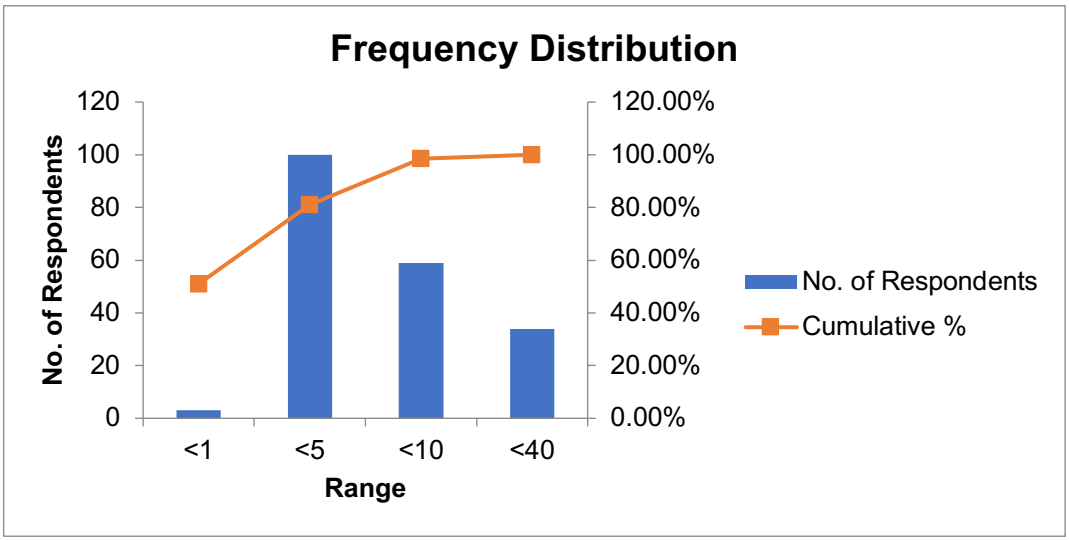


FIGURE 28: FREQUENCY DISTRIBUTION GRAPH - TRIP LENGTHS (BRT COMMUTERS)

TABLE 35: % DISTANCE TRAVELLED ON THE BRT CORRIDOR

Range (Km)	No. of Respondents	% distance travelled on the corridor (range)
Upto 1	3	81%
Upto 5	103	66%
Upto 10	162	77%
Upto 40	181	64%

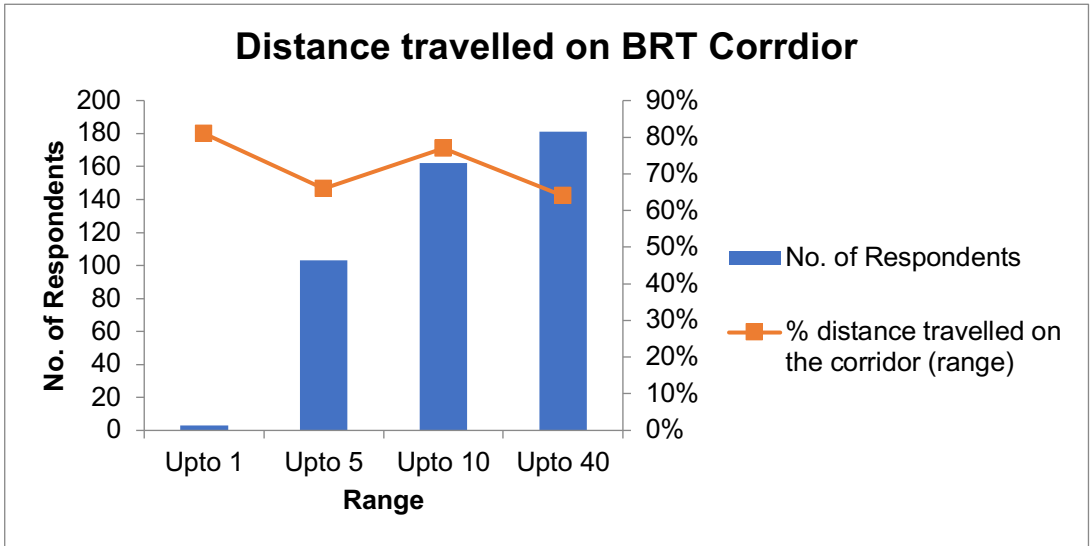


FIGURE 29: DISTANCE TRAVELLED ON THE BRT CORRIDOR

3.3.2.9 Segment of Trips on BRT Corridor

O-D survey of commuters at intersections was analyzed to generate an understanding of percent of trip length that overlaps the BRT corridor. The analysis of this data suggests that on an average 42% of the trip length of commuters using modes other than Bus or BRT is on the corridor. When this data is analyzed against trip length, the results suggest that on an average 60.24% of trip length is on the corridor for trip lengths less than 1km. This figure is 49% for trip length more than 1km and less than 5km, 43% for trip length for more than 5km and less than or equal to 10km and 25% for trip length greater than 10km. Frequency distribution of this data suggests that 20.3% of trips do not use any part of the BRT corridor, 8.2% use less than 10% of trip length on BRT corridor, 15.9% use more than 10% & less than 25% of trip length on the corridor, 35.8% use more than 25% & less than 75% of trip length on the corridor while 6.12% use 100% of trip length on the corridor. Table 36 and Figure 30 presents the frequency distribution of percent of trip lengths of commuters on the BRT corridor.

TABLE 36: FREQUENCY DISTRIBUTION OF % OF TRIP LENGTHS ON THE CORRIDOR

Range	No. of Respondents	Frequency (range) %	Cumulative %
0%	106	20.30%	20.30%
Less than 10%	43	8.20%	28.50%
Less than 25%	83	15.90%	44.40%
Less than 75%	187	35.80%	80.20%
Upto 100%	104	19.80%	100.0%

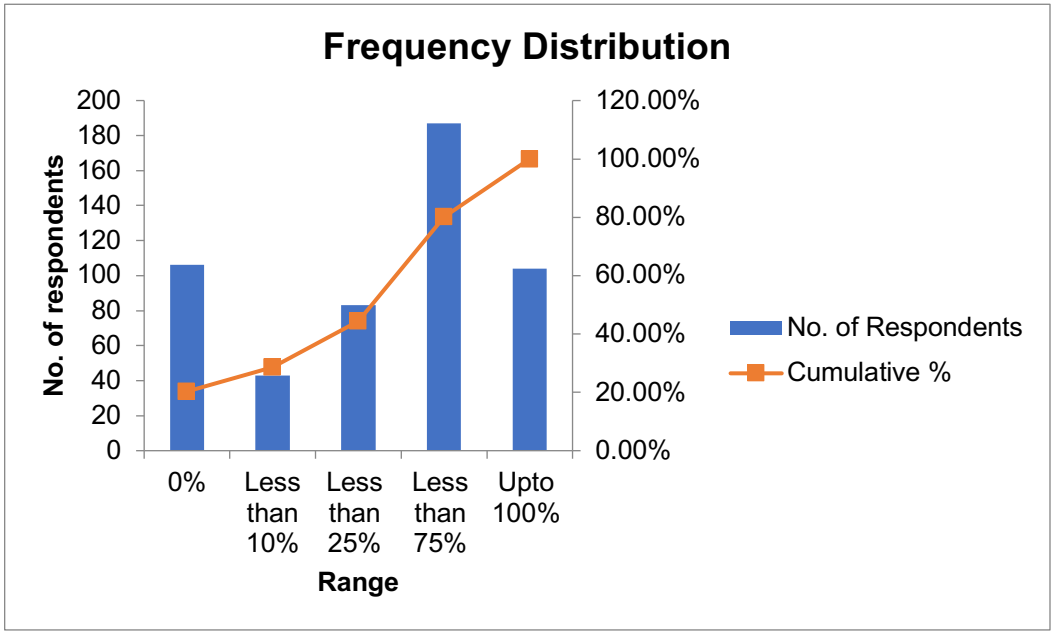


FIGURE 30: FREQUENCY DISTRIBUTION GRAPH % OF TRIP LENGTHS ON THE CORRIDOR

3.3.2.10 Composition of Traffic and Trips by Mode on the BRT Corridor

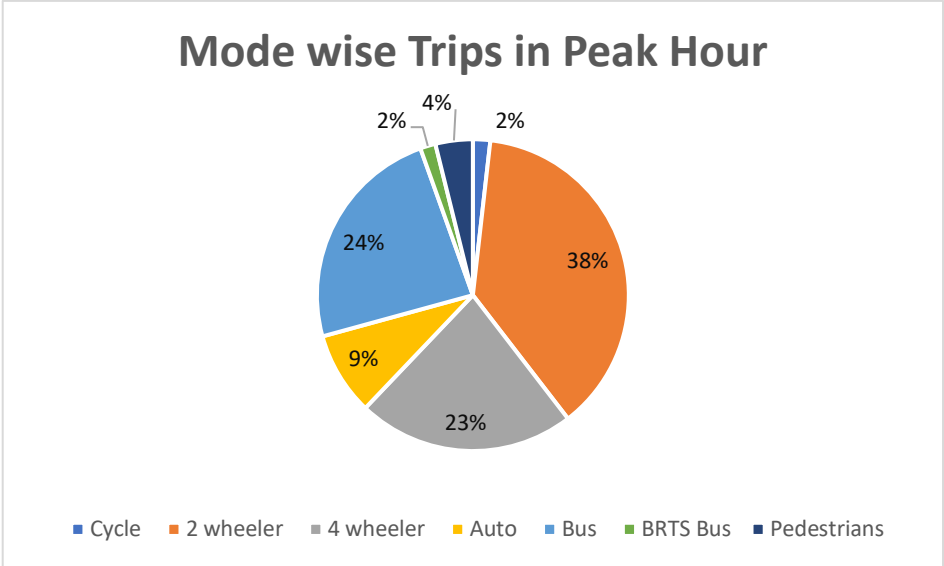
Traffic counts collected at the junctions of the BRT corridor was combined with occupancy data derived from the junction O-D survey to estimate composition and volume of traffic and trips at each junction and on different segments on the BRT corridor. The analysis of data suggests that maximum mode share of trips on the Gondal junction for modes other than BRT buses is 4% of trips by walk, 2% by cycle, 38% by two wheelers, 23% by cars, 9% auto rickshaws, 24% by RMTS buses and 2% by BRTS buses (Table 37). In terms of PCU, the share of traffic volume is 30% by two wheelers, 20% by cars, 19% by auto rickshaw, 1% by bicycle, 19% by LCV, 7% by Truck and 3% by buses (Table 38). Figure 31 and Figure 32 presents the maximum and minimum percentage share of trips by modes and traffic (in terms of PCU) by modes respectively. When comparing intersections, it is observed that Gondal junction carries the maximum volume of traffic in terms of PCU and serves the maximum trips in an hour. Similarly Ayodhya junction carries the minimum volume of PCU in an hour and serves the minimum number of trips in an hour. Table 39 and Table 40 presents the minimum peak hour volume and trips at Ayodhya junction on the BRT corridor. Figure 33 presents the total (sum of up and down direction) segment volume in terms of PCU and trips at different segments on the BRT corridor. This does not include trips or traffic volume because of BRT service. Mode wise trips and PCU at different junctions on BRTS corridor is presented in Annexure 8.6.

TABLE 37: EXISTING PEAK HOUR MODE WISE TRIPS AT GONDAL CHOWK (MAXIMUM)

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	346	2%
2 wheeler	7260	38%
4 wheeler	4337	23%
Auto	1659	9%
Bus	4576	24%
BRTS Bus	306	2%
Pedestrians	744	4%
Total	**19228**	**100%**

TABLE 38: PEAK HOUR MODE WISE PCU AT GONDAL CHOWK (MAXIMUM)

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	168	1%
2 wheeler	4254	30%
4 wheeler	2816	20%
Auto	2720	19%
Bus	458	3%
BRTS Bus	18	0%
LMV	2667	19%
Trucks	960	7%
Total	**14060**	**100%**



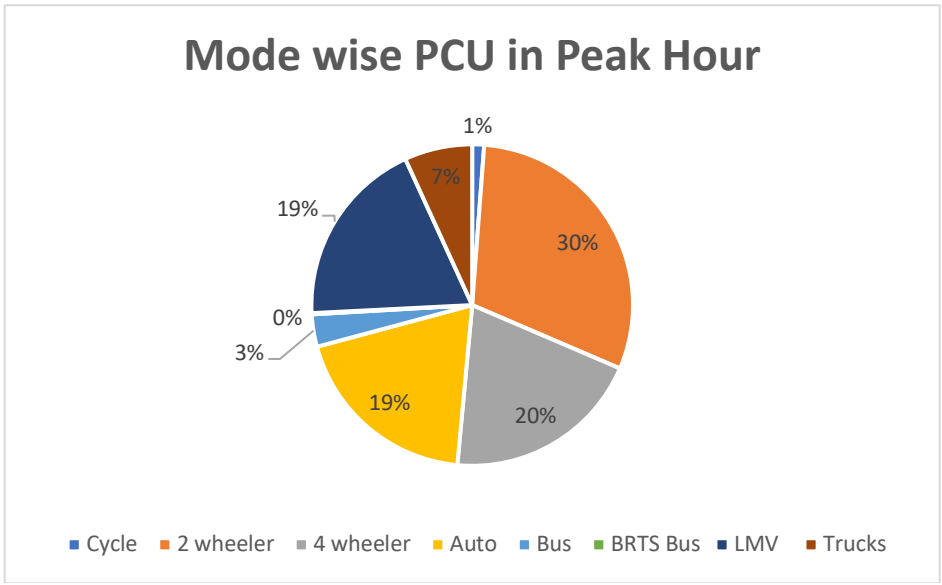


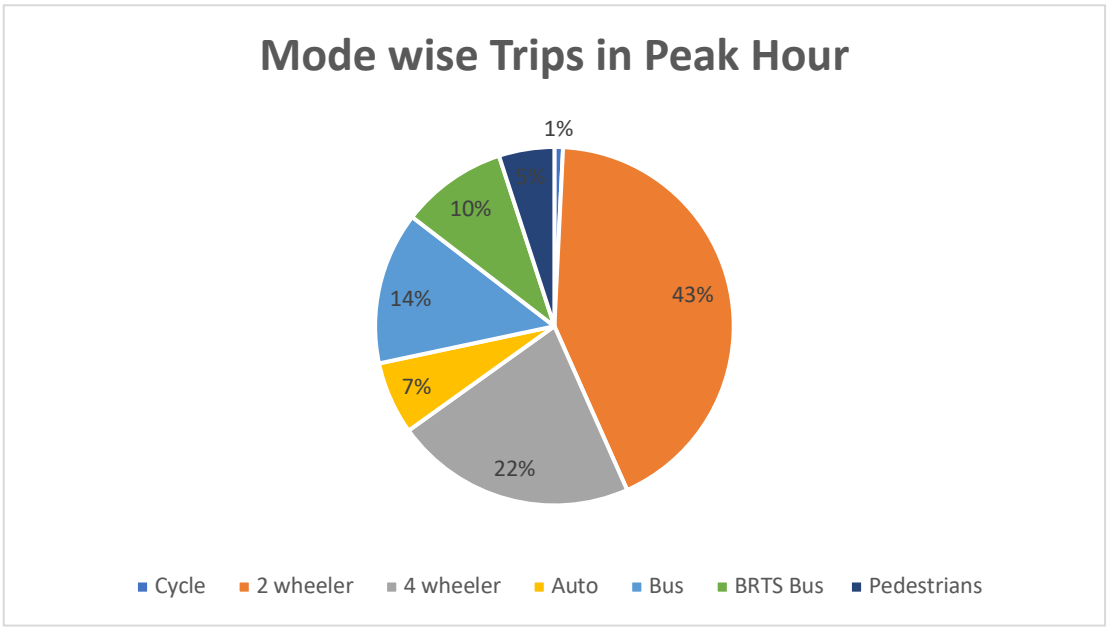
FIGURE 31: PIE CHART SHOWING PEAK HOUR MODE-WISE TRIPS & PCU AT GONDAL CHOWK (MAXIMUM)

TABLE 39: EXISTING PEAK HOUR MODE WISE TRIPS AT AYODHYA CHOWK (MINIMUM)

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	49	1%
2 wheeler	2724	43%
4 wheeler	1392	22%
Auto	420	7%
Bus	880	14%
BRTS Bus	612	10%
Pedestrians	320	5%
Total	**6398**	**100%**

TABLE 40: PEAK HOUR MODE-WISE PCU AT AYODHYA CHOWK (MINIMUM)

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	24	1%
2 wheeler	1596	40%
4 wheeler	904	23%
Auto	688	17%
Bus	88	2%
BRTS Bus	35	1%
LMV	288	7%
Trucks	360	9%
Total	**3983**	**100%**



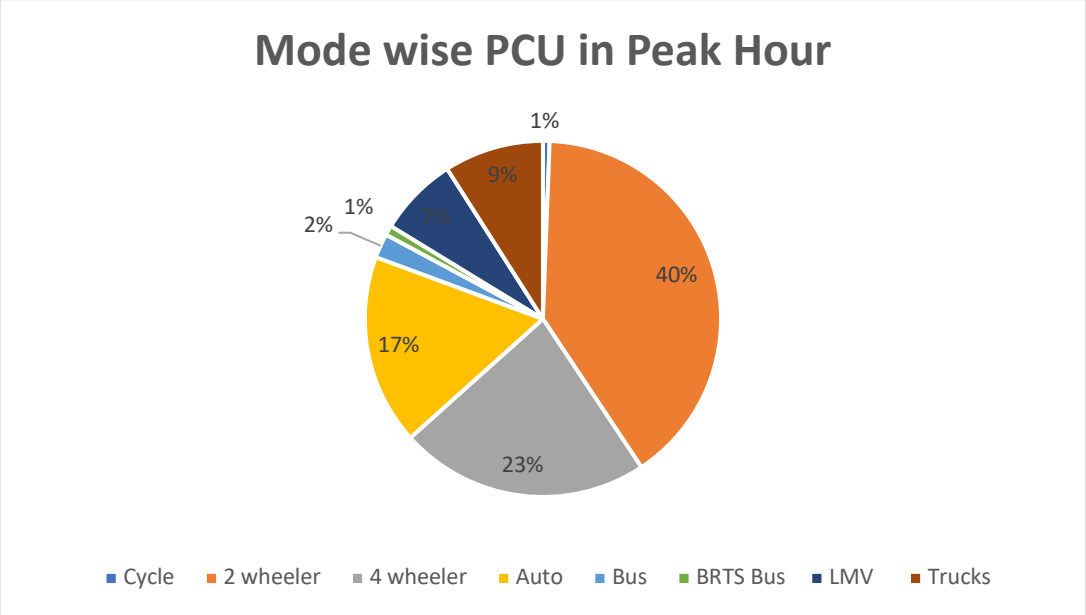


FIGURE 32: PIE CHART SHOWING PEAK HOUR MODE-WISE TRIPS & PCU AT AYODHYA CHOWK (MINIMUM)

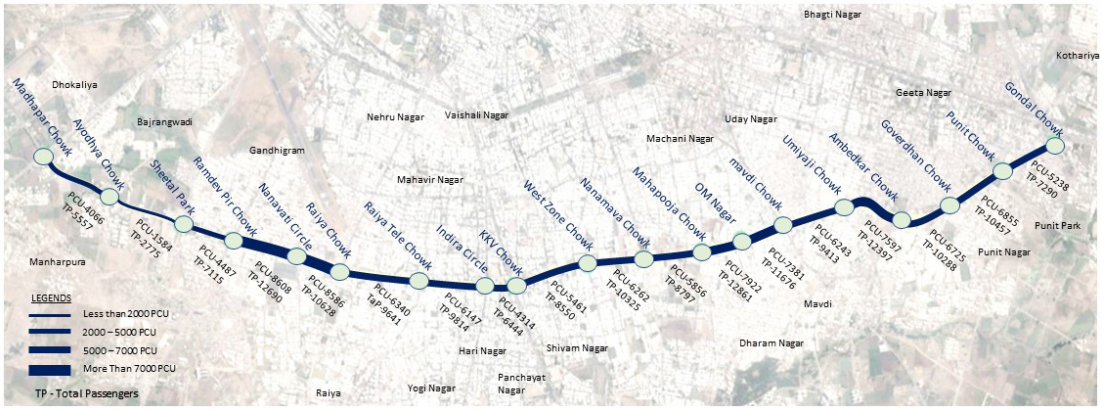


FIGURE 33: TRAFFIC VOLUME INTENSITY ON BRTS CORRIDOR

3.3.2.11 Traffic count estimation for Peak hour and daily traffic data

Above traffic volume data was collected on 13-15 December 2017 on different time period between 8 AM to 11 AM and 5 PM to 7 PM to achieved peak hour traffic. But it has been observed (from 8 hour traffic counts included in Rajkot BRTS DPR) that the peak traffic period was round 7:30 AM to 8:30 AM on the BRTS corridor. With the help of Pune's (Maharashtra) hourly traffic percentage trend and Rajkot junction traffic count survey (March 2008), percentage traffic trend for Rajkot has been calculated (Figure 34) for every junction. This has been achieved by deriving a ratio of traffic count for each hour to the peak hour traffic count This provided a correction factor to be applied to a specific hour traffic count, in order to derive a peak hour traffic count for that junction. Estimated peak hour and daily PCU calculations for each junction, based on this methodology have been presented in Table 41. Additionally, peak hour traffic PCU for each arm and each direction and each mode has been projected with the help of multiplication factor for every junction.

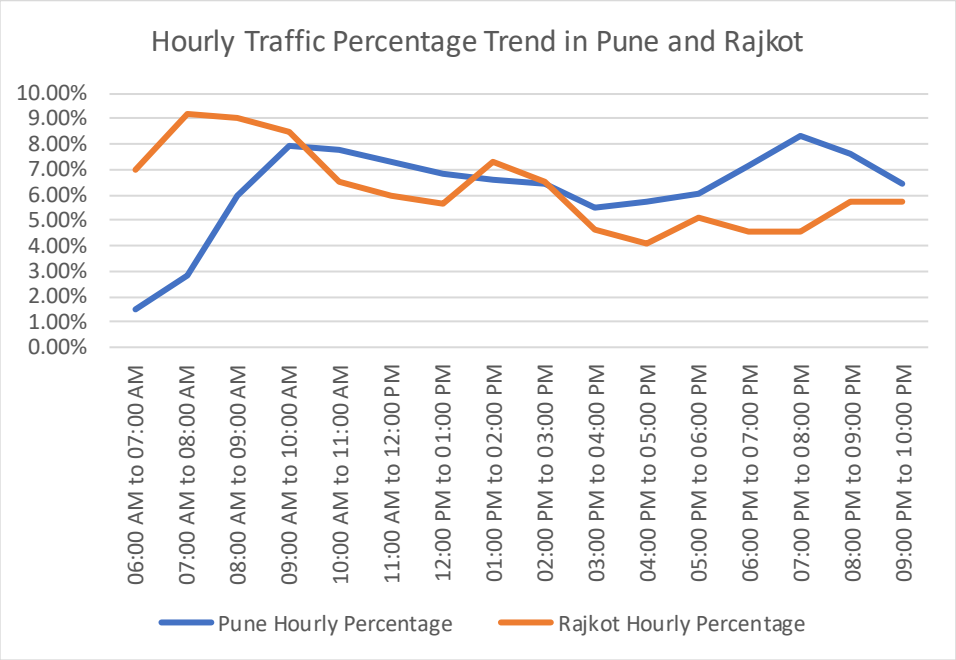


FIGURE 34: HOURLY TRAFFIC PERCENTAGE TREND IN PUNE AND RAJKOT

TABLE 41: TRAFFIC VOLUME PROJECTION FOR PEAK HOUR DATA

Nos.	Junction Name	Survey Hour	Junction PCU (survey)	Multiplication factor	Peak hour PCU	Daily PCU
1	Gondal Chowk	10:00 AM to 11:00 AM	14060	1.41	19808	216314
2	Punit Nagar Circle	09:00 AM to 10:00 AM	8988	1.08	9728	106236
3	Goverdhan Chowk	09:00 AM to 10:00 AM	6926	1.08	7496	81863
4	Ambedkar Nagar	09:00 AM to 10:00 AM	7419	1.08	8030	87693
5	Umiyaji Chowk	10:00 AM to 11:00 AM	9057	1.41	12760	139342
6	Mavdi Chowk	10:00 AM to 11:00 AM	12009	1.41	16918	184751
7	Om Nagar Chowk	08:00 AM to 09:00 AM	8212	1.01	8292	90550
8	Maha Puja Dhaam Chowk	06:00 PM to 07:00 PM	10053	1.31	13151	143611
9	Nana Mava Chowk	11:00 AM to 12:00 AM	10667	1.53	16280	177787
10	Big Bazar Chowk	09:00 AM to 10:00 AM	8616	1.08	9326	101844
11	Indira Chowk	05:00 PM to 06:00 PM	11480	1.80	20613	225102
12	KKV Chowk	06:00 PM to 07:00 PM	8396	2.02	16996	185605
13	Raiya telephone office Circle	06:00 PM to 07:00 PM	8696	2.02	17603	192236
14	Raiya Circle	09:00 AM to 10:00 AM	11058	1.08	11970	130714

Nos.	Junction Name	Survey Hour	Junction PCU (survey)	Multiplication factor	Peak hour PCU	Daily PCU
15	Nanavati Chowk	10:00 AM to 11:00 AM	9872	1.41	13907	151874
16	Rampir Chowk	11:00 AM to 12:00 AM	7927	1.53	12098	132113
17	Shital Park Chowk	10:00 AM to 11:00 AM	5408	1.41	7618	83194
18	Ayodhya Chowk	10:00 AM to 11:00 AM	3983	1.41	5611	61280
19	Madhapar Chowk	11:00 AM to 12:00 AM	7977	1.53	12174	132947

3.3.2.12 Average Speed of Modes other than Bus

Speed data on BRT corridor and on different roads in Rajkot was recorded using hand held mobile based GPS devices. The data was recorded on Auto Rickshaw, two wheelers and cars/taxi. A total of 25 samples were collected for auto rickshaw, 9 for two wheelers and 5 for cars/taxi. The analysis of this data suggests that the average speed by Auto rickshaw on BRT corridor is 27.05 km/h. Similarly, average speeds by two wheelers on the BRT corridor is 19.63 km/h, and by cars is 38.71 km/h respectively.

Average speeds in the rest of the city by auto rickshaw is estimated to be 26.69 km/hr and 36.74 km/h by car. Table 42 presents the speed data collected on both the city roads and the BRT corridor in Rajkot.

TABLE 42: AVERAGE SPEED DATA BY ALL MODES

S.No.	Mode	Start Point	End point	Distance (Km)	Avg. Speed (Km/h)
1	Auto	Maha Pooja Dham	Platinum Hotel	5.015	19.6
2	Auto	Mavdi Chowk	Nana Mava	1.74	14.52
3	Auto	KKV Chowk	Nana Mava	1.16	31.23
4	Auto	Nana Mava	Om Nagar	0.99	30.83
5	Bus	Om Nagar	Big Bazzar Junction	1.58	25.84
6	Bus	Big Bazzar Junction	Raiya Chowk	2.39	24.16
7	Bus	Madhapar Chowk	Raiya Tele Exchange	3.82	26.92
8	Auto	Bhagat Singh Chowk	Jilla Panchayat Circle	1.05	26.91
9	Auto	Nanavati Circle	Ayodhya Chowk	1.86	33.42
10	Auto	Jilla Panchayat Circle	Mahilla College Chowk	0.89	27.86
11	Auto	Mahilla College Chowk	Big Bazzar Junction	2.32	34.69
12	Auto	Big Bazzar Junction	Maha Pooja Dham	1.1	33.85

S.No.	Mode	Start Point	End point	Distance (Km)	Avg. Speed (Km/h)
13	Auto	Maha Pooja Dham	Umiyaji Chowk	1.43	20.93
14	Auto	Umiyaji Chowk	Ambedkar Nagar Circle	0.6	28.2
15	Car	Sharda Baag	Platinum Hotel	0.84	36.74
16	Auto	Platinum Hotel	Kishanpara Circle	1.69	26.81
17	Auto	Kishanpara Circle	Mahilla College Chowk	0.45	28.29
18	Auto	Mahilla College Chowk	Kotecha Circle	0.87	28.59
19	Auto	Kotecha Circle	KKV Chowk	0.76	31.81
20	Auto	Sharda Baag	Jilla Panchayat Circle	0.72	32.15
21	Auto	Kishanpara Circle	Mahilla College Chowk	0.43	26.86
22	Auto	Big Bazzar Junction	Nana Mava	0.504	27.16
23	Auto	Kishanpara Circle	Hanuman Modhi Chowk	1.17	25.71
24	Auto	Raiya Chowk	Hanuman Modhi Chowk	0.69	20.94
25	Auto	New Era School	Bholeshwar Mahadev Temple	0.72	26.38
26	Auto	Appolo Pharmacy	Kishanpara Circle	0.18	23.75
27	Auto	Bal Udyan	Sharda Baag	0.49	28.79
28	Auto	INOX	Platinum Hotel	0.565	21.43
29	Auto	Hanuman Modhi Chowk	Raiya Chowk	0.75	25.57
30	Car	Shital Park	Ayodhya Chowk	0.79	42.95
31	Car	Ayodhya Chowk	Madhapar Chowk	0.646	44.91
32	Car	Madhapar Chowk	Bhandhan Party Plot	0.98	36.46
33	Car	Bandhan Party Plot	Shital Park	0.41	32.5
34	Bike	Raiya Telephone Exchange	Indira Circle	0.7	22.51
35	Motorcycle	Indira Circle	West Zone 2	1	8.22
36	Motorcycle	West Zone 2	Nana Mava Circle	0.55	20.09
37	Motorcycle	Nana Mava Circle	Mahapuja Dham	0.6	13.09

S.No.	Mode	Start Point	End point	Distance (Km)	Avg. Speed (Km/h)
38	Motorcycle	Maha Pooja Dham	Om Nagar	0.55	29.84
39	Motorcycle	Om Nagar	Mavdi Chowk	0.55	16.89
40	Motorcycle	Mavdi Chowk	Umiyaji Chowk	0.6	8.83
41	Motorcycle	Umiyaji Chowk	Ambedkar Nagar Circle	0.6	27.44
42	Motorcycle	Ambedkar Nagar Chowk	Goverdhan Chowk	0.5	29.76

3.3.2.13 Willingness to use BRTS Perception survey

Perception survey has been conducted during the second site visit to Rajkot. Four questions has asked regarding BRTS usage and last mile connectivity option and total 36 survey samples have been collected. Out of total, 61% of respondants state that the 'BRTS station is far from their origin and destination' and that is the reason that they are not prefering BRTS as a mode of transport. 36% respondants state that 'High Speed – low journey time than other mode' is the reason for which they are or they will prefer BRTS as a mode of transport. More than 50% respondent have answered that more people can use BRTS if waiting time for BRTS is reduced. For preferred last mile connectivity option, about 44% repondents have opted for RMTS as the most preferred last mile connectivity mode. This was followed by 19% each for walk and auto rickshaw, while the least, i.e. 11% opted for cycling as the preferable last mile connectivity mode. Outcomes from perception survey have been presented in Table 43.

TABLE 43: PERCEPTION SURVEY OUTCOMES

Why won't you use BRTS?					
Poor, Unreliable Service-high wait time	Poor Quality of Buses, Uncomfortable Buses or station	Station acess is difficult-difficult to cross road at junctions	Low Speed-Longer journey time than other modes	Station is Far from OD	
11%	**11%**	**11%**	**6%**	**61%**	
Why would you use BRTS?					
Great Service-low waiting time	Good quality of bus, very comfortable stations-greatexperience	Station is easy to access-easy to cross the road at junction	High speed-low journey time than other modes	Station is very close to my O D	
33%	**13%**	**7%**	**36%**	**11%**	
If Waiting time for BRTS is reduced considerably, it will result in -					
No change expected in number of people using it	some more people may use BRT	Many more people may use it	Considerable change (50%-75%)	The ridership will more than double	
19%	**53%**	**25%**	**0%**	**3%**	
Which of the feeder options if improved/provided will make you use BRTS?					
Good Footpaths & pedestrian crossing	Cycles & good cycle tracks	Good Auto rickshaw & e-rickshaw connection	RMT Buses	None of these	Any Other
19%	**11%**	**19%**	**44%**	**4%**	**4%**

4 Comparative analysis for last mile connectivity options

A total of six last mile connectivity options have been shortlisted based on literature review, as well assessment of city mobility plan, BRT DPR and experience from other cities in India. These options are:

1. Walk – Improved walkability to BRT corridor from surrounding areas/zones
2. Cycling – Improved bicycling infrastructure on access streets to BRT with or without an integrated biccle sharing system.
3. RMTS buses – Operational, service ad infrastructure planning of RMTS as specifically planned feeder service to BRTS
4. Hybrid BRT – Overlapping routes, using BRT corridor, but which connect origin and destination outside the corridor. These services may be operated by RRL or RMTS
5. Auto rickshaw – Organised auto rickshaw based feeder services, with scheduled trips and regulated (and integrated) fare structure
6. E rickshaw - Organised e-rickshaw based feeder services, with scheduled trips and regulated (and integrated) fare structure

As discussed in previous section, the city was divided in to 177 zones for assessment of trip demand in terms of origin and destination. Based on this mode wise O-D data - daily trips X (origin + destination), forms the basis of estimating potential demand for the BRT feeder mode options listed above. To help quantify this demand, a spread sheet based model has been developed. This section presents the details of this model along with its findings based on data from both current and horizon year.

4.1 Model Development and Base Year Results

The principle behind estimations in the model is the application of estimated cumulative probability of shift to BRT, from each mode in each zone, on to demand from each zone. The cumulatie probability estimate is based on the product of three probabilities – probability to shift because of overalapping trip length on the corridor as well proximity to BRT station, probability of shift because of cost savings and probability to shift because of time saving. The product of cumulative probability and OD in each zone, provided the number of trips that may shift to BRT. The spread sheet allows this estimation from each (current mode) to each of the proposed feeder modes.

4.1.1 Model Assumptions and default input data for estimation

To derive the estimates from the model, the first step is to include the input data such as current cost of using different modes, current average speeds and conditional proability of shift values. Average speed and journey cost data has been derived from the primary and secondary data collected as well other secondary sources (discussed in the previous section). However, the probability of shift data based on different conditions, such as different overlapping trip lengths, has been assumed based informed guestimates.

Table 44 presents mode wise average speed used in the model (both for existing proposed condition) as data derived from primary and secondary data. Table 45 presents mode wise per km cost (for undertaking the journey using that mode) as derived from primary and secondary data. Table 46 presents Access time, Changeover time and cost (both for existing proposed condition) as data derived from primary data. Table 47 presents the applicable conditions and assumed conditional probability of shift values, for application of probabilities based on distance from the corridor. Table 48 presents the applicable consitions and assumed conditional probability of shift values for application of probabilities based on relative journey cost saving. Table 49 presents the applicable conditions and assumed conditional probability of shift values, for application of probabilities based on relative journey time saving. Together the data presented in these tables forms the default input data in the model.

TABLE 44: MODE-WISE AVERAGE OPERATION SPEED (DEFAULT DATA IN MODEL)

Average Operational Speed (Km/h)		
	Off BRT corridor	**On BRT corridor**
Car	**39.21 Km/h** *(Derived from Primary Survey - Speed survey analysis Off BRT corridor)*	**36.74 Km/h** *(Derived from Primary Survey - Speed survey analysis on BRT corridor)*
2W	**22.63 Km/h** *(Derived from Primary Survey - Speed survey analysis Off BRT corridor)*	**22.5 Km/h** *(Derived from Primary Survey - Speed survey analysis on BRT corridor)*
3W	**26.45 Km/h** *(Derived from Primary Survey - Speed survey analysis Off BRT corridor)*	**25.92 Km/h** *(Derived from Primary Survey - Speed survey analysis on BRT corridor)*
Shared 3W	**14.81 Km/h** *(Derived from Primary Survey - Speed survey analysis Off BRT corridor)*	**14.81 Km/h** *(Derived from Primary Survey - Speed survey analysis on BRT corridor)*
RMTS	**18.32 Km/h** *(Derived from Secondary data - RMTS Bus Schecdule)*	**18.32 Km/h** *(Derived from Secondary data - RMTS Bus Schecdule)*
BRTS	-	**18.48 Km/h** *(Derived from Secondary data - BRTS Bus Schecdule)*
Cyclist	**11 Km/h** *(Source: NMT Planning and Design Guideline)*	**14 Km/h** *(Source: NMT Planning and Design Guideline)*
Pedestrian	**4.14 Km/h** *(Source: TRIPP,IIT Delhi, Mtech thesis – Sandeep Gandhi)*	**5.04 Km/h** *(Source: TRIPP,IIT Delhi, Mtech thesis - Sandeep Gandhi)*

TABLE 45: MODE-WISE COST PER KILOMETRE (DEFAULT DATA IN MODEL)

Cost per Kilometre (Rs./Km)		
	Off BRT corridor	**On BRT corridor**
Car (Existing & Proposed)	**Rs. 6.10 / km** *(Derived from actual fuel cost and maintenance cost)*	**Rs. 6.10 / km** *(Derived from actual fuel cost and maintenance cost)*
2W (Existing & Proposed)	**Rs. 3.40 / km** *(Derived from actual fuel cost and maintenance cost)*	**Rs. 3.40 / km** *(Derived from actual fuel cost and maintenance cost)*
3W (Existing)	**Rs. 11.00 / km** *(Derived from Rajkot auto rickshaw teriff charges)*	**Rs. 11.00 / km** *(Derived from Rajkot auto rickshaw teriff charges)*
E-rickshaw (Proposed)	**Rs. 3.50 / km** *(Derived from standard E-rickshaw charges (Rs.8/km) divided by avg. occupancy (2.29) of E-rickshaw)*	**Rs. 3.50 / km** *(Derived from standard E-rickshaw charges (Rs.8/km) divided by avg. occupancy (2.29) of E-rickshaw)*

Cost per Kilometre (Rs./Km)		
	Off BRT corridor	**On BRT corridor**
Shared 3W (Existing)	**Rs. 10.00 / km** *(Derived from Shared auto rickshaw charges of Rajkot)*	**Rs. 10.00 / km** *(Derived from Shared auto rickshaw charges of Rajkot)*
Shared 3W (Proposed)	**Rs. 4.50 / km** *(Derived from standard auto rickshaw charges of Rajkot (Rs.11/km) divided by avg. occupancy (2.44) of shared rickshaw)*	**Rs. 4.50 / km** *(Derived from standard auto rickshaw charges of Rajkot (Rs.11/km) divided by avg. occupancy (2.44) of shared rickshaw)*
RMTS (Existing & Proposed)	**Rs. 1.00 / km** *(Derived from Secondary data - RMTS fare matrix)*	**Rs. 1.00 / km** *(Derived from Secondary data - RMTS fare matrix)*
RMTS – Hybrid BRTS (Proposed)	**Rs. 1.00 / km** *(Derived from Secondary data - RMTS fare matrix)*	**Rs. 1.00 / km** *(Derived from Secondary data - RMTS fare matrix)*
BRTS (Existing & Proposed)	**-**	**Rs. 1.50 / km** *(Derived from Secondary data - BRTS fare matrix)*
Cyclist	**Rs. 0.00 / km**	**Rs. 0.00 / km**
Pedestrian	**Rs. 0.00 / km**	**Rs. 0.00 / km**

TABLE 46: CHANGEOVER TIME, ACCESS TIME AND CHANGEOVER COST (DEFAULT DATA IN MODEL)

Modes	Existing Off BRT		Existing On BRT
	Changeover time (Min)	**Access Time (min)**	**Access Time (min)**
3W	**0.00 min**	**5.40 min** *(Derived from walking time for 100m + junction crossing time (0.75min) for both access and egress + auto rickshaw waiting time (1min))*	**4.88 min** *(Derived from walking time for 100m + junction crossing time (0.75min) for both access and egress + auto rickshaw waiting time (1min))*
Shared3W	**0.00 min**	**12.20 min** *(Derived from walking time for 300m + junction crossing time (0.75min) for both access and egress + shared rickshaw waiting time (2min))*	**10.64 min** *(Derived from walking time for 300m + junction crossing time (0.75min) for both access and egress + shared rickshaw waiting time (2min))*
RMTS	**0.00 min**	**24.43 min** *(Derived from walking time for 610m + junction crossing time (0.75min) for both access and egress + RMTS bus waiting time (6min))*	**21.27 min** *(Derived from walking time for 610m + junction crossing time (0.75min) for both access and egress + RMTS bus waiting time (6min))*
BRTS	**-**	**-**	**18.77 min** *(Derived from walking time for 610m +*

Modes	Existing Off BRT		Existing On BRT
	Changeover time (Min)	**Access Time (min)**	**Access Time (min)**
			junction crossing time (0.75min) for both access and egress + BRTS bus waiting time (3.5min))
Modes	**Proposed Off BRT**		**Proposed On BRT**
	Changeover time (Min)	**Access Time (min)**	**Access Time (min)**
E-rickshaw	**7.79 min** *(Derived from walking time for 75m + junction crossing time (0.75min) for both access and egress + E-rickshaw waiting time (1min)+ BRTS Bus waiting time(3.5m))*	**5.40 min** *(Derived from walking time for 100m + junction crossing time (0.75min) for both access and egress + E-rickshaw waiting time (1min))*	**0.00 min**
Shared3W	**8.79 min** *(Derived from walking time for 75m + junction crossing time (0.75min) for both access and egress + shared rickshaw waiting time (2min)+ BRTS Bus waiting time(3.5m))*	**12.20 min** *(Derived from walking time for 300m + junction crossing time (0.75min) for both access and egress + auto rickshaw waiting time (2min))*	**0.00 min**
RMTS - Hybrid BRT	**0.00 min**	**24.43 min** *(Derived from walking time for 610m + junction crossing time (0.75min) for both access and egress + RMTS/BRTS bus waiting time (6min))*	**19.52 min** *(Derived from walking time for 610m + junction crossing time (0.75min) for both access and egress + RMTS/BRTS bus waiting time (3.5min))*
RMTS	**13.38 min** *(Derived from walking time for 100m + junction crossing time (0.75min) for both access and egress + RMTS bus waiting time (6min) + BRTS Bus waiting time (3.5m))*	**24.43 min** *(Derived from walking time for 610m + junction crossing time (0.75min) for both access and egress + RMTS bus waiting time (6min))*	**0.00 min**
BRTS	**-**	**-**	**19.52 min** *(Derived from walking time for 610m + junction crossing time (0.75min) for both access and egress + BRTS bus waiting time (3.5min))*
Cyclist	**8.60 min** *(Derived from walking time for 50m + junction crossing time (0.75min) + bicycle parking time (1.5min) for both access*	**5.95 min** *(Derived from walking time for 50m + junction crossing time (0.75min) + bicycle parking time (1.5min)*	**0.00 min**

Modes	Existing Off BRT		Existing On BRT
	Changeover time (Min)	Access Time (min)	Access Time (min)
	and egress + BRTS Bus waiting time (3.5m))	*for both access and egress)*	
Pedestrian	**6.19 min** *(Derived from walking time for 50m + junction crossing time (0.75min) for both access and egress + BRTS Bus waiting time (3.5m))*	**0.00 min**	**0.00 min**
Changeover cost for RMTS	**Rs. 4.50** *Difference between the total cost of travelling with RMTS and travelling on both RMTS and BRTS plying on the same route.*		

TABLE 47: PROBABILITIES FOR TRIP LENGTH AND TRIP COMPOSITION (DEFAULT DATA IN MODEL)

Trip length and trip composition	Probabilities
Trip Length> Distace from the BRT	**2%**
Trip Length>0.8 km (Distace from the BRT) + Distace off the BRT> Distace from the BRT	**4%**
Trip Length>0.8 km (Distace from the BRT) + Distace off the BRT>0.8 km Distace from the BRT	**6%**
Trip Length>0.6 km (Distace from the BRT) + Distace off the BRT> Distace from the BRT	**8%**
Trip Length>0.6 km (Distace from the BRT) + Distace off the BRT>0.8 km Distace from the BRT	**12%**
Trip Length>0.6 km (Distace from the BRT) + Distace off the BRT>0.6 km Distace from the BRT	**18%**
Trip Length>0.4 km (Distace from the BRT) + Distace off the BRT> Distace from the BRT	**14%**
Trip Length>0.4 km (Distace from the BRT) + Distace off the BRT>0.8 km Distace from the BRT	**20%**
Trip Length>0.4 km (Distace from the BRT) + Distace off the BRT>0.6 km Distace from the BRT	**26%**
Trip Length>0.4 km (Distace from the BRT) + Distace off the BRT>0.4 km Distace from the BRT	**32%**
Trip Length>0.2 km (Distace from the BRT) + Distace off the BRT> Distace from the BRT	**22%**
Trip Length>0.2 km (Distace from the BRT) + Distace off the BRT>0.8 km Distace from the BRT	**30%**
Trip Length>0.2 km (Distace from the BRT) + Distace off the BRT>0.6 km Distace from the BRT	**38%**
Trip Length>0.2 km (Distace from the BRT) + Distace off the BRT>0.4 km Distace from the BRT	**46%**
Trip Length>0.2 km (Distace from the BRT) + Distace off the BRT>0.2 km Distace from the BRT	**54%**
Trip Length<0.2 km (Distace from the BRT) + Distace off the BRT> Distace from the BRT	**32%**
Trip Length<0.2 km (Distace from the BRT) + Distace off the BRT>0.8km Distace from the BRT	**42%**
Trip Length<0.2 km (Distace from the BRT) + Distace off the BRT>0.6km Distace from the BRT	**52%**
Trip Length<0.2 km (Distace from the BRT) + Distace off the BRT>0.4km Distace from the BRT	**62%**

Trip length and trip composition	Probabilities
Trip Length<0.2 km (Distace from the BRT) + Distace off the BRT>0.2km Distace from the BRT	72%
Trip Length<0.2 km (Distace from the BRT) + Distace off the BRT<0.2km Distace from the BRT	82%

TABLE 48: PROBABILITIES FOR TRIP COST (DEFAULT DATA IN MODEL)

Trip Cost	Probabilities
Existing Cost > Proposed Cost	4%
0.95 Existing Cost > Proposed Cost	12%
0.8 Existing Cost > Proposed Cost	24%
0.65Existing Cost > Proposed Cost	40%
0.5 Existing Cost > Proposed Cost	60%
0.5 Existing Cost > Proposed Cost	84%

TABLE 49: PROBABILITIES FOR JOURNEY TIME (DEFAULT DATA IN MODEL)

Journey Time	Probabilities
Existing journey Time>Proposed journey Time	4%
0.95 Existing journey Time>Proposed journey Time	12%
0.8 Existing journey Time>Proposed journey Time	24%
0.65 Existing journey Time>Proposed journey Time	40%
0.5 Existing journey Time>Proposed journey Time	60%
0.5 Existing journey Time>Proposed journey Time	84%

4.1.2 Zone and mode wise present origin-destination demand

The current year daily trip demand from each zone and average trip lngth (mode wise) for these trips, has been estimated by combining primary data from origin and destination survey, bus ETM data (for RMTS and BRTS) and intersection traffic volume counts. The estimation methodology for this zone wise trip demand and average trip lengths has been discussed below for buses and for all other modes.

4.1.2.1 Zone wise Average Trip Length ad Daily Trip Demand for Buses

Zone wise average trip length and daily trip demand has been estimated for RMTS and BRTS passengers using the ETM data from the two services. ETM data is availale on the bases of bus stop to bus stop trips for each route. This data has been classified in to boarding trips that cross or touch the BRT corridor (from each boarding station) and alighting trips that originate from bus stops on the other side of the BRT corridor. Thus only trips which extended upto or beyond and from or before the BRT corridor were accounted for. From the ETM data average trip lengths of both upward and downward trips and for both boarding and alighting was derived at each bus stop. Trip length was estimated by plotting all bus stops on google earth and including distances between each bus stop compare in the analysis.

Following this all bus stops were marked on the google earth and classified as per zones within which they are located. Sum of daily boarding and alighting figures for all bus stops (from different or same routes) following within each zone were totalled as the bus trips originating or destined to that zone. Similalry using bus stop wise O-D data, weighted average trip length for bus trips in each zone as derived. Since this trip length was a representation of bus stop to bus stop trip length and not a door to door trip length, an average of access and egress trip length neded to be added. This average access and egress trip length is. 1.22 km. This value

has been derived from the O-D survey conducted at the BRTS stations and discussed in previous section.

Since O-D survey were not conducted at RMTS stops, and because the average access and egress distance is estimated to be less than the dimensions of each zone, it was assumed that the O-D fof RMTS passenger lies in the zone at which the journey begins or ends. However, O-D survey was conducted at BRTS stations and a percentage breakup of trips from different zones is known. This percentage breakup was applied to daily number of boarding and alighting trips at each bus stop, in order to generate the actual daily O-D data for the BRTS trips. Similar to the method used for RMTS, ETM data was used to estimate the zone wise numbers and average trip length of BRTS commuters.

Annexure 8.7 presents the zoneiwse average trip demand and trip length for commuters using RMTS and BRTS services.

4.1.2.2 Zonewise Average Daily Trip Length and Trip Demand for Commuters Using Modes other than Buses

O-D survey for commuters using modes other than buses was conducted at all interscrtions on the BRT corridor. The findings of this survey have been discussed in the previous section. Using this O-D survey origin and destination of these trips (mode wise) has been assigned to the defined zones along with their trip length. Hence zone and mode wise average trip length is known along with the breakup of average trips from each zone that overlaps with the corridor and that which is off the corridor.

However this data is a sample collected at aparticular time of the day, and can be used as a zone wise representational percentage of trips from each intersections. This when multiplied with the daily arm, direction and mode wise trip data provides the number of non bus trips and average trip length (by each mode) from each zone. Annexure 8.8 presents the zonewise average trip demand and trip length for commuters using modes, other than buses and presents zone wise daily demand of commuters using or crossing BRT corridor for each of the surveyed modes.

Figure 35 presents the aggregated trips (excluding BRTS commuters) from each zone using parts of the BRT corridor or crossing the same.

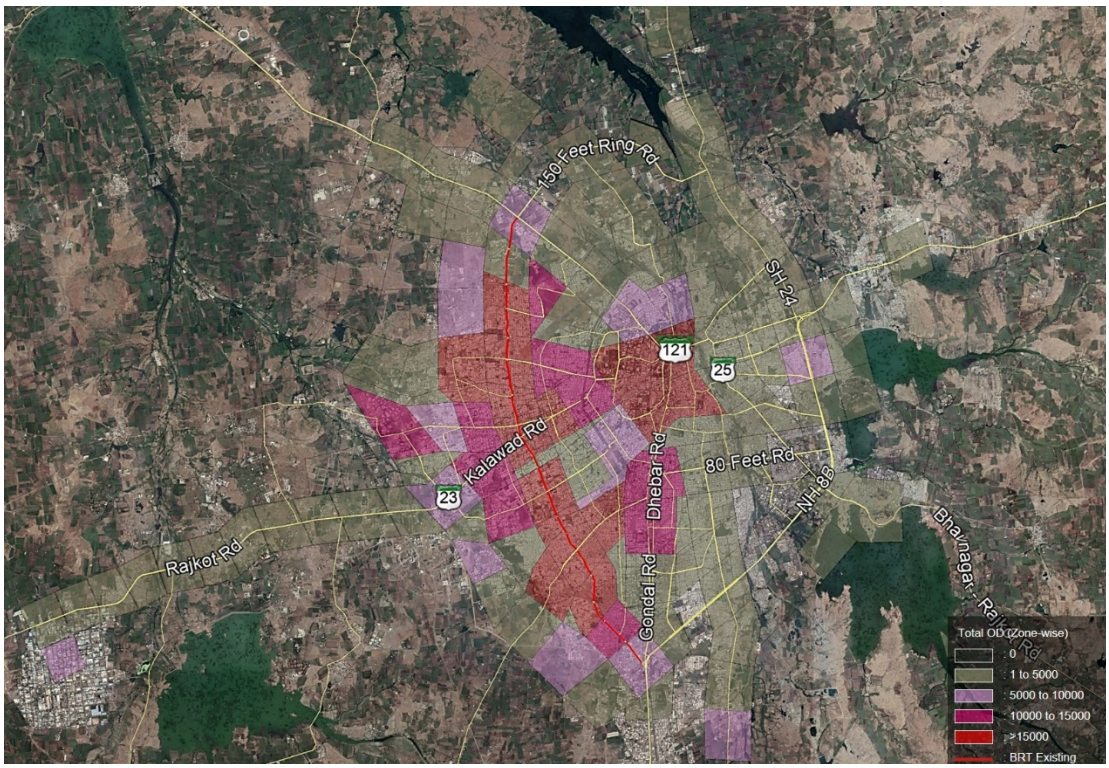


FIGURE 35: O-D IN BASE YEAR

It is evident from the figure presented above that maximum number of ODs are from zone 109 i.e., KKV Chowk (color coded red) and minimum is zero (having no colour). Apart from zones along BRTs corridor, another maximum ODs (color coded red) can be seen near bus terminal and race course having zone numbers 77, 78, 91& 92. Zones having majority of ODs which are more than 15000 in numbers are falling along/ within half a km of the BRT corridor. Where as ODs ranging from 10,000 to 15,000 (color coded magenta) and 5000 to 10,000 (color coded pink) are falling within a range of 1-2km. Also, it has been observed that there are two prominent distant zones ranging 5000 to 10,000 ODs from Metoda (zone no. 177) and Kothariya (zone no. 165).

4.1.3 Model Outputs for Base Year

Zone wise trip demand and trip length data, including data on breakup of trip length on and off the BRT corridor, for all modes was input in the model along with the default data discussed above. The model uses the trip length data to estimate the average journey time and journey cost by different modes from each zone. Similarly journey time and cost is estimated as a combination of different feeder and BRT trips for specific existing journey details for each mode from each zone. Default probability values (discussed above) are applied to the comparison of these current and proposed journey time anc cost data, to estimate the overall proability of shift from each current mode to each feeder mode for each zone. Zone wise model outputs in terms of expected shift from each existing mode to each feeder mode for each zone has been presented in Annexure 8.9. Figure 36 to Figure 41 presents zone wise aggregated demand for different proposed feeder modes to BRT in the current year.

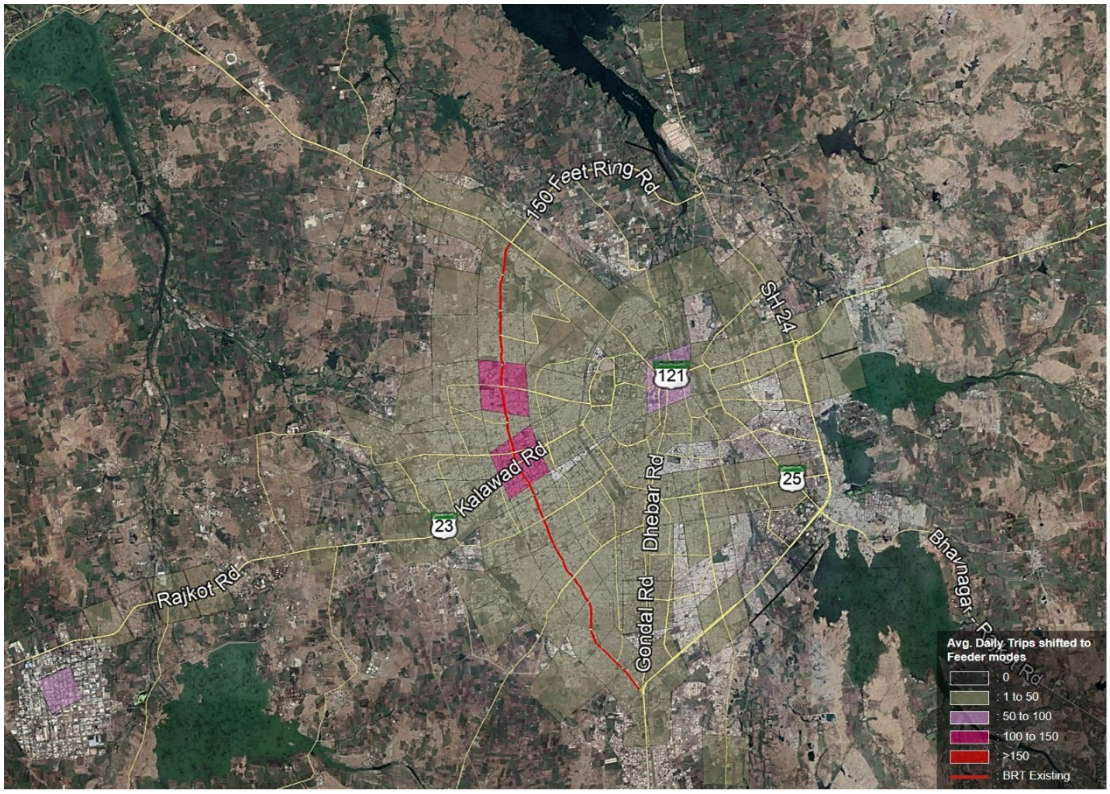


FIGURE 36: AVERAGE TRIPS SHIFTED TO FEEDER WALK IN BASE YEAR

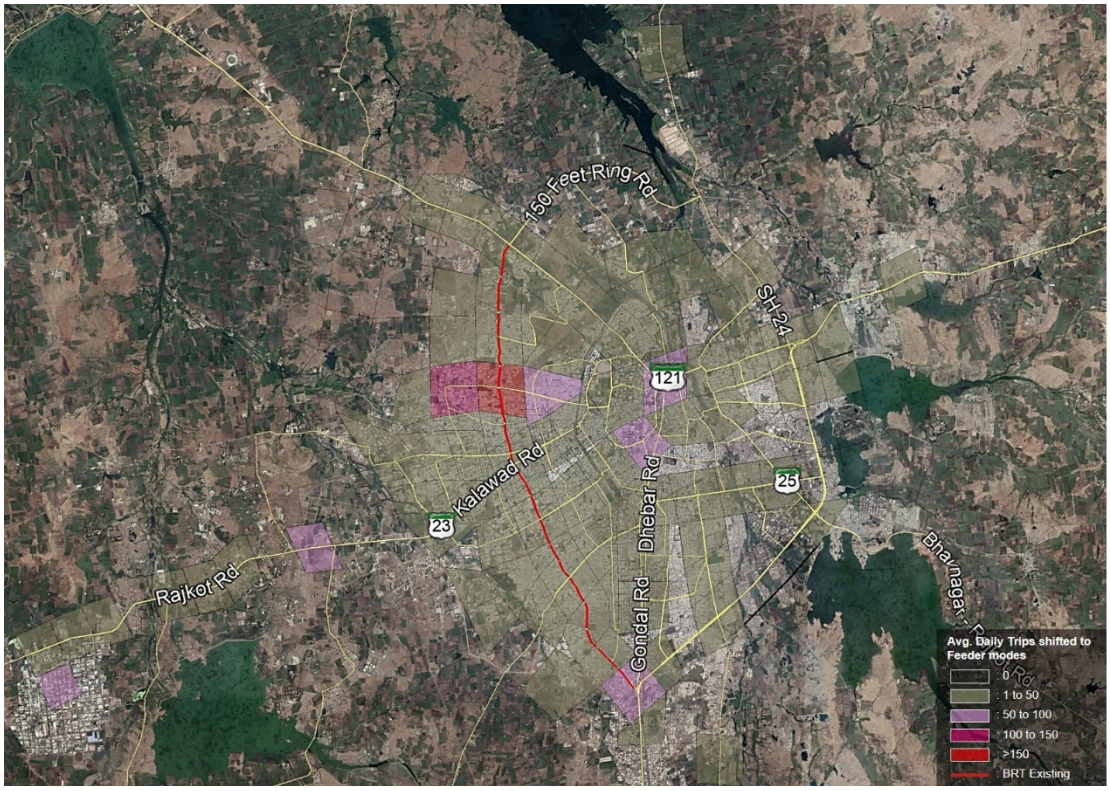


FIGURE 37: AVERAGE TRIPS SHIFTED TO FEEDER BICYCLE SHARING IN BASE YEAR

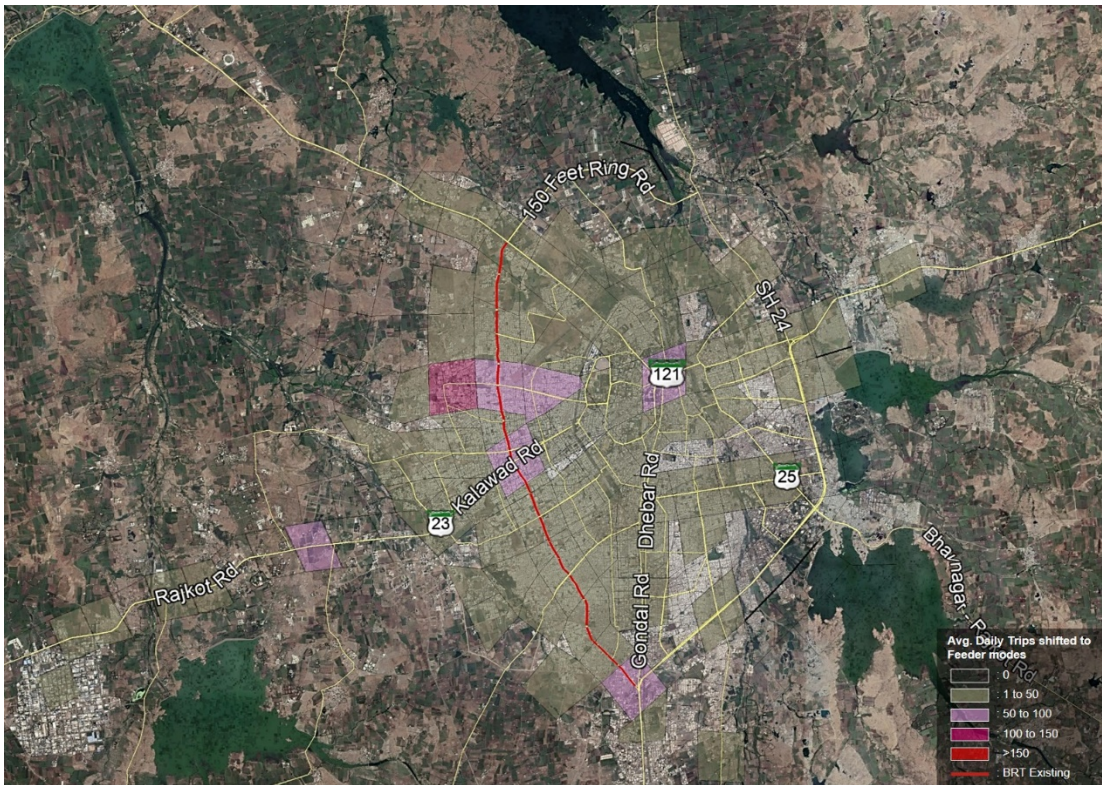


FIGURE 38: AVERAGE TRIPS SHIFTED TO RMTS-BUS FEEDER IN BASE YEAR

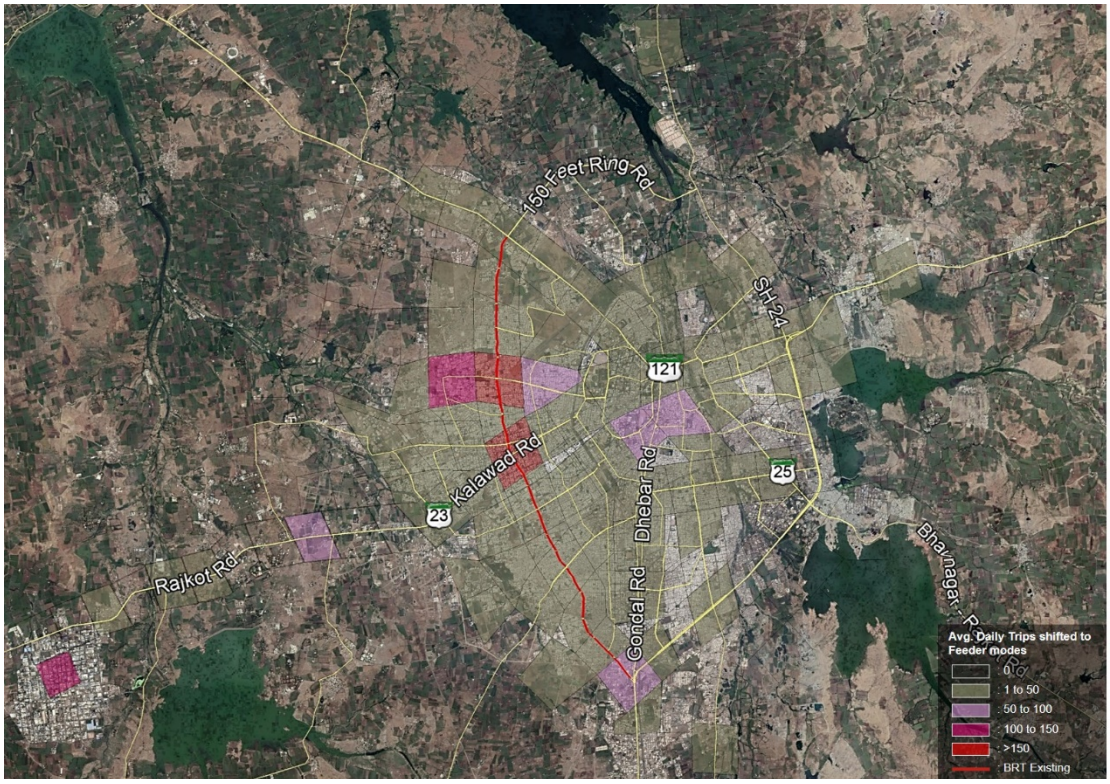


FIGURE 39: AVERAGE TRIPS SHIFTED TO HYBRID FEEDER IN BASE YEAR

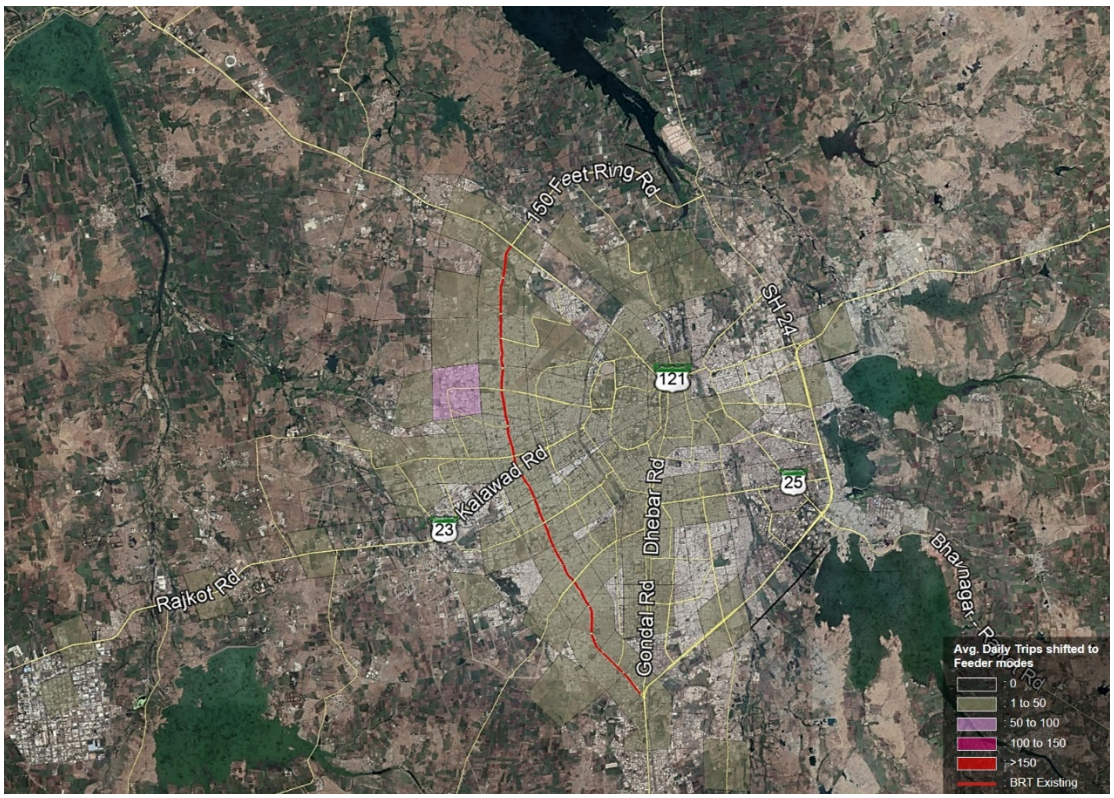


FIGURE 40: AVERAGE TRIPS SHIFTED TO SHARED 3W IN BASE YEAR

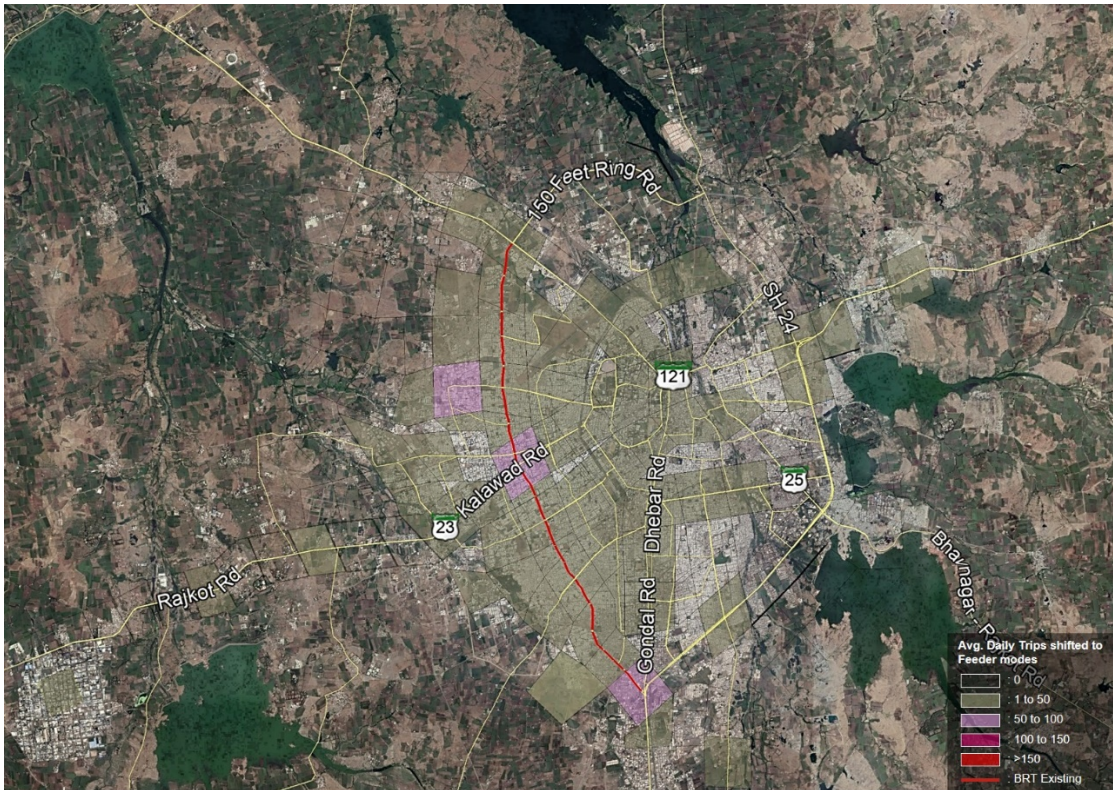


FIGURE 41: AVERAGE TRIPS SHIFTED TO E RICKSHAW IN BASE YEAR

It is evident from the figures presented above that Hybrid feeder mode is likely to shift maximum number of commuters to BRT. This is because journey cost of 2W, 4W and Shared Auto users is significantly reducing if they are shifting to hybrid mode. Overall the model suggests that on an average a total of 7543 no. of trips, which is 0.96 percent of trips currently using parts of the BRT corridor or crossing it, shall shift to BRT if the above listed feeder modes are introduced.

4.2 Horizon year scenario development

Two horizon years planned for in this study are 2023 and 2028. It is expected that based on the achieved changes in Urban development in the city horizon year scenario and demand can be defined. These have been defined for each of the two horizon years in the following sub sections. Subsequent section also presents the model input and outputs based on each horizon year scenario.

4.2.1 Horizon Year 2023

Because of the current rapid increase in the development of land around the BRT corridor (including observed historic trend from 2010) it is expected that all undeveloped/vacant land along the BRT corridor would have been developed in line with the current development pattern. This includes Madhapar, Ayodhya chowk, Shital park, Nanavati chowk, Raiya, Nana mauva, Om nagar chowk, Ambedkar chowk, and Punit chowk Pockets of land measuring and area of 3.1 Ha (Residential), 16.7 Ha (Residential), 6.97 Ha (Residential), 1.72 Ha (Commercial), 4 Ha (Mixed landuse), 1.44 Ha (Mixed landuse), 3.52 Ha (Institutional), 1.80 Ha (Commercial), 19.3 Ha (Residential), 1.95 Ha (Institutional), 1.14 Ha (Commercial), 7.75 Ha (Residential), 0.87 Ha (Mixed landuse), 2.32 Ha (Public Open Land), 7.87 Ha (Residential), 1.15 Ha (Residential), 2.15 Ha (Residential), 3.29 Ha (Residential), 0.98 Ha (Residential), 1.59 Ha (Residential), 0.57 Ha (Residential), 2.22 Ha (Residential), 2.44 Ha (Residential), and 3.75 Ha (Residential) respectively. The expected land use for these pockets has been presented in Figure 42. The expected catchment in terms of origin destination of commutes using parts of BRT corridor has been assumed to be the same as that of other land pockets in the BRT catchment area with current similar land use. In addition to additional trips attributed to land

use change, current number of trips from all zones in the city, are expected to be incremented based on two reasons – urban population growth rate of 39% (annually), and increase in trip rate attributed to expected increase in income leading to resultant increase in travel budget. The assumed trip rate in 2023 is expected to increase by 5% over the current year trip rate. Based on the above mentioned expected rate of increase in trips and trip rate, a demand estimation factor of 0.24% has been included in the model. Additionally zones with little or no trip demand because of limited land development have been assigned trip demand figure based on reference from similar zones. These revised zones are 38, 60, 66, 81, 116, 118, 136, 144 and 146. Mode wise expected trip demand from each zone in horizon year 2023 has been presented in Annexure 8.10. Figure 43 Presents the expected, aggregate trip demand in 2023 from different zones in the city.

Apart from expected changes in demand, changes are expected in the operations of RMTS abd RRL services in the future, as a part of the evolution process of these two organizations. For example, it is expected that in the next five years, RMTS and RRL would have figured out an integrated ticketing systems for the two organizations. As a resulted the changeorve cost involved (discussed in previous section) between RMTS and RRL would reduce to zero (i.e existing changeover cost Rs. 4.50 in current year would reduce to Rs. 0 in 2023).

It is also assumed that traffic on the road in the next five years would increase. This will affect on the average speed of vehicles other than BRTS and NMT modes (i.e. bicyclists and pedestrians). It is assumed that the speed of vehicles will reduce by 5% in next five years. Thus the average speed in 2023, for each mode, has been evaluated by reducing average speed in current year by 5%.

Similar to changes in vehicle speed, changes in parking charges would also get increase in the next five years as “Pay and Parking scheme” will get implemented throughout Rajkot. This will affect the access cost for private vehicle users. The charges for parking has been estimated by assuming Rs. 15 and Rs. 30 charges for 2 Wheelers and 4 wheelers respectively.

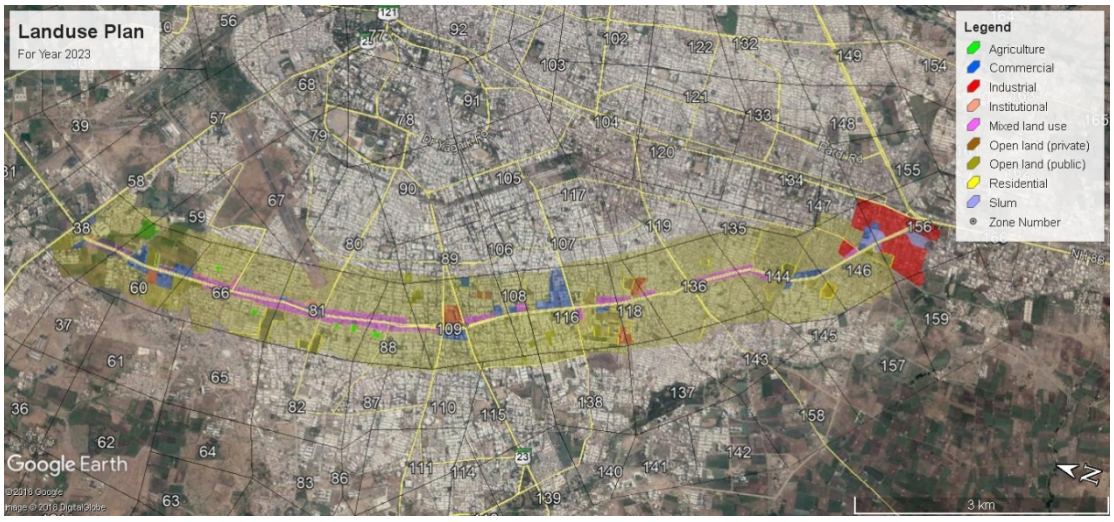


FIGURE 42: EXPECTED LAND USE FOR YEAR 2023

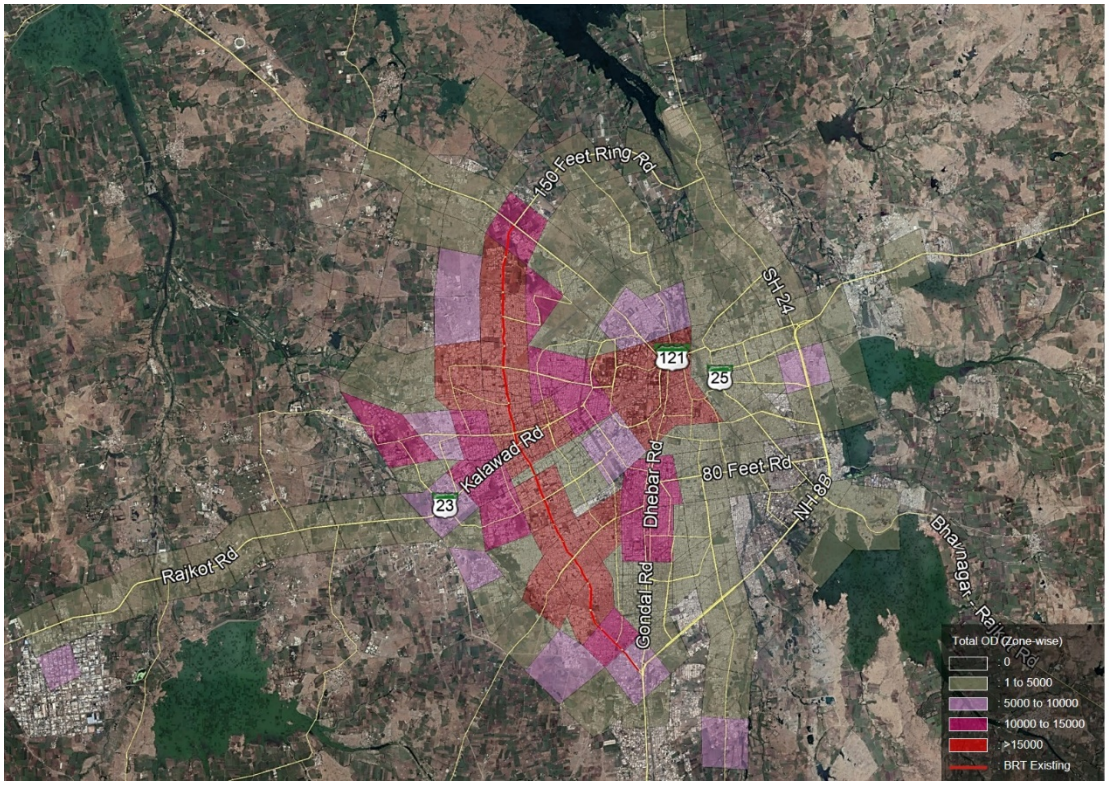


FIGURE 43: EXPECTED AGGREGATED O-D IN 2023

4.2.2 Horizon Year 2028

Area based development (ABD) under the smart city proposal, is a green field development in Rajkot. This is a total of. 371 hectare land pocket located at west side of city near Raiya village and Saurashtra University campus. The proposed site is 7km away from airport and 9.4km away from railway station. Proposed ABD is connected with existing BRTS corridor by two major roads, i.e. by Raiya road (meeting BRT corridor at Raiya junction) and by Raiyadhar road (meeting BRT corridor at Ramdevpir junction). The distance between proposed ABD and existing BRTS corridor is 4.5km. Figure 44 Presents the proposed area based development plan, while Figure 45 presents the location of ABD in the city along with the major streets linking it to the rest of the city.

RMC also proposes to develop high speed BRTS network on the streets feeding the ABD. This network totals to approximately 27.6 km of BRT network that shall be added to the current BRT network alongside the development of ABD. Figure 46 presents the proposed extension to the BRTS network.

It is expected that by the year 2028, ABD development and te development of the proposed extension to BRT network would have been completed. This is likely to influence the demad from the zones in this area. It is assumed that the newly developed areas and the zones around it would witness a similar pattern of demand as has been recorded around the current BRT corridor. In addition demand from all zones will be influenced by the increase in urban population and the expected increase in trip rate due to increasing income levels. Based on the explaination presented in previous section, a two types of correction figures has been estimated to be applied to all zone O-D demand over the current year O-D figures. First type of corrections applied on zones which are on/adjecsent to existing or proposed BRTS corridors. 10% increase in O-D trips has been applied to all zones from which existing or proposed BRTS corridors are passing (which are zone no. 33, 34, 35, 38, 62, 63, 65, 66, 81, 82, 83, 109, 115, 139, 166, 180, 181, 182, 183, 184, 185, 186, 187, 188 and 189). While 5% increase in O-D trips has been applled to all zones which are adjescent to existing or proposed corridors (which are 20, 21, 31, 32, 366, 37, 58, 59, 60, 61, 64, 67, 80, 85, 86, 87, 88, 89, 106, 110, 111,112,113,114,116,138 and 140). Second type of O-D correction has been done for zones which will developed in 2028 because of ‘Area based development’ (ABD) which are 33 to 37,

61 to 65, 82 to 84 and 178 to 193. This has been estimated by appling the O-D of similar zones to ABD zones. Every zone which is on Jamngar Highway (33, 34 and 35) has been estimated as 25% of O-D of zone no. 68 which is also on Jamnagar Highway. Each zone which is next to existing BRT corridor (within 1km) has been estimated as 25% of O-D of zone no. 82 which is a similar zone. For zones which are located between 1km to 1.5km from existing BRT corridor (36, 61 to 64, 83, 84 and 180), each has been estimated as 25% of O-D of zone no. 139 which is a similar zone. As Race course area is proposed in ABD, surrounding each zone of proposed ABD (i.e. 181, 182, 183, 185 and 186) has been estimated as 20% of O-D of zone no. 78 which is a zone including existing Race course area.

Apart from expected changes in demand, it is also assumed that traffic on the road in the next five years (2023-2028) would increase. Because of this, the average speed for vehicles other than BRTS and bicyclists and pedestrians will be reduced by 5%. Thus the average speed in 2028, for each mode, has been calculated by multiplying average speed of vehicles in 2023 by 0.95.

Due to increase in private vehicle numbers in year 2028, private vehicle owners will face the shortage of parking spaces. This will result in increase in the access time for private vehicle users. Thus it is assumed that access time for private 4-wheeler will be increased by 15 min while the access time for private 2-wheeler will be increased by 8 min.

The resultant zone and mode wise expected O-D demand and average trip length in 2028 has been presented in Annexure 8.11. Figure 47 presents the expected, aggregate trip demand in 2028 from different zones in the city.

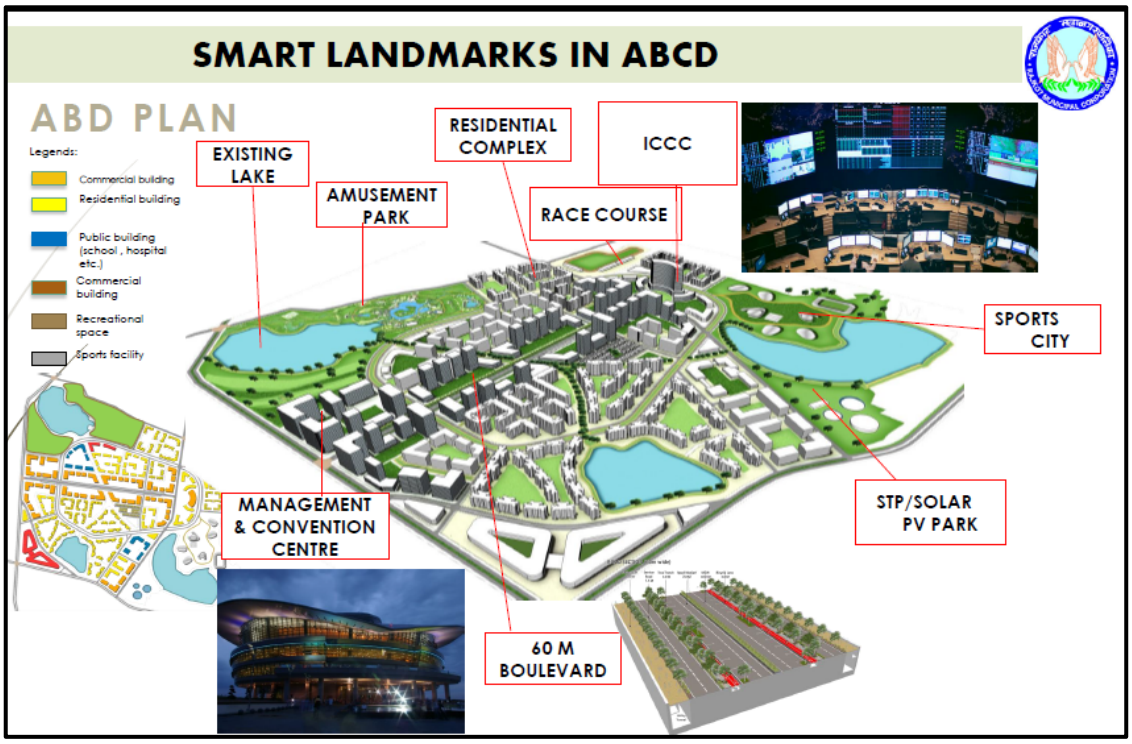


FIGURE 44: AREA BASED DEVELOPMENT PLAN

FIGURE 45: AREA BASED DEVELOPMENT PROPOSED SITE LOCATION

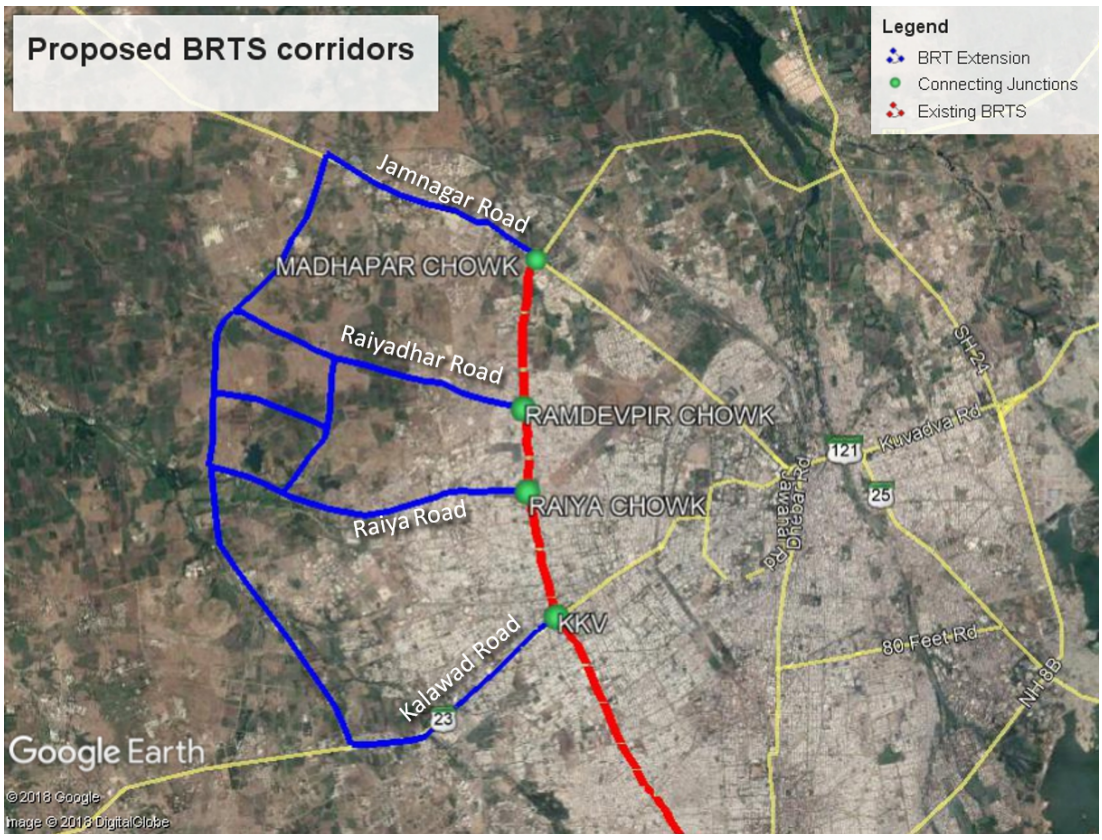


FIGURE 46: PROPOSED EXTENSION OF BRTS NETWORK

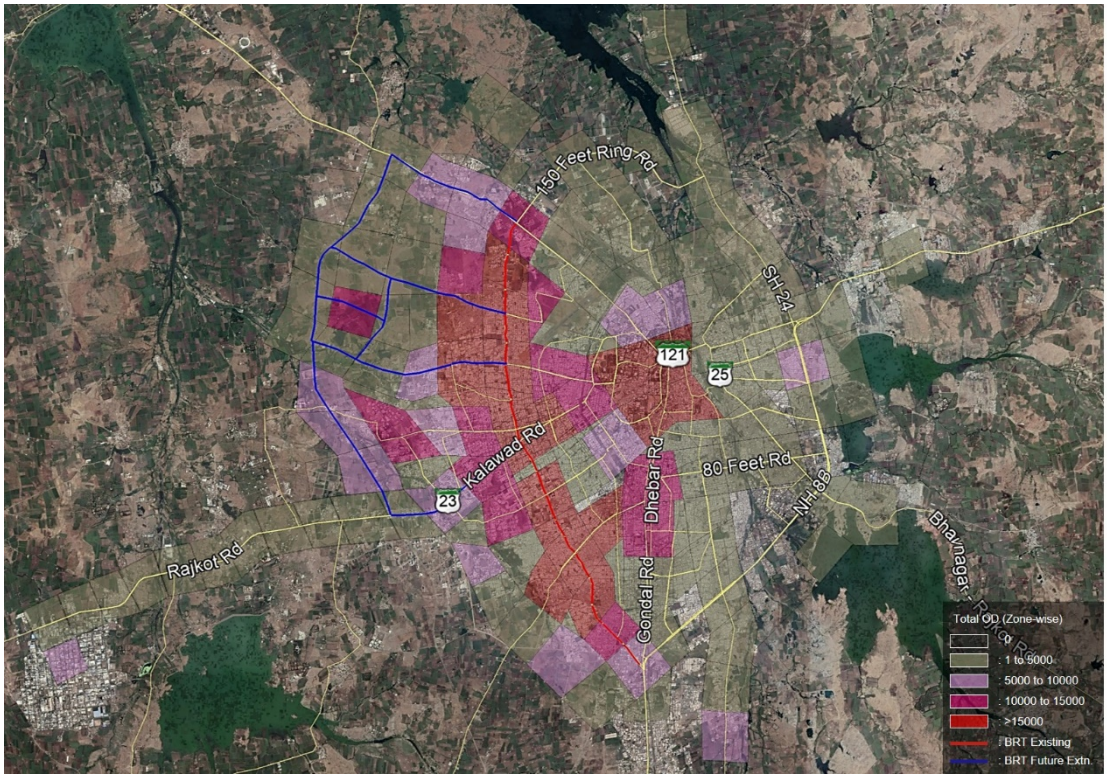


FIGURE 47: EXPECTED AGGREGATED O-D IN 2028

4.2.3 Model Inputs and Outputs for horizon year

Based on the factor loading values for each of the horizon year that were derived from expected land use development and population growth rates (as discussed above), the zone wise input data in the model (O-D values for each zone and each mode) were revised. However no changes were made to average trip length and average distance travelled on and off the corridor. This is because in such a short time frame urban sprawl for the city is not expected to reach a stage where average trip length would be significantly altered. In addition to changes in input O-D data, the fault value of changeover cost between RMTS and BRTS has been set to 0 (from Rs. 4.5 in the current year model). This is based on the expected development in RMTS and RRL ticketing systems, leading to an integrated fare system, minimising changeover losses for passengers.

Based on the resived input data for both the scenarios, revised output was generated in terms of estimated number of trips that are likely to shift from each mode in each zone to each of the six evaluated feeder modes.

4.2.3.1 Horizon Year 2023

The detailed model output has been presented in Annexure 8.12 for horizon year 2023. Figure 48 to Figure 53 presents zone wise aggregated demand for different proposed feeder modes to BRT in this horizon year.

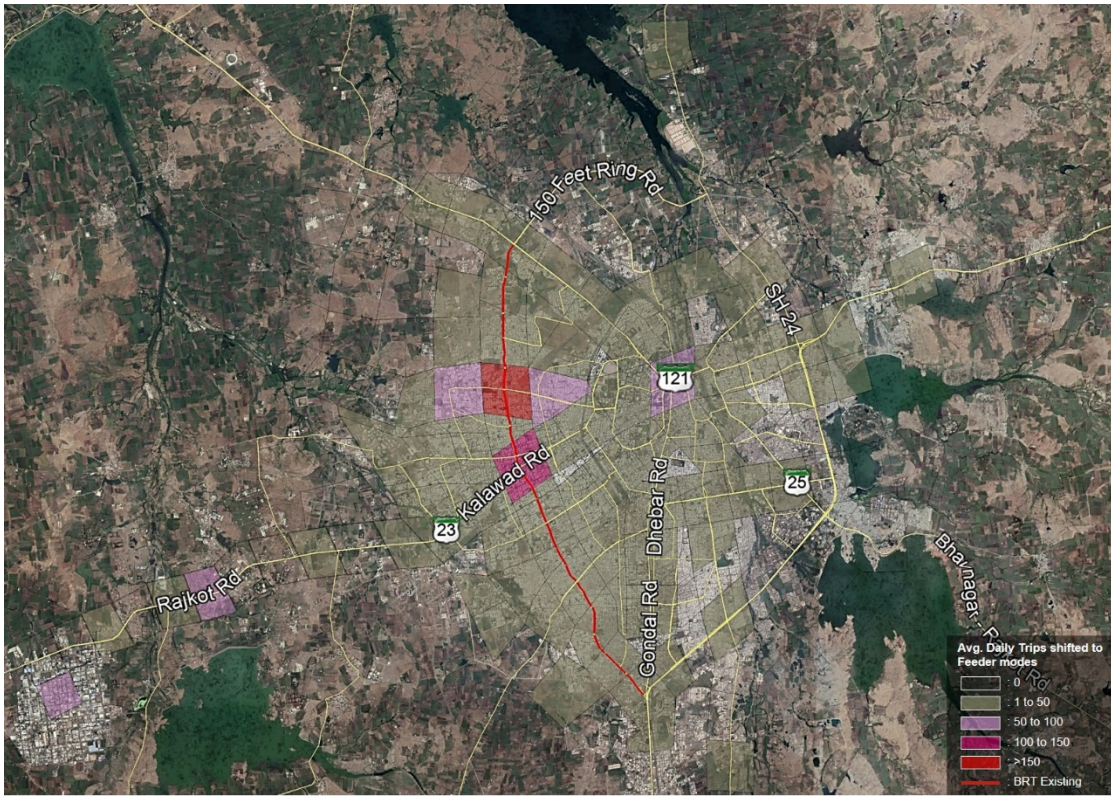


FIGURE 48: AVERAGE TRIPS SHIFTED TO FEEDER WALK IN 2023

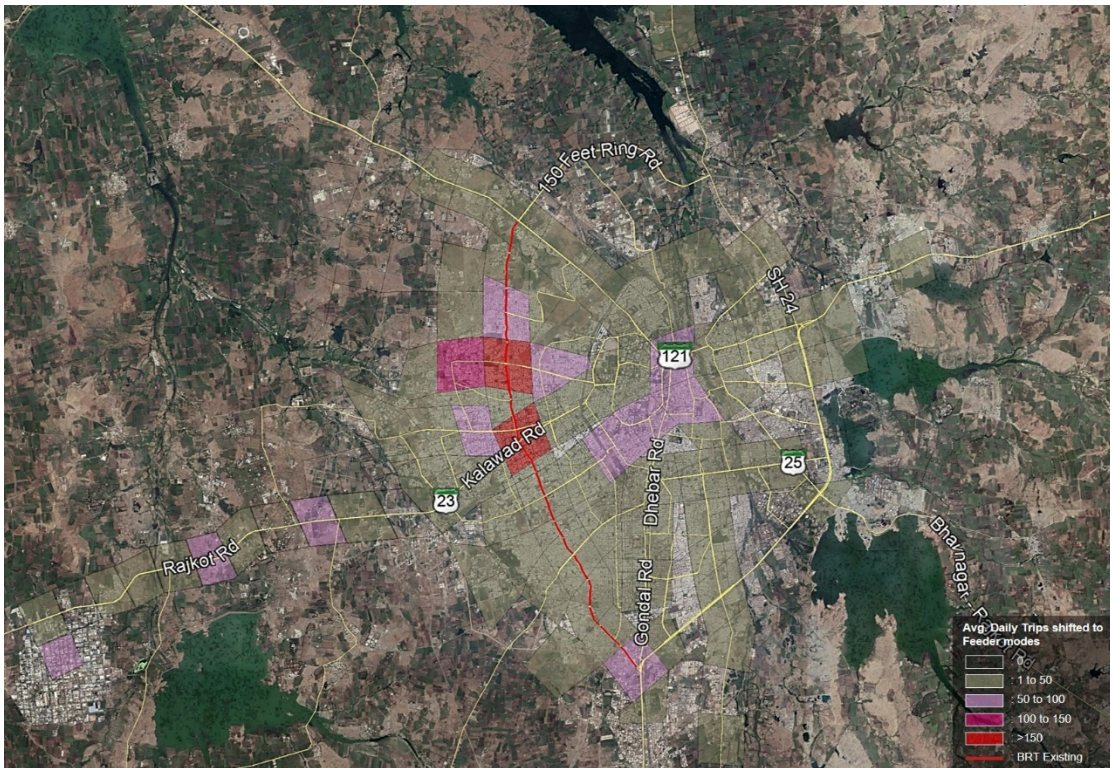


FIGURE 49: AVERAGE TRIPS SHIFTED TO FEEDER BICYCLE SHARING IN 2023

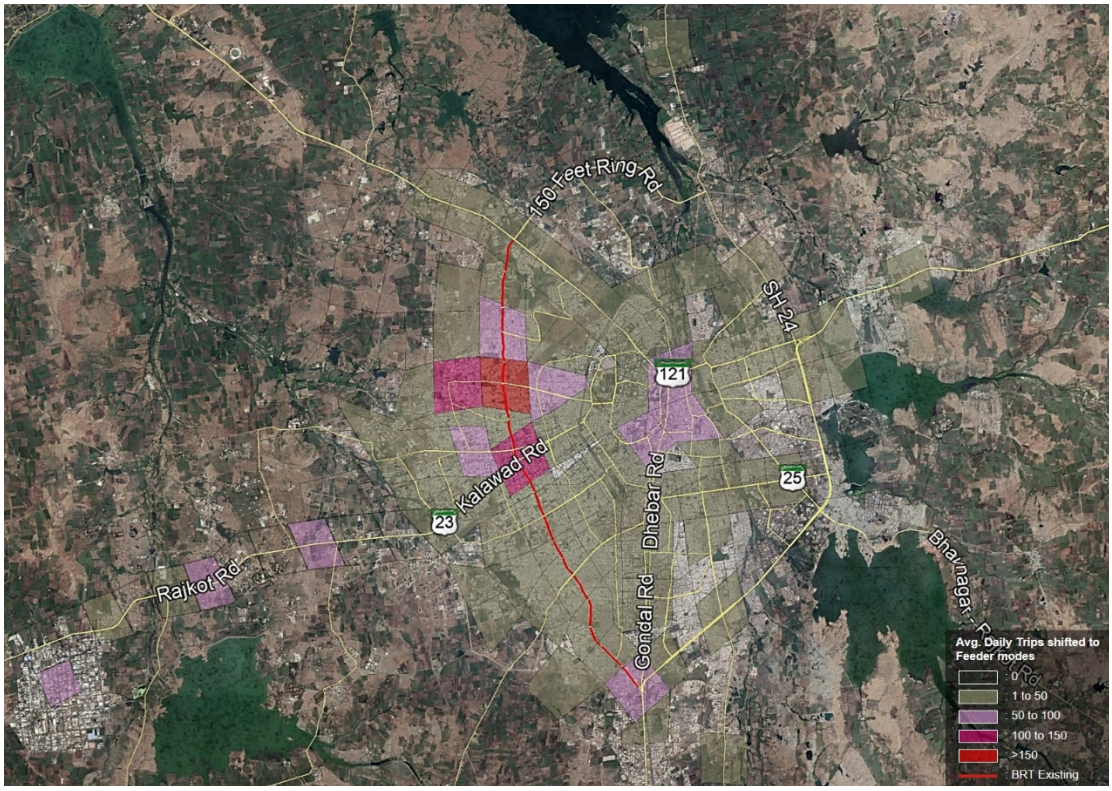


FIGURE 50: AVERAGE TRIPS SHIFTED TO RMTS - BUS FEEDER IN 2023

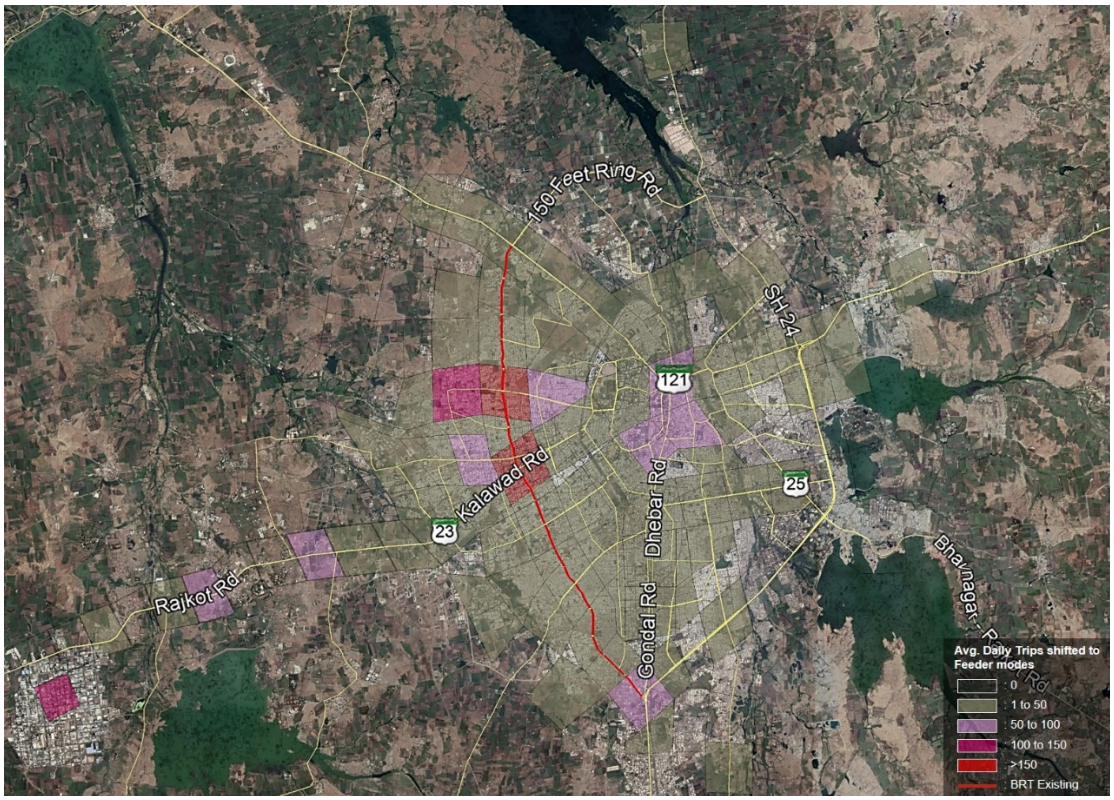


FIGURE 51: AVERAGE TRIPS SHIFTED TO HYBRID FEEDER IN 2023

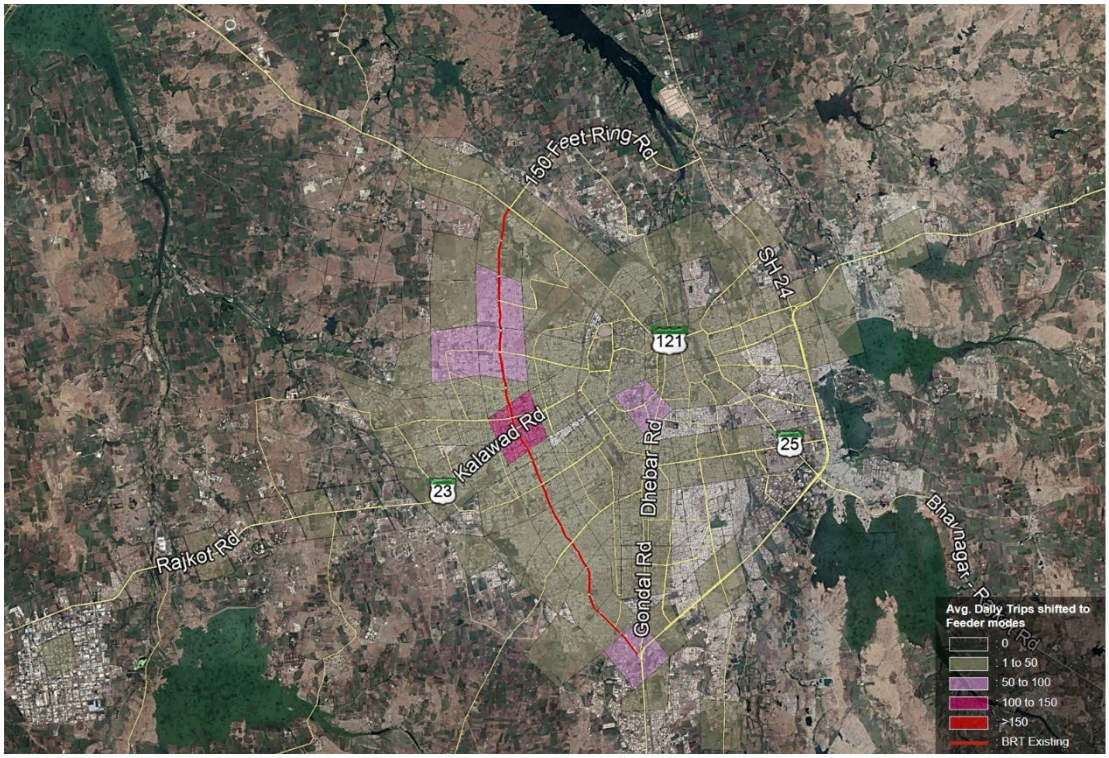


FIGURE 52: AVERAGE TRIPS SHIFTED TO SHARED 3W IN 2023

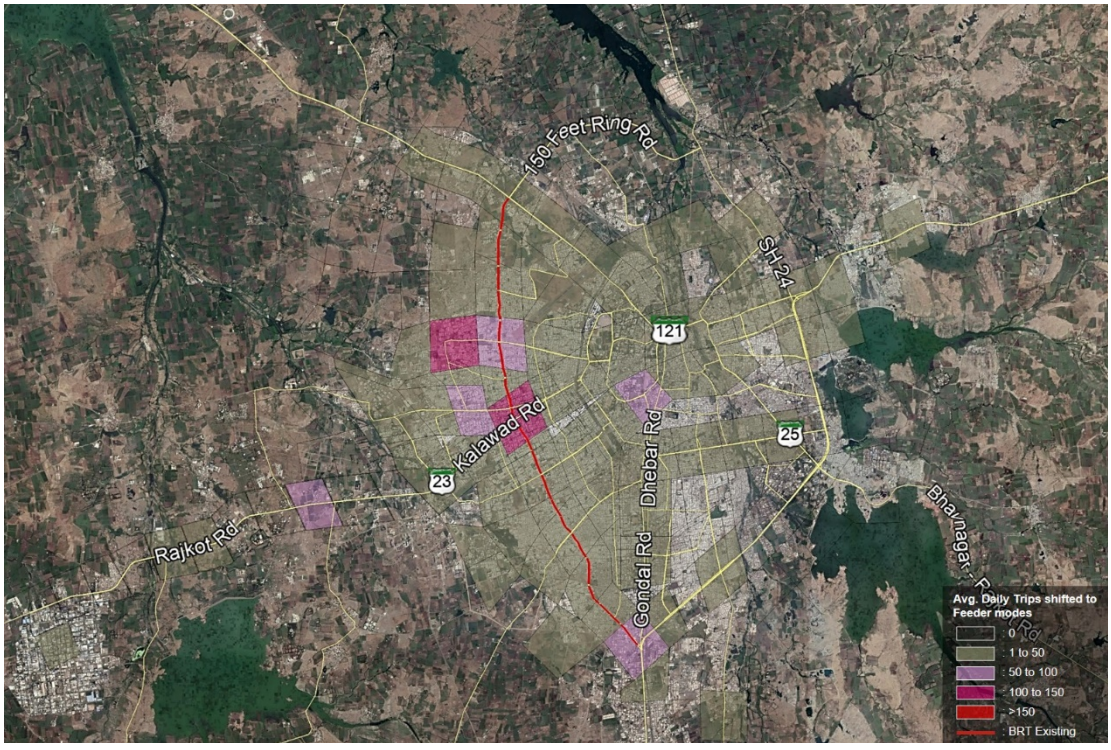


FIGURE 53: AVERAGE TRIPS SHIFTED TO E RICKSHAW IN 2023

It is evident from the figures presented above that Bicycle Sharing feeder mode is likely to shift maximum number of commuters to BRT. This is because journey cost of 2W, 4W and Shared Auto users is significantly reducing if they are shifting to bicycle sharing mode Overall the model suggests that on an average a total of 11200 no. of trips, which is 1.11 percent of trips currently using parts of the BRT corridor or crossing it, shall shift to BRT if the above listed feeder modes are introduced.

4.2.3.2 Horizon Year 2028

The detailed model output has been presented in Annexure 8.13 for horizon year 2028. Figure 54 to Figure 59 presents zone wise aggregated demand for different proposed feeder modes to BRT in this horizon year.

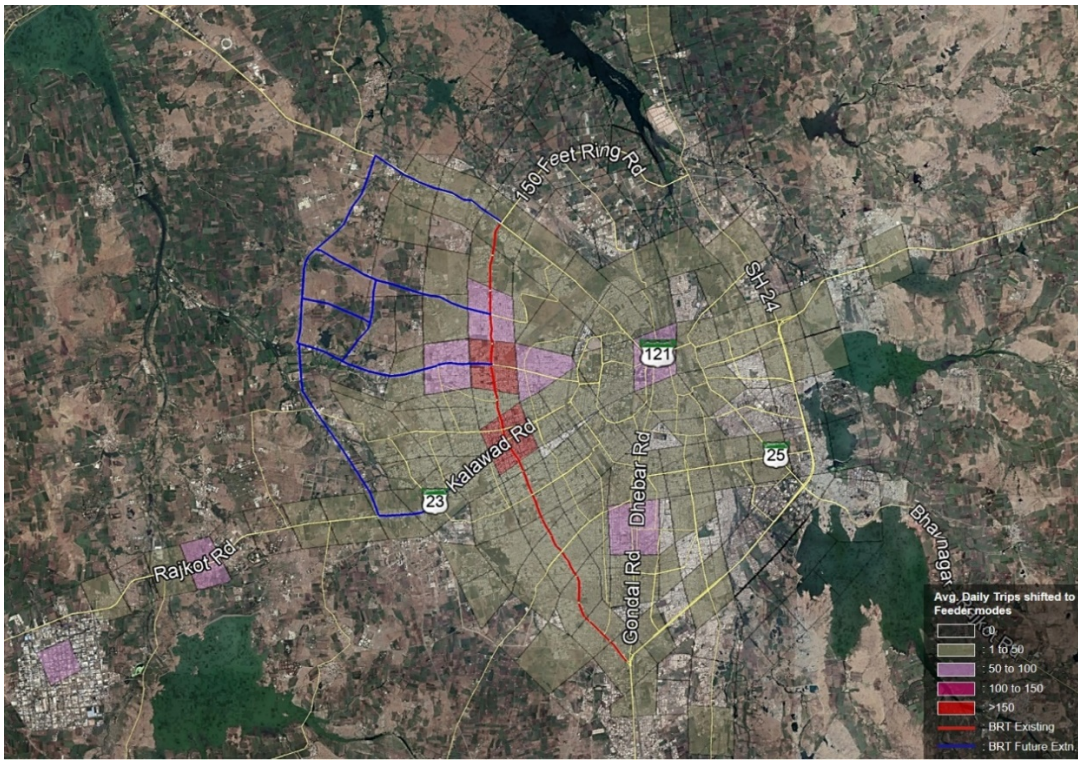


FIGURE 54: AVERAGE TRIPS SHIFTED TO FEEDER WALK IN 2028

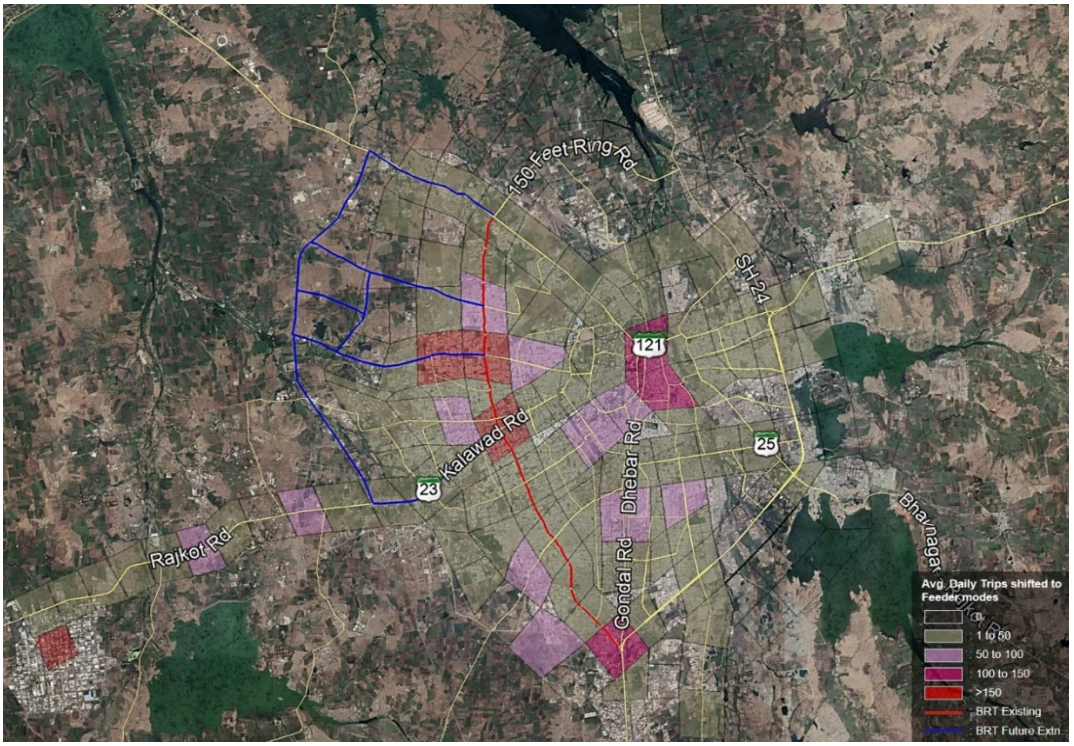


FIGURE 55: AVERAGE TRIPS SHIFTED TO FEEDER BICYCLE SHARING IN 2028

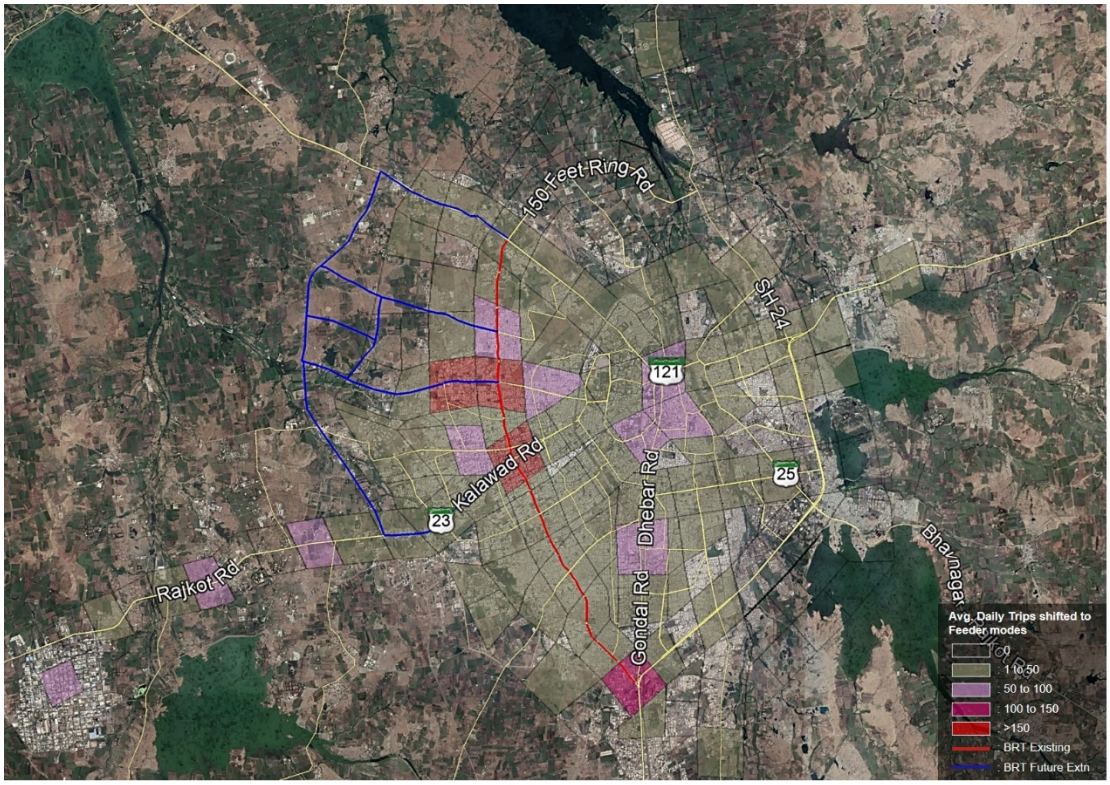


FIGURE 56: AVERAGE TRIPS SHIFTED TO RMTS - BUS FEEDER IN 2028

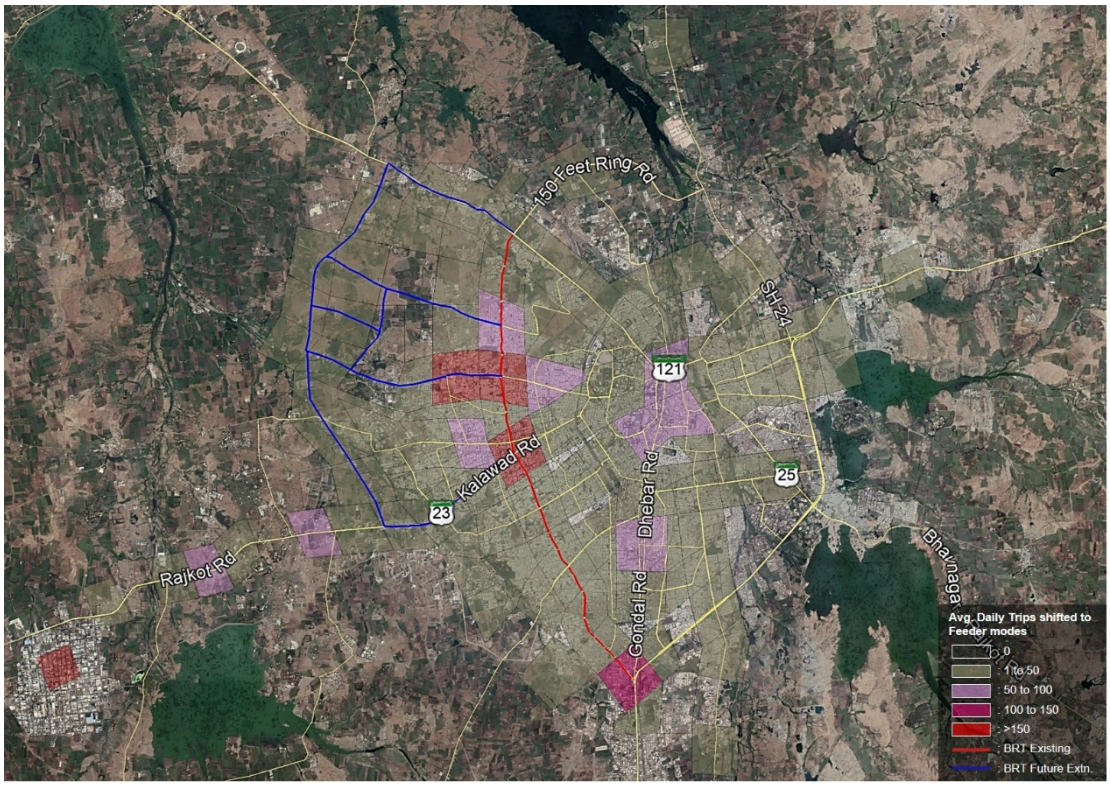


FIGURE 57: AVERAGE TRIPS SHIFTED TO HYBRID FEEDER IN 2028

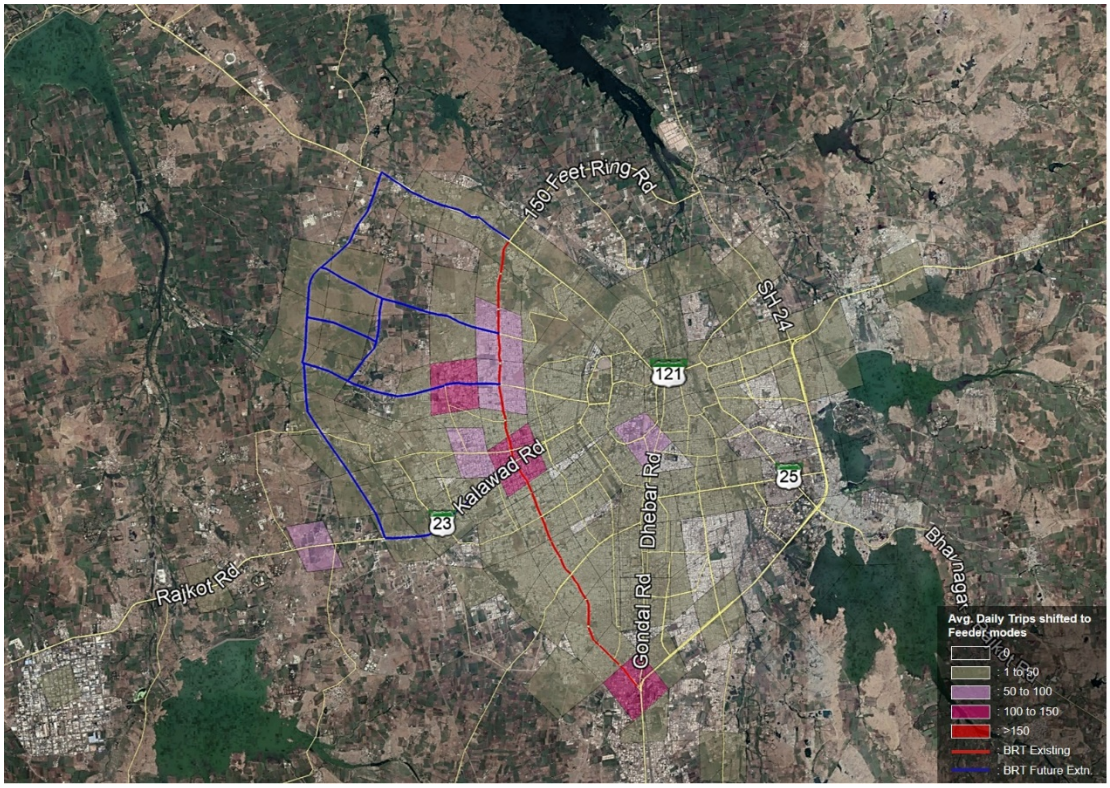


FIGURE 58: AVERAGE TRIPS SHIFTED TO SHARED 3W IN 2028

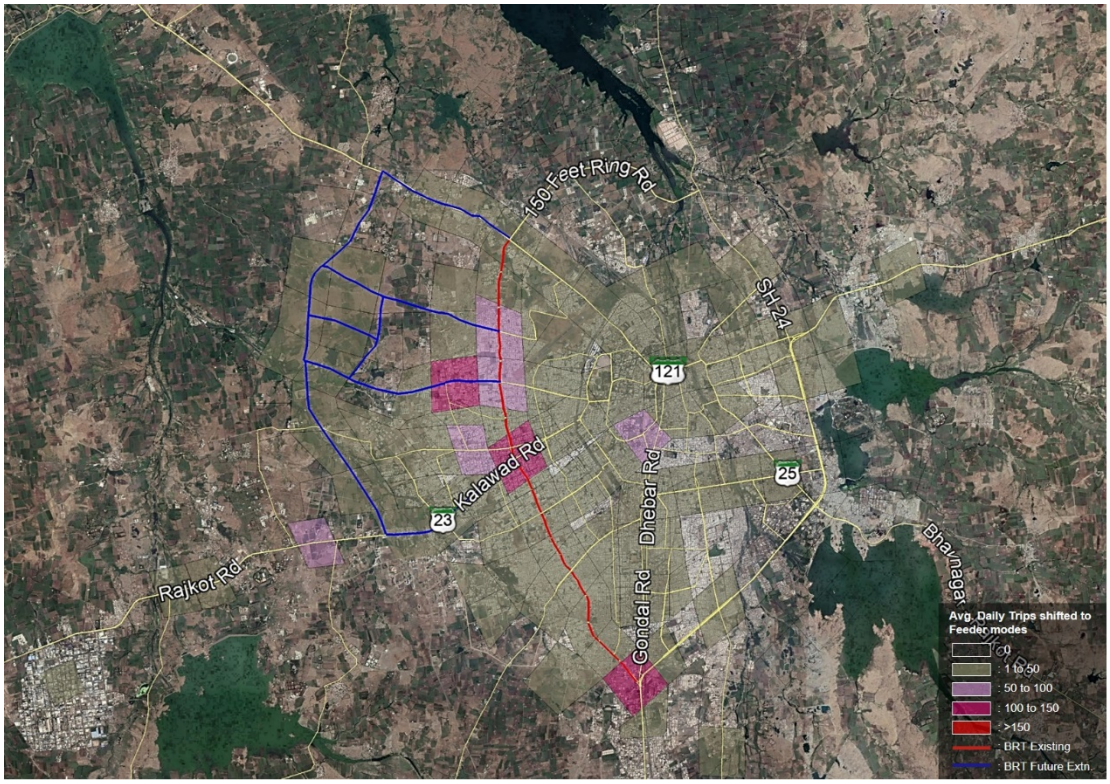


FIGURE 59: AVERAGE TRIPS SHIFTED TO E RICKSHAW IN 2028

It is evident from the figures presented above that Bicycle Sharing feeder mode is likely to shift maximum number of commuters to BRT. This is because journey cost of 2W, 4W and Shared Auto users is significantly reducing if they are shifting to bicycle sharing mode. Overall the

model suggests that on an average a total of 16006 no. of trips, which is 1.16 percent of trips currently using parts of the BRT corridor or crossing it, shall shift to BRT if the above listed feeder modes are introduced.

4.3 Model Findings

As an outcome of the modelling exercise the expected trips shifted to each feeder mode (walk, bicycle sharing, RMTS, RMYS-Hybrid BRT, shaed auto rickshaw and walk) in each zone was estimated by aggregating projected numbers of trips expected to be shifted from each of the current modes (Car, motorized two wheelers, auto rickshaw, shared auto rickshaw, RMTS bus, walk and cycle) in that zone. This was based on the methodology explained earlier. The expected shift of trips in each zone was derived for three time periods – current year, 2023 and 2028.

These projected number of trips expected to be shifted in favour of BRT, from each mode, through introduction of specific feeder mode has been presented on a colour coded zonal map, with four colour gradiesnt representing per day number of trips shifted to BRT in four categories – 1 to 50, >50 to 100, >100 to 150 and >150. An analysis of this map reveals the zones of interest for each feeder mode. These and other findings from the model have been discussed below for both current and horizon years.

4.3.1 Base and Horizon Year Zones of interest – Feeder Mode wise

The analysis of zone and mode wise model shift maps in favour of BRT have been divided in to current and horizon year evaluation. These have been presented below.

4.3.1.1 Base or Current Year Zones of Interest

Current year zones of interest have been identified by indetifying zones with a potential of shifting 50 or more trips towards BRT due to introduction of each feeder mode. The number of trips estimated to be shifted is an outome of cumulative probability of shift derived from the product of three probabilities, i.e. shift due to cost ving, time saving and proximity to the corridor including overlapping of trip length with the corridor. This process is not based on desire to shift surveys but on assumed linear relationship between probabilities and different factors effecting the same (as discussed above). Thus it is possible that the model outputs include counter intuitive and seemingly impossible findings, which need to be rationalised. For example, huge cost saving in walking (over other modes such as shared auto rickshaw) creates a relatively higher probability of shift even for zones located far away from the corridor. This coupled with high origin and destination of trips from such zones yields in an output suggesting significant walking trips to the BRT corridor even if it involves multipl hours in terms of access time.

Thus this exercise of identifying zones of interest omits such zones with counter rational results. The zones of interest have been identified for all three years (i.e. current year, 2023 and 2028), for each feeder mode and discussd in Table 50 to Table 55.

TABLE 50: EXPECTED NUMBER OF TRIPS SHIFTED TO FEEDER WALK IN ZONES OF INTEREST - ALL THREE YEARS

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to feeder Walk		
				For Year 2018	For Year 2023	For Year 2028
	66	0.00	Ramdevpir Chowk			56
	77	4.70	Hospital chowk	65	80	99

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to feeder Walk		
				For Year 2018	For Year 2023	For Year 2028
	80	1.30	Krishna kunj society, near Raiya chowk and Airport		61	75
	81	0.00	Raiya chowk	148	202	249
	82	1.00	Alap green city, Raiya road, near Raiya chowk		59	73
	109	0.00	KKV chowk	113	141	175
	120	2.00	PD Malviya commerce college, near Mavdi chowk			50
	171	7.70	Kalawad road, near Metoda		56	69
	177	12.40	Metoda village	60	75	92

TABLE 51: EXPECTED NUMBER OF TRIPS SHIFTED TO BICYCLE SHARING IN ZONES OF INTEREST - ALL THREE YEARS

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to Bicycle Sharing		
				For Year 2018	For Year 2023	For Year 2028
	66	0.00	Ramdevpir Chowk		65.76	91.86
	77	4.70	Hospital chowk	63.20	78.36	113.72
	80	1.30	Krishna kunj society, near Raiya chowk and Airport	51.07	63.33	87.00
	81	0.00	Raiya chowk	160.20	218.51	697.50
	82	1.00	Alap green city, Raiya road, near Raiya chowk	108.00	134.12	166.52
	91	3.20	Tikon bagh bus terminal	53.35	66.15	89.78
	92	4.25	Tikon bagh chowk		69.13	136.17
	105	2.00	Bhaktinagar Railway station		61.95	76.44
	109	0.00	KKV chowk	145.63	338.25	710.26
	110	0.90	Panchayat Nagar bus stand, near Indira circle		54.39	67.11
	120	2.00	PD Malviya commerce college, near Mavdi chowk			55.73

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to Bicycle Sharing		
				For Year 2018	For Year 2023	For Year 2028
	122	3.60	Devpara			55.70
	143	1.10	Mavdi gam			52.89
	156	0.00	Gondal Chowk	67.81	84.08	103.75
	157	1.40	Punit Nagar			69.41
	168	5.00	Kalwad road	54.32	68.20	85.72
	171	7.70	Kalawad road, near Metoda		56.51	69.73
	177	12.40	Metoda village	55.01	68.21	207.86

TABLE 52: EXPECTED NUMBER OF TRIPS SHIFTED TO RMTS BUS IN ZONES OF INTEREST - ALL THREE YEARS

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to RMTS Bus		
				For Year 2018	For Year 2023	For Year 2028
	66	0.00	Ramdevpir Chowk		59.99	74.02
	77	4.70	Hospital chowk	60.45	76.93	94.92
	80	1.30	Krishna kunj society, near Raiya chowk and Airport	50.14	63.20	77.98
	81	0.00	Raiya chowk	85.84	168.25	207.60
	82	1.00	Alap green city, Raiya road, near Raiya chowk	106.98	132.69	163.72
	91	3.20	Tikon bagh bus terminal		64.37	79.43
	92	4.25	Tikon bagh chowk		63.30	78.11
	109	0.00	KKV chowk	83.81	135.29	166.92
	110	0.90	Panchayat Nagar bus stand, near Indira circle		51.85	63.98
	120	2.00	PD Malviya commerce college, near Mavdi chowk			55.28
	156	0.00	Gondal Chowk	65.88	83.57	103.12
	168	5.00	Kalwad road	54.06	67.12	82.82
	171	7.70	Kalawad road, near Metoda		56.29	69.45
	177	12.40	Metoda village		53.89	66.49

TABLE 53: EXPECTED NUMBER OF TRIPS SHIFTED TO RMTS - HYBRID BRTS IN ZONES OF INTEREST - ALL THREE YEARS

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to RMTS - Hybrid BRTS		
				For Year 2018	For Year 2023	For Year 2028
	66	0.00	Ramdevpir Chowk		60.23	74.55
	77	4.70	Hospital chowk	62.08	77.22	95.51
	80	1.30	Krishna kunj society, near Raiya chowk and Airport	50.97	63.45	78.52
	81	0.00	Raiya chowk	304.94	416.18	513.77
	82	1.00	Alap green city, Raiya road, near Raiya chowk	107.01	132.93	164.25
	91	3.20	Tikon bagh bus terminal	51.96	64.67	80.03
	92	4.25	Tikon bagh chowk	51.15	63.67	78.79
	109	0.00	KKV chowk	215.11	266.96	538.55
	110	0.90	Panchayat Nagar bus stand, near Indira circle		52.16	64.60
	120	2.00	PD Malviya commerce college, near Mavdi chowk			55.82
	156	0.00	Gondal Chowk	67.40	83.82	103.65
	168	5.00	Kalwad road	54.21	67.46	83.47
	171	7.70	Kalawad road, near Metoda		56.53	69.98
	177	12.40	Metoda village	101.33	125.83	155.43

TABLE 54: EXPECTED NUMBER OF TRIPS SHIFTED TO SHARED 3W IN ZONES OF INTEREST - ALL THREE YEARS

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to Shared 3W		
				For Year 2018	For Year 2023	For Year 2028
	66	0.00	Ramdevpir Chowk		55.19	68.61
	81	0.00	Raiya chowk		52.69	65.04
	82	1.00	Alap green city, Raiya road, near Raiya chowk	63.41	92.15	113.70
	91	3.20	Tikon bagh bus terminal		57.77	71.28
	109	0.00	KKV chowk		101.69	126.17
	110	0.90	Panchayat Nagar bus stand, near Indira circle			64.05

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to Shared 3W		
				For Year 2018	For Year 2023	For Year 2028
	156	0.00	Gondal Chowk		83.60	103.15
	168	5.00	Kalwad road			58.40

TABLE 55: EXPECTED NUMBER OF TRIPS SHIFTED TO E-RICKSHAW IN ZONES OF INTEREST - ALL THREE YEARS

S. No.	Zone No.	Zone distance from BRT corridor (km)	Important, nodes, localities, and streets covered by the zone	Expected number of trips shifted to E Rickshaw		
				For Year 2018	For Year 2023	For Year 2028
	66	0.00	Ramdevpir Chowk		57.92	72.15
	81	0.00	Raiya chowk		52.67	65.05
	82	1.00	Alap green city, Raiya road, near Raiya chowk	67.71	116.43	143.65
	91	3.20	Tikon bagh bus terminal		61.22	75.54
	109	0.00	KKV chowk	54.28	101.50	126.78
	110	0.90	Panchayat Nagar bus stand, near Indira circle		52.22	65.10
	156	0.00	Gondal Chowk	65.88	83.57	103.12
	168	5.00	Kalwad road		52.56	64.85

4.3.2 Base and Horizon Year Feeder Mode Wise Expected Demand

It is estimated that if all six proposed feeder modes to BRT were developed throughout the city, a total of 0.96% percent of trips crossing BRT corridor in a day (a tota of 7542.73 trips cross or use parts of BRT in a day) would shift to BRT. This shift will happen from different modes depending on the proximity of the zones and the average speed and cost comparison of trips between existing and proposed feeder mode cum BRT combination. This percent changes to 1.11% in 2023 while total trips crossing BRT increase to 11200.35 in this year; and 1.16% in 2028 while total trips crossing BRT in this year are projected to increase to 16006.89. The mode wise breakup of these trips in three years for the study has been presented in Table 56, Table 57 and Table 58.

TABLE 56: MODE WISE PREDOMINANT ZONES AND PREDOMINANT MODES FROM WHERE TRIPS EXPECTED TO SHIFT IN CURRENT YEAR

S. No.	Proposed feeder mode	Predominant zones from where trips expected to shift	Predominant modes from where trips expected to shift
1	Walk	81, 109	2 Wheeler, Shared 3W
2	Bicycle sharing	81, 82, 109	2 Wheeler, 4 Wheeler, Shared 3W
3	RMTS	82	2 Wheeler, 4 Wheeler
4	RMTS – Hybrid BRT	81, 82, 109, 177	2 Wheeler, 4 Wheeler, Shared 3W
5	Shared auto rickshaw	82	2 Wheeler, 4 Wheeler, 3 Wheeler
6	E Rickshaw	82, 109, 156	2 Wheeler, 4 Wheeler

TABLE 57: MODE WISE PREDOMINANT ZONES AND PREDOMINANT MODES FROM WHERE TRIPS EXPECTED TO SHIFT IN YEAR 2023

S. No.	Proposed feeder mode	Predominant zones from where trips expected to shift	Predominant modes from where trips expected to shift
1	Walk	81, 109	2 Wheeler, Shared 3W
2	Bicycle sharing	81, 82, 109	2 Wheeler, 4 Wheeler, Shared 3W
3	RMTS	81, 82, 109	2 Wheeler, 4 Wheeler, Shared 3W
4	RMTS – Hybrid BRT	81, 82, 109, 177	2 Wheeler, 4 Wheeler, Shared 3W
5	Shared auto rickshaw	109	2 Wheeler, 4 Wheeler
6	E Rickshaw	82, 109	2 Wheeler, 4 Wheeler

TABLE 58: MODE WISE PREDOMINANT ZONES AND PREDOMINANT MODES FROM WHERE TRIPS EXPECTED TO SHIFT IN YEAR 2028

S. No.	Proposed feeder mode	Predominant zones from where trips expected to shift	Predominant modes from where trips expected to shift
1	Walk	81, 109	2 Wheeler, 4 Wheeler, Shared 3W
2	Bicycle sharing	77, 81, 82, 92, 109, 156, 177	2 Wheeler, 4 Wheeler, Shared 3W
3	RMTS	81, 82, 109, 156	2 Wheeler, 4 Wheeler
4	RMTS – Hybrid BRT	81, 82, 109, 156, 177	2 Wheeler, 4 Wheeler, Shared 3W
5	Shared auto rickshaw	82, 109, 156	2 Wheeler, 4 Wheeler, 3 Wheeler
6	E Rickshaw	82, 109, 156	2 Wheeler, 4 Wheeler, 3 Wheeler

The numbers presented in the tables above may not be realistic because many feeder modes for multiple zones are likely to be competing for same trips. Additionally, since there are 177 zones, even small number of trips aggregated for the day, resulted in a relatively appealing figure, even though it may not be practically possible to introduce a feeder to effectively capture these trips. To address these issues, a network for complementing feeders using the information generated from zones of interest maps, needs to be developed. The same has been discussed in the following section.

5 Last Mile Connectivity Plan

Six feeder modes have been evaluated across more than 180 analysis zones in Rajkot for the potential to shift commuters trips on the corridor in seven existing modes, for base year (2018) and horizon year 2023 as well 2028. The number of commuters which are probable to shift to one or more of the feeder modes is dependent on the quantum of trips attracted or generated by these zones and the estimated probability of shift. The estimated probability of shift in turn is dependent on expected utility in shifting, estimated by time and cost saving coupled by percentage of journey length that currently overlaps with the BRT corridor (and on the proposed BRT corridor extension in 2028).

Horizon year projected number ot trips that may shift in favour of BRT is effected by the rate of increase of trips in the city, by the expected development and changes in the land use. These have been accounted for and explained in the previous section.

Basis these processes, estimate of potential trips that may shift in favour of BRT from each zone has been generated for the three study periods – 2018, 2023 and 2028. Analysis of these trips generates zones of interest (zones with potential of shifting large number of daily trips in favour of BRT, through shift to multiple feeder modes) and feeder modes of interest (modes with the potential of attracting large number of trips to BRT from multiple zones). These can then be used to plan interventions in terms of feeder mode network and operational plan.

This section analyses the findings from the modelling exercise (Chapter 4), and derives a feeder network plan for practical application in the city.

5.1 Zones of Interest - Base and Horizon Year

The analysis of modelling output as presented in colour coded zonal maps depicting potential daily trips that may be shifted from each zone to each BRT feeder mode has been presented in Figure 36 to Figure 41, Figure 48 to Figure 53 and Figure 54 to Figure 59 (Chapter 4) for each of the three years in the study. Analysis of these figures and a review of the total trips expected to be shifted in each of study periods (Annexure 8.14), suggests that the area around, Raiya Road, University Road, Kalawad Road and Race Course have the maximum potential of shifting in favour of BRT through different feeder modes. In addition to this, areas around Metoda, Gondal Chowk and KKV Chowk also appear as zones of interest when it comes to potential for shifting in favour of BRT. Table 59 presents estimate of trips expected to be shifted in each of the three study periods, from the areas mentioned above, as represented by their zone numbers.

TABLE 59: ESTIMATE OF TRIPS EXPECTED TO BE SHIFTED IN YEAR 2018, 2023 & 2028

Zone Number	Total Trips Shifted Year 2018	Total Trips Shifted Year 2023	Total Trips Shifted Year 2028	Mode of Interest
66	240	345	437	Bicycle Sharing
77	267	375	480	Bicycle Sharing
80	223	302	382	Bicycle Sharing
81	759	1110	1798	Bicycle Sharing
82	501	668	825	Bicycle Sharing
91	241	334	421	Bicycle Sharing
92	170	263	376	Bicycle Sharing
105	85	113	139	Bicycle Sharing
109	662	1084	1844	Bicycle Sharing
110	201	275	344	Bicycle Sharing
120	154	234	289	RMTS-Hybrid BRT
122	30	54	94	Bicycle Sharing
143	95	147	194	Bicycle Sharing
156	321	428	528	Bicycle Sharing

Zone Number	Total Trips Shifted Year 2018	Total Trips Shifted Year 2023	Total Trips Shifted Year 2028	Mode of Interest
157	78	98	145	Bicycle Sharing
168	245	340	421	Bicycle Sharing
171	186	255	315	RMTS-Hybrid BRT
177	270	354	561	Bicycle Sharing

5.2 Feeder modes of interest – base and horizon year

Analysis of outputs generated by the spreadsheet model (Chapter 4) suggests that the shared bicycle or bike rental options couples with dedicated bicycling infrastructure is the most attractive feeder mode with the highest cumulative potential of shifting daily trips in favour of BRT in 2028 is 4315 daily trips. This is followed by a hybrid BRT or bus routes using parts of BRT corridor but connecting key locations in the city. The total number of trips with a potential to shift to BRT through this feeder mode is 3448 daily trips. A total of 2531 number of daily trips have a potential to shift in favour of BRT through the use of RMTS as a feeder mode provided the average headway by the service reduces to 20 minutes, and if the total transfer distance between RMTS stop and BRT station is less than 100m. It is important to note here that the results of brief desire to shift survey (presented in Chapter 4) suggest that maximum number of commuters favour RMTS buses as their feeder mode to BRTS with a relatively fewer opting for cycling.

The remaining three feeder modes posess a relatively lower potential to transfer trips on to BRT. Feeder walk has the potential to shift a total of 1983 daily trips, E-rickshaw have the potential to shift a total of 1987 daily trips and shared auto rickshaw have the potential to shift a total of 1742 daily trips in favour of BRT in 2028. Table 60 presents the total potential of shifting trips from current modes in favour of BRT through the use of different feeder modes in the three study periods.

TABLE 60: POTENTIAL OF SHIFTING TRIPS FROM CURRENT MODES IN FAVOUR OF BRT IN YEAR 2018,2023 & 2028

Modes	Year 2018	Year 2023	Year 2028	Zone number (with maximum potential to shift in 2028)
To Feeder Walk	1179	1506	1983	From Zone no. 81
To Feeder Bicycle Sharing	1687	2416	4315	From Zone no. 109
To RMTS Bus	1316	1890	2531	From Zone no. 81
To RMTS - Hybrid BRT	1851	2410	3448	From Zone no. 109
To Shared 3W	569	1264	1742	From Zone no. 109
To E Rickshaw	770	1444	1987	From Zone no. 82

5.3 Proposed phase wise network and integration plan for feeder modes of interest

Chapter 4 presents feeder mode wise zonal plans depicting zones with graded potential of shift towards BRT (using a specific feeder mode). These have been used to develop feeder mode specific network plan. The analysis suggests that there is limited potential for integrating all feeder modes serving different zones and stretches of the BRT corridor. Thus, two new hybrid BRT routes have been planned, a circular route for e-rickshaw is proposed, junctions with BRT corridors are proposed to be developed, a network of streets are proposed to be developed with high quality NMT (pedestrian and cyclist) infrastructure and areas/zones to be served by bike sharing stations have been identified. These proposed network plans for each of the feeder modes has been presented below with their associated salient features.

5.3.1 Bicycle and Walk as Feeder

Feeder bicycle is proposed to be planned by providing bike rental stations and/or parking at identified BRT stations along with high quality segregated bike paths on streets connecting the corridor to attractors and generators of trips in favour of BRT throught the use of this feeder mode. Developing bike paths on streets also entails developing high quality pedestrian infrastructure which together contributes to overall street development proposal on the network. Analysis of feeder mode zonal plan presented in Chapter 4, suggests that the zones of interest for bicycle and walk feeder modes overlap. This implies that the street development proposal in these zones will actuate shift from both these feeder modes. Thus a street improvement network plan and a plan for potential zones with bicycle stations has been proposed. This has been presented in Figure 60.

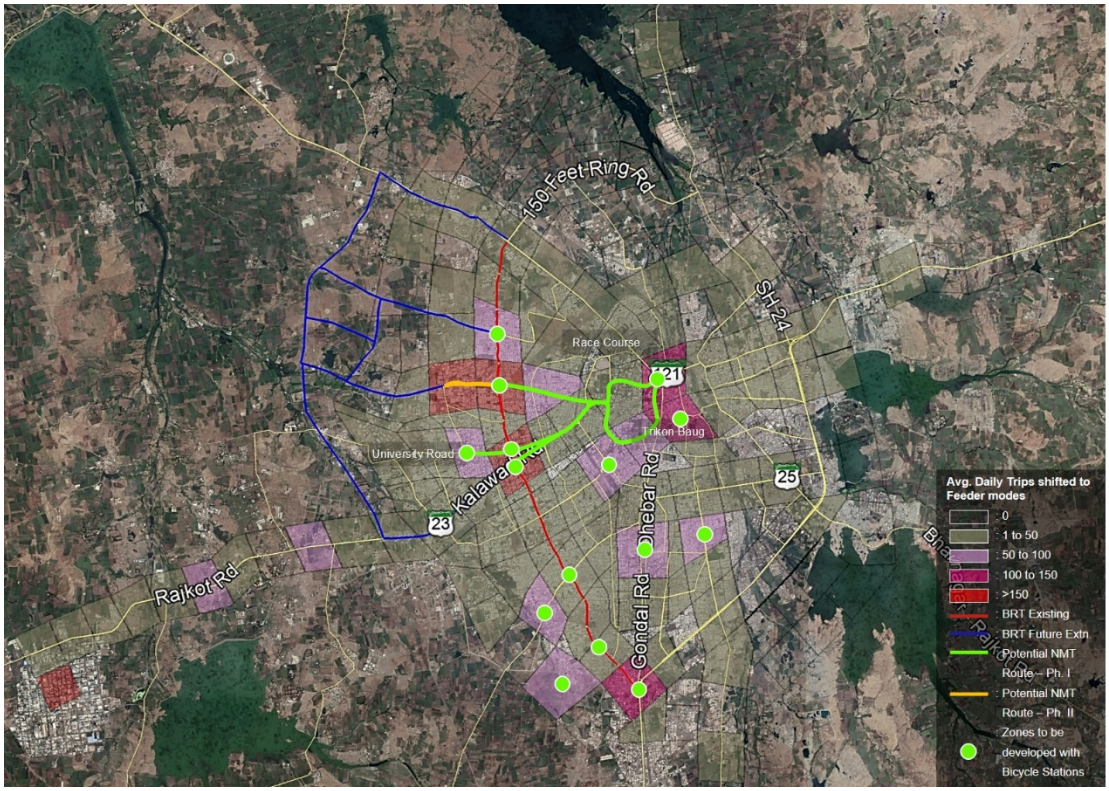


FIGURE 60: POTENTIAL NMT NETWORK PLAN

The salient features of this network are as following:

- The proposed redesigned street network with integrated as well dedicated bicycle and pedestrian infrastructure is estimated to be a total of 12 km in length in the final phase. The development of this network includes Kalawad road on the eastern side of the BRT corridor and the entire stretch of the Raiya Road and university road along with parts of Gaurav Path. The western part of Raiya road (west of BRT corridor) is the future BRT corridor and thus will need to be developed (today) as per the designed cross section for BRT which is expected to be operational by 2028. It also includes the circulatory road network around the core area (Moti Tanki Chowk, Sadar Bazaar, etc.), which include parts of race course ring road, Jawahar Road, Dr. Yagnik Road and Kasturba Road. This network links the existing BRT corridor as well the BRT extension to Trikon Bagh bus station in the heart of the city. In the final phase (2028) the network is expected to expand with the development of BRT corridors on western half of Kalawad and Raiya Road, because this network typically also includes dedicated high quality provisions for pedestrians and cyclists.
- Most of the streets in the proposed network have a right of way (RoW) of 24m, while Kalawad road has a RoW of 30m. Some streets such as Dr. Yagnik Road are as narrow as 15m.

- The assessment of street RoW suggests that it is possible to provide a 1.8m to 2.5m wide dedicated barrier free footpath on either side of all streets in the proposed network. It also suggests that most parts of the network can be provided with a 2.2 to 2.5m wided segregated cycle track on either side of the streets. Where RoW does not permit provision of dedicated tracks, stretches can include common cycle track and footpath (3 to 4m wide) or 1.2 to 1.5m wide painted cycle lanes along with traffic calming to reduce vehicular speeds to within 30km/h (on such roads) (Figure 61).

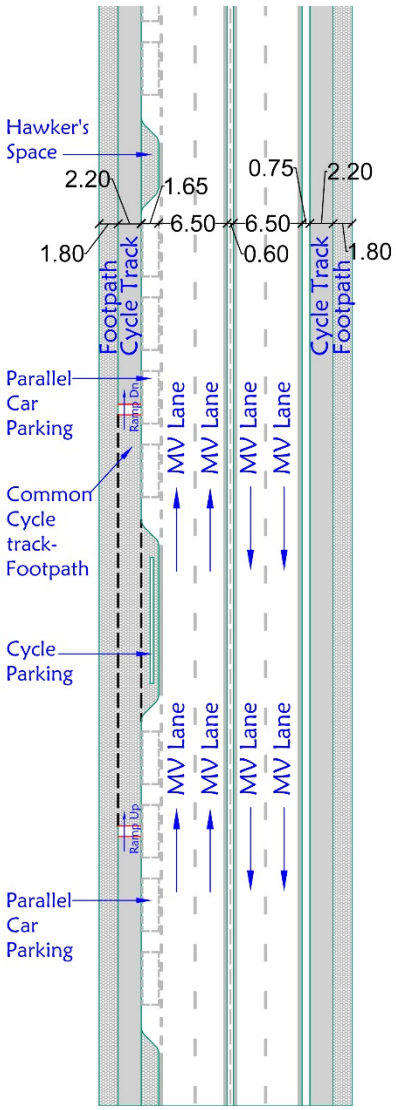


FIGURE 61: TYPICAL LAYOUT PLAN FOR 24M ROW

- Along with dedicated cycle tracks, bicycle sharing stations can be integrated with the network. The Rajkot Bicycle Sharing Scheme proposal developed by ICLEI-SA (discussed in Chapter 2), already includes proposals for bicycle sharing stations development along parts of the street development network. This includes the entire stretch of Kalawad Road and the streets in and around the core area encircled by parts of race course ring road, Jawahar Road, Dr. Yagnik Road and Kasturba Road. It is proposed that in order to contribute shift towards BRT through the use of bicycle sharing additional bicycle sharing stations be created in the identified zones of interest for this feeder mode. These include zone numbers 66, 77, 81,82, 92,105, 109, 110, 120, 122, 136, 143, 146, 156 and 157 in the year 2028. The number and location of bicycle stations in these zones may be identified as a part of the bicycle sharing proposal for the city of Rajkot.

- It is expected that a total of 781 daily trips in 2018, 1176 trips in 2023 and 2260 trips in 2028 are likely to shift in favour of BRT through the use of bicycle sharing system (and dedicated cycling infrastructure). This is based on the estimation of trips likely to shift from each zone served by the street network proposed to be redeveloped. Table 61 presents the details of zone number wises expected daily shift in trips towards BRT through the use of bicycle sharing, after the redevelopment has taken place in each of the three study periods.
- It is expected that a total of 533 daily trips in 2018, 680 trips in 2023 and 841 trips in 2028 are likely to shift in favour of BRT through the use of dedicated pedestrian infrastructure. This is based on the estimation of trips likely to shift from each zone served by the street network proposed to be redeveloped. Table 62 presents the details of zone number wises expected daily shift in trips towards BRT through the use of dedicated high quality pedestrian infrastructure, after the redevelopment has taken place in each of the three study periods.
- Based on the thumb rule cost, it is estimated that the development of complete streets on a 24m RoW (existing road) road is expected to cost the range of 7.80 crore per km, including provision of lighting and existing services re-alignment (Tripp et al., 2014).
- Using the RMTS E-ticketing data, it is known that roughly 40% of commuters on the routes crossing the BRT corridor, access or cross the corridor. Applying this figure to the proposed bicycling route serving as a feeder to BRT corridor, and assuming that 50% of the cyclists crossing or terminating at the BRT corridor will be shifting to the BRT service, the total daily ridership of cyclist on this network can be estimated as x/40%/50%, where x is the estimated number of commuters using bicycle sharing as feeder mode to the BRT. Using this formula the number of daily trips by cycle sharing on the proposed corridor is expected to be 3904 in 2018, 5880 in 2023 and 11298 in 2028.
- The estimated figure of 2260 trips on the cycling network using bicycle sharing services is subject to the conditions discussed in chapter 4. These include a cycle sharing station with an average access distance of 50m off the corridor and within 50m at the corridor. It is also subject to transition time between bicycle and walk to be no more than 1.5 minutes at each end. This means that operations will need to be designed to reduce the transaction and handing over time at both ends of the journey. This requires development of bicycle sharing stations at the junctions where the proposed road development network crosses the BRTS, i.e. KKV, Indira Circle and Raiya Circle junctions. There is space at these three junctions for the provisions of such stations, however it may involve limited redevelopment (Figure 63). Additionally, the conditions for shift to bicycle share feeder include a free ride, i.e. at each end the ride is expected to be less than 30 minutes, and thus free for feeder trips.
- Provision of usable and barrier free dedicated cycling path is a critical assumption in the estimate of trips shifting to BRT using bicycle sharing services. This implies that regulatory and maintenance framework of the infrastructure would have to be brought in place, either under Rajkot Municipal Corporation, Rajkot Traffic Police or both. Additionally, strict and defined parking norms and regulatory structure will have to be in place throughout the length of the proposed re-developed street network with dedicated bicycling and pedestrian infrastructure. This is necessary to ensure that pedestrian and cycling infrastructure remains usable by the intended audience. This is also one of the boundary conditions defined for estimating the modelled shift in favour of BRT in horizon years 2023 and 2028 (refer chapter 4).
- It is expected that inner city streets feeding the main streets selected for redevelopment, play a critical role in serving as a walk feeder network to the BRT. Even though all of these streets may not qualify for a segregated pedestrian infrastructure (based on the RoW available), efforts need to be made to develop these streets as pedestrian priority streets. It is expected that a total of approximately 30km street network in the zones adjoining the proposed redeveloped street network. It is expected that limited redevelopment these streets will require pavement texture change, incorporation of traffic calming, street lighting, signage, pavement marking and drainage redevelopment. It is expected that such a limited redevelopment exercise will require an approximate budget of between 1.20 to 1.80 crore per km.
- The original design of BRTS (Urban Mass Transit Company, 2010) included junction designs with three phase (one for buses, one for pedestrians and one for other

vehicles) signalized roundabouts. However currently most junctions on the BRT do not include roundabout geometry and function as unsignalized (signals are only operated during peak hours) junctions. Bus stations on the BRT corridor were planned and constructed at junctions for ease of access by commuters. However, the absence of operational signaling system at intersections (during most of the day), means that access the BRTS becomes unsafe, unpleasant and unattractive for commuters. There is thus merit in developing the junctions as signalized roundabout to convert existing non BRT trips to BRT trips through walk, bicycle and other feeder modes. While signalization shall help ensure safety and comfort in accessing the BRT, a roundabout at the junction can help reduce signal phasing allowing reduced delays for all ad also providing operational ease for possibility of adding additional (hybrid) routes to the BRT.

TABLE 61: EXPECTED DAILY SHIFT IN TRIPS TOWARDS BRT THROUGH BICYCLE SHARING IN YEAR 2018,2023 & 2028

Zone of Interest	Year 2018	Year 2023	Year 2028
77	63.20	78.36	113.72
78	17.57	22.48	29.03
80	51.07	63.33	87.00
81	160.20	218.51	697.50
82	108.00	134.12	166.52
89	29.20	36.21	47.16
90	25.26	33.11	40.86
91	53.35	66.15	89.78
92	33.58	69.13	136.17
105	49.96	61.95	76.44
109	145.63	338.25	710.26
110	43.86	54.39	67.11
Total	**781**	**1176**	**2260**

TABLE 62: EXPECTED DAILY SHIFT IN TRIPS TOWARDS BRT THROUGH WALK IN YEAR 2018,2023 & 2028

Zone of Interest	Year 2018	Year 2023	Year 2028
77	65	80	98.90
78	13	17	20.44
80	49	61	75.34
81	148	202	248.89
82	47.87	59.36	73.24
89	18	23	27.82
90	18	22	26.78
91	16	20	24.90
92	22	27	33.72
105	11	13	16.61
109	113	141	174.92
110	12	15	19.38
Total	**533**	**680**	**841**

5.3.2 Hybrid BRTS as Feeder

Analysis of zones of interest for Hybrid BRT suggests that, provision of routes using parts of BRT (in order to eliminate any changeover time and cost penalty) and connecting main trip generators and attractors outside the corridor, is likely to contribute to increased usage of the corridor. This mode in effect adds two more routes to BRT which are both feeder and main modes on the corridor. The two proposed routes are:

Route A – Starting from Trikon Bagh Station, Passing through Jawahar Road, Dr. Yagnik Road, Gaurav Path and Kalawad Road, then turning on to BRT corridor at KKV junction (towards Raiya Circle), turning off the corridor at Raiya Circle, continuing on Raiya road towards Raiya

Dhar and then terminating on Sadhu Vaswani Road.This route will have a total length of 8.9 km. Of this approximately 5.9km is off the BRT corridor, 1.8 km is on the current BRT corridor, and 1.2km is on the proposed extension to the BRT corridor on Raiya Road.

Route B – Starting from Gondal and using the corridor till KKV junction and then turning on to Kalavad Road and terminating at Metoda. This route will have a total length of 18km. This route es approximately 6km length of the existing BRT corridor, 3.5km length of proposed BRT extension (on Kalawad Road expected to be operational in 2028) and 8.5km length is outside the BRT network.

Figure 62 Presents the route map for the proposed hybrid BRT routes and Table 63 Presents the zone wise contribution to shift in favour of BRT using the hybrid BRTS route.

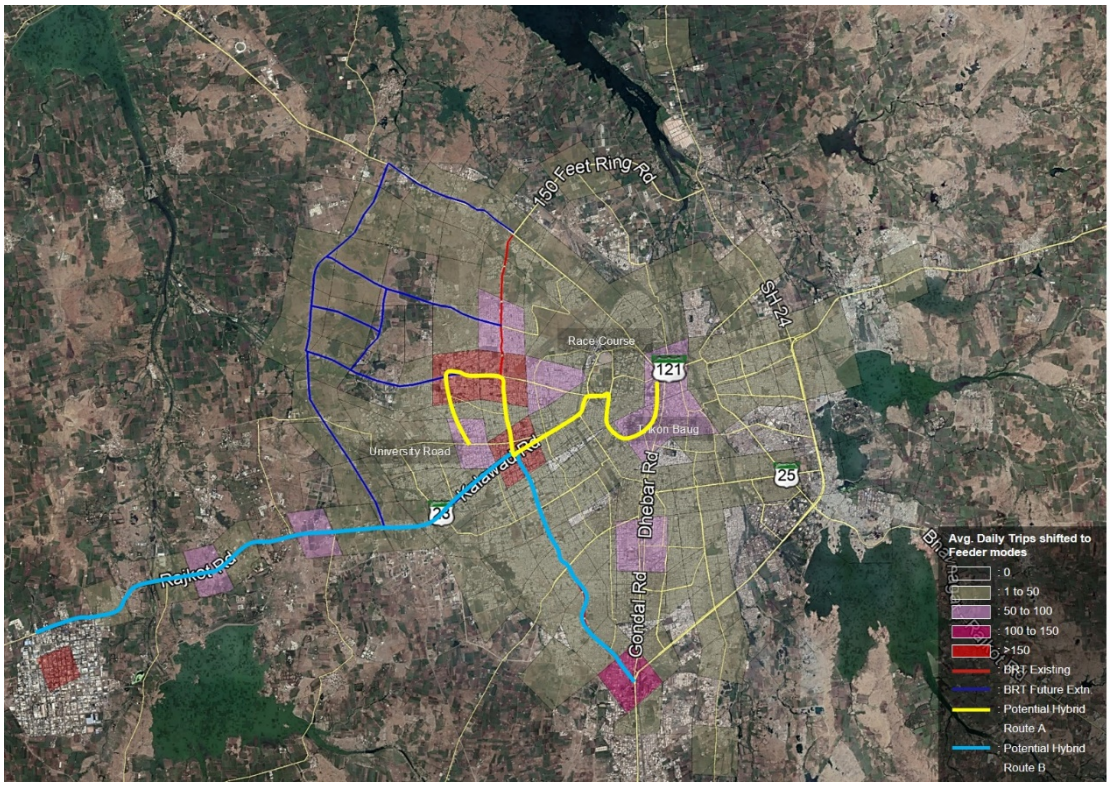


FIGURE 62: POTENTIAL HYBRID BRT NETWORK PLAN

TABLE 63: EXPECTED DAILY SHIFT IN TRIPS TOWARDS BRT THROUGH HYBRID BRT NETWORK IN YEAR 2018,2023 & 2028

Route A Zone	Year 2018	Year 2023	Year 2028	Route B Zone	Year 2018	Year 2023	Year 2028
77	62.08	77.22	95.51	**109**	107.56	133.48	269.275
91	51.96	64.67	80.03	**110**	20.94	26.08	32.3
92	51.15	63.67	78.79	**115**	7.35	9.35	11.77
105	10.07	12.72	15.93	**139**	2.72	3.62	4.75
78	16.79	21.05	26.21	**166**	0.69	1.1	1.58
90	24.18	30.22	37.52	**167**	0.79	1.22	1.74
89	28.45	35.46	43.92	**168**	54.21	67.46	83.47
109	107.56	133.48	269.27	**169**	0.00	0.24	0.53

Route A Zone	Year 2018	Year 2023	Year 2028	Route B Zone	Year 2018	Year 2023	Year 2028
110	20.94	26.08	32.3	**170**	0.38	0.72	1.12
88	28.77	35.92	44.6	**171**	45.40	56.53	69.98
81	304.94	416.18	513.77	**172**	1.17	1.69	2.32
82	107.01	132.93	164.25	**173**	0.01	0.26	0.55
87	26.20	32.73	40.62	**174**	2.39	3.2	4.19
-	-	-	-	**175**	0.06	0.32	0.62
-	-	-	-	**176**	0.03	0.28	0.58
-	-	-	-	**177**	101.33	125.83	155.43
-	-	-	-	**108**	2.76	3.66	4.75
-	-	-	-	**116**	12.08	16.7	20.83
-	-	-	-	**118**	17.32	23.85	29.76
-	-	-	-	**136**	26.35	34.54	42.86
-	-	-	-	**144**	22.91	31.49	39.09
-	-	-	-	**146**	10.60	14.69	18.36
-	-	-	-	**156**	67.40	83.82	103.65
Total	**840**	**1082**	**1443**	**Total**	**504**	**640**	**899**
	Total (Route A+B)	**Year 2018**	**1345**	**Year 2023**	**1722**	**Year 2028**	**2342**

The salient features of the proposed hybrid BRT routes are as following:

- A total of 1443 trips are expected to shift to (current and proposed) BRT through the use of Hybrid BRT route A and 899 trips are expected to shift to BRT through the use of Hybrid BRT route B. It is known from the analysis of trips undertaken as of today on RMTS, that approximately 40% of all trips use parts of BRT or cross the corridor. Assuming the same percentage for the proposed hybrid routes, it is estimated that route A will serve a total of 3608 trips per day, while route B will serve a total of 2248 trips per day.
- Estimation of fleet requirement on the proposed routes for hybrid BRT are based on the number of trips to be catered, average operational speed of buses, average expected occupancy, average commuter trip length, desired headway and route length. With the route length of the corridor and the average commuter trip length expected to remain the same in the current and the horizon years for the study, the fleet requirement is expected to change in future based on the changes in other parameters.
- The desired headway is based on the average waiting time (used in the estimate of potential trips that might shift to BRT), which is 10 minutes (refer chapter 4). Thus, the average headway to be planned for is in the range of 20 minutes.
- Average operational speed on the corridor is expected to remain the same at 18.48km/h. However, with an increase in traffic, the average operational speed on streets outside the corridor is expected to reduce from current 18.32km/h to 17.4km/h in 2023 and 16.53km/h in 2028. This effects the overall operational speeds on the two routes which shall reduce from 18.4 to 17.2km/h for route A and 18.4 to 17.6km/h on Route B. The operational speed is also affected by the length of the BRT corridor used by the buses. Since the BRT corridor network is expected to expand in 2028, the operational speed of the buses on these two routes changes accordingly (Annexure 8.15.1 to Annexure 8.15.3).
- An average occupancy of 60 to 90% is generally acceptable for bus services. If the occupancy and other parameters remains constant the headway will vary with the

seating capacity of the bus. Thus, bigger the bus, more the headway and hence more the wait time. To get around this issue, estimation of fleet was made by keeping the headway in the range of 20-25 minutes and varying the occupancy as well the bus size. Using this method, it was assessed that a 24-seater bus may be ideal for Hybrid BRT services, with route A expected to attract higher occupancy (and thus earning) than route B (Annexure 8.15.1 to Annexure 8.15.3).

- Because of difference in route length and expected number of trips between Route A and B, Route A is proposed to be planned with an occupancy of 80% and average headway of between 13 (in 2028) to 22 minutes (in 2018), while route B is proposed to be planned for an average occupancy of 30 to 45% and average headway of 24 (in 2028) to 29 minutes (in 2018) (Annexure 8.15.1 to Annexure 8.15.3).
- Based on the parameters mentioned above, the estimate total fleet requirement based on 90% fleet utilization, for hybrid BRTS is 9 in 2018, 11 in 2023 and 14 in 2028.
- RMTS route no. 27, currently uses a section of the BRT corridor between Raiya Chowk and Rampir junction (1.1km). This route serves additional areas which show potential to shift to a hybrid BRTS network. In addition to the two hybrid routes, this route may also be considered to be converted to a hybrid BRTS route (with buses using the dedicated bus lane in the corridor) in the near future.
- Since BRT corridor, currently has high floor island stations with doors, buses using the corridor need to have doors on the right side. However, outside the corridor only curbside boarding is possible and hence low/standard floor buses with doors on the left side are required. For this purpose, it is proposed that the 24 seater bus is desirable to be standard 550 to 650mm floor height with doors on both sides. To facilitate level boarding by these buses on the BRT corridor, a 15m long extension of the current island station is proposed, including a 6m long (1:20) ramp connecting the high floor section of the station with the low floor extension of the same (Figure 63 & Figure 64). It is possible to accommodate this additional length at the stations because the road geometry was originally designed to accommodate a station area length of 80m, while the stations developed on the current BRTS corridor are less than 40m in length.

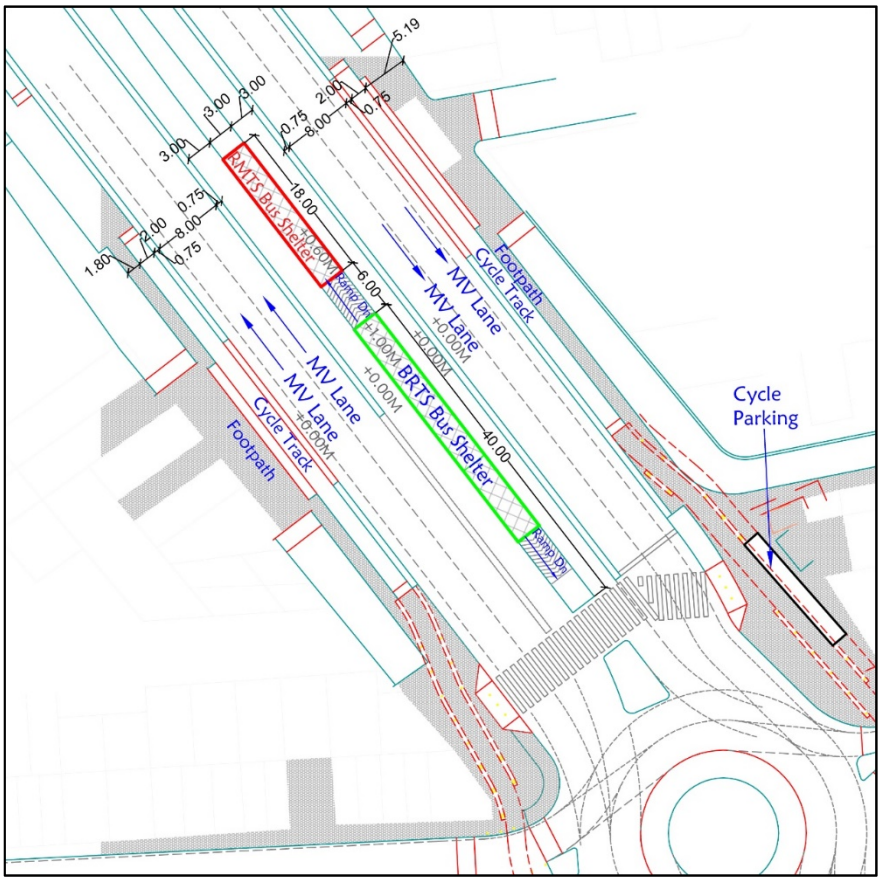


FIGURE 63: RMTS BUS SHELTER LOCATION PLAN FOR HYBRID BRTS

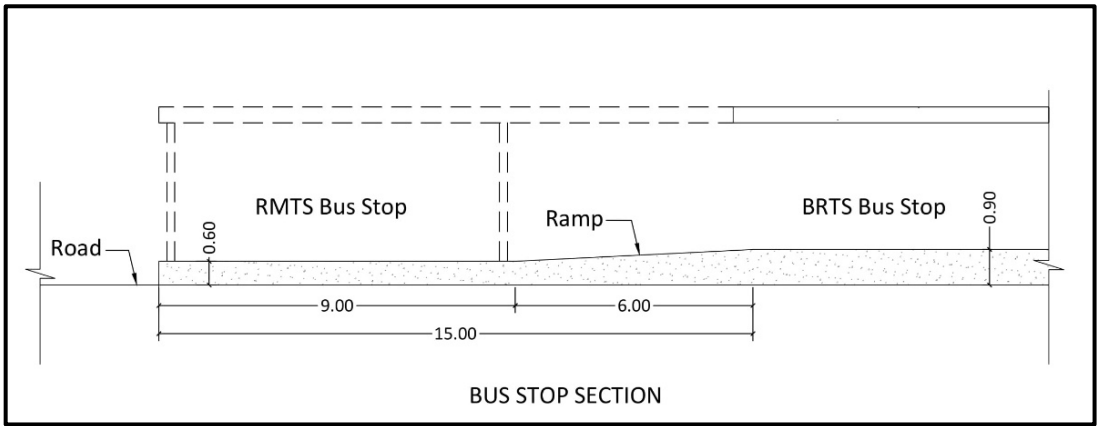


FIGURE 64: SECTION SHOWING RMTS AND BRTS BUS SHELTER INTEGRACTION FOR HYBRID BRTS

- Integration of different station and fleet types on the same BRTS corridor raises concerns for delay caused by a docked bus blocking the passage of another bus at the stations (especially since Rajkot BRTS corridor does not include passing lanes). However, this risk is expected to have little impact on the overall journey time or operational speed because of two reasons. A delay encountered at first station not likely repeat at subsequent stations because of the time gap that will be forced between thintegrated scheduling in a manner that should be able to allow bunching of these two types of buses at stations. However if the city expects high risk of delays from using two types of buses, they may go for a high floor, 24 seater bus (where available), however the same will lead to discomfort for passengers on the stretches outside the corridor, because they will need to negotiate 3 to 4 steps to get in and out of the bus.
- Based on the estimation of trips to be catered by hybrid BRTS routes, the average trip length of commuters and assuming the current per km fare on RMTS (Rs. 1.0 per km) to be applied on hybrid RMTS[3], it is expected that route A shall record an average earning per km (EPK) of Rs. 19.2 in 2018, 2023 and 2028, while Route B shall record an EPK of Rs. 7.2 in 2018, Rs.8.4 in 2023 and Rs. 10.8 in 2028. An average EPK of Hybrid BRTS service in 2028 is expected to be Rs. 11.8 in 2018, Rs. 13.0 in 2023 and Rs. 14.8 in 2028 (Annexure 8.15.1 to Annexure 8.15.3).
- Hybrid BRTS fleet may consist of regular diesel buses or more advance electric buses (e buses). With the current policy and government financing thrust in favor of e-buses, it is expected that hybrid BRTS routes may be operated using this technology. From the limited experience of cost per km (CPK) in operating 12m long battery-based e-buses with a guaranteed operation of 160 to 200km per day is in the range of Rs. 35 to Rs. 60 per km. Since the bulk of the capital cost for such buses is in the batteries, it is expected that with the possibility of booster charge at the end of the trip (10 minute layover time is included in operational calculations), and with reduced size of buses, this cost will reduce and the CPK in the range of Rs. 30 to 40 can be expected. Assuming a CPK of Rs. 35 per km which is not very different from the current average CPK of RMTS buses at Rs. 38.3, it is estimated that the operator of Hybrid BRTS will have to be subsidized at Rs. 23.2 per km in 2018, Rs. 22 per km in 2023 and Rs. 20.2 per km in 2028. This is slightly less than the current average subsidy of Rs. 26.6 per km on the current RMTS routes (Annexure 8.16). However, this estimation of EPK and CPK of Hybrid BRTS routes may change based on the fleet size, vehicle size and energizing methods used. Section 6.1.2 discusses these options in more details.
- It is expected that gradually more hybrid BRTS routes will be added to the current BRTS network, not only augmenting ridership on the BRTS corridor but also encouraging shift to more efficient public transport from less efficient private motorized modes. With potential of increased ridership on the BRTS corridor, it is expected that the current average per km fare on the BRTS may be rationalized to the level of RMTS from the current Rs. 1.50 per km to Rs. 1.0 per km. This also paves the way for an

[3] This is one of the boundary conditions for estimating shift to BRTS using Hybrid BRTS as feeder – as discussed in chapter 4

integrated regulator for both BRTS and RMTS. In the long run, it is expected that a common regulator will be advantageous in promoting bus based public transport in the city as it would allow better integrated route and service planning as well fare integration. This in turn is expected to attract higher ridership and reduce overall operational costs.

- Integrating additional routes on the current BRTS corridor in the form of hybrid BRT, opens an opportunity to improve the utilization of current BRTS infrastructure and extend the benefits of the system to more residents of the city. This also allows the city to defend investments in to the system when increasing traffic congestion in mixed traffic lanes, leads to demands of abandoning the system or pushing more (non-entitled) vehicles in the corridor. Many other cities with closed BRTS, already facing such problems. This is the reason why Ahmedabad BRTS has already integrated AMTS routes on some of its corridor in a Hybrid-BRTS format (TNN, 2015).

5.3.3 RMTS as Feeder

Analysis of zones of interest with potential to shift trips to BRTS using RMTS services as the feeder network has been undertaken. This analysis identified a total of 8 routes out of the 31 routes crossing the BRT corridor, as having the maximum potential to shift trips in favour of BRTS if conducive conditions exist. These routes were identified as they were connecting the BRTS corridor to the zones of interest for RMTS feeder trips (to BRT). These routes are route no.'s, 2, 5, 7, 16, 26, 27, 40 and 57 (Figure 66). Of these routes, route no. 27 has the potential to be converted to a hybrid BRTS route, as discussed earlier. The conducive conditions for utilizing these routes as a potential feeder to BRT and the resultant or expected outcome is as following:

- One of the critical boundary conditions for RMTS to act as a feeder to BRTS is the required of reduced average waiting time of less than 10minutes (refer chapter 4). This means that the average headway on RMTS routes serving as feeder to BRTS should be in the range of 20 minutes. The current average headway on the 8 routes mentioned above is 46.1 minutes. This period needs to be halved in order for these routes to serve as an effective feeder to BRTS. To achieve this it is estimated that an additional 18 buses (including 10% reserve) will need to be inducted in these routes.
- Another critical boundary condition for the selected RMTS routes to act as feeder to BRTS is the reduced changeover time between the modes. This can be achieved by locating the RMTS bus stops within 75m of the BRTS corridor, and providing a good quality pedestrian infrastructure linking these RMTS stations to the BRTS corridor. This implies that the junctions where RMTS routes cross the BRTS corridor should be developed with a good quality pedestrian infrastructure extending up to 100m on all cross roads. Though this should eventually be done for all such junctions on the BRTS corridor, however it is critical that such a cross road development be undertaken on Ramdev pir, Nanavati circle, Raiya chowk, Indira circle, KKV chowk and Punit Nagar Junctions on the BRTS corridor in the immediate phase. This is because the 8 selected routes cross the BRT at these junctions (Figure 65).
- Additional conditions (as discussed in chapter 4) include fare integration between RMTS and BRTS as well private vehicle parking regulations and restrictions (for horizon year 2023 and 2028).
- It is estimated that after if the above conditions are met, the 8 identified routes shall be able to shift 884 daily trips in favour of BRTS in 2018, 1260 daily trips in 2023 and 1573 daily trips in 2028 (Table 64).

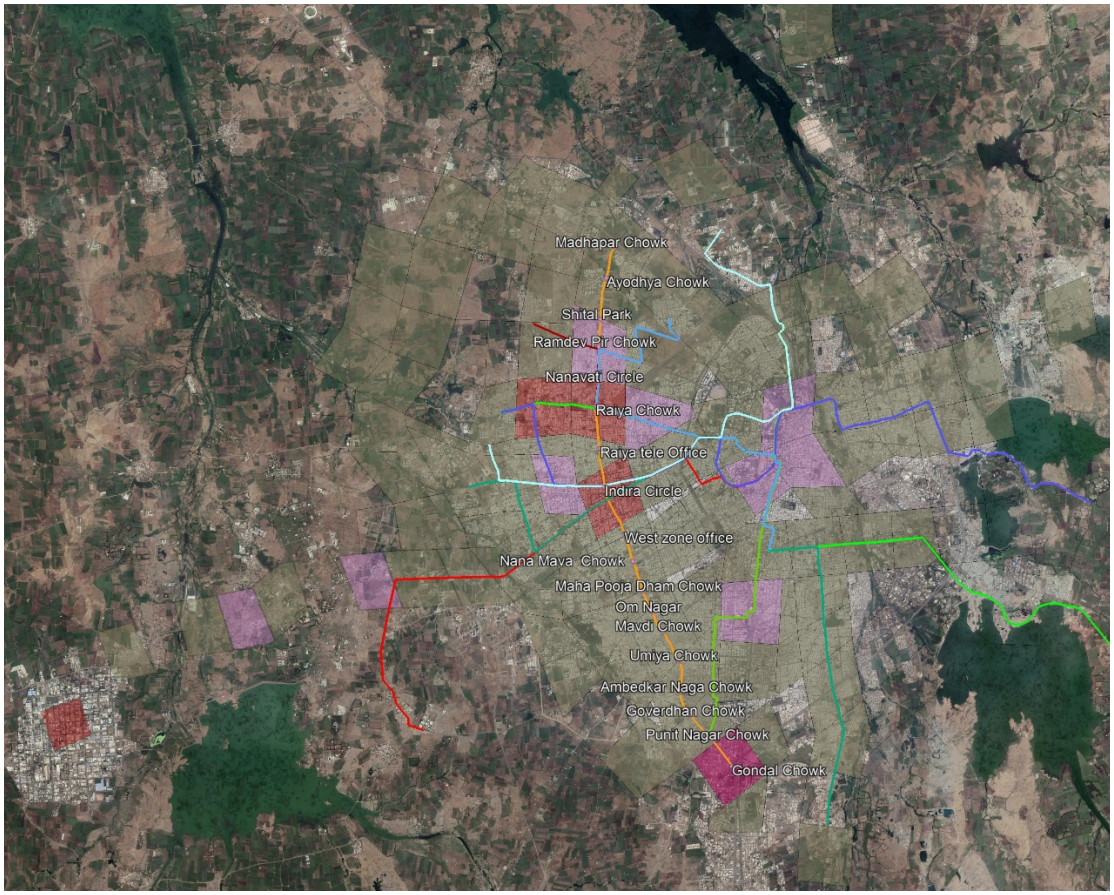


FIGURE 65: RMTS ROUTES CROSSING THE BRT CORRIDOR HAVING POTENTIAL TO SHIFT DAILY TRIPS IN FAVOUR OF BRTS

TABLE 64: EXPECTED DAILY SHIFT IN TRIPS TOWARDS BRT THROUGH RMTS IN YEAR 2018,2023 & 2028

Zone of interest	Year 2018	Year 2023	Year 2028
30	0.16	0.27	0.33
39	0.01	0.01	0.01
40	0.13	0.21	0.26
56	3.16	3.91	4.83
58	1.04	1.77	2.18
59	11.01	15.40	18.96
65	6.67	8.69	28.26
66	41.17	59.99	74.02
67	3.50	5.45	6.73
69	5.10	6.33	7.81
70	1.86	2.30	2.84
71	2.76	3.42	4.22
72	5.60	6.95	8.57
74	11.47	14.26	17.59
77	60.45	76.93	94.92
78	15.21	20.68	25.52

Zone of interest	Year 2018	Year 2023	Year 2028
80	50.14	63.20	77.98
81	85.84	168.25	207.60
82	106.98	132.69	163.72
83	3.08	4.47	6.61
86	0.38	1.46	1.80
87	22.57	32.49	40.09
89	14.37	35.11	43.33
90	23.94	29.94	36.94
91	48.37	64.37	79.43
92	48.29	63.30	78.11
95	0.00	0.00	0.01
96	0.01	0.01	0.01
99	1.03	1.27	1.57
100	4.52	5.61	6.92
102	8.47	10.50	12.95
103	0.00	0.00	0.00
104	7.24	8.97	11.07
105	9.38	12.48	15.40
106	0.17	0.28	0.35
109	83.81	135.29	166.92
110	40.07	51.85	63.98
111	6.34	9.18	11.32
112	13.66	18.23	22.50
114	1.18	2.15	2.66
115	5.58	9.11	11.24
119	10.34	17.46	21.55
120	36.13	44.80	55.28
122	2.84	5.28	6.52
126	0.03	0.04	0.05
128	0.06	0.07	0.09
132	0.61	0.76	0.94
135	1.21	2.78	3.43
139	2.28	3.38	4.17
146	9.00	14.45	17.83
149	11.08	14.06	17.35
154	0.40	0.67	0.83
163	0.01	0.01	0.01
166	0.59	0.85	1.05
167	0.79	0.98	1.21
168	54.06	67.12	82.82
Total	**884**	**1260**	**1573**

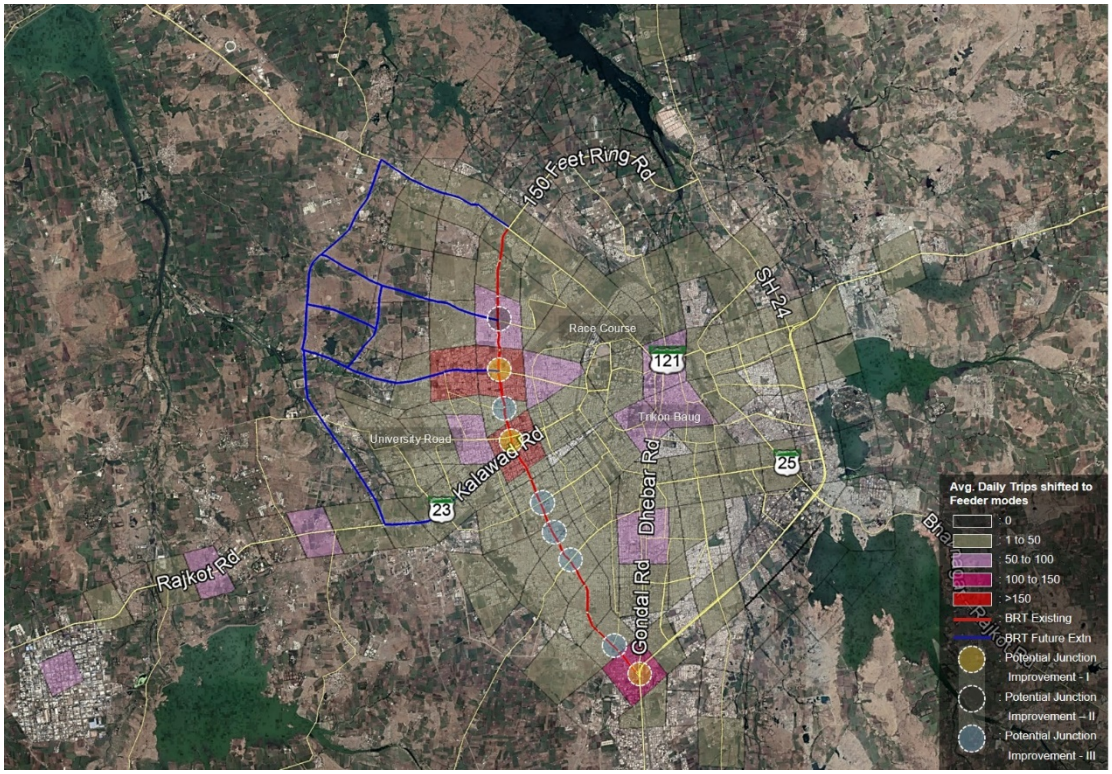


FIGURE 66: POTENTIAL RMTS NETWORK PLAN

5.3.4 E-Rickshaw as Feeder

Analysis of zones of interest with potential to shift trips to BRTS using E-rickshaw as the feeder network has been undertaken. Using this analysis, a 7.8km route, looping across the BRT corridor has been proposed (Figure 67). This loop passes through Kishanpara chowk, Mahila college chowk, Kotecha chowk, Indira circle, Sinhar school, Sadhu Vasvani schoold for girls, Pramukh swami auditorium, Salus hospital and Khodiyar dairy farm and uses Gaurav path, Kalawad road, University road, Sadhu Vasvani road and Railya road. This loop has been selected because it has the highest potential of serving as an efficient BRT feeder system. It is estimated that this loop will effectively shift 254 trips per day to BRTS in 2018, 446 tips in 2023 and 552 trips in 2028. Table 65 Presents the zone wise breakup of trips attracted in favour of BRTS by the proposed E-rickshaw route in each of the three years for the study. The salient features of this proposed electric IPT mode as feeder to BRT have been presented below.

- From the e-ticketing data collected on RMTS routes, it is known that roughly 40% of trips using the routes that cross the BRT corridor, are accessing or crossing the corridor. Applying this figure to the proposed e-rickshaw route serving as a feeder to BRT corridor, and assuming that 50% of the e-rickshaw users crossing or terminating at the BRT corridor will shifting to the BRT service, the total daily ridership of e-rickshaw on this network can be estimated as x/40%/50%, where x is the estimated number of commuters using e-rickshaw as feeder mode to the BRT. Using this formula the number of daily trips by e-rickshaw on the proposed corridor is expected to be 1270 in 2018, 2230 in 2023 and 2760 in 2018 (Annexure 8.17.1 to Annexure 8.17.3).
- Estimation of fleet requirement on the proposed route for e-rickshaw is based on the number of passenger trips to be catered, average operational speed of e-rickshaw, average expected occupancy, average commuter trip length, desired headway and route length. With the route length of the corridor and the average commuter trip length expected to remain the same in the current and the horizon years for the study, the fleet requirement is expected to change in future based on the changes in other parameters.
- The average commuter trip length by e-rickshaw is expected to be longer than walk but shorter than cycle. Current average one way walk trip to BRT is about 0.6km, while average trip length for cyclists is estimated to be in the range of 5.0km (discussed in

the previous sections). Based on this it is estimated that the average commuter trip length by e-rickshaw on the proposed route shall be bout 1.5km.

- The desired headway is based on the average waiting time (used in the estimate of potential trips that might shift to BRT), which is 1 minute (refer chapter 4). However, since e-rickshaws are not operating as per a fixed schedule and rather wait for commuters at important nodes, the planned headway for e-rickshaw service has little or no impact on the average wait time if the same is available in sufficient numbers along the route. Thus for estimating the required fleet of e-rickshaw on the proposed e-rickshaw feeder route, is not dependent on the proposed headway, rather resultant headway based on fleet size requirement has been derived (Annexure 8.17.1 to Annexure 8.17.3).
- With an increase in traffic, the average operational speed on streets outside the corridor is expected to reduce from current year estimate of 8km/h to 7.6 km/h in 2023 and 7.22 km/h in 2028 (Annexure 8.17.1 to Annexure 8.17.3).
- An average occupancy of 50 to 60% is generally acceptable for shared feeder modes. If the occupancy and other parameters remains constant the headway will vary with the seating capacity of the mode. Most e-rickshaws are 4 seater vehicles. Based on this and using an average occupancy of 50%, on an average two passengers are expected to be using the e-rickshaw (Annexure 8.17.1 to Annexure 8.17.3).
- A 90% fleet utilization is usually accepted for a fleet of public service passenger vehicles. However in case of e-rickshaw three one hour charging cycles are expected in day (apart from the night charging), i.e. a charge every 25 to 30km. This is expected to reduce the fleet utilization by another 20%. Thus a fleet utilization figure of 70% has been taken for e-rickshaws.
- Based on the parameters mentioned above, the estimate total fleet requirement based for e-rickshaws, with routes operating on both direction on the proposed loop is, 11 in 2018, 21 in 2023 and 27 in 2028. With this fleet size the average headway between e-rickshaws is expected to be 14.7 minutes in 2018, 8.4 minutes in 2023 and 6.8 minutes in 2023. (Annexure 8.17.1 to Annexure 8.17.3).
- Based on the estimation of trips to be catered by e-rickshaw, the average trip length of commuters and with an estimated per passenger km fare of Rs. 3.5, it is expected that route shall record and EPK of 7.0 Rs in 2018, 2023 and 2028 (Annexure 8.17.1 to Annexure 8.17.3).
- The estimated EPK is expected to be attractive for operators (without the need for any subsidy). The operations may be undertaken by a company employing drivers or by individual operators. In case of later some additional support from the RMC may be required to provide land and charging stations as well some support in acquiring loan from banks for the purchase of the vehicles.

TABLE 65: EXPECTED DAILY SHIFT IN TRIPS TOWARDS BRT THROUGH E-RICKSHAW IN YEAR 2018,2023 & 2028

Zone of interest	Year 2018	Year 2023	Year 2028
80	16.35	30.81	38.02
81	31.37	52.67	65.05
82	67.71	116.43	143.65
87	17.41	33.13	40.88
89	54.28	101.50	126.78
90	37.86	52.22	65.10
109	18.01	34.51	42.59
110	10.85	24.27	29.95
Total	**254**	**446**	**552**

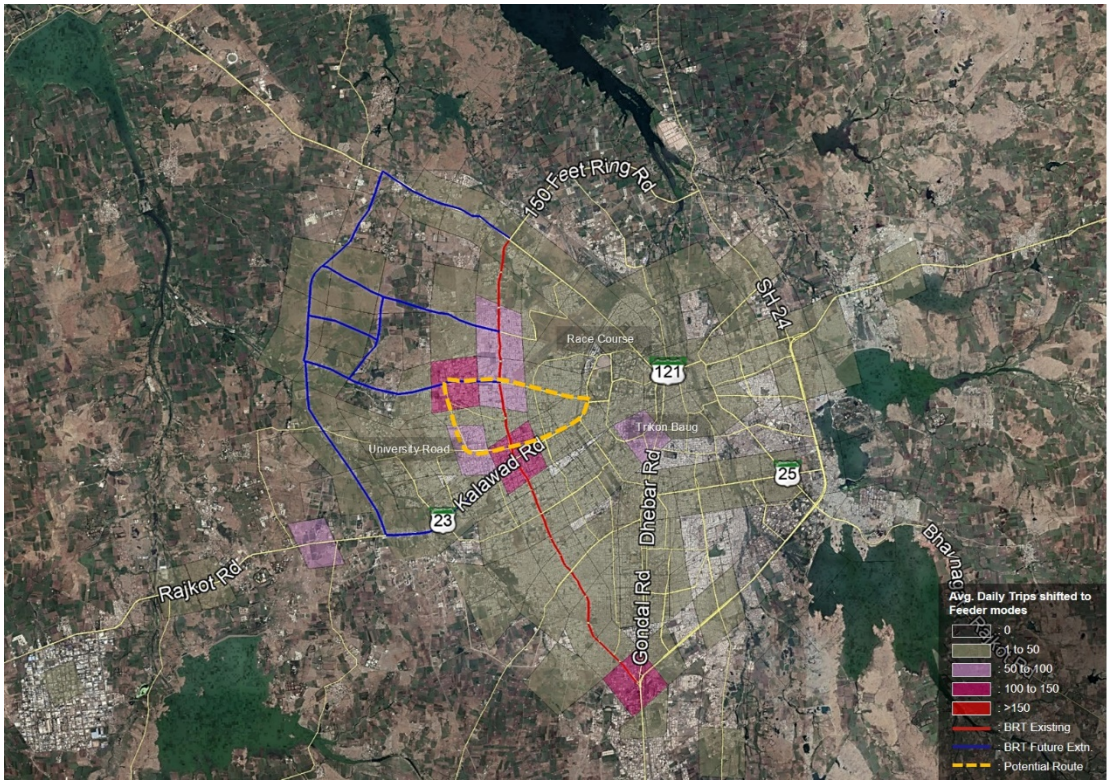


FIGURE 67: POTENTIAL E-RICKSHAW NETWORK PLAN

5.4 Impact on Current BRTS Corridor Ridership and Fleet Requirement

If all four means for developing BRTS feeder network as discussed above are implemented, then it is expected that the city would have shifted a total of 3796 daily trips in favour of the current BRTS corridor in 2018, 5284 daily trips in 2023 and 7567 daily trips in 2028. In addition to this the BRTS ridership is expected to grow with the increasing development around the corridor and the increasing number of trips and trip rate in the city. This rate is estimated to be 0.24 in 2023 and 0.53 in 2028 (discussed in chapter 4). Basis this the current number of daily trips i.e. 3796 are expected to increase to 4707 in 2023 and 5808 in 2028, provided BRTS fleet is expanded to accommodate the same. Table 66 presents the estimate of potential daily trips on BRTS after the feeder network development as discussed above is undertaken.

TABLE 66: NUMBER OF DAILY TRIPS EXPECTED IN YEAR 2018, 2023 & 2028

Feeder Network/Mode	**2018**	**2023**	**2028**
Walk	533	680	841
Cycle	781	1176	2260
Hybrid BRTS	1345	1722	2342
RMTS	884	1260	1573
E-Rickshaw	254	446	552
TOTAL	3796	5284	7567
Current BRTS corridor	21109	26175	32297
TOTAL expected Including feeder	**24905**	**31459**	**39864**

The above estimates have been fed in a model to estimate fleet requirement, headway and EPK for BRT. The model was tested with the base year figure of 21,109 average daily trips (derived from the BRTS ridership data for August 2017), with the average trip length of 3.83 km on BRT average BRTS operational speed of 18.48 km/h and average per passenger km fare of Rs. 1.50 (derived from BRTS data provided by RRL as discussed in chapter 3). The model estimates based on 90% fleet utilization and average occupancy of 78% closely match with current data (Annexure 8.18). For example, the model estimates a fleet of 11 buses with

average 248km of operations per bus per day, and a resultant average headway of 7.8 minutes. As against this observed sleet size is 11, observed average km undertaken by each bus per day is 250 and average headway is about 7.5 minutes (Annexure 8.18). Since average occupancy is nearing 80%, it is not expected to change in the future. Hence estimates for BRTS fleet size and expected headway are based on all the parameters retained as same in the model except for expected daily trip demand. Hence three scenarios are created, daily trip demand with additional trips attracted to BRTS through proposed feeder services in 2018, 2023 and 2028.

Based on the above estimate of daily ridership on BRTS in each of the three study periods, after implementing the identified feeder network, it is estimated that the current corridor fleet size will need to be expanded from current 11 buses to 13 buses when estimated feeder trips are accounted for, to 16 buses in 2023 (with trip demand including feeder trips in that year) and 21 buses in 2028 (with trip demand including feeder trips in that year). As a result of this average headway on the BRTS corridor will reduce to 6.7 minutes in 2018, 5.3 minutes in 2023 and 4.2 minutes in 2028 (Annexure 8.18). This headway is expected to reduce even further with the introduction of hybrid BRTS fleet as discussed above. This is in turn expected to make the BRTS even more attractive for potential commuters.

The change in fleet size and headway is however not expected to change the average EPK figure from Rs. 49.14, This is because no change is expected in the fare, occupancy or commuter trip length. Thus, the average per km subsidy required from the city to operate RRL services is expected to remain unchanged. Also based on the current data available with RRL the EPK is estimated at Rs. 60.4. It may be important to note that this difference is attributed to the actual fare box earning being based on fare slabs. For example the average trip length of 3.8km at an estimated average per passenger km fare (as estimated from fare chart in chapter 3) of Rs. 1.5 is Rs. 5.7. However the actual fare for this distance on the BRTS bus is Rs. 7.0.

Since the fleet of BRTS buses can be expected to double over the next decade, over which time period the current BRTS buses would have reached the end of their life, there is potential in exploring other alternate vehicle technologies. This includes e-buses, especially since the current policy thrust is in favour of such vehicles. Section 6.1.2.1 discusses the potential for incorporating 12m long e-buses in the BRT fleet.

Of the total of 3641 daily trips estimated to be shifted in favour of in 2018, 5089 in 2023 and 7330 in 2028, most are expected to shift from shared 3W in all three years i.e., 2018, 2023 and 2028, while the least shift is expected from RMTS, pedestrians and cyclists. Figure 68 to Figure 70 present the mode share attracted by all feeder modes together from different existing modes.

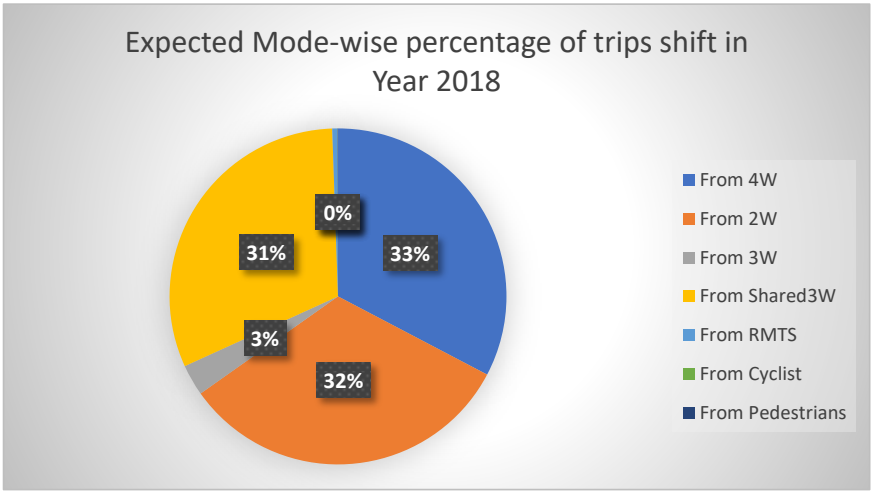


FIGURE 68: MODE-WISE PERCENTAGE TRIPS SHIFT IN YEAR 2018

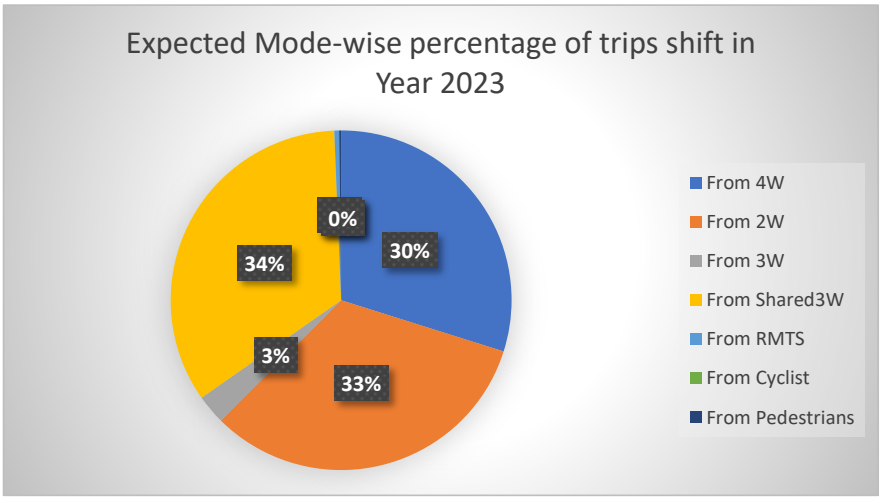


FIGURE 69: MODE-WISE PERCENTAGE TRIPS SHIFT IN YEAR 2023

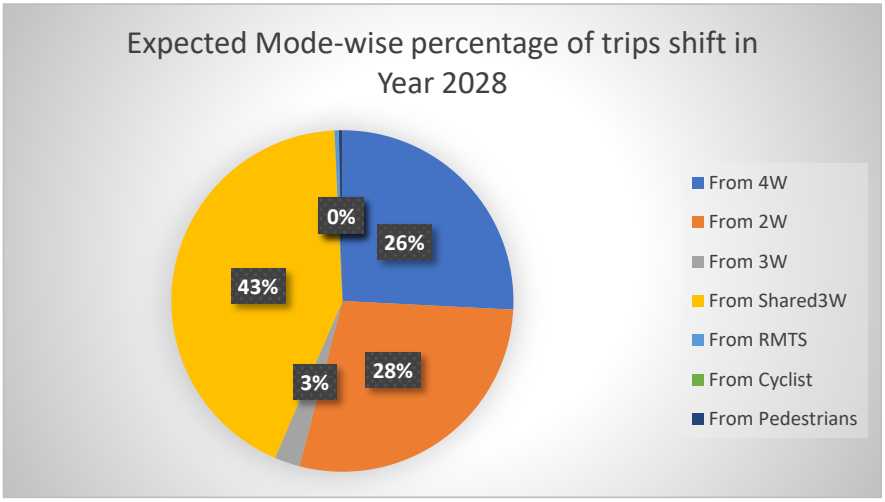


FIGURE 70: MODE-WISE PERCENTAGE TRIPS SHIFT IN YEAR 2028

5.5 Options for financing feeder infrastructure development and integration

Of the six possible feeder systems BRT, evaluated for implementation in Rajkot, five have been proposed for implementation in different areas of the city, as discussed above. The sixth, omitted, system is the shared Auto Rickshaw. This feeder mode did not present significant potential for increased feeder trips to BRT (it already serves as a feeder for limited trips to BRT), either in general or on any focused

corridors. Thus interventions in to shared auto rickshaw system is proposed to be avoided. All other systems can be considered attractive for implementation in the city by the concerned officials. This chapter discusses possible financing options that may be considered by the city for implementation of these systems.

5.5.1 Walk and Cycle Feeder – Street redevelopment and Bicycle sharing

To develop walking and cycling as an effective feeder mode, this study proposes implementation of bicycle sharing system as per the study by ICLEI-SA, in and around the recommended corridors and zones and along with street redevelopment of 12 km primary streets and approximately 30 km secondary and tertiary streets, in order to integrate high class pedestrian and bicycling infrastructure on these roads. Financing of development and

operations of bicycle sharing system has been covered in the ICLEI-SA report for Rajkot on the same These include multiple options such as raising additional revenue from advertisement at the bicycle stations, etc.

In addition to bicycle sharing the proposal is to develop a total of 42 km of road network at an estimated cost of Rs 130 to 148 crores. This is a one-time investment required from the city. The city may explore innovative ways for financing this investment. These ways are primarily based on land monetization, around the developed streets, because street improvements are likely to result in increased land value in that area. Two possible financing mechanisms that may be considered by the city are:

- Sale of additional FAR – The city may come up with schemes encouraging residents buy additional FAR and or land use change around these streets. The income from this measure can be directly used to develop the streets. However sale of additional FAR and higher property taxes may not be easy to implement before development of the streets. Which may require the city to take short term loans for this development from financing institutions such as the World Bank or the Asian Development Bank (ADB).
- Increase in property tax – The increased property tax should ideally be implemented after the development of the streets has been completed. The additional revenue from this may be collected as a separate head and used for upkeep and maintenance of these streets.

5.5.2 Hybrid BRTS

The two routes on Hybrid BRTS (as discussed above) are not expected to be profitable, both with operations of Diesel or electric buses. The city will required to subsidize the operations of these buses at an approximate cost of Rs. 20 to 23 per km. This comparable to the subsidy on the current RMTS routes of Rs. 26 per km. The operations of these routes may be given to a private operator under a concession agreement (in line with the current RMTS operations). Though there are no monetary benefits expected out of financing the Hybrid-BRTS system, however investments in any public transport system is expected to return economic and social benefits. This means that the financing of such systems will remain the governments responsibility.

5.5.3 RMTS Services

No changes are proposed in the current RMTS financing in the short term as it is already a successfully managing its operations. However, in the long term the city may consider aggregating a number of routes in to a single larger contract. This shift may open a window for the city to change its fleet to more efficient technologies, such as hybrid or electric, and is also expected to reduce the CPK (for the city government) reduce the per km subsidy required from the city.

Additionally, the junctions on BRTS are proposed to be developed with pedestrian infrastructure linking RMTS bus stops to BRTS station (within 75m of the corridor). The estimated cost of developing each of these junctions is expected to be in the range of 50 lakh to 1.0 crore. It is expected that this investment shall be required from the city. However corporates and public sector undertaking may be roped in for financing the maintenance and upkeep of the junctions (including limited landscaping and beautification) as a part of their CSR activity.

5.5.4 E-Rickshaw

As discussed above – e-rickshaw services as feeder may be possible to be introduced without any financing requirement from the government. This is because e-rickshaw ridership has been estimated at a fare of Rs. 3.5 per passenger km or an EPK of Rs. 7, which is expected to cover costs and return limited profits for the operators. The operators can be individuals or corporates owning the fleet. The government may however be required to provide land for charging and parking of e-rickshaws and also subsidize the electricity (for e-rickshaw) so as the same is available to the operator at no more than domestic rates.

5.6 Electrification options and viability for feeder modes of interest

5.6.1 Potential of electrification of different modes for last mile connectivity

Besides walking, all the modes of transportation for last mile connectivity could also be done with the respective electric vehicles (e-rickshaw, e-bike etc, electric car, etc.).

The current use of the different modes as a mode for last mile connectivity gives a good indication on the potential for electrification of the corresponding mode. The most frequent used modes for last mile (average of first and last mile) according to Table 29 are:

- Walking: 74 %
- City bus: 10.5 %
- Auto rickshaw: 7.5 %
- Other modes (Bicycle, BRT, car, two-wheelers, shared auto rickshaw, drop/picked up): < 5%

According to the current use of non-electric modes, the highest potential for electrification have city buses, followed by auto rickshaws, while other modes have rather a small potential.

5.6.1.1 Electric city buses

General information about the electrification of buses can be found in chapter 6 of this report. A potential electrification of the city buses could benefit from already gained know-how for electric buses on the BRT-corridor. There are multiple synergetic effects in the coordination and collaboration of electrifying the BRT-corridor and city buses, such as:

- Shared use of charging infrastructure
- Shared use of bus maintenance
- Joint procurement resulting in less expensive costs per unit

5.6.1.2 E-rickshaws

Auto-rickshaws are a very common vehicle in Indian cities and often used for intermediate public transport (IPT). IPT is a major transport mode throughout India, offering a convenient mode of transport at a reasonable cost. Auto rickshaws are also used as a mode for last-mile connectivity. The electrification of rickshaws could be promoted by the provision of parking and charging infrastructure for e-rickshaws in close distance to BRT stops. Also, depending on the charging strategy for the BRT, charging infrastructure at the depot and/or at the terminal or selected bus stops could be provided. Besides charging infrastructure along the BRT-corridor, charging infrastructure should also be provided at main attraction points, such as markets, schools etc. The flat topography of Rajkot is an advantage for the introduction and promotion of e-rickshaws, as pilots in other Indian cities have shown that e-rickshaws have poorer performance in hilly terrain when compared to auto rickshaws The “Bharat EV standards” published by the Department of Heavy Industries specify the type of charging infrastructure required for Indian cities. The document recommends cities to prioritise AC charging stations in the short term, considering the low power requirement of e-rickshaws.

5.6.1.3 Electric bicycle

An electric bicycle, also known as e-bike, is a bicycle with an integrated electric motor to assist the riders’ pedal power. Electric bicycles use rechargeable batteries and reach a speed of around 25 km/h (slow e-bikes) to 45 km/h (fast e-bikes).

Electric bicycles have the following main advantages:

- Higher speed which reduces the travel times
- Longer range when compared to conventional bicycles (e.g. in Switzerland, bicycles are usually used for short distances (0 – 5 km), while E-Bikes are also being used for medium distances (5 – 15 km))
- High potential for hilly terrain when compared to conventional bicycles
- Health benefits when compared to other electric vehicles

E-bike usage has experienced rapid growth for the last years. In many western countries, especially fast e-bikes have the potential to encourage people to use e-bikes instead of cars due to the increased range and higher speed. Slower e-bikes are especially popular for elderly people or for people with lower fitness levels. For last mile connectivity in Rajkot, the potential of E-bikes seems relatively low for the following reasons:

- People with an e-Bike will most likely not have a need to use public transport, as they can reach their destination much faster by doing the whole trip by e-Bike instead of doing one part of their trip by e-Bike and one part by public transport. This is also the case for conventional bikes, which is reflected in the low amount of people using bicycle as a mode for last connectivity (2%).
- An E-Bike might be attractive for last mile in a hilly city, where walking or biking can be exhausting. This is not the case in Rajkot

The integration of e-bikes in the proposed bike sharing system might be reasonable for stations, where attractors are a bit further away from the station (5 – 15 km) and a public transportation or IPT service to these attractors is inexistent. The existence of safe and attractive bike routes however is a prerequisite.

5.6.1.4 Recommendation

For the above reasons, the highest potential for the electrification of vehicles for last mile connectivity have city buses and rickshaws. The electrification of these two modes should be further pursued. City buses could use the prospective charging infrastructure at the BRT depot (see chapter 6.2.2). Charging stations for e-rickshaws should be installed along the BRT-corridor as well as at main attraction points, such as markets, schools etc.

5.6.2 Indian policy frameworks and incentives

5.6.2.1 National Electric Mobility Mission Plan 2020

The National Electric Mobility Mission Plan (NEMMP) 2020 is an initiative taken by the Department of heavy Industries that aims to accelerate the growth of the electric and hybrid components of the automotive sector. It focuses primarily on fast-tracking the manufacturing and introduction of EVs in India (Global Green Growth Institute, 2015).

5.6.2.2 Faster Adaption and Manufacturing of (Hybrid &) Electric Vehicles

The Department of Heavy Industries had launched Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) in April 2015 (UITP India, 2018). As part of the NEMMP, FAME has a corpus of about 8 billion INR to invest in electric mobility based initiatives. The fund was allocated for a duration of two years and expired in April 2017. The government extended the demand incentives until 2020 (The Economic Times, 2017). The scheme is focused on the following key areas:

- Fiscal and tax eco system to encourage customers to opt for Electric Vehicles
- Purchase of Electric or Hybrid Vehicles
- Pilot Project for City Buses
- Supporting Infrastructure

5.6.2.3 Green Urban Transport Scheme

The Ministry of Urban Development will launch the project "Green Urban Transport Scheme", enabling a shift towards electric vehicles for public transport and use of non-fossil fuel for powering vehicles. The total cost of the project will be around INR 800 billion.

The government will give funding to 105 cities which will be selected through competition. The funding of the scheme will be 50:50 between states and the central government. The ministry has proposed a grant of INR 250 billion, the rest may come from multi-lateral banks and state governments (UITP India, 2018).

5.6.3 Other policies that promote electric mobility

5.6.3.1 Environmental zones

Zones are restricted to vehicles that have an environmental badge. Badges are only given to vehicles that meet specified emission rates. In Germany, the first environmental zones have been introduced in 2007 to reduce the pollution through fine particle in cities and municipalities (Umwelt-Plakette, 2018). Currently there are 55 environmental zones already introduced in German cities.

5.6.3.2 Diesel restriction zones

Similar to the environmental zones, restricting diesel vehicles depending on their emission rates from entering specific zones.

5.6.3.3 Parking

Parking can be used as an incentive either with the provision of specific parking for electric vehicles only or with electric vehicles being exempted from parking fees.

5.6.3.4 Financial incentives

Financial incentives can be an exclusion from fees and taxes. With the goal of reaching 50’000 pure electric vehicles, the Norwegian government for instance exempted all electric cars and vans from non-recurring vehicle fees, including purchase taxes and 25% VAT on purchase (Wikipedia, 2018). Financial incentives can also be in the form of direct subsidies on the vehicle price paid to the consumers.

5.6.3.5 Use of restricted lanes

Electric vehicles can be allowed to use lanes that are restricted to public transport. This incentive however is highly controversial as it can lead to congestion on the restricted lanes, making the use of public transport less attractive.

5.6.3.6 Charging infrastructure

The provision of charging infrastructure can reduce the costs of the customers and increase the range of electric vehicles.

6 Feasibility and Options for Electrification of BRT Corridor

6.1 Feasibility and options for electric BRT fleet

Fully battery driven electric buses have two main disadvantages when compared to diesel buses (Lenz, 2017).

a) The energy storage capacity (density) of diesel is much bigger than the energy storage capacity of a battery (factor 1:100). This means that to compete with diesel buses, electric buses either need big and heavy batteries that guarantee a minimal range or charging infrastructure at stops or along routes are needed to recharge the batteries.

b) The energy transfer rate of a diesel bus is in general much higher than the energy transfer rate of an electric bus (again factor 1:100). In other words, it takes much longer to charge a battery than to refuel a diesel bus. This factor however can be reduced significantly using fast charging stations.

Because of these disadvantages, the introduction of electric buses requires a careful analysis on where and how often the buses should be charged (**charging strategy**) and how the buses should be charged (**charging technology**).

Charging strategy and charging technology have interdependencies, i.e. the charging strategy at least partly determines the charging technology. The electrification of the BRT-corridor is feasible, if the operation can be achieved with the chosen charging strategy and technology.

6.1.1 Charging strategies

6.1.1.1 Overnight charging

Buses are being charged overnight, typically at the bus depot. This means that the daily mileage must be attained with one full charging cycle. The daily range of the buses is limited to the capacity of the battery. Therefore, buses that are being fully charged overnight usually have heavier batteries with a longer range.

6.1.1.2 Opportunity charging

Buses are being charged at selected bus stops along the route. Typically, the buses can additionally be charged at the terminal stations during layover times. There are no limitations of range with this strategy, but charging infrastructure at selected stations is required. These charging stations usually have dimensions of about 2 x 3 x 3 meters (Lenz, 2017).

6.1.1.3 In motion charging

Buses are drawing power from overhead wires while driving. There are no limitations of range, but overhead wires are required.

6.1.2 Relevant factors for charging strategy

The choice for a suitable charging strategy depends on a variety of route and operational characteristics, such as vehicle size, fleet size or required range of vehicles. The most important factors and their impacts on the charging strategy are briefly described in this chapter.

6.1.2.1 Vehicle size

Bigger vehicles have a higher energy demand. A bi-articulated 24 m bus e.g. has about twice the energy demand of a 12 m standard bus, as shown in the Table 67 below.

TABLE 67: ENERGY CONSUMPTION FOR DIFFERENT BUS LENGTHS. SOURCE: (LENZ, 2017)

Bus length	12m (standard bus)	18m (articulated bus)	24m (bi-articulated bus)
Energy consumption	1.5 kWh / km	2.25 kWh / km	3 kWh / km

Since the charging rate remains the same, bigger vehicles that consume more energy need to be charged longer. However, with the strategy of overnight charging, the available charging time is limited to the non-operating hours. For the case of Rajkot, the daily mileage per vehicle is around 250 km. Table 68 displays the required energy and the charging time. It is assumed that the charging power is 60 kW, which is a common power rate (at the actual state) for fully battery driven plug-in buses that use overnight charging.

TABLE 68: CHARGING TIME FOR DIFFERENT BUS LENGTHS

Bus length	12 m (standard bus)	18 m (articulated bus)	24 m (bi-articulated bus)
Energy consumption for 250 km	375 kWh	562.5 kWh	750 kWh
Charging time for full battery load. Charging power: 60 kW	6.25 h	9.4 h	12.5 h

As shown, overnight charging is best for 12 m or smaller buses. For bigger buses, the time required to fully charge the bus can be longer than the non-operating hours which makes overnight charging not appropriate for longer buses.

With opportunity charging, longer vehicles face a similar issue. The time needed to recharge a bus at a stop will increase with the size of the vehicle, as they consume more energy. As buses cannot drive while they are being charged, standing times increase accordingly. Therefore, like overnight charging, opportunity charging is less suitable for bigger vehicles.

6.1.2.2 Fleet size

Overnight charging implies that all buses are being charged during the same time, typically during night. This means that the energy demand of all buses needs to be met during the same time which requires much more power. With opportunity charging or in motion charging on the other hand, energy demand is more evenly distributed as not all vehicles need to be charged at the same time. Therefore, for bigger fleet sizes, opportunity charging or in motion charging is more suitable than overnight charging, which only should be considered for relatively small fleet sizes.

6.1.2.3 Range

With overnight charging only, the range of the bus is limited to the capacity of the battery and the energy demand of the vehicle. With opportunity charging and in motion charging, the range is unlimited if charging infrastructure at stops or overhead wires are available.

6.1.2.4 Flexibility

Due to the dependency on overhead wires, in motion charging offers the smallest flexibility of all charging strategies. Bus operation is only possible on the electrified routes. Overnight

charging allows for the biggest flexibility, as buses are not dependent on any charging infrastructure during operation.

6.1.2.5 Summary

The impacts of the described factors on charging strategies are summarized Table 69.

TABLE 69: IMPACT OF DIFFERENT FACTORS ON CHARGING STRATEGY

	Size of vehicle	Fleet size	Range	Flexibility
Overnight charging	Small – standard (12 m)	Small	Limited	Big
Opportunity charging	Small – standard (12 m)	All sizes	Unlimited	Medium
In motion charging	All sizes	All sizes	Unlimited	small

6.1.3 Charging technologies

6.1.3.1 Plug-in charging

Plug-in charging (Figure 71) is the most common form of charging EVs. It is usually used for overnight charging at the depot and less often for opportunity charging, e.g. at terminals, as the driver needs to get out the vehicle to recharge it and as the charging duration is typically long. The charging power ranges from around 30 kW to 150 kW (Siemens, 2018).

FIGURE 71: PLUG-IN CHARGING AT THE AIRPORT STUTTGART. SOURCE: (Siemens, 2018)

6.1.3.2 Pantograph

A. Top-down pantograph

Top-down-pantographs (Figure 72) are mounted to charging points at selected bus stops. The charging power can vary, but is typically around 300 kW with a charging time from 3 to 10 minutes (Lenz, 2017).

FIGURE 72: TOP-DOWN PANTOGRAPH IN HAMBURG. SOURCE: (SIEMENS, 2018)

There are also systems that allow a flash charging, i.e. a system with a much shorter charging time (around 15 seconds) and a higher charging power (400 – 600 kW). With flash charging (Figure 73), a bus can be charged just during the time passengers embark and disembark. However due to the short charging time, the buses need multiple stations with charging points in short distances (e.g. in Geneva charging stations at 25% of all stops).

FIGURE 73: ARTICULATED BUS WITH FLASH-CHARGING IN GENEVA (SOURCE: ABB)

B. Bottom-up pantograph

Bottom-up pantographs (Figure 74) are directly mounted on the bus roof. This technology is mainly being used in cities with existing overhead wires, such as for tramways. The charging power ranges from 60 to 120 kW.

FIGURE 74: BOTTOM-UP PANTOGRAPH IN VIENNA. SOURCE: (SIEMENS, 2018)

6.1.3.3 Inductive charging

Inductive charging (Figure 75) is a technology used to charge e-buses either for overnight charging at the depot or for opportunity charging at selected bus stops. The charging infrastructure remains invisible for the customers as the charging slabs are buried underground. The charging process starts automatically as soon as the vehicle completely covers the charging segment. The charging takes around 2 min.

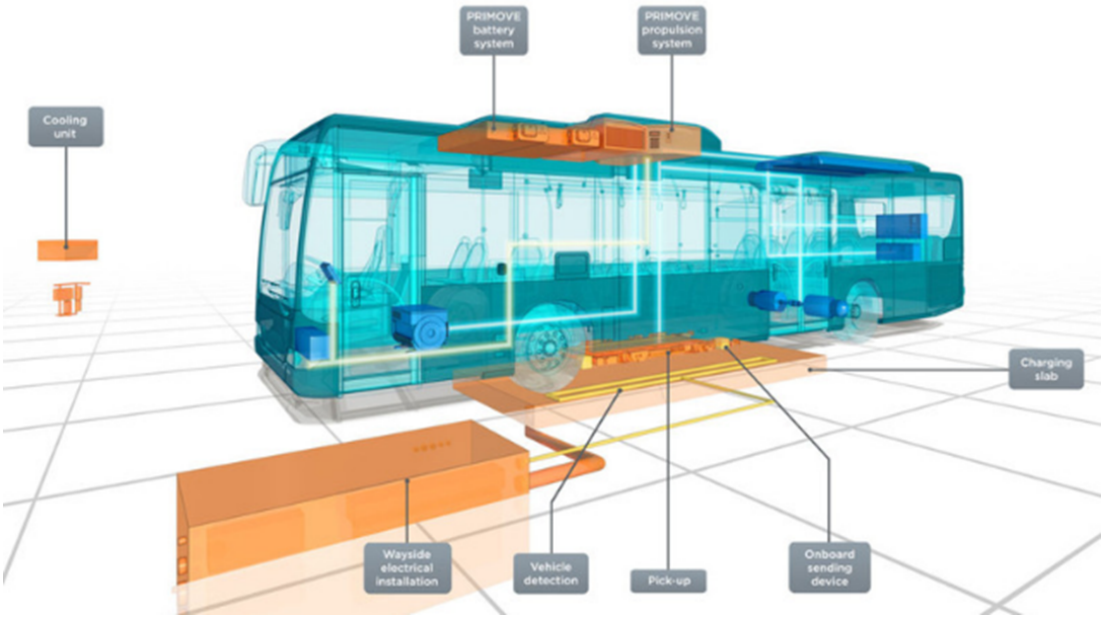


FIGURE 75: INDUCTIVE CHARGING. SOURCE: (Bombardier, 2018)

6.2 Feasibility and options for charging infrastructure

6.2.1 Charging strategy for Rajkot

As shown in the table above, 12 m buses are used for the BRTS and the total bus fleet with 10+1 vehicles is rather small. Therefore, regarding the size of the vehicles and the size of the bus fleet, opportunity charging seems the appropriate charging strategy for the BRT in Rajkot. However, it must be proven that the operation of the BRT with overnight charging is feasible. The following issues need to be considered:

1. Is it possible to drive the required distance (250 km per day) with a fully charged battery bus?
2. Is it possible to fully charge a bus during the non-operating hours?
3. Is it possible to provide enough power at the charging location when all buses are being charged simultaneously?

According to table 1, the energy consumption for a 12 m bus is around 1.5 kWh/km. With a daily driven distance of 250 km, the energy consumption for an electric bus would be around 375 kWh. With operating hours from 6 am to 11 pm (17 hours), around 6 hours per day could be used for charging the electric buses. Therefore, the required charging power is 375 kWh/ 6 h = 62.5 kW. The required charging power at the depot for the whole BRT fleet would be 11 * 62.5 kW = ca. 700 kW. This charging power would need to be provided at the depot.

Table 70 contains electric buses, which would meet the requirements for Rajkot. It can be concluded that already with today's technology, the operation of the BRT-corridor with 12 m electric buses can be accomplished with overnight charging, where buses are being charged at the depot only.

TABLE 70: EXAMPLES OF EXISTING 12 M BUSES THAT MEET REQUIREMENTS FOR RAJKOT.

	Ebusco 2.1	BYD ADL Enviro 200 EV	Solaris Urbino 12 electric
Range [km]	300	290	267
Charge rate [kW]	75	80	80
Capacity [passengers]	90	90	90
Top speed [km/h]	80	70	80

6.2.2 Charging infrastructure

With overnight charging, the required charging infrastructure is relatively small. Most charging stations consume less than 1 m^2 of space. Furthermore, plug-In charging stations are safe, robust and durable. The existing area at the BRT depot (Figure 76) should provide more than adequate space for all required charging stations. The city of London for instance managed to provide 43 charging stations for 46 buses in a garage (Figure 77 & Figure 78) that regarding area is only slightly bigger than the BRT depot in Rajkot (Bus&Coach Buyer, 2016).

FIGURE 76: BRT DEPOT IN RAJKOT

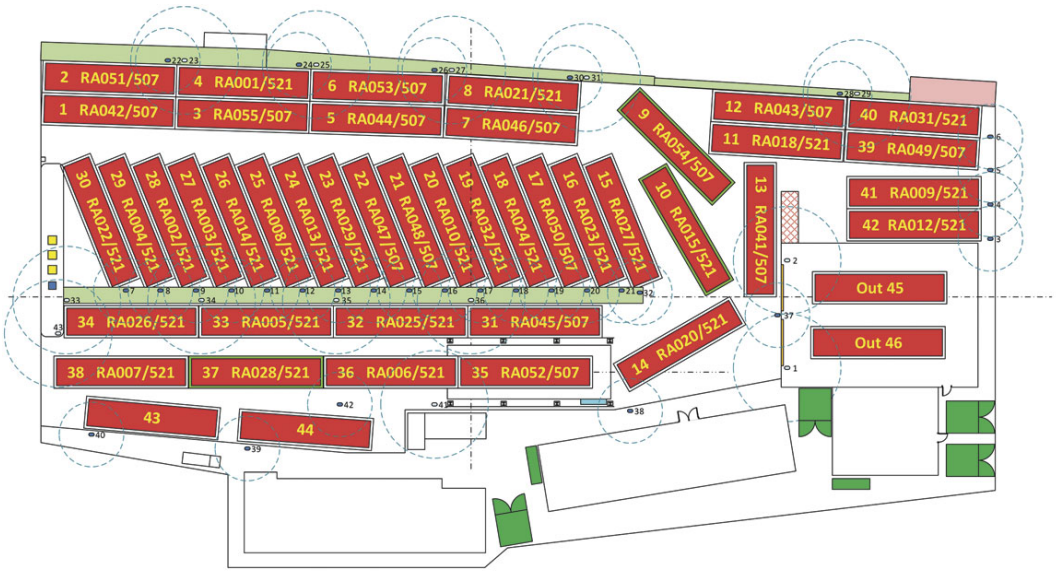


FIGURE 77: PLAN OF WATERLOO ELECTRIC BUS PARKING IN LONDON. SOURCE: (BUS&COACH BUYER, 2016)

FIGURE 78: WATERLOO ELECTRIC BUS PARKING AND CHARGING INFRASTRUCTURE. SOURCE: (BUS&COACH BUYER, 2016)

6.2.3 Impact of electrification of BRT-corridor on energy consumption

The total Energy consumption of the BRT-fleet for Rajkot would add up to 10 x 375 kWh = 3'750 kWh per day or around 1'370 MWh per year. This is around 0.1% of the energy demand of the city of Rajkot.

6.2.4 Environmental and social impact assessment

If the used electricity is drawn from renewable, CO_2-free electricity sources, the CO_2 savings of the electrification are ca. 100 kg CO_2 / a and vehicle or roughly 1 t CO_2 / a for the entire fleet (RWTH Aachen University, 2018). Besides the CO_2 savings, there are also health benefits due to less air pollution and less noise.

6.2.5 Costs

6.2.5.1 Vehicle costs

Table 71 gives a comparison of investment costs of standard 12 m transit buses in different world regions comparing diesel, hybrids and electric units. It should be noted that these costs are at least from 2013 or older.

TABLE 71: REGION WISE PRICE COMPARISON FOR 12 M BUSES. SOURCE: (GRÜTTER, 2015)

Market	Conventional diesel	Hybrid	Electric	Mark-up Hybrid	Mark-up Electric
China	$60,000-$90,000	$125,000-$200,000	$280,000-$350,000	115%	420%
India	$75,000-$110,000	$175,000-$255,000	$325,000-$410,000	130%	300%
Russia	$130,000-$180,000	$245,000-$325,000	$400,000-$500,000	85%	190%
Latin America	$200,000-$225,000	$280,000-$340,000	$410,000-$500,000	45%	115%
Rest of World	$100,000-$350,000	$195,000-$500,000	$300,000-$700,000	55%	120%
Europe	$250,000-$350,000	$420,000-$510,000	$575,000-$680,000	55%	110%
North America	$300,000-$400,000	$485,000-$540,000	$595,000-$690,000	45%	85%
Average	**$200,000**	**$330,000**	**$480,000**	**65%**	**140%**

Battery driven electric buses are a new technology. New technologies have generally higher costs that will decrease if the technology is successful due to economies of scale and cost improvements. This is already the case for electric buses. While costs of conventional diesel buses can be assumed to be about the same, costs for electric buses have decreased and are approximately around 300'000 USD for a 12 m bus. Investment costs for electric buses are still higher than for conventional buses, but the price difference has become smaller.

6.2.5.2 Battery costs

The main reason for the higher costs of electric buses is the battery (Global Green Growth Institute, 2015). The size of the battery depends on the drive range of the vehicle, and the battery size influences the cost of the battery. Figure 79 shows the evolution of lithium-ion battery prices and the expected time to reach the benchmark price of USD 150 / kWh. The price of lithium-ion battery has decreased from USD 1'000 / kWh to USD 410 / kWh for the period 2007-2014, i.e. a price drop at an average annual rate of 14%. According to the figure, prices will continue to decrease in the future at 6%-8% per year (Global Green Growth Institute, 2015).

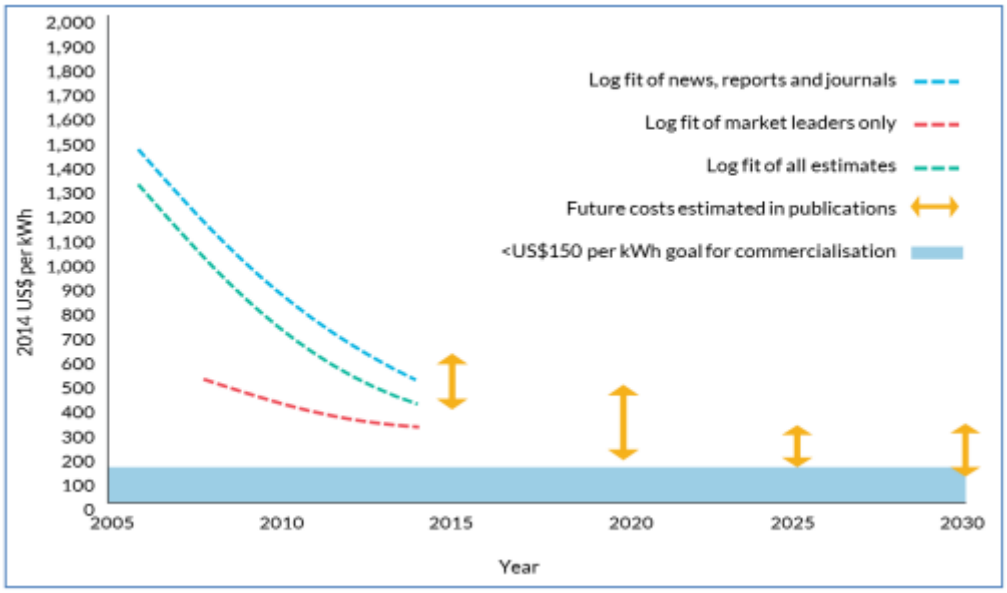


FIGURE 79: TREND OF LITHIUM-ION BATTERY PRICES AND FUTURE PRICE PREDICTIONS. SOURCE: (GLOBAL GREEN GROWTH INSTITUTE, 2015)

6.2.5.3 Life-cycle costs

Life-cycle costs refers to the total cost of ownership over the life of an asset. Life-cycle costs consider not only the investment costs for a new bus, but also account for the long-term costs such as costs for operation and maintenance. The life-cycle costs of an electric bus as well as the life-cycle costs of a diesel bus were calculated, allowing for a fair comparison between conventional buses and electric buses. The costs were calculated using a life cycle cost calculation program developed by RWTH Aachen University (RWTH Aachen University, 2018). The costs for electric bus include capital costs for vehicle, battery and charging stations as well as running costs (energy costs, maintenance). The costs for diesel bus include capital costs for vehicle and running costs for diesel and maintenance.

The life-cycle costs were calculated specifically for the mileage and the amount of needed charging infrastructure of the BRT in Rajkot. For all other parameters, such as investment costs, inflation rate, expected operating life time, diesel costs, fuel consumption etc. assumptions were made that are realistic for a West-European context. For an adaption to Indian context, life-cycle costs are analysed by using a price index. By using a price index, statements about the absolute life-cycle costs can't be derived. However, the relative costs of a diesel bus vs. an electric bus can be compared. In Figure 80, Figure 81 and Figure 82, a price index of 100 reflects the price of an electric bus for the first year. The lifetime of an electric bus was assumed to be 15 years.

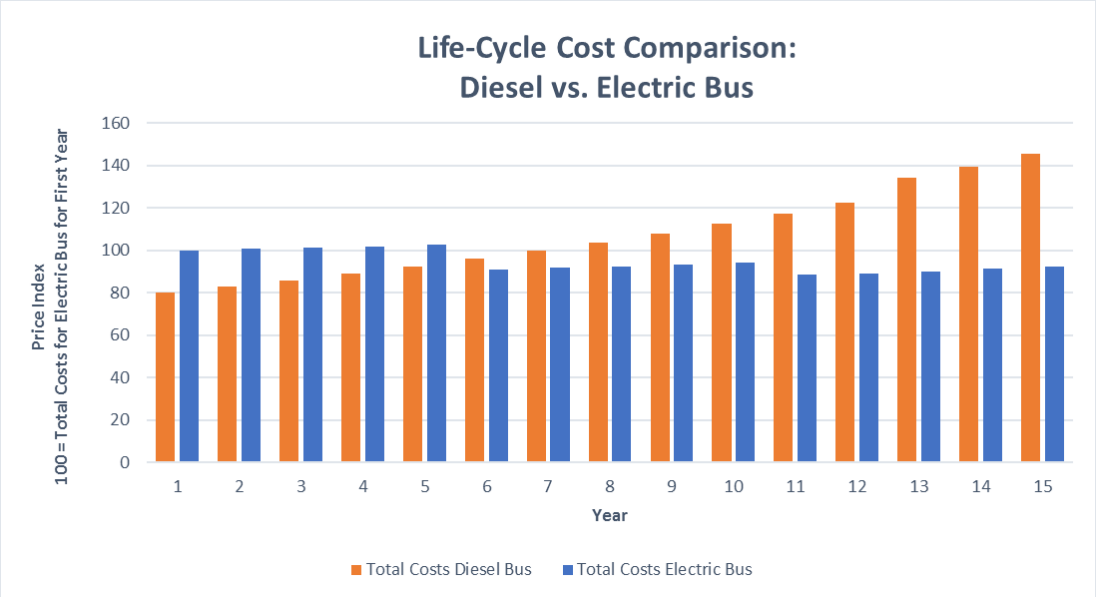


FIGURE 80: LIFE-CYCLE COST COMPARISON - DIESEL VS. ELECTRIC BUS.
SOURCE CALCULATION PROGRAM: (RWTH AACHEN UNIVERSITY, 2018)

The figure shows, that the life-cycle costs of an electric bus are lower than the life-cycle costs of a diesel bus. The break-even of electric bus with respect to diesel is reached after 9 years. This corresponds approximately with a study of the Global Green Growth Institute, which states that for India, electric buses can break even with respect to diesel buses in 10-14 years due to lower running costs (Global Green Growth Institute, 2015). The difference can be explained as the price differences regarding investment costs between diesel buses and electric buses are lower in high-priced markets such as Europe or North America and higher in low-priced markets such as China or India.

To better understand the cost differences, the cost-components of diesel buses or electric buses respectively were further analysed.

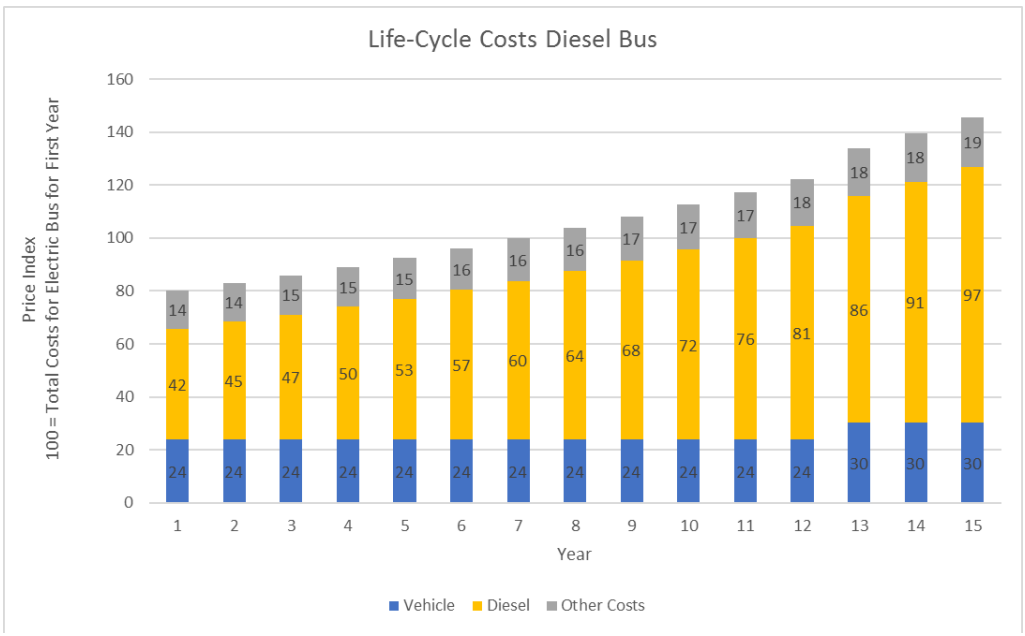


FIGURE 81: LIFE-CYCLE COSTS DIESEL BUS. SOURCE CALCULATION PROGRAM: (RWTH AACHEN UNIVERSITY, 2018)

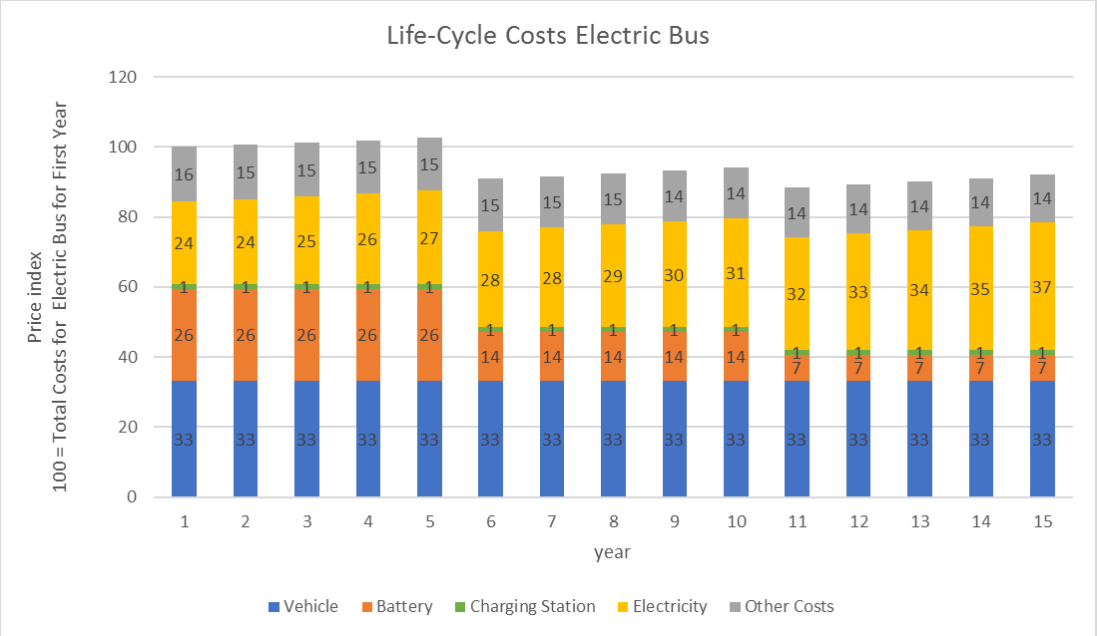


FIGURE 82: LIFE-CYCLE COSTS ELECTRIC BUS.
SOURCE CALCULATION PROGRAM: (RWTH AACHEN UNIVERSITY, 2018)

1. The biggest cost component for diesel buses are the diesel costs. As shown, costs for diesel increase due to increases in diesel price.
2. The biggest cost components for an electric bus are the vehicle costs, the battery costs and the electricity costs.
3. The current vehicle costs of electric buses are expected to be considerably higher than the vehicle costs of diesel buses (see chapter 6.2.5.1). However, as the case with battery costs, also the vehicle costs of electric buses can be expected to decrease soon due to economies of scale and the possible manufacturing of electric buses in India.
4. The life time of batteries was assumed to be five years. It should be noted, that the costs for the second and third battery are considerably lower since cost reduction are to be expected for batteries (see chapter 6.2.5.2).
5. Electricity costs on the other hand are rising, due to expected price increases for electricity.

Maintenance costs of electric buses are initially slightly higher than maintenance costs for diesel buses. But the maintenance costs for electric buses fall due to less maintenance-intensive components (no gear, no oil change, less vibration, less brake dust, etc.) The savings in maintenance costs of electric buses when compared to conventional buses have also been stated in other studies (California Air resources Board, 2016).

7 Next Steps…

Based on the data collected as a part of this study (Chapter 3), a complete picture of potential feeder modes for BRT in Rajkot has been created. This has been presented in Chapter 4 and Chapter 5 above. The study uses data a host of secondary data and data collected from more than 1000 responses of O-D surveys conducted around the corridor, to generate an areawise (or zonewise) understanding of number of trips that may be shifted to BRT using one or more of the six potential feeder modes - i.e. trips shifting to BRT from the said zones or areas after introduction of feeder modes serving those zones or areas in the city. Of these six feeder modes five have been found to have potential to attract trips in favour of BRT (Chapter 5.3). Using the understanding generated from models run to estimate potrential mode shift in favour of BRT (after introduction of the said feeder modes), a feeder Network and Integration plan has been proposed for Rajkot BRTS (Chapter 5.3). It is estimated that if the proposed feeder network and its integration plan is implemented, a total of 3796 dailyt trips will be added to BRT in this year, 5284 in 2023 and 7567 in 2028 (Chapter 5.4). In order to achieve this the following next steps need to be planned and undertaken:

1. Rajkot city has already conducted studies on the bicycle sharing system. This system coupled with high quality, dedicated bicycle infrastructure has a high potential for attracting trips in favour of BRT (Section 5.3.1). The city should implement the bicycle sharing plans in a phased manner starting from areas around the Raiya Road, University Road, Kalawad Road and the core area around Moti Tanki Chowk (Section 5.3.1).
2. High quality pedestrian and cyclist infrastructure is key to ensure that these modes serve as an efficient feeder to BRT. The study has identified the road network surrounding the core area of Moti Tanki Chowk, along with Raiya Road, University Road and Portions of Kalawad Road for upgradation in order to accommodate a high quality pedestrian and cyclist infrastructure (Section 5.3.1). The planning and implementation of this development should be taken up on priority. This can also dovetail with the proposed planning for BRT network extension on Raiya Road and Kalawad Road.
3. One of the boundary conditions identified in the study for sustained usage of proposed pedestrian and bicyclist network, is institutional and regulatory control on parking on these streets. Like in other cities Rajkot stands to gain by putting in place an over arching parking policy and parking enforcement structure. This is not only in terms ensuring the efficiency of the feeder network but also in terms of shifting trips out of inefficient private modes, and to achieve a city-wide prevention of encroachment of public spaces menat for pedestrians and other purposes. Thus Rajkot should start discussing the framework of the city parking policy as well the details of an enforcement plan.
4. The study identifies that RMTS can serve as an effective feeder to BRTS if the changeover time and cost is eliminated (Refer Chapter 4 and Section 5.3). This is possible if BRTS routes are expanded and the additional routes can link important O-D in the city via. The BRT corridor. Two such routes have been identified, along with fleet and operational requirements of the same, in current year, in 2023 and in 2028

(Section 5.3.2). Introducing these routes requires planning extension to the current BRT stations. This extension is also required to accommodate additional fleet of BRTS buses required to accommodate trips attracted by proposed feeder network. The city should initiate detailed operational and service planning of these routes.

5. As a long term strategy, it is recommended that regulation and planning of both RRL and RMTS operations should be integrated. With introduction of Hybrid routes, this becomes even more important. Thus the city needs to initiate a dialogue for the development of road map towards integration of RRL and RMTS as an overarching regulator of all public mode of urban transport in the city.
6. Eight, RMTS routes have been recognised with a high potential to serve as feeder to BRT, provided their stops are integrated with BRTS stations and the wiaitng time for passengers on the routes is reduced (section 5.3.3). The city should initiate conduct studies to look at feasibility of increasing services (adding more fleet) on these routes.
7. Higher efficiency of BRTS services, lower delay (as well higher safety) for BRTS commuters, easier changeover between RMTS as well as Cycle sharing network and BRTS, are all the benefits in favour of attracting more commuters to BRTS, that can be realized by addressing the shortcoming of current BRTS junctions. These shortocmings include, no singalization (for pedestrians or buses), no planned areas for bicycle parking at intersections, discountinuous pedestrian paths and cycle infrastructure at junctions, missing good quality pedestrian connectivity between RMTS and BRTS stations. The city should initiate redevelopment of intersections on BRT corridor, along with atleast 100m length of the cross roads to address these shortcomings (Section 5.3.1 and Section 5.3.3).
8. The study has identified a ring corridor (around BRTS) linking University Road and Raiya road with the highest potential to attract commuters to BRT through the use of E-rickshaw (Section 5.3.4). The city should intiate discussion on a regulatory mechanism for e-ricksahw in order to initiate deployment of the same on the identified corridor. The regulatory and institutional mechanism is intended to finalize mechanism for permit allocation, route allocation, fare structure, etc.
9. It is estimated that the post the development of feeder network as proposed by this study (Section 5.3), an increase in daily ridership of BRTS can be expected, provided the system has the capacity to carry these additional commuters (Section 5.4). Thus an additional fleet requirement of 2 buses in 2018, 5 in 2023 and 10 in 2018 (taking the total fleet size to 21 in 2018) is expected (Section 5.4). The city thus needs to initiate the expansion of its BRTS fleet in line with the rollout of the BRTS feeder network development in the city.
10. It is understood that there is significant potential of, and benefits to be reaped in using electric buses for the proposed two hybrid BRTS routes (Section 5.3.1 and Section 6.2). Similarly gradual shift of BRTS buses from Diesel to electric technology is also anticipated to reap similar benefits (Section 5.4 and Section 6.2). There is thus a clear potential in using the bus based public transport in the city as the starting point for electric mobility joutney in Rajkot. In order to achieve this the city should initiate development of policy and regulatory framework as well long term road map for electric mobility.

8 Annexure

8.1 Per day boarding & alighting and Route serves by each RMTS bus stops

Bus Stop	Boarding	Alighting
131 SLUM QUATER	0	21
150 FEET JAMNAGAR ROAD CROSSING	7	21
50 FEET ROAD CROSSING	49	11
53 QUARTER	0.00	0.7
A.G. SOCIETY	75	50
A.V. JASANI T.B. HOSPITAL	0	1
AAJI DEM	107	58
AAJI G.I.D.C	30	20
AALAP HERITAGE	1	6
ADITYA PARK	0	2
AFRICA COLONY	18	58
AKASHVANI CHOWK	92	55
AKSHAR NAGAR	12	53
AKSHAR VATIKA (MAVDI)	0	22
ALAP GREEN CITY	94	0
ALAY PARK	1	31
ALKAPURI	37	48
AMBAJI KADAVA PLOT	13	5
AMBEDKAR CHOWK	3	26
AMBICA TOWNSHIP	0	38
AMIN MARG AKSHAR MARG ROAD CROSSING	12	15
AMIN MARG CIVIC CENTER	5	5
AMIN MARG CROSSING	7	9
AMRAPALI FATAK	118	94
ANAND BANGLA CHOWK	78	73
ARYA LAND RESI.	0	1
ARYA NAGAR- PEDAK ROAD	5	21
ARYA SAMAJ	201	166
ASHAPURA MANDIR	26	0
ASHOK GARDAN	5	22
ASTHA GREEN CITY	9	48
ASTHA RECIDENCY	59	51
ASTRON CHOK	151	74
ASTRON SOCIETY	8	9
ATMIYA COLLAGE / CENTRAL SCHOOL	124	140
AV JASANI TB HOSPITAL	3	8
AZAD CHOWK	32	19
B.T. SAVANI HOSPITAL	96	78
BAHUMADI BHAVAN	33	36
BAJARANG VADI CIRCLE	65	209

Bus Stop	Boarding	Alighting
BAJRANG WADI	16	39
BALAJI ESTATE	39	47
BALAJI PARK / SATELLITE PARK	37	14
BAPA SITARAM CHOWK	211	37
BAPU NAGAR	12	5
BEDI GAAM	9	40
BEDI MARKETING YARD	21	55
BHAGIRATH SOCITY	0	9
BHAGVATI PARA POLICE STATION	56	2
BHAGVATI PARA (JAI PRAKASH NAGAR)	15	0
BHAGVATIVATI PARA STREET NO.-9	31	5
BHAKTI NAGAR	19	13
BHAKTI NAGAR CIRCLE	236	57
BHAKTI NAGAR STATION	10	22
BHAKTI PARK	10	0
BHARAD ENGG. COLLEGE	1	104
BHIMRAO NAGAR	20	60
BHOMESHWAR	78	157
BOMBE HOTEL	50	38
BRAHM SAMAJ	30	35
BT SAVANI HOSPITAL	67	12
CENTRAL WARE HOUSE	34	29
CHAMPAK NAGAR - PANI NO GHODO	5	15
CHANDRANAGAR MARKET	7	37
CHANDRESH NAGAR	9	3
CHAUDHARI SCHOOL	10	54
CHITRA LEKHA CHOWK	69	41
CHUNARAVAD	21	1
CITYLIGHT PARTY PLOT	11	0
CIVIL COURT CHOWK	59	47
COSMOPLEX CINEMA	59	27
CRYSTAL MALL	60	87
D.H. COLLEGE	14	17
DEVPARA	78	12
DH COLLEGE	39	10
DOSHI HOSPITAL	54	14
DREAM CITY	20	13
DUDHESHWER MAHADEV	2	42
EVEREST PARK	61	26
FIELD MARSHAL CHOWK	32	28
FULCHAB CHOWK	89	26
FULIA HANUMAN MANDIR	85	47
FULWADI PARK	6	90
GADHIYA NAGAR	0	32
GANGOTRI PARK	0	48
GAURIDAD	0	66

Bus Stop	Boarding	Alighting
GAYATRI DHAAM	18	23
G-COMPANY SRP	77	0
GETCO CHOWKDI	24	0
GHANSHYAM NAGAR / NANDA HALL	17	2
GHANTESHWAR GAAM	55	10
GHANTESHWAR PARK	14	15
GHANTESHWAR SRP CAMP	192	20
GIDC GATE-1	1	183
GIT GUJRI CROSSING	3	19
GITA NAGAR / P & T COLONY	25	4
GOKUL NAGAR APPROACH	7	8
GOKUL PARK	46	3
GOKULDHAM	7	14
GOLDEN PARK	0	23
GONDAL CHOWKDI	101	52
GOPAL NAGAR CHORO	14	11
GOUTAM NAGAR	14	7
GOUTAMBUDH NAGAR	9	0
GOVANI HOSTEL	1	41
GOVERMENT POLLYTECHNIC	57	76
GOVERNMENT ENGINEERING COLLEGE	178	307
GOVIND BAUG	2	20
GOVIND NAGAR	52	2
GRAMUDHYOG MANDIR PEDAK	0	14
GRAND CENTRAL MALL	25	55
GREENLAND CHOKDI	197	294
GUJRAT HOUSING BOARD QUATER	116	0
GUNDAVADI POLICE CHOKI	30	5
GURUDEV PARK	58	37
GURUKUL	12	6
GURUPRASAD CHOWK	1	38
HANSHRAJ NAGAR	11	23
HANUMAN MADHI	30	41
HANUMAN MADHI CHOWK	18	23
HARIPAR GAAM	13	15
HEMU GADHAVI HALL	134	97
HINGLAJ NAGAR	5	4
HOSHPITAL CHOWK	270	257
HUDKO POLICE CHOKI	131	12
I.P MISSION SCHOOL	3	37
INDIRA CIRCLE	223	181
INDRAPRASTH SOCIETY	15	127
IOC	0	10
IP MISSION	5	10
IP MISSION SCHOOL	37	44
JAGNATH MANDIR	21	15

Bus Stop	Boarding	Alighting
JAI JAVAN JAI KISAN SOCIETY	25	43
JAI PRAKASH NAGAR SOCITY	15	2
JALARAM CHOWK / SANT KABIR ROAD CORNER	2	9
JALARAM PLOT	4	34
JANAK PURI - AJANTA PARK	42	0
JANGLESHWAR CROSSING / BAPUNAGAR	25	10
JASANI SCHOOL	25	17
JAY GOPAL CHOWK	0	13
JILLA GARDEN	7	3
JILLA PANCHAYAT CHOWK	148	64
JIVAN JYOT SCHOOL	85	71
JIVANTIKA MAIN RD CROSSING	11	14
JIVRAJ PARK	0	300
JOGRANA CHOWK	1	18
JUBELI BAUG	238	250
JUBELI MARKET	41	1
JULELAL MANDIR	31	1
JUNCTION POLICE CHOKI	13	39
JUNCTION RAILWAY POLICE STATION	0	2
JUNCTION RAILWAY STATION	28	29
K.K.V. HALL	124	111
KADVI BAI	11	17
KADVI BAI SCHOOL	45	41
KALI PAT	6	58
KANKOT- KALAWAD ROAD	69	48
KANTA STRI VIKAS GRUH	88	39
KASHTURI RESI.	2	14
KHOKHAD DAL	4	53
KISANPARA CHOWK	225	133
KOT YARD	0	9
KOTECHA CHOK	246	212
KOTHARIYA CHOWKDI	155	1
KOTHARIYA COLLONY	105	93
KOTHARIYA GAAM	54	5
KOTHARIYA HOUSING	56	0
KOTHARIYA SOLVANT	2	10
KOTHI COMPOUND	56	56
KRISHNA BANGLOWS	7	0
KRISHNA INT. SCHOOL	2	12
LABHUBHAI TRIVEDI ENG.CLG.	154	73
LAKH NO BUNGLOW	4	66
LAKHESHWER SOCITY - R.T.O. OFFICE	0	22
LIC CHOWK / MAHILA COLLAGE CHOWK	14	10
LIMBDA CHOWK	112	64
MADHAPAR CHOKDI	66	29
MADHAPAR GAAM	36	71

Bus Stop	Boarding	Alighting
MADHAPAR GAAM GATE	0	49
MADHUR NAGAR	4	1
MAHA PUJA DHAM	0	48
MAHAKALI SOCITY	24	0
MAHILA COLLAGE CHOWK / LIC OFFICE	57	39
MAKAM CHOWK	83	48
MALAVIA CHOWK	230	121
MANAHARURA (150 FEET RING ROAD)	3	0
MARKETING YARD	4	74
MARUTI NAGAR	0	93
MARUTI NAGAR (SARVODAY HOUSING SOCITY)	0	46
MARUTI NAGAR 50 FEET ROAD CHOCK	41	62
MARWADI COLLAGE	1	55
MAVADI CHOWK	121	42
MAVADI FIRE STATION	89	23
MAVADI GAAM	80	17
MOCHI NAGAR	8	38
MOTA MAVA	54	32
NAGRIK BANK CHOWK	12	0
NANA MAVA CHOWK	2	8
NANAVATI CHOCK	13	98
NANDA HALL	44	3
NARAYAN NAGAR	11	21
NEW RAJDEEP SOCITY	0	33
NILKANTH CINEMA	60	12
OM NAGAR	0	16
OM RESIDENCY	18	33
P & T COLONY / GITA NAGAR	65	41
P.D.M. COLLEGE	3	4
PANCHAYAT NAGAR	148	51
PANCHSHIL SOCIETY	119	32
PANCHSHIL SOCIETY APPROACH ROAD (DALIBAI HOSTEL)	0	18
PARDI GAAM	2	30
PAREVDI CHOCK	140	113
PATEL NAGAR	0	8
PATEL WADI	6	26
PATIDAR CHOWK	0	19
PDM COLLAGE	73	70
POLICE HEAD QUATER	5	25
POPAT PARA CENTRAL JAIL	52	25
POPATPARA	24	14
PRADYUMAN PARK	0	70
PUNIT NAGAR	62	131
PUNIT NAGAR BRTS BUS STOP	27	0
PUSHKAR DHAM	0	42
R.K. UNIVERSITY	3	77

Bus Stop	Boarding	Alighting
RADHE PARK / GANGOTRI PARK	1	39
RADHIKA PARK	53	0
RAIL NAGAR	1	10
RAILWAY COLONY	40	61
RAIYA CHOKDI	104	135
RAIYA GAAM	133	0
RAIYA TELEPHONE EXCHANGE	5	14
RAIYADHAR SLUM QUARTER	0	159
RAJ KAMAL PETROL PUMP	3	2
RAJ LAXMI SOCITY	47	0
RAJ NAGAR ROAD CROSSING	25	3
RAJ SHREE AUTO	9	13
RAJKOT DAIRY	19	0
RAJKOT MAHANAGAR PALIKA AVAS	1	14
RAM KRAUSHNA ASHRAM	198	67
RAMAPIR CHOKDI	8	114
RAMNATH PARA (B DIVISION POLICE STATION)	2	0
RANCHHODDAS ASHRAM	53	52
RANGOLI PARK	57	19
RANUJA MANDIR	80	0
RATANPAR (RAMJI MANDIR)	0	58
RATANPAR GAAM	0	65
RATANPAR TELEPHONE EXCHANGE	2	19
REFUGEE COLONY	13	13
RK UNIVERSITY	1	29
RUDA OFFICE	37	55
RURAL HOUSING	0	22
S T BUS STAND	475	309
S.T. WORK SHOP	91	11
SADHU VASHWANI SCHOOL	11	1
SAINIK SOCIETY	30	23
SANKALP SIDH PARK	3	3
SANTOSHI NAGAR	0	73
SARDA BAUG	9	18
SARDAR VALLABH VIDHYALAY	1	5
SATYA ROAD COROSSING	25	28
SATYA SAI HOSPITAL	6	15
SATYAM PARK	20	19
SATYASAI ROAD CROSSING	10	49
SAURASTRA UNIVERSITY	268	374
SBI BANK CHOWK	25	35
SETELITE CHOWK	1	24
SETH HIGH SCHOOL	59	86
SETH NAGAR	40	27
SHANTI NAGAR	0	20
SHAPAR VERAVAL	0	306

Bus Stop	Boarding	Alighting
SHARDABAG	3	11
SHASHTRI NAGAR	7	41
SHETH NAGAR	4	0
SHITAL PARK	6	11
SHIV DAHARA RESIDENCY	11	46
SHIV SHAKTI COLONY	92	66
SHIVALAY APARTMENT	6	0
SHIVAM PARK	8	1
SHREE H.N SHUKLA COLLEGE	0	77
SHREE RAM PARK	4	3
SINCHAI NAGAR	3	3
SITLA MATAJI MANDIR	1	90
SN SCHOOL	3	9
SORATHIYA WADI CIRCLE	111	90
SPECIAL SCHOOL FOR BOYS	16	51
SREE RANI MA RUDI MA CHOWK	1	24
SRP CAMP G COMPANY	0	95
SRP CAMP ROAD CROSSING	2	5
SURYA MUKHI HANUMAN CHOWK	6	13
SWAMI NARAYAN MANDIR / MAHILA COLLEGE	278	233
SWAMINARAYAN CHOWK	33	59
SWAPNALOK RESIDENCY	1	17
SWASHRAY SOCIETY	18	39
SWATI SOCITY	11	7
THEBACHADA- MAHIKA PATIYU	4	23
TRAMBA GAAM	0	132
TRIKON BAUG	1886	1603
TRISHUL CHOWK	1	6
TULSI BAUG	1	30
UMA KANT PANDIT	9	32
UMA PTC COLLEGE	3	12
VAD VAJDI GAAM	0	22
VAGUDAD	3	11
VAKANER SOCIETY	4	9
VAKANER SOCIETY CORNER	27	53
VAMBE AVAS YOJNA	2	40
VAVDI GAAM (SCHOOL)	22	0
VAVDI GAAM (WORD OFFICE)	3	0
VELNATHPARA (SHALA NO 71)	9	31
VELNATHPARA (STREET NO 17)	2	9
VIMA NU DAVAKHANU	10	0
VIRDA VAJDI GAAM	4	15
VISHVA NAGAR	5	9
VORA SOCIETY	25	64
VRI SAVARKARA AVAS CROSSING	13	0
VRUKSH MANDIR	7	30

Bus Stop	Boarding	Alighting
VRUNDAVAN ROAD CROSSING	0	35
VRUNDAVAN SOCIETY	65	80
VVP ENGINEERING COLLEGE	7	49
WANKANER SOCIETY	2	1
WOCKHARDT HOSPITAL	56	62
YADUNANDAN CHOWK	0	18
ANTANI CHOWK	7	8
DANAPITH CHOWK	11	2

8.2 RMTS Hourly Average Speed of RMTS Buses

21-Nov-17						
Route No.	Time	Hourly average speed	Daily average speed		Route No.	Time
1	06 AM - 07 AM	21.08	19.27		3	06 AM - 07 AM
1	07 AM - 08 AM	20.10	19.27		3	07 AM - 08 AM
1	08 AM - 09 AM	23.86	19.27		3	08 AM - 09 AM
1	09 AM - 10 AM	22.36	19.27		3	09 AM - 10 AM
1	10 AM - 11 AM	18.63	19.27		3	10 AM - 11 AM
1	11 AM - 12 PM	18.21	19.27		3	11 AM - 12 PM
1	12 PM - 01 PM	19.59	19.27		3	12 PM - 01 PM
1	01 PM - 02 PM	19.83	19.27		3	01 PM - 02 PM
1	02 PM - 03 PM	19.94	19.27		3	02 PM - 03 PM
1	03 PM - 04 PM	24.53	19.27		3	03 PM - 04 PM
1	04 PM - 05 PM	19.00	19.27		3	04 PM - 05 PM
1	05 PM - 06 PM	17.17	19.27		3	05 PM - 06 PM
1	06 PM - 07 PM	16.02	19.27		3	06 PM - 07 PM
1	07 PM - 08 PM	17.95	19.27		3	07 PM - 08 PM
1	08 PM - 09 PM	18.11	19.27		3	08 PM - 09 PM
22-Nov-17						
Route No.	Time	Hourly average speed	Daily average speed		Route No.	Time
1	06 AM - 07 AM	16.50	20.06		3	06 AM - 07 AM
1	07 AM - 08 AM	23.56	20.06		3	07 AM - 08 AM
1	08 AM - 09 AM	21.53	20.06		3	08 AM - 09 AM
1	09 AM - 10 AM	20.00	20.06		3	09 AM - 10 AM
1	10 AM - 11 AM	20.91	20.06		3	10 AM - 11 AM
1	11 AM - 12 PM	18.50	20.06		3	11 AM - 12 PM
1	12 PM - 01 PM	21.95	20.06		3	12 PM - 01 PM
1	01 PM - 02 PM	15.86	20.06		3	01 PM - 02 PM
1	02 PM - 03 PM	17.84	20.06		3	02 PM - 03 PM
1	03 PM - 04 PM	23.96	20.06		3	03 PM - 04 PM
1	04 PM - 05 PM	20.32	20.06		3	04 PM - 05 PM

1	05 PM - 06 PM	19.72	20.06		3	05 PM - 06 PM
1	06 PM - 07 PM	15.97	20.06		3	06 PM - 07 PM
1	07 PM - 08 PM	19.59	20.06		3	07 PM - 08 PM
1	08 PM - 09 PM	19.87	20.06		3	08 PM - 09 PM
23-Nov-17						
Route No.	**Time**	**Hourly average speed**	**Daily average speed**		**Route No.**	**Time**
1	06 AM - 07 AM	23.92	19.01		3	06 AM - 07 AM
1	07 AM - 08 AM	22.90	19.01		3	07 AM - 08 AM
1	08 AM - 09 AM	22.37	19.01		3	08 AM - 09 AM
1	09 AM - 10 AM	24.26	19.01		3	09 AM - 10 AM
1	10 AM - 11 AM	17.87	19.01		3	10 AM - 11 AM
1	11 AM - 12 PM	17.39	19.01		3	11 AM - 12 PM
1	12 PM - 01 PM	19.53	19.01		3	12 PM - 01 PM
1	01 PM - 02 PM	18.76	19.01		3	01 PM - 02 PM
1	02 PM - 03 PM	19.68	19.01		3	02 PM - 03 PM
1	03 PM - 04 PM	19.64	19.01		3	03 PM - 04 PM
1	04 PM - 05 PM	19.55	19.01		3	04 PM - 05 PM
1	05 PM - 06 PM	16.98	19.01		3	05 PM - 06 PM
1	06 PM - 07 PM	17.74	19.01		3	06 PM - 07 PM
1	07 PM - 08 PM	20.05	19.01		3	07 PM - 08 PM
1	08 PM - 09 PM	18.09	19.01		3	08 PM - 09 PM
24-Nov-17						
Route No.	**Time**	**Hourly average speed**	**Daily average speed**		**Route No.**	**Time**
1	06 AM - 07 AM	20.83	18.48		3	06 AM - 07 AM
1	07 AM - 08 AM	20.05	18.48		3	07 AM - 08 AM
1	08 AM - 09 AM	23.27	18.48		3	08 AM - 09 AM
1	09 AM - 10 AM	19.54	18.48		3	09 AM - 10 AM
1	10 AM - 11 AM	19.29	18.48		3	10 AM - 11 AM
1	11 AM - 12 PM	15.77	18.48		3	11 AM - 12 PM
1	12 PM - 01 PM	18.36	18.48		3	12 PM - 01 PM
1	01 PM - 02 PM	15.38	18.48		3	01 PM - 02 PM
1	02 PM - 03 PM	18.89	18.48		3	02 PM - 03 PM
1	03 PM - 04 PM	19.58	18.48		3	03 PM - 04 PM
1	04 PM - 05 PM	21.38	18.48		3	04 PM - 05 PM
1	05 PM - 06 PM	17.86	18.48		3	05 PM - 06 PM
1	06 PM - 07 PM	13.91	18.48		3	06 PM - 07 PM
1	07 PM - 08 PM	18.46	18.48		3	07 PM - 08 PM
1	08 PM - 09 PM	16.85	18.48		3	08 PM - 09 PM

8.3 Primary Survey Forms

8.3.1 Bus O-D Survey form

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
1	Kanica	14/12/17	10:05 am	Indira Circle	F	Gondal Chowk	Indira Circle	Gondal Chowkdi	W	W	W
2	Kanica	14/12/17	10:07 am	Indira Circle	M	Gondal Chowk	Mawdi Chowk	Gondal Chowkdi	W	W	W
3	Kanica	14/12/17	10:08 am	Indira Circle	M	Madhapar Chowk	Munjka	Jam Nagar	SA	CB	R
4	Kanica	14/12/17	10:10 am	Indira Circle	F	Ayodhya	Tvs Showroom	Ayodhya Chowk	W	W	R
5	Kanica	14/12/17	10:12 am	Indira Circle	F	Kotecha Chowk	Rampir	Dhamsania College	W	W	E
6	Kanica	14/12/17	10:13 am	Indira Circle	F	Om Nagar	Kotecha Chowk	Yadunandan Chowk	W	W	E
7	Kanica	14/12/17	10:16 am	Indira Circle	F	Gondal Chowk	Sadhu Vaswani	shapar	W	CB	W
8	Kanica	14/12/17	10:18 am	Indira Circle	M	Gondal Chowk	saurashtra University	ST Workshop	W	CB	W
9	Kanica	14/12/17	10:20 am	Indira Circle	M	Maha Pooja Dham	Jalaram Society	Equity Hundai	W	W	W
10	Kanica	14/12/17	10:22 am	Indira Circle	M	Nana Mava Circle	saurashtra University	Rajnagar Chowk	A	W	W
11	Kanica	14/12/17	10:25 am	Indira Circle	M	Mavdi Chowk	Atmiya College	Bapa Sitaram Chowk	W	W	E
12	Kanica	14/12/17	10:50 am	Raiya Tele Exchange	M	Madhapar Chowk	Somnath Society	Jam Nagar	W	Bus	P
13	Kanica	14/12/17	10:54 am	Raiya Tele Exchange	M	Indira Circle	Adarsh Plaza	Pushkar Dham	W	SA	P
14	Kanica	14/12/17	10:57 am	Raiya Tele Exchange	F	West Zone Office Chowk	Somnath Society	Big Bazzar	W	W	P
15	Kanica	14/12/17	11:00 am	Raiya Tele Exchange	F	West Zone Office Chowk	saurashtra University	West Zone Office Chowk	W	W	P
16	Kanica	14/12/17	11:05 am	Raiya Tele Exchange	F	Indira Circle	Ami Park	Saurashtra University	W	RMTS Bus	Education
17	Kanica	14/12/17	11:10 am	Raiya Tele Exchange	F	Madhapar Chowk	Tulsi Park	Dwarka Heights	W	W	P

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
18	Kanica	14/12/17	11:24 am	Raiya Tele Exchange	M	Gondal Chowk	Bhayavadar	Gondal Chowkdi	Bus	Bus	P
19	Kanica	14/12/17	11:27 am	Raiya Tele Exchange	F	Madhapar Chowk	Gondal Chowkdi	Gayatri Dham	Car	Bus	P
20	Kanica	14/12/17	11:30 am	Raiya Tele Exchange	F	Nanavati Chowk	Astron Chowk	ICE Nanavati	RMTS Bus	W	Education
21	Kanica	14/12/17	11:33 am	Raiya Tele Exchange	F	Gondal Chowk	Mombasa Ave	Aji Dam Chowk	W	SA	W
22	Kanica	14/12/17	11:34 am	Raiya Tele Exchange	F	Mavdi Chowk	Somnath Society	Bapa Sitaram Chowk	W	W	P
23	Kanica	14/12/17	11:35 am	Raiya Tele Exchange	M	Ram Dev Pir Chowkdi	Gopal Chowk	Unnati School	Auto	W	Education
24	Kanica	14/12/17	11:40 am	Raiya Chowk	F	Gondal Chowk	Bapa Sitaram Chowk	Junagadh	W	W	P
25	Kanica	14/12/17	11:44 am	Raiya Chowk	F	Indira Circle	Raiya Gaon	Wockhardt Hospital	W	W	W
26	Kanica	14/12/17	11:48 am	Raiya Chowk		Maha Pooja Dham	Ashutosh Enterprise	Pathak School	RMTS Bus	W	Education
27	Kanica	14/12/17	11:55 am	Raiya Chowk		Nanavati Chowk	Brahma Samaj Nagar	Nanavati Chowk	W	W	W
28	Kanica	14/12/17	12:00 pm	Nanavati Chowk	M	Indira Circle	RMC	TGES school	W	W	Education
29	Kanica	14/12/17	12:02 pm	Nanavati Chowk	F	Indira Circle	Satyanarayan Park	TGES school	W	W	Education
30	Kanica	14/12/17	12:05 pm	Nanavati Chowk	M	Gondal Chowk	Dharam Nagar	Somnath	W	Bus	Personal
31	Kanica	14/12/17	12:10 pm	Ramdev Pir Chowk	M	Raiya Tele Exchange	Gandhigram Society	Rosary High School	W	W	Education
32	Kanica	14/12/17	12:11 pm	Ramdev Pir Chowk	F	Raiya Tele Exchange	Labhdeep Society	Rosary High School	W	W	Education
33	Kanica	14/12/17	12:12 pm	Ramdev Pir Chowk	M	Punit Nagar	Gautam Nagar	Pipaliya	W	B	W
34	Kanica	14/12/17	12:13 pm	Ramdev Pir Chowk	M	Indira Circle	Bharti Nagar	GK Dholakiya School	W	SA	Education
35	Kanica	14/12/17	12:14 pm	Ramdev Pir Chowk	M	Nanavati Chowk	Swapnalok	Punjab Honda	W	W	Personal
36	Kanica	14/12/17	12:15 pm	Ramdev Pir Chowk	F	Ayodhya Chowk	Navjivan High School	Ayodhya Residency	W	W	Education

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
37	Kanica	14/12/17	12:16 pm	Ramdev Pir Chowk	M	Raiya Tele Exchange	Ramapir Chokdi	Ozone Mall	W	W	W
38	Kanica	14/12/17	12:17 pm	Ramdev Pir Chowk	F	Indira Circle	Shastri Nagar Rampir	Kotecha Chowk	W	SA	Education
39	Kanica	14/12/17	12:18 pm	Ramdev Pir Chowk	M	Ayodhya	Rampir Chokdi	Omkar Society	W	W	W
40	Kanica	14/12/17	12:20 pm	Ramdev Pir Chowk	M	Indira Circle	Gandhigram Society	Innovative School	W	SA	Education
41	Kanica	14/12/17	6:00 pm	Nana Mava Chowk	F	Ambedkar Nagar	RMC	Aashray	W	W	Personal
42	Kanica	14/12/17	6:03 pm	Nana Mava Chowk	M	Punit Nagar	Laxmi Nagar	Vavdi Gam	SA	W	Education
43	Kanica	14/12/17	6:06 pm	Nana Mava Chowk	M	Madhapar Chowk	Amrut	Para Pipaliya	W	W	W
44	Kanica	14/12/17	6:09 pm	Nana Mava Chowk	F	Shital Park	Aarogyam Medical Store	Rail Nagar	W	A	W
45	Kanica	14/12/17	6:12 pm	Nana Mava Chowk	F	Umiya Chowk	Kalyan Party Plot	Aashray Greens	W	W	Personal
46	Kanica	14/12/17	6:15 pm	Nana Mava Chowk	F	Indira Circle	RMC	Akashwani Chowk	W	SA	Education
47	Kanica	14/12/17	6:18 pm	Nana Mava Chowk	F	Raiya Tele Exchange	RMC	Rajput	W	W	Education
48	Kanica	14/12/17	6:21 pm	Nana Mava Chowk	F	Indira Circle	Hari Nagar	Dholakiya School	W	Car	W
49	Kanica	14/12/17	6:24 pm	Nana Mava Chowk	M	Madhapar Chowk	Padmi Society	Jam Nagar	W	SA	W
50	Kanica	14/12/17	6:27 pm	Nana Mava Chowk	M	Gondal Chowk	Panchvati Society	Dhoraji	W	B	W
51	Kairvi	14/12/17	09:50am	NANAVATI CHOWK	F	Indira Circle	Gandhigram	University Rd	W	CB	E
52	Kairvi	14/12/17	09:52am	NANAVATI CHOWK	F	Indira Circle	Gandhigram	University Rd	W	CB	E
53	Kairvi	14/12/17	09:55am	NANAVATI CHOWK	M	Indira Circle	Ayodhya Chowk	KKV	W	W	W
54	Kairvi	14/12/17	09:57am	NANAVATI CHOWK	F	Indira Circle	Gandhigram	Panchayat Chowk	W	W	W
55	Kairvi	14/12/17	09:58am	NANAVATI CHOWK	M	West Zone	Gandhigram	Atmiya College	W	W	E
56	Kairvi	14/12/17	10:00am	SHITAL PARK	M	Madhapar Chowk	Vinay Vatika	Madhapar	W	W	R
57	Kairvi	14/12/17	10:02am	SHITAL PARK	F	Indira Circle	Shashtri Nagar	Kotecha Chowk	W	W	E

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
58	Kairvi	14/12/17	10:04am	SHITAL PARK	M	Shital Park	Nanavati Chowk	Shyam Nagar	W	W	R
59	Kairvi	14/12/17	10:06am	SHITAL PARK	F	Nanavati Chowk	Raiya Dhar	Nanavati Chowk	W	W	R
60	Kairvi	14/12/17	10:08am	SHITAL PARK	M	Shital Park	Ayodhya Chowk	Sheetal Park	W	W	R
61	Kairvi	14/12/17	10:10am	SHITAL PARK	M	Shital Park	Madhapar	Sheetal Park	W	W	R
62	Kairvi	14/12/17	10:12am	SHITAL PARK	F	Raiya Telephone	Shital Park	Sadhuvasvani	W	A	R
63	Kairvi	14/12/17	10:13am	SHITAL PARK	F	Shital Park	West Zone	Shital Park	CB	W	W
64	Kairvi	14/12/17	10:15am	SHITAL PARK	M	Madhapar	Purusharth	Shital Park	W	W	E
65	Kairvi	14/12/17	10:17am	SHITAL PARK	F	Ayodhya Chowk	Shital Park	Near by	W	W	E
66	Kairvi	14/12/17	10:18am	SHITAL PARK	F	Ayodhya Chowk	Shital Park	Astha Residence	W	W	E
67	Kairvi	14/12/17	10:22am	SHITAL PARK	M	Raiya Chowk	Shital Park	Raiya Chowk	W	W	R
68	Kairvi	20/12/17	10:30am	Ambedkar Chowk	F	Ambedkar Nagar	Mavdi Chowkdi	Ambedkar Chowk	W	W	W
69	Kairvi	20/12/17	10:32am	Ambedkar Chowk	F	Nana Mauva	Ambedkar Chowk	Aji Dam	W	P	R
70	Kairvi	20/12/17	10:35am	Ambedkar Chowk	F	Madhapar Chowk	Ambedkar Chowk	Madhapar Chowkdi	W	CB	R
71	Kairvi	20/12/17	10:37am	Ambedkar Chowk	M	Madhapar Chowk	Pramukh Industries	Jamnagar	W	ST	W
72	Kairvi	20/12/17	10:55am	MAHAPUJA	F	Madhapar Chowk	Mahapuja	Krishna Society	W	W	W
73	Kairvi	20/12/17	10:57am	MAHAPUJA	M	Mahapuja	Gondal Chowkdi	Creative School	B	W	W
74	Kairvi	20/12/17	11:00am	MAHAPUJA	F	Indira Circle	Mahapuja	Bhalodiya College	W	W	W
75	Kairvi	20/12/17	11:04am	MAHAPUJA	F	Indira Circle	Mahapuja	Bhalodiya College	W	W	E
76	Kairvi	20/12/17	11:07am	MAHAPUJA	F	Madhapar Chowk	Mahapuja	Kagdadi	W	GRTS	W
77	Kairvi	20/12/17	11:12am	MAHAPUJA	F	Ayodhya Chowk	Mahapuja	Ayodhya Chowk	W	W	R
78	Kairvi	20/12/17	11:15am	MAHAPUJA	F	Indira Circle	Backbone Center	Saurashtra University	CB	CB	E
79	Kairvi	20/12/17	11:30am	OM NAGAR	M	Indira Circle	Om Nagar	Atmiya College	W	W	E
80	Kairvi	20/12/17	11:32am	OM NAGAR	M	Ramapir Chowkdi	Om Nagar	Lijjat Papad	W	W	R

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
81	Kairvi	20/12/17	11:35am	OM NAGAR	F	Indira Circle	Om Nagar	Swaminaray an Mandir	W	CB	E
82	Kairvi	20/12/17	11:38am	OM NAGAR	M	Nana Mauva	Mavdi Chowkdi	Nana Mauva	A	W	W
83	Kairvi	20/12/17	11:40am	OM NAGAR	M	Nana Mauva	Madhapar	Nana Mauva	A	W	W
84	Kairvi	20/12/17	11:43am	OM NAGAR	M	Govardhan Chowk	Om Nagar	Sapar	W	P	W
85	Kairvi	20/12/17	11:45am	OM NAGAR	M	Umiya Chowk	Om Nagar	Umiya Chowk	W	W	R
86	Jeet	20/12/17	10:30 am	Ambedkar Nagar	M	Ambedkar Nagar	Balaji Hall	Khodiyar Nagar	W	W	R
87	Jeet	20/12/17	10:32 am	Ambedkar Nagar	F	Raiya Chowkdi	Aastha Residency	Raiya Village	W	W	R
88	Jeet	20/12/17	10:33 am	Ambedkar Nagar	M	West Zone	Ambedkar Nagar	Pantaloons	W	W	W
89	Jeet	20/12/17	10:35 am	Ambedkar Nagar	F	Raiya Chowkdi	Ambedkar Nagar	Raiya Chowkdi	W	W	W
90	Jeet	20/12/17	10:37 am	Ambedkar Nagar	M	West Zone	Ambedkar Nagar	Reliance Mall	W	W	R
91	Jeet	20/12/17	12:10 am	Madhapar Chowkdi	M	Raiya Chowkdi	Mota Rampar	Modi School	Bus	Walk	Edu
92	Jeet	20/12/17	12:12 am	Madhapar Chowkdi	M	Raiya Chowkdi	Madhapar	Satwara	Bus	Walk	R
93	Jeet	20/12/17	12:13 am	Madhapar Chowkdi	M	Madhapar	Indira Circle	Madhapar Village	Bus	Bus	W
94	Jeet	20/12/17	12:15 am	Madhapar Chowkdi	M	Mahapuja	Wakaner	Dholakiya School	Rikshaw	Walk	R
95	Jeet	20/12/17	12:17 am	Madhapar Chowkdi	M	Mahapuja	SRPF Camp	Dholakiya School	Bus	Walk	Edu
96	Jeet	20/12/17	12:18am	Madhapar Chowkdi	M	Raiya Chowkdi	Sheth Nagar	Mahadev Hotel	Rikshaw	Walk	R
97	Jeet	20/12/17	12:20 am	Madhapar Chowkdi	M	Raiya Telephone Exchange	Madhapar	Telephone Exchnage	Walk	Walk	R
98	Jeet	20/12/17	12:22 am	Madhapar Chowkdi	M	Madhapar	Om Nagar	Madhapar Village	Walk	Auto	R
99	Jeet	20/12/17	12:23 am	Madhapar Chowkdi	M	Telephone Exchange	Jamnagar	Telephone Exchnage	BUs	Walk	R
100	Jeet	20/12/17	12:25 am	Madhapar Chowkdi	M	Mahapuja	Sheth Nagar	Dholakiya School	2W	Walk	Edu
101	Jeet	21/12/17	10:50 am	Mavdi Chowk	F	Indira Circle	Swaminaray an Chowk	Panchayat Chowk	Auto	W	R
102	Jeet	21/12/17	10:52 am	Mavdi Chowk	M	Raiya Telephone Exchnage	PD Malaviya College	Raiya Telephone	D	W	W

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
103	Jeet	21/12/17	10:53 am	Mavdi Chowk	F	Raiya Circle	Mavdi Chowk	Raiya Circle	W	W	R
104	Jeet	21/12/17	10:55 am	Mavdi Chowk	M	Madhapar Chowkdi	Swaminaray an Chowk	Morbi City	Auto	CB	W
105	Jeet	21/12/17	10:56 am	Mavdi Chowk	M	Indira Circle	Mavdi Chowk	KKV Hall	W	P	W
106	Jeet	21/12/17	10:58am	Mavdi Chowk	M	West Zone	Mavdi Chowk	Reliance Mall	W	W	W
107	Jeet	21/12/17	11:00 am	Mavdi Chowk	M	Nana Mauva	Amrapali Fatak	Nana Mauva	D	W	W
108	Jeet	21/12/17	11:03 am	Mavdi Chowk	M	Gondal Chowkdi	Mavdi Chowk	Shapar	W	P	W
109	Jeet	21/12/17	11:05 am	Mavdi Chowk	M	Punit Nagar	Mavdi	Punit Park	W	W	W
110	Jeet	21/12/17	10:05 am	Umiya Chowk	M	Indira Circle	Umiya Chowk	Saurashtra University	W	A	W
111	Jeet	21/12/17	10:06 am	Umiya Chowk	M	Indira Circle	Nana Mauva	Indira Circle	Bus-BRT	Bus - BRT	W
112	Jeet	21/12/17	10:08 am	Umiya Chowk	M	Umiyaji Chowk	Nana Mauva	Umiyaji Chowk	Bus BRT	Bus BRT	W
113	Jeet	21/12/17	10:10 am	Umiya Chowk	M	Raiya Chowk	Ambedkar nagar	Raiya Chowk	W	W	W
114	Jeet	21/12/17	10:12 am	Umiya Chowk	F	Indira Circle	Umiya Chowk	Sadhuvasva ni Rd	W	A	W
115	Jeet	21/12/17	10:14 am	Umiya Chowk	M	Indira Circle	Govardhan Chowk	KKV (for Metoda)	W	W	W
116	Jeet	21/12/17	10:16 am	Umiya Chowk	M	West Zone	Gondal Chowkdi	Reliance Mall	Bus BRT	W	R
117	Jeet	21/12/17	10:18 am	Umiya Chowk	F	Punit Nagar	Umiya Chowk, Gokuldham Society.	Punit Park	W	W	W
118	Jeet	21/12/17	10:19 am	Umiya Chowk	M	Indira Circle	Gokuldham society	Akashwani Chowk	W	Auto	R
119	Jeet	21/12/17	10:20 am	Umiya Chowk	M	Govardhan Chowk	Umiya Chowk	Madhav Park	Car	W	W
120	Shyambir	13/12/17	3:15 PM	West Zone Office Chowk	M	Gondal Chowk	Iscon Mall	Vavdi	Walk	A	Shopping
121	Shyambir	13/12/17	3:15 PM	West Zone Office Chowk	M	Madhapar Chowk	Iscon Mall	Bajrang Wadi	Walk	A	Shopping
122	Shyambir	13/12/17	3:18 PM	West Zone Office Chowk	F	Maha Pooja Dham Chowk	Maruti Chowk	Vishav Nagar	Walk	W	Education
123	Shyambir	13/12/17	3:19 PM	West Zone Office Chowk	F	Maha Pooja Dham Chowk	Maruti Chowk	Vishav Nagar	Walk	W	Education

S. no	Surveyor	Date	Time	Junction or Bus Stop Name	M/F	Destination Stop	Origin	Destination	Origin to Bus Stop Mode - Dropped (D), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Bus stop to destination mode-Pickup (P), Walk (W), Bicycle (B), 2 W (S), Car (C), City Bus (CB), Auto (A) or others	Purpose - Work (W), Education (E), Recreation (R)
124	Shyambir	13/12/17	3:20 PM	West Zone Office Chowk	M	Nana Mava Chowk	West Zone Office Chowk	Nana Mava Chowk	Walk	W	Survey
125	Shyambir	13/12/17	3:25 PM	West Zone Office Chowk	M	Maha Pooja Dham Chowk	KKV Chowk	Mayani Chowk	Walk	W	Shopping
126	Shyambir	13/12/17	3:25 PM	West Zone Office Chowk	M	Maha Pooja Dham Chowk	KKV Chowk	Mayani Chowk	Walk	W	Shopping
127	Shyambir	13/12/17	3:50 PM	Nana Mava Chowk	M	Raiya Chowk	PNB Bank	Kiwadi Nagar	Walk	W	Other
128	Shyambir	13/12/17	3:55 PM	Nana Mava Chowk	F	Punit Nagar Chowk	Padmi Society (Library)	Kodiyan Nagar	Walk	W	Education
129	Shyambir	13/12/17	3:58 PM	Nana Mava Chowk	F	Punit Nagar Chowk	Padmi Society (Library)	Kodiyan Nagar	Walk	W	Education
130	Shyambir	13/12/17	4:00 PM	Nana Mava Chowk	M	Indira Circle	Nana Muva Road	Vaidik Boys Hostel	Walk	W	Other
131	Shyambir	13/12/17	4:05 PM	Nana Mava Chowk	F	Indira Circle	Padmi Society (Library)	Vardhman Girls Hostel	Walk	W	Education
132	Shyambir	13/12/17	4:06 PM	Nana Mava Chowk	F	Mavdi Chowk	Astha Shop (Nana mava)	Astha Hostel	Walk	W	Work
133	Shyambir	13/12/17	4:10 PM	Nana Mava Chowk	M	Punit Nagar Chowk	Aarogyam Hospital	Punit Nagar	Walk	A	Work
134	Shyambir	13/12/17	4:15 PM	Nana Mava Chowk	M	Goverdhan Chowk	PNB Bank	Madhav Vatika	Walk	W	Work
135	Shyambir	13/12/17	5:30 PM	Indira Circle	M	Raiya Chowk	CMS Computer Institute (Coaching)	Akashat Hostel	Walk	A	Education
136	Shyambir	13/12/17	5:32 PM	Indira Circle	M	Nanavati Chowk	CMS Computer Institute (Coaching)	Gandhi Nagar	Walk	W	Education
137	Shyambir	13/12/17	5:33 PM	Indira Circle	F	West Zone Office Chowk	Royal Park(PG)	Big Bazzar	Walk	W	Shopping
138	Shyambir	13/12/17	5:35 PM	Indira Circle	F	West Zone Office Chowk	Royal Park(PG)	Big Bazzar	Walk	W	Shopping
139	Shyambir	13/12/17	5:40 PM	Indira Circle	F	Nanavati Circle(Bus Stop)	Patel Education	Gandhi Nagar	Walk	W	Education
140	Shyambir	13/12/17	5:42 PM	Indira Circle	M	Goverdhan Chowk	Diva Hospital	Nandanvan	Walk	W	Work

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141	Shyambir	13/12/17	5:45 PM	Indira Circle	M	Gondal Chowk	Sampati Apartment	Udyog nagar	Walk	A	Work
142	Shyambir	13/12/17	5:46 PM	Indira Circle	M	Madhapar Chowk	Suzuki Service Station	Sheth Nagar	Walk	A	Work
143	Shyambir	13/12/17	6:15 PM	Raiya Tele Exchange	M	Ramdev Pir Chowk	Royal Hotel	Dharam Nagar	Walk	W	Work
144	Shyambir	13/12/17	6:18 PM	Raiya Tele Exchange	F	Punit Nagar Chowk	Patel Travels	Punit Nagar	Walk	A	Work
145	Shyambir	13/12/17	6:20 PM	Raiya Tele Exchange	F	Nana Mava Chowk	Mathur Hospital	Mota Mava	Walk	A	Work
146	Shyambir	13/12/17	6:25 PM	Raiya Tele Exchange	M	West Zone Office Chowk	Kala Kendra	Iscon Mall	Walk	W	Work
147	Shyambir	13/12/17	6:26 PM	Raiya Tele Exchange	M	Madhapar Chowk	Hari Nagar	Manharpura	Walk	W	Work
148	Shyambir	13/12/17	6:30 PM	Raiya Tele Exchange	M	Om Nagar Chowk	Golden Park (Coaching)	Chandresh Nagar	Walk	W	Education
149	Shyambir	13/12/17	6:35 PM	Raiya Tele Exchange	F	Umiya Chowk	Golden Park (Coaching)	Mavdi Village	Walk	W	Education
150	Shyambir	13/12/17	6:38 PM	Raiya Tele Exchange	M	Ambedkar Nagar Chowk	Tulsi Park	Punit Nagar	Auto	W	Work
151	Shyambir	14/12/17	11:44 am	Raiya Chowk	M	Umiya Chowk	Geetanjali college	Gokuldham Society	Dropped	W	Education
152	Shyambir	14/12/17	11:45 am	Raiya Chowk	F	Madhapar Chowk	Nav jevan Society	Tankara	Auto	CB	Work
153	Shyambir	14/12/17	11:50 am	Raiya Chowk	F	Indira Circle	M.J Kundaliya	Ravi park	City Bus	W	Education
154	Shyambir	14/12/17	11:50 am	Raiya Chowk	F	Indira Circle	M.J Kundaliya	Ravi park	City Bus	W	Education
155	Shyambir	14/12/17	11:55 am	Nanavati Chowk	F	Indira Circle	Dharam Nagar	Inovative Society	Walk	W	Work
156	Shyambir	14/12/17	11:58 am	Nanavati Chowk	M	Indira Circle	Radhika Park	G T Sheth School	Walk	W	Education
157	Shyambir	14/12/17	11:59 am	Nanavati Chowk	M	Indira Circle	Radhika Park	G T Sheth School	Walk	W	Education
158	Shyambir	14/12/17	12:05 pm	Ayodhya Chowk	M	Raiya Tele Exchange	Madhapar	Modi School	Walk	W	Education
159	Shyambir	14/12/17	12:08 pm	Ayodhya Chowk	M	Raiya Tele Exchange	Manas Apartment	Modi School	Walk	W	Education
160	Shyambir	14/12/17	12:10 pm	Ayodhya Chowk	M	Raiya Tele Exchange	Gokul Appartment	Modi School	Walk	W	Education

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161	Shyambir	14/12/17	12:20 pm	Ayodhya Chowk	F	Indira Circle	Alaknanda Apartment	G T Sheth School	Walk	W	Work
162	Shyambir	14/12/17	12:25 pm	Ayodhya Chowk	M	Raiya Chowk	Gokul Apartment	Raiya Chowk(Shop)	Walk	W	Work
163	Shyambir	14/12/17	12:30 pm	Ayodhya Chowk	M	Madhapar Chowk	Seemandhra Apartment	Jamnagar	Walk	Bus	Other
164	Shyambir	14/12/17	12:32 pm	Ayodhya Chowk	M	Raiya Tele Exchange	Radha Residency	Modi School	Walk	W	Education
165	Shyambir	14/12/17	12:33 pm	Ayodhya Chowk	F	West Zone Office Chowk	Alaknanda Apartment	Big Bazzar	Walk	W	Shopping
166	Shyambir	14/12/17	12:35 pm	Ayodhya Chowk	M	West Zone Office Chowk	Ayodhya Society	Bhavan Kunj	Walk	W	Other
167	Shyambir	14/12/17	12:38 pm	Ayodhya Chowk	M	Nana Mava Chowk	Ayodhya Society	Krishna School	Walk	W	Education
168	Shyambir	15/12/17	10:44 am	Gondal Chowk	F	Indira Circle	Virpur	RP Bhalodia College	Bus	W	Education
169	Shyambir	15/12/17	10:45 am	Gondal Chowk	F	Indira Circle	Virpur	RP Bhalodia College	Bus	W	Education
170	Shyambir	15/12/17	10:46 am	Gondal Chowk	M	Raiya Chowk	Hudko Chokdi	Panchvati Society	Auto	W	Job
171	Shyambir	15/12/17	10:48 am	Gondal Chowk	M	Mavdi Chowk	Jakhra	Astha Hotel	Bus	W	Other
172	Shyambir	15/12/17	10:50 am	Gondal Chowk	M	Indira Circle	Porbandar	Race Course	Bus	A	Other
173	Shyambir	15/12/17	10:51 am	Gondal Chowk	M	Indira Circle	Shapar	Indira Circle	Auto	W	Job
174	Shyambir	15/12/17	10:52 am	Gondal Chowk	M	Mavdi Chowk	Maldhari Hotel	ICICI Bank	Bike	W	Other
175	Shyambir	15/12/17	10:53 am	Gondal Chowk	F	Raiya Tele Exchange	Gondal	Somnath Society	Bus	B	Other
176	Shyambir	15/12/17	10:54 am	Gondal Chowk	M	Indira Circle	Junagadh	RP Bhalodia College	Bus	Bus	Education
177	Shyambir	15/12/17	10:55 am	Gondal Chowk	M	Ambedkar Nagar Chowk	Gondal	Shree Jay Ambe Energy (Office)	Bus	W	Job
178	Shyambir	15/12/17	11:04 am	Punit Nagar Chowk	M	Gondal Chowk	Govindratn Banglow	Kothariya Chokdi	Cycle	A	Education
179	Shyambir	15/12/17	11:06 am	Punit Nagar Chowk	M	Gondal Chowk	Punit Nagar	Gondal	Walk	Bus	Other

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180	Shyambir	15/12/17	11:07 am	Punit Nagar Chowk	F	Gondal Chowk	Punit Nagar	Gondal	Walk	Bus	Other
181	Shyambir	15/12/17	11:08 am	Punit Nagar Chowk	M	Raiya Chowk	Punit Nagar	Raiya Chowk	Walk	W	Other
182	Shyambir	15/12/17	11:10 am	Punit Nagar Chowk	M	Raiya Chowk	Shiv Mandir	Raiya Chowk	Walk	W	Job
183	Shyambir	15/12/17	11:14 am	Punit Nagar Chowk	M	Umiya Chowk	Vision School	Jasraj Nagar	Walk	W	Education
184	Shyambir	15/12/17	11:16 am	Punit Nagar Chowk	M	Indira Circle	Punit Nagar	Police Head Quarter	Walk	B	Other
185	Shyambir	15/12/17	11:18 am	Punit Nagar Chowk	M	Indira Circle	Riddhi Siddhi Society	G T Sheth School	Bike	W	Education
186	Shyambir	15/12/17	11:20 am	Punit Nagar Chowk	F	Nana Mava Chowk	Punit Nagar	Panchvati Society	Walk	W	Job
187	Shyambir	15/12/17	11:25 am	Punit Nagar Chowk	F	Indira Circle	Punit Nagar	G T Sheth School	Walk	W	Education
188	Shyambir	15/12/17	11:30 am	Goverdhan Chowk	F	Punit Nagar Chowk	West Zone Office	Girls Hostel, Gondal Road	Walk	W	Education
189	Shyambir	15/12/17	11:32 am	Goverdhan Chowk	F	Punit Nagar Chowk	West Zone Office	Girls Hostel, Gondal Road	Walk	W	Education
190	Shyambir	15/12/17	11:35 am	Goverdhan Chowk	F	Indira Circle	Nandanvan	G T Sheth School	Walk	W	Education
191	Shyambir	15/12/17	11:40 am	Goverdhan Chowk	F	Indira Circle	Nandanvan	Kansagara College	Walk	W	Education
192	Shyambir	15/12/17	11:42 am	Goverdhan Chowk	M	Indira Circle	Nandanvan	G T Sheth School	Walk	W	Education
193	Shyambir	15/12/17	11:45 am	Goverdhan Chowk	F	Gondal Chowk	Govindratn Banglow	Patel Nagar	Walk	A	Other
194	Shyambir	15/12/17	11:50 am	Goverdhan Chowk	F	Indira Circle	Madhav Park	Kotecha Nagar	Walk	W	Education
195	Shyambir	15/12/17	11:55 am	Goverdhan Chowk	F	Indira Circle	SukhSagar Apartment	Kansagara College	Walk	W	Education
196	Shyambir	15/12/17	11:58 am	Goverdhan Chowk	M	Ayodhya Chowk	Labhubhai College	Ayodhya	Walk	W	Education

8.3.2 Other than Bus O-D Survey form

S. no	Surveyor	Date	Time	Junction	Arm - Road Name or BRT to N or BRT to S	M/F	Mode - Car (C), 2 W (S), Auto (A), Shared Auto (SA), Bicycle (B), Walk (W)	Origin	Destination	Dir. (L/R/C)	Next turn junction	Purpose - Work (W), Education (E), Recreation (R)	O u
1	Sandeep	14-12-2017	08:45	KKV	BRT N	M	B	Ramapir Chowkdi	Nana Mauva	C	End	W	
2	Sandeep	14-12-2017	08:47	KKV	BRT N	M,F	SA	Raiya	Vajdi	R	Straight	W	
3	Sandeep	14-12-2017	08:49	KKV	BRT N	M	SA	Indira Circle	Gondal Chowkdi	C	Straight	W	
4	Sandeep	14-12-2017	08:51	KKV	BRT N	M,M	W	Raiya Chokdi	Grace College	R	Straight	E	
5	Sandeep	14-12-2017	08:53	KKV	BRT N	M	W	Indira Circle	KKV	L	Straight	W	
6	Sandeep	14-12-2017	08:55	KKV	BRT N	M	B	Indira Circle	KKV	L	Straight	W	
7	Sandeep	14-12-2017	09:00	KKV	BRT N	M	W	Indira Circle	KKV	L	Straight	W	
8	Sandeep	14-12-2017	09:05	KKV	BRT N	M,M	S	Raiya Tel. Exch	Bhavnagar Road	L	KKV	W	
9	Sandeep	14-12-2017	09:08	KKV	BRT N	F	W	Raiya Tel. Exch	KKV	L	End	W	
10	Sandeep	14-12-2017	09:11	KKV	BRT N	F	SA	Ramapir Chowkdi	KKV	L	End	W	
11	Sandeep	14-12-2017	09:15	KKV	BRT N	M,M	SA	Ramapir Chowkdi	Gondal Chowk	C	End	W	
12	Sandeep	14-12-2017	09:20	KKV	BRT S	M	SA	Mavdi	Raiya Circle	C	Straight	W	
13	Sandeep	14-12-2017	09:23	KKV	BRT S	M	SA	Laxmi Nagar	Metoda	L	Straight	W	
14	Sandeep	14-12-2017	09:40	KKV	Kotecha Circle Road	M	C	Kotaya	Indira Circle	R	End	W	
15	Sandeep	14-12-2017	09:42	KKV	Kotecha Circle Road	M,M,M	C	Bus Stand	Kalavad Road	C	End	PW	
16	Sandeep	14-12-2017	09:43	KKV	Kotecha Circle Road	M	S	Rashtriya Shala	Axis Bank, KKV	R	End	W	
17	Sandeep	14-12-2017	09:44	KKV	Kotecha Circle Road	M,M	C	Ranchod Ngr Society	Big Bazaar, Ring Road	L	End	PW	
18	Sandeep	14-12-2017	09:45	KKV	BRT S	M	C	Mavdi Chokdi	Kalavad	L	End	W	
19	Sandeep	14-12-2017	09:48	KKV	BRT S	M	S	Gondal Cowkdi	KKV	L	End	W	
20	Sandeep	14-12-2017	09:50	KKV	BRT S	M	C	Kalawad	Madhapar	C	Straight	R	
21	Sandeep	14-12-2017	09:51	KKV	Kalawad Road	M	S	University	KKV	C	End	W	
22	Sandeep	14-12-2017	09:52	KKV	Kalawad Road	M,M	S	Kasturi Residency	Danapith	C	Race Course	W	
23	Sandeep	14-12-2017	09:55	KKV	Kalawad Road	M,M	S	Atmia College	Indira Circle	L	Indira Circle - right	W	
24	Sandeep	14-12-2017	09:57	KKV	BRT N	M	C	Kalawad	Gondal	C	End	W	
25	Sandeep	14-12-2017	09:59	KKV	BRT N	M	C	Sadhu Vaswani Road	Shapar	C	End	W	
26	Sandeep	14-12-2017	10:01	KKV	BRT N	M,M,M	C	Raiya Circle	Mavdi Chawkdi	C	End	W	

27	Sandeep	14-12-2017	10:10	Indira Circle	Kotecha Circle Road	M	S	P D Malaviya College of Commerce	University	C	University (Right)	W	
28	Sandeep	14-12-2017	10:13	Indira Circle	Kotecha Circle Road	M,M	S	Kotecha Circle	Panchayat Chowk	C	End	W	
29	Sandeep	14-12-2017	10:15	Indira Circle	Kotecha Circle Road	M,M	S	Vidya Nagar Main Road	Aakashwani Chowk	C	End	PW	
30	Sandeep	14-12-2017	10:18	Indira Circle	BRT N	M	S	Rail Nagar	KKV Hall	C	End	W	
31	Sandeep	14-12-2017	10:19	Indira Circle	BRT N	M,M	S	Amruta Society	Dharmendra Road	L	Astron (L)	W	
32	Sandeep	14-12-2017	10:20	Indira Circle	BRT N	M	S	Shiv Sangam Society	Indira Circle	L	End	PW	
33	Sandeep	14-12-2017	10:21	Indira Circle	University Road	M,F	SA	Saurashtra University	KKV	R	End	W	
34	Sandeep	14-12-2017	10:23	Indira Circle	University Road	M	S	Bapa Sitaram Chowk	Kotharia	C	Mahila College Circle	PW	
35	Sandeep	14-12-2017	10:26	Indira Circle	University Road	M,M,F, F	C	Aakashwani Chowk	Vapi	C		PW	
36	Sandeep	14-12-2017	10:30	Indira Circle	BRT S	M	S	Amruta Society	Panchayat Chowk	L	End	W	
37	Sandeep	14-12-2017	10:33	Indira Circle	BRT S	M,M,M ,M	SA	Amin Marg	Badri Park	C	End	W	
38	Sandeep	14-12-2017	11:00	Raiya Tel. Exch	BRT S	M	S	KKV	Raiya Circle	C	Straight	W	
39	Sandeep	14-12-2017	11:01	Raiya Tel. Exch	BRT S	M	C	Mavdi Chokdi	Madhapar	C	End	W	
40	Sandeep	14-12-2017	11:02	Raiya Tel. Exch	BRT S	M,M	S	Mavdi Chokdi	Popatpara	C	End	E	
41	Sandeep	14-12-2017	11:03	Raiya Tel. Exch	BRT S	M	S	Raiya Tel. Exch.	Somnath Society	C	Straight	W	
42	Sandeep	14-12-2017	11:04	Raiya Tel. Exch	BRT S	M	S	Dhamsaniya Commerce College	Ramapir Chowkdi	C	Straight	E	
43	Sandeep	14-12-2017	11:04	Raiya Tel. Exch	BRT S	M	S	RMC West Zone	Kidwai Nagar	C	Left	W	
44	Sandeep	14-12-2017	11:05	Raiya Tel. Exch	BRT W	M	C	Raiya Tel. Exchange	Collectors office	C		W	
45	Sandeep	14-12-2017	11:06	Raiya Tel. Exch	BRT W	M	C	Hari Nagar	SBI Raiya Road	L	Raiya Circle	W	
46	Sandeep	14-12-2017	11:07	Raiya Tel. Exch	BRT N	M	S	Saraswati Park	Kalawad Road	C	KKV (R0	PW	
47	Sandeep	14-12-2017	11:09	Raiya Tel. Exch	BRT N	M	S	Gandhigram	Punit Nagar	C	Straight	W	
48	Sandeep	14-12-2017	11:11	Raiya Tel. Exch	BRT N	M	S	Gandhigram	Indira Circle	C	End	W	
49	Sandeep	14-12-2017	11:13	Raiya Tel. Exch	BRT N	M	S	Veja Gam	Sadhu Vaswani Road	R	Straight	W	
50	Sandeep	14-12-2017	11:15	Raiya Tel. Exch	BRT N	M	S	Raiya Village	KKV	C	Straight	W	
51	Sandeep	14-12-2017	11:17	Raiya Tel. Exch	BRT N	M	C	Raiya Village	Amreli	C	Nanamua (L)	W	
52	Sandeep	15-12-2017	09:50	Raiya Circle	BRT S	M,M	S	Ranuja Temple	Raiya Village	L	Straight	W	
53	Sandeep	15-12-2017	09:52	Raiya Circle	BRT S	M	C	Amin Marg	Ratanpar Village	C	Madhapar	W	

54	Sandeep	15-12-2017	09:53	Raiya Circle	BRT S	M	S	University Road	Raiya Circle	L	End	W	
55	Sandeep	15-12-2017	09:55	Raiya Circle	BRT W	M	S	Ridhi Sidhi Park	Aalap Green City	C	Race Course	W	
56	Sandeep	15-12-2017	09:57	Raiya Circle	BRT W	M	C	University	Ruda Transport Nagar	L	Madhapar (S)	W	
57	Sandeep	15-12-2017	09:59	Raiya Circle	BRT W	M,F	A	Raiya Village	Moti Tanki Chowk	C	End	W	
58	Sandeep	15-12-2017	10:00	Raiya Circle	BRT W	M	S	Maya Nagar	Trikon Baug	C	Nimra Chowk	W	
59	Sandeep	15-12-2017	10:02	Raiya Circle	BRT W	M	s	Sadhu Vaswani Road	Trikon Baug	C	Race Course	W	
60	Sandeep	15-12-2017	10:10	Nanavati Chowk	Airport Road	M	C	Gandhigram	Morbi	R	Madhapar	PW	
61	Sandeep	15-12-2017	10:12	Nanavati Chowk	Airport Road	M	S	Gandhigram	Sath Hanuman	R	Madhapar	PW	
62	Sandeep	15-12-2017	10:15	Nanavati Chowk	Airport Road	M	S	Gandhi Nagar	Indira Circle	L	End	W	
63	Sandeep	15-12-2017	10:18	Nanavati Chowk	Airport Road	F,C	A	Gandhigram	Giriraj Hospital	L	End	PW	
64	Sandeep	15-12-2017	10:25	Nanavati Chowk	BRT N	M	S	Gandhigram	Nanavati Chowk	C	End	PW	
65	Sandeep	15-12-2017	10:27	Nanavati Chowk	BRT N	M	S	Gandhigram	Head Post office	C	Raiya Circle (L)	PW	
66	Sandeep	15-12-2017	10:29	Nanavati Chowk	BRT N	M	S	Gandhigram	Kalawad Road	C	Raiya Circle (R	W	
67	Sandeep	15-12-2017	10:31	Nanavati Chowk	BRT N	M	S	Madhapar	Nanavati Chowk	R	End	W	
68	Sandeep	15-12-2017	10:33	Nanavati Chowk	BRT N	M,F	C	Gandhigram	Jaitpur	C	Gondal (S)	PW	
69	Kanica	14-12-2017	08:20am	KKV Bus Stop	E-W	M	W	Raiya Chowk	KKV Chowk	L	Indira Circle	W	2
70	Kanica	14-12-2017	08:20am	KKV Bus Stop	E-W	M	W	Raiya Chowk	Metoda	C	AG Chowk	W	1
71	Kanica	14-12-2017	08:23am	KKV Bus Stop	E-W	M	W	Balaji, Panchavati Society	VVP Engg. College	C	AG Chowk	E	1
72	Kanica	14-12-2017	08:26am	KKV Bus Stop	E-W	F	S	Nirmala Convent	Padadhari	C	Madhapar	W	1
73	Kanica	14-12-2017	08:30am	KKV Bus Stop	W-E	F	SA	Khirasara Palace	Gandhigram	L	Indira Circle	PW	1
74	Kanica	14-12-2017	08:34am	KKV Bus Stop	W-E	M	SA	Kankot	Astha Hospital	R	Big Bazaar	W	1
75	Kanica	14-12-2017	08:37am	KKV Bus Stop	W-E	M	S	Kendriya Vidyalaya	Devraj Donga	C	Kotecha	PW	1
76	Kanica	14-12-2017	08:40am	KKV Bus Stop	W-E	M	SA	Metoda	Jetpur	R	Big Bazaar	PW	1
77	Kanica	14-12-2017	08:42am	KKV Bus Stop	W-E	M	SA	Rani Tower	Virani Chowk	C	Kotecha	PW	2
78	Kanica	14-12-2017	08:45am	KKV Bus Stop	E-W	F	BUS	Kalawad Road	Alap	C	Crystal Mall	PW	1
79	Kanica	14-12-2017	08:47am	KKV Bus Stop	W-E	M	SA	Rani Tower	Wockhardt Hospital	C	Kotecha	W	3
80	Kanica	14-12-2017	08:47am	KKV Bus Stop	W-E	M	SA	Metoda	Civil Hospital	C	Kotecha	PW	2

81	Kanica	14-12-2017	08:50am	KKV Bus Stop	N-S	M	SA	Alap city	Giriraj Hospital	C	Big Bazaar	W	1
82	Kanica	14-12-2017	08:52am	KKV Bus Stop	W-E	F	SA	Anand par	Trikon Bagh	C	Kotecha	W	1
83	Kanica	14-12-2017	08:54am	KKV Bus Stop	E-W	F	SA	Devpara	Mahila ITI	C	Crystal Mall	E	1
84	Kanica	14-12-2017	08:55am	KKV Bus Stop	E-W	M	SA	Nilkanth Cinema	Marwadi University	R	Indira Circle	E	1
85	Kanica	14-12-2017	08:56am	KKV Bus Stop	E-W	M	Bus	Mavdi	Metoda	C	Crystal Mall	W	1
86	Kanica	14-12-2017	08:57am	KKV Bus Stop	E-W	F	Bus	Thorada	Equity Hyundai	R	Indira Circle	W	1
87	Kanica	14-12-2017	08:59am	KKV Bus Stop	E-W	M	S	Laxmi wadi	Khirasara Gaon	C	Crystal Mall	W	2
88	Kanica	14-12-2017	09:00am	KKV Bus Stop	E-W	F	W	Kotecha	Balaji Hall	L	Big Bazaar	W	1
89	Kanica	14-12-2017	09:02am	KKV Bus Stop	E-W	M	A	Swami Narayan Mandir	Gondal chokdi	L	Big Bazaar	W	1
90	Kanica	14-12-2017	09:03am	KKV Bus Stop	E-W	M	SA	Surat	Global girls hostel, gold residency	R	Indira Circle	W	1
91	Kanica	14-12-2017	09:04am	KKV Bus Stop	E-W	M	SA	Mavdi	Metoda	C	Crystal Mall	W	1
92	Kanica	14-12-2017	09:05am	KKV Bus Stop	E-W	M	S	Punit Nagar	Metoda	C	Crystal Mall	W	2
93	Kanica	14-12-2017	09:07am	KKV Bus Stop	E-W	F	Bus	Gondal Road	B.H Gardi college	C	Crystal Mall	E	1
94	Kanica	14-12-2017	09:10am	KKV Bus Stop	E-W	M	S	Telephone exchange	Kalawad gaon	C	Crystal Mall	W	2
95	Kanica	14-12-2017	09:12am	KKV Bus Stop	E-W	F	SA	Hudco chowkdi	Metoda	C	Crystal Mall	W	1
96	Kanica	14-12-2017	09:15am	KKV Bus Stop	E-W	M	S	Kalawad Road	Gondal chokdi	L	Big Bazaar	W	2
97	Kanica	14-12-2017	09:22am	KKV Bus Stop	W-E	M	W	Nana Mauva	Laxmi wadi	C	Kotecha	PW	1
98	Kanica	14-12-2017	09:25am	KKV Bus Stop	W-E	F	A	Sadhura swami	Near Astron chowk	C	Kotecha	W	1
99	Kanica	14-12-2017	09:27am	KKV Bus Stop	W-E	M	SA	Kings craft hotel	Junagarh	R	Big Bazaar	W	2
100	Kanica	14-12-2017	09:30am	KKV Bus Stop	W-E	M	SA	Metoda	Bhakti Nagar Circle	C	Kotecha	PW	1
101	Kanica	14-12-2017	09:33am	KKV Bus Stop	W-E	M	SA	Metoda	Gondal chokdi	R	Big Bazaar	W	1
102	Kanica	14-12-2017	09:35am	KKV Bus Stop	W-E	M	SA	Mota mauva	Gondal chokdi	R	Big Bazaar	W	1
103	Kanica	14-12-2017	09:37am	KKV Bus Stop	E-W	M	C	Limbdi	AG Chowk	C	Crystal Mall	W	2
104	Kanica	14-12-2017	09:40am	KKV Bus Stop	E-W	M	C	Pulchhab Chowk	Iskon Mall	L	Big Bazaar	W	1

105	Kanica	14-12-2017	09:42am	KKV Bus Stop	E-W	M	S	Shree hari	Atmiya College	C	Crystal Mall	E	2
106	Kanica	14-12-2017	09:44am	KKV Bus Stop	E-W	M	S	Kotecha	Nana Mauva	L	Big Bazaar	W	1
107	Kanica	14-12-2017	09:45am	KKV Bus Stop	S-N	M	C	Gondal	Raiya chowkdi	C	Indira Circle	PW	3
108	Kanica	14-12-2017	09:47am	KKV Bus Stop	S-N	M	C	Sanskruti Apartment	Indira circle	C	KKV Chowk	PW	1
109	Kanica	14-12-2017	09:48am	KKV Bus Stop	W-E	M	S	Crystal Mall	Kotecha	C	Kotecha	PW	1
110	Kanica	14-12-2017	09:50am	KKV Bus Stop	W-E	M	S	Kalawad Road	Kothariya	R	Big Bazaar	W	1
111	Kanica	14-12-2017	10:00am	KKV Bus Stop	N-S	M	S	Gandhigram	Kalawad Road	R	Crystal Mall	W	1
112	Kanica	14-12-2017	10:02am	KKV Bus Stop	N-S	M	S	Raiya circle	KKV Hall	R	Crystal Mall	W	1
113	Kanica	14-12-2017	10:05am	KKV Bus Stop	N-S	M	S	Raiya circle	KKV Hall	R	Crystal Mall	PW	1
114	Kanica	14-12-2017	10:12am	Indira Circle	N-S	M	S	Raiya Telephone exchange	Wockhardt Hospital	C	KKV Chowk	W	1
115	Kanica	14-12-2017	10:15am	Indira Circle	S-N	M	S	School of Science	Panchayat Nagar	L	Panchayat Chowk	W	1
116	Kanica	14-12-2017	10:17am	Indira Circle	S-N	M	S	Mota mava	Chimanbhai Flyover	C	Raiya Telephone Exchange	W	1
117	Kanica	14-12-2017	10:20am	Indira Circle	W-E	M	S	Kalawad Road	Jagnath	C	Kotecha	W	1
118	Kanica	14-12-2017	11:25am	Raiya Telephone Exchange	W-E	M	S	Panchayat Nagar	Ganesha Industries	R	Indira Circle	PW	1
119	Kanica	14-12-2017	11:27am	Raiya Telephone Exchange	W-E	M	S	Kotecha	Somnath Society	C	Indira Circle	PW	1
120	Kanica	14-12-2017	11:30am	Raiya Telephone Exchange	E-W	M	C	Somnath Mahadev Temple	Mota Mava	L	KKV Chowk	PW	1
121	Kanica	14-12-2017	11:33am	Raiya Telephone Exchange	E-W	F	S	Krishna Hospital	Sadhuvaswani Road	C	Jay Gopal chowk	PW	1
122	Kanica	14-12-2017	6:20pm	Nana Mava Chowk	S-N	M	B	GIDC Udhyog Nagar	Nana Mava	L	Aashapura Temple	W	1
123	Kanica	14-12-2017	6:22pm	Nana Mava Chowk	S-N	M	S	Mavdi	Balaji Wafers	L	Aashapura Temple	W	1
124	Kanica	14-12-2017	6:24pm	Nana Mava Chowk	S-N	M	S	Gondal	Sadhuvaswani Road	C	West Zone BRTs Stop	W	1
125	Kanica	14-12-2017	6:25pm	Nana Mava Chowk	S-N	M	B	Gokuldham Society	Raiya Chowkdi	C	West Zone BRTs Stop	W	1
126	Kanica	14-12-2017	6:26pm	Nana Mava Chowk	W-E	M	S	Shastri nagar	Vijay Plot	C	Laxmi Nagar Chowk	W	1
127	Kanica	14-12-2017	6:27pm	Nana Mava Chowk	W-E	M	S	Junagarh	Raiya Telephone Exchage	L	West Zone BRTs Stop	PW	2

128	Kanica	14-12-2017	6:28pm	Nana Mava Chowk	W-E	M	S	Nana Mauva	Astron Chowk	C	Raj Nagar Chowk	W	1
129	Kanica	14-12-2017	6:29pm	Nana Mava Chowk	W-E	M	S	Ambika Township	Astron Chowk	C	Raj Nagar Chowk	W	1
130	Kanica	14-12-2017	6:30pm	Nana Mava Chowk	W-E	M	S	Police HQ Mavdi	Astron Chowk	C	Raj Nagar Chowk	E	1
131	Kanica	15-12-2017	09:10am	Raiya Circle	N-S	M	B	Sadhuvaswani Road	Sheetal Park	C	Nanavati Chowk	W	1
132	Kanica	15-12-2017	09:12am	Raiya Circle	N-S	M	S	Raiya Chokdi	Unnati School	C	Nanavati Chowk	W	1
133	Kanica	15-12-2017	09:15am	Raiya Circle	E-W	M	B	Shivpara	Sadhuvaswani Road	C	Alap Chowk	PW	1
134	Kanica	15-12-2017	09:20am	Raiya Circle	E-W	M	S	Kuvadva road	Delta Auto Engineers	L	Alap Chowk	PW	1
135	Kanica	15-12-2017	09:22am	Raiya Circle	E-W	M	S	Gandhigram	KKV Hall	L	Raiya Circle	W	1
136	Kanica	15-12-2017	09:25am	Raiya Circle	E-W	M	C	Krishna Kunj Society	Christ Hospital	R	Nanavati - towards sterling	W	1
137	Kanica	15-12-2017	09:30am	Raiya Circle	E-W	F	SA	Ajay Chowk	Raiyadhar	R	Ayodhya Chowk	W	1
138	Kanica	15-12-2017	09:35am	Raiya Circle	E-W	M	S	Hanuman Vati	Raiya	C	Alap Chowk	W	1
139	Kanica	15-12-2017	09:40am	Raiya Circle	N-S	M	S	Gandhigram	Mota Mava	R	KKV Hall	W	1
140	Kanica	15-12-2017	09:50am	Raiya Circle	N-S	M	B	Raiyadhar	Bandhani Ghar	L	Hanuman Vati	W	1
141	Kanica	15-12-2017	09:52am	Raiya Circle	N-S	F	SA	Ramapir Chowk	Punit Nagar	C	Nanavati Chowk	W	1
142	Kanica	15-12-2017	09:55am	Raiya Circle	N-S	M	S	Ayodhya Chowk	Rajkot Central Bus Station	L	Hanuman Vati	W	1
143	Kanica	15-12-2017	10:00am	Raiya Circle	N-S	F	S	Gandhigram	Civil Hospital	L	Hanuman Vati	W	1
144	Kanica	15-12-2017	10:03am	Raiya Circle	N-S	M	S	Raj Bank, Nanavati	Atika Industries	L	Hanuman Vati	W	2
145	Kanica	15-12-2017	10:05am	Raiya Circle	N-S	M	C	Gandhigram	Vidya Nagar	C	Raiya Telephone Exchange	W	2
146	Kanica	15-12-2017	10:07am	Raiya Circle	N-S	M	C	Madhapar	Indira circle	C	Raiya Telephone Exchange	PW	1
147	Kanica	15-12-2017	10:10am	Nanavati Circle	S-N	M	B	Race Course	Raiyadhar	L	Ramapir Chowk	PW	1
148	Kanica	15-12-2017	10:12am	Nanavati Circle	S-N	F	SA	Nana Mauva	Sheetal Park	L	Ramapir Chowk	PW	1
149	Kanica	15-12-2017	10:13am	Nanavati Circle	S-N	F	SA	Indira Circle	Madhapar	C	Ramapir Chowk	W	1
150	Kanica	15-12-2017	10:15am	Nanavati Circle	S-N	M	C	Junagarh	Sterling Hospital	C	Ramapir Chowk	PW	2
151	Kanica	15-12-2017	10:16am	Nanavati Circle	S-N	M	C	Hari Nagar	Sanosara	C	Ramapir Chowk	W	4
152	Kanica	15-12-2017	10:18am	Nanavati Circle	S-N	M	C	Airport	Ayodhya Chowk	C	Ramapir Chowk	W	1
153	Kanica	15-12-2017	10:19am	Nanavati Circle	S-N	M	S	Big Bazaar	Morbi	C	Ramapir Chowk	W	1
154	Kanica	15-12-2017	10:20am	Nanavati Circle	S-N	M	S	Raiya Chokdi	Shastri Nagar	C	Ramapir Chowk	W	2

155	Kanica	15-12-2017	10:22am	Nanavati Circle	W-E	M	B	Raiya Nagar	Raiya Chokdi	R	Raiya Chokdi	PW	1
156	Kanica	15-12-2017	10:24am	Nanavati Circle	W-E	M	C	Dwarkesh Park Mandir	Panchnath, Old city	C	Kanhaiya	W	1
157	Kanica	15-12-2017	10:25am	Nanavati Circle	W-E	M	S	JMC	Wankaner	L	Nanavati	W	1
158	Kanica	15-12-2017	10:26am	Nanavati Circle	W-E	M	S	Satadhar Park	Brahma Samaj , Raiya Chokdi	R	Raiya Chokdi	PW	1
159	Kanica	15-12-2017	10:27am	Nanavati Circle	W-E	M	C	Shanti Niketan	Wankaner	L	Nanavati	W	3
160	Kanica	15-12-2017	10:28am	Nanavati Circle	W-E	M	B	Raiya Nagar	Gandhigram	C	SK Chowk	PW	1
161	Kanica	15-12-2017	10:29am	Nanavati Circle	W-E	M	C	Raiya Nagar	Madhapar	L	SK Chowk	W	1
162	Kanica	15-12-2017	10:30am	Ramapir Chokdi	E-W	M	B	Gandhigram	Raiyadhar	C	SK Chowk	W	1
163	Kanica	15-12-2017	10:32am	Ramapir Chokdi	E-W	M	C	Civil Hospital	Raiyadhar	C	Ramapir Chowk	PW	1
164	Kanica	15-12-2017	10:34am	Ramapir Chokdi	E-W	F	A	Maruti Hall	Hanuman Madhi	L	Nanavati	W	1
165	Kanica	15-12-2017	1035am	Ramapir Chokdi	E-W	M	S	Civil Hospital	Cancer Hospital, Raiya	L	Nanavati	PW	2
166	Kanica	15-12-2017	10:36am	Ramapir Chokdi	E-W	M	S	Bharti Nagar	Trikon Bagh	L	Nanavati	W	1
167	Kanica	15-12-2017	10:38am	Ramapir Chokdi	E-W	M	B	Lakhno Bunglow	Raiya Telephone Exchage	L	Nanavati	W	1
168	Kanica	15-12-2017	10:40am	Ramapir Chokdi	E-W	M	S	Rail Nagar	KKV Hall	L	Nanavati	PW	1
169	Kanica	15-12-2017	10:43am	Ramapir Chokdi	E-W	M	C	Lakhno Bunglow	Madhapar	R	Sheetal Park	PW	1
170	Kanica	15-12-2017	10:44am	Ramdev pir Rd	N-S	M	S	Rail Nagar	Block No. 27	C	Raiya	W	1
171	Kanica	15-12-2017	10:46am	Ramdev pir Rd	N-S	M	S	Rail Nagar	Sadhuvaswani Road	R	Municipal Quarter	W	1
172	Kanica	15-12-2017	10:48am	Ramdev pir Rd	N-S	F	SA	Ghanteshwar	Sadar	L	Bajrangbali Circle	PW	3
173	Kanica	15-12-2017	10:50am	Ramdev pir Rd	N-S	M	S	Bansidhar Park	Dhebar Road	C	Nanavati	W	1
174	Kanica	15-12-2017	10:52am	Ramdev pir Rd	N-S	M	S	Ayodhya Park	Yagnik Road	C	Nanavati	W	1
175	Kanica	15-12-2017	10:53am	Ramdev pir Rd	N-S	M	C	Madhapar	Raiya Circle	C	Nanavati	W	1
176	Kanica	15-12-2017	10:55am	Ramdev pir Rd	N-S	M	B	Bharti Nagar	Amul	C	Nanavati	W	1
177	Kanica	15-12-2017	10:57am	Ramdev pir Rd	N-S	M	C	Bajrangwadi	Imperial Height, Big Bazaar	C	Nanavati	W	1
178	Kanica	15-12-2017	10:58am	Sheetal Park	E-W	M	S	Bajrangwadi	Ramdev Pir Chowk	L	Ramdev pir	PW	2
179	Kanica	15-12-2017	11:00am	Sheetal Park	E-W	M	S	Jubilee Vegetable Market	Ayodhya Chowk	L	Tow Sheetal Park	PW	2
180	Kanica	15-12-2017	11:03am	Sheetal Park	E-W	F	A	Airport	Raiyadhar	C	Tow Sheetal Park	PW	1
181	Kanica	15-12-2017	11:05am	Sheetal Park	E-W	M	C	Bajrangwadi	University Road	L	Ramdev pir	W	1
182	Kanica	15-12-2017	11:07am	Sheetal Park	E-W	M	C	Bajrangwadi	Yagnik Road	L	Ramdev pir	PW	3
183	Kanica	15-12-2017	11:10am	Sheetal Park	E-W	M	S	Puneet Nagar	KKV Hall	L	Ramdev pir	PW	1

184	Kanica	15-12-2017	11:11am	Sheetal Park	E-W	M	S	Gautam Nagar	Madhapar	R	Ayodhya Chowk	PW	1
185	Kanica	15-12-2017	11:12am	Sheetal Park	N-S	M	S	Sheth Nagar	Amruta Hospital	C	Ramdev pir	W	1
186	Kanica	15-12-2017	11:15am	Sheetal Park	N-S	M	S	Madhapar	Raj Nagar Chowk	C	Ramdev pir	PW	2
187	Kanica	15-12-2017	11:17am	Sheetal Park	N-S	M	B	Madhapar	Ramdev Pir	C	Ramdev pir	PW	1
188	Kanica	15-12-2017	11:18am	Sheetal Park	N-S	M	C	Madhapar	Kotecha	C	Ramdev pir	W	1
189	Kanica	15-12-2017	11:20am	Sheetal Park	N-S	M	S	Madhapar	Raiya Chokdi	C	Ramdev pir	W	1
190	Kanica	15-12-2017	11:22am	Sheetal Park	N-S	M	S	Ayodhya Chowk	Raiya Road	C	Ramdev pir	PW	1
191	Kanica	15-12-2017	11:24am	Sheetal Park	N-S	M	SA	Gokul-Mathura Society	Raiya Chokdi	C	Ramdev pir	PW	2
192	Kanica	15-12-2017	11:25am	Sheetal Park	N-S	M	S	Ayodhya Chowk	Raiya Circle	C	Ramdev pir	PW	1
193	Kanica	15-12-2017	11:27am	Ayodhya Chowk	E-W	M	W	Synergy Hospital	Dharam Nagar Society	C	Tow Ayodhya Chowk	PW	1
194	Kanica	15-12-2017	11:29m	Ayodhya Chowk	E-W	M	S	Astha Avenue Society	Indira circle	L	Sheetal Park	E	2
195	Kanica	15-12-2017	11:30am	Ayodhya Chowk	E-W	M	S	Astha Society, Wadi	Madhapar	R	Madhapar	PW	1
196	Kanica	15-12-2017	11:32am	Ayodhya Chowk	N-S	M	S	Popatpara	Kalavad Road	C	Ayodhya Chowk	W	1
197	Kanica	15-12-2017	11:35am	Ayodhya Chowk	N-S	M	C	Maruti Service Centre	Kalavad Road	C	Ayodhya Chowk	PW	2
198	Kanica	15-12-2017	11:39am	Ayodhya Chowk	N-S	M	B	Madhapar	Kalavad Road	C	Ayodhya Chowk	E	1
199	Kanica	15-12-2017	11:42am	Ayodhya Chowk	N-S	M	S	Madhapar	Ramdev Pir	C	Ayodhya Chowk	W	2
200	Kanica	15-12-2017	11:45am	Ayodhya Chowk	N-S	M	SA	Madhapar	Ramdev Pir	C	Ayodhya Chowk	W	3
201	Kanica	15-12-2017	11:47am	Ayodhya Chowk	N-S	F	SA	Ranjit Nagar, Jam Nagar	Nana Mava	C	Ayodhya Chowk	PW	1
202	Kanica	15-12-2017	11:50am	Ayodhya Chowk	N-S	M	SA	Jam Nagar	KKV Hall	C	Ayodhya Chowk	W	2
203	Kanica	15-12-2017	11:50am	Madhapar Road	E-W	M	B	Gandhi Society	Maha Pooja Dham Chowk	L	Ayodhya Chowk	E	1
204	Kanica	15-12-2017	11:52am	Madhapar Road	E-W	M	S	Hospital Chowk	Dwarkadhish Hotel	C	Madhapar	W	2
205	Kanica	15-12-2017	11:54am	Madhapar Road	E-W	M	SA	Bajrangwadi	Ramdev Pir Chowk	C	Madhapar	W	1
206	Kanica	15-12-2017	11:56am	Madhapar Road	E-W	F	A	Sandhiya Pul	Sheth Nagar	C	Madhapar	PW	2
207	Kanica	15-12-2017	11:58am	Madhapar Road	E-W	F	B	Gayatri Dham Society	Sheth Nagar	C	Madhapar	E	1
208	Kanica	15-12-2017	12:00pm	Madhapar Road	E-W	M	S	Mochi Bazaaar	SRPF Camp	C	Jam Nagar Road	PW	1
209	Kanica	15-12-2017	12:03pm	Madhapar Road	N-S	M	S	Manharpur	Bajrangwadi	L	tow east	W	1
210	Kanica	15-12-2017	12:05pm	Madhapar Road	N-S	M	C	Madhapar	Raiya Chokdi	C	southe	W	1

211	Kanica	15-12-2017	12:07pm	Madhapar Road	N-S	F	S	Morbi	Civil Hospital	L	tow east	PW	2
212	Kanica	15-12-2017	12:08pm	Madhapar Road	N-S	M	S	Madhapar Gram	Railway station	L	tow east	W	2
213	Kanica	15-12-2017	12:09pm	Madhapar Road	N-S	M	S	Vrindavan Society, Madhapar	Kendriya Vidyalaya	L	Civil Hospital	E	1
214	Kanica	15-12-2017	12:10pm	Madhapar Road	N-S	M	S	Rail Nagar Main	Ramdev Pir	C	Ayodhya Chowk	W	2
215	Kanica	15-12-2017	12:11pm	Madhapar Road	N-S	M	A	Morbi	Sadar Bazar	L	Hospital Chowk	W	1
216	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-N	M	SA	Om Nagar	Mavdi Chowkdi	.	.	W	
217	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-N	M	S	Bhavnath 1 Society	Aji Area	C	Gondal Chowkdi	W	
218	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-N	M	S	Raj Nagar	Naval Nagar	L	Ananad Bunglow	W	
219	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-N	M	SA	Vajdi	Gondal Chowkdi	C	Gondal Chowkdi	W	
220	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-N	F	SA	Civil Hospital	Himalay Society	R	.	R	
221	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-E	M	S	Anand Bunglow	Bapasitaram Society	C		W	
222	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-E	M	S	Lakshminagar Rd	Mavdi	L	Mavdi Chowkdi	W	
223	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-E	M	S	Mavdi Chowkdi	Mavdi	L	Mavdi Chowkdi	R	
224	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-E	M	S	Mayani Chowk	Mavdi Chowkdi	.	.	W	
225	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	SA	Gondal Chowkdi	KKV Chowk	C	KKV Chowk	W	
226	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	F	A	Punit Nagar	Indira Circle	C	Indira Circle	R	
227	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	S	Mayani Chowk	Mavdi Chowkdi	.	.	W	
228	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	S	Mavdi Chowkdi	Mavdi Chowkdi		Mavdi Chowkdi	R	
229	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	SA	Gondal Chowkdi	KKV	C		W	
230	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	F	A	Punit Nagar	Indira Circle	C	Indira Circle	W	
231	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	F	SA	Punit Nagar	Vidya Nagar Main Rd			R	
232	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	C	Mavdi Rd	KKV	C	KKV	W	
233	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	S	Chotila Gam	Mavdi Chowkdi	.	.	R	
234	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-S	M	S	Saame Kathe	Sardar Nagar	.	.	W	
235	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-W	M	S	Bapasitaram Chowk	Uday Nagar	L		W	

236	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-W	M	S	Bapasitaram Chowk	Nana Mauva		Nana Mauva	W	
237	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-W	M	S	Mavdi Rd	Soni Bazaar	C		W	
238	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-W	M	S	Bapasitaram Chowk	KKV	L	KKV	R	
239	Kairvi	14-12-2017	09:30AM	MAVDI CHOWKDI	BRT-W	M	S	Bapasitaram Chowk	Indira Circle	L	Indira Circle	E	
240	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-N	M	S	Mavdi Rd	Punit Nagar	C		R	
241	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-N	F	S	Vishveshwar Society	Radha Chowkdi	C		R	
242	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-N	M	SA	Somnath society	Marketing Yard			W	
243	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-N	M	SA	Shiv Park	Gondal Chowkdi		Gondal Chowkdi	W	
244	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-N	M	SA	Mavdi Chowkdi	Hudko			W	
245	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-E	M	S	Sorathiya Wadi Circle	Umiya Chowk	.	.	W	
246	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-E	M	S	kothariya road	Umiya Chowk	.	.	W	
247	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-S	M	S	Govardhan Chowk	Raiya Chowk	C	Raiya Chowkdi	W	
248	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-S	M	S	Punit Nagar	Lakshmi Nagar	R	Gokuldham Society	W	
249	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-S	M	S	Fortune Hotel	Umiya Chowk	.	.	W	
250	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-S	M	SA	Gondal Chowkdi	Indira Circle	C	Indira Circle	W	
251	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-S	M	SA	Gondal Chowkdi	AG Chowk	C	KKV	W	
252	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-S	M	SA	Gondal Chowkdi	AG Chowk	C	KKV	E	
253	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-W	M	S	Umiya Chowk	Swaminarayan Mandir	C	Krishna Nagar	W	
254	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-W	M	S	Umiya Chowk	Gokuldham	C		W	
255	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-W	M	S	Bapasitaram Chowk	Govardhan Chowk			R	
256	Kairvi	15-12-2017	09:30AM	UMIYA CHOWK	BRT-W	M	S	Umiya Chowk	Mavdi Chowkdi	L	Mavdi Chowkdi	R	
257	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-N	M	S	Thorada	Ambedkar Nagar	.	.	W	
258	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-N	M	S	Ambedkar Nagar	Gondal City	C	Gondal Chowkdi	R	
259	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-N	M	S	Ankur Rd	Punit Nagar	C		W	

260	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-N	M	S	Nana Mauva	Gondal Chowkdi	C	Gondal Chowkdi	W	
261	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-N	F	SA	KKV	Ambedkar Nagar	.	.	R	
262	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-N	M	SA	Balaji hall	Rampark Society			W	
263	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-S	M	S	Madhav Park	ST Bus Stand	C		W	
264	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-S	M	S	kothariya road	Raiya Dhar	C	Raiya Chowkdi	W	
265	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-S	M	SA	Gondal Chowkdi	KKV	C	KKV	R	
266	Kairvi	15-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-S	M	SA	Gondal Chowkdi	Ambedkar Nagar	.	.	R	
267	Kairvi	16-12-2017	09:30AM	AMBEDKAR NAGAR	BRT-S	M	C	Govardhan Chowk	Mavdi Rd	C	Mavdi Chowkdi	W	
268	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-N	M	SA	Ramapir Chowkdi	Gondal Chowkdi	C	Gondal Chowkdi	W	
269	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-N	F	SA	Mavdi	Ramapir Chowk	C		R	
270	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-N	M	SA	Mavdi	Govardhan Chowk	.	.	R	
271	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-N	M	S	Umiya Chowk	Bajrang Society	C		W	
272	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-N	M	S	Big Bazaar	Khodiyaar Para	L		W	
273	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-S	F	A	Vrindavan Society	Mavdi Rd	C		R	
274	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-S	M	S	Gondal Chowkdi	Astha Residency Chowk	C		R	
275	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-S	M	S	Gondal Chowkdi	Astha Residency Chowk	C		R	
276	Kairvi	16-12-2017	09:30AM	GOVARDHAN CHOWK	BRT-S	M	C	Gondal City	Govardhan Chowk	.	.	R	
277	Haseeb:Pushkar	14-12-2017	08:05	KKVCHOWK	BRT-S	M	W	kothariya road	metoda	L	AG Chowk	W	
278	Haseeb:Pushkar	14-12-2017	08:06	KKVCHOWK	BRT-S	M	SA(T)	Balaji hall	metoda	L	AG Chowk	W	
279	Haseeb:Pushkar	14-12-2017	08:07	KKVCHOWK	BRT-S	M	SA(T)	Balaji hall	SOS School	R	KKV chowk	E	
280	Haseeb:Pushkar	14-12-2017	08:08	KKVCHOWK	BRT-E	F	SA(T)	Kevda	Bapa Sitaram	L		R	
281	Haseeb:Pushkar	14-12-2017	08:09	KKVCHOWK	BRT-E	M	SA(T)	Metoda	Biraniya Ghat	L	Punit Nagar	W	
282	Haseeb:Pushkar	14-12-2017	08:10	KKVCHOWK	BRT-E	M	S	Panchyat Chowk	Gondal City			W	
283	Haseeb:Pushkar	14-12-2017	08:11	KKVCHOWK	BRT-E	M	B	Kalawad Rd	Raj Nagar Chowk	R		W	
284	Haseeb:Pushkar	14-12-2017	08:12	KKVCHOWK	BRT-E	M	W	Madhapar Gam	Om Nagar Chowk			W	

285	Haseeb:Pushkar	14-12-2017	08:13	KKVCHOWK	BRT-N	M	B	Ramapir Chowkdi	Mavdi Chowkdi	C		W	
286	Haseeb:Pushkar	14-12-2017	08:14	KKVCHOWK	BRT-N	F	SA	Nanavati Chowk	Suryoday Society	L		W	
287	Haseeb:Pushkar	14-12-2017	08:15	KKVCHOWK	BRT-N	M	B	Gandhigram	Gondal Chowkdi	C		W	
288	Haseeb:Pushkar	14-12-2017	08:16	KKVCHOWK	BRT-N	M	B	University Rd	Mavdi	C		R	
289	Haseeb:Pushkar	14-12-2017	08:17	KKVCHOWK	BRT-N	M	SA	Ramapir Chowkdi	KKV			R	
290	Haseeb:Pushkar	14-12-2017	08:18	KKVCHOWK	BRT-N	M	S	Munjka Gam	Balaji Hall	C		W	
291	Haseeb:Pushkar	14-12-2017	08:19	KKVCHOWK	BRT-N	M	B	Telephone Exchange	Nana Mauva Rd.	C		W	
292	Haseeb:Pushkar	14-12-2017	08:20	KKVCHOWK	BRT-N	M	SA(T)	Gadhigram	metoda	R		W	
293	Haseeb:Pushkar	14-12-2017	08:21	KKVCHOWK	BRT-N	M	B	Gadhigram	Mavdi	C		W	
294	Haseeb:Pushkar	14-12-2017	08:22	KKVCHOWK	BRT-N	F	B	Sadhuvasvani Rd	Wockhart Hospital	L		W	
295	Haseeb:Pushkar	14-12-2017	08:23	KKVCHOWK	BRT-N	F	SA	Raiya Chowkdi	Kotecha Chowk	L		W	
296	Haseeb:Pushkar	14-12-2017	08:24	KKVCHOWK	BRT-W	M	SA	Metoda	Civil Hospital	C	Kotecha Chowk	W	
297	Haseeb:Pushkar	14-12-2017	08:25	KKVCHOWK	BRT-W	F	SA	AG Chowk	Gymkhana Chowk	C	Kotecha Chowk	W	
298	Haseeb:Pushkar	14-12-2017	08:26	KKVCHOWK	BRT-S	M	W	Giriraj Hospital	Marwadi College	C	Madhapar	E	
299	Haseeb:Pushkar	14-12-2017	08:27	KKVCHOWK	BRT-S	F	SA	Gondal Chowkdi	Khirasara	L		W	
300	Haseeb:Pushkar	14-12-2017	08:28	KKVCHOWK	BRT-S	F	SA	Rashriyashala	metoda	L		W	
301	Haseeb:Pushkar	14-12-2017	08:29	KKVCHOWK	BRT-S	M	B	Sardar Nagar Main Rd	Pushkar Dham	L	AG Chowk	W	
302	Haseeb:Pushkar	14-12-2017	08:30	KKVCHOWK	BRT-E	M	C	Hospital Chowk	KKV	C		W	
303	Haseeb:Pushkar	14-12-2017	08:31	KKVCHOWK	BRT-E	M	C	150ft Rd	Iskon Mall	L		R	
304	Haseeb:Pushkar	14-12-2017	08:32	KKVCHOWK	BRT-E	M	C	Kotecha Chowk	Big Bazaar	L		R	
305	Haseeb:Pushkar	14-12-2017	08:33	KKVCHOWK	BRT-E	M	S	Pedak Rd	Big Bazaar	L		W	
306	Haseeb:Pushkar	14-12-2017	08:34	KKVCHOWK	BRT-E	M	C	Hospital Chowk	KKV	L	AG Chowk	W	
307	Haseeb:Pushkar	14-12-2017	08:35	KKVCHOWK	BRT-E	M	SA(T)	Balaji hall	SOS School	R		E	
308	Haseeb:Pushkar	14-12-2017	08:36	KKVCHOWK	BRT-N	F	SA(T)	Kevda	Bapa Sitaram	L		R	

309	Haseeb:Pushkar	14-12-2017	08:37	KKVCHOWK	BRT-N	M	SA(T)	Metoda	Biraniya Ghat	L	Punit Nagar	R	
310	Haseeb:Pushkar	14-12-2017	08:38	KKVCHOWK	BRT-E	M	S	Morvi Rd	Nana Mauva	C	AG Chowk	W	
311	Haseeb:Pushkar	14-12-2017	08:39	KKVCHOWK	BRT-E	M	S	Jalaram Society	KKV	L		W	
312	Haseeb:Pushkar	14-12-2017	08:40	KKVCHOWK	BRT-E	M	S	Dhebar Colony	Raiya Chowk	R		W	
313	Haseeb:Pushkar	14-12-2017	08:41	KKVCHOWK	BRT-E	M	S	Astha Residency	Vavdi	L	Punit Nagar	W	
314	Haseeb:Pushkar	14-12-2017	08:42	KKVCHOWK	BRT-E	M	S	Marketing Yard	Panchayat Chowk	C	Indira Circle	W	
315	Haseeb:Pushkar	14-12-2017	08:43	KKVCHOWK	BRT-E	M	C	Kotecha chowk	Panchayat Chowk	C		R	
316	Haseeb:Pushkar	14-12-2017	08:44	KKVCHOWK	BRT-E	M	S	Navagam	Panchayat Chowk	c		W	
317	Haseeb:Pushkar	14-12-2017	08:45	KKVCHOWK	BRT-N	F	SA	Somnath society	hill ton hotel , rajputpara main rd	c	KKV	W	
318	Haseeb:Pushkar	14-12-2017	08:46	KKVCHOWK	BRT-N	F	SA	Raiya dhar	KKV	L	KKV	W	
319	Haseeb:Pushkar	14-12-2017	08:47	KKVCHOWK	BRT-N	F	A	Raiya telephone ex.	KKV	L	KKV	W	
320	Haseeb:Pushkar	14-12-2017	08:48	KKVCHOWK	BRT-N	M	SA	Gauridad	Kotecha Chowk	L		W	
321	Haseeb:Pushkar	14-12-2017	08:49	KKVCHOWK	BRT-N	F	SA	Raiya Gam	KKV	C	KKV	W	
322	Haseeb:Pushkar	14-12-2017	08:50	KKVCHOWK	BRT-N	F	SA	Gandhigram	Mauva	C	KKV	R	
323	Haseeb:Pushkar	14-12-2017	08:51	KKVCHOWK	BRT-W	F	SA(T)	Munjka	Virani Chowk	C	Kotecha Chowk	W	
324	Haseeb:Pushkar	14-12-2017	08:52	KKVCHOWK	BRT-W	M	S	Pushkardham	Sahkarnagar rd	C	Kotecha Chowk	W	
325	Haseeb:Pushkar	14-12-2017	08:53	KKVCHOWK	BRT-W	M	C	Ravi Ratna Park	Shapar	R	KKV	W	
326	Haseeb:Pushkar	14-12-2017	08:54	KKVCHOWK	BRT-W	M	C	Sadhuvasvani Rd	Palace Rd	C	KKV	W	
327	Haseeb:Pushkar	14-12-2017	08:55	KKVCHOWK	BRT-W	M	C	Royal Park	Ruda Transport Nagar		Raiya Chowkdi	W	
328	Haseeb:Pushkar	14-12-2017	08:56	KKVCHOWK	BRT-W	M	S	SOS school	University Rd	L	Panchayat Chowk	R	
329	Haseeb:Pushkar	14-12-2017	08:57	KKVCHOWK	BRT-W	F	SA	Metoda	Nanavati Chowk	C	Nanavati Chowk	R	
330	Haseeb:Pushkar	14-12-2017	08:58	KKVCHOWK	BRT-W	M	C	Jalaram Society	Pushkardham	L	Panchayat Chowk	W	
331	Haseeb:Pushkar	14-12-2017	08:59	KKVCHOWK	BRT-W	M	S	KKV	Raiya Chowk	C		R	
332	Haseeb:Pushkar	14-12-2017	09:00	Raiya Telephone Exchange	BRT-S	M	S	Indira Circle	Patidar Chowk	C		R	

333	Haseeb:Pushkar	14-12-2017	09:01	Raiya Telephone Exchange	BRT-S	M	S	Kalawad Rd	Raiya Chowk	C		R	
334	Haseeb:Pushkar	14-12-2017	09:02	Raiya Telephone Exchange	BRT-S	M	C	Royal Park	Madhapar Chowkdi	C	Raiya Chowkdi	W	
335	Haseeb-kanica	14-12-2017	08:05	Raiya Telephone Exchange	BRT-S	M	C	Sadhuvasvani Rd	Madhapar Chowkdi	C	Raiya Chowkdi	R	
336	Haseeb-kanica	14-12-2017	08:06	Raiya Telephone Exchange	BRT-S	M	C	Jalaram Society	Somnath Society	L	Raiya telephone exchange	W	
337	Haseeb-kanica	14-12-2017	08:07	Raiya Telephone Exchange	BRT-S	F	SA	Meghpar	Nanavati Chowk	C	Nanavati Chowk	R	
338	Haseeb-kanica	14-12-2017	08:08	Raiya Telephone Exchange	BRT-S	M	S	Sapar	Raiya Telephone Exchange	C	.	W	
339	Haseeb-kanica	14-12-2017	08:09	Raiya Telephone Exchange	BRT-W	M	C	Sadhuvasvani Rd	ST. Bus Stand	C	Indira Circle	W	
340	Haseeb-kanica	14-12-2017	08:10	Raiya Telephone Exchange	BRT-W	F	SA	Amin Marg	Civil Hospital	C	Nirmala Rd	R	
341	Haseeb-kanica	14-12-2017	08:11	Raiya Telephone Exchange	BRT-N	M	C	Gujarat Gas	Marketing Yard	L	Indira Circle	W	
342	Haseeb-kanica	14-12-2017	08:12	Raiya Telephone Exchange	BRT-N	M	S	Raiya Chowkdi	Mavdi Chowkdi	C	Indira Circle	R	
343	Haseeb-kanica	14-12-2017	08:13	Raiya Telephone Exchange	BRT-N	M	S	Gandhigram	Nana Mauva	C	KKV	W	
344	Haseeb-kanica	14-12-2017	08:14	Raiya Telephone Exchange	BRT-N	M	S	Madhapar Gam	Panchayat Chowk	C	Indira Circle	W	
345	Haseeb-kanica	14-12-2017	08:15	Raiya Telephone Exchange	BRT-N	M	S	Madhapar Gam	Gondal Rd	C	KKV	W	
346	Haseeb-kanica	14-12-2017	08:16	Raiya Telephone Exchange	BRT-E	M	C	Tirupati 4	Christ College	L	Indira Circle	E	
347	Haseeb-kanica	14-12-2017	08:17	Raiya Telephone Exchange	BRT-E	M	SA	Santkabir Rd	Iskon Mall	C	Gopal Chowk	W	
348	Haseeb-kanica	14-12-2017	08:18	Raiya Telephone Exchange	BRT-E	F	S	Sawaminarayan Mandir	Raiya Telephone Exchange	C	.	W	
349	Haseeb-kanica	14-12-2017	08:19	Raiya Telephone Exchange	BRT-E	M	S	Tirupati Nagar	Nana Mauva	L	Indira Circle	W	
350	Haseeb-kanica	14-12-2017	08:20	West Zone (Big Bazaar Junction)	BRT-S	F	SA	Ramapir Chowkdi	Shashtri Nagar	C	Nana Mauva	R	
351	Haseeb-kanica	14-12-2017	08:21	West Zone (Big Bazaar Junction)	BRT-S	F	S	Bajrangwadi Circle	Nana Mauva	C	Nana Mauva	W	
352	Haseeb-kanica	14-12-2017	08:22	West Zone (Big Bazaar Junction)	BRT-S	M	S	Somnath society	Umakant Pandit Udhyog Nagar	C	Nana Mauva	W	

353	Haseeb-kanica	14-12-2017	08:23	West Zone (Big Bazaar Junction)	BRT-S	M	S	Gundawadi	Astha Residency Chowk	C	Nana Mauva	R	
354	Haseeb-kanica	14-12-2017	08:24	West Zone (Big Bazaar Junction)	BRT-S	F	S	Mombasa	Big Bazaar	C	.	R	
355	Haseeb-kanica	14-12-2017	08:25	West Zone (Big Bazaar Junction)	BRT-S	F	S	St.Paul, Bhaktinagar Circle	Chandra Park	R	.	R	
356	Haseeb-kanica	14-12-2017	08:26	West Zone (Big Bazaar Junction)	BRT-E	F	S	Gulab Vihar Society	Kothariya Main Rd	C	Maruti Chowk	R	
357	Haseeb-kanica	14-12-2017	08:27	West Zone (Big Bazaar Junction)	BRT-E	M	S	Shri Colony	Giriraj Hospital	R	KKV	W	
358	Haseeb-kanica	14-12-2017	08:28	West Zone (Big Bazaar Junction)	BRT-E	F	S	kothariya road	150ft. Rd	R	KKV	W	
359	Haseeb-kanica	14-12-2017	08:29	West Zone (Big Bazaar Junction)	BRT-E	F	C	Big Bazaar	Snk Sports Acadamy	C	Mahadev Mandir Chowk	R	
360	Haseeb-kanica	14-12-2017	08:30	West Zone (Big Bazaar Junction)	BRT-E	F	S	Sawaminarayan Mandir	Mavdi Gam	C		R	
361	Haseeb-kanica	14-12-2017	08:31	West Zone (Big Bazaar Junction)	BRT-E	F	S	Vividhkarmachari Society	Gulab Vihar Society	C		R	
362	Haseeb-kanica	14-12-2017	08:32	West Zone (Big Bazaar Junction)	BRT-E	M	C	Nana Mauva	KKV	L	KKV	W	
363	Haseeb-kanica	14-12-2017	08:33	West Zone (Big Bazaar Junction)	BRT-S	M	S	Aji Dam	Govardhan Chowk	C	KKV	W	
364	Haseeb-kanica	14-12-2017	08:34	West Zone (Big Bazaar Junction)	BRT-S	S	SA	Balaji hall	Hanuman Madhi	C	Raiya Chowkdi	R	
365	Haseeb-kanica	14-12-2017	08:35	West Zone (Big Bazaar Junction)	BRT-S	F	SA	Balaji hall	Madhapar Chowkdi	C	KKV	R	
366	Haseeb-kanica	14-12-2017	08:36	West Zone (Big Bazaar Junction)	BRT-S	F	SA	Pathak School	KKV	C	KKV	R	
367	Haseeb-kanica	14-12-2017	08:37	West Zone (Big Bazaar Junction)	BRT-S	M	S	Bapasitaram Chowk	KKV	C	KKV	W	
368	Haseeb-kanica	14-12-2017	08:38	West Zone (Big Bazaar Junction)	BRT-S	F	A	Lakshminagar Rd	Para Pipaliya	C	Madhapar Chowkdi	R	
369	Haseeb-kanica	14-12-2017	08:39	West Zone (Big Bazaar Junction)	BRT-S	F	A	Gokuldham Society	Amarnath Garden	L	West Zone	W	
370	Haseeb-kanica	14-12-2017	08:40	West Zone (Big Bazaar Junction)	BRT-S	M	S	Sapar	Nageshwar temple, Jamnagar Rd	C	Madhapar Chowkdi	R	
371	Haseeb-kanica	14-12-2017	08:41	West Zone (Big Bazaar Junction)	BRT-S	M	C	Ishwariya Gam	Gandhigram	C	Kanaiya Chowk	R	
372	Haseeb-kanica	14-12-2017	08:42	West Zone (Big Bazaar Junction)	BRT-S	M	B	Nehru Nagar	Raiya Dhar	C	KKV	R	

373	Haseeb-kanica	14-12-2017	08:43	West Zone (Big Bazaar Junction)	BRT-W	M	C	Maruti Chowk	Selva Residency, Sadhu Vaswani Rd	C	Raiya telephone exchange	W	
374	Haseeb-kanica	14-12-2017	08:44	West Zone (Big Bazaar Junction)	BRT-W	M	C	Alap Residency	Astha Residency Chowk	C	Mavdi	R	
375	Haseeb-kanica	14-12-2017	08:45	West Zone (Big Bazaar Junction)	BRT-W	M	S	Maruti Chowk	Somnath Society	L	Raiya telephone exchange	W	
376	Haseeb-kanica	14-12-2017	08:46	West Zone (Big Bazaar Junction)	BRT-W	M	S	Indira Circle	Balaji Hall	R	Nana Mauva	R	
377	Haseeb-kanica	14-12-2017	08:47	Nana Mava Circle	BRT-N	M	S	Big Bazaar	Nana Mauva	.	Nana Mauva chowk	W	
378	Haseeb-kanica	14-12-2017	08:48	Nana Mava Circle	BRT-N	M	S	Big Bazaar	Ambedkar Nagar	C	Mahapuja Chowk	W	
379	Haseeb-kanica	14-12-2017	08:49	Nana Mava Circle	BRT-N	M	S	Rail Nagar	Dharam Nagar	C	Om Nagar	W	
380	Haseeb-kanica	14-12-2017	08:50	Nana Mava Circle	BRT-N	M	S	Raiya Chowkdi	Gondal City	C	Gondal Chowkdi	R	
381	Haseeb-kanica	14-12-2017	08:51	Nana Mava Circle	BRT-N	M	B	Big Bazaar	Bapa Sitaram Chowk	C	Mavdi	R	
382	Haseeb-kanica	14-12-2017	08:52	Nana Mava Circle	BRT-N	F	C	Ambika Township	Nana Mauva	.	Nana Mauva chowk	R	
383	Haseeb-kanica	14-12-2017	08:53	Nana Mava Circle	BRT-N	F	SA	Jivan Nagar Society	Nandanvan 4	C	Gondal Rd	R	
384	Haseeb-kanica	14-12-2017	08:54	Nana Mava Circle	BRT-N	F	SA	Metoda	Balaji Hall	C	Mahapuja Chowk	R	
385	Haseeb-kanica	14-12-2017	08:55	Nana Mava Circle	BRT-N	M	SA	Nikava Gam	Umiya Chowk	C	.	R	
386	Haseeb-kanica	14-12-2017	08:56	Nana Mava Circle	BRT-E	M	B	Raj Nagar	Ambedkar Chowk	L	.	R	
387	Haseeb-kanica	14-12-2017	08:57	Nana Mava Circle	BRT-E	M	B	Nana Mauva	Govardhan Chowk	L	Govardhan Chowk	R	
388	Haseeb-kanica	14-12-2017	08:58	Nana Mava Circle	BRT-E	M	C	Sorathiya Wadi Circle	KKV	R	KKV	W	
389	Haseeb-kanica	14-12-2017	08:59	Nana Mava Circle	BRT-E	M	C	Virani Chowk	Jivraj Nagar	C	Ambedkar Nagar	W	
390	Haseeb-kanica	14-12-2017	09:00	Nana Mava Circle	BRT-E	F	C	Atika	Nana Mauva	C	Nana Mauva	R	
391	Haseeb-kanica	14-12-2017	09:01	Nana Mava Circle	BRT-E	M	C	PDM College	Jalaram 2	R	KKV	R	
392	Haseeb-kanica	14-12-2017	09:02	Nana Mava Circle	BRT-E	F	S	Para Bazaar	Shashtri Nagar	C	Ambedkar Nagar	R	
393	Haseeb-kanica	14-12-2017	09:03	Nana Mava Circle	BRT-E	M	S	Tagore Rd	Pushkardham	C	Ambedkar Nagar	R	
394	Haseeb-kanica	14-12-2017	09:04	Nana Mava Circle	BRT-S	M	S	Balaji hall	Kotecha Chowk	C	KKV	W	
395	Haseeb-kartikay	14-12-2017	09:05	Nana Mava Circle	BRT-S	M	S	Om Nagar	Hospital Chowk	R	KKV Chowk	W	

396	Haseeb-kartikay	14-12-2017	09:06	Nana Mava Circle	BRT-S	M	S	Samrat Industrial Area	Somnath Society	C	Raiya telephone exchange	R	
397	Haseeb-kartikay	14-12-2017	09:07	Nana Mava Circle	BRT-S	M	S	Bapasitaram Chowk	Satya Sai Rd	C	Mavdi Chowkdi	R	
398	Haseeb-kartikay	14-12-2017	09:08	Nana Mava Circle	BRT-W	M	S	Shashtri Nagar	Vijay Plot	C	Lakshmi Nagar Nala	W	
399	Haseeb-kartikay	14-12-2017	09:09	Nana Mava Circle	BRT-W	M	S	Jivraj Park	University Rd	L	Big Bazaar	R	
400	Haseeb-kartikay	14-12-2017	09:10	Nana Mava Circle	BRT-W	M	C	Ambika Township	Field Marshal Chowk	C	Raj Nagar Chowk	R	
401	Haseeb-kartikay	15-12-2017	09:11	Raiya Chowk	BRT-E	F	SA	Bhagvati Para	Meera Nagar	c		W	
402	Haseeb-kartikay	15-12-2017	09:12	Raiya Chowk	BRT-E	M	S	Rail Nagar	Raiya Chowk	.	Raiya Chowk	W	
403	Haseeb-kartikay	15-12-2017	09:13	Raiya Chowk	BRT-E	M	S	Nirmala Rd	Riddhi Siddhi Park	C	.	W	
404	Haseeb-kartikay	15-12-2017	09:14	Raiya Chowk	BRT-E	F	A	Airport Rd	University Rd	L	Indira Circle	R	
405	Haseeb-kartikay	15-12-2017	09:15	Raiya Chowk	BRT-E	M	S	Ranchhod Nagar	Raiya Gam	C		W	
406	Haseeb-kartikay	15-12-2017	09:16	Raiya Chowk	BRT-E	M	S	Kanaiya Chowk	Nanavati Chowk	R	Nanavati Chowk	W	
407	Haseeb-kartikay	15-12-2017	09:17	Raiya Chowk	BRT-E	M	C	Kanaiya Chowk	Raiya Chowk	.	Raiya Chowk	W	
408	Haseeb-kartikay	15-12-2017	09:18	Raiya Chowk	BRT-E	M	C	Alkapuri Society	Raiya Chowk	.	Raiya Chowk	W	
409	Haseeb-kartikay	15-12-2017	09:19	Raiya Chowk	BRT-N	M	S	Gandhigram	Kothariya Main Rd	C	Indira Circle	W	
410	Haseeb-kartikay	15-12-2017	09:20	Raiya Chowk	BRT-N	M	S	Madhapar Chowkdi	Tirupati Nagar	C		W	
411	Haseeb-kartikay	15-12-2017	09:21	Raiya Chowk	BRT-N	F	SA	Sadhuvasvani Rd	Mahapuja Chowk	C		W	
412	Haseeb-kartikay	15-12-2017	09:22	Raiya Chowk	BRT-N	M	S	Jamnagar Rd	Vidya Nagar Main Rd	L	Hanuman Madhi	W	
413	Haseeb-kartikay	15-12-2017	09:23	Raiya Chowk	BRT-N	M	S	Jamnagar Rd	Kanaiya Chowk	L	Hanuman Madhi	W	
414	Haseeb-kartikay	15-12-2017	09:24	Raiya Chowk	BRT-N	M	C	Rail Nagar	Indira Circle	C	Raiya telephone exchange	W	
415	Haseeb-kartikay	15-12-2017	09:25	Raiya Chowk	BRT-E	M	S	Govind Nagar	Raiya Gam	C	Rameshwar Chowk	W	
416	Haseeb-kartikay	15-12-2017	09:26	Raiya Chowk	BRT-E	M	S	Brahma Samaj Chowk	150ft. Rd	C		R	
417	Haseeb-kartikay	15-12-2017	09:27	Raiya Chowk	BRT-E	M	S	Nageshwar Park	Gandhigram	R	Ramapir Chowkdi	W	
418	Haseeb-kartikay	15-12-2017	09:28	Raiya Chowk	BRT-E	M	SA	Krishna Nagar Chowk	Jamnagar City	R	.	R	

419	Haseeb-kartikay	15-12-2017	09:29	Raiya Chowk	BRT-E	M	S	Gandhigram	Sadhuvasvani Rd	C	Rameshwar Chowk	W	
420	Haseeb-kartikay	15-12-2017	09:30	Raiya Chowk	BRT-E	M	C	Kanaiya Chowk	Madhapar Chowkdi	R	Madhapar Chowkdi	W	
421	Haseeb-kartikay	15-12-2017	09:31	Raiya Chowk	BRT-N	M	B	Bajrangwadi Circle	Anjali Park	L		R	
422	Haseeb-kartikay	15-12-2017	09:32	Raiya Chowk	BRT-N	M	S	Bansidhar Park	Moti Tanki Chowk	L		R	
423	Haseeb-kartikay	15-12-2017	09:33	Raiya Chowk	BRT-N	F	SA	Ramapir Chowkdi	Astrone Chowk	C	KKV	W	
424	Haseeb-kartikay	15-12-2017	09:34	Raiya Chowk	BRT-N	M	S	Gandhigram	Big Bazaar	C	Big Bazaar	W	
425	Haseeb-kartikay	15-12-2017	09:35	Raiya Chowk	BRT-N	M	C	Ramdevpir Chowk	Raiya Chowk	C	Raiya Chowkdi	R	
426	Haseeb-kartikay	15-12-2017	09:36	Raiya Chowk	BRT-E	M	S	Mahavir Nagar	Raiya Chowk	.	Raiya Chowkdi	W	
427	Haseeb-kartikay	15-12-2017	09:37	Raiya Chowk	BRT-E	M	C	Akshar Nagar	Raiya Chowk	.	Raiya Chowkdi	R	
428	Haseeb-kartikay	15-12-2017	09:38	Raiya Chowk	BRT-N	M	SA	Lakh no Bunglow	ST. Bus Stand	L		R	
429	Haseeb-kartikay	15-12-2017	09:39	Raiya Chowk	BRT-E	M	S	Lakh no Bunglow	Sterling Hospital	L		W	
430	Haseeb-kartikay	15-12-2017	09:40	Raiya Chowk	BRT-E	M	SA	Hospital Chowk	Raiya Chowk	.	Raiya Chowk	W	
431	Haseeb-kartikay	15-12-2017	09:41	Raiya Chowk	BRT-E	M	S	Mochi Nagar Society	Mavdi Chowkdi	L	Mavdi Chowkdi	W	
432	Haseeb-kartikay	15-12-2017	09:42	Raiya Chowk	BRT-N	M	S	Ravi Ratna Park	Dharam Cinema	C	Raiya Chowkdi	W	
433	Haseeb-kartikay	15-12-2017	09:43	Raiya Chowk	BRT-N	M	C	Bharti Nagar	Jam Tower	C	Raiya Chowkdi	W	
434	Haseeb-kartikay	15-12-2017	09:44	Raiya Chowk	BRT-N	M	S	Nageshwar Park	Karmachari Society	C	Indira Circle	W	
435	Haseeb-kartikay	15-12-2017	09:45	Raiya Chowk	BRT-N	M	C	Bharti Nagar	Swapnalok Residency	R		R	
436	Haseeb-kartikay	15-12-2017	09:46	Raiya Chowk	BRT-E	M	SA	Airport Rd	Raiyadhar	L	Raiyadhar	W	
437	Haseeb-kartikay	15-12-2017	09:47	Raiya Chowk	BRT-E	M	S	Bajrangwadi Circle	Panchayat Chowk	L	Indira Circle	W	
438	Haseeb-kartikay	15-12-2017	09:48	Raiya Chowk	BRT-E	M	S	Wakaner Society	Wokhart Hospital	L	KKV	W	
439	Haseeb-kartikay	15-12-2017	09:49	Raiya Chowk	BRT-E	M	S	Lakh no Bunglow	Madhapar Gam	R	Madhapar Chowkdi	W	
440	Haseeb-kartikay	15-12-2017	09:50	Raiya Chowk	BRT-E	M	C	Gandhigram	Ramdevpir Chowk	L	Ramapir Chowkdi	R	
441	Haseeb-kartikay	15-12-2017	09:51	Raiya Chowk	BRT-E	M	C	Limbdi Gam	Lakh No Bunglow	L	Ramapir Chowkdi	R	
442	Haseeb-kartikay	15-12-2017	09:52	Raiya Chowk	BRT-E	M	C	Popat Para	Limbudi Wadi Rd	L	Raiya	R	

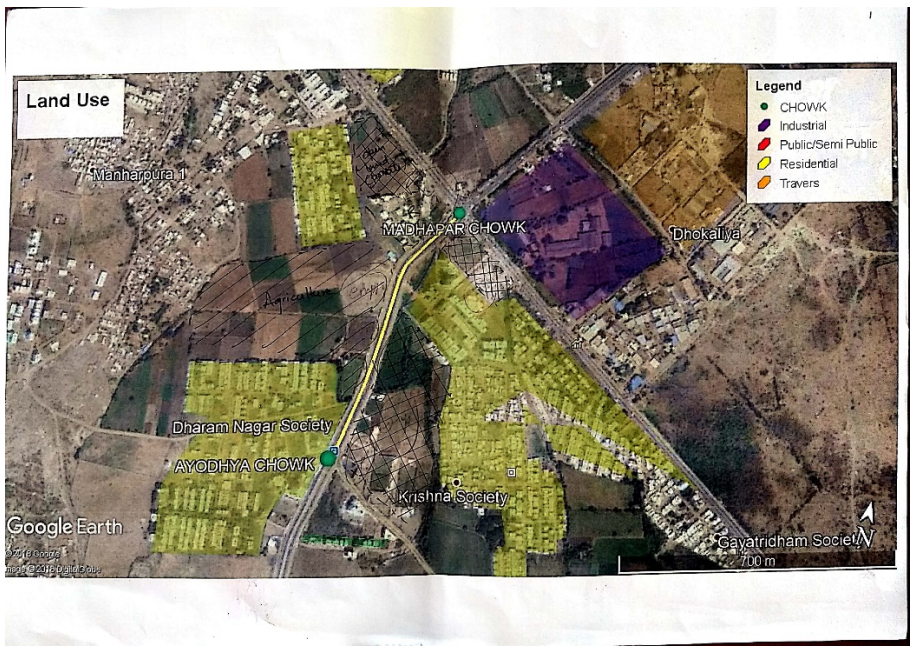
443	Haseeb-kartikay	15-12-2017	09:53	Raiya Chowk	BRT-N	M	S	Gokul Mathura Chowk	Gandhigram			R	
444	Haseeb-kartikay	15-12-2017	09:54	Raiya Chowk	BRT-N	M	S	Jamnagar Rd	KKV	C		R	
445	Haseeb-kartikay	15-12-2017	09:55	Raiya Chowk	BRT-N	M	C	Gandhi Nagar	Astrone Chowk	C		R	
446	Haseeb-kartikay	15-12-2017	09:56	Raiya Chowk	BRT-N	M	S	Madhapar Chowkdi	Bharti Nagar	C	Ramdevpir	R	
447	Haseeb-kartikay	15-12-2017	09:57	Raiya Chowk	BRT-N	F	SA	Jamnagar Rd	Sadhuvasvani Rd	C	Raiya Chowkdi	W	
448	Haseeb-kartikay	15-12-2017	09:58	Raiya Chowk	BRT-N	M	S	Gandhi Society	Alap Green City	C	Raiya	W	
449	Haseeb-kartikay	15-12-2017	09:59	Ayodhya Chowk	BRT-E	M	S	Astha Avenue	Khanderi Gam	R	Madhapar Chowkdi	R	
450	Haseeb-kartikay	15-12-2017	10:01	Ayodhya Chowk	BRT-E	M	S	Astha Avenue	Big Bazaar	L	Big Bazaar	W	
451	Haseeb-kartikay	15-12-2017	10:02	Ayodhya Chowk	BRT-E	M	S	Astha Avenue	Astrone Chowk	L	Indira Circle	W	
452	Haseeb-kartikay	15-12-2017	10:03	Ayodhya Chowk	BRT-N	M	S	Rail Nagar	Raiya Chowkdi	C	Raiya Chowkdi	W	
453	Haseeb-kartikay	15-12-2017	10:04	Ayodhya Chowk	BRT-N	M	C	Hospital Chowk	Bhid Bhanjan Society	C		W	
454	Haseeb-kartikay	15-12-2017	10:05	Ayodhya Chowk	BRT-N	M	S	Vora Society	Gandhigram	C		R	
455	haseeb - satya	15-12-2017	10:06	AYODHYA CHOWK	BRT-N	M	C	Nageshwar Park	Panchayat Chowk	C	Nanavati Chowk	W	
456	haseeb - satya	15-12-2017	10:07	AYODHYA CHOWK	BRT-N	F	SA	Christ Hospital	Kalawad Rd	C		W	
457	haseeb - satya	15-12-2017	10:08	AYODHYA CHOWK	BRT-N	F	SA	Jamnagar Rd	metoda	C	KKV	W	
458	haseeb - satya	15-12-2017	10:09	AYODHYA CHOWK	BRT-N	M	SA	Para Pipadiya	Hanuman Madhi	C	Raiya Chowkdi	W	
459	haseeb - satya	15-12-2017	10:10	AYODHYA CHOWK	BRT-N	M	C	Morbi City	Indira Circle	C	Indira Circle	R	
460	haseeb - satya	15-12-2017	10:11	AYODHYA CHOWK	BRT-N	M	S	Madhapar Chowkdi	Raiya Chowkdi			R	
461	haseeb - satya	15-12-2017	10:12	MADHAPAR CHOWKDI	BRT-E	M	S	Bajrangwadi Circle	SRP Camp	C	MADHAPAR CHOWKDI	R	
462	haseeb - satya	15-12-2017	10:13	MADHAPAR CHOWKDI	BRT-E	M	S	Bajrangwadi Circle	Nyara		MADHAPAR CHOWKDI	W	
463	haseeb - satya	15-12-2017	10:14	MADHAPAR CHOWKDI	BRT-E	F	SA	Hospital Chowk	Ghanteshwar Park	C	MADHAPAR CHOWKDI	R	
464	haseeb - satya	15-12-2017	10:15	MADHAPAR CHOWKDI	BRT-E	M	SA	Hospital Chowk	MADHAPAR CHOWKDI	.	MADHAPAR CHOWKDI	R	

465	haseeb - satya	15-12-2017	10:16	MADHAPAR CHOWKDI	BRT-E	M	C	Rail Nagar	MADHAPAR CHOWKDI	.	MADHAPAR CHOWKDI	W	
466	haseeb - satya	15-12-2017	10:17	MADHAPAR CHOWKDI	BRT-E	F	S_Cab	Ranchhod Nagar	Jamnagar City	C		R	
467	haseeb - satya	15-12-2017	10:18	MADHAPAR CHOWKDI	BRT-E	M	S_Cab	Jagnath Rd	Jamnagar City	C		R	
468	haseeb - satya	15-12-2017	10:19	MADHAPAR CHOWKDI	BRT-N	M	C	Bedi Gam	Gondal Rd	L	Pipadiya Toll Plaza	W	
469	haseeb - satya	15-12-2017	10:20	MADHAPAR CHOWKDI	BRT-N	M	B	Rail Nagar	Atmiya College	L		E	
470	haseeb - satya	15-12-2017	10:21	MADHAPAR CHOWKDI	BRT-N	M	S	Rail Nagar	MADHAPAR CHOWKDI	.	MADHAPAR CHOWKDI	W	
471	haseeb - satya	15-12-2017	10:22	MADHAPAR CHOWKDI	BRT-N	M	S	MADHAPAR CHOWKDI	Sadhuvasvani Rd	L	Indira Circle	W	
472	haseeb - satya	20-12-2017	09:00	MAHAPUJA CHOWK	BRT-N	M	S	Nirmala Rd	Mavdi Chowkdi	C	Mavdi Chowkdi	W	
473	haseeb - satya	20-12-2017	09:03	MAHAPUJA CHOWK	BRT-N	M	S	Sadhuvasvani Rd	Gondal Chowkdi	C	Gondal Chowkdi	W	
474	haseeb - satya	20-12-2017	09:04	MAHAPUJA CHOWK	BRT-N	F	A	Balaji hall	Gondal Chowkdi	C	Gondal Chowkdi	R	
475	haseeb - satya	20-12-2017	09:05	MAHAPUJA CHOWK	BRT-N	M	A	Ramapir Chowkdi	MAHAPUJA CHOWK	.	MAHAPUJA CHOWK	W	
476	haseeb - satya	20-12-2017	09:06	MAHAPUJA CHOWK	BRT-N	M	S	Gandhigram	Mavdi Chowkdi	C	Mavdi Chowkdi	W	
477	haseeb - satya	20-12-2017	09:07	MAHAPUJA CHOWK	BRT-E	M	S	Chandresh Nagar Society	Dharam Nagar	C		W	
478	haseeb - satya	20-12-2017	09:08	MAHAPUJA CHOWK	BRT-E	M	S	Bapasitaram Chowk	MAHAPUJA CHOWK	.	MAHAPUJA CHOWK	W	
479	haseeb - satya	20-12-2017	09:09	MAHAPUJA CHOWK	BRT-E	M	S	Guruprasad Chowk	150ft. Rd	R	Big Bazaar	W	
480	haseeb - satya	20-12-2017	09:10	MAHAPUJA CHOWK	BRT-E	M	A	Chandresh Nagar Society	Gondal City	L	Gondal Chowkdi	W	
481	haseeb - satya	20-12-2017	09:11	MAHAPUJA CHOWK	BRT-E	M	C	Mayani Chowk	Mauva Circle	C	Mavdi Chowkdi	W	
482	haseeb - satya	20-12-2017	09:12	MAHAPUJA CHOWK	BRT-S	M	S	Mavdi Rd	Mauva Circle	C	Nana Mauva	W	
483	haseeb - satya	20-12-2017	09:13	MAHAPUJA CHOWK	BRT-S	F	SA	Krishna Park	Indira Circle	C	Indira Circle	W	
484	haseeb - satya	20-12-2017	09:14	MAHAPUJA CHOWK	BRT-S	F	SA	Sapar	Indira Circle	C	Indira Circle	R	
485	haseeb - sandeep	20-12-2017	09:14	MAHAPUJA CHOWK	BRT-S	F	SA(T)	Sapar	KKV	C	KKV	E	
486	haseeb - sandeep	20-12-2017	09:15	MAHAPUJA CHOWK	BRT-S	M	S	Bapasitaram Chowk	Saurashtra University	C	Indira Circle	E	

487	haseeb - sandeep	20-12-2017	09:16	MAHAPUJA CHOWK	BRT-N	M	S	Prajapati-2	Pedak Rd			W	
488	haseeb - sandeep	20-12-2017	09:17	MAHAPUJA CHOWK	BRT-N	M	S	Dharam Nagar	Virani Chowk	L		W	
489	haseeb - sandeep	20-12-2017	09:18	MAHAPUJA CHOWK	BRT-N	M	S	Nana Mauva	Guruprasad Chowk	R		W	
490	haseeb - sandeep	20-12-2017	09:19	MAHAPUJA CHOWK	BRT-N	M	S	Crystall Mall	Gondal Chowkdi	R	Gondal Chowkdi	W	
491	haseeb - sandeep	20-12-2017	09:20	MAHAPUJA CHOWK	BRT-N	M	S	Rampark	Mavdi Chowkdi	R	Mavdi Chowkdi	W	
492	haseeb - sandeep	20-12-2017	09:21	MAHAPUJA CHOWK	BRT-N	M	S	Kalawad Rd	MAHAPUJA CHOWK	.	MAHAPUJA CHOWK	W	
493	haseeb - sandeep	20-12-2017	09:22	OM NAGAR CHOWK	BRT-N	M	B	150ft. Rd	Patel Nagar	R	OM NAGAR CHOWK	W	
494	haseeb - sandeep	20-12-2017	09:23	OM NAGAR CHOWK	BRT-N	M	C	Madhapar	Mavdi Chowkdi	C	Mavdi Chowkdi	R	
495	haseeb - sandeep	20-12-2017	09:24	OM NAGAR CHOWK	BRT-N	M	S	Gandhigram	Gondal Chowkdi	C	Gondal Chowkdi	R	
496	haseeb - sandeep	20-12-2017	09:25	OM NAGAR CHOWK	BRT-S	M	S	Chandresh Nagar Society	Mavdi Chowkdi	C	Mavdi Chowkdi	W	
497	haseeb - sandeep	20-12-2017	09:26	OM NAGAR CHOWK	BRT-S	M	S	Mavdi Rd	OM NAGAR CHOWK	.	OM NAGAR CHOWK	R	
498	haseeb - sandeep	20-12-2017	09:27	OM NAGAR CHOWK	BRT-S	M	S	Bapasitaram Chowk	KKV	C	KKV	R	
499	haseeb - sandeep	20-12-2017	09:28	OM NAGAR CHOWK	BRT-S	M	S	Gokuldham Society	Gandhigram	L		E	
500	haseeb - sandeep	20-12-2017	09:29	OM NAGAR CHOWK	BRT-S	M	S	Nana Mauva	OM NAGAR CHOWK	.	OM NAGAR CHOWK	R	
501	haseeb - sandeep	20-12-2017	09:30	OM NAGAR CHOWK	BRT-S	M	S	Mavdi Rd	KKV	C	KKV	W	
502	haseeb - sandeep	20-12-2017	09:31	OM NAGAR CHOWK	BRT-W	M	S	Parimal Park	Lakshmi Nagar Nala	L	Mavdi Chowkdi	R	
503	haseeb - sandeep	20-12-2017	09:32	OM NAGAR CHOWK	BRT-W	M	S	Om Nagar Chowk	Balaji Hall	L		W	
504	haseeb - sandeep	20-12-2017	09:33	OM NAGAR CHOWK	BRT-W	M	S	kothariya road	Om Nagar	L	Om Nagar	W	
505	haseeb - sandeep	20-12-2017	09:34	PUNIT NAGAR CHOWK	BRT-N	M	S	Madhapar Chowkdi	Kothariya Main Rd	L		R	
506	haseeb - sandeep	20-12-2017	09:35	PUNIT NAGAR CHOWK	BRT-N	M	S	Mavdi Chowkdi	Kothariya Main Rd	L		R	
507	haseeb - sandeep	20-12-2017	09:36	PUNIT NAGAR CHOWK	BRT-N	M	S	Umiya Chowk	Ranchhod Nagar Main Rd	C	Green Land Chowkdi	R	
508	haseeb - sandeep	20-12-2017	09:37	PUNIT NAGAR CHOWK	BRT-N	M	SA	Munjka	Punit nagar chowk	.	.	R	

509	haseeb - sandeep	20-12-2017	09:38	PUNIT NAGAR CHOWK	BRT-N	M	B	Balaji hall	Gondal Chowkdi	C	Gondal Chowkdi	R	
510	haseeb - sandeep	20-12-2017	09:39	PUNIT NAGAR CHOWK	BRT-E	M	C	Punit Nagar	Nandanvan 4	C		R	
511	haseeb - sandeep	20-12-2017	09:40	PUNIT NAGAR CHOWK	BRT-E	M	S	Mangal Park	80ft Rd	C		R	
512	haseeb - sandeep	20-12-2017	09:41	PUNIT NAGAR CHOWK	BRT-E	M	S	kothariya road	Punit nagar chowk	.	Punit nagar chowk	R	
513	haseeb - sandeep	20-12-2017	09:42	PUNIT NAGAR CHOWK	BRT-E	M	S	Marketing Yard	Vavdi	C		R	
514	haseeb - sandeep	20-12-2017	09:43	PUNIT NAGAR CHOWK	BRT-S	M	S	Kalpwan Society	Govardhan Chowk			R	
515	haseeb - sandeep	20-12-2017	09:44	PUNIT NAGAR CHOWK	BRT-S	M	SA	Gondal Chowkdi	Punit nagar chowk	.	Punit nagar chowk	R	
516	haseeb - sandeep	20-12-2017	09:45	PUNIT NAGAR CHOWK	BRT-S	F	SA	Gondal Chowkdi	Raiya Gam	C	Raiya Chowkdi	R	
517	haseeb - sandeep	20-12-2017	09:46	PUNIT NAGAR CHOWK	BRT-S	M	S	Punit nagar chowk	Ramapir Chowk	C	Ramapir Chowkdi	R	
518	haseeb - sandeep	20-12-2017	09:47	PUNIT NAGAR CHOWK	BRT-W	M	S	Mavdi	Gondal Rd	C		R	
519	haseeb - sandeep	20-12-2017	09:48	PUNIT NAGAR CHOWK	BRT-W	M	S	Punit nagar chowk	Gondal City	R		R	
520	haseeb - sandeep	20-12-2017	09:49	PUNIT NAGAR CHOWK	BRT-W	M	S	Punit Nagar	Mavdi Rd	R		R	
521	haseeb - sandeep	20-12-2017	09:50	GONDAL CHOWKDI	BRT-W	M	SA	Jamnagar City	Kothariya Main Rd	C		R	
522	haseeb - sandeep	20-12-2017	09:51	GONDAL CHOWKDI	BRT-W	M	S	Gondal Chowkdi	Gokuldham			R	
523	haseeb - sandeep	20-12-2017	09:52	GONDAL CHOWKDI	BRT-W	M	S	Kothariya	Relience Mart	C		R	

8.3.3 Land use survey sheets




Land Use
Legend
Airport
CHOWK
Commercial
Industrial
Public/Semi Public
Residential
Saurashtra Kala Kendra Society
RAIYA TELEPHONE EXCHANGE
Golden Park
Mahavir Nagar
Jalaram 3
Jala Ram Nagar
INDIRA CIRCLE
Google Earth
500 m


Land Use
Legend
Airport
CHOWK
Commercial
Industrial
Public/Semi Public
Residential
Golden Park
Jalaram 3
Jala Ram Nagar
INDIRA CIRCLE
Royal Park
Nutan Nagar
Mahavir Park
Google Earth
500 m


Land Use
Google Earth


Land Use
Legend
Airport
CHOWK
Commercial
Industrial
Public/Semi Public
Residential
Shivam Nagar
BIG BAZAAR
Gurudev Park
Karan Park
Chandra Park
NANAMAUVA CHOWK
Neharu Nagar Society
Google Earth
500 m


Land Use
Legend
Airport
CHOWK
Commercial
Industrial
Public/Semi Public
Residential
NANAMAUVA CHOWK
Neharu Nagar Society
Padmi Society
Mechani Nagar
MAHAPUJA DHAM CHOWK
Om Nagar Part B
Visvanagar
Google Earth
500 m


Land Use
Google Earth

8.4 Data of respondents for both Bus and Other than Bus O-D

Region	All Mode Other than Bus	
1	0	
2	0	
3	0	
4	0	
5	0	
6	0	
7	0	

Region	All Mode Other than Bus	
8	0	
9	0	
10	0	
11	0	
12	0	
13	0	
14	0	
15	0	
16	0	
17	0	
18	1	
19	0	
20	0	
21	0	
22	0	
23	1	
24	0	
25	1	
26	0	
27	0	
28	0	
29	0	
30	1	
31	0	
32	1	
33	7	
34	3	
35	0	
36	0	
37	0	
38	39	
39	0	
40	0	
41	0	
42	1	
43	3	
44	0	
45	0	
46	0	
47	2	
48	0	
49	0	
50	0	
51	0	
52	0	
53	0	

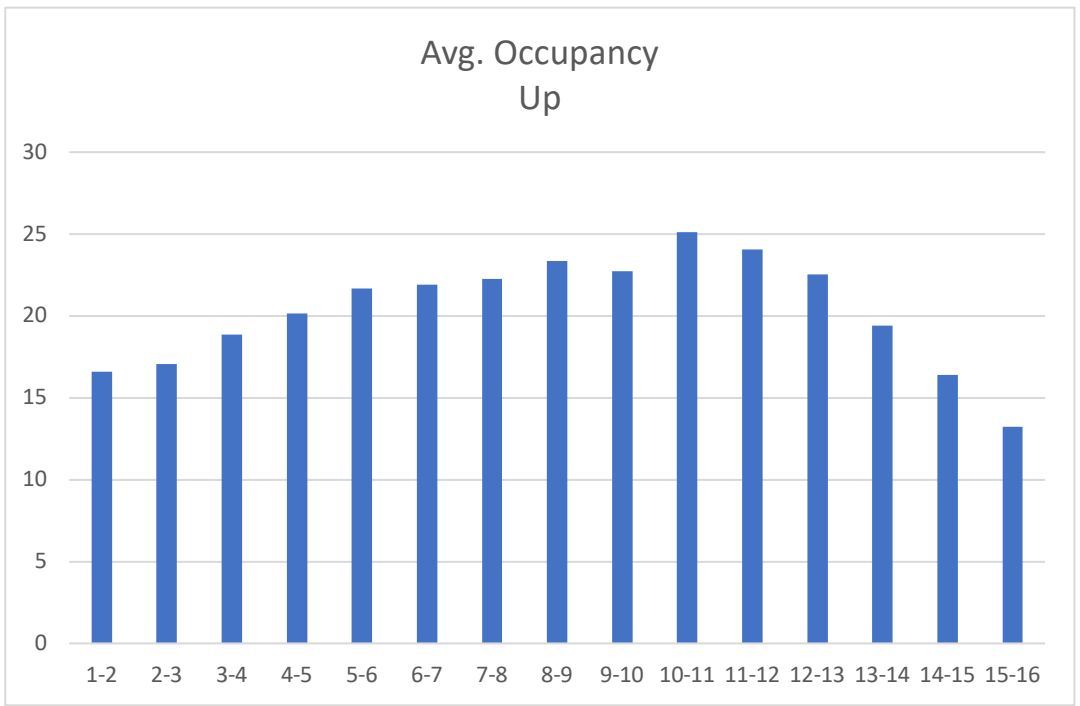
Region	All Mode Other than Bus	
54	2	
55	1	
56	2	
57	6	
58	9	
59	17	
60	15	
61	16	
62	0	
63	0	
64	0	
65	8	
66	60	
67	4	
68	4	
69	2	
70	6	
71	2	
72	5	
73	1	
74	4	
75	1	
76	2	
77	20	
78	19	
79	0	
80	18	
81	56	
82	15	
83	8	
84	2	
85	2	
86	1	
87	22	
88	19	
89	15	
90	17	
91	18	
92	5	
93	2	
94	0	
95	0	
96	0	
97	0	
98	0	
99	1	

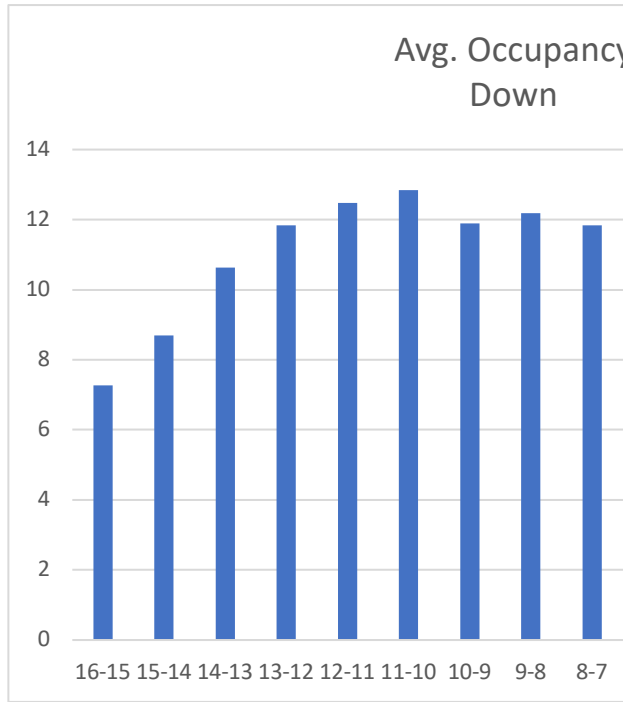
Region	All Mode Other than Bus	
100	3	
101	1	
102	3	
103	0	
104	6	
105	22	
106	0	
107	10	
108	6	
109	88	
110	16	
111	6	
112	7	
113	2	
114	1	
115	17	
116	18	
117	4	
118	19	
119	9	
120	5	
121	2	
122	5	
123	0	
124	0	
125	0	
126	1	
127	0	
128	0	
129	0	
130	0	
131	0	
132	2	
133	2	
134	1	
135	6	
136	36	
137	3	
138	6	
139	5	
140	0	
141	3	
142	1	
143	19	
144	20	
145	1	

Region	All Mode Other than Bus	
146	23	
147	2	
148	0	
149	7	
150	0	
151	0	
152	0	
153	0	
154	2	
155	1	
156	30	
157	1	
158	2	
159	0	
160	2	
161	0	
162	0	
163	0	
164	0	
165	2	
166	2	
167	0	
168	6	
169	0	
170	3	
171	2	
172	1	
173	0	
174	2	
175	1	
176	1	
177	5	
Outer	53	

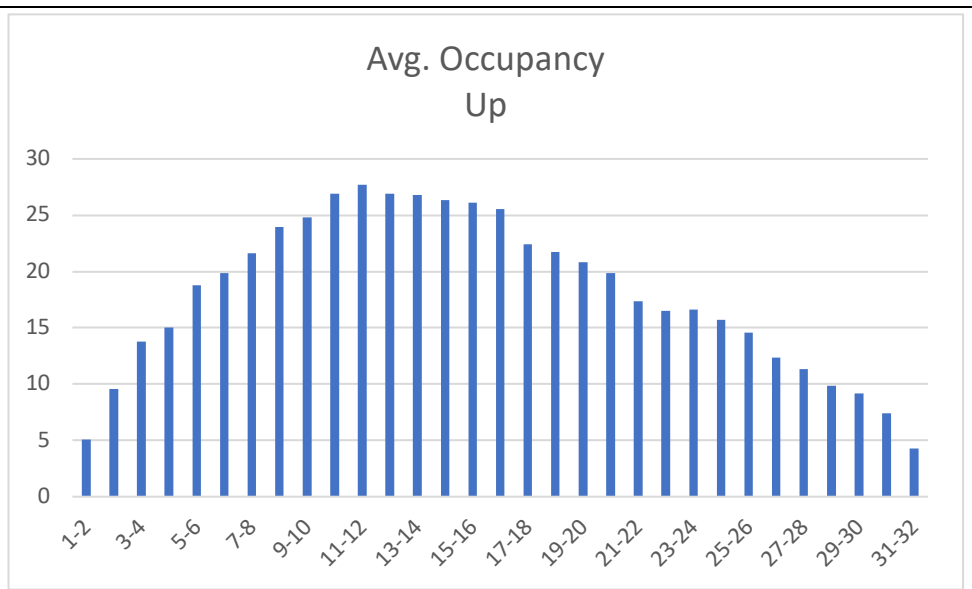
8.5 Graphical Representation of Average Occupancy for RMTS Routes

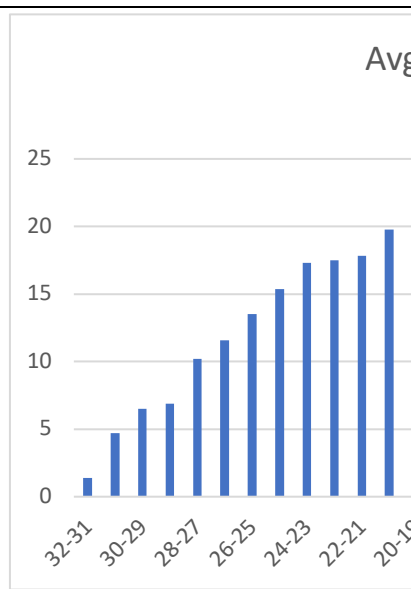
Route 1



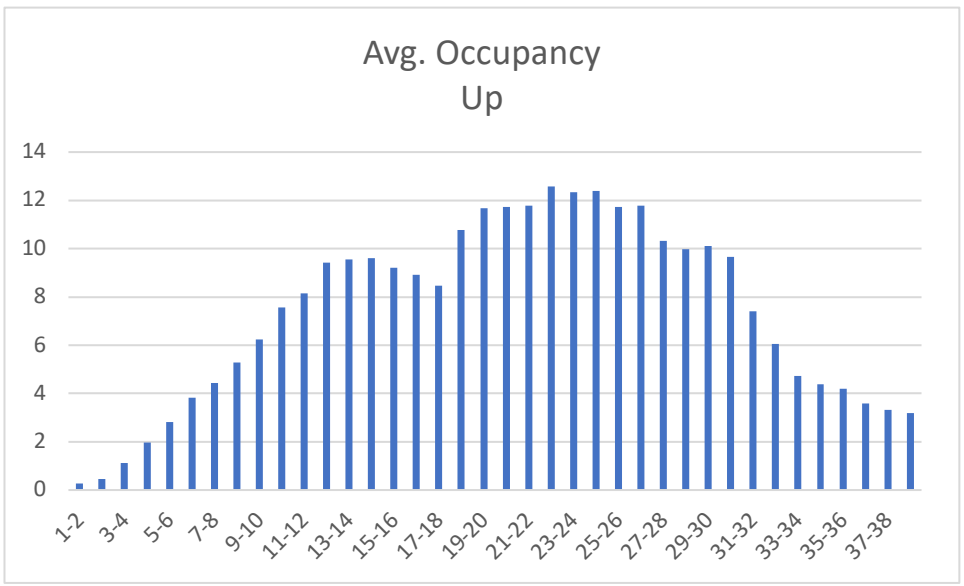


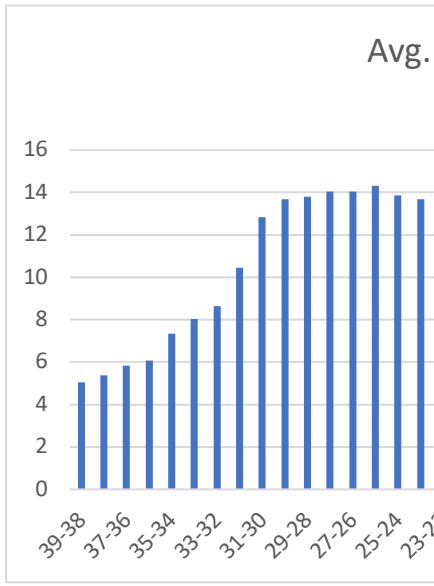
Route 2



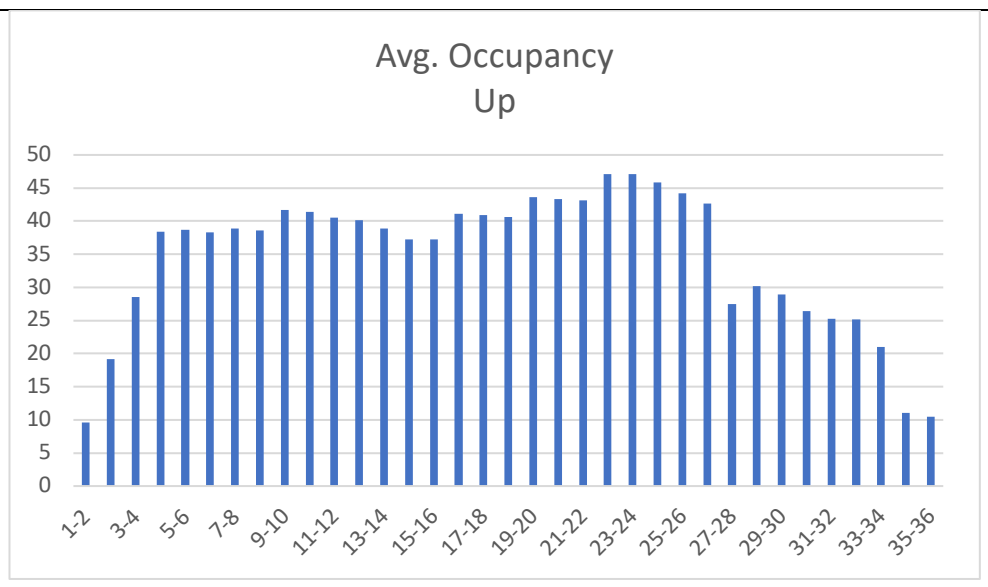


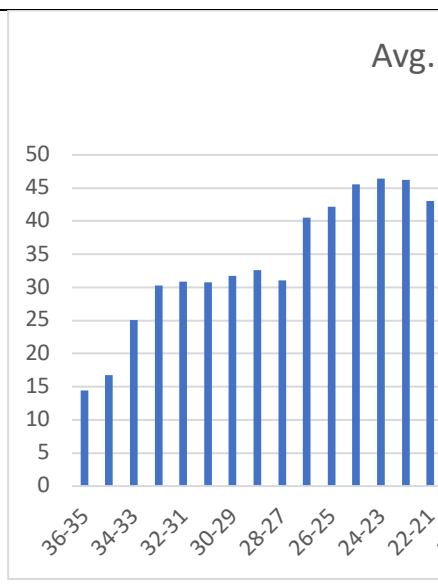
Route 3



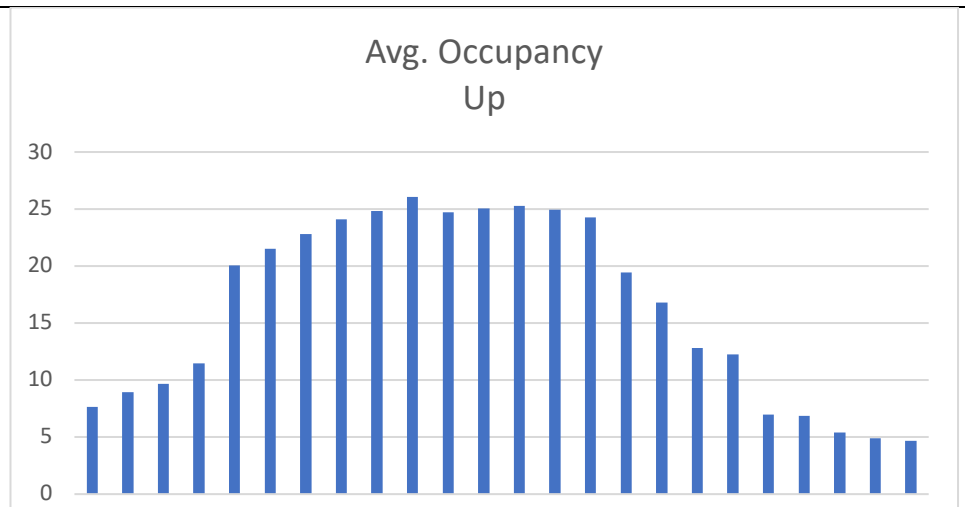


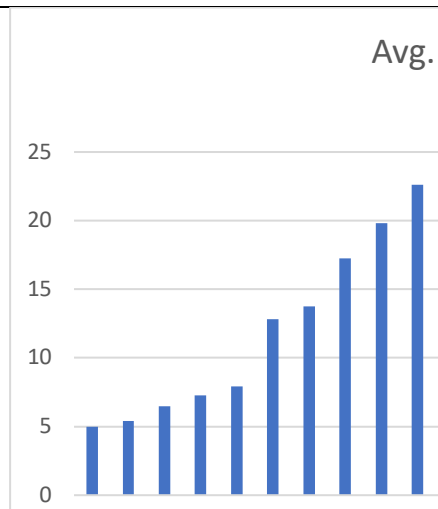
Route 5



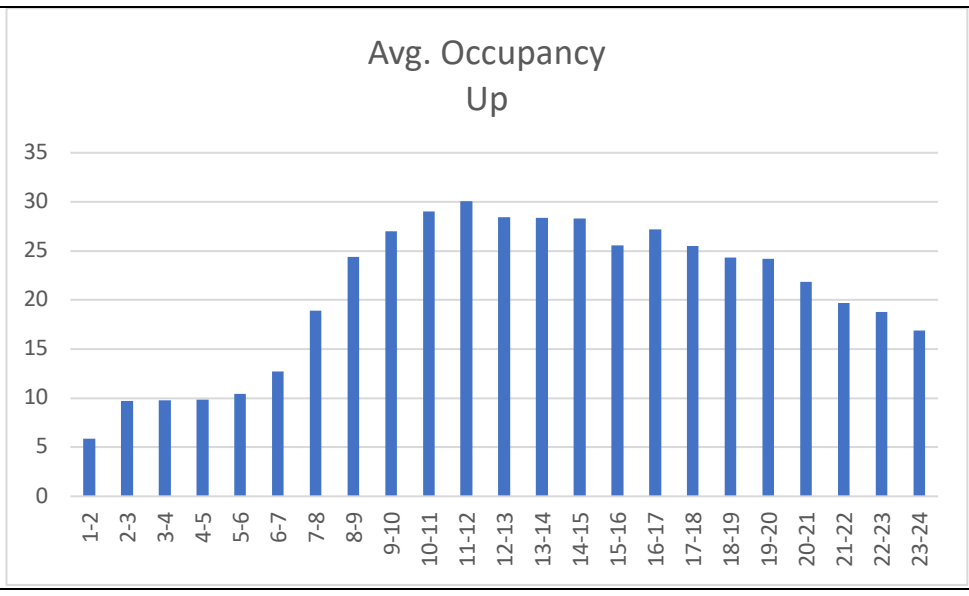


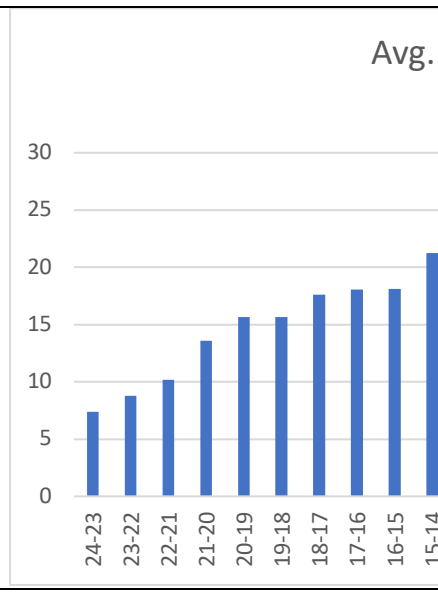
Route 7



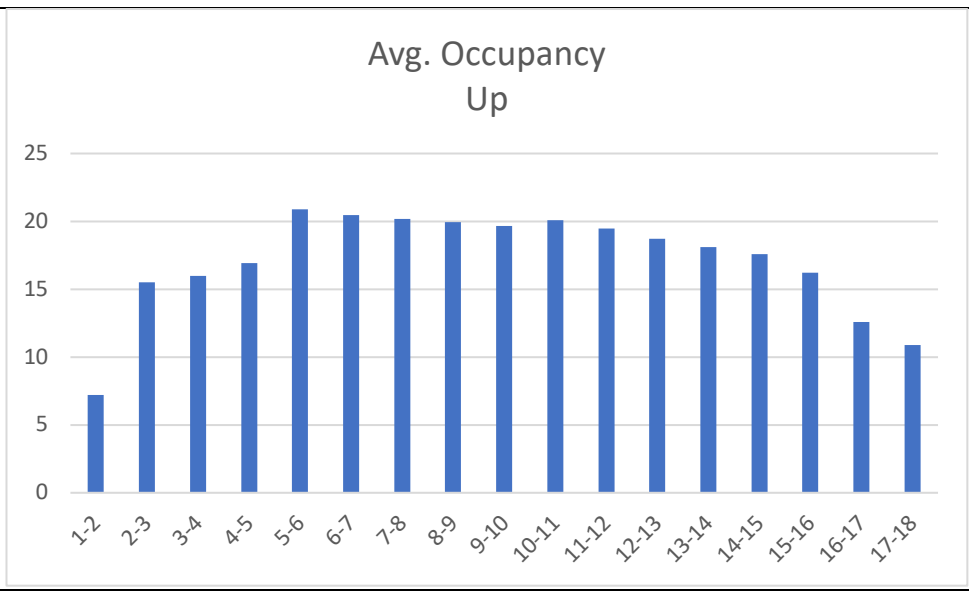


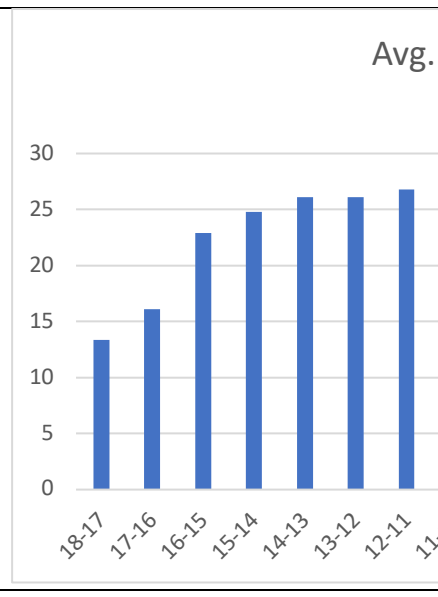
Route 8





Route 11





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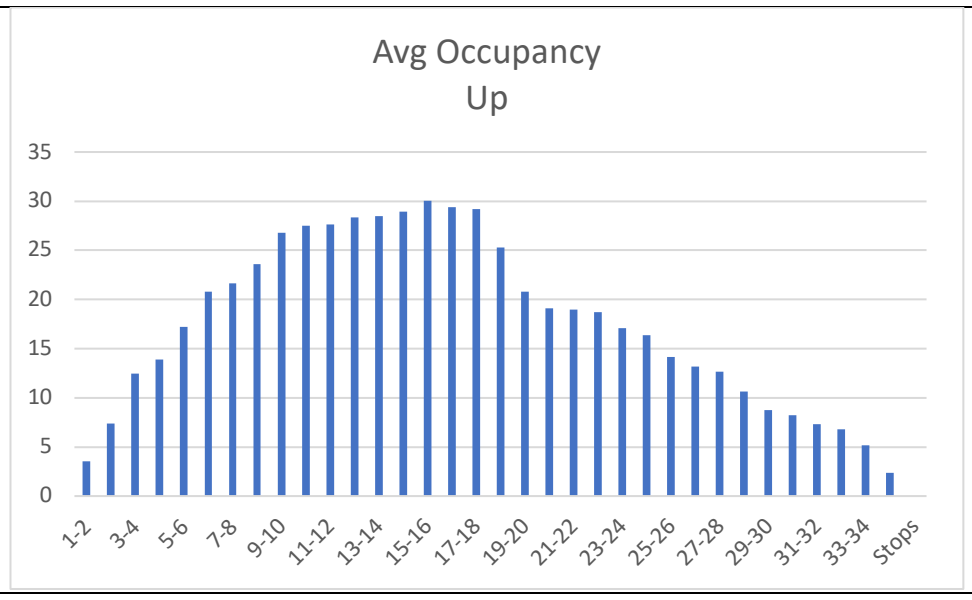

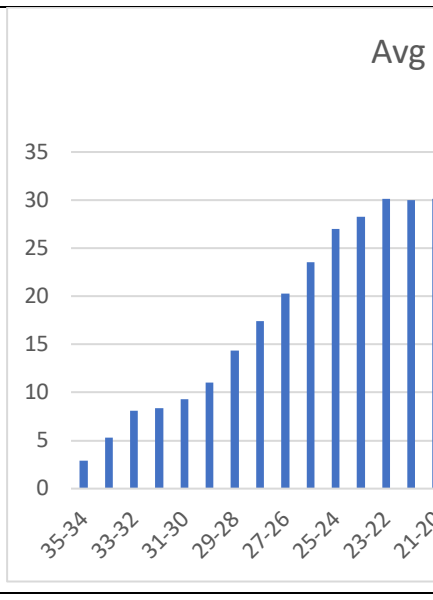

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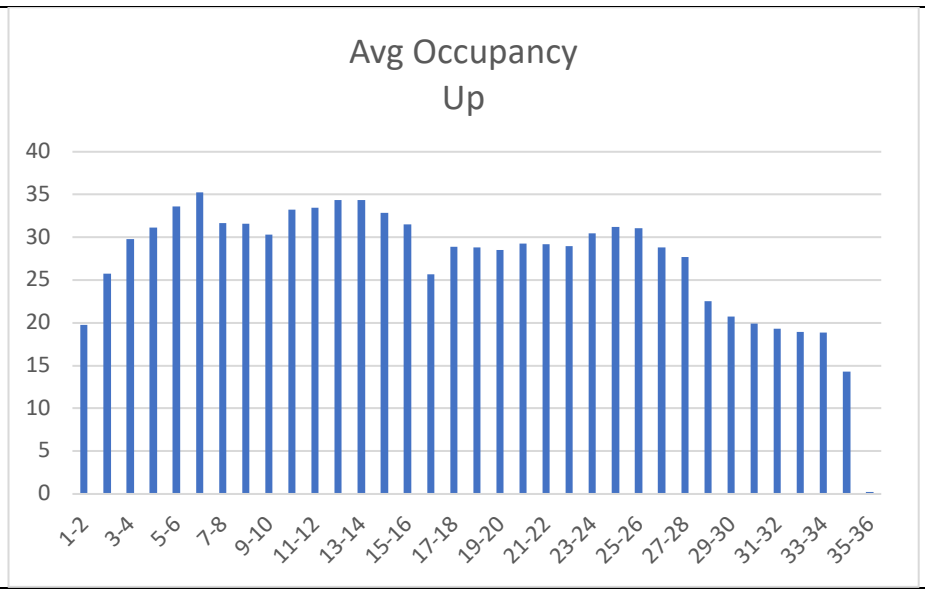

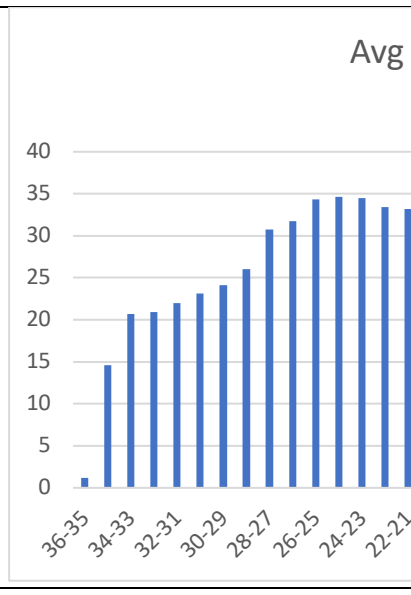

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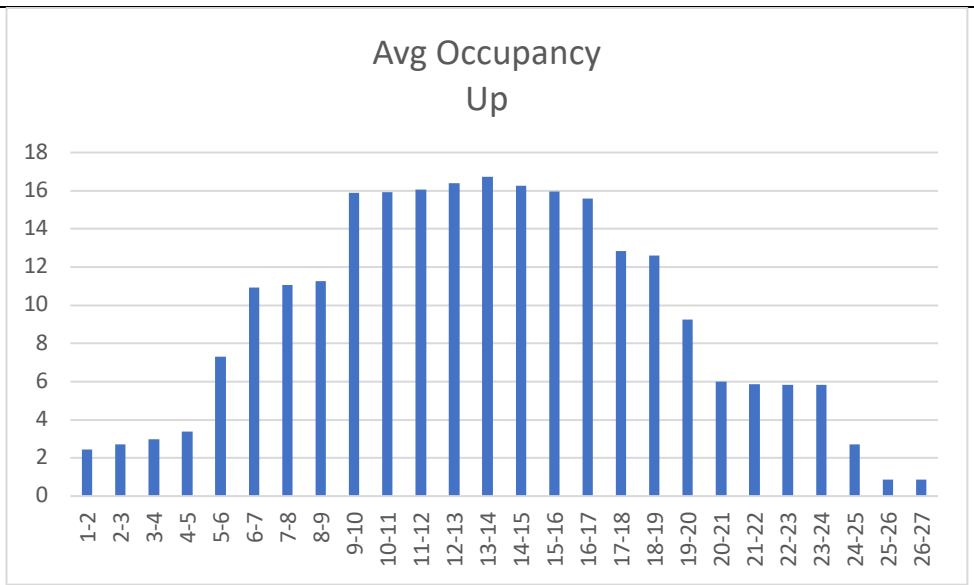

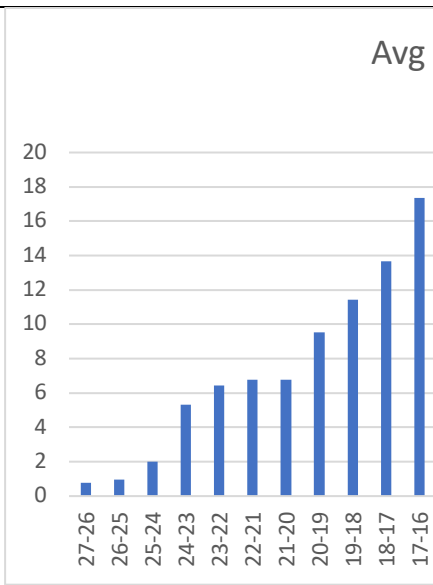

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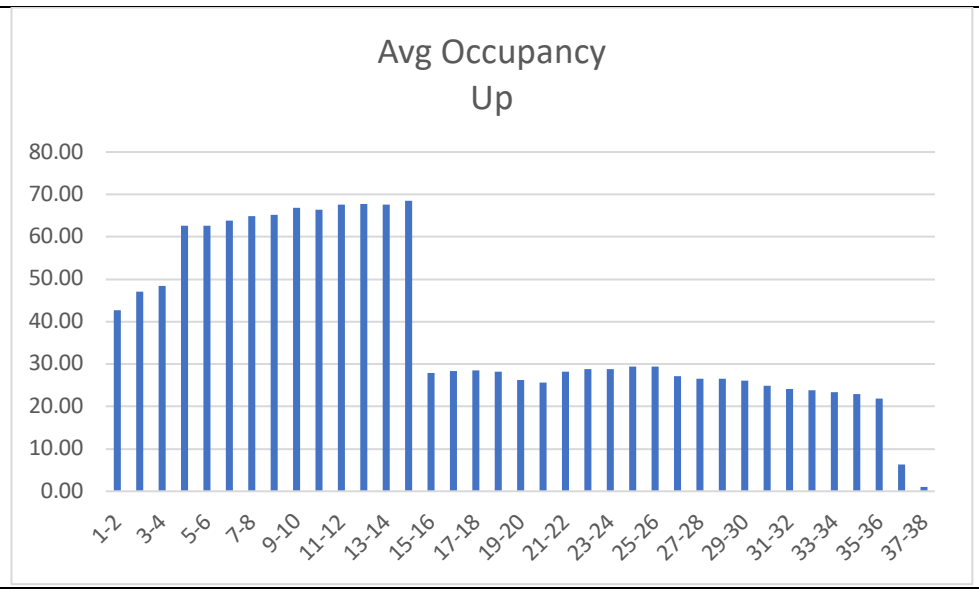

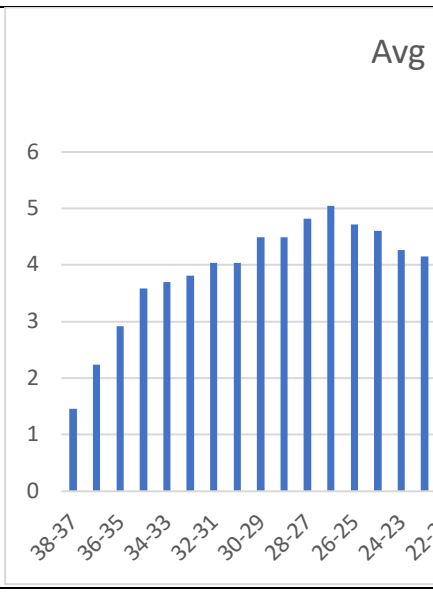

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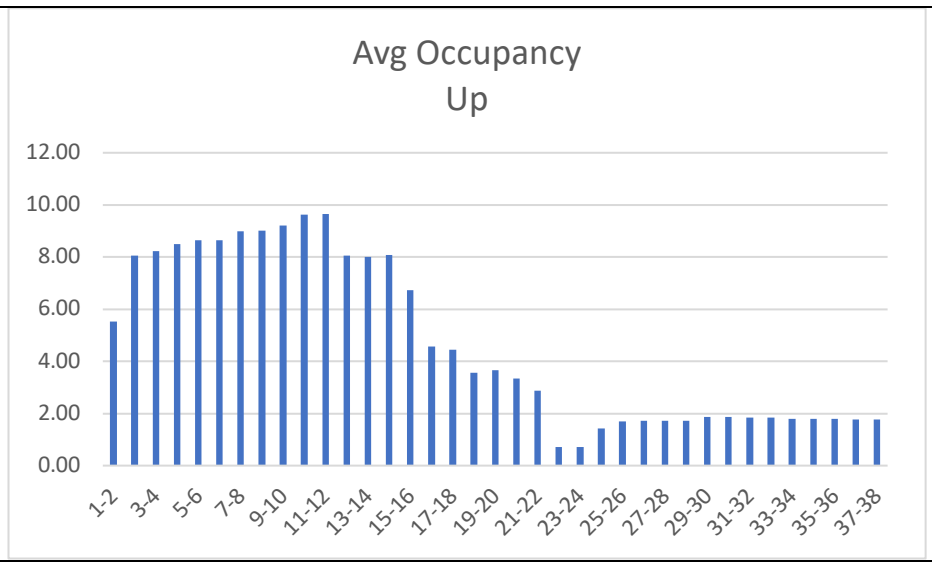

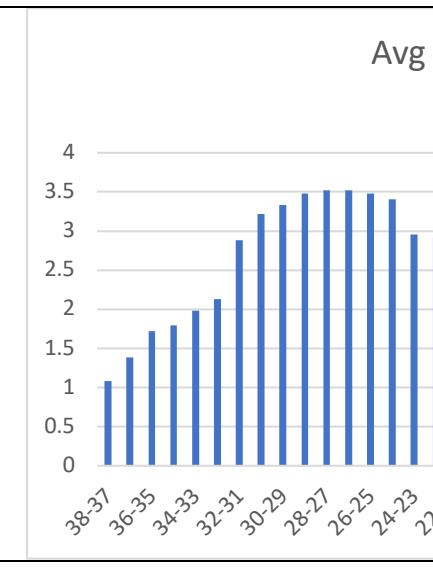

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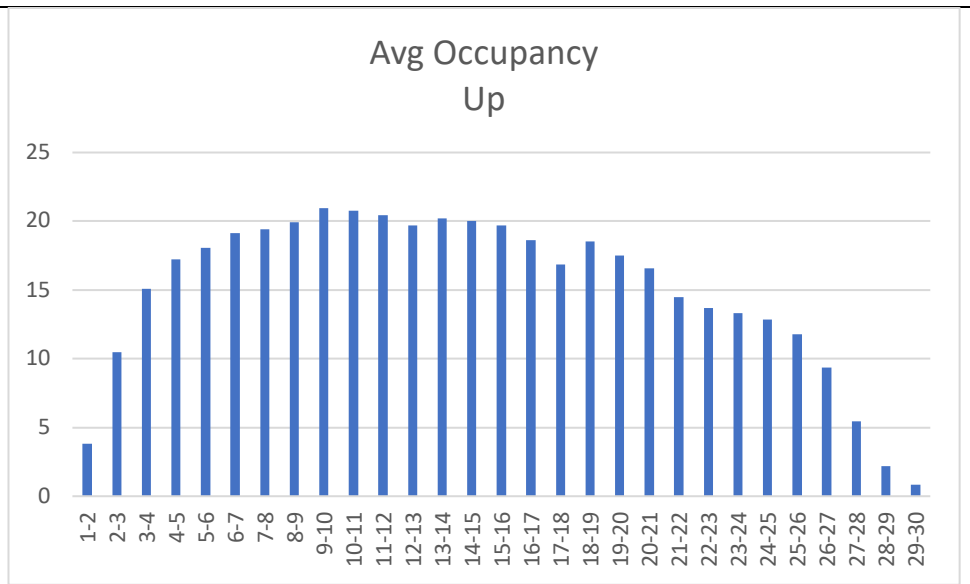
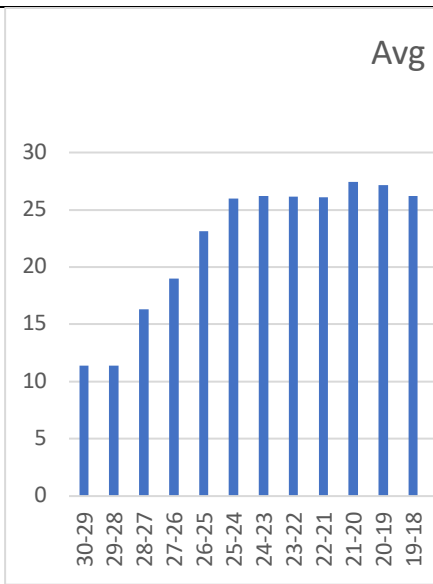
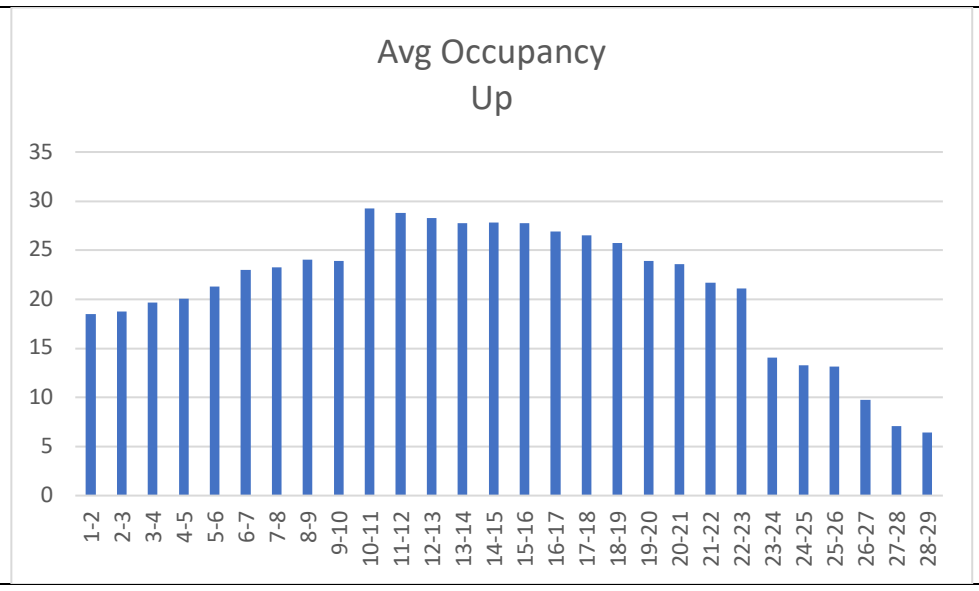
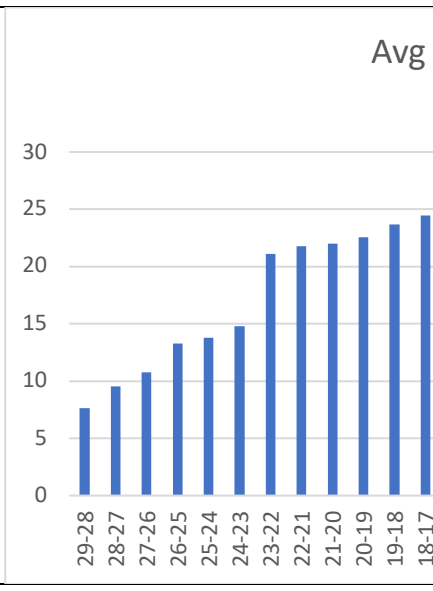




Route 24





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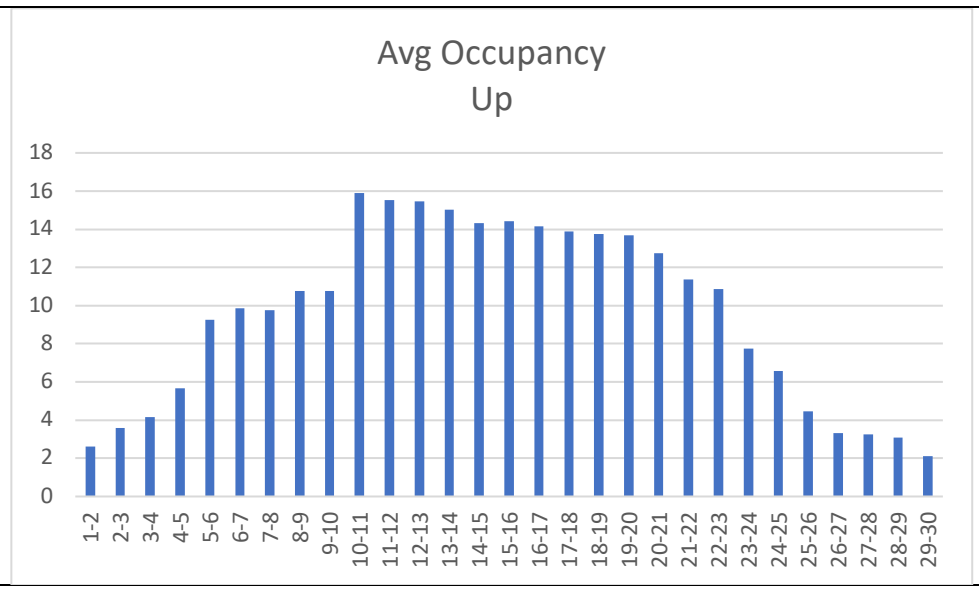
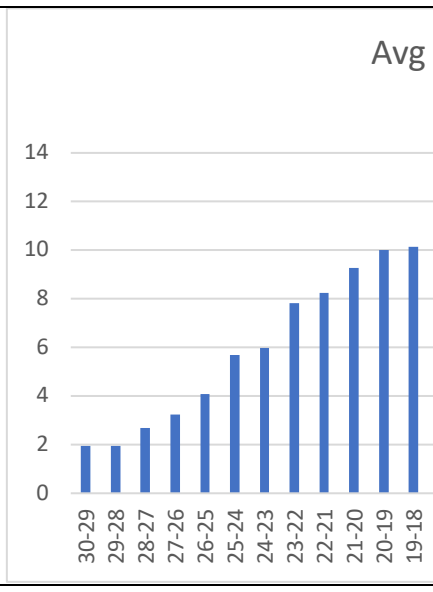
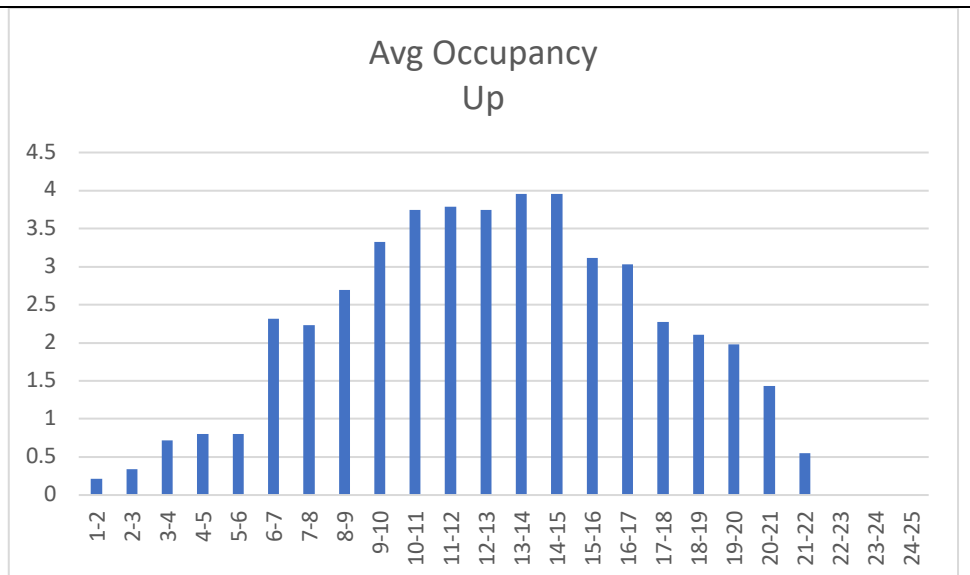
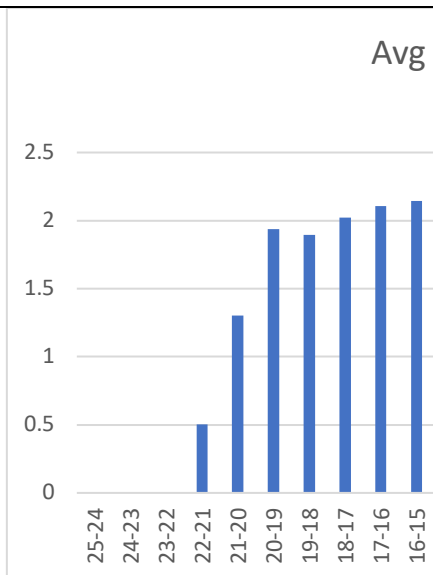


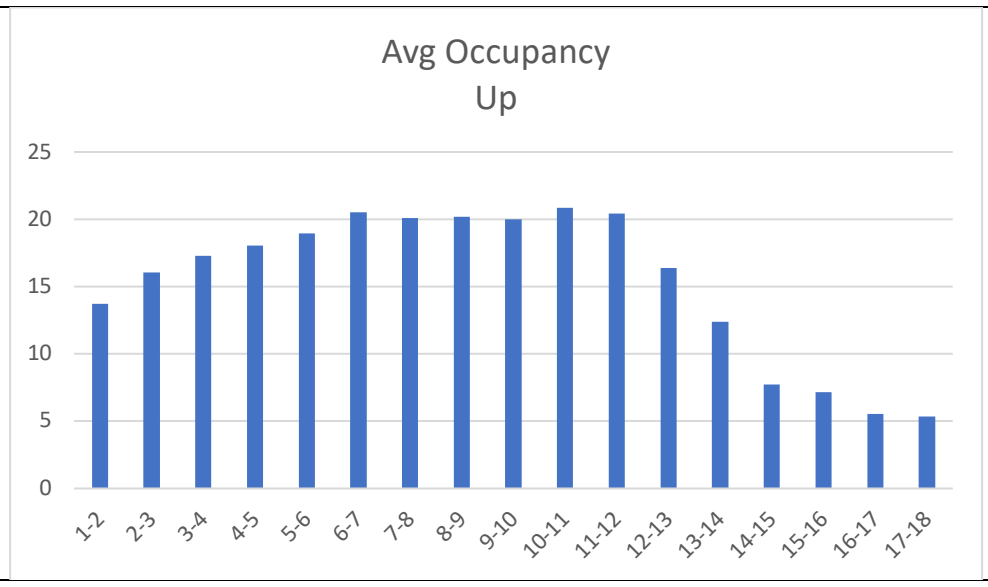


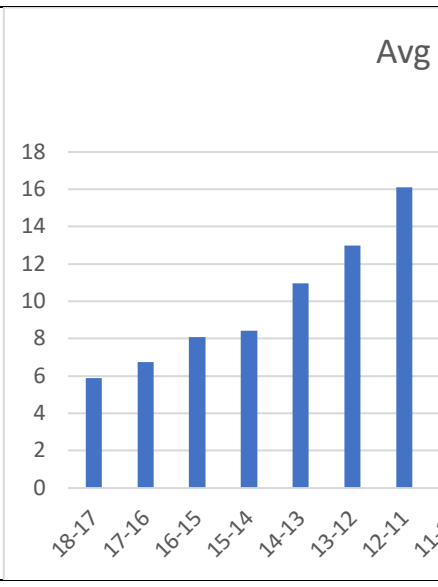
Route 26





Route 27





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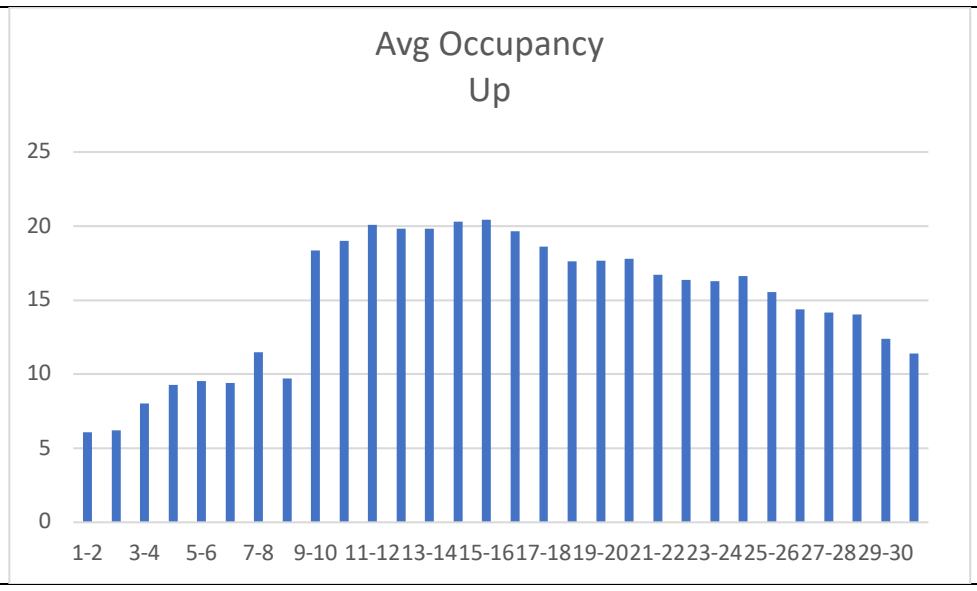

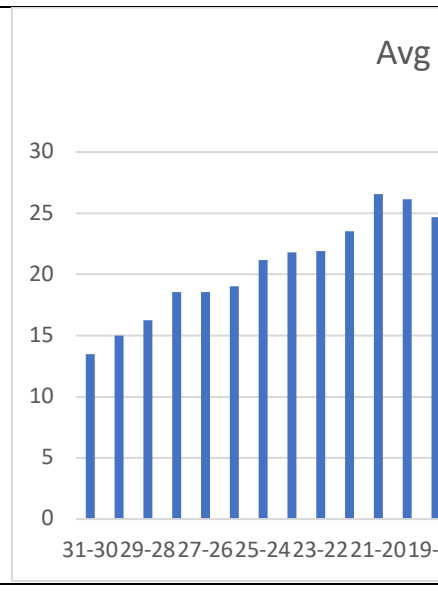

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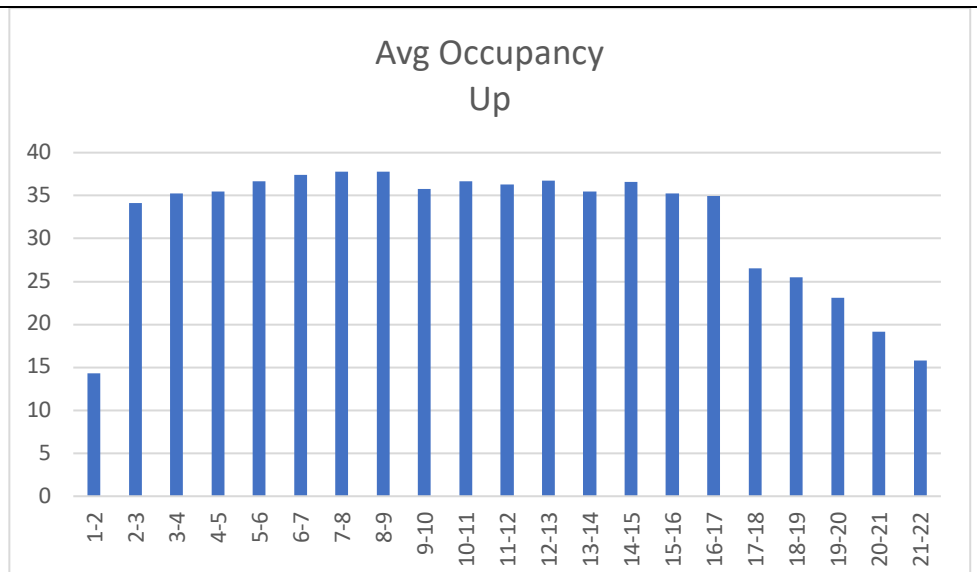
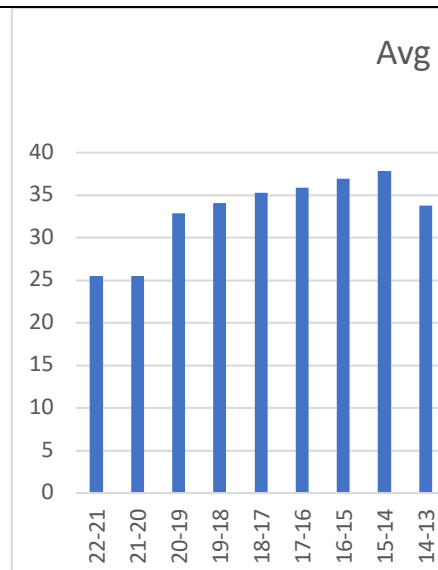
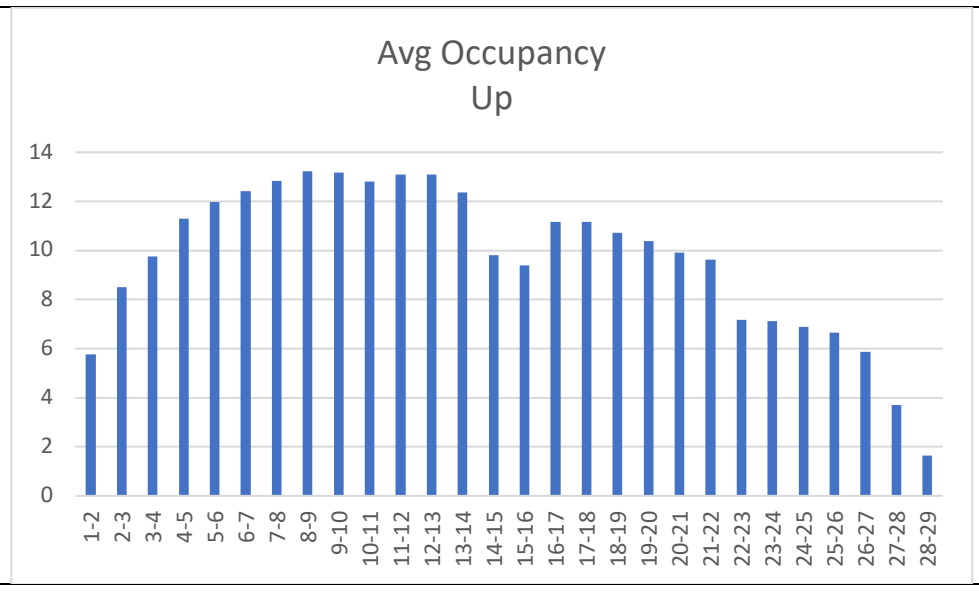
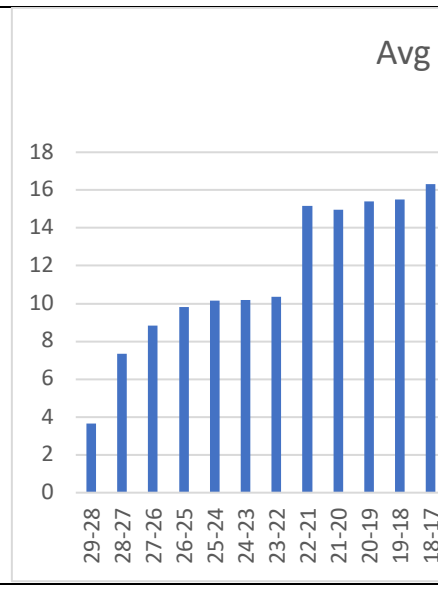




Route 38





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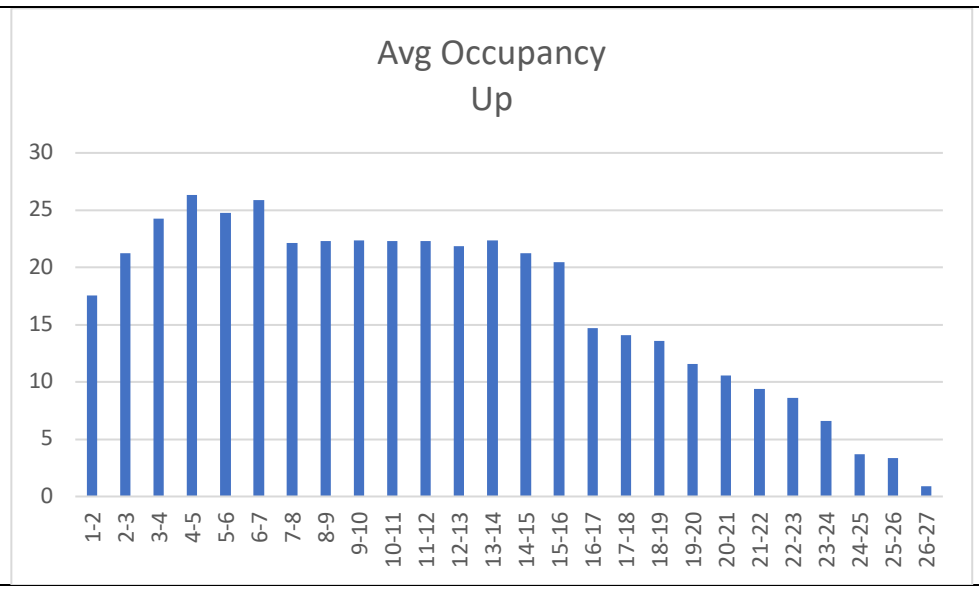

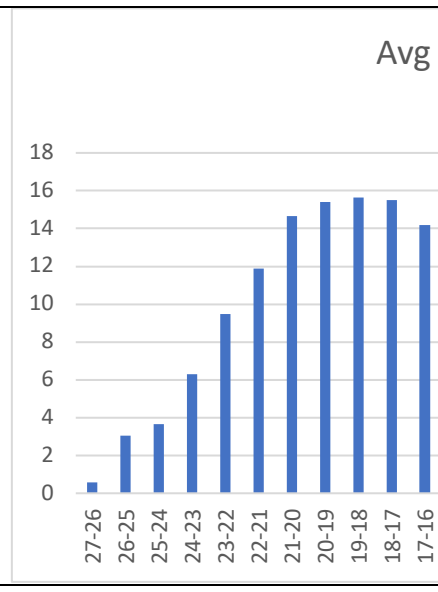

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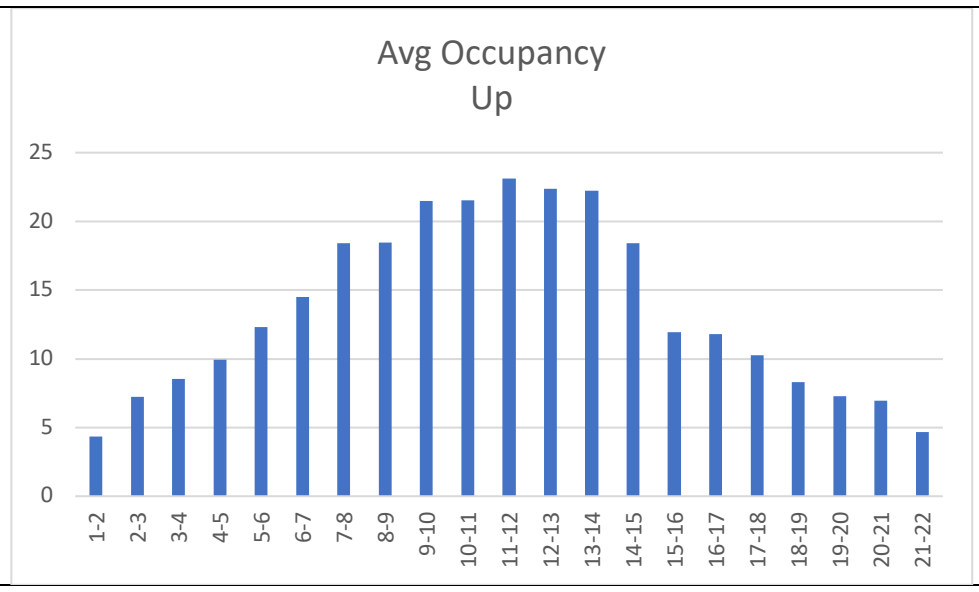

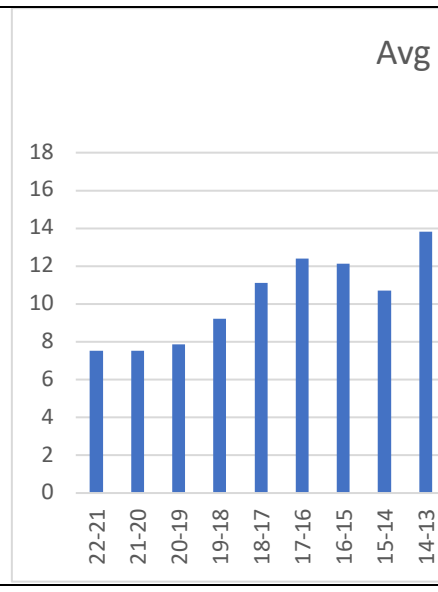

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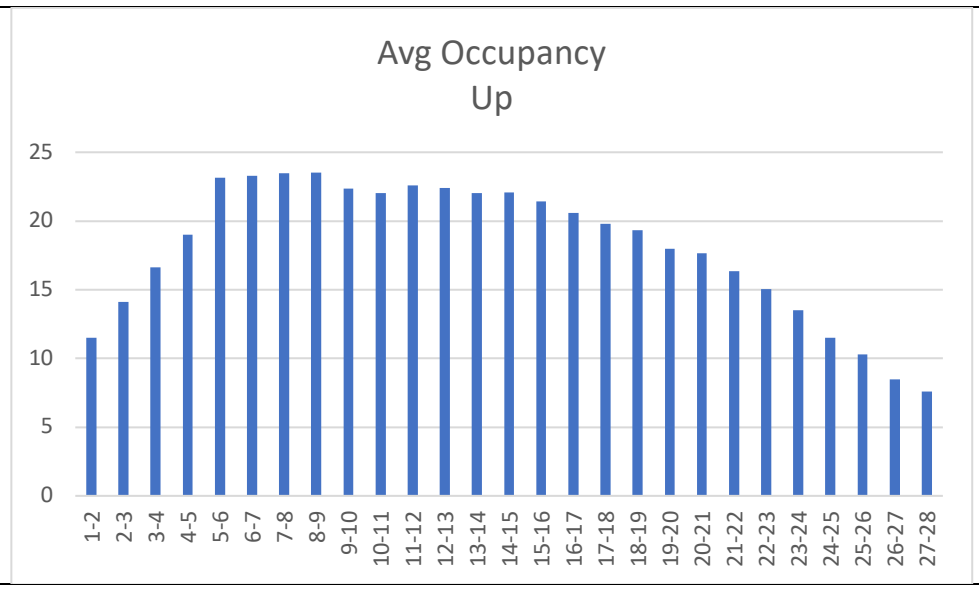

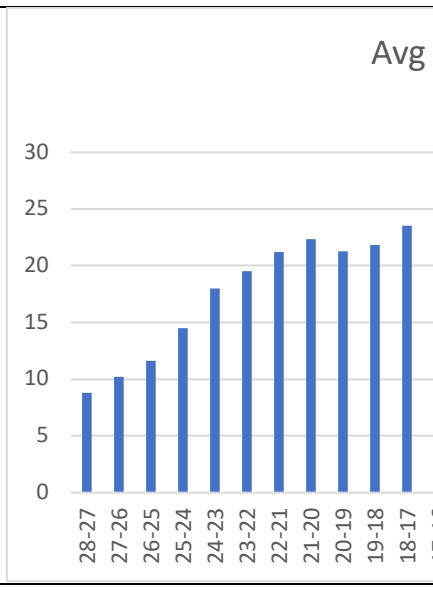

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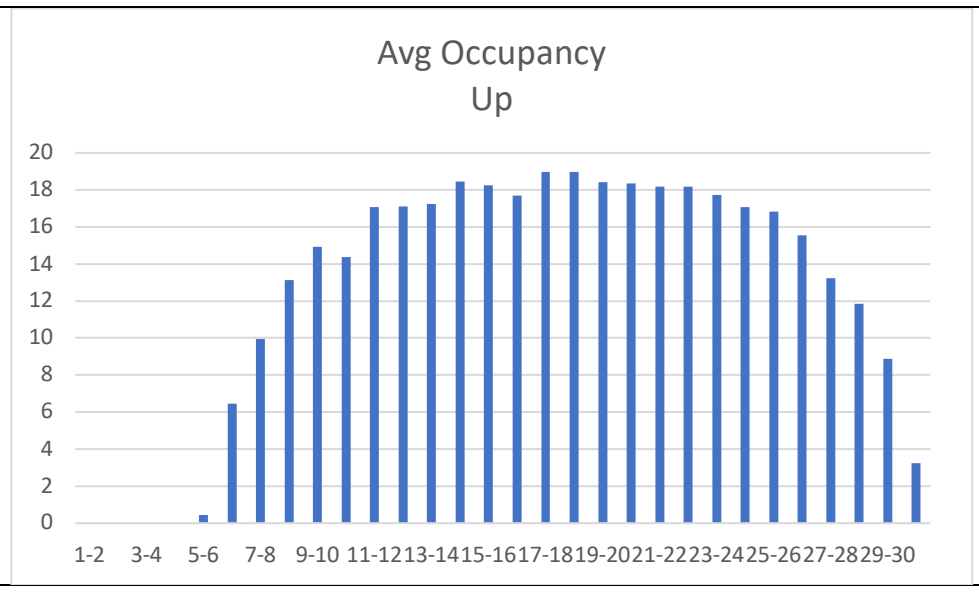

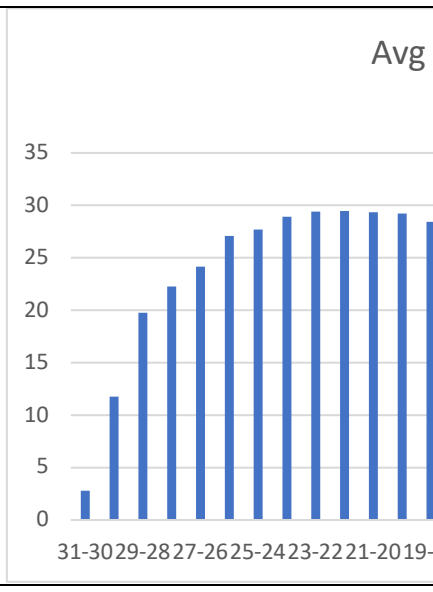

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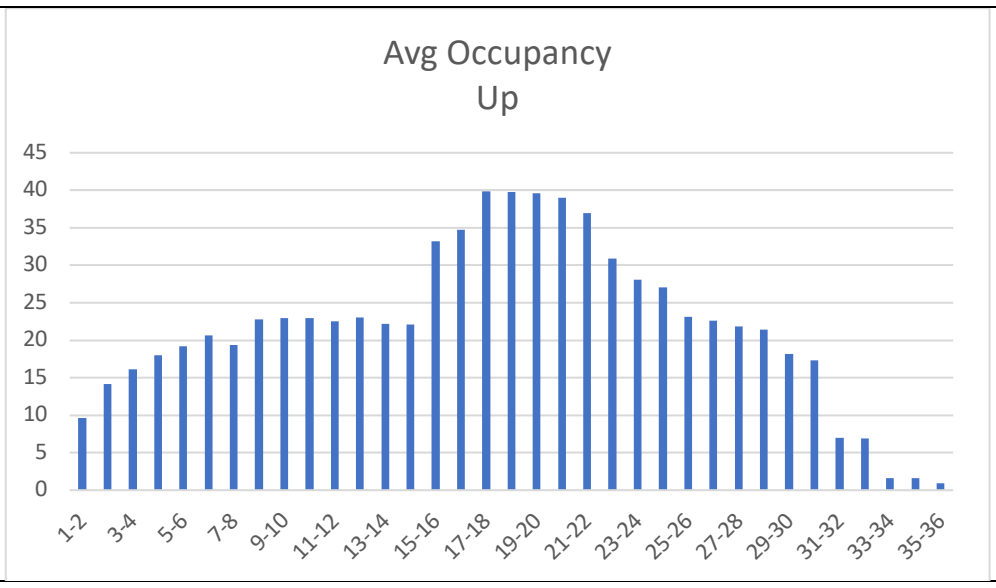

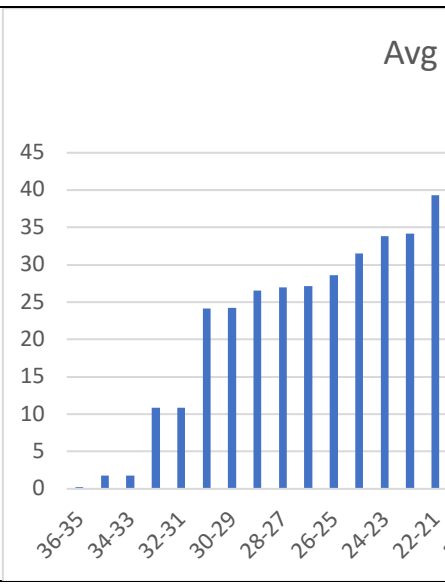

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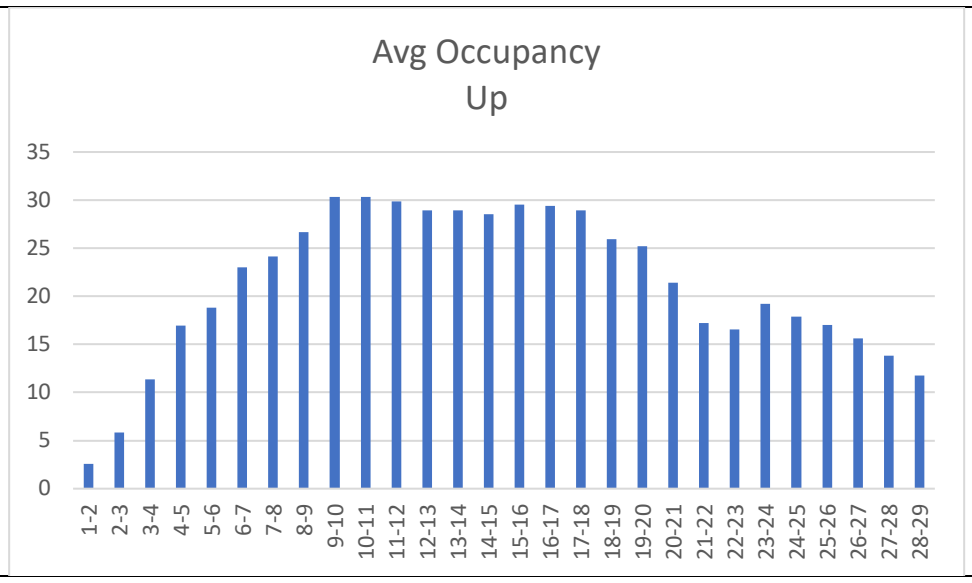

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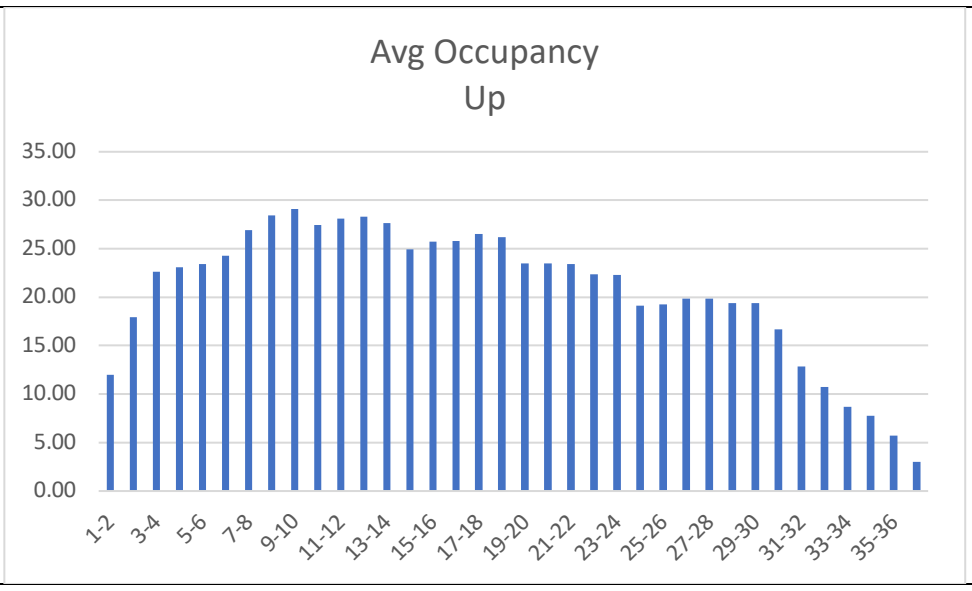

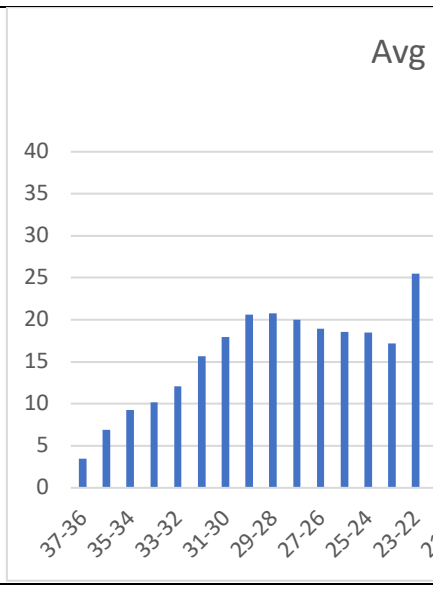

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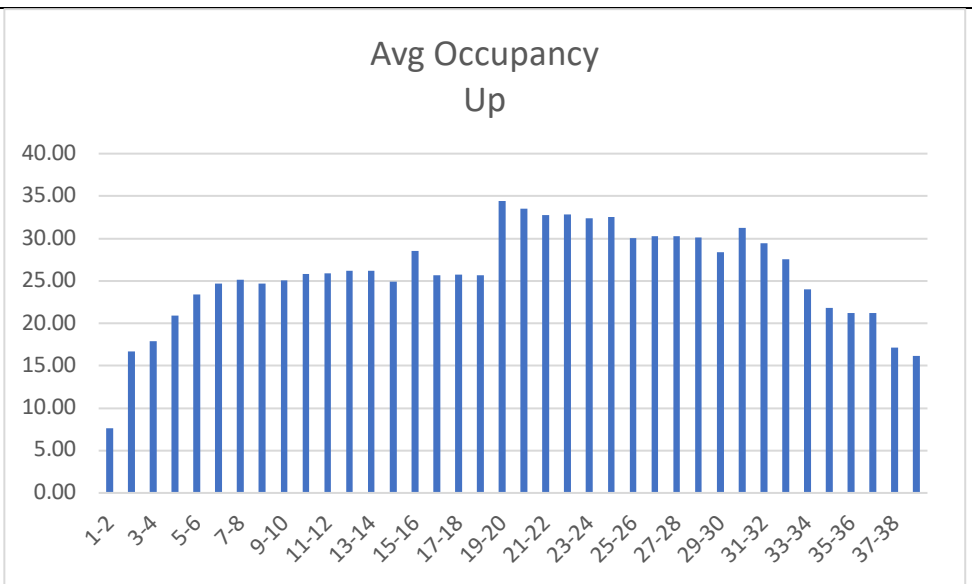

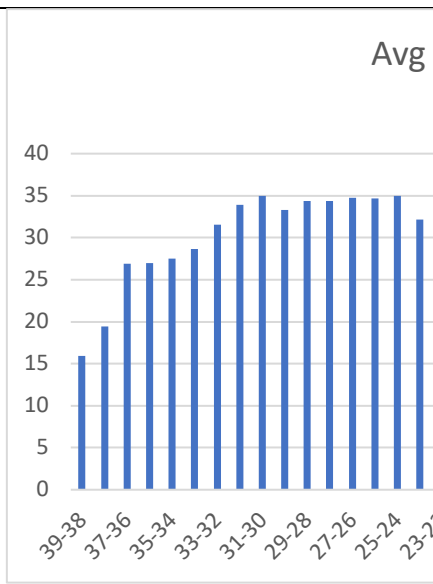

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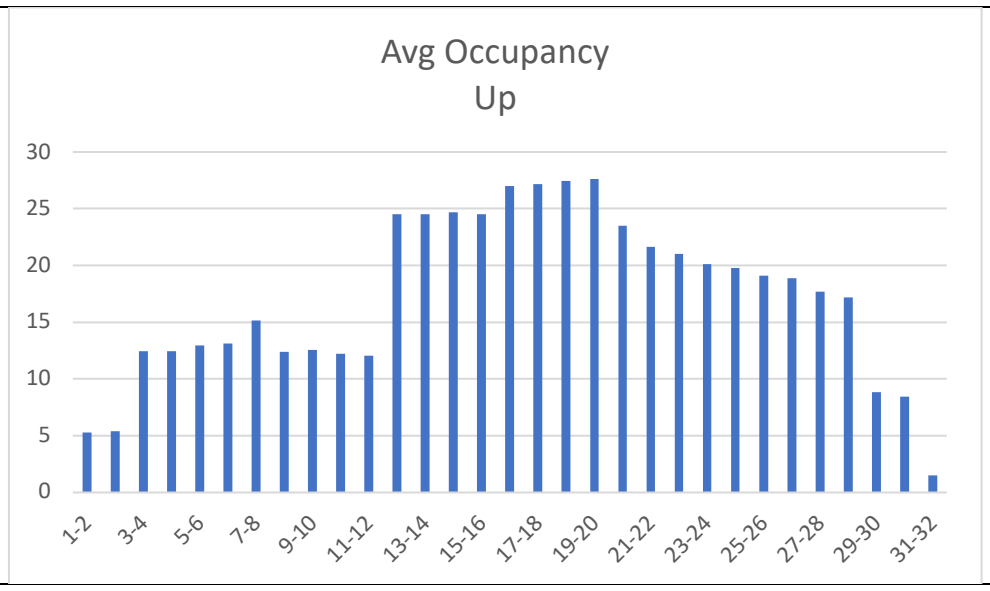
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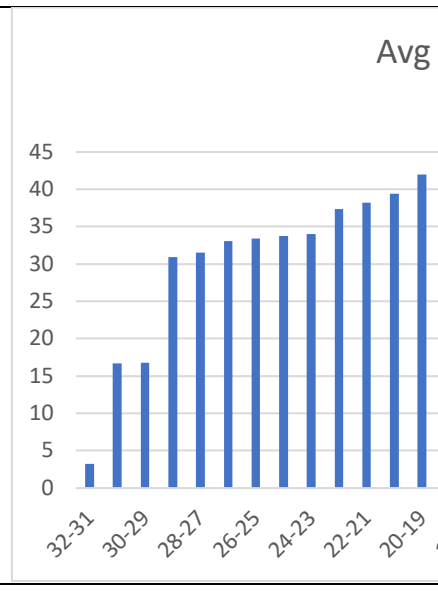
Up
30
25
20
15
10
5
0
1-2
3-4
5-6
7-8
9-10
11-12
13-14
15-16
17-18
19-20
21-22
23-24
25-26
27-28
29-30
31-32


Avg
45
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35
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25
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10
5
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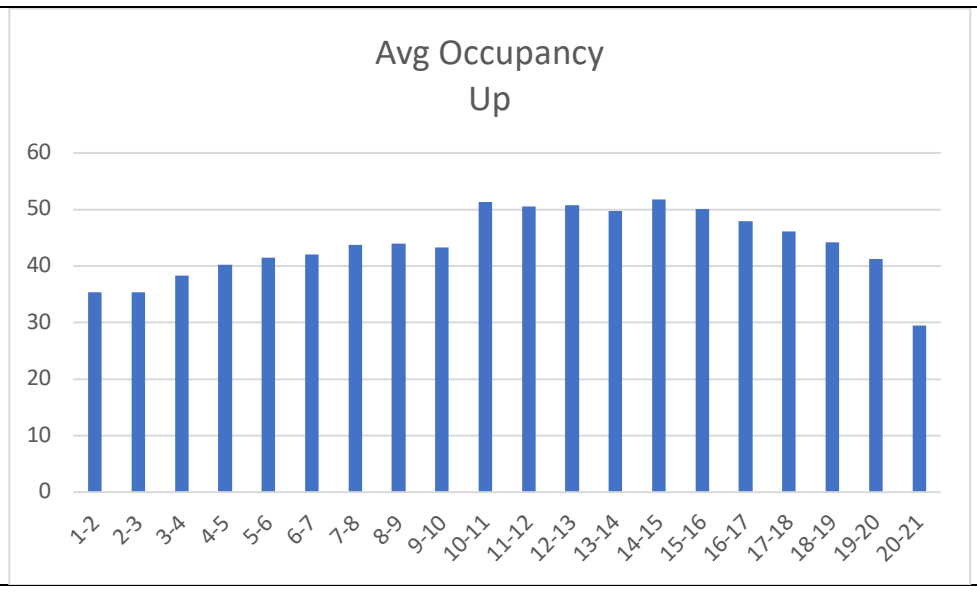
32-31
30-29
28-27
26-25
24-23
22-21
20-19

Route 57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30
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2-3
3-4
4-5
5-6
6-7
7-8
8-9
9-10
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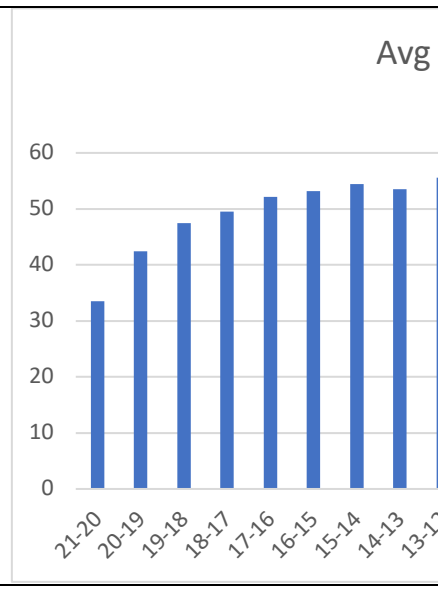
16-17
17-18
18-19
19-20
20-21


Avg
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50
40
30
20
10
0
21-20
20-19
19-18
18-17
17-16
16-15
15-14
14-13

8.6 Peak hour mode wise trips and PCU for all junctions on BRTS corridor

Ambedkar Nagar Chowk

Vehicle Type	Mode wise Trips	Trips Mode share	Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	165	1%	Cycle	80	1%
2 wheeler	6277	55%	2 wheeler	3678	50%
4 wheeler	2415	21%	4 wheeler	1568	21%
Auto	820	7%	Auto	1344	18%
Bus	616	5%	Bus	62	1%
BRTS Bus	766	7%	BRTS Bus	44	1%
Pedestrians	432	4%	LMV	403	5%
Total	**11490**	**100%**	Trucks	240	3%
			Total	**7419**	**100%**

Ayodhya Chowk

Vehicle Type	Mode wise Trips	Trips Mode share	Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	49	1%	Cycle	24	1%
2 wheeler	2724	43%	2 wheeler	1596	40%
4 wheeler	1392	22%	4 wheeler	904	23%
Auto	420	7%	Auto	688	17%
Bus	880	14%	Bus	88	2%
BRTS Bus	612	10%	BRTS Bus	35	1%
Pedestrians	320	5%	LMV	288	7%
Total	**6398**	**100%**	Trucks	360	9%
			Total	**3983**	**100%**

Dharam Nagar Chowk

Vehicle Type	Mode wise Trips	Trips Mode share	Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	280	2%	Cycle	136	2%
2 wheeler	7148	56%	2 wheeler	4188	51%
4 wheeler	2107	17%	4 wheeler	1368	17%
Auto	1200	9%	Auto	1968	24%
Bus	528	4%	Bus	53	1%
BRTS Bus	612	5%	BRTS Bus	35	0%
Pedestrians	800	6%	LMV	344	4%
Total	**12675**	**100%**	Trucks	120	1%
			Total	**8212**	**100%**

Gondal Chowk

Vehicle Type	Mode wise Trips	Trips Mode share	Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	346	2%	Cycle	168	1%
2 wheeler	7260	38%	2 wheeler	4254	30%
4 wheeler	4337	23%	4 wheeler	2816	20%
Auto	1659	9%	Auto	2720	19%
Bus	4576	24%	Bus	458	3%
BRTS Bus	306	2%	BRTS Bus	18	0%
Pedestrians	744	4%	LMV	2667	19%
Total	**19228**	**100%**	Trucks	960	7%
			Total	**14060**	**100%**

Indira Circle

Vehicle Type	Mode wise Trips	Trips Mode share	Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	181	1%	Cycle	88	1%
2 wheeler	11054	54%	2 wheeler	6477	56%
4 wheeler	2144	10%	4 wheeler	1392	12%
Auto	1737	8%	Auto	2848	25%
Bus	4048	20%	Bus	405	4%
BRTS Bus	612	3%	BRTS Bus	35	0%
Pedestrians	672	3%	LMV	235	2%
Total	**20449**	**100%**	Trucks	0	0%

KKV Chowk

Vehicle Type	Mode wise Trips	Trips Mode share	Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	132	1%	Cycle	64	1%
2 wheeler	7322	56%	2 wheeler	4290	51%
4 wheeler	2538	19%	4 wheeler	1648	20%
Auto	1113	8%	Auto	1824	22%
Bus	176	1%	Bus	18	0%
BRTS Bus	459	3%	BRTS Bus	26	0%

Total	**11480**	**100%**

Pedestrians	1392	11%
Total	**13131**	**100%**

LMV	478	6%
Trucks	48	1%
Total	**8396**	**100%**

Maha Pooja Dham Chowk

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	231	1%
2 wheeler	8397	51%
4 wheeler	3129	19%
Auto	1444	9%
Bus	1408	9%
BRTS Bus	919	6%
Pedestrians	800	5%
Total	**16328**	**100%**

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	112	1%
2 wheeler	4920	49%
4 wheeler	2032	20%
Auto	2368	24%
Bus	141	1%
BRTS Bus	53	1%
LMV	355	4%
Trucks	72	1%
Total	**10053**	**100%**

Mavdi Chowk

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	173	1%
2 wheeler	10772	59%
4 wheeler	3671	20%
Auto	1357	7%
Bus	1232	7%
BRTS Bus	612	3%
Pedestrians	528	3%
Total	**18346**	**100%**

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	84	1%
2 wheeler	6312	53%
4 wheeler	2384	20%
Auto	2224	19%
Bus	123	1%
BRTS Bus	35	0%
LMV	726	6%
Trucks	120	1%
Total	**12009**	**100%**

Vehicle Type	Mode w Trip
Cycle	
2 wheeler	7
4 wheeler	3
Auto	1
Bus	3
BRTS Bus	1
Pedestrians	
Total	**17**

Nanavati Chowk

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	165	1%
2 wheeler	6968	51%
4 wheeler	2538	19%
Auto	1864	14%
Bus	1056	8%
BRTS Bus	612	4%
Pedestrians	440	3%
Total	**13644**	**100%**

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	80	1%
2 wheeler	4083	41%
4 wheeler	1648	17%
Auto	3056	31%
Bus	106	1%
BRTS Bus	35	0%
LMV	696	7%
Trucks	168	2%
Total	**9872**	**100%**

Punit Nagar Circle

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	165	1%
2 wheeler	5888	48%
4 wheeler	3203	26%
Auto	1171	10%
Bus	880	7%
BRTS Bus	612	5%
Pedestrians	224	2%
Total	**12144**	**100%**

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	80	1%
2 wheeler	3450	38%
4 wheeler	2080	23%
Auto	1920	21%
Bus	88	1%
BRTS Bus	35	0%
LMV	878	10%
Trucks	456	5%
Total	**8988**	**100%**

Vehicle Type	Mode w Trip
Cycle	
2 wheeler	9
4 wheeler	2
Auto	1
Bus	1
BRTS Bus	
Pedestrians	
Total	**16**

Raiya tele. Office Circle

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	173	1%
2 wheeler	8243	63%
4 wheeler	1786	14%
Auto	1337	10%
Bus	880	7%
BRTS Bus	306	2%
Pedestrians	296	2%
Total	**13022**	**100%**

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	84	1%
2 wheeler	4830	56%
4 wheeler	1160	13%
Auto	2192	25%
Bus	88	1%
BRTS Bus	18	0%
LMV	229	3%
Trucks	96	1%

Ramdevpir Chowk

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	214	2%
2 wheeler	5069	47%
4 wheeler	2119	20%
Auto	1630	15%
Bus	704	7%
BRTS Bus	612	6%
Pedestrians	360	3%

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	104	1%
2 wheeler	2970	37%
4 wheeler	1376	17%
Auto	2672	34%
Bus	70	1%
BRTS Bus	35	0%
LMV	291	4%

Vehicle Type	Mode w Trip
Cycle	
2 wheeler	4
4 wheeler	1
Auto	
Bus	1
BRTS Bus	1
Pedestrians	
Total	**9**

Total	**8696**	**100%**

Total	**10708**	**100%**

Trucks	408	5%
Total	**7927**	**100%**

Umiyaji Circle

Vehicle Type	Mode wise Trips	Trips Mode share
Cycle	280	2%
2 wheeler	10332	71%
4 wheeler	2267	16%
Auto	566	4%
Bus	352	2%
BRTS Bus	306	2%
Pedestrians	448	3%
Total	**14552**	**100%**

Vehicle Type	Mode wise PCU	PCU Mode share
Cycle	136	2%
2 wheeler	6054	67%
4 wheeler	1472	16%
Auto	928	10%
Bus	35	0%
BRTS Bus	18	0%
LMV	270	3%
Trucks	144	2%
Total	**9057**	**100%**

8.7 Zonewise trip demand and avg. trip length for RMTS & BRTS in Base Year 2018

Zone No.	RMTS		BRTS		Zone No.	RMTS		BRTS		Zone No.	
	Daily trips	Avg. trip length (km)	Daily trips	Avg. trip length (km)		Daily trips	Avg. trip length (km)	Daily trips	Avg. trip length (km)		Daily
1	34.00	15.90	0.00	0.00	**60**	21.00	8.50	461.28	4.60	**119**	
2	0.00	0.00	0.00	0.00	**61**	0.00	0.00	67.83	3.65	**120**	
3	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	0.00	**121**	
4	0.00	0.00	0.00	0.00	**63**	0.00	0.00	0.00	0.00	**122**	
5	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	0.00	**123**	
6	0.00	0.00	0.00	0.00	**65**	159.00	2.42	192.73	4.60	**124**	
7	0.00	0.00	0.00	0.00	**66**	169.00	2.39	3351.19	3.96	**125**	
8	0.00	0.00	0.00	0.00	**67**	13.00	2.37	0.00	0.00	**126**	
9	0.00	0.00	0.00	0.00	**68**	54.00	4.38	77.15	8.90	**127**	
10	0.00	0.00	0.00	0.00	**69**	35.00	7.32	0.00	0.00	**128**	
11	0.00	0.00	0.00	0.00	**70**	103.00	9.42	0.00	0.00	**129**	
12	0.00	0.00	0.00	0.00	**71**	90.00	9.65	0.00	0.00	**130**	
13	13.00	11.73	0.00	0.00	**72**	171.00	10.22	0.00	0.00	**131**	
14	0.00	0.00	0.00	0.00	**73**	0.00	0.00	0.00	0.00	**132**	
15	0.00	0.00	0.00	0.00	**74**	8.00	12.35	0.00	0.00	**133**	
16	0.00	0.00	0.00	0.00	**75**	2.00	12.14	0.00	0.00	**134**	
17	0.00	0.00	0.00	0.00	**76**	1.00	4.45	0.00	0.00	**135**	
18	33.00	8.51	0.00	0.00	**77**	581.00	7.17	0.00	0.00	**136**	
19	0.00	0.00	0.00	0.00	**78**	407.00	5.09	715.63	21.26	**137**	
20	0.00	0.00	0.00	0.00	**79**	2.00	2.42	0.00	0.00	**138**	
21	0.00	0.00	0.00	0.00	**80**	113.00	3.09	0.00	0.00	**139**	
22	0.00	0.00	0.00	0.00	**81**	271.00	5.77	2971.95	3.91	**140**	
23	1.00	7.50	0.00	0.00	**82**	167.00	9.73	397.40	3.38	**141**	
24	0.00	0.00	0.00	0.00	**83**	449.00	8.58	212.59	6.00	**142**	
25	0.00	0.00	0.00	0.00	**84**	0.00	0.00	0.00	0.00	**143**	
26	4.00	3.27	0.00	0.00	**85**	0.00	0.00	0.00	0.00	**144**	
27	0.00	0.00	0.00	0.00	**86**	59.00	5.80	0.00	0.00	**145**	
28	14.00	7.82	0.00	0.00	**87**	55.00	5.98	229.82	4.50	**146**	
29	0.00	0.00	0.00	0.00	**88**	48.00	3.52	918.85	8.80	**147**	
30	3.00	7.53	0.00	0.00	**89**	177.00	4.60	805.43	4.35	**148**	
31	0.00	0.00	0.00	0.00	**90**	563.00	4.99	424.51	4.30	**149**	
32	0.00	0.00	0.00	0.00	**91**	722.00	6.92	0.00	0.00	**150**	
33	106.00	7.29	1514.12	6.87	**92**	1570.60	8.46	0.00	0.00	**151**	
34	33.00	5.39	0.00	0.00	**93**	4.00	12.45	0.00	0.00	**152**	
35	19.00	6.39	0.00	0.00	**94**	0.00	0.00	0.00	0.00	**153**	
36	0.00	0.00	0.00	0.00	**95**	39.00	9.51	0.00	0.00	**154**	
37	0.00	0.00	160.93	6.20	**96**	57.00	10.77	0.00	0.00	**155**	
38	252.00	5.83	2445.82	5.97	**97**	0.00	0.00	0.00	0.00	**156**	
39	18.00	11.82	0.00	0.00	**98**	0.00	0.00	0.00	0.00	**157**	
40	43.00	8.62	0.00	0.00	**99**	5.00	6.24	0.00	0.00	**158**	
41	0.00	0.00	0.00	0.00	**100**	6.00	9.23	79.10	8.30	**159**	
42	0.00	0.00	0.00	0.00	**101**	16.00	4.64	0.00	0.00	**160**	
43	64.00	9.70	0.00	0.00	**102**	25.00	4.98	311.67	6.20	**161**	
44	0.00	0.00	0.00	0.00	**103**	88.00	5.64	0.00	0.00	**162**	
45	0.00	0.00	0.00	0.00	**104**	378.00	7.31	0.00	0.00	**163**	
46	0.00	0.00	0.00	0.00	**105**	253.00	6.75	0.00	0.00	**164**	
47	0.00	0.00	0.00	0.00	**106**	3.00	4.79	0.00	0.00	**165**	
48	0.00	0.00	0.00	0.00	**107**	21.00	3.51	528.99	6.55	**166**	
49	0.00	0.00	0.00	0.00	**108**	0.00	0.00	339.71	4.43	**167**	
50	0.00	0.00	0.00	0.00	**109**	969.00	5.47	3400.86	4.73	**168**	
51	0.00	0.00	0.00	0.00	**110**	287.00	7.79	929.17	5.04	**169**	
52	0.00	0.00	0.00	0.00	**111**	546.00	6.83	231.44	3.93	**170**	
53	8.00	3.43	0.00	0.00	**112**	439.00	8.53	652.17	6.22	**171**	
54	0.00	0.00	0.00	0.00	**113**	3.00	3.32	0.00	0.00	**172**	
55	15.00	1.67	0.00	0.00	**114**	0.00	0.00	0.00	0.00	**173**	
56	22.00	6.62	0.00	0.00	**115**	241.00	7.78	528.78	3.59	**174**	
57	88.00	5.10	92.80	8.90	**116**	21.00	5.56	2386.59	5.36	**175**	
58	136.00	3.24	0.00	0.00	**117**	0.00	0.00	562.50	4.95	**176**	
59	148.00	2.37	346.53	3.83	**118**	48.00	1.67	987.77	3.83	**177**	

8.8 Zonewise trip demand and avg. trip length for other than bus modes in Base Year 2018

	Car		2W		3W		Shared 3W		
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips
1	0.00	0.00	0.00	0.00	0.00	0.00	756.72	19.70	0.
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
13	176.09	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
19	110.47	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
23	279.19	12.20	132.95	12.70	0.00	0.00	0.00	0.00	0.
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
25	0.00	0.00	458.51	6.90	0.00	0.00	0.00	0.00	0.
26	0.00	0.00	621.20	8.70	0.00	0.00	0.00	0.00	0.
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
30	0.00	0.00	621.29	5.40	0.00	0.00	0.00	0.00	0.
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
32	0.00	0.00	999.18	3.90	0.00	0.00	0.00	0.00	0.
33	890.03	11.61	2856.27	8.80	3140.00	9.40	837.58	13.40	20.
34	0.00	0.00	2121.03	4.36	0.00	0.00	4956.50	5.48	0.
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
36	**0.00**	0.00	1512.00	6.30	0.00	0.00	0.00	0.00	0.

	Car		2W		3W		Shared 3W		
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
38	4348.48	6.93	8650.22	7.04	76.05	7.80	3180.67	5.15	29.
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
40	0.00	0.00	249.63	9.20	0.00	0.00	0.00	0.00	0.
41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
42	0.00	0.00	0.00	0.00	1216.13	13.10	0.00	0.00	0.
43	0.00	0.00	2762.27	12.04	0.00	0.00	0.00	0.00	0.
44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
47	378.43	17.13	278.72	15.80	0.00	0.00	0.00	0.00	0.
48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
52	3072.59	15.50	576.45	9.50	0.00	0.00	0.00	0.00	0.
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
54	0.00	0.00	6263.72	9.51	0.00	0.00	0.00	0.00	0.
55	0.00	0.00	0.00	0.00	0.00	0.00	148.46	7.50	0.
56	186.78	15.80	552.51	14.35	0.00	0.00	0.00	0.00	0.
57	1847.99	7.58	1977.02	7.43	622.62	7.90	219.71	18.43	0.
58	0.00	0.00	4042.04	5.33	0.00	0.00	0.00	0.00	13.
59	801.40	3.99	14689.28	6.81	2156.17	6.60	5334.47	4.19	28.
60	942.86	5.70	4424.27	7.88	0.00	0.00	0.00	0.00	0.
61	613.57	9.09	7064.52	5.72	20.00	5.50	5729.31	4.53	229.
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
65	543.08	5.55	1777.77	8.82	15430.36	4.60	0.00	0.00	0.
66	1825.69	9.68	17668.39	7.65	11910.92	11.02	6318.66	7.04	126.
67	726.79	5.10	5119.12	4.48	128.97	4.19	2716.88	4.60	21.
68	6.10	6.90	14274.12	9.01	0.00	0.00	201.25	9.30	0.
69	0.00	0.00	14490.62	6.49	0.00	0.00	0.00	0.00	0.
70	2757.67	8.37	1836.28	10.26	0.00	0.00	0.00	0.00	0.
71	0.00	0.00	2023.00	11.66	0.00	0.00	0.00	0.00	0.
72	0.00	0.00	8118.84	9.09	0.00	0.00	0.00	0.00	0.
73	0.00	0.00	3965.29	9.50	0.00	0.00	0.00	0.00	0.

	Car		2W		3W		Shared 3W		
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips
74	6796.05	9.40	6789.12	9.93	0.00	0.00	63.71	14.10	0.
75	0.00	0.00	0.00	0.00	0.00	0.00	521.11	8.80	0.
76	0.00	0.00	4813.87	7.00	3140.00	9.40	0.00	0.00	0.
77	24054.20	5.62	16802.79	14.35	0.00	0.00	16567.00	7.78	0.
78	4077.36	5.11	14562.22	7.61	19873.68	8.07	837.99	8.50	104.
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
80	4782.99	2.57	10217.76	17.14	0.00	0.00	8619.45	6.94	71.
81	5716.44	4.21	41169.92	4.45	14306.38	2.20	23642.26	17.50	4899.
82	1342.11	13.05	45453.90	10.25	0.00	0.00	244.24	4.85	0.
83	545.09	6.10	3419.20	5.77	2078.49	5.40	1229.06	9.30	62.
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.
85	3164.87	8.62	1332.18	5.50	0.00	0.00	432.69	9.00	0.
86	0.00	0.00	3342.32	2.67	0.00	0.00	0.00	0.00	0.
87	3952.36	5.02	37511.03	5.78	2637.60	4.10	309.24	4.40	65.
88	9878.54	8.28	40389.25	6.38	3217.87	1.00	1608.94	5.20	12.
89	10598.79	1.86	40924.91	2.41	0.00	0.00	2016.98	6.35	0.
90	2443.39	5.77	22716.07	9.19	1506.42	6.85	2146.67	4.60	0.
91	2314.41	12.21	28997.25	5.67	1502.27	5.10	7941.51	7.30	135.
92	2266.67	6.50	28771.48	7.26	0.00	0.00	1221.63	26.70	40.
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
99	2191.11	8.10	764.51	10.25	0.00	0.00	0.00	0.00	0.
100	0.00	0.00	2225.52	12.77	0.00	0.00	0.00	0.00	4.
101	0.00	0.00	429.22	13.50	0.00	0.00	0.00	0.00	0.
102	3326.22	7.70	3588.46	11.95	0.00	0.00	0.00	0.00	2.
103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
104	13047.03	1.89	7166.48	9.19	0.00	0.00	0.00	0.00	0.
105	2946.67	6.41	7111.80	8.04	0.00	0.00	2443.25	11.05	102.
106	0.00	0.00	645.51	6.28	0.00	0.00	0.00	0.00	0.
107	1077.78	5.51	3146.87	3.94	76.05	7.80	687.31	10.78	27.
108	1420.87	5.88	4104.97	2.79	0.00	0.00	0.00	0.00	0.
109	31200.19	8.88	74919.73	4.21	9597.24	6.11	14555.13	17.90	57.
110	2244.30	12.91	17695.70	5.69	113.20	4.10	613.49	7.20	19.

	Car		2W		3W		Shared 3W		
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips
111	5866.67	5.00	10985.23	4.94	0.00	0.00	0.00	0.00	0.
112	661.08	10.46	10871.55	6.86	0.00	0.00	11101.93	4.00	0.
113	1256.13	8.29	7953.51	6.52	0.00	0.00	0.00	0.00	135.
114	0.00	0.00	815.99	7.83	0.00	0.00	464.61	16.20	0.
115	0.00	0.00	18408.79	5.19	110.89	8.20	2443.25	3.80	105.
116	9386.25	6.45	15894.87	5.36	0.00	0.00	3777.83	5.93	4907.
117	0.00	0.00	11278.37	2.30	382.63	13.91	0.00	0.00	0.
118	12731.54	3.29	21150.25	5.26	3509.96	5.60	2776.00	8.81	10.
119	8867.62	3.17	20634.77	3.50	0.00	0.00	622.62	7.90	0.
120	5695.60	6.93	15359.40	11.21	0.00	0.00	0.00	0.00	0.
121	126.53	7.80	1146.83	8.00	0.00	0.00	0.00	0.00	0.
122	1303.00	9.80	0.00	0.00	0.00	0.00	1361.35	17.33	0.
123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
128	0.00	0.00	24.23	18.00	0.00	0.00	0.00	0.00	0.
129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
131	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
132	363.40	10.80	449.59	9.95	0.00	0.00	0.00	0.00	0.
133	0.00	0.00	2132.31	2.50	0.00	0.00	0.00	0.00	0.
134	3072.59	15.50	5591.19	4.02	0.00	0.00	0.00	0.00	0.
135	0.00	0.00	5836.82	4.54	540.08	3.80	0.00	0.00	12.
136	3812.26	5.38	35849.78	4.10	4239.55	3.80	2408.35	5.24	22.
137	0.00	0.00	4534.77	6.29	0.00	0.00	2077.23	1.80	0.
138	6623.52	4.07	19070.74	5.49	2211.78	7.33	350.93	5.80	24.
139	7039.79	7.58	3511.64	4.50	0.00	0.00	1075.45	6.83	0.
140	0.00	0.00	912.46	4.30	0.00	0.00	0.00	0.00	0.
141	2930.50	6.75	15825.92	5.59	0.00	0.00	0.00	0.00	0.
142	0.00	0.00	2026.28	9.30	0.00	0.00	0.00	0.00	0.
143	4586.52	7.09	26732.64	4.61	1720.69	2.10	3838.00	10.54	35.
144	2292.26	5.89	32445.21	5.07	0.00	0.00	3294.72	7.21	4.
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
146	1867.39	3.97	12431.76	7.38	2507.14	4.05	4149.65	5.48	87.
147	0.00	0.00	444.19	6.40	0.00	0.00	0.00	0.00	0.

Zone No	Car		2W		3W		Shared 3W		
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
149	245.15	3.60	2889.63	15.36	0.00	0.00	303.27	17.62	0.
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
154	0.00	0.00	1525.91	6.46	0.00	0.00	0.00	0.00	0.
155	0.00	0.00	3072.90	2.80	0.00	0.00	484.98	6.50	0.
156	137.42	26.70	7926.88	8.75	2402.17	6.24	3.00	6.15	10.
157	964.54	1.40	1489.03	2.50	0.00	0.00	8792.00	6.60	0.
158	0.00	0.00	264.98	3.10	0.00	0.00	0.00	0.00	0.
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
160	176.09	17.00	2459.53	10.37	0.00	0.00	865.38	5.60	0.
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
163	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
165	227.91	8.00	11616.77	12.35	0.00	0.00	0.00	0.00	0.
166	2191.11	3.50	1010.47	6.10	0.00	0.00	0.00	0.00	0.
167	49.09	6.20	468.54	12.85	0.00	0.00	0.00	0.00	0.
168	970.20	25.53	4118.34	19.83	0.00	0.00	252.58	11.20	0.
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
170	0.00	0.00	525.15	8.80	0.00	0.00	0.00	0.00	0.
171	0.00	0.00	5861.59	22.40	0.00	0.00	0.00	0.00	0.
172	0.00	0.00	576.45	11.50	0.00	0.00	0.00	0.00	0.
173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
174	0.00	0.00	0.00	0.00	0.00	0.00	1182.93	12.68	0.
175	0.00	0.00	11.82	15.80	0.00	0.00	0.00	0.00	0.
176	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
177	2547.99	15.64	1381.13	17.50	263.98	27.00	9254.27	15.92	0.

8.9 Zonewise expected shift to each feeder mode-2018

8.9.1 To Feeder Walk

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pe destrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	4.07	0.18	0.00	0.00	4	**33**	1.79	1.92	3.17	2.53
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**34**	0.00	0.71	0.00	1.67
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**35**	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**36**	0.00	0.51	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**37**	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**38**	1.46	2.91	0.03	6.41
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**39**	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**40**	0.00	0.17	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**41**	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**42**	0.00	0.00	2.45	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**43**	0.00	8.35	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**44**	0.00	0.00	0.00	0.00
13	0.41	0.00	0.00	0.00	0.04	0.00	0.00	0	**45**	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**46**	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**47**	1.65	1.22	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**48**	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**49**	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0	**50**	0.00	0.00	0.00	0.00
19	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0	**51**	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**52**	13.42	0.39	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**53**	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**54**	0.00	4.21	0.00	0.00
23	0.38	0.18	0.00	0.00	0.00	0.00	0.00	1	**55**	0.00	0.00	0.00	0.05
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**56**	0.82	0.74	0.00	0.00
25	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0	**57**	0.62	0.66	0.21	0.96
26	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0	**58**	0.00	1.36	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**59**	0.27	4.94	0.72	1.79
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**60**	0.32	1.49	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**61**	0.41	2.37	0.01	1.93
30	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0	**62**	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**63**	0.00	0.00	0.00	0.00
32	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0	**64**	0.00	0.00	0.00	0.00

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pe destrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
65	0.18	1.19	5.18	0.00	0.02	0.00	0.00	7	**100**	0.00	4.49	0.00	0.00
66	1.23	5.94	24.01	2.12	0.02	0.00	0.00	33	**101**	0.00	0.87	0.00	0.00
67	0.24	1.72	0.04	0.91	0.00	0.00	0.00	3	**102**	1.12	7.23	0.00	0.00
68	0.00	9.59	0.00	0.14	0.02	0.00	0.00	10	**103**	0.00	0.00	0.00	0.00
69	0.00	4.87	0.00	0.00	0.01	0.00	0.00	5	**104**	4.38	4.82	0.00	0.00
70	0.93	1.23	0.00	0.00	0.07	0.00	0.00	2	**105**	0.99	2.39	0.00	7.39
71	0.00	2.72	0.00	0.00	0.06	0.00	0.00	3	**106**	0.00	0.22	0.00	0.00
72	0.00	5.46	0.00	0.00	0.17	0.00	0.00	6	**107**	0.36	1.06	0.03	0.46
73	0.00	4.00	0.00	0.00	0.00	0.00	0.00	4	**108**	0.48	1.38	0.00	0.00
74	4.57	6.84	0.00	0.13	0.02	0.00	0.00	12	**109**	20.97	25.17	3.22	63.58
75	0.00	0.00	0.00	0.35	0.01	0.00	0.00	0	**110**	4.52	5.95	0.04	1.24
76	0.00	1.62	3.17	0.00	0.00	0.00	0.00	5	**111**	1.97	3.69	0.00	0.00
77	8.08	50.81	0.00	5.57	0.20	0.00	0.00	65	**112**	0.44	3.65	0.00	3.73
78	1.37	4.89	6.68	0.28	0.14	0.00	0.00	13	**113**	0.42	2.67	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**114**	0.00	0.27	0.00	2.03
80	1.61	44.63	0.00	2.90	0.11	0.00	0.00	49	**115**	0.00	6.19	0.04	0.82
81	1.92	13.83	4.81	127.10	0.09	0.08	0.00	148	**116**	3.15	5.34	0.00	1.27
82	1.80	45.82	0.00	0.08	0.17	0.00	0.00	48	**117**	0.00	3.79	0.51	0.00
83	0.18	1.15	0.70	0.83	0.15	0.00	0.00	3	**118**	4.28	7.11	1.18	1.87
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**119**	2.98	6.93	0.00	0.21
85	1.06	0.45	0.00	0.29	0.00	0.00	0.00	2	**120**	1.91	30.96	0.00	0.00
86	0.00	1.12	0.00	0.00	0.02	0.00	0.00	1	**121**	0.04	0.39	0.00	0.00
87	1.33	12.60	0.89	1.04	0.02	0.00	0.00	16	**122**	0.88	0.00	0.00	5.95
88	3.32	13.57	1.08	0.54	0.02	0.00	0.00	19	**123**	0.00	0.00	0.00	0.00
89	3.56	13.75	0.00	0.68	0.06	0.00	0.13	18	**124**	0.00	0.00	0.00	0.00
90	0.82	15.27	0.51	0.72	0.19	0.00	0.00	18	**125**	0.00	0.00	0.00	0.00
91	3.11	9.74	0.50	2.67	0.24	0.00	0.00	16	**126**	0.00	0.00	0.00	0.00
92	0.76	9.67	0.00	11.08	0.53	0.00	0.00	22	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0	**128**	0.00	0.06	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**132**	0.24	0.30	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	**133**	0.00	0.72	0.00	0.00
99	0.74	0.77	0.00	0.00	0.00	0.00	0.00	2	**134**	13.42	1.88	0.00	0.00

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pe destrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
135	0.00	1.96	0.18	0.00	0.03	0.00	0.00	2	**170**	0.00	0.35	0.00	0.00
136	1.28	12.05	1.42	0.81	0.07	0.00	0.00	16	**171**	0.00	45.30	0.00	0.00
137	0.00	1.52	0.00	0.70	0.02	0.00	0.00	2	**172**	0.00	1.16	0.00	0.00
138	2.23	6.41	0.74	0.12	0.04	0.00	0.00	10	**173**	0.00	0.00	0.00	0.00
139	2.37	1.18	0.00	0.36	0.04	0.00	0.00	4	**174**	0.00	0.00	0.00	2.38
140	0.00	0.31	0.00	0.00	0.05	0.00	0.00	0	**175**	0.00	0.05	0.00	0.00
141	0.98	5.32	0.00	0.00	0.09	0.00	0.00	6	**176**	0.00	0.00	0.00	0.00
142	0.00	2.04	0.00	0.00	0.01	0.00	0.00	2	**177**	11.13	6.03	2.39	40.42
143	1.54	8.98	0.58	2.58	0.05	0.00	0.00	14					
144	0.77	10.90	0.00	1.11	0.00	0.00	0.00	13					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
146	0.63	4.18	0.84	1.39	0.04	0.00	0.00	7					
147	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
149	0.08	9.71	0.00	1.32	0.27	0.00	0.00	11					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
154	0.00	0.51	0.00	0.00	0.06	0.00	0.00	1					
155	0.00	1.03	0.00	0.49	0.00	0.00	0.00	2					
156	1.06	5.33	0.81	0.00	0.04	0.00	0.00	7					
157	0.32	0.50	0.00	17.72	0.01	0.00	0.00	19					
158	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0					
159	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0					
160	0.41	1.65	0.00	0.87	0.00	0.00	0.00	3					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
163	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
165	0.08	23.42	0.00	0.00	0.00	0.00	0.00	23					
166	0.74	0.34	0.00	0.00	0.01	0.00	0.01	1					
167	0.02	0.63	0.00	0.00	0.03	0.00	0.00	1					
168	7.50	22.14	0.00	0.34	0.00	0.00	0.00	30					
169	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0					

8.9.2 To Feeder Bicycle Sharing

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	4.07	0.55	0.00	0.00	4.62	**34**	0.03	0.71	0.00	9.99
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.02	0.51	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	2.91	2.91	0.03	3.21
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.00	0.17	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	2.45	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.04	8.35	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.24	**46**	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.22	1.22	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	**51**	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	2.52	0.39	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.10	4.21	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	0.30
23	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.36	**56**	2.41	0.74	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	0.66	0.66	0.21	0.96
25	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.16	**58**	0.06	1.36	0.00	0.00
26	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.22	**59**	4.94	4.94	0.72	1.79
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	1.49	1.49	0.00	0.00
28	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	**61**	4.75	2.37	0.01	1.93
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	0.00
30	0.01	0.21	0.00	0.00	0.01	0.00	0.00	0.23	**63**	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	0.00
32	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.35	**65**	0.60	1.19	5.18	0.00
33	5.76	1.92	3.17	2.53	0.36	0.00	0.00	13.73	**66**	11.87	5.94	24.01	6.37

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	1.72	1.72	0.04	0.91	0.00	0.00	0.00	4.40	**102**	1.21	7.23	0.00	0.00
68	4.80	9.59	0.00	0.14	0.27	0.00	0.00	14.80	**103**	0.00	0.00	0.00	0.00
69	0.23	4.87	0.00	0.00	0.12	0.00	0.00	5.22	**104**	2.41	4.82	0.00	0.00
70	0.62	1.23	0.00	0.00	0.21	0.00	0.00	2.06	**105**	2.39	2.39	0.00	44.33
71	0.03	2.72	0.00	0.00	0.18	0.00	0.00	2.93	**106**	0.01	0.22	0.00	0.00
72	0.13	5.46	0.00	0.00	0.52	0.00	0.00	6.10	**107**	1.06	1.06	0.03	0.46
73	0.06	4.00	0.00	0.00	0.00	0.00	0.00	4.06	**108**	1.38	1.38	0.00	0.00
74	4.56	6.84	0.00	0.13	0.15	0.00	0.00	11.68	**109**	50.35	25.17	3.22	63.58
75	0.00	0.00	0.00	0.35	0.04	0.00	0.00	0.39	**110**	35.67	5.95	0.04	1.24
76	0.08	1.62	3.17	0.00	0.01	0.00	0.00	4.86	**111**	3.69	3.69	0.00	0.00
77	5.65	50.81	0.00	5.57	1.17	0.00	0.00	63.20	**112**	7.31	3.65	0.00	3.73
78	4.89	4.89	6.68	0.28	0.82	0.00	0.00	17.57	**113**	2.67	2.67	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.01	0.27	0.00	2.03
80	3.43	44.63	0.00	2.90	0.11	0.00	0.00	51.07	**115**	0.29	6.19	0.04	4.93
81	13.83	13.83	4.81	127.10	0.55	0.08	0.00	160.20	**116**	5.34	5.34	0.00	1.27
82	61.09	45.82	0.00	0.08	1.01	0.00	0.00	108.00	**117**	0.18	3.79	0.51	0.00
83	1.15	1.15	0.70	0.83	0.91	0.00	0.00	4.73	**118**	7.11	7.11	1.18	5.60
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	6.93	6.93	0.00	0.21
85	0.45	0.45	0.00	0.87	0.00	0.00	0.00	1.77	**120**	5.16	30.96	0.00	0.00
86	0.05	1.12	0.00	0.00	0.20	0.00	0.00	1.37	**121**	0.39	0.39	0.00	0.00
87	12.60	12.60	0.89	0.31	0.18	0.00	0.00	26.59	**122**	0.00	0.00	0.00	5.95
88	13.57	13.57	1.08	0.54	0.24	0.00	0.00	29.01	**123**	0.00	0.00	0.00	0.00
89	13.75	13.75	0.00	0.68	0.89	0.00	0.13	29.20	**124**	0.00	0.00	0.00	0.00
90	7.63	15.27	0.51	0.72	1.14	0.00	0.00	25.26	**125**	0.00	0.00	0.00	0.00
91	38.97	9.74	0.50	2.67	1.46	0.00	0.00	53.35	**126**	0.00	0.00	0.00	0.00
92	9.67	9.67	0.00	11.08	3.17	0.00	0.00	33.58	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	**128**	0.00	0.06	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.24	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.34	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.30	0.30	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.03	0.72	0.00	0.00
99	0.26	0.77	0.00	0.00	0.02	0.00	0.00	1.04	**134**	24.42	1.88	0.00	0.00
100	0.04	4.49	0.00	0.00	0.04	0.00	0.00	4.56	**135**	0.09	1.96	0.18	0.00
101	0.01	0.87	0.00	0.00	0.05	0.00	0.00	0.93	**136**	12.05	12.05	1.42	0.81

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.07	1.52	0.00	0.70	0.02	0.00	0.00	2.31	**171**	0.09	45.30	0.00	0.00
138	6.41	6.41	0.74	0.35	0.39	0.00	0.00	14.30	**172**	0.01	1.16	0.00	0.00
139	1.18	1.18	0.00	0.36	0.39	0.00	0.00	3.11	**173**	0.00	0.00	0.00	0.00
140	0.01	0.31	0.00	0.00	0.47	0.00	0.00	0.79	**174**	0.00	0.00	0.00	2.38
141	5.32	5.32	0.00	0.00	0.94	0.00	0.00	11.58	**175**	0.00	0.05	0.00	0.00
142	0.03	2.04	0.00	0.00	0.05	0.00	0.00	2.13	**176**	0.00	0.00	0.00	0.00
143	8.98	8.98	0.58	2.58	0.55	0.00	0.00	21.67	**177**	6.03	6.03	2.39	40.42
144	10.90	10.90	0.00	1.11	0.00	0.00	0.00	22.91					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	4.18	4.18	0.84	1.39	0.43	0.00	0.00	11.02					
147	0.01	0.15	0.00	0.00	0.03	0.00	0.00	0.18					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	0.97	9.71	0.00	1.32	1.63	0.00	0.00	13.64					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.02	0.51	0.00	0.00	0.36	0.00	0.00	0.90					
155	0.05	1.03	0.00	0.49	0.01	0.00	0.00	1.58					
156	61.26	5.33	0.81	0.00	0.42	0.00	0.00	67.81					
157	0.50	0.50	0.00	29.54	0.05	0.00	0.00	30.60					
158	0.00	0.09	0.00	0.00	0.01	0.00	0.00	0.11					
159	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.58					
160	5.78	1.65	0.00	0.87	0.00	0.00	0.00	8.31					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.44					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	3.90	23.42	0.00	0.00	0.00	0.00	0.00	27.32					
166	0.34	0.34	0.00	0.00	0.11	0.00	0.01	0.80					
167	0.16	0.63	0.00	0.00	0.18	0.00	0.00	0.97					
168	31.83	22.14	0.00	0.34	0.01	0.00	0.00	54.32					
169	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07					
170	0.01	0.35	0.00	0.00	1.43	0.00	0.00	1.79					

8.9.3 To RMTS Bus

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	1.16	0.02	0.00	0.00	1.18	**34**	0.03	0.51	0.00	1.19
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.02	0.51	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	2.91	2.08	0.03	0.76
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.00	0.12	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	2.45	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.04	8.35	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**46**	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.22	1.22	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**51**	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	2.52	0.39	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.10	4.21	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	0.02
23	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.31	**56**	2.41	0.74	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	0.66	0.47	0.21	0.27
25	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.12	**58**	0.06	0.97	0.00	0.00
26	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.22	**59**	4.94	3.53	0.72	1.79
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	1.49	1.06	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	4.75	1.70	0.01	1.93
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	0.00
30	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.16	**63**	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	0.00
32	0.02	0.16	0.00	0.00	0.00	0.00	0.00	0.18	**65**	0.60	0.85	5.18	0.00
33	5.76	1.37	3.17	1.81	0.00	0.00	0.00	12.11	**66**	11.87	4.24	24.01	1.01

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	1.72	0.82	0.04	0.91	0.00	0.00	0.00	3.50	**102**	1.21	7.23	0.00	0.00
68	4.80	6.85	0.00	0.06	0.00	0.00	0.00	11.71	**103**	0.00	0.00	0.00	0.00
69	0.23	4.87	0.00	0.00	0.00	0.00	0.00	5.10	**104**	2.41	4.82	0.00	0.00
70	0.62	1.23	0.00	0.00	0.01	0.00	0.00	1.86	**105**	2.39	1.71	0.00	5.28
71	0.03	2.72	0.00	0.00	0.01	0.00	0.00	2.76	**106**	0.01	0.15	0.00	0.00
72	0.13	5.46	0.00	0.00	0.02	0.00	0.00	5.60	**107**	1.06	0.50	0.03	0.33
73	0.06	4.00	0.00	0.00	0.00	0.00	0.00	4.06	**108**	1.38	0.39	0.00	0.00
74	4.56	6.84	0.00	0.06	0.00	0.00	0.00	11.47	**109**	50.35	11.99	3.22	18.16
75	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.17	**110**	35.67	4.25	0.04	0.10
76	0.08	1.16	3.17	0.00	0.00	0.00	0.00	4.40	**111**	3.69	2.64	0.00	0.00
77	5.65	50.81	0.00	3.98	0.02	0.00	0.00	60.45	**112**	7.31	2.61	0.00	3.73
78	4.89	3.49	6.68	0.13	0.01	0.00	0.00	15.21	**113**	2.67	1.91	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.01	0.20	0.00	0.97
80	3.43	44.63	0.00	2.07	0.00	0.00	0.00	50.14	**115**	0.29	4.42	0.04	0.82
81	13.83	6.59	4.81	60.52	0.01	0.08	0.00	85.84	**116**	5.34	3.81	0.00	0.91
82	61.09	45.82	0.00	0.06	0.02	0.00	0.00	106.98	**117**	0.18	1.08	0.51	0.00
83	1.15	0.82	0.70	0.39	0.01	0.00	0.00	3.08	**118**	7.11	5.08	1.18	0.89
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	6.93	3.30	0.00	0.10
85	0.45	0.32	0.00	0.08	0.00	0.00	0.00	0.85	**120**	5.16	30.96	0.00	0.00
86	0.05	0.32	0.00	0.00	0.00	0.00	0.00	0.38	**121**	0.39	0.28	0.00	0.00
87	12.60	9.00	0.89	0.07	0.00	0.00	0.00	22.57	**122**	0.00	0.00	0.00	2.83
88	13.57	9.69	1.08	0.39	0.00	0.00	0.00	24.74	**123**	0.00	0.00	0.00	0.00
89	9.82	3.93	0.00	0.48	0.01	0.00	0.13	14.37	**124**	0.00	0.00	0.00	0.00
90	7.63	15.27	0.51	0.52	0.02	0.00	0.00	23.94	**125**	0.00	0.00	0.00	0.00
91	38.97	6.96	0.50	1.91	0.02	0.00	0.00	48.37	**126**	0.00	0.00	0.00	0.00
92	9.67	6.91	0.00	31.66	0.05	0.00	0.00	48.29	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.06	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.30	0.30	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.03	0.72	0.00	0.00
99	0.26	0.77	0.00	0.00	0.00	0.00	0.00	1.03	**134**	24.42	1.34	0.00	0.00
100	0.04	4.49	0.00	0.00	0.00	0.00	0.00	4.52	**135**	0.09	0.93	0.18	0.00
101	0.01	0.87	0.00	0.00	0.00	0.00	0.00	0.87	**136**	12.05	5.74	1.42	0.58

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.07	1.09	0.00	0.70	0.04	0.00	0.00	1.90	**171**	0.09	45.30	0.00	0.00
138	6.41	4.58	0.74	0.08	0.00	0.00	0.00	11.82	**172**	0.01	1.16	0.00	0.00
139	1.18	0.84	0.00	0.26	0.00	0.00	0.00	2.28	**173**	0.00	0.00	0.00	0.00
140	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.17	**174**	0.00	0.00	0.00	1.70
141	5.32	3.80	0.00	0.00	0.01	0.00	0.00	9.12	**175**	0.00	0.05	0.00	0.00
142	0.03	2.04	0.00	0.00	0.00	0.00	0.00	2.08	**176**	0.00	0.00	0.00	0.00
143	8.98	6.42	0.58	0.74	0.01	0.00	0.00	16.72	**177**	6.03	6.03	2.39	19.25
144	10.90	7.79	0.00	0.53	0.00	0.00	0.00	19.22					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	4.18	2.98	0.84	1.00	0.00	0.00	0.00	9.00					
147	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.11					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	0.97	9.71	0.00	0.38	0.03	0.00	0.00	11.08					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.02	0.37	0.00	0.00	0.01	0.00	0.00	0.40					
155	0.05	0.29	0.00	0.08	0.00	0.00	0.00	0.42					
156	61.26	3.80	0.81	0.00	0.00	0.00	0.00	65.88					
157	0.50	0.14	0.00	2.95	0.00	0.00	0.00	3.60					
158	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.03					
159	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
160	5.78	1.65	0.00	0.21	0.00	0.00	0.00	7.65					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	3.90	23.42	0.00	0.00	0.00	0.00	0.00	27.32					
166	0.34	0.24	0.00	0.00	0.00	0.00	0.01	0.59					
167	0.16	0.63	0.00	0.00	0.00	0.00	0.00	0.79					
168	31.83	22.14	0.00	0.10	0.00	0.00	0.00	54.06					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.35	0.00	0.00	0.02	0.00	0.00	0.38					

8.9.4 To RMTS - Hybrid BRT

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	5.81	0.02	0.00	0.00	5.83	**34**	0.03	0.71	0.00	1.19
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.02	0.51	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	2.91	2.91	0.03	1.07
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.00	0.17	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	2.45	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.04	8.35	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**46**	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.22	1.22	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**51**	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	2.52	0.39	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.10	4.21	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	0.02
23	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.36	**56**	2.41	0.74	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	0.66	0.66	0.21	2.06
25	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.16	**58**	0.06	1.36	0.00	0.00
26	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.22	**59**	4.94	4.94	0.72	1.79
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	1.49	1.49	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	4.75	2.37	0.01	1.93
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	0.00
30	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.22	**63**	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	0.00
32	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.35	**65**	0.60	1.19	5.18	0.00
33	5.76	1.92	3.17	2.53	0.00	0.00	0.00	13.38	**66**	11.87	5.94	24.01	2.12

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	1.72	1.72	0.04	0.91	0.00	0.00	0.00	4.40	**102**	1.21	7.23	0.00	0.00
68	4.80	9.59	0.00	0.14	0.00	0.00	0.00	14.53	**103**	0.00	0.00	0.00	0.00
69	0.23	4.87	0.00	0.00	0.00	0.00	0.00	5.10	**104**	2.41	4.82	0.00	0.00
70	0.62	1.23	0.00	0.00	0.02	0.00	0.00	1.87	**105**	2.39	2.39	0.00	5.28
71	0.03	2.72	0.00	0.00	0.02	0.00	0.00	2.77	**106**	0.01	0.22	0.00	0.00
72	0.13	5.46	0.00	0.00	0.05	0.00	0.00	5.64	**107**	1.06	1.06	0.03	0.46
73	0.06	4.00	0.00	0.00	0.00	0.00	0.00	4.06	**108**	1.38	1.38	0.00	0.00
74	4.56	6.84	0.00	0.13	0.00	0.00	0.00	11.54	**109**	50.35	25.17	3.22	136.2
75	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.35	**110**	35.67	5.95	0.04	0.21
76	0.08	1.62	3.17	0.00	0.00	0.00	0.00	4.86	**111**	3.69	3.69	0.00	0.00
77	5.65	50.81	0.00	5.57	0.06	0.00	0.00	62.08	**112**	7.31	3.65	0.00	3.73
78	4.89	4.89	6.68	0.28	0.04	0.00	0.00	16.79	**113**	2.67	2.67	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.01	0.27	0.00	4.35
80	3.43	44.63	0.00	2.90	0.01	0.00	0.00	50.97	**115**	0.29	6.19	0.04	0.82
81	13.83	13.83	4.81	272.36	0.03	0.08	0.01	304.94	**116**	5.34	5.34	0.00	1.27
82	61.09	45.82	0.00	0.08	0.02	0.00	0.00	107.01	**117**	0.18	3.79	0.51	0.00
83	1.15	1.15	0.70	0.83	0.01	0.00	0.00	3.84	**118**	7.11	7.11	1.18	1.87
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	6.93	6.93	0.00	0.21
85	0.45	0.45	0.00	0.29	0.00	0.00	0.00	1.19	**120**	5.16	30.96	0.00	0.00
86	0.05	1.12	0.00	0.00	0.00	0.00	0.00	1.18	**121**	0.39	0.39	0.00	0.00
87	12.60	12.60	0.89	0.10	0.00	0.00	0.00	26.20	**122**	0.00	0.00	0.00	12.74
88	13.57	13.57	1.08	0.54	0.00	0.00	0.01	28.77	**123**	0.00	0.00	0.00	0.00
89	13.75	13.75	0.00	0.68	0.01	0.00	0.27	28.45	**124**	0.00	0.00	0.00	0.00
90	7.63	15.27	0.51	0.72	0.05	0.00	0.00	24.18	**125**	0.00	0.00	0.00	0.00
91	38.97	9.74	0.50	2.67	0.07	0.00	0.00	51.96	**126**	0.00	0.00	0.00	0.00
92	9.67	9.67	0.00	31.66	0.15	0.00	0.00	51.15	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.06	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.30	0.30	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.03	0.72	0.00	0.00
99	0.26	0.77	0.00	0.00	0.00	0.00	0.00	1.03	**134**	24.42	1.88	0.00	0.00
100	0.04	4.49	0.00	0.00	0.00	0.00	0.00	4.52	**135**	0.09	1.96	0.18	0.00
101	0.01	0.87	0.00	0.00	0.00	0.00	0.00	0.87	**136**	12.05	12.05	1.42	0.81

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.07	1.52	0.00	0.70	0.04	0.00	0.00	2.33	**171**	0.09	45.30	0.00	0.00
138	6.41	6.41	0.74	0.12	0.00	0.00	0.00	13.68	**172**	0.01	1.16	0.00	0.00
139	1.18	1.18	0.00	0.36	0.00	0.00	0.00	2.72	**173**	0.00	0.00	0.00	0.00
140	0.01	0.31	0.00	0.00	0.00	0.00	0.00	0.33	**174**	0.00	0.00	0.00	2.38
141	5.32	5.32	0.00	0.00	0.01	0.00	0.00	10.64	**175**	0.00	0.05	0.00	0.00
142	0.03	2.04	0.00	0.00	0.00	0.00	0.00	2.08	**176**	0.00	0.00	0.00	0.00
143	8.98	8.98	0.58	1.84	0.01	0.00	0.00	20.39	**177**	6.03	6.03	2.39	86.62
144	10.90	10.90	0.00	1.11	0.00	0.00	0.00	22.91					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	4.18	4.18	0.84	1.39	0.00	0.00	0.00	10.60					
147	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.16					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	0.97	9.71	0.00	2.84	0.03	0.00	0.00	13.54					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.02	0.51	0.00	0.00	0.01	0.00	0.00	0.54					
155	0.05	1.03	0.00	0.16	0.00	0.00	0.00	1.24					
156	61.26	5.33	0.81	0.00	0.00	0.00	0.00	67.40					
157	0.50	0.50	0.00	2.95	0.00	0.00	0.00	3.96					
158	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.09					
159	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
160	5.78	1.65	0.00	0.29	0.00	0.00	0.00	7.73					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	3.90	23.42	0.00	0.00	0.00	0.00	0.00	27.32					
166	0.34	0.34	0.00	0.00	0.00	0.00	0.01	0.69					
167	0.16	0.63	0.00	0.00	0.00	0.00	0.00	0.79					
168	31.83	22.14	0.00	0.24	0.00	0.00	0.00	54.21					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.35	0.00	0.00	0.02	0.00	0.00	0.38					

8.9.5 To Shared 3W

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	0.19	0.02	0.00	0.00	0.21	**34**	0.03	0.03	0.00	0.08
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.02	0.02	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	2.91	1.38	0.03	0.76
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.00	0.05	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	2.45	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.04	0.40	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**46**	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	0.87	0.06	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**51**	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	1.80	0.02	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.10	0.20	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	0.00
23	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.26	**56**	1.15	0.21	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	0.47	0.03	0.21	0.05
25	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	**58**	0.06	0.39	0.00	0.00
26	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.02	**59**	4.94	0.24	0.72	0.85
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	1.49	0.71	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	3.39	0.11	0.01	0.92
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	0.00
30	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.04	**63**	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	0.00
32	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.06	**65**	0.28	0.34	5.18	0.00
33	4.11	0.27	3.17	0.12	0.02	0.00	0.00	7.69	**66**	8.48	0.85	24.01	0.30

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	1.72	0.49	0.04	0.26	0.00	0.00	0.00	2.52	**102**	1.21	0.34	0.00	0.00
68	3.43	0.46	0.00	0.01	0.02	0.00	0.00	3.91	**103**	0.00	0.00	0.00	0.00
69	0.23	0.23	0.00	0.00	0.01	0.00	0.00	0.47	**104**	1.15	0.23	0.00	0.00
70	0.29	0.06	0.00	0.00	0.01	0.00	0.00	0.36	**105**	1.14	0.11	0.00	0.35
71	0.03	0.13	0.00	0.00	0.01	0.00	0.00	0.17	**106**	0.01	0.10	0.00	0.00
72	0.13	0.26	0.00	0.00	0.02	0.00	0.00	0.41	**107**	1.06	0.50	0.03	0.02
73	0.06	0.19	0.00	0.00	0.00	0.00	0.00	0.25	**108**	0.99	0.07	0.00	0.00
74	2.17	0.33	0.00	0.01	0.01	0.00	0.00	2.51	**109**	35.96	7.19	3.22	3.03
75	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	**110**	25.48	0.28	0.04	0.10
76	0.08	0.08	3.17	0.00	0.00	0.00	0.00	3.32	**111**	1.76	0.18	0.00	0.00
77	2.69	2.42	0.00	0.27	0.02	0.00	0.00	5.39	**112**	5.22	0.17	0.00	1.07
78	3.49	0.23	6.68	0.01	0.04	0.00	0.00	10.46	**113**	1.91	0.13	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.01	0.01	0.00	0.10
80	2.45	2.13	0.00	0.14	0.02	0.00	0.00	4.74	**115**	0.29	0.29	0.04	0.04
81	13.83	3.95	4.81	6.05	0.03	0.08	0.00	28.75	**116**	3.81	1.53	0.00	0.60
82	61.09	2.18	0.00	0.04	0.10	0.00	0.00	63.41	**117**	0.18	0.18	0.51	0.00
83	1.15	0.05	0.70	0.04	0.09	0.00	0.00	2.03	**118**	5.08	2.03	1.18	0.09
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	4.95	0.99	0.00	0.01
85	0.21	0.06	0.00	0.01	0.00	0.00	0.00	0.29	**120**	2.46	1.47	0.00	0.00
86	0.05	0.05	0.00	0.00	0.01	0.00	0.00	0.12	**121**	0.28	0.02	0.00	0.00
87	9.00	0.60	0.89	0.10	0.01	0.00	0.00	10.60	**122**	0.00	0.00	0.00	0.28
88	6.46	0.65	1.08	0.03	0.02	0.00	0.00	8.24	**123**	0.00	0.00	0.00	0.00
89	9.82	0.65	0.00	0.03	0.06	0.00	0.13	10.70	**124**	0.00	0.00	0.00	0.00
90	5.45	0.73	0.51	0.52	0.05	0.00	0.00	7.25	**125**	0.00	0.00	0.00	0.00
91	27.84	0.46	0.50	0.13	0.02	0.00	0.00	28.96	**126**	0.00	0.00	0.00	0.00
92	4.60	0.46	0.00	0.53	0.05	0.00	0.00	5.64	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.02	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.30	0.09	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.03	0.03	0.00	0.00
99	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.16	**134**	17.44	0.09	0.00	0.00
100	0.04	0.21	0.00	0.00	0.00	0.00	0.00	0.25	**135**	0.09	0.56	0.18	0.00
101	0.01	0.04	0.00	0.00	0.01	0.00	0.00	0.05	**136**	12.05	3.44	1.42	0.23

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.07	0.07	0.00	0.70	0.04	0.00	0.00	0.88	**171**	0.09	2.16	0.00	0.00
138	4.58	0.92	0.74	0.06	0.02	0.00	0.00	6.31	**172**	0.01	0.06	0.00	0.00
139	0.56	0.06	0.00	0.02	0.02	0.00	0.00	0.66	**173**	0.00	0.00	0.00	0.00
140	0.01	0.09	0.00	0.00	0.03	0.00	0.00	0.13	**174**	0.00	0.00	0.00	0.11
141	3.80	0.25	0.00	0.00	0.05	0.00	0.00	4.11	**175**	0.00	0.00	0.00	0.00
142	0.03	0.10	0.00	0.00	0.00	0.00	0.00	0.13	**176**	0.00	0.00	0.00	0.00
143	6.42	1.28	0.58	0.12	0.03	0.00	0.00	8.43	**177**	4.31	0.29	2.39	1.92
144	10.90	0.52	0.00	0.05	0.00	0.00	0.00	11.47					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	2.98	1.19	0.84	0.66	0.02	0.00	0.00	5.71					
147	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.02					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	0.97	0.46	0.00	0.06	0.08	0.00	0.00	1.57					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.02	0.07	0.00	0.00	0.02	0.00	0.00	0.11					
155	0.05	0.49	0.00	0.08	0.00	0.00	0.00	0.62					
156	43.76	2.54	0.81	0.00	0.02	0.00	0.00	47.12					
157	0.24	0.24	0.00	2.11	0.01	0.00	0.00	2.59					
158	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.07					
159	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06					
160	5.78	0.47	0.00	0.21	0.00	0.00	0.00	6.46					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	2.79	1.12	0.00	0.00	0.00	0.00	0.00	3.90					
166	0.16	0.10	0.00	0.00	0.01	0.00	0.01	0.27					
167	0.16	0.09	0.00	0.00	0.02	0.00	0.00	0.26					
168	22.73	1.05	0.00	0.02	0.00	0.00	0.00	23.80					
169	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
170	0.01	0.02	0.00	0.00	0.07	0.00	0.00	0.09					

8.9.6 To E-Rickshaw

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	0.19	0.02	0.00	0.00	0.21	**34**	0.03	0.20	0.00	0.08
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.02	0.02	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	2.91	1.38	0.03	1.07
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.00	0.08	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	2.45	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.04	0.40	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**46**	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.22	0.35	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**51**	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	1.80	0.11	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.10	0.60	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	0.00
23	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.31	**56**	1.72	0.35	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	0.66	0.19	0.21	0.05
25	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.05	**58**	0.06	0.65	0.00	0.00
26	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.07	**59**	4.94	1.41	0.72	1.28
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	1.49	1.06	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	4.75	0.68	0.01	1.38
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	0.00
30	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.07	**63**	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	0.00
32	0.02	0.10	0.00	0.00	0.00	0.00	0.00	0.11	**65**	0.43	0.57	5.18	0.00
33	4.11	0.91	3.17	0.12	0.00	0.00	0.00	8.32	**66**	11.87	2.83	24.01	0.61

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	1.72	0.82	0.04	0.43	0.00	0.00	0.00	3.02	**102**	1.21	2.07	0.00	0.00
68	4.80	2.74	0.00	0.01	0.01	0.00	0.00	7.55	**103**	0.00	0.00	0.00	0.00
69	0.23	0.23	0.00	0.00	0.00	0.00	0.00	0.46	**104**	1.72	1.38	0.00	0.00
70	0.44	0.35	0.00	0.00	0.01	0.00	0.00	0.80	**105**	1.71	0.68	0.00	0.35
71	0.03	0.78	0.00	0.00	0.01	0.00	0.00	0.81	**106**	0.01	0.10	0.00	0.00
72	0.13	1.56	0.00	0.00	0.02	0.00	0.00	1.71	**107**	1.06	0.50	0.03	0.02
73	0.06	0.19	0.00	0.00	0.00	0.00	0.00	0.25	**108**	1.38	0.39	0.00	0.00
74	3.26	0.33	0.00	0.01	0.00	0.00	0.00	3.59	**109**	35.96	11.99	3.22	3.03
75	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	**110**	35.67	1.70	0.04	0.44
76	0.08	0.46	3.17	0.00	0.00	0.00	0.00	3.70	**111**	2.64	1.05	0.00	0.00
77	4.03	7.26	0.00	0.27	0.02	0.00	0.00	11.58	**112**	7.31	0.52	0.00	1.78
78	4.89	1.40	6.68	0.01	0.01	0.00	0.00	13.00	**113**	2.67	0.76	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.01	0.08	0.00	0.10
80	3.43	12.75	0.00	0.14	0.02	0.00	0.00	16.35	**115**	0.29	1.77	0.04	0.04
81	13.83	6.59	4.81	6.05	0.01	0.08	0.00	31.37	**116**	3.81	2.54	0.00	0.60
82	61.09	6.55	0.00	0.06	0.02	0.00	0.00	67.71	**117**	0.18	1.08	0.51	0.00
83	1.15	0.33	0.70	0.04	0.01	0.00	0.00	2.23	**118**	7.11	3.38	1.18	0.09
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	6.93	1.98	0.00	0.01
85	0.32	0.21	0.00	0.04	0.00	0.00	0.00	0.57	**120**	3.69	4.42	0.00	0.00
86	0.05	0.32	0.00	0.00	0.00	0.00	0.00	0.38	**121**	0.39	0.11	0.00	0.00
87	12.60	3.60	0.89	0.31	0.00	0.00	0.00	17.41	**122**	0.00	0.00	0.00	0.28
88	9.69	3.88	1.08	0.15	0.01	0.00	0.00	14.82	**123**	0.00	0.00	0.00	0.00
89	13.75	3.93	0.00	0.19	0.01	0.00	0.13	18.01	**124**	0.00	0.00	0.00	0.00
90	5.45	4.36	0.51	0.52	0.02	0.00	0.00	10.85	**125**	0.00	0.00	0.00	0.00
91	38.97	2.78	0.50	0.13	0.02	0.00	0.00	42.41	**126**	0.00	0.00	0.00	0.00
92	6.91	1.38	0.00	0.53	0.05	0.00	0.00	8.86	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.03	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.30	0.14	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.03	0.03	0.00	0.00
99	0.18	0.22	0.00	0.00	0.00	0.00	0.00	0.40	**134**	17.44	0.27	0.00	0.00
100	0.04	1.28	0.00	0.00	0.00	0.00	0.00	1.32	**135**	0.09	0.93	0.18	0.00
101	0.01	0.25	0.00	0.00	0.00	0.00	0.00	0.25	**136**	12.05	5.74	1.42	0.39

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.07	0.22	0.00	0.70	0.04	0.00	0.00	1.03	**171**	0.09	2.16	0.00	0.00
138	4.58	1.83	0.74	0.08	0.00	0.00	0.00	7.24	**172**	0.01	0.17	0.00	0.00
139	0.84	0.34	0.00	0.02	0.00	0.00	0.00	1.20	**173**	0.00	0.00	0.00	0.00
140	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.17	**174**	0.00	0.00	0.00	0.11
141	3.80	0.76	0.00	0.00	0.01	0.00	0.00	4.57	**175**	0.00	0.01	0.00	0.00
142	0.03	0.10	0.00	0.00	0.00	0.00	0.00	0.13	**176**	0.00	0.00	0.00	0.00
143	8.98	4.28	0.58	0.12	0.01	0.00	0.00	13.97	**177**	4.31	1.72	2.39	1.92
144	10.90	3.11	0.00	0.16	0.00	0.00	0.00	14.17					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	4.18	1.99	0.84	1.00	0.00	0.00	0.00	8.01					
147	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.05					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	0.97	2.77	0.00	0.06	0.03	0.00	0.00	3.83					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.02	0.15	0.00	0.00	0.01	0.00	0.00	0.18					
155	0.05	0.49	0.00	0.12	0.00	0.00	0.00	0.66					
156	61.26	3.80	0.81	0.00	0.00	0.00	0.00	65.88					
157	0.36	0.36	0.00	17.72	0.00	0.00	0.00	18.44					
158	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.07					
159	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
160	5.78	0.79	0.00	0.21	0.00	0.00	0.00	6.78					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	3.90	6.69	0.00	0.00	0.00	0.00	0.00	10.59					
166	0.24	0.16	0.00	0.00	0.00	0.00	0.01	0.41					
167	0.16	0.30	0.00	0.00	0.00	0.00	0.00	0.46					
168	22.73	6.33	0.00	0.02	0.00	0.00	0.00	29.08					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.10	0.00	0.00	0.02	0.00	0.00	0.13					

8.10 Zonewise trip demand and avg. trip length in Horizon Year 2023

	Car		2W		3W		Shared 3W		RMTS		BRTS	
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
1	0.00	0.00	0.00	0.00	0.00	0.00	756.72	19.70	34.00	15.90	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	176.09	17.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00	11.73	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.00	8.51	0.00	
19	110.47	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	279.19	12.20	132.95	12.70	0.00	0.00	0.00	0.00	1.00	7.50	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	0.00	0.00	458.51	6.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26	0.00	0.00	621.20	8.70	0.00	0.00	0.00	0.00	4.00	3.27	0.00	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.00	7.82	0.00	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30	0.00	0.00	621.29	5.40	0.00	0.00	0.00	0.00	3.00	7.53	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32	0.00	0.00	999.18	3.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33	890.03	11.61	2856.27	8.80	3140.00	9.40	837.58	13.40	106.00	7.29	1514.12	
34	0.00	0.00	2121.03	4.36	0.00	0.00	4956.50	5.48	33.00	5.39	0.00	
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.00	6.39	0.00	

	Car		2W		3W		Shared 3W		RMTS		BRTS	
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
36	0.00	0.00	1512.00	6.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160.93	
38	5479.09	6.93	10899.27	7.04	95.82	7.80	4007.64	5.15	317.52	5.83	3081.74	
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	11.82	0.00	
40	0.00	0.00	249.63	9.20	0.00	0.00	0.00	0.00	43.00	8.62	0.00	
41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
42	0.00	0.00	0.00	0.00	1216.13	13.10	0.00	0.00	0.00	0.00	0.00	
43	0.00	0.00	2762.27	12.04	0.00	0.00	0.00	0.00	64.00	9.70	0.00	
44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
47	378.43	17.13	278.72	15.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
52	3072.59	15.50	576.45	9.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	3.43	0.00	
54	0.00	0.00	6263.72	9.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
55	0.00	0.00	0.00	0.00	0.00	0.00	148.46	7.50	15.00	1.67	0.00	
56	186.78	15.80	552.51	14.35	0.00	0.00	0.00	0.00	22.00	6.62	0.00	
57	1847.99	7.58	1977.02	7.43	622.62	7.90	219.71	18.43	88.00	5.10	92.80	
58	0.00	0.00	4042.04	5.33	0.00	0.00	0.00	0.00	136.00	3.24	0.00	
59	801.40	3.99	14689.28	6.81	2156.17	6.60	5334.47	4.19	148.00	2.37	346.53	
60	5327.15	5.70	24997.14	7.88	0.00	0.00	0.00	0.00	118.65	8.50	2606.23	
61	613.57	9.09	7064.52	5.72	20.00	5.50	5729.31	4.53	0.00	0.00	67.83	
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
65	543.08	5.55	1777.77	8.82	15430.36	4.60	0.00	0.00	159.00	2.42	192.73	
66	2008.26	9.68	19435.23	7.65	13102.02	11.02	6950.53	7.04	185.90	2.39	3248.15	
67	726.79	5.10	5119.12	4.48	128.97	4.19	2716.88	4.60	13.00	2.37	0.00	
68	6.10	6.90	14274.12	9.01	0.00	0.00	201.25	9.30	54.00	4.38	77.15	
69	0.00	0.00	14490.62	6.49	0.00	0.00	0.00	0.00	35.00	7.32	0.00	
70	2757.67	8.37	1836.28	10.26	0.00	0.00	0.00	0.00	103.00	9.42	0.00	
71	0.00	0.00	2023.00	11.66	0.00	0.00	0.00	0.00	90.00	9.65	0.00	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
72	0.00	0.00	8118.84	9.09	0.00	0.00	0.00	0.00	171.00	10.22	0.00	
73	0.00	0.00	3965.29	9.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
74	6796.05	9.40	6789.12	9.93	0.00	0.00	63.71	14.10	8.00	12.35	0.00	
75	0.00	0.00	0.00	0.00	0.00	0.00	521.11	8.80	2.00	12.14	0.00	
76	0.00	0.00	4813.87	7.00	3140.00	9.40	0.00	0.00	1.00	4.45	0.00	
77	24054.20	5.62	16802.79	14.35	0.00	0.00	16567.00	7.78	581.00	7.17	0.00	
78	4077.36	5.11	14562.22	7.61	19873.68	8.07	837.99	8.50	407.00	5.09	715.63	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.42	0.00	
80	4782.99	2.57	10217.76	17.14	0.00	0.00	8619.45	6.94	113.00	3.09	0.00	
81	6288.08	4.21	45286.91	4.45	15737.02	2.20	26006.49	17.50	298.10	5.77	3144.25	
82	1342.11	13.05	45453.90	10.25	0.00	0.00	244.24	4.85	167.00	9.73	397.40	
83	545.09	6.10	3419.20	5.77	2078.49	5.40	1229.06	9.30	449.00	8.58	212.59	
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
85	3164.87	8.62	1332.18	5.50	0.00	0.00	432.69	9.00	0.00	0.00	0.00	
86	0.00	0.00	3342.32	2.67	0.00	0.00	0.00	0.00	59.00	5.80	0.00	
87	3952.36	5.02	37511.03	5.78	2637.60	4.10	309.24	4.40	55.00	5.98	229.82	
88	9878.54	8.28	40389.25	6.38	3217.87	1.00	1608.94	5.20	48.00	3.52	918.85	
89	10598.79	1.86	40924.91	2.41	0.00	0.00	2016.98	6.35	177.00	4.60	805.43	
90	2443.39	5.77	22716.07	9.19	1506.42	6.85	2146.67	4.60	563.00	4.99	424.51	
91	2314.41	12.21	28997.25	5.67	1502.27	5.10	7941.51	7.30	722.00	6.92	0.00	
92	2266.67	6.50	28771.48	7.26	0.00	0.00	1221.63	26.70	1570.60	8.46	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	12.45	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.00	9.51	0.00	
96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.00	10.77	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
99	2191.11	8.10	764.51	10.25	0.00	0.00	0.00	0.00	5.00	6.24	0.00	
100	0.00	0.00	2225.52	12.77	0.00	0.00	0.00	0.00	6.00	9.23	79.10	
101	0.00	0.00	429.22	13.50	0.00	0.00	0.00	0.00	16.00	4.64	0.00	
102	3326.22	7.70	3588.46	11.95	0.00	0.00	0.00	0.00	25.00	4.98	311.67	
103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.00	5.64	0.00	
104	13047.03	1.89	7166.48	9.19	0.00	0.00	0.00	0.00	378.00	7.31	0.00	
105	2946.67	6.41	7111.80	8.04	0.00	0.00	2443.25	11.05	253.00	6.75	0.00	
106	0.00	0.00	645.51	6.28	0.00	0.00	0.00	0.00	3.00	4.79	0.00	
107	1077.78	5.51	3146.87	3.94	76.05	7.80	687.31	10.78	21.00	3.51	528.99	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
108	1420.87	5.88	4104.97	2.79	0.00	0.00	0.00	0.00	0.00	0.00	339.71	
109	31200.19	8.88	74919.73	4.21	9597.24	6.11	14555.13	17.90	969.00	5.47	3378.15	
110	2244.30	12.91	17695.70	5.69	113.20	4.10	613.49	7.20	287.00	7.79	929.17	
111	5866.67	5.00	10985.23	4.94	0.00	0.00	0.00	0.00	546.00	6.83	231.44	
112	661.08	10.46	10871.55	6.86	0.00	0.00	11101.93	4.00	439.00	8.53	652.17	
113	1256.13	8.29	7953.51	6.52	0.00	0.00	0.00	0.00	3.00	3.32	0.00	
114	0.00	0.00	815.99	7.83	0.00	0.00	464.61	16.20	0.00	0.00	0.00	
115	0.00	0.00	18408.79	5.19	110.89	8.20	2443.25	3.80	241.00	7.78	528.78	
116	10324.87	6.45	17484.35	5.36	0.00	0.00	4155.61	5.93	23.10	5.56	2600.27	
117	0.00	0.00	11278.37	2.30	382.63	13.91	0.00	0.00	0.00	0.00	468.43	
118	14004.70	3.29	23265.28	5.26	3860.95	5.60	3053.60	8.81	52.80	1.67	1147.80	
119	8867.62	3.17	20634.77	3.50	0.00	0.00	622.62	7.90	93.00	4.81	848.56	
120	5695.60	6.93	15359.40	11.21	0.00	0.00	0.00	0.00	148.00	7.25	626.22	
121	126.53	7.80	1146.83	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
122	1303.00	9.80	0.00	0.00	0.00	0.00	1361.35	17.33	40.00	11.51	0.00	
123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	107.00	12.59	311.67	
127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
128	0.00	0.00	24.23	18.00	0.00	0.00	0.00	0.00	5.00	13.66	0.00	
129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	107.50	
131	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
132	363.40	10.80	449.59	9.95	0.00	0.00	0.00	0.00	30.00	11.02	0.00	
133	0.00	0.00	2132.31	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
134	3072.59	15.50	5591.19	4.02	0.00	0.00	0.00	0.00	27.00	2.94	345.58	
135	0.00	0.00	5836.82	4.54	540.08	3.80	0.00	0.00	89.00	4.79	175.02	
136	4002.87	5.38	37642.27	4.10	4451.52	3.80	2528.77	5.24	211.05	6.64	2845.48	
137	0.00	0.00	4534.77	6.29	0.00	0.00	2077.23	1.80	192.00	1.67	858.67	
138	6623.52	4.07	19070.74	5.49	2211.78	7.33	350.93	5.80	116.00	6.70	543.08	
139	7039.79	7.58	3511.64	4.50	0.00	0.00	1075.45	6.83	116.00	6.52	154.29	
140	0.00	0.00	912.46	4.30	0.00	0.00	0.00	0.00	140.00	7.41	0.00	
141	2930.50	6.75	15825.92	5.59	0.00	0.00	0.00	0.00	280.00	7.64	0.00	
142	0.00	0.00	2026.28	9.30	0.00	0.00	0.00	0.00	16.00	5.82	0.00	
143	4586.52	7.09	26732.64	4.61	1720.69	2.10	3838.00	10.54	163.00	7.19	1191.65	
144	2521.48	5.89	35689.73	5.07	0.00	0.00	3624.19	7.21	0.00	0.00	2585.65	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	362.90	
146	2054.13	3.97	13674.94	7.38	2757.86	4.05	4564.62	5.48	139.70	6.12	1538.58	
147	0.00	0.00	444.19	6.40	0.00	0.00	0.00	0.00	5.00	3.83	0.00	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
149	245.15	3.60	2889.63	15.36	0.00	0.00	303.27	17.62	90.00	12.69	2032.17	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
154	0.00	0.00	1525.91	6.46	0.00	0.00	0.00	0.00	20.00	12.74	0.00	
155	0.00	0.00	3072.90	2.80	0.00	0.00	484.98	6.50	2.00	4.15	0.00	
156	137.42	26.70	7926.88	8.75	2402.17	6.24	3.00	6.15	124.00	7.04	1261.04	
157	964.54	1.40	1489.03	2.50	0.00	0.00	8792.00	6.60	3.00	11.15	0.00	
158	0.00	0.00	264.98	3.10	0.00	0.00	0.00	0.00	7.00	8.46	0.00	
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.00	11.58	0.00	
160	176.09	17.00	2459.53	10.37	0.00	0.00	865.38	5.60	0.00	0.00	2032.17	
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
163	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.00	14.07	0.00	
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
165	227.91	8.00	11616.77	12.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
166	2191.11	3.50	1010.47	6.10	0.00	0.00	0.00	0.00	33.00	7.47	0.00	
167	49.09	6.20	468.54	12.85	0.00	0.00	0.00	0.00	89.00	8.51	0.00	
168	970.20	25.53	4118.34	19.83	0.00	0.00	252.58	11.20	2.00	9.04	0.00	
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.00	10.71	0.00	
170	0.00	0.00	525.15	8.80	0.00	0.00	0.00	0.00	79.00	11.85	0.00	
171	0.00	0.00	5861.59	22.40	0.00	0.00	0.00	0.00	10.00	12.54	0.00	
172	0.00	0.00	576.45	11.50	0.00	0.00	0.00	0.00	6.00	12.68	0.00	
173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.00	14.55	0.00	
174	0.00	0.00	0.00	0.00	0.00	0.00	1182.93	12.68	12.00	15.95	0.00	
175	0.00	0.00	11.82	15.80	0.00	0.00	0.00	0.00	19.00	15.46	0.00	
176	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.00	15.50	0.00	
177	2547.99	15.64	1381.13	17.50	263.98	27.00	9254.27	15.92	0.00	0.00	0.00	

8.11 Zonewise trip demand and avg. trip length in Horizon Year 2028

	Car		2W		3W		Shared 3W		RMTS		BRTS	
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
1	0.00	0.00	0.00	0.00	0.00	0.00	756.72	19.70	34.00	15.90	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	176.09	17.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00	11.73	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.00	8.51	0.00	
19	110.47	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	279.19	12.20	132.95	12.70	0.00	0.00	0.00	0.00	1.00	7.50	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	0.00	0.00	458.51	6.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26	0.00	0.00	621.20	8.70	0.00	0.00	0.00	0.00	4.00	3.27	0.00	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.00	7.82	0.00	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30	0.00	0.00	621.29	5.40	0.00	0.00	0.00	0.00	3.00	7.53	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32	0.00	0.00	999.18	3.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33	891.55	11.61	6424.80	8.80	3140.00	9.40	887.89	13.40	119.50	7.29	1533.41	
34	1.53	0.00	5689.56	4.36	0.00	0.00	5006.81	5.48	46.50	5.39	19.29	
35	1.53	0.00	3568.53	0.00	0.00	0.00	50.31	0.00	32.50	6.39	19.29	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
36	1759.95	0.00	2389.91	6.30	0.00	0.00	268.86	0.00	29.00	0.00	38.57	
37	335.53	0.00	11363.47	0.00	0.00	0.00	61.06	0.00	41.75	0.00	260.28	
38	5479.09	6.93	10899.27	7.04	95.82	7.80	4007.64	5.15	317.52	5.83	3081.74	
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	11.82	0.00	
40	0.00	0.00	249.63	9.20	0.00	0.00	0.00	0.00	43.00	8.62	0.00	
41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
42	0.00	0.00	0.00	0.00	1216.13	13.10	0.00	0.00	0.00	0.00	0.00	
43	0.00	0.00	2762.27	12.04	0.00	0.00	0.00	0.00	64.00	9.70	0.00	
44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
47	378.43	17.13	278.72	15.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
52	3072.59	15.50	576.45	9.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	3.43	0.00	
54	0.00	0.00	6263.72	9.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
55	0.00	0.00	0.00	0.00	0.00	0.00	148.46	7.50	15.00	1.67	0.00	
56	186.78	15.80	552.51	14.35	0.00	0.00	0.00	0.00	22.00	6.62	0.00	
57	1847.99	7.58	1977.02	7.43	622.62	7.90	219.71	18.43	88.00	5.10	92.80	
58	0.00	0.00	4042.04	5.33	0.00	0.00	0.00	0.00	136.00	3.24	0.00	
59	801.40	3.99	14689.28	6.81	2156.17	6.60	5334.47	4.19	148.00	2.37	346.53	
60	5327.15	5.70	24997.14	7.88	0.00	0.00	0.00	0.00	118.65	8.50	2606.23	
61	949.10	9.09	18427.99	5.72	20.00	5.50	5790.37	4.53	41.75	0.00	167.18	
62	1759.95	0.00	877.91	0.00	0.00	0.00	268.86	0.00	29.00	0.00	38.57	
63	1759.95	0.00	877.91	0.00	0.00	0.00	268.86	0.00	29.00	0.00	38.57	
64	1759.95	0.00	877.91	0.00	0.00	0.00	268.86	0.00	29.00	0.00	38.57	
65	878.60	5.55	13141.24	8.82	15430.36	4.60	61.06	0.00	200.75	2.42	292.08	
66	2008.26	9.68	19435.23	7.65	13102.02	11.02	6950.53	7.04	185.90	2.39	3248.15	
67	726.79	5.10	5119.12	4.48	128.97	4.19	2716.88	4.60	13.00	2.37	0.00	
68	6.10	6.90	14274.12	9.01	0.00	0.00	201.25	9.30	54.00	4.38	77.15	
69	0.00	0.00	14490.62	6.49	0.00	0.00	0.00	0.00	35.00	7.32	0.00	
70	2757.67	8.37	1836.28	10.26	0.00	0.00	0.00	0.00	103.00	9.42	0.00	
71	0.00	0.00	2023.00	11.66	0.00	0.00	0.00	0.00	90.00	9.65	0.00	

	Car		2W		3W		Shared 3W		RMTS		BRTS	
Zone No	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
72	0.00	0.00	8118.84	9.09	0.00	0.00	0.00	0.00	171.00	10.22	0.00	
73	0.00	0.00	3965.29	9.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
74	6796.05	9.40	6789.12	9.93	0.00	0.00	63.71	14.10	8.00	12.35	0.00	
75	0.00	0.00	0.00	0.00	0.00	0.00	521.11	8.80	2.00	12.14	0.00	
76	0.00	0.00	4813.87	7.00	3140.00	9.40	0.00	0.00	1.00	4.45	0.00	
77	24054.20	5.62	16802.79	14.35	0.00	0.00	16567.00	7.78	581.00	7.17	0.00	
78	4077.36	5.11	14562.22	7.61	19873.68	8.07	837.99	8.50	407.00	5.09	715.63	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.42	0.00	
80	4782.99	2.57	10217.76	17.14	0.00	0.00	8619.45	6.94	113.00	3.09	0.00	
81	6288.08	4.21	45286.91	4.45	15737.02	2.20	26006.49	17.50	298.10	5.77	3144.25	
82	1342.11	13.05	45453.90	10.25	0.00	0.00	244.24	4.85	167.00	9.73	397.40	
83	2305.04	6.10	4297.11	5.77	2078.49	5.40	1497.92	9.30	478.00	8.58	251.16	
84	1759.95	0.00	877.91	0.00	0.00	0.00	268.86	0.00	29.00	0.00	38.57	
85	3164.87	8.62	1332.18	5.50	0.00	0.00	432.69	9.00	0.00	0.00	0.00	
86	0.00	0.00	3342.32	2.67	0.00	0.00	0.00	0.00	59.00	5.80	0.00	
87	3952.36	5.02	37511.03	5.78	2637.60	4.10	309.24	4.40	55.00	5.98	229.82	
88	9878.54	8.28	40389.25	6.38	3217.87	1.00	1608.94	5.20	48.00	3.52	918.85	
89	10598.79	1.86	40924.91	2.41	0.00	0.00	2016.98	6.35	177.00	4.60	805.43	
90	2443.39	5.77	22716.07	9.19	1506.42	6.85	2146.67	4.60	563.00	4.99	424.51	
91	2314.41	12.21	28997.25	5.67	1502.27	5.10	7941.51	7.30	722.00	6.92	0.00	
92	2266.67	6.50	28771.48	7.26	0.00	0.00	1221.63	26.70	1570.60	8.46	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	12.45	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.00	9.51	0.00	
96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.00	10.77	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
99	2191.11	8.10	764.51	10.25	0.00	0.00	0.00	0.00	5.00	6.24	0.00	
100	0.00	0.00	2225.52	12.77	0.00	0.00	0.00	0.00	6.00	9.23	79.10	
101	0.00	0.00	429.22	13.50	0.00	0.00	0.00	0.00	16.00	4.64	0.00	
102	3326.22	7.70	3588.46	11.95	0.00	0.00	0.00	0.00	25.00	4.98	311.67	
103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.00	5.64	0.00	
104	13047.03	1.89	7166.48	9.19	0.00	0.00	0.00	0.00	378.00	7.31	0.00	
105	2946.67	6.41	7111.80	8.04	0.00	0.00	2443.25	11.05	253.00	6.75	0.00	
106	0.00	0.00	645.51	6.28	0.00	0.00	0.00	0.00	3.00	4.79	0.00	
107	1077.78	5.51	3146.87	3.94	76.05	7.80	687.31	10.78	21.00	3.51	528.99	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
108	1420.87	5.88	4104.97	2.79	0.00	0.00	0.00	0.00	0.00	0.00	339.71	
109	31200.19	8.88	74919.73	4.21	9597.24	6.11	14555.13	17.90	969.00	5.47	3378.15	
110	2244.30	12.91	17695.70	5.69	113.20	4.10	613.49	7.20	287.00	7.79	929.17	
111	5866.67	5.00	10985.23	4.94	0.00	0.00	0.00	0.00	546.00	6.83	231.44	
112	661.08	10.46	10871.55	6.86	0.00	0.00	11101.93	4.00	439.00	8.53	652.17	
113	1256.13	8.29	7953.51	6.52	0.00	0.00	0.00	0.00	3.00	3.32	0.00	
114	0.00	0.00	815.99	7.83	0.00	0.00	464.61	16.20	0.00	0.00	0.00	
115	0.00	0.00	18408.79	5.19	110.89	8.20	2443.25	3.80	241.00	7.78	528.78	
116	10324.87	6.45	17484.35	5.36	0.00	0.00	4155.61	5.93	23.10	5.56	2600.27	
117	0.00	0.00	11278.37	2.30	382.63	13.91	0.00	0.00	0.00	0.00	468.43	
118	14004.70	3.29	23265.28	5.26	3860.95	5.60	3053.60	8.81	52.80	1.67	1147.80	
119	8867.62	3.17	20634.77	3.50	0.00	0.00	622.62	7.90	93.00	4.81	848.56	
120	5695.60	6.93	15359.40	11.21	0.00	0.00	0.00	0.00	148.00	7.25	626.22	
121	126.53	7.80	1146.83	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
122	1303.00	9.80	0.00	0.00	0.00	0.00	1361.35	17.33	40.00	11.51	0.00	
123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	107.00	12.59	311.67	
127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
128	0.00	0.00	24.23	18.00	0.00	0.00	0.00	0.00	5.00	13.66	0.00	
129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	107.50	
131	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
132	363.40	10.80	449.59	9.95	0.00	0.00	0.00	0.00	30.00	11.02	0.00	
133	0.00	0.00	2132.31	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
134	3072.59	15.50	5591.19	4.02	0.00	0.00	0.00	0.00	27.00	2.94	345.58	
135	0.00	0.00	5836.82	4.54	540.08	3.80	0.00	0.00	89.00	4.79	175.02	
136	4002.87	5.38	37642.27	4.10	4451.52	3.80	2528.77	5.24	211.05	6.64	2845.48	
137	0.00	0.00	4534.77	6.29	0.00	0.00	2077.23	1.80	192.00	1.67	858.67	
138	6623.52	4.07	19070.74	5.49	2211.78	7.33	350.93	5.80	116.00	6.70	543.08	
139	7039.79	7.58	3511.64	4.50	0.00	0.00	1075.45	6.83	116.00	6.52	154.29	
140	0.00	0.00	912.46	4.30	0.00	0.00	0.00	0.00	140.00	7.41	0.00	
141	2930.50	6.75	15825.92	5.59	0.00	0.00	0.00	0.00	280.00	7.64	0.00	
142	0.00	0.00	2026.28	9.30	0.00	0.00	0.00	0.00	16.00	5.82	0.00	
143	4586.52	7.09	26732.64	4.61	1720.69	2.10	3838.00	10.54	163.00	7.19	1191.65	
144	2521.48	5.89	35689.73	5.07	0.00	0.00	3624.19	7.21	0.00	0.00	2585.65	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	362.90	
146	2054.13	3.97	13674.94	7.38	2757.86	4.05	4564.62	5.48	139.70	6.12	1538.58	
147	0.00	0.00	444.19	6.40	0.00	0.00	0.00	0.00	5.00	3.83	0.00	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
149	245.15	3.60	2889.63	15.36	0.00	0.00	303.27	17.62	90.00	12.69	2032.17	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
154	0.00	0.00	1525.91	6.46	0.00	0.00	0.00	0.00	20.00	12.74	0.00	
155	0.00	0.00	3072.90	2.80	0.00	0.00	484.98	6.50	2.00	4.15	0.00	
156	137.42	26.70	7926.88	8.75	2402.17	6.24	3.00	6.15	124.00	7.04	1261.04	
157	964.54	1.40	1489.03	2.50	0.00	0.00	8792.00	6.60	3.00	11.15	0.00	
158	0.00	0.00	264.98	3.10	0.00	0.00	0.00	0.00	7.00	8.46	0.00	
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.00	11.58	0.00	
160	176.09	17.00	2459.53	10.37	0.00	0.00	865.38	5.60	0.00	0.00	2032.17	
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
163	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.00	14.07	0.00	
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
165	227.91	8.00	11616.77	12.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
166	2191.11	3.50	1010.47	6.10	0.00	0.00	0.00	0.00	33.00	7.47	0.00	
167	49.09	6.20	468.54	12.85	0.00	0.00	0.00	0.00	89.00	8.51	0.00	
168	970.20	25.53	4118.34	19.83	0.00	0.00	252.58	11.20	2.00	9.04	0.00	
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.00	10.71	0.00	
170	0.00	0.00	525.15	8.80	0.00	0.00	0.00	0.00	79.00	11.85	0.00	
171	0.00	0.00	5861.59	22.40	0.00	0.00	0.00	0.00	10.00	12.54	0.00	
172	0.00	0.00	576.45	11.50	0.00	0.00	0.00	0.00	6.00	12.68	0.00	
173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.00	14.55	0.00	
174	0.00	0.00	0.00	0.00	0.00	0.00	1182.93	12.68	12.00	15.95	0.00	
175	0.00	0.00	11.82	15.80	0.00	0.00	0.00	0.00	19.00	15.46	0.00	
176	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.00	15.50	0.00	
177	2547.99	15.64	1381.13	17.50	263.98	27.00	9254.27	15.92	0.00	0.00	0.00	
178	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
179	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
180	1759.95	8.58	877.91	5.50	0.00	0.00	268.86	7.83	29.00	7.52	38.57	
181	815.47	8.10	2912.44	7.77	3974.74	7.40	167.60	11.30	81.40	10.58	143.13	
182	815.47	9.10	2912.44	8.77	3974.74	8.40	167.60	12.30	81.40	11.58	143.13	

Zone No	Car		2W		3W		Shared 3W		RMTS		BRTS	
	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.Trip Length	Daily Trips	Avg.T Leng
183	815.47	9.10	2912.44	8.77	3974.74	8.40	167.60	12.30	81.40	11.58	143.13	
184	2854.15	8.10	10193.55	7.77	13911.57	7.40	586.59	11.30	284.90	10.58	500.94	
185	815.47	8.10	2912.44	7.77	3974.74	7.40	167.60	11.30	81.40	10.58	143.13	
186	815.47	9.10	2912.44	8.77	3974.74	8.40	167.60	12.30	81.40	11.58	143.13	
187	335.53	11.46	11363.47	7.86	0.00	0.00	61.06	5.00	41.75	9.53	99.35	
188	335.53	11.46	11363.47	7.86	0.00	0.00	61.06	5.00	41.75	9.53	99.35	
189	335.53	11.46	11363.47	7.86	0.00	0.00	61.06	5.00	41.75	9.53	99.35	
190	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
191	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
192	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
193	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

8.12 Zonewise expected shift to each feeder mode-2023

8.12.1 To Feeder Walk

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips s from S 3W
1	0.00	0.00	0.00	5.04	0.23	0.00	0.00	5	34	0.00	0.88	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	35	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	36	0.00	0.63	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	37	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	38	2.28	4.54	0.04	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	39	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	40	0.00	0.21	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	41	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	42	0.00	0.00	3.04	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	43	0.00	10.36	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	44	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	45	0.00	0.00	0.00	
13	0.51	0.00	0.00	0.00	0.05	0.00	0.00	1	46	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	47	2.05	1.51	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	48	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	49	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	50	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0	51	0.00	0.00	0.00	
19	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0	52	16.64	0.48	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	53	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	54	0.00	5.22	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	55	0.00	0.00	0.00	
23	0.47	0.22	0.00	0.00	0.00	0.00	0.00	1	56	1.01	0.92	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	57	0.77	0.82	0.26	
25	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0	58	0.00	1.68	0.00	
26	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0	59	0.33	6.12	0.90	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	60	2.22	10.41	0.00	
28	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0	61	0.51	2.94	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	62	0.00	0.00	0.00	
30	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0	63	0.00	0.00	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	64	0.00	0.00	0.00	
32	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0	65	0.23	1.48	6.43	
33	2.22	2.38	3.92	3.14	0.04	0.00	0.00	12	66	1.67	8.10	32.75	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips s from S 3W
67	0.30	2.13	0.05	1.13	0.00	0.00	0.00	4	102	1.39	8.97	0.00	
68	0.00	11.89	0.00	0.17	0.02	0.00	0.00	12	103	0.00	0.00	0.00	
69	0.00	6.04	0.00	0.00	0.01	0.00	0.00	6	104	5.44	5.97	0.00	
70	1.15	1.53	0.00	0.00	0.09	0.00	0.00	3	105	1.23	2.96	0.00	
71	0.00	3.37	0.00	0.00	0.07	0.00	0.00	3	106	0.00	0.27	0.00	
72	0.00	6.77	0.00	0.00	0.21	0.00	0.00	7	107	0.45	1.31	0.03	
73	0.00	4.96	0.00	0.00	0.00	0.00	0.00	5	108	0.59	1.71	0.00	
74	5.66	8.49	0.00	0.16	0.03	0.00	0.00	14	109	26.00	31.21	4.00	
75	0.00	0.00	0.00	0.43	0.01	0.00	0.00	0	110	5.61	7.37	0.05	
76	0.00	2.01	3.92	0.00	0.00	0.00	0.00	6	111	2.44	4.58	0.00	
77	10.02	63.01	0.00	6.90	0.24	0.00	0.00	80	112	0.55	4.53	0.00	
78	1.70	6.07	8.28	0.35	0.17	0.00	0.00	17	113	0.52	3.31	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	114	0.00	0.34	0.00	
80	1.99	55.34	0.00	3.59	0.13	0.00	0.00	61	115	0.00	7.67	0.05	
81	2.62	18.87	6.56	173.37	0.12	0.11	0.00	202	116	4.30	7.28	0.00	
82	2.24	56.81	0.00	0.10	0.21	0.00	0.00	59	117	0.00	4.70	0.64	
83	0.23	1.42	0.87	1.02	0.19	0.00	0.00	4	118	5.83	9.69	1.61	
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	119	3.69	8.60	0.00	
85	1.32	0.56	0.00	0.36	0.00	0.00	0.00	2	120	2.37	38.40	0.00	
86	0.00	1.39	0.00	0.00	0.02	0.00	0.00	1	121	0.05	0.48	0.00	
87	1.65	15.63	1.10	1.29	0.02	0.00	0.00	20	122	1.09	0.00	0.00	
88	4.12	16.83	1.34	0.67	0.02	0.00	0.01	23	123	0.00	0.00	0.00	
89	4.42	17.05	0.00	0.84	0.07	0.00	0.17	23	124	0.00	0.00	0.00	
90	1.02	18.93	0.63	0.89	0.23	0.00	0.00	22	125	0.00	0.00	0.00	
91	3.86	12.08	0.63	3.31	0.30	0.00	0.00	20	126	0.00	0.00	0.00	
92	0.94	11.99	0.00	13.74	0.65	0.00	0.00	27	127	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0	128	0.00	0.07	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	129	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0	130	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0	131	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	132	0.30	0.37	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	133	0.00	0.89	0.00	
99	0.91	0.96	0.00	0.00	0.00	0.00	0.00	2	134	16.64	2.33	0.00	
100	0.00	5.56	0.00	0.00	0.01	0.00	0.00	6	135	0.00	2.43	0.23	
101	0.00	1.07	0.00	0.00	0.01	0.00	0.00	1	136	1.67	15.68	1.85	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips s from S 3W
137	0.00	1.89	0.00	0.87	0.02	0.00	0.00	3	171	0.00	56.17	0.00	
138	2.76	7.95	0.92	0.15	0.05	0.00	0.00	12	172	0.00	1.44	0.00	
139	2.93	1.46	0.00	0.45	0.05	0.00	0.00	5	173	0.00	0.00	0.00	
140	0.00	0.38	0.00	0.00	0.06	0.00	0.00	0	174	0.00	0.00	0.00	
141	1.22	6.59	0.00	0.00	0.12	0.00	0.00	8	175	0.00	0.06	0.00	
142	0.00	2.53	0.00	0.00	0.01	0.00	0.00	3	176	0.00	0.00	0.00	
143	1.91	11.14	0.72	3.20	0.07	0.00	0.00	17	177	13.80	7.48	2.97	
144	1.05	14.87	0.00	1.51	0.00	0.00	0.00	17					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
146	0.86	5.70	1.15	1.90	0.06	0.00	0.00	10					
147	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
149	0.10	12.04	0.00	1.64	0.34	0.00	0.00	14					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
154	0.00	0.64	0.00	0.00	0.07	0.00	0.00	1					
155	0.00	1.28	0.00	1.21	0.00	0.00	0.00	2					
156	1.32	6.61	1.00	0.00	0.05	0.00	0.00	9					
157	0.40	0.62	0.00	21.98	0.01	0.00	0.00	23					
158	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0					
159	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0					
160	0.51	2.05	0.00	2.16	0.00	0.00	0.00	5					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
163	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0					
165	0.09	29.04	0.00	0.00	0.00	0.00	0.00	29					
166	0.91	0.42	0.00	0.00	0.01	0.00	0.01	1					
167	0.02	0.78	0.00	0.00	0.04	0.00	0.00	1					
168	9.30	27.45	0.00	0.42	0.00	0.00	0.00	37					
169	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0					
170	0.00	0.44	0.00	0.00	0.30	0.00	0.00	1					

8.12.2 To Feeder Bicycle Sharing

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3
1	0.00	0.00	0.00	15.13	1.36	0.00	0.00	16.49	34	0.04	0.88	0.00	12
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35	0.00	0.00	0.00	0
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36	0.03	0.63	0.00	0
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	0.00	0.00	0.00	0
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	4.54	4.54	0.04	10
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	0.00	0.21	0.00	0
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41	0.00	0.00	0.00	0
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42	0.00	0.00	3.04	0
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43	0.05	10.36	0.00	0
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44	0.00	0.00	0.00	0
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45	0.00	0.00	0.00	0
13	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	46	0.00	0.00	0.00	0
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47	1.51	1.51	0.00	0
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	0.00	0.00	0
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49	0.00	0.00	0.00	0
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	0.00	0.00	0
18	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.14	51	0.00	0.00	0.00	0
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52	3.12	0.48	0.00	0
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53	0.00	0.00	0.00	0
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	0.12	5.22	0.00	0
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55	0.00	0.00	0.00	0
23	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.45	56	2.99	0.92	0.00	0
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	0.82	0.82	0.26	3
25	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.20	58	0.08	1.68	0.00	0
26	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.28	59	6.12	6.12	0.90	2
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60	10.41	10.41	0.00	0
28	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06	61	5.89	2.94	0.01	2
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62	0.00	0.00	0.00	0
30	0.01	0.26	0.00	0.00	0.01	0.00	0.00	0.28	63	0.00	0.00	0.00	0
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64	0.00	0.00	0.00	0
32	0.02	0.42	0.00	0.00	0.00	0.00	0.00	0.44	65	0.74	1.48	6.43	0
33	7.14	2.38	3.92	3.14	0.44	0.00	0.00	17.03	66	16.19	8.10	32.75	8

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shift from Shar
67	2.13	2.13	0.05	1.13	0.00	0.00	0.00	5.45	**102**	1.50	8.97	0.00	
68	5.95	11.89	0.00	0.50	0.34	0.00	0.00	18.68	**103**	0.00	0.00	0.00	
69	0.29	6.04	0.00	0.00	0.15	0.00	0.00	6.47	**104**	2.99	5.97	0.00	
70	0.77	1.53	0.00	0.00	0.51	0.00	0.00	2.81	**105**	2.96	2.96	0.00	
71	0.04	3.37	0.00	0.00	0.45	0.00	0.00	3.86	**106**	0.01	0.27	0.00	
72	0.16	6.77	0.00	0.00	0.64	0.00	0.00	7.57	**107**	1.31	1.31	0.03	
73	0.08	4.96	0.00	0.00	0.00	0.00	0.00	5.03	**108**	1.71	1.71	0.00	
74	5.66	8.49	0.00	0.48	0.18	0.00	0.00	14.80	**109**	62.43	31.21	4.00	
75	0.00	0.00	0.00	0.43	0.04	0.00	0.00	0.48	**110**	44.24	7.37	0.05	
76	0.10	2.01	3.92	0.00	0.01	0.00	0.00	6.03	**111**	4.58	4.58	0.00	
77	7.00	63.01	0.00	6.90	1.45	0.00	0.00	78.36	**112**	9.06	4.53	0.00	
78	6.07	6.07	8.28	1.05	1.02	0.00	0.00	22.48	**113**	3.31	3.31	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.34	0.00	
80	4.26	55.34	0.00	3.59	0.13	0.00	0.00	63.33	**115**	0.37	7.67	0.05	
81	18.87	18.87	6.56	173.37	0.75	0.11	0.00	218.51	**116**	7.28	7.28	0.00	
82	75.75	56.81	0.00	0.31	1.25	0.00	0.00	134.12	**117**	0.22	4.70	0.64	
83	1.42	1.42	0.87	1.02	1.87	0.00	0.00	6.61	**118**	9.69	9.69	1.61	
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	8.60	8.60	0.00	
85	0.56	0.56	0.00	2.16	0.00	0.00	0.00	3.27	**120**	6.40	38.40	0.00	
86	0.07	1.39	0.00	0.00	0.25	0.00	0.00	1.70	**121**	0.48	0.48	0.00	
87	15.63	15.63	1.10	0.77	0.23	0.00	0.00	33.36	**122**	0.00	0.00	0.00	
88	16.83	16.83	1.34	0.67	0.30	0.00	0.01	35.97	**123**	0.00	0.00	0.00	
89	17.05	17.05	0.00	0.84	1.11	0.00	0.17	36.21	**124**	0.00	0.00	0.00	
90	9.46	18.93	0.63	2.68	1.41	0.00	0.00	33.11	**125**	0.00	0.00	0.00	
91	48.33	12.08	0.63	3.31	1.80	0.01	0.00	66.15	**126**	0.00	0.00	0.00	
92	11.99	11.99	0.00	41.23	3.93	0.00	0.00	69.13	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.09	**128**	0.00	0.07	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.43	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.37	0.37	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.04	0.89	0.00	
99	0.32	0.96	0.00	0.00	0.02	0.00	0.00	1.29	**134**	30.28	2.33	0.00	
100	0.04	5.56	0.00	0.00	0.04	0.00	0.00	5.65	**135**	0.12	2.43	0.23	
101	0.01	1.07	0.00	0.00	0.10	0.00	0.00	1.18	**136**	15.68	15.68	1.85	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted Shared
137	0.09	1.89	0.00	0.87	0.02	0.00	0.00	2.87	**171**	0.12	56.17	0.00	
138	7.95	7.95	0.92	0.44	0.48	0.00	0.00	17.74	**172**	0.01	1.44	0.00	
139	1.46	1.46	0.00	0.45	0.48	0.00	0.00	3.86	**173**	0.00	0.00	0.00	
140	0.02	0.38	0.00	0.00	0.58	0.00	0.00	0.98	**174**	0.00	0.00	0.00	
141	6.59	6.59	0.00	0.00	1.17	0.00	0.00	14.35	**175**	0.00	0.06	0.00	
142	0.04	2.53	0.00	0.00	0.07	0.00	0.00	2.64	**176**	0.00	0.00	0.00	
143	11.14	11.14	0.72	9.59	0.68	0.00	0.00	33.27	**177**	7.48	7.48	2.97	
144	14.87	14.87	0.00	4.53	0.00	0.00	0.00	34.27					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	5.70	5.70	1.15	5.71	0.58	0.00	0.00	18.83					
147	0.01	0.19	0.00	0.00	0.03	0.00	0.00	0.23					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	1.20	12.04	0.00	4.93	2.02	0.00	0.00	20.20					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.03	0.64	0.00	0.00	0.45	0.00	0.00	1.12					
155	0.06	1.28	0.00	1.21	0.01	0.00	0.00	2.57					
156	75.96	6.61	1.00	0.00	0.52	0.00	0.00	84.08					
157	0.62	0.62	0.00	36.63	0.07	0.00	0.00	37.94					
158	0.01	0.11	0.00	0.00	0.03	0.00	0.00	0.14					
159	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.72					
160	7.17	2.05	0.00	2.16	0.00	0.00	0.00	11.39					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.54					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	4.84	29.04	0.00	0.00	0.00	0.00	0.00	33.88					
166	0.42	0.42	0.00	0.00	0.14	0.00	0.01	0.99					
167	0.20	0.78	0.00	0.00	0.37	0.00	0.00	1.35					
168	39.46	27.45	0.00	1.26	0.01	0.00	0.00	68.20					
169	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08					
170	0.01	0.44	0.00	0.00	1.78	0.00	0.00	2.23					

8.12.3 To RMTS Bus

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted Share
1	0.00	0.00	0.00	2.40	0.02	0.00	0.00	2.42	34	0.04	0.88	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36	0.03	0.63	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	4.54	4.54	0.04	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	0.00	0.21	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42	0.00	0.00	3.04	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43	0.05	10.36	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47	1.51	1.51	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52	3.12	0.48	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	0.12	5.22	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55	0.00	0.00	0.00	
23	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.44	56	2.99	0.92	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	0.82	0.82	0.26	
25	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.20	58	0.08	1.68	0.00	
26	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.27	59	6.12	6.12	0.90	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60	10.41	10.41	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61	5.89	2.94	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62	0.00	0.00	0.00	
30	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.27	63	0.00	0.00	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64	0.00	0.00	0.00	
32	0.02	0.42	0.00	0.00	0.00	0.00	0.00	0.44	65	0.74	1.48	6.43	
33	7.14	2.38	3.92	3.14	0.00	0.00	0.00	16.59	66	16.19	8.10	32.75	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifte from Share
67	2.13	2.13	0.05	1.13	0.00	0.00	0.00	5.45	**102**	1.50	8.97	0.00	0.00
68	5.95	11.89	0.00	0.12	0.00	0.00	0.00	17.96	**103**	0.00	0.00	0.00	0.00
69	0.29	6.04	0.00	0.00	0.00	0.00	0.00	6.33	**104**	2.99	5.97	0.00	0.00
70	0.77	1.53	0.00	0.00	0.01	0.00	0.00	2.30	**105**	2.96	2.96	0.00	6.54
71	0.04	3.37	0.00	0.00	0.01	0.00	0.00	3.42	**106**	0.01	0.27	0.00	0.00
72	0.16	6.77	0.00	0.00	0.02	0.00	0.00	6.95	**107**	1.31	1.31	0.03	0.57
73	0.08	4.96	0.00	0.00	0.00	0.00	0.00	5.03	**108**	1.71	1.71	0.00	0.00
74	5.66	8.49	0.00	0.11	0.00	0.00	0.00	14.26	**109**	62.43	31.21	4.00	37.54
75	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.43	**110**	44.24	7.37	0.05	0.18
76	0.10	2.01	3.92	0.00	0.00	0.00	0.00	6.03	**111**	4.58	4.58	0.00	0.00
77	7.00	63.01	0.00	6.90	0.02	0.00	0.00	76.93	**112**	9.06	4.53	0.00	4.63
78	6.07	6.07	8.28	0.25	0.02	0.00	0.00	20.68	**113**	3.31	3.31	0.00	0.00
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.34	0.00	1.80
80	4.26	55.34	0.00	3.59	0.00	0.00	0.00	63.20	**115**	0.37	7.67	0.05	1.02
81	18.87	18.87	6.56	123.83	0.01	0.11	0.00	168.25	**116**	7.28	7.28	0.00	1.73
82	75.75	56.81	0.00	0.10	0.02	0.00	0.00	132.69	**117**	0.22	4.70	0.64	0.00
83	1.42	1.42	0.87	0.73	0.02	0.00	0.00	4.47	**118**	9.69	9.69	1.61	1.82
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	8.60	8.60	0.00	0.26
85	0.56	0.56	0.00	0.26	0.00	0.00	0.00	1.37	**120**	6.40	38.40	0.00	0.00
86	0.07	1.39	0.00	0.00	0.00	0.00	0.00	1.46	**121**	0.48	0.48	0.00	0.00
87	15.63	15.63	1.10	0.13	0.00	0.00	0.00	32.49	**122**	0.00	0.00	0.00	5.27
88	16.83	16.83	1.34	0.67	0.00	0.00	0.01	35.67	**123**	0.00	0.00	0.00	0.00
89	17.05	17.05	0.00	0.84	0.01	0.00	0.17	35.11	**124**	0.00	0.00	0.00	0.00
90	9.46	18.93	0.63	0.89	0.02	0.00	0.00	29.94	**125**	0.00	0.00	0.00	0.00
91	48.33	12.08	0.63	3.31	0.03	0.00	0.00	64.37	**126**	0.00	0.00	0.00	0.00
92	11.99	11.99	0.00	39.26	0.06	0.00	0.00	63.30	**127**	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.07	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**130**	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.37	0.37	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.04	0.89	0.00	0.00
99	0.32	0.96	0.00	0.00	0.00	0.00	0.00	1.27	**134**	30.28	2.33	0.00	0.00
100	0.04	5.56	0.00	0.00	0.00	0.00	0.00	5.61	**135**	0.12	2.43	0.23	0.00
101	0.01	1.07	0.00	0.00	0.00	0.00	0.00	1.08	**136**	15.68	15.68	1.85	1.05

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifte from Share
137	0.09	1.89	0.00	0.87	0.05	0.00	0.00	2.89	171	0.12	56.17	0.00	0.00
138	7.95	7.95	0.92	0.15	0.00	0.00	0.00	16.96	172	0.01	1.44	0.00	0.00
139	1.46	1.46	0.00	0.45	0.00	0.00	0.00	3.38	173	0.00	0.00	0.00	0.00
140	0.02	0.38	0.00	0.00	0.01	0.00	0.00	0.40	174	0.00	0.00	0.00	2.96
141	6.59	6.59	0.00	0.00	0.01	0.00	0.00	13.20	175	0.00	0.06	0.00	0.00
142	0.04	2.53	0.00	0.00	0.00	0.00	0.00	2.57	176	0.00	0.00	0.00	0.00
143	11.14	11.14	0.72	2.28	0.01	0.00	0.00	25.28	177	7.48	7.48	2.97	35.80
144	14.87	14.87	0.00	1.51	0.00	0.00	0.00	31.25					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	5.70	5.70	1.15	1.90	0.01	0.00	0.00	14.45					
147	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.19					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	1.20	12.04	0.00	0.78	0.03	0.00	0.00	14.06					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.03	0.64	0.00	0.00	0.01	0.00	0.00	0.67					
155	0.06	1.28	0.00	0.20	0.00	0.00	0.00	1.54					
156	75.96	6.61	1.00	0.00	0.00	0.00	0.00	83.57					
157	0.62	0.62	0.00	3.66	0.00	0.00	0.00	4.90					
158	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.12					
159	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
160	7.17	2.05	0.00	0.36	0.00	0.00	0.00	9.58					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	4.84	29.04	0.00	0.00	0.00	0.00	0.00	33.88					
166	0.42	0.42	0.00	0.00	0.00	0.00	0.01	0.85					
167	0.20	0.78	0.00	0.00	0.00	0.00	0.00	0.98					
168	39.46	27.45	0.00	0.20	0.00	0.00	0.00	67.12					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.44	0.00	0.00	0.03	0.00	0.00	0.48					

8.12.4 To RMTS - Hybrid BRT

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	shifted Share
1	0.00	0.00	0.00	7.21	0.02	0.00	0.24	7.47	34	0.04	0.88	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	35	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	36	0.03	0.63	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	37	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	38	4.54	4.54	0.04	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	39	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	40	0.00	0.21	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	41	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	42	0.00	0.00	3.04	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	43	0.05	10.36	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	44	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	45	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	46	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	47	1.51	1.51	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	48	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	49	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	50	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	51	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	52	3.12	0.48	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	53	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	54	0.12	5.22	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	55	0.00	0.00	0.00	
23	0.22	0.22	0.00	0.00	0.00	0.00	0.24	0.68	56	2.99	0.92	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	57	0.82	0.82	0.26	
25	0.01	0.19	0.00	0.00	0.00	0.00	0.24	0.44	58	0.08	1.68	0.00	
26	0.01	0.26	0.00	0.00	0.00	0.00	0.24	0.51	59	6.12	6.12	0.90	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	60	10.41	10.41	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	61	5.89	2.94	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	62	0.00	0.00	0.00	
30	0.01	0.26	0.00	0.00	0.00	0.00	0.24	0.51	63	0.00	0.00	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	64	0.00	0.00	0.00	
32	0.02	0.42	0.00	0.00	0.00	0.00	0.24	0.68	65	0.74	1.48	6.43	
33	7.14	2.38	3.92	3.14	0.00	0.00	0.24	16.83	66	16.19	8.10	32.75	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	shifted Share
67	2.13	2.13	0.05	1.13	0.00	0.00	0.24	5.69	**102**	1.50	8.97	0.00	
68	5.95	11.89	0.00	0.17	0.00	0.00	0.24	18.25	**103**	0.00	0.00	0.00	
69	0.29	6.04	0.00	0.00	0.00	0.00	0.24	6.57	**104**	2.99	5.97	0.00	
70	0.77	1.53	0.00	0.00	0.02	0.00	0.24	2.56	**105**	2.96	2.96	0.00	
71	0.04	3.37	0.00	0.00	0.02	0.00	0.24	3.67	**106**	0.01	0.27	0.00	
72	0.16	6.77	0.00	0.00	0.06	0.00	0.24	7.23	**107**	1.31	1.31	0.03	
73	0.08	4.96	0.00	0.00	0.00	0.00	0.24	5.27	**108**	1.71	1.71	0.00	
74	5.66	8.49	0.00	0.48	0.00	0.00	0.24	14.86	**109**	62.43	31.21	4.00	1
75	0.00	0.00	0.00	0.43	0.00	0.00	0.24	0.67	**110**	44.24	7.37	0.05	
76	0.10	2.01	3.92	0.00	0.00	0.00	0.24	6.27	**111**	4.58	4.58	0.00	
77	7.00	63.01	0.00	6.90	0.07	0.00	0.24	77.22	**112**	9.06	4.53	0.00	
78	6.07	6.07	8.28	0.35	0.05	0.00	0.24	21.05	**113**	3.31	3.31	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**114**	0.02	0.34	0.00	
80	4.26	55.34	0.00	3.59	0.01	0.00	0.24	63.45	**115**	0.37	7.67	0.05	
81	18.87	18.87	6.56	371.50	0.04	0.11	0.25	416.18	**116**	7.28	7.28	0.00	
82	75.75	56.81	0.00	0.10	0.02	0.00	0.24	132.93	**117**	0.22	4.70	0.64	
83	1.42	1.42	0.87	1.02	0.02	0.00	0.24	5.00	**118**	9.69	9.69	1.61	
84	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**119**	8.60	8.60	0.00	
85	0.56	0.56	0.00	0.36	0.00	0.00	0.24	1.71	**120**	6.40	38.40	0.00	
86	0.07	1.39	0.00	0.00	0.00	0.00	0.24	1.70	**121**	0.48	0.48	0.00	
87	15.63	15.63	1.10	0.13	0.00	0.00	0.24	32.73	**122**	0.00	0.00	0.00	
88	16.83	16.83	1.34	0.67	0.00	0.00	0.25	35.92	**123**	0.00	0.00	0.00	
89	17.05	17.05	0.00	0.84	0.01	0.00	0.51	35.46	**124**	0.00	0.00	0.00	
90	9.46	18.93	0.63	0.89	0.07	0.00	0.24	30.22	**125**	0.00	0.00	0.00	
91	48.33	12.08	0.63	3.31	0.09	0.00	0.24	64.67	**126**	0.00	0.00	0.00	
92	11.99	11.99	0.00	39.26	0.19	0.00	0.24	63.67	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**128**	0.00	0.07	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.01	0.00	0.24	0.25	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**132**	0.37	0.37	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	**133**	0.04	0.89	0.00	
99	0.32	0.96	0.00	0.00	0.00	0.00	0.24	1.51	**134**	30.28	2.33	0.00	
100	0.04	5.56	0.00	0.00	0.00	0.00	0.24	5.85	**135**	0.12	2.43	0.23	
101	0.01	1.07	0	0	0	0	0.24	1.32	**136**	15.68	15.68	1.85	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifte from Share
137	0.09	1.89	0.00	0.87	0.05	0.00	0.24	3.13	**171**	0.12	56.17	0.00	0.00
138	7.95	7.95	0.92	0.15	0.00	0.00	0.24	17.20	**172**	0.01	1.44	0.00	0.00
139	1.46	1.46	0.00	0.45	0.00	0.00	0.24	3.62	**173**	0.00	0.00	0.00	0.00
140	0.02	0.38	0.00	0.00	0.01	0.00	0.24	0.64	**174**	0.00	0.00	0.00	2.96
141	6.59	6.59	0.00	0.00	0.01	0.00	0.24	13.44	**175**	0.00	0.06	0.00	0.00
142	0.04	2.53	0.00	0.00	0.00	0.00	0.24	2.81	**176**	0.00	0.00	0.00	0.00
143	11.14	11.14	0.72	2.28	0.01	0.00	0.24	25.52	**177**	7.48	7.48	2.97	107.4
144	14.87	14.87	0.00	1.51	0.00	0.00	0.24	31.49					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
146	5.70	5.70	1.15	1.90	0.01	0.00	0.24	14.69					
147	0.01	0.19	0.00	0.00	0.00	0.00	0.24	0.43					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
149	1.20	12.04	0.00	3.52	0.03	0.00	0.24	17.04					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
154	0.03	0.64	0.00	0.00	0.01	0.00	0.24	0.91					
155	0.06	1.28	0.00	0.20	0.00	0.00	0.24	1.78					
156	75.96	6.61	1.00	0.01	0.00	0.00	0.24	83.82					
157	0.62	0.62	0.00	3.66	0.00	0.00	0.24	5.14					
158	0.01	0.11	0.00	0.00	0.00	0.00	0.24	0.36					
159	0.00	0.00	0.00	0.00	0.01	0.00	0.24	0.25					
160	7.17	2.05	0.00	0.36	0.00	0.00	0.24	9.82					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.24	0.25					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
165	4.84	29.04	0.00	0.00	0.00	0.00	0.24	34.12					
166	0.42	0.42	0.00	0.00	0.00	0.00	0.25	1.10					
167	0.20	0.78	0.00	0.00	0.00	0.00	0.24	1.22					
168	39.46	27.45	0.00	0.30	0.00	0.00	0.24	67.46					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24					
170	0.01	0.44	0.00	0.00	0.03	0.00	0.24	0.72					

8.12.5 To Shared 3W

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	0.24	0.02	0.00	0.00	0.26	34	0.04	0.88	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36	0.03	0.30	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	4.54	4.54	0.04	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	0.00	0.21	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42	0.00	0.00	3.04	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43	0.05	2.96	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	46	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47	1.51	0.43	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	51	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52	3.12	0.23	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	0.12	2.49	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55	0.00	0.00	0.00	
23	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.44	56	2.99	0.66	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	0.82	0.59	0.26	
25	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.15	58	0.08	1.68	0.00	
26	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.14	59	6.12	4.37	0.90	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60	10.41	10.41	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61	5.89	2.10	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62	0.00	0.00	0.00	
30	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.27	63	0.00	0.00	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64	0.00	0.00	0.00	
32	0.02	0.42	0.00	0.00	0.00	0.00	0.00	0.44	65	0.74	1.48	6.43	
33	7.14	1.70	3.92	0.15	0.03	0.00	0.00	12.94	66	16.19	5.78	32.75	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	2.13	2.13	0.05	0.32	0.00	0.00	0.00	4.65	102	1.50	4.27	0.00	
68	5.95	8.50	0.00	0.01	0.02	0.00	0.00	14.47	103	0.00	0.00	0.00	
69	0.29	2.87	0.00	0.00	0.01	0.00	0.00	3.17	104	2.99	2.84	0.00	
70	0.77	0.73	0.00	0.00	0.01	0.00	0.00	1.50	105	2.96	2.12	0.00	
71	0.04	1.61	0.00	0.00	0.01	0.00	0.00	1.65	106	0.01	0.27	0.00	
72	0.16	3.22	0.00	0.00	0.02	0.00	0.00	3.40	107	1.31	1.31	0.03	
73	0.08	1.42	0.00	0.00	0.00	0.00	0.00	1.49	108	1.71	1.71	0.00	
74	5.66	2.42	0.00	0.01	0.01	0.00	0.00	8.10	109	62.43	31.21	4.00	
75	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	110	44.24	5.27	0.05	
76	0.10	0.96	3.92	0.00	0.00	0.00	0.00	4.98	111	4.58	4.58	0.00	
77	7.00	18.00	0.00	0.33	0.02	0.00	0.00	25.35	112	9.06	2.16	0.00	
78	6.07	4.33	8.28	0.02	0.05	0.00	0.00	18.75	113	3.31	2.37	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	114	0.02	0.24	0.00	
80	4.26	15.81	0.00	0.17	0.03	0.00	0.00	20.27	115	0.37	7.67	0.05	
81	18.87	18.87	6.56	8.26	0.04	0.11	0.00	52.69	116	7.28	7.28	0.00	
82	75.75	16.23	0.00	0.05	0.12	0.00	0.00	92.15	117	0.22	4.70	0.64	
83	1.42	1.02	0.87	0.05	0.11	0.00	0.00	3.47	118	9.69	9.69	1.61	
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	119	8.60	8.60	0.00	
85	0.56	0.56	0.00	0.02	0.00	0.00	0.00	1.13	120	6.40	18.28	0.00	
86	0.07	1.39	0.00	0.00	0.01	0.00	0.00	1.47	121	0.48	0.34	0.00	
87	15.63	11.16	1.10	0.13	0.01	0.00	0.00	28.03	122	0.00	0.00	0.00	
88	16.83	12.02	1.34	0.03	0.02	0.00	0.01	30.25	123	0.00	0.00	0.00	
89	17.05	17.05	0.00	0.04	0.07	0.00	0.17	34.38	124	0.00	0.00	0.00	
90	9.46	9.01	0.63	0.64	0.07	0.00	0.00	19.81	125	0.00	0.00	0.00	
91	48.33	8.63	0.63	0.16	0.03	0.00	0.00	57.77	126	0.00	0.00	0.00	
92	11.99	5.71	0.00	0.65	0.06	0.00	0.00	18.41	127	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	128	0.00	0.05	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	129	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	130	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.04	131	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132	0.37	0.27	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	133	0.04	0.89	0.00	
99	0.32	0.46	0.00	0.00	0.00	0.00	0.00	0.77	134	30.28	2.33	0.00	
100	0.04	1.59	0.00	0.00	0.00	0.00	0.00	1.64	135	0.12	2.43	0.23	
101	0.01	0.51	0.00	0.00	0.01	0.00	0.00	0.53	136	15.68	15.68	1.85	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.09	1.35	0.00	0.87	0.05	0.00	0.00	2.35	171	0.12	2.67	0.00	
138	7.95	7.95	0.92	0.07	0.03	0.00	0.00	16.91	172	0.01	0.41	0.00	
139	1.46	1.46	0.00	0.02	0.03	0.00	0.00	2.98	173	0.00	0.00	0.00	
140	0.02	0.38	0.00	0.00	0.03	0.00	0.00	0.43	174	0.00	0.00	0.00	
141	6.59	4.71	0.00	0.00	0.07	0.00	0.00	11.37	175	0.00	0.03	0.00	
142	0.04	0.72	0.00	0.00	0.00	0.00	0.00	0.77	176	0.00	0.00	0.00	
143	11.14	11.14	0.72	0.15	0.04	0.00	0.00	23.18	177	7.48	2.14	2.97	
144	14.87	14.87	0.00	0.07	0.00	0.00	0.00	29.81					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	5.70	4.07	1.15	0.91	0.03	0.00	0.00	11.86					
147	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.14					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	1.20	5.73	0.00	0.08	0.10	0.00	0.00	7.11					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.03	0.45	0.00	0.00	0.02	0.00	0.00	0.51					
155	0.06	1.28	0.00	0.10	0.00	0.00	0.00	1.44					
156	75.96	6.61	1.00	0.00	0.03	0.00	0.00	83.60					
157	0.62	0.62	0.00	2.62	0.00	0.00	0.00	3.86					
158	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.12					
159	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03					
160	7.17	1.46	0.00	0.26	0.00	0.00	0.00	8.89					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	4.84	13.83	0.00	0.00	0.00	0.00	0.00	18.67					
166	0.42	0.42	0.00	0.00	0.01	0.00	0.01	0.86					
167	0.20	0.37	0.00	0.00	0.02	0.00	0.00	0.59					
168	39.46	7.84	0.00	0.02	0.00	0.00	0.00	47.33					
169	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
170	0.01	0.21	0.00	0.00	0.08	0.00	0.00	0.30					

8.12.6 To E-Rickshaw

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
1	0.00	0.00	0.00	0.24	0.02	0.00	0.00	0.26	**34**	0.04	0.88	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.03	0.45	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	4.54	4.54	0.04	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.00	0.21	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	3.04	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.05	4.93	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**46**	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.51	0.72	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**51**	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	3.12	0.34	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.12	3.73	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	
23	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.44	**56**	2.99	0.66	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	0.82	0.59	0.26	
25	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.20	**58**	0.08	1.68	0.00	
26	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.20	**59**	6.12	6.12	0.90	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	10.41	10.41	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	5.89	2.94	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.00	0.00	0.00	
30	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.27	**63**	0.00	0.00	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.00	0.00	0.00	
32	0.02	0.42	0.00	0.00	0.00	0.00	0.00	0.44	**65**	0.74	1.48	6.43	
33	7.14	2.38	3.92	0.15	0.00	0.00	0.00	13.60	**66**	16.19	8.10	32.75	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
67	2.13	2.13	0.05	0.54	0.00	0.00	0.00	4.86	**102**	1.50	6.41	0.00	
68	5.95	8.50	0.00	0.01	0.00	0.00	0.00	14.45	**103**	0.00	0.00	0.00	
69	0.29	4.31	0.00	0.00	0.00	0.00	0.00	4.60	**104**	2.99	4.27	0.00	
70	0.77	1.09	0.00	0.00	0.01	0.00	0.00	1.87	**105**	2.96	2.96	0.00	
71	0.04	2.41	0.00	0.00	0.01	0.00	0.00	2.46	**106**	0.01	0.27	0.00	
72	0.16	4.83	0.00	0.00	0.02	0.00	0.00	5.01	**107**	1.31	1.31	0.03	
73	0.08	3.54	0.00	0.00	0.00	0.00	0.00	3.62	**108**	1.71	1.71	0.00	
74	5.66	6.06	0.00	0.01	0.00	0.00	0.00	11.73	**109**	62.43	31.21	4.00	
75	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	**110**	44.24	7.37	0.05	
76	0.10	1.43	3.92	0.00	0.00	0.00	0.00	5.45	**111**	4.58	4.58	0.00	
77	7.00	30.00	0.00	0.33	0.02	0.00	0.00	37.36	**112**	9.06	3.24	0.00	
78	6.07	6.07	8.28	0.02	0.02	0.00	0.00	20.45	**113**	3.31	3.31	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.34	0.00	
80	4.26	26.35	0.00	0.17	0.03	0.00	0.00	30.81	**115**	0.37	7.67	0.05	
81	18.87	18.87	6.56	8.26	0.01	0.11	0.00	52.67	**116**	7.28	7.28	0.00	
82	75.75	40.58	0.00	0.07	0.02	0.00	0.00	116.43	**117**	0.22	4.70	0.64	
83	1.42	1.42	0.87	0.05	0.02	0.00	0.00	3.78	**118**	9.69	9.69	1.61	
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**119**	8.60	8.60	0.00	
85	0.56	0.56	0.00	0.05	0.00	0.00	0.00	1.16	**120**	6.40	27.43	0.00	
86	0.07	1.39	0.00	0.00	0.00	0.00	0.00	1.46	**121**	0.48	0.48	0.00	
87	15.63	15.63	1.10	0.77	0.00	0.00	0.00	33.13	**122**	0.00	0.00	0.00	
88	16.83	16.83	1.34	0.19	0.01	0.00	0.01	35.21	**123**	0.00	0.00	0.00	
89	17.05	17.05	0.00	0.24	0.01	0.00	0.17	34.51	**124**	0.00	0.00	0.00	
90	9.46	13.52	0.63	0.64	0.02	0.00	0.00	24.27	**125**	0.00	0.00	0.00	
91	48.33	12.08	0.63	0.16	0.03	0.00	0.00	61.22	**126**	0.00	0.00	0.00	
92	11.99	8.56	0.00	0.65	0.06	0.00	0.00	21.27	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.05	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.37	0.37	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.04	0.89	0.00	
99	0.32	0.68	0.00	0.00	0.00	0.00	0.00	1.00	**134**	30.28	2.33	0.00	
100	0.04	3.97	0.00	0.00	0.00	0.00	0.00	4.02	**135**	0.12	2.43	0.23	
101	0.01	0.77	0.00	0.00	0.00	0.00	0.00	0.78	**136**	15.68	15.68	1.85	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips from 3W
137	0.09	1.89	0.00	0.87	0.05	0.00	0.00	2.89	**171**	0.12	26.75	0.00	
138	7.95	7.95	0.92	0.10	0.00	0.00	0.00	16.92	**172**	0.01	1.03	0.00	
139	1.46	1.46	0.00	0.02	0.00	0.00	0.00	2.95	**173**	0.00	0.00	0.00	
140	0.02	0.38	0.00	0.00	0.01	0.00	0.00	0.40	**174**	0.00	0.00	0.00	
141	6.59	6.59	0.00	0.00	0.01	0.00	0.00	13.20	**175**	0.00	0.05	0.00	
142	0.04	1.81	0.00	0.00	0.00	0.00	0.00	1.85	**176**	0.00	0.00	0.00	
143	11.14	11.14	0.72	0.15	0.01	0.00	0.00	23.15	**177**	7.48	3.56	2.97	
144	14.87	14.87	0.00	0.22	0.00	0.00	0.00	29.96					
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
146	5.70	5.70	1.15	1.36	0.01	0.00	0.00	13.91					
147	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.20					
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
149	1.20	8.60	0.00	0.08	0.03	0.00	0.00	9.91					
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
154	0.03	0.64	0.00	0.00	0.01	0.00	0.00	0.67					
155	0.06	1.28	0.00	0.43	0.00	0.00	0.00	1.77					
156	75.96	6.61	1.00	0.00	0.00	0.00	0.00	83.57					
157	0.62	0.62	0.00	21.98	0.00	0.00	0.00	23.22					
158	**0.01**	**0.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.12**					
159	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**					
160	**7.17**	**2.05**	**0.00**	**0.26**	**0.00**	**0.00**	**0.00**	**9.48**					
161	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**					
162	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**					
163	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**					
164	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**					
165	**4.84**	**20.74**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**25.58**					
166	**0.42**	**0.42**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.85**					
167	**0.20**	**0.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.76**					
168	**39.46**	**13.07**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**52.56**					
169	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**					
170	**0.01**	**0.31**	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.35**					

8.13 Zonewise expected shift to each feeder mode-2028

8.13.1 To Feeder Walk

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
1	0.00	0.00	0.00	6.22	0.28	0.00	0.00	7.00	34	0.00	2.92	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35	0.00	0.09	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36	0.04	1.23	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	0.01	0.28	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	2.82	5.60	0.05	2
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	0.00	0.26	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42	0.00	0.00	3.75	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43	0.00	12.78	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45	0.00	0.00	0.00	
13	0.63	0.00	0.00	0.00	0.06	0.00	0.00	1.00	46	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47	2.53	1.86	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	51	0.00	0.00	0.00	
19	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52	20.53	0.59	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	0.00	6.44	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55	0.00	0.00	0.00	
23	0.57	0.27	0.00	0.00	0.00	0.00	0.00	1.00	56	1.25	1.14	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	0.95	1.02	0.32	
25	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	58	0.00	2.08	0.00	
26	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	59	0.41	7.55	1.11	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60	2.74	12.85	0.00	
28	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	61	0.98	9.47	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62	0.04	0.02	0.00	
30	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	63	0.04	0.02	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64	0.04	0.02	0.00	
32	0.00	0.51	0.00	0.00	0.00	0.00	0.00	1.00	65	0.45	13.51	7.93	
33	2.75	6.61	4.84	4.11	0.06	0.00	0.00	18.00	66	2.06	9.99	40.41	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips sh from Sh 3W
67	0.37	2.63	0.07	1.40	0.00	0.00	0.00	4.00	**102**	1.71	11.07	0.00	
68	0.00	14.68	0.00	0.21	0.03	0.00	0.00	15.00	**103**	0.00	0.00	0.00	
69	0.00	7.45	0.00	0.00	0.02	0.00	0.00	7.00	**104**	6.71	7.37	0.00	
70	1.42	1.89	0.00	0.00	0.11	0.00	0.00	3.00	**105**	1.51	3.66	0.00	1
71	0.00	4.16	0.00	0.00	0.09	0.00	0.00	4.00	**106**	0.00	0.33	0.00	
72	0.00	8.35	0.00	0.00	0.26	0.00	0.00	9.00	**107**	0.55	1.62	0.04	
73	0.00	6.12	0.00	0.00	0.00	0.00	0.00	6.00	**108**	0.73	2.11	0.00	
74	6.99	10.47	0.00	0.20	0.04	0.00	0.00	18.00	**109**	32.08	38.51	4.93	9
75	0.00	0.00	0.00	0.54	0.01	0.00	0.00	1.00	**110**	6.92	9.10	0.06	
76	0.00	2.47	4.84	0.00	0.00	0.00	0.00	7.00	**111**	3.02	5.65	0.00	
77	12.37	77.74	0.00	8.52	0.30	0.00	0.00	99.00	**112**	0.68	5.59	0.00	
78	2.10	7.49	10.22	0.43	0.21	0.00	0.00	20.00	**113**	0.65	4.09	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.00	0.42	0.00	
80	2.46	68.29	0.00	4.43	0.17	0.00	0.00	75.00	**115**	0.00	9.46	0.06	
81	3.23	23.28	8.09	213.91	0.15	0.13	0.09	249.00	**116**	5.31	8.99	0.00	
82	2.76	70.10	0.00	0.13	0.26	0.00	0.00	73.00	**117**	0.00	5.80	0.79	
83	1.18	2.21	1.07	1.54	0.25	0.00	0.00	6.00	**118**	7.20	11.96	1.98	
84	0.04	0.02	0.00	0.01	0.00	0.00	0.00	0.00	**119**	4.56	10.61	0.00	
85	1.63	0.68	0.00	0.44	0.00	0.00	0.00	3.00	**120**	2.93	47.38	0.00	
86	0.00	1.72	0.00	0.00	0.03	0.00	0.00	2.00	**121**	0.07	0.59	0.00	
87	2.03	19.28	1.36	1.59	0.03	0.00	0.00	24.00	**122**	1.34	0.00	0.00	
88	5.08	20.76	16.54	0.83	0.02	0.00	0.15	43.00	**123**	0.00	0.00	0.00	
89	5.45	21.04	0.00	1.04	0.09	0.00	0.20	28.00	**124**	0.00	0.00	0.00	
90	1.26	23.36	0.77	1.10	0.29	0.00	0.00	27.00	**125**	0.00	0.00	0.00	
91	4.76	14.91	0.77	4.08	0.37	0.00	0.00	25.00	**126**	0.00	0.00	0.00	
92	1.17	14.79	0.00	16.96	0.81	0.00	0.00	34.00	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	**128**	0.00	0.09	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.37	0.46	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.00	1.10	0.00	
99	1.13	1.18	0.00	0.00	0.00	0.00	0.00	2.00	**134**	20.53	2.87	0.00	
100	0.00	6.86	0.00	0.00	0.01	0.00	0.00	7.00	**135**	0.00	3.00	0.28	
101	0.00	1.32	0.00	0.00	0.01	0.00	0.00	1.00	**136**	2.06	19.35	2.29	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3
137	0.00	2.33	0.00	1.07	0.03	0.00	0.00	3.00	**171**	0.00	69.31	0.00	
138	3.41	9.80	1.14	0.18	0.06	0.00	0.00	15.00	**172**	0.00	1.78	0.00	
139	3.62	1.81	0.00	0.55	0.06	0.00	0.00	6.00	**173**	0.00	0.00	0.00	
140	0.00	0.47	0.00	0.00	0.07	0.00	0.00	1.00	**174**	0.00	0.00	0.00	
141	1.51	8.14	0.00	0.00	0.14	0.00	0.00	10.00	**175**	0.00	0.08	0.00	
142	0.00	3.13	0.00	0.00	0.01	0.00	0.00	3.00	**176**	0.00	0.00	0.00	
143	2.36	13.74	0.88	3.95	0.08	0.00	0.00	21.00	**177**	17.03	9.23	3.66	6
144	1.30	18.35	0.00	1.86	0.00	0.00	0.00	22.00	**178**	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**179**	0.00	0.00	0.00	
146	1.06	7.03	1.42	2.35	0.07	0.00	0.00	12.00	**180**	0.90	0.45	0.00	
147	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	**181**	0.42	1.50	2.04	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**182**	0.84	2.99	2.04	
149	0.13	14.86	0.00	2.03	0.42	0.00	0.00	17.00	**183**	0.84	2.99	2.04	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**184**	1.47	5.24	7.15	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**185**	0.42	1.50	2.04	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**186**	0.84	2.99	2.04	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**187**	0.69	5.84	0.00	
154	0.00	0.78	0.00	0.00	0.09	0.00	0.00	1.00	**188**	0.69	5.84	0.00	
155	0.00	1.58	0.00	1.50	0.00	0.00	0.00	3.00	**189**	0.69	5.84	0.00	
156	1.62	8.15	1.23	0.00	0.06	0.00	0.00	11.00	**190**	0.00	0.00	0.00	
157	1.49	0.77	0.00	27.12	0.01	0.00	0.00	29.00	**191**	0.00	0.00	0.00	
158	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	**192**	0.00	0.00	0.00	
159	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	**193**	0.00	0.00	0.00	
160	0.63	2.53	0.00	2.67	0.00	0.00	0.00	6.00					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	0.12	35.83	0.00	0.00	0.00	0.00	0.00	36.00					
166	1.13	0.52	0.00	0.00	0.02	0.00	0.01	2.00					
167	0.03	0.96	0.00	0.00	0.05	0.00	0.00	1.00					
168	11.47	33.87	0.00	0.52	0.00	0.00	0.00	46.00					
169	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00					
170	0.00	0.54	0.00	0.00	0.37	0.00	0.00	1.00					

8.13.2 To Feeder Bicycle Sharing

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W
1	0.00	0.00	0.00	37.35	1.68	0.00	0.00	39.02	34	0.14	2.92	0.00	15.
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35	0.09	0.09	0.00	0.
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36	0.06	1.23	0.00	0.
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37	0.28	0.28	0.00	0.
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	5.60	5.60	0.05	12.
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	0.01	0.26	0.00	0.
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41	0.00	0.00	0.00	0.
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42	0.00	0.00	3.75	0.
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43	0.07	12.78	0.00	0.
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44	0.00	0.00	0.00	0.
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45	0.00	0.00	0.00	0.
13	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.36	46	0.00	0.00	0.00	0.
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47	1.86	1.86	0.00	0.
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48	0.00	0.00	0.00	0.
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49	0.00	0.00	0.00	0.
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	0.00	0.00	0.
18	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.17	51	0.00	0.00	0.00	0.
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52	3.85	0.59	0.00	0.
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53	0.00	0.00	0.00	0.
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	0.15	6.44	0.00	0.
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55	0.00	0.00	0.00	0.
23	0.27	0.27	0.00	0.00	0.01	0.00	0.00	0.55	56	3.69	1.14	0.00	0.
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57	1.02	1.02	0.32	8.
25	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.25	58	0.10	2.08	0.00	0.
26	0.02	0.32	0.00	0.00	0.01	0.00	0.00	0.34	59	7.55	7.55	1.11	8.
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60	12.85	12.85	0.00	0.
28	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	61	18.95	9.47	0.01	8.
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62	0.02	0.02	0.00	0.
30	0.02	0.32	0.00	0.00	0.02	0.00	0.00	0.35	63	0.02	0.02	0.00	0.
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64	0.02	0.02	0.00	0.
32	0.02	0.51	0.00	0.00	0.00	0.00	0.00	0.54	65	6.76	13.51	7.93	0.
33	19.82	6.61	4.84	12.32	0.61	0.00	0.00	44.20	66	19.98	9.99	40.41	21.

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3
67	2.63	2.63	0.07	1.40	0.00	0.00	0.00	6.73	**102**	1.84	11.07	0.00	0
68	7.34	14.68	0.00	1.24	0.42	0.00	0.00	23.67	**103**	0.00	0.00	0.00	0
69	0.35	7.45	0.00	0.00	0.18	0.00	0.00	7.98	**104**	3.68	7.37	0.00	0
70	0.94	1.89	0.00	0.00	0.64	0.00	0.00	3.47	**105**	3.66	3.66	0.00	67
71	0.05	4.16	0.00	0.00	0.56	0.00	0.00	4.76	**106**	0.02	0.33	0.00	0
72	0.20	8.35	0.00	0.00	1.58	0.00	0.00	10.13	**107**	1.62	1.62	0.04	2
73	0.10	6.12	0.00	0.00	0.00	0.00	0.00	6.21	**108**	2.11	2.11	0.00	0
74	6.98	10.47	0.00	1.18	0.22	0.00	0.00	18.85	**109**	77.03	38.51	4.93	583
75	0.00	0.00	0.00	1.61	0.06	0.00	0.00	1.66	**110**	54.58	9.10	0.06	1
76	0.12	2.47	4.84	0.00	0.01	0.00	0.00	7.44	**111**	5.65	5.65	0.00	0
77	8.64	77.74	0.00	25.55	1.79	0.00	0.00	113.72	**112**	11.18	5.59	0.00	5
78	7.49	7.49	10.22	2.58	1.26	0.00	0.00	29.03	**113**	4.09	4.09	0.00	0
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.42	0.00	18
80	5.25	68.29	0.00	13.29	0.17	0.00	0.00	87.00	**115**	0.45	9.46	0.06	12
81	23.28	23.28	8.09	641.73	0.92	0.13	0.06	697.50	**116**	8.99	8.99	0.00	12
82	93.47	70.10	0.00	0.38	2.58	0.00	0.00	166.52	**117**	0.28	5.80	0.79	0
83	2.21	2.21	1.07	4.62	2.46	0.00	0.00	12.57	**118**	11.96	11.96	1.98	18
84	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.05	**119**	10.61	10.61	0.00	1
85	0.68	0.68	0.00	2.67	0.00	0.00	0.00	4.04	**120**	7.90	47.38	0.00	0
86	0.08	1.72	0.00	0.00	0.30	0.00	0.00	2.10	**121**	0.59	0.59	0.00	0
87	19.28	19.28	1.36	0.95	0.28	0.00	0.00	41.16	**122**	0.00	0.00	0.00	54
88	20.76	20.76	1.65	0.83	0.37	0.00	0.11	44.48	**123**	0.00	0.00	0.00	0
89	21.04	21.04	0.00	3.11	1.36	0.00	0.61	47.16	**124**	0.00	0.00	0.00	0
90	11.68	23.36	0.77	3.31	1.74	0.00	0.00	40.86	**125**	0.00	0.00	0.00	0
91	59.63	14.91	0.77	12.25	2.23	0.00	0.00	89.78	**126**	0.00	0.00	0.00	0
92	14.79	14.79	0.00	101.74	4.84	0.00	0.00	136.17	**127**	0.00	0.00	0.00	0
93	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11	**128**	0.00	0.09	0.00	0
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0
95	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.60	**130**	0.00	0.00	0.00	0
96	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.53	**131**	0.00	0.00	0.00	0
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.46	0.46	0.00	0
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.05	1.10	0.00	0
99	0.39	1.18	0.00	0.00	0.03	0.00	0.00	1.60	**134**	37.37	2.87	0.00	0
100	0.05	6.86	0.00	0.00	0.09	0.00	0.00	7.01	**135**	0.14	3.00	0.28	0
101	0.01	1.32	0.00	0.00	0.12	0.00	0.00	1.46	**136**	19.35	19.35	2.29	3

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3
137	0.11	2.33	0.00	1.07	0.03	0.00	0.00	3.54	**171**	0.14	69.31	0.00	0
138	9.80	9.80	1.14	1.08	0.60	0.00	0.00	22.42	**172**	0.01	1.78	0.00	0
139	1.81	1.81	0.00	1.66	0.60	0.00	0.00	5.87	**173**	0.00	0.00	0.00	0
140	0.02	0.47	0.00	0.00	0.72	0.00	0.00	1.21	**174**	0.00	0.00	0.00	10
141	8.14	8.14	0.00	0.00	1.44	0.00	0.00	17.71	**175**	0.00	0.08	0.00	0
142	0.05	3.13	0.00	0.00	0.08	0.00	0.00	3.26	**176**	0.00	0.00	0.00	0
143	13.74	13.74	0.88	23.68	0.84	0.00	0.00	52.89	**177**	9.23	9.23	3.66	185
144	18.35	18.35	0.00	11.18	0.00	0.00	0.00	47.87	**178**	0.00	0.00	0.00	0
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**179**	0.00	0.00	0.00	0
146	7.03	7.03	1.42	14.08	0.72	0.00	0.00	30.28	**180**	0.45	0.45	0.00	0
147	0.01	0.23	0.00	0.00	0.04	0.00	0.00	0.28	**181**	1.50	1.50	2.04	1
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**182**	2.99	2.99	2.04	3
149	1.49	14.86	0.00	12.16	2.50	0.00	0.00	31.00	**183**	2.99	2.99	2.04	3
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**184**	5.24	5.24	7.15	3
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**185**	1.50	1.50	2.04	1
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**186**	2.99	2.99	2.04	3
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**187**	23.37	5.84	0.00	0
154	0.04	0.78	0.00	0.00	0.56	0.00	0.00	1.38	**188**	23.37	5.84	0.00	0
155	0.08	1.58	0.00	1.50	0.02	0.00	0.00	3.17	**189**	23.37	5.84	0.00	0
156	93.73	8.15	1.23	0.00	0.64	0.00	0.00	103.75	**190**	0.00	0.00	0.00	0
157	0.77	0.77	0.00	67.80	0.08	0.00	0.00	69.41	**191**	0.00	0.00	0.00	0
158	0.01	0.14	0.00	0.00	0.04	0.00	0.00	0.18	**192**	0.00	0.00	0.00	0
159	0.00	0.00	0.00	0.00	0.89	0.00	0.00	0.89	**193**	0.00	0.00	0.00	0
160	8.85	2.53	0.00	2.67	0.00	0.00	0.00	14.05					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.67					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	5.97	35.83	0.00	0.00	0.00	0.00	0.00	41.80					
166	0.52	0.52	0.00	0.00	0.17	0.00	0.05	1.26					
167	0.24	0.96	0.00	0.00	0.46	0.00	0.00	1.66					
168	48.69	33.87	0.00	3.12	0.03	0.00	0.00	85.72					
169	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.10					
170	0.01	0.54	0.00	0.00	2.19	0.00	0.00	2.75					

8.13.3 To RMTS Bus

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3
1	0.00	0.00	0.00	2.96	0.03	0.00	0.00	2.99	**34**	0.14	2.92	0.00	1
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.09	0.09	0.00	0
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.06	1.23	0.00	0
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.28	0.28	0.00	0
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	5.60	5.60	0.05	2
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	0
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.01	0.26	0.00	0
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	0
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	3.75	0
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.07	12.78	0.00	0
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	0
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	0
13	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**46**	0.00	0.00	0.00	0
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.86	1.86	0.00	0
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	0
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	0
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	0
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**51**	0.00	0.00	0.00	0
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	3.85	0.59	0.00	0
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	0
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.15	6.44	0.00	0
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	0
23	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.55	**56**	3.69	1.14	0.00	0
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	1.02	1.02	0.32	0
25	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.25	**58**	0.10	2.08	0.00	0
26	0.02	0.32	0.00	0.00	0.00	0.00	0.00	0.33	**59**	7.55	7.55	1.11	2
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	12.85	12.85	0.00	0
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	18.95	9.47	0.01	2
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.02	0.02	0.00	0
30	0.02	0.32	0.00	0.00	0.00	0.00	0.00	0.33	**63**	0.02	0.02	0.00	0
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.02	0.02	0.00	0
32	0.02	0.51	0.00	0.00	0.00	0.00	0.00	0.54	**65**	6.76	13.51	7.93	0
33	19.82	6.61	4.84	4.11	0.01	0.00	0.00	35.38	**66**	19.98	9.99	40.41	3

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3
67	2.63	2.63	0.07	1.40	0.00	0.00	0.00	6.73	**102**	1.84	11.07	0.00	0
68	7.34	14.68	0.00	0.15	0.00	0.00	0.00	22.16	**103**	0.00	0.00	0.00	0
69	0.35	7.45	0.00	0.00	0.00	0.00	0.00	7.81	**104**	3.68	7.37	0.00	0
70	0.94	1.89	0.00	0.00	0.01	0.00	0.00	2.84	**105**	3.66	3.66	0.00	8
71	0.05	4.16	0.00	0.00	0.01	0.00	0.00	4.22	**106**	0.02	0.33	0.00	0
72	0.20	8.35	0.00	0.00	0.03	0.00	0.00	8.57	**107**	1.62	1.62	0.04	0
73	0.10	6.12	0.00	0.00	0.00	0.00	0.00	6.21	**108**	2.11	2.11	0.00	0
74	6.98	10.47	0.00	0.14	0.00	0.00	0.00	17.59	**109**	77.03	38.51	4.93	46
75	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.54	**110**	54.58	9.10	0.06	0
76	0.12	2.47	4.84	0.00	0.00	0.00	0.00	7.44	**111**	5.65	5.65	0.00	0
77	8.64	77.74	0.00	8.52	0.03	0.00	0.00	94.92	**112**	11.18	5.59	0.00	5
78	7.49	7.49	10.22	0.31	0.02	0.00	0.00	25.52	**113**	4.09	4.09	0.00	0
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.42	0.00	2
80	5.25	68.29	0.00	4.43	0.01	0.00	0.00	77.98	**115**	0.45	9.46	0.06	1
81	23.28	23.28	8.09	152.79	0.01	0.13	0.00	207.60	**116**	8.99	8.99	0.00	2
82	93.47	70.10	0.00	0.13	0.02	0.00	0.00	163.72	**117**	0.28	5.80	0.79	0
83	2.21	2.21	1.07	1.10	0.02	0.00	0.00	6.61	**118**	11.96	11.96	1.98	2
84	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.05	**119**	10.61	10.61	0.00	0
85	0.68	0.68	0.00	0.32	0.00	0.00	0.00	1.69	**120**	7.90	47.38	0.00	0
86	0.08	1.72	0.00	0.00	0.00	0.00	0.00	1.80	**121**	0.59	0.59	0.00	0
87	19.28	19.28	1.36	0.16	0.00	0.00	0.00	40.09	**122**	0.00	0.00	0.00	6
88	20.76	20.76	1.65	0.83	0.00	0.00	0.01	44.02	**123**	0.00	0.00	0.00	0
89	21.04	21.04	0.00	1.04	0.01	0.00	0.20	43.33	**124**	0.00	0.00	0.00	0
90	11.68	23.36	0.77	1.10	0.03	0.00	0.00	36.94	**125**	0.00	0.00	0.00	0
91	59.63	14.91	0.77	4.08	0.04	0.00	0.00	79.43	**126**	0.00	0.00	0.00	0
92	14.79	14.79	0.00	48.45	0.08	0.00	0.00	78.11	**127**	0.00	0.00	0.00	0
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.09	0.00	0
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	0
95	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**130**	0.00	0.00	0.00	0
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	0
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.46	0.46	0.00	0
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.05	1.10	0.00	0
99	0.39	1.18	0.00	0.00	0.00	0.00	0.00	1.57	**134**	37.37	2.87	0.00	0
100	0.05	6.86	0.00	0.00	0.00	0.00	0.00	6.92	**135**	0.14	3.00	0.28	0
101	0.01	1.32	0.00	0.00	0.00	0.00	0.00	1.34	**136**	19.35	19.35	2.29	1

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
137	0.11	2.33	0.00	1.07	0.06	0.00	0.00	3.57	**171**	0.14	69.31	0.00	
138	9.80	9.80	1.14	0.18	0.01	0.00	0.00	20.93	**172**	0.01	1.78	0.00	
139	1.81	1.81	0.00	0.55	0.01	0.00	0.00	4.17	**173**	0.00	0.00	0.00	
140	0.02	0.47	0.00	0.00	0.01	0.00	0.00	0.50	**174**	0.00	0.00	0.00	
141	8.14	8.14	0.00	0.00	0.01	0.00	0.00	16.29	**175**	0.00	0.08	0.00	
142	0.05	3.13	0.00	0.00	0.00	0.00	0.00	3.18	**176**	0.00	0.00	0.00	
143	13.74	13.74	0.88	2.82	0.01	0.00	0.00	31.20	**177**	9.23	9.23	3.66	
144	18.35	18.35	0.00	1.86	0.00	0.00	0.00	38.56	**178**	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**179**	0.00	0.00	0.00	
146	7.03	7.03	1.42	2.35	0.01	0.00	0.00	17.83	**180**	0.45	0.45	0.00	
147	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.24	**181**	1.50	1.50	2.04	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**182**	2.99	2.99	2.04	
149	1.49	14.86	0.00	0.97	0.04	0.00	0.00	17.35	**183**	2.99	2.99	2.04	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**184**	5.24	5.24	7.15	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**185**	1.50	1.50	2.04	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**186**	2.99	2.99	2.04	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**187**	23.37	5.84	0.00	
154	0.04	0.78	0.00	0.00	0.01	0.00	0.00	0.83	**188**	23.37	5.84	0.00	
155	0.08	1.58	0.00	0.25	0.00	0.00	0.00	1.90	**189**	23.37	5.84	0.00	
156	93.73	8.15	1.23	0.00	0.01	0.00	0.00	103.12	**190**	0.00	0.00	0.00	
157	0.77	0.77	0.00	4.52	0.00	0.00	0.00	6.05	**191**	0.00	0.00	0.00	
158	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.14	**192**	0.00	0.00	0.00	
159	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**193**	0.00	0.00	0.00	
160	8.85	2.53	0.00	0.44	0.00	0.00	0.00	11.82					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	5.97	35.83	0.00	0.00	0.00	0.00	0.00	41.80					
166	0.52	0.52	0.00	0.00	0.00	0.00	0.01	1.05					
167	0.24	0.96	0.00	0.00	0.00	0.00	0.00	1.21					
168	48.69	33.87	0.00	0.25	0.00	0.00	0.00	82.82					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.54	0.00	0.00	0.03	0.00	0.00	0.59					

8.13.4 To RMTS - Hybrid BRT

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Share
1	0.00	0.00	0.00	17.78	0.03	0.00	0.53	18.34	**34**	0.14	2.92	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**35**	0.09	0.09	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**36**	0.06	1.23	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**37**	0.28	0.28	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**38**	5.60	5.60	0.05	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**39**	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**40**	0.01	0.26	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**41**	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**42**	0.00	0.00	3.75	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**43**	0.07	12.78	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**44**	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**45**	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.01	0.00	0.53	0.54	**46**	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**47**	1.86	1.86	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**48**	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**49**	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**50**	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**51**	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**52**	3.85	0.59	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**53**	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**54**	0.15	6.44	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**55**	0.00	0.00	0.00	
23	0.27	0.27	0.00	0.00	0.00	0.00	0.53	1.08	**56**	3.69	1.14	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**57**	1.02	1.02	0.32	
25	0.01	0.24	0.00	0.00	0.00	0.00	0.53	0.78	**58**	0.10	2.08	0.00	
26	0.02	0.32	0.00	0.00	0.00	0.00	0.53	0.87	**59**	7.55	7.55	1.11	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**60**	12.85	12.85	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**61**	18.95	9.47	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**62**	0.02	0.02	0.00	
30	0.02	0.32	0.00	0.00	0.00	0.00	0.53	0.86	**63**	0.02	0.02	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**64**	0.02	0.02	0.00	
32	0.02	0.51	0.00	0.00	0.00	0.00	0.53	1.07	**65**	6.76	13.51	7.93	
33	19.82	6.61	4.84	4.11	0.01	0.00	0.53	35.91	**66**	19.98	9.99	40.41	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
67	2.63	2.63	0.07	1.40	0.00	0.00	0.53	7.26	**102**	1.84	11.07	0.00	
68	7.34	14.68	0.00	0.21	0.00	0.00	0.53	22.75	**103**	0.00	0.00	0.00	
69	0.35	7.45	0.00	0.00	0.00	0.00	0.53	8.34	**104**	3.68	7.37	0.00	
70	0.94	1.89	0.00	0.00	0.03	0.00	0.53	3.39	**105**	3.66	3.66	0.00	
71	0.05	4.16	0.00	0.00	0.03	0.00	0.53	4.77	**106**	0.02	0.33	0.00	
72	0.20	8.35	0.00	0.00	0.08	0.00	0.53	9.15	**107**	1.62	1.62	0.04	
73	0.10	6.12	0.00	0.00	0.00	0.00	0.53	6.74	**108**	2.11	2.11	0.00	
74	6.98	10.47	0.00	0.59	0.00	0.00	0.53	18.57	**109**	77.03	38.51	4.93	4
75	0.00	0.00	0.00	0.54	0.00	0.00	0.53	1.07	**110**	54.58	9.10	0.06	
76	0.12	2.47	4.84	0.00	0.00	0.00	0.53	7.97	**111**	5.65	5.65	0.00	
77	8.64	77.74	0.00	8.52	0.09	0.00	0.53	95.51	**112**	11.18	5.59	0.00	
78	7.49	7.49	10.22	0.43	0.06	0.00	0.53	26.21	**113**	4.09	4.09	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**114**	0.02	0.42	0.00	
80	5.25	68.29	0.00	4.43	0.02	0.00	0.53	78.52	**115**	0.45	9.46	0.06	
81	23.28	23.28	8.09	458.38	0.04	0.13	0.56	513.77	**116**	8.99	8.99	0.00	
82	93.47	70.10	0.00	0.13	0.02	0.00	0.53	164.25	**117**	0.28	5.80	0.79	
83	2.21	2.21	1.07	1.54	0.02	0.00	0.53	7.58	**118**	11.96	11.96	1.98	
84	0.02	0.02	0.00	0.01	0.00	0.00	0.53	0.58	**119**	10.61	10.61	0.00	
85	0.68	0.68	0.00	0.44	0.00	0.00	0.53	2.34	**120**	7.90	47.38	0.00	
86	0.08	1.72	0.00	0.00	0.00	0.00	0.53	2.33	**121**	0.59	0.59	0.00	
87	19.28	19.28	1.36	0.16	0.00	0.00	0.53	40.62	**122**	0.00	0.00	0.00	
88	20.76	20.76	1.65	0.83	0.00	0.00	0.59	44.60	**123**	0.00	0.00	0.00	
89	21.04	21.04	0.00	1.04	0.01	0.00	0.80	43.92	**124**	0.00	0.00	0.00	
90	11.68	23.36	0.77	1.10	0.08	0.00	0.53	37.52	**125**	0.00	0.00	0.00	
91	59.63	14.91	0.77	4.08	0.11	0.00	0.53	80.03	**126**	0.00	0.00	0.00	
92	14.79	14.79	0.00	48.45	0.23	0.00	0.53	78.79	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**128**	0.00	0.09	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.01	0.00	0.53	0.54	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.01	0.00	0.53	0.54	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**132**	0.46	0.46	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**133**	0.05	1.10	0.00	
99	0.39	1.18	0.00	0.00	0.00	0.00	0.53	2.10	**134**	37.37	2.87	0.00	
100	0.05	6.86	0.00	0.00	0.00	0.00	0.53	7.45	**135**	0.14	3.00	0.28	
101	0.01	1.32	0.00	0.00	0.00	0.00	0.53	1.87	**136**	19.35	19.35	2.29	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
137	0.11	2.33	0.00	1.07	0.06	0.00	0.53	4.10	**171**	0.14	69.31	0.00	
138	9.80	9.80	1.14	0.18	0.01	0.00	0.53	21.46	**172**	0.01	1.78	0.00	
139	1.81	1.81	0.00	0.55	0.01	0.00	0.53	4.70	**173**	0.00	0.00	0.00	
140	0.02	0.47	0.00	0.00	0.01	0.00	0.53	1.03	**174**	0.00	0.00	0.00	
141	8.14	8.14	0.00	0.00	0.01	0.00	0.53	16.82	**175**	0.00	0.08	0.00	
142	0.05	3.13	0.00	0.00	0.00	0.00	0.53	3.71	**176**	0.00	0.00	0.00	
143	13.74	13.74	0.88	2.82	0.01	0.00	0.53	31.73	**177**	9.23	9.23	3.66	1
144	18.35	18.35	0.00	1.86	0.00	0.00	0.53	39.09	**178**	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**179**	0.00	0.00	0.00	
146	7.03	7.03	1.42	2.35	0.01	0.00	0.53	18.36	**180**	0.45	0.45	0.00	
147	0.01	0.23	0.00	0.00	0.00	0.00	0.53	0.77	**181**	1.50	1.50	2.04	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**182**	2.99	2.99	2.04	
149	1.49	14.86	0.00	8.69	0.04	0.00	0.53	25.60	**183**	2.99	2.99	2.04	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**184**	5.24	5.24	7.15	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**185**	1.50	1.50	2.04	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**186**	2.99	2.99	2.04	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	**187**	23.37	5.84	0.00	
154	0.04	0.78	0.00	0.00	0.01	0.00	0.53	1.36	**188**	23.37	5.84	0.00	
155	0.08	1.58	0.00	0.25	0.00	0.00	0.53	2.43	**189**	23.37	5.84	0.00	
156	93.73	8.15	1.23	0.01	0.01	0.00	0.53	103.65	**190**	0.00	0.00	0.00	
157	0.77	0.77	0.00	4.52	0.00	0.00	0.53	6.58	**191**	0.00	0.00	0.00	
158	0.01	0.14	0.00	0.00	0.00	0.00	0.53	0.67	**192**	0.00	0.00	0.00	
159	0.00	0.00	0.00	0.00	0.01	0.00	0.53	0.54	**193**	0.00	0.00	0.00	
160	8.85	2.53	0.00	0.44	0.00	0.00	0.53	12.35					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.53	0.54					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53					
165	5.97	35.83	0.00	0.00	0.00	0.00	0.53	42.33					
166	0.52	0.52	0.00	0.00	0.00	0.00	0.54	1.58					
167	0.24	0.96	0.00	0.00	0.00	0.00	0.53	1.74					
168	48.69	33.87	0.00	0.37	0.00	0.00	0.53	83.47					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53					
170	0.01	0.54	0.00	0.00	0.03	0.00	0.53	1.12					

8.13.5 To Shared 3W

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifte from Share
1	0.00	0.00	0.00	0.30	0.03	0.00	0.00	0.32	**34**	0.14	2.92	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.09	0.09	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.06	0.59	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.28	0.28	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	5.60	5.60	0.05	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.01	0.26	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	3.75	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.07	3.65	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	**46**	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.86	0.53	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**51**	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	3.85	0.28	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.15	3.07	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	
23	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.55	**56**	3.69	0.81	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	1.02	0.73	0.32	
25	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.18	**58**	0.10	2.08	0.00	
26	0.02	0.15	0.00	0.00	0.00	0.00	0.00	0.17	**59**	7.55	5.39	1.11	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	12.85	12.85	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	18.95	6.77	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.02	0.02	0.00	
30	0.02	0.32	0.00	0.00	0.00	0.00	0.00	0.34	**63**	0.02	0.02	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.02	0.02	0.00	
32	0.02	0.51	0.00	0.00	0.00	0.00	0.00	0.54	**65**	6.76	9.65	7.93	
33	19.82	4.72	4.84	0.20	0.04	0.00	0.00	29.61	**66**	19.98	7.14	40.41	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
67	2.63	2.63	0.07	0.40	0.00	0.00	0.00	5.73	**102**	1.84	5.27	0.00	
68	7.34	10.48	0.00	0.01	0.03	0.00	0.00	17.86	**103**	0.00	0.00	0.00	
69	0.35	3.55	0.00	0.00	0.01	0.00	0.00	3.91	**104**	3.68	3.51	0.00	
70	0.94	0.90	0.00	0.00	0.01	0.00	0.00	1.85	**105**	3.66	2.61	0.00	
71	0.05	1.98	0.00	0.00	0.01	0.00	0.00	2.04	**106**	0.02	0.33	0.00	
72	0.20	3.97	0.00	0.00	0.03	0.00	0.00	4.20	**107**	1.62	1.62	0.04	
73	0.10	1.75	0.00	0.00	0.00	0.00	0.00	1.84	**108**	2.11	2.11	0.00	
74	6.98	2.99	0.00	0.01	0.01	0.00	0.00	9.99	**109**	77.03	38.51	4.93	
75	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03	**110**	54.58	9.10	0.06	
76	0.12	1.18	4.84	0.00	0.00	0.00	0.00	6.14	**111**	5.65	5.65	0.00	
77	8.64	22.21	0.00	0.41	0.03	0.00	0.00	31.28	**112**	11.18	2.66	0.00	
78	7.49	5.35	10.22	0.02	0.06	0.00	0.00	23.13	**113**	4.09	2.92	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.30	0.00	
80	5.25	19.51	0.00	0.21	0.03	0.00	0.00	25.01	**115**	0.45	9.46	0.06	
81	23.28	23.28	8.09	10.19	0.04	0.13	0.03	65.04	**116**	8.99	8.99	0.00	
82	93.47	20.03	0.00	0.06	0.15	0.00	0.00	113.70	**117**	0.28	5.80	0.79	
83	2.21	1.58	1.07	0.07	0.14	0.00	0.00	5.07	**118**	11.96	11.96	1.98	
84	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.05	**119**	10.61	10.61	0.00	
85	0.68	0.68	0.00	0.02	0.00	0.00	0.00	1.39	**120**	7.90	22.56	0.00	
86	0.08	1.72	0.00	0.00	0.02	0.00	0.00	1.82	**121**	0.59	0.42	0.00	
87	19.28	13.77	1.36	0.16	0.02	0.00	0.00	34.59	**122**	0.00	0.00	0.00	
88	20.76	14.83	1.65	0.04	0.02	0.00	0.07	37.38	**123**	0.00	0.00	0.00	
89	21.04	21.04	0.00	0.05	0.09	0.00	0.20	42.42	**124**	0.00	0.00	0.00	
90	11.68	11.12	0.77	0.79	0.08	0.00	0.00	24.45	**125**	0.00	0.00	0.00	
91	59.63	10.65	0.77	0.19	0.04	0.00	0.00	71.28	**126**	0.00	0.00	0.00	
92	14.79	7.04	0.00	0.81	0.08	0.00	0.00	22.72	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**128**	0.00	0.06	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.46	0.33	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.05	1.10	0.00	
99	0.39	0.56	0.00	0.00	0.00	0.00	0.00	0.96	**134**	37.37	2.87	0.00	
100	0.05	1.96	0.00	0.00	0.01	0.00	0.00	2.02	**135**	0.14	3.00	0.28	
101	0.01	0.63	0.00	0.00	0.00	0.00	0.00	0.65	**136**	19.35	19.35	2.29	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
137	0.11	1.67	0.00	1.07	0.06	0.00	0.00	2.90	**171**	0.14	3.30	0.00	
138	9.80	9.80	1.14	0.09	0.03	0.00	0.00	20.87	**172**	0.01	0.51	0.00	
139	1.81	1.81	0.00	0.03	0.03	0.00	0.00	3.67	**173**	0.00	0.00	0.00	
140	0.02	0.47	0.00	0.00	0.04	0.00	0.00	0.53	**174**	0.00	0.00	0.00	
141	8.14	5.81	0.00	0.00	0.08	0.00	0.00	14.03	**175**	0.00	0.04	0.00	
142	0.05	0.89	0.00	0.00	0.00	0.00	0.00	0.95	**176**	0.00	0.00	0.00	
143	13.74	13.74	0.88	0.19	0.05	0.00	0.00	28.61	**177**	9.23	2.64	3.66	
144	18.35	18.35	0.00	0.09	0.00	0.00	0.00	36.78	**178**	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**179**	0.00	0.00	0.00	
146	7.03	5.02	1.42	1.12	0.04	0.00	0.00	14.63	**180**	0.45	0.45	0.00	
147	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.18	**181**	1.50	1.07	2.04	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**182**	2.99	2.14	2.04	
149	1.49	7.07	0.00	0.10	0.12	0.00	0.00	8.77	**183**	2.99	2.14	2.04	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**184**	5.24	3.74	7.15	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**185**	1.50	1.07	2.04	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**186**	2.99	2.14	2.04	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**187**	23.37	2.78	0.00	
154	0.04	0.56	0.00	0.00	0.03	0.00	0.00	0.62	**188**	23.37	2.78	0.00	
155	0.08	1.58	0.00	0.12	0.00	0.00	0.00	1.77	**189**	23.37	2.78	0.00	
156	93.73	8.15	1.23	0.00	0.04	0.00	0.00	103.15	**190**	0.00	0.00	0.00	
157	0.77	0.77	0.00	3.23	0.00	0.00	0.00	4.76	**191**	0.00	0.00	0.00	
158	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.14	**192**	0.00	0.00	0.00	
159	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.04	**193**	0.00	0.00	0.00	
160	8.85	1.81	0.00	0.32	0.00	0.00	0.00	10.97					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	5.97	17.06	0.00	0.00	0.00	0.00	0.00	23.03					
166	0.52	0.52	0.00	0.00	0.01	0.00	0.01	1.06					
167	0.24	0.46	0.00	0.00	0.03	0.00	0.00	0.73					
168	48.69	9.68	0.00	0.02	0.00	0.00	0.00	58.40					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.26	0.00	0.00	0.10	0.00	0.00	0.37					

8.13.6 To E-Rickshaw

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
1	0.00	0.00	0.00	0.30	0.03	0.00	0.00	0.32	**34**	0.14	2.92	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**35**	0.09	0.09	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**36**	0.06	0.88	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**37**	0.28	0.28	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**38**	5.60	5.60	0.05	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**39**	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**40**	0.01	0.26	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**41**	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**42**	0.00	0.00	3.75	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**43**	0.07	6.09	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**44**	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**45**	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**46**	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**47**	1.86	0.89	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**48**	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**49**	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**50**	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**51**	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**52**	3.85	0.42	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**53**	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**54**	0.15	4.60	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**55**	0.00	0.00	0.00	
23	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.55	**56**	3.69	0.81	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**57**	1.02	0.73	0.32	
25	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.25	**58**	0.10	2.08	0.00	
26	0.02	0.23	0.00	0.00	0.00	0.00	0.00	0.24	**59**	7.55	7.55	1.11	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**60**	12.85	12.85	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**61**	18.95	9.47	0.01	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**62**	0.02	0.02	0.00	
30	0.02	0.32	0.00	0.00	0.00	0.00	0.00	0.33	**63**	0.02	0.02	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**64**	0.02	0.02	0.00	
32	0.02	0.51	0.00	0.00	0.00	0.00	0.00	0.54	**65**	6.76	13.51	7.93	
33	19.82	6.61	4.84	0.20	0.01	0.00	0.00	31.47	**66**	19.98	9.99	40.41	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Share
67	2.63	2.63	0.07	0.67	0.00	0.00	0.00	6.00	**102**	1.84	7.91	0.00	
68	7.34	10.48	0.00	0.01	0.00	0.00	0.00	17.83	**103**	0.00	0.00	0.00	
69	0.35	5.32	0.00	0.00	0.00	0.00	0.00	5.68	**104**	3.68	5.26	0.00	
70	0.94	1.35	0.00	0.00	0.01	0.00	0.00	2.30	**105**	3.66	3.66	0.00	
71	0.05	2.97	0.00	0.00	0.01	0.00	0.00	3.03	**106**	0.02	0.33	0.00	
72	0.20	5.96	0.00	0.00	0.03	0.00	0.00	6.19	**107**	1.62	1.62	0.04	
73	0.10	4.37	0.00	0.00	0.00	0.00	0.00	4.47	**108**	2.11	2.11	0.00	
74	6.98	7.48	0.00	0.01	0.00	0.00	0.00	14.47	**109**	77.03	38.51	4.93	
75	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03	**110**	54.58	9.10	0.06	
76	0.12	1.77	4.84	0.00	0.00	0.00	0.00	6.73	**111**	5.65	5.65	0.00	
77	8.64	37.02	0.00	0.41	0.03	0.00	0.00	46.09	**112**	11.18	3.99	0.00	
78	7.49	7.49	10.22	0.02	0.02	0.00	0.00	25.23	**113**	4.09	4.09	0.00	
79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**114**	0.02	0.42	0.00	
80	5.25	32.52	0.00	0.21	0.03	0.00	0.00	38.02	**115**	0.45	9.46	0.06	
81	23.28	23.28	8.09	10.19	0.01	0.13	0.06	65.05	**116**	8.99	8.99	0.00	
82	93.47	50.07	0.00	0.09	0.02	0.00	0.00	143.65	**117**	0.28	5.80	0.79	
83	2.21	2.21	1.07	0.07	0.02	0.00	0.00	5.58	**118**	11.96	11.96	1.98	
84	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.05	**119**	10.61	10.61	0.00	
85	0.68	0.68	0.00	0.13	0.00	0.00	0.00	1.50	**120**	7.90	33.84	0.00	
86	0.08	1.72	0.00	0.00	0.00	0.00	0.00	1.80	**121**	0.59	0.59	0.00	
87	19.28	19.28	1.36	0.95	0.00	0.00	0.00	40.88	**122**	0.00	0.00	0.00	
88	20.76	20.76	1.65	0.24	0.01	0.00	0.11	43.54	**123**	0.00	0.00	0.00	
89	21.04	21.04	0.00	0.30	0.01	0.00	0.20	42.59	**124**	0.00	0.00	0.00	
90	11.68	16.68	0.77	0.79	0.03	0.00	0.00	29.95	**125**	0.00	0.00	0.00	
91	59.63	14.91	0.77	0.19	0.04	0.00	0.00	75.54	**126**	0.00	0.00	0.00	
92	14.79	10.56	0.00	0.81	0.08	0.00	0.00	26.24	**127**	0.00	0.00	0.00	
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**128**	0.00	0.06	0.00	
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**129**	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**130**	0.00	0.00	0.00	
96	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**131**	0.00	0.00	0.00	
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**132**	0.46	0.46	0.00	
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**133**	0.05	1.10	0.00	
99	0.39	0.84	0.00	0.00	0.00	0.00	0.00	1.24	**134**	37.37	2.87	0.00	
100	0.05	4.90	0.00	0.00	0.00	0.00	0.00	4.96	**135**	0.14	3.00	0.28	
101	0.01	0.95	0.00	0.00	0.00	0.00	0.00	0.96	**136**	19.35	19.35	2.29	

Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared 3W	Trips shifted from RMTS	Trips shifted from Cyclists	Trips shifted from Pedestrians	Total trips shifted to feeder	Zone No.	Trips shifted from cars	Trips shifted from 2W	Trips shifted from 3W	Trips shifted from Shared
137	0.11	2.33	0.00	1.07	0.06	0.00	0.00	3.57	**171**	0.14	33.00	0.00	
138	9.80	9.80	1.14	0.13	0.01	0.00	0.00	20.88	**172**	0.01	1.27	0.00	
139	1.81	1.81	0.00	0.03	0.01	0.00	0.00	3.64	**173**	0.00	0.00	0.00	
140	0.02	0.47	0.00	0.00	0.01	0.00	0.00	0.50	**174**	0.00	0.00	0.00	
141	8.14	8.14	0.00	0.00	0.01	0.00	0.00	16.29	**175**	0.00	0.06	0.00	
142	0.05	2.23	0.00	0.00	0.00	0.00	0.00	2.28	**176**	0.00	0.00	0.00	
143	13.74	13.74	0.88	0.19	0.01	0.00	0.00	28.57	**177**	9.23	4.40	3.66	
144	18.35	18.35	0.00	0.27	0.00	0.00	0.00	36.96	**178**	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**179**	0.00	0.00	0.00	
146	7.03	7.03	1.42	1.68	0.01	0.00	0.00	17.16	**180**	0.45	0.45	0.00	
147	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.24	**181**	1.50	1.50	2.04	
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**182**	2.99	2.14	2.04	
149	1.49	10.61	0.00	0.10	0.04	0.00	0.00	12.23	**183**	2.99	2.14	2.04	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**184**	5.24	5.24	7.15	
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**185**	1.50	1.50	2.04	
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**186**	2.99	2.14	2.04	
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**187**	23.37	4.17	0.00	
154	0.04	0.78	0.00	0.00	0.01	0.00	0.00	0.83	**188**	23.37	4.17	0.00	
155	0.08	1.58	0.00	0.53	0.00	0.00	0.00	2.19	**189**	23.37	4.17	0.00	
156	93.73	8.15	1.23	0.00	0.01	0.00	0.00	103.12	**190**	0.00	0.00	0.00	
157	0.77	0.77	0.00	27.12	0.00	0.00	0.00	28.65	**191**	0.00	0.00	0.00	
158	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.14	**192**	0.00	0.00	0.00	
159	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	**193**	0.00	0.00	0.00	
160	8.85	2.53	0.00	0.95	0.00	0.00	0.00	12.33					
161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
163	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01					
164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
165	5.97	25.59	0.00	0.00	0.00	0.00	0.00	31.57					
166	0.52	0.52	0.00	0.00	0.00	0.00	0.01	1.05					
167	0.24	0.69	0.00	0.00	0.00	0.00	0.00	0.93					
168	48.69	16.13	0.00	0.02	0.00	0.00	0.00	64.85					
169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
170	0.01	0.39	0.00	0.00	0.03	0.00	0.00	0.43					

8.14 Zonewise total trips expected to be shifted in Year 2018, 2023 & 2028

Zone Number	Year 2018	Year 2023	Year 2028	Zone Number	Year 2018	Year 2023	Year 2028	Zone Number	Year 2018	Year 2023	Year 2028	Zone Number	Year 2018	Year 2
1	16.30	32.18	67.50	**45**	0.00	0.24	0.53	**89**	118.92	198.22	247.23	**133**	3.10	
2	0.00	0.24	0.53	**46**	0.00	0.24	0.53	**90**	108.99	159.06	196.49	**134**	129.07	18
3	0.00	0.24	0.53	**47**	12.67	17.03	21.24	**91**	241.32	334.37	420.96	**135**	10.23	1
4	0.00	0.24	0.53	**48**	0.00	0.24	0.53	**92**	169.57	263.11	375.74	**136**	125.26	19
5	0.00	0.24	0.53	**49**	0.00	0.24	0.53	**93**	0.09	0.35	0.67	**137**	10.68	1
6	0.00	0.24	0.53	**50**	0.00	0.24	0.53	**94**	0.00	0.24	0.53	**138**	62.89	9
7	0.00	0.24	0.53	**51**	0.00	0.24	0.53	**95**	0.31	0.62	1.24	**139**	13.92	2
8	0.00	0.24	0.53	**52**	26.25	34.99	43.40	**96**	0.45	0.80	1.20	**140**	1.93	
9	0.00	0.24	0.53	**53**	0.05	0.30	0.60	**97**	0.00	0.24	0.53	**141**	46.41	7
10	0.00	0.24	0.53	**54**	18.14	27.95	34.72	**98**	0.00	0.24	0.53	**142**	8.59	1
11	0.00	0.24	0.53	**55**	0.42	0.76	1.17	**99**	5.17	7.73	9.77	**143**	94.91	14
12	0.00	0.24	0.53	**56**	14.55	21.32	26.54	**100**	19.67	28.34	35.24	**144**	103.46	17
13	0.71	1.12	1.62	**57**	12.40	19.58	32.17	**101**	3.85	5.97	7.59	**145**	0.00	
14	0.00	0.24	0.53	**58**	6.68	11.16	14.00	**102**	38.78	56.00	69.93	**146**	51.42	8
15	0.00	0.24	0.53	**59**	58.72	83.25	108.52	**103**	0.23	0.52	0.88	**147**	0.67	
16	0.00	0.24	0.53	**60**	15.23	118.52	162.00	**104**	36.30	52.79	65.37	**148**	0.00	
17	0.00	0.24	0.53	**61**	42.45	59.47	171.88	**105**	84.67	112.57	139.13	**149**	55.06	8
18	0.09	0.40	0.73	**62**	0.00	0.24	0.86	**106**	1.08	1.94	2.63	**150**	0.00	
19	0.15	0.42	0.76	**63**	0.00	0.24	0.86	**107**	12.49	17.97	23.78	**151**	0.00	
20	0.00	0.24	0.53	**64**	0.00	0.24	0.86	**108**	11.97	19.65	24.47	**152**	0.00	
21	0.00	0.24	0.53	**65**	39.29	51.82	159.87	**109**	661.79	1084.19	1843.60	**153**	0.00	
22	0.00	0.24	0.53	**66**	239.71	344.53	437.25	**110**	201.46	275.04	344.21	**154**	2.70	
23	2.14	3.15	4.12	**67**	20.76	29.73	36.92	**111**	34.55	55.73	68.99	**155**	6.05	1
24	0.00	0.24	0.53	**68**	62.24	95.91	119.19	**112**	68.07	93.79	115.96	**156**	321.32	42
25	0.66	1.38	1.93	**69**	21.24	33.19	41.18	**113**	23.87	36.31	45.03	**157**	77.74	9
26	0.96	1.66	2.28	**70**	9.18	13.81	17.27	**114**	10.74	19.76	33.93	**158**	0.46	
27	0.00	0.24	0.53	**71**	12.22	18.51	23.07	**115**	35.17	62.90	77.84	**159**	0.76	
28	0.06	0.31	0.62	**72**	25.08	37.14	46.85	**116**	57.37	97.70	127.78	**160**	39.87	5
29	0.00	0.24	0.53	**73**	16.69	25.41	31.59	**117**	17.70	33.38	41.42	**161**	0.00	
30	0.93	1.87	2.54	**74**	52.35	78.09	97.18	**118**	87.28	137.43	180.91	**162**	0.00	
31	0.00	0.24	0.53	**75**	1.30	2.08	3.87	**119**	63.77	100.44	125.16	**163**	0.55	
32	1.39	2.84	3.73	**76**	25.93	34.68	43.03	**120**	153.67	234.37	289.42	**164**	0.00	
33	64.68	88.70	194.94	**77**	267.35	375.40	480.46	**121**	3.42	5.41	6.91	**165**	119.96	17
34	17.38	23.52	41.00	**78**	86.38	119.98	149.57	**122**	29.86	53.72	93.82	**166**	3.85	
35	0.08	0.33	1.70	**79**	0.00	0.24	0.53	**123**	0.00	0.24	0.53	**167**	3.95	
36	2.20	3.66	7.29	**80**	222.51	302.11	381.86	**124**	0.00	0.24	0.53	**168**	245.45	33
37	0.00	0.24	3.62	**81**	758.94	1109.95	1797.85	**125**	0.00	0.24	0.53	**169**	0.09	
38	44.00	80.53	118.72	**82**	500.98	667.68	825.09	**126**	2.45	3.28	4.28	**170**	3.38	
39	0.41	0.75	1.16	**83**	18.91	27.05	43.66	**127**	0.00	0.24	0.53	**171**	186.21	25
40	0.88	1.73	2.36	**84**	0.01	0.25	0.87	**128**	0.39	0.77	1.18	**172**	5.05	
41	0.00	0.24	0.53	**85**	6.47	10.87	13.72	**129**	0.00	0.24	0.53	**173**	1.14	
42	14.71	18.48	23.04	**86**	4.57	9.22	11.61	**130**	0.00	0.24	0.53	**174**	9.37	1
43	34.63	50.24	62.22	**87**	119.25	179.43	221.63	**131**	0.00	0.24	0.53	**175**	0.69	
44	0.00	0.24	0.53	**88**	124.11	196.00	257.40	**132**	3.91	5.44	6.91	**176**	1.62	

8.15 Fleet Estimation for Hybrid RMTS

8.15.1 Fleet Estimation for Hybrid RMTS in 2018

Year 2018	Route A	Route B	Units
Route length	8.9	18	
Average operational speed by bus off corridor	18.32	18.32	Km/h
Average operational speed by bus on corridor	18.48	18.48	
Distance on Corridor	1.8	6	
Distance off corridor	7.1	12	
Average operational speed	18.3523596	18.3733333	
Average layover time	10	10	Minutes
Average one way trip time	0.65161793	1.14919942	Hours
Average one way trip time	39.1484716	68.9519651	Minutes
Total passengers shifting to BRT	840	504	Per day
% of passenger using BRT	40%	40%	
Total passengers using the route in a day	2100	1260	
Average passenger trip length	6.43	6.43	Km
Seating capacity of bus	24	24	
Average occupancy	80%	30%	
Average occupancy per bus	19.2	7.2	
Fleet utilization	90%	90%	
Average km per bus per day	204.874656	234.946168	km
Total fleet required	3.81415459	5.32154998	
Total Headway	22.778938	28.793601	Minutes
Average Ticket price(per km)	1	1	Rs.
Total daily Earning	13503	8101.8	Rs.
Total bus km in a day	703.28125	1125.25	
Total Earning per km	19.2	7.2	Rs.
Overall EPK	**11.81538462**		Rs

8.15.2 Fleet Estimation for Hybrid RMTS in 2023

Year 2023	Route A	Route B	Units
Route length	8.9	18	
Average operational speed by bus off corridor	17.4	17.4	Km/h
Average operational speed by bus on corridor	18.48	18.48	
Distance on Corridor	1.8	6	
Distance off corridor	7.1	12	
Average operational speed	17.618427	17.76	
Average layover time	10	10	Minutes
Average one way trip time	0.6718196	1.20114943	Hours
Average one way trip time	40.6896552	72.0689655	Minutes
Total passengers shifting to BRT	1082	640	Per day
% of passenger using BRT	40%	40%	
Total passengers using the route in a day	2705	1600	
Average passenger trip length	6.43	6.43	Km
Seating capacity of bus	24	24	
Average occupancy	80%	35%	
Average occupancy per bus	19.2	8.4	
Fleet utilization	90%	90%	
Average km per bus per day	198.714061	224.784689	km
Total fleet required	5.06530856	6.05400024	
Total Headway	17.6842033	26.4541213	Minutes
Average Ticket price(per km)	1	1	Rs.
Total daily Earning	17393.15	10288	Rs.
Total bus km in a day	905.893229	1224.7619	
Total Earning per km	19.2	8.4	EPK
Overall EPK	**12.99184911**		Rs

8.15.3 Fleet Estimation for Hybrid RMTS in 2028

Year 2028	Route A	Route B	Units
Route length	8.9	18	
Average operational speed by bus off corridor	16.53	16.5	Km/h
Average operational speed by bus on corridor	18.48	18.5	
Distance on Corridor	3	9.5	
Distance off corridor	5.9	8.5	
Average operational speed	17.2	17.6	
Average layover time	10	10	Minutes
Average one way trip time	0.68449077	1.25559589	Hours
Average one way trip time	42.3049002	75.3357532	Minutes
Total passengers shifting to BRT	1443	899	Per day
% of passenger using BRT	40%	40%	
Total passengers using the route in a day	3607.5	2247.5	
Average passenger trip length	6.43	6.43	Km
Seating capacity of bus	24	24	
Average occupancy	80%	45%	
Average occupancy per bus	19.2	10.8	
Fleet utilization	90%	90%	
Average km per bus per day	195.0355	215.03734	km
Total fleet required	6.8827169	6.91401836	
Total Headway	13.2600887	24.2135291	Minutes
Average Ticket price(per km)	1	1	Rs.
Total daily Earning	23196.225	14451.425	Rs.
Total bus km in a day	1208.13672	1338.09491	
Total Earning per km	19.2	10.8	EPK
Overall EPK	**14.78563443**		Rs

8.16 Earning & Cost Per Kilometer (EPKM & CPKM) of both BRTs and RMTS

Sr. No.	Route No.	Route Name	Route length(KM)	Avg. KM	EPKM(Rs.)	CPKM(Rs.)
1	**1**	TriKonbag - sau uni	6.9	364	14.5	50
2	**2**	Raiya-Pradumanpark	16.6	362	10.7	33
3	**3**	bhakti park-jivarajpark	15.1	367	10.5	33
4	**4**	Aji-G.I.D.C	22.8	388	17.3	50
5	**5**	Raiya-Tramba	21.85	380	16.2	33
6	**6**	Santosingar-Trumba	22.05	372	10.2	33
7	**7**	Bhakit nagar cir.-Bajarang wadi circle	9.2	340	10.7	33
8	**8**	Mavadi to greenland	13.9	380	11.9	33
9	**9**	ARPIT ENG. TO SAU. UNI.	30.55	403	10.7	50
10	**11**	trikon baug-saparveraval	15.5	385	10.8	50
11	**13**	kotharoya-Santoshinagar	10.05	340	13.4	33
12	**14**	Navagam-Kothariya	12.9	392	11.0	33
13	**15**	Kothariya to G.I.D.C-3	20.3	376	14.8	50
14	**16**	Sau Uni-Kothariya	16	416	13.8	33
15	**17**	Sau. To Trumba gam	23.3	412	17.3	50
16	**18**	Aji-G.I.D.C	21.15	413	15.6	50
17	**19**	vavdi gaam-Hansrajnagar	11.6	341	9.4	33
18	**20**	Ghanteswar to Sapar	26.5	340	13.5	33
19	**21**	TRIKON BAUG TO JK PARK RAIYA	8.2	316	3.3	33
20	**23**	Mavadi to Pradumanpark	15.35	353	9.6	33
21	**24**	trikonbag-G.I.D.C-3	17.35	422	11.6	50
22	**25**	slum quater-Jivaraj Park	11.5	369	8.5	33
23	**26**	VAVDI GAM-slum quarter	12.2	418	11.3	33
24	**27**	trikonbag-raiyadhar	6.75	280	12.8	33
25	**28**	gujrat housing quarter-jivrajpark	13.95	345	13.5	33
26	**30**	Trikonbaug Circular	9.55	188	10.1	33
27	**31**	Trikonbaug Circular	9.55	175	9.8	33
28	**32**	parasananagar-Trumba	20	376	10.5	33
29	**34**	Sau. Uni.- pradumanpark	16.15	379	14.6	33
30	**35**	trikonbag-sapar	15.75	360	14.1	33
31	**36**	bhaktinagar circle-parapipaliya village	12.05	339	10.1	33
32	**37**	Vinodnagar-Santosinagar	11.7	352	14.5	33
33	**38**	ajidem-madhapar village	12.5	335	11.4	33
34	**40**	sau. Uni-santoshi nagar	11.9	335	10.7	33
35	**41**	VINOD NAGAR-gangotri park	13.1	320	8.5	33
36	**42**	greenland chokdi-JIVRAJ PARK	12.75	341	12.3	33
37	**43**	bhagvatipara-akshar vatika	13.1	320	10.9	33
38	**44**	trikonbag-trumba village	16.4	384	12.2	50
39	**45**	sau. Uni-ratanpargam	25.75	406	15.1	50
40	**46**	trikonbag-Arpit engg. College(hadala)	18.85	372	13.1	50
41	**47**	kothariya-sau. Uni.	13.85	416	14.5	50
42	**51**	Punit nagar-Ghnateshwar	16.85	408	14.0	33
43	**54**	kothariya-Gnateshwar	17.45	392	17.0	33
44	**55**	Gondal X-Ratanpar	24.8	427	11.1	50
45	**57**	Trikonbaug-Govt Engg	11.8	697	13.1	50

8.17 Fleet Estimation for E-rickshaw

8.17.1 Fleet Estimation for E-rickshaw in 2018

Year 2018	Route A	Units
Route length	7.8	
Average operational speed by bus off corridor	8	Km/h
Average operational speed by bus on corridor	8	
Distance on Corridor	0	
Distance off corridor	7.8	
Average operational speed	8	
Average layover time	0	Minutes
Average one way trip time	0.975	Hours
Average one way trip time	58.5	Minutes
Total passengers shifting to BRT	254	Per day
% of passenger using BRT	20%	
Total passengers using the route in a day	1270	
Average passenger trip length	1.5	Km
Seating capacity of bus	4	
Average occupancy	50%	
Average occupancy per bus	2	
Fleet utilization	70%	
Average km per bus per day	120	km
Total fleet required	11.3392857	
Total Headway	14.7401575	Minutes
Average Ticket price(per km)	3.5	Rs.
Total daily Earning	6667.5	Rs.
Total bus km in a day	952.5	
Total Earning per km	7	Rs.

8.17.2 Fleet Estimation for E-rickshaw in 2023

Year 2023	Route A	Units
Route length	7.8	
Average operational speed by bus off corridor	7.6	Km/h
Average operational speed by bus on corridor	7.6	
Distance on Corridor	0	
Distance off corridor	7.8	
Average operational speed	7.6	
Average layover time	0	Minutes
Average one way trip time	1.02631579	Hours
Average one way trip time	61.5789474	Minutes
Total passengers shifting to BRT	446	Per day
% of passenger using BRT	20%	
Total passengers using the route in a day	2230	

Year 2023	Route A	Units
Average passenger trip length	1.5	Km
Seating capacity of bus	4	
Average occupancy	50%	
Average occupancy per bus	2	
Fleet utilization	70%	
Average km per bus per day	114	km
Total fleet required	20.9586466	
Total Headway	8.39461883	Minutes
Average Ticket price(per km)	3.5	Rs.
Total daily Earning	11707.5	Rs.
Total bus km in a day	1672.5	
Total Earning per km	7	EPK

8.17.3 Fleet Estimation for E-rickshaw in 2028

Year 2028	Route A	Units
Route length	7.8	
Average operational speed by bus off corridor	7.22	Km/h
Average operational speed by bus on corridor	7.22	
Distance on Corridor	0	
Distance off corridor	7.8	
Average operational speed	7.22	
Average layover time	0	Minutes
Average one way trip time	1.08033241	Hours
Average one way trip time	64.8199446	Minutes
Total passengers shifting to BRT	552	Per day
% of passenger using BRT	20%	
Total passengers using the route in a day	2760	
Average passenger trip length	1.5	Km
Seating capacity of bus	4	
Average occupancy	50%	
Average occupancy per bus	2	
Fleet utilization	70%	
Average km per bus per day	108.3	km
Total fleet required	27.3051049	
Total Headway	6.7826087	Minutes
Average Ticket price(per km)	3.5	Rs.
Total daily Earning	14490	Rs.
Total bus km in a day	2070	
Total Earning per km	7	EPK

8.18 BRTs Fleet Estimation for Year 2018, 2023 & 2028

Particulars	2018 (without feeder)	2018 with feeder	2023 with feeder	2028 with feeder	Units
Route length	10.7	10.7	10.7	10.7	
Average operational speed by bus off corridor	18.32	18.32	18.32	18.32	Km/h
Average operational speed by bus on corridor	18.48	18.48	18.48	18.48	
Distance on Corridor	10.7	10.7	10.7	10.7	
Distance off corridor	0	0	0	0	
Average operational speed	18.48	18.48	18.48	18.48	
Average layover time	4	4	4	4	Minutes
Average one way trip time	0.645671	0.645671	0.645671	0.645671	Hours
Average one way trip time	39.0436681	39.0436681	39.0436681	39.0436681	Minutes
Total passengers shifting to BRT	21109	24905	31459	39864	Per day
% of passenger using BRT	100%	100%	100%	100%	
Total passengers using the route in a day	21109	24905	31459	39864	
Average passenger trip length	3.83	3.83	3.83	3.83	Km
Seating capacity of bus	42	42	42	42	
Average occupancy	78%	78%	78%	78%	
Average occupancy per bus	32.76	32.76	32.76	32.76	
Fleet utilization	90%	90%	90%	90%	
Average km per bus per day	248.58	248.58	248.58	248.58	km
Total fleet required	11.0	13.0	16.4	20.8	
Total Headway	7.8	6.6	5.2	4.1	Minutes
Average Ticket price(per km)	1.50	1.50	1.50	1.50	Rs.
Total daily Earning	121271	143079	180732	229019	Rs.
Total bus km in a day	2468	2912	3678	4661	
Total Earning per km	49.14	49.14	49.14	49.14	Rs.