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Road-Map for Bus Fleet and Infrastructure Development for Andhra Pradesh State Road Transport Corporation - APSRTC

SGArchitects

ROAD-MAP FOR BUS FLEET AND INFRASTRUCTURE DEVELOPMENT FOR ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION - APSRTC

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1 Study Background

State Transport Undertakings (STUs) in India are focusing mainly on sustaining current operations, with limited resources at hand. They find themselves unable to direct effort towards estimating demand trends, supply gaps and sector status (such as demand catered by competing modes). Thus, they may not be ideally positioning themselves to cater to future requirements. In such a scenario, STUs may face increasing challenges towards meeting current and future fleet and infrastructure upgradation requirements. These challenges include both land and financing constraints.

To address this, STUs need additional capital and technical investments, which needs to be planned for. To tap into potential financing and/or funding resources the STU's need to make a case for requirement of fleet and infrastructure upgradation. This mandates the need for a long-range plan backed by a vision, and a roadmap to achieve that vision in both the long and the short term. However, to affect the overall revamping and improvement in the financial health of STUs, simple induction of fleet may not be sufficient. What is required is a detailed understanding and action on fleet, operations, service and infrastructure requirements, over a longer term. To achieve this, STUs require to focus on developing long range development plans as well roadmap to achieve the goals set in the development plans. Both the central government and the Association of State Road Transport Undertakings (ASRTU) have set up challenging goals for the STUs and are offering to support them in achieving the same. As a part of this initiative, this study is being undertaken to help revive and reposition bus based public transport in India. To achieve the aim of this project, a road map development exercise is proposed to be undertaken for Andhra Pradesh State Road Corporation (APSRTC). To have a credible demonstrating effect the findings from the exercise need to be both robust and comprehensive.

This roadmap development exercise proposes to provide quantified and comparative, scenario-based data to the decision and policy makers and seeks to demonstrate both the methodology and the utility of producing a road map for development of APSRTC. A critical objective of the study is the development of a bus fleet upgradation plan for STU's and provide policy level recommendation for bus service improvement in in terms of projected - recommended fleet size, land requirement, annual budgetary provision, staff strength, etc. – in different scenarios. This estimation and projection are governed by a current condition and expected scenario. Current conditions are defined by data such as existing fleet strength, number of trips catered, fleet age, etc., while different scenario is defined by a number of variables such as desire mode share, projection of route length, projection of number of routes, desired efficiency, desired occupancy, etc. Because estimation of policy recommendations in multiple scenarios involves complex calculations this roadmap is based on modelling APSRTC's fleet requirement using the fleet estimation tool developed by SGArchitects, Delhi. It is expected that the outputs from the tool will contribute to an informed short, medium and long-term planning to achieve the vision and the goals for the corporation and STU's will be able to use the findings of this study, to tap additional resources and funds.

This report highlights the estimation of fleet and bus infrastructure for APSRTC, under four scenarios, which are: Business as usual scenario, mode share retain scenario, desirable scenario (25% mode share) and desirable scenario (30% mode share). Section two of this report highlights about APSRTC, Section three discusses development of the road map in detail with project methodology. Section four, of the report highlights the development of bus fleet upgradation tool, components and its functionality. Section five discusses the interactions and the meetings held during the process and section six focusses on the outcomes obtained through the tool for two different scenarios generated

out for APSRTC followed by the profitability factors and comparison of the outputs generated for the different scenarios.

2 Introduction to Andhra Pradesh State road transport Corporation - APSRTC

The State of Andhra Pradesh is situated on the eastern coast of the southern India covering an area of 162,970 Sq.km. As per 2011 Census of India, the state has a population of 49,386,799 inhabitants. Following the state bifurcation in 2014 Andhra Pradesh presently has 13 districts (Figure 1).

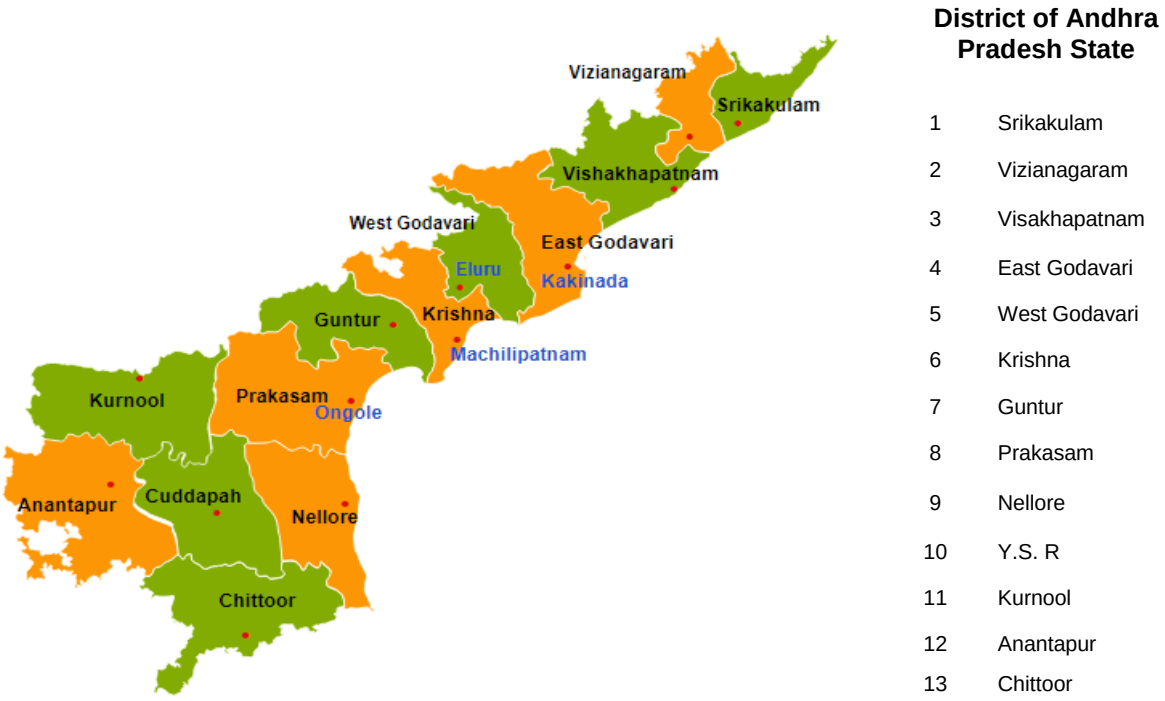


Figure 1: Andhra Pradesh State and District Map (Source - www.ap.gov.in)

The state is well connected to other states through road and rail networks. The Andhra Pradesh State Road Transport Corporation (APSRTC - Figure 2) is the major public bus transport owned by the state government which runs buses connecting different parts of the state. APSRTC was formed on 11 January 1958 as per Road Transport Corporations Act 1950.

Figure 2: Andhra Pradesh State road transport Corporation – APSRTC

Currently APSRTC is a leading passenger road transport organization and it maintains its supremacy among the other Indian STU's with an effective fleet of 11713 buses (9009 STU buses + 2704 Hired buses) serving 3868 routes, 426 bus stations, 128 Depots and 790 bus shelters (as of 31st October 2017). The buses of the Corporation cover 43.19 lakhs kilometres and carry 70.09 lakhs people to their destinations every day. APSRTC connects 14123 villages to all major towns and cities in A.P which constitutes 95 percent of road transport. APSRTC operates to City and Mofussil areas. The buses of the Corporation also ply to important towns and cities in the adjacent states of Tamil-Nadu, Karnataka, Maharashtra, Goa, Orissa and Chhattisgarh. (Andhra Pradesh State Road Corporation , n.d.)

3 Study Objectives and Methodology

This study is being undertaken to fulfil the following objectives:

3.1. Study Objectives and Methodology

The current study, presented in this report, intends to achieve the, following objectives:

1. To estimate the performance of APSRTC in the future based on past trends. These estimates shall be made against key performance indicators such as demand catered, mode share, fleet strength, operational efficiency, financial efficiency, etc.
2. To assist APSRTC in defining a desirable scenario.
3. To estimate the future requirements for APSRTC to achieve the desirable scenario. These requirements are in terms of parameters such as fleet size, land requirement, depot and terminal infrastructure development requirement and investment requirement.
4. This data should be useful for APSRTC to develop a long-term plan for investment and efficient asset utilization. For example, with the knowledge of annual budgetary requirement, APSRTC can plan a long-term strategy for tapping funds both from the State as well from funding agencies such as World Bank and ADB. With the knowledge of annual additional land requirement, the current land bank with APSRTC can be utilized and the land that is expected to remain unutilized can be turned in to a source of revenue for a known time.
5. To develop a profitability or a loss reduction scenario for the Corporation. This scenario shall identify and quantify the steps that may be undertaken to achieve specific loss reduction targets for the organization.

The methodology for meeting the above objectives for the study is as following:

1. Use the existing data reported by APSRTC to plot trends, to predict the consolidated performance of the STU over the next 33 years both in terms of meeting passenger demand and in terms of financial performance. This scenario is referred to as the Business as Usual Scenario (BAU).
2. Use, projections based on trend for estimating of future demand (in terms of number of trips) that shall be catered by APSRTC in a BAU scenario.
3. Using available data on population growth rate and other factors, project the future demand of trips in the State (including trips from other states), also projecting the demand based on trip characteristics (trip length, trip purpose, rural, urban). This not only allows more accurate estimation of future demand but also makes available to APSRTC data changing trends in the future.
4. Estimate the demand that APSRTC will be catering in the future if the current mode share is retained. Compare this demand with the demand expected to be catered by the Corporation based on the current trend.
5. Based on this comparison, generate an understanding and report to the Corporation if the current trends in operational and investment factors will help the corporation retain or expand its market share in the future.
6. Based on the current trends, estimate and report to the Corporation on the projected financial health of the Corporation
7. Include levers for scenario building in a relevant tool and explain the possibilities of building different scenarios to the APSRTC officials. Subsequently use this information to develop a

desirable scenario with APSRTC officials. These tools include mode share, operational efficiency, staff to bus ratio, occupancy, average passenger trip length, average route length, etc.

8. Estimate the performance of APSRTC in a desirable scenario, both in terms of passenger trips it will cater (mode share) and in terms of financial performance.
9. Also estimate the road map to the desirable scenario, listing the requirements in terms of Fleet expansion, bus infrastructure (depot and terminal) development, associated land requirement, and investments required.
10. Develop a profitability scenario by modelling variations in critical factors such as occupancy, staff to bus ratio and fleet utilization. Using this annual loss reduction and efficiency improvement targets shall be generated.

4 Development of Fleet Estimation Tool

The fleet estimation tool is designed to assist state transport undertakings (STU) in forecasting demand in different scenarios to allow long range planning to address the projected demand including and associated infrastructural, fleet and financial requirements.

4.1. Tool Architecture

The fleet estimation tool has been developed as a spread sheet-based model (as presented in Figure 3) with three basic elements – a dashboard which serves as a user interface and data input module, a default sheet, which provides a scenario building interface and an output sheet which presents outputs as both as numbers and graphs. The tool architecture is based on an annual projection/estimation basis and it generates annual outputs for a 33-year period from the date of input. It also allows users to use older data (older than the year of estimation), and projects these to the current date (to be further used for future projections) based on growth rates provided by the user. The tool is designed to provide macro or state level outputs (for both inter district and intra city operations), however it can also be tweaked to provide district level results.

	Please insert values/information/data in yellow boxes as per instructions provided under comments/explanations section								
	CURRENT YEAR								
S.No.	Item	Value	Error Check						
1	Current Year	2018	OK						
	FLEET DETAILS								
		Bus Type 1	Error Check	Bus Type 2	Error Check	Bus Type 3	Error Check	Total	Average seating capacity
	Item	Mini/ Midi buses		Regular Buses		Luxury Coaches			
2	Current Intra City Bus Fleet	0	ERROR	1315	OK	30	OK	1345	
3	Current Intra City per bus seating Capacity	0	ERROR	41.5	OK	44	OK		41.55576208
4	Current Inter City Bus Fleet	0	ERROR	10134	OK	234	OK	10368	
5	Current Inter City per bus seating capacity	0	ERROR	47.6	OK	40	OK		47.42847222
								11713	
	FLEET UTILIZATION AND OPERATIONAL EFFICIENCY								
	Item	Value (%)	Error Check						
6	Current year fleet utilization (Intra City)	98%	OK						
7	Current year fleet utilization (Inter City)	99%	OK						
8	Current year operational efficiency (Intra City)	93%	OK						
9	Current year operational efficiency (Inter City)	94%	OK						

Fleet Estimation Tool

Figure 3: Fleet estimation Tool-Architecture

4.2. Working and Methodology

The tool estimates a total of 37 outputs (ranging from annual budgetary requirements for fleet and infrastructure to new buses to be purchased, budgets required and profit after purchase(Annexure-9.4), using 82 inputs (Annexure-1.1) and 143 default values (Annexure-9.2) . The user is required to insert the data in the dash board tab and can obtain the results under output tab. The default tab includes a list of (editable by the user) default values or assumptions used in estimating the output values. These include target mode shares, annual rates of change, fleet and infrastructure development cost, etc. The tool uses a series of validated algorithms to input values and the default values to generate output for each successive year. Each year estimates form the input for successive year estimates, thereby generating annual output values for 33 successive years, which are then presented as a table and graph for each of the 37 outputs (Annexure-9.10-9.13). Figure 4 presents a diagrammatic representation of the basic tool working methodology.

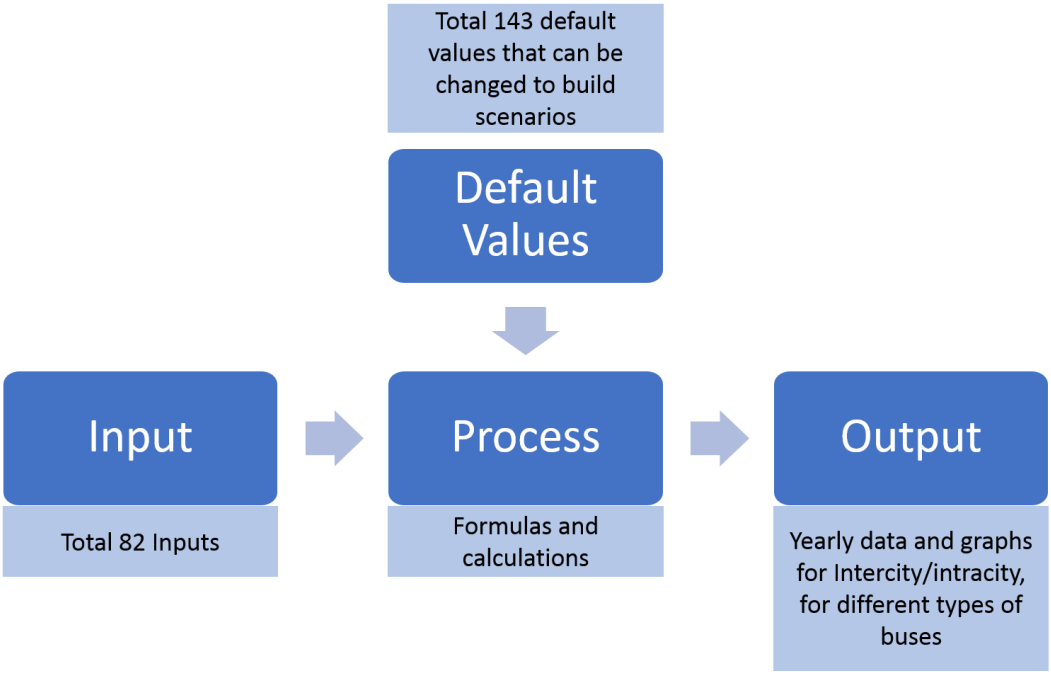


Figure 4: Fleet estimation tool- Working and methodology

4.3. Tool Components

The three main components of the tool described above have been described in detail in the following sub sections.

4.3.1 Outputs

A total of 37 outputs present results under the following three broad categories:

1. Future (annual) fleet size requirement categorized by service type and by vehicle type.
2. Future (annual) land requirement for depots and terminal classified by service type
3. Future annual budget requirement i.e. cost of fleet acquisition and infrastructure development classified by service type.

In addition, outputs are presented as rate of change, depicting growth/decline in different public transport mode share, staff requirement, efficiency, etc. A list of all outputs has been presented in Annexure-9.4.

4.3.2 Inputs

To generate the outputs, the model requires a list of data inputs along with assumptions (such as expected/desired mode share or efficiency) which define a scenario. The data input in dashboard has been designed keeping in mind the easy availability of data with the STU's and from other sources such as census. The user defines the current year and defines the data year. The model then projects the data from the data year (data such as census data is typically a historic data) to the current year and this is used in all output estimates. A total of 82 data inputs under the following 8 categories is required. Table 1 lists the 8 categories and the respective components under which the data is inserted by the user.

Table 1: Fleet estimation tool – Input data Categories

S.no	Input Category	Components	Source
1	Fleet Detail and Average Seating Capacity	Intercity and Intra city	STU
2	Fleet utilization and Operational efficiency	Intercity and Intra city	STU
3	Fleet Age	Intercity and Intra city	STU
4	Trip and Profile Data	Population (Urban and rural), Mode share (Bus and IPT), work, non-work (Bus and IPT) Education trips, Trip-lengths, Nature of tourist trips- *applicable separately for less than and more than 10 km Inter and Intracity*	Census
5	STU data	Daily STU passenger trips, daily operated routes, Number of one-way Bus trips on the routes, Average route length and Average occupancy - *applicable separately for Inter and Intracity*	STU
6	Growth Rates	Urban, Rural and Tourist	Web -Reports and Studies, tourism reports
7	Staff Ratio	Intercity and Intra city	STU
8	Cost and Earnings	Earning per Km, Cost per Km, operating cost, Ticket price per km, earning per passenger, average trip length per passenger - *applicable separately for Inter and Intracity*	STU

List of all input data in the dashboard has been presented Annexure -9.7.

Even though the tool relies on the data provided by APSRTC as well as other secondary data for inputs in the model, not all data required to be input in the model (such as average passenger trip length) is reported by STU's. However, these can be derived from the existing data as explained later in this chapter.

4.3.3 Default Values

The default values are the values of various parameters to be used in the tool for analysis and for defining different scenarios (such as different growth rates). These values are based on standard accepted norms. These values are editable and if required the user can change these values by accessing the default tab on the spreadsheet. Thus, changes to these values are required only when different scenarios need to be generated and compared. A total of 143 default values are used by the tool and have been listed in Annexure -9.2. These can be further categorized under thirty defaults handles as presented in Table 2:

Table 2: Fleet estimation tool – Default Value Categorization

S.no	Default Handles	Units	For
1	Fleet Utilization Improvement	Percentage	Intercity and Intra city
2	Efficiency Gap and Income Level	Percentage	Intercity and Intra city
3	Expected Life of Bus	Years	Intercity and Intra city
4	Mode share: STU-buses, Private buses and IPT	Percentage	Less than 10 km and more than 10 km- Intercity and Intra city
5	Rate of Change in Mode Share: STU-buses, Private buses and IPT	Percentage	Less than 10 km and more than 10 km- Intercity and Intra city
6	Percentage of Non-work trips	Percentage	Intercity and Intra city
7	Non-work trips by bus and IPT	Percentage	Intercity and Intra city
8	STU city trips	Percentage	Intercity and Intra city
9	Educational trips	Percentage	Intercity and Intra city
10	Non-work trips by bus originating from state	Percentage	Intercity and Intra city
11	Work trips by bus originating from other state	Percentage	Intercity and Intra city
12	Target occupancy	Percentage	Intercity and Intra city
13	Trip length and annual rate of change	Number / percentage	Intercity and Intra city
14	Average number of trips per bus per day / Rate of change	Number / percentage	Intercity and Intra city
15	Route length / annual rate of change	Number / percentage	Intercity and Intra city
16	Bus cost	Rupees	Intercity and Intra city
17	Revenue from Scrapping	Rupees	Intercity and Intra city
18	Land Requirement	Square meters	Intercity and Intra city
19	Infrastructure cost	Rupees	Intercity and Intra city
20	Infrastructure capacity (Depot / Terminals)	Number (Buses / Bays)	Intercity and Intra city
21	Factor to relate terminal capacity to bus fleet	Percentage	Intercity and Intra city
22	Non-STU city buses using Intercity Terminal	Percentage	
23	Buses by Category - Mini/regular/Luxury (existing or Proposed)	Percentage	Intercity and Intra city
24	Average seating Capacity	Numbers	Intercity and Intra city
25	Rate of Change in Occupancy	Percentage	Intercity and Intra city
26	Average staff numbers and annual rate of change	Number / percentage	Intercity and Intra city
27	Operational efficiency	Percentage	Intercity and Intra city
28	Buses per route / annual rate of change	Number / percentage	Intercity and Intra city

S.no	Default Handles	Units	For
29	Operational hours	Hours	Intercity and Intra city
30	Staff Salary (Avg.)	Rupees	Intercity and Intra city

4.4. Data collection

The fleet estimation tool requires a series of secondary data inputs. Based on this data the tool computes the projected scenarios. The two broad categories of data required for the tool and their use in output estimation has been described below.

1. Latest census based demographic data from the State. This data is used to project demographic profile of the state (such as population data, urbanization) over the next 33 years. This helps generate the overall demand in terms of daily trips. This is further bifurcated as inter district and intra city trips, trips by different modes, trips by purpose and trips by length. Such bifurcation allows application of trip characteristic specific growth rates to generate more realistic projections.

2. Data for current bus fleet being operated by the STU. This includes details on fleet size, fleet age, average occupancy, efficiency, fleet utilization, etc. Current fleet data (STU) is used to estimate expected fleet size for the state over the next 33 years in a business as usual scenario. This when compared to estimated fleet requirement in a defined scenario (such that based on a defined expected mode share in the horizon year) over the same period shall provide expected gap in required operational bus fleet on an annual basis.

4.5. Basis Of estimation and Scenario Building Factors

The Fleet estimation tool generates estimate of fleet size required in each projected year based on expected bus trips, average passenger trip length, expected average occupancy, average run by each bus and expected fleet utilization. All other outputs are generated based on this projected fleet size. This includes staff requirements, Infrastructure requirements, land and budget. Average daily bus trips are estimated based on population (urban and rural) of the state, growth rate trend applied (urban rural and tourist) and the total trips (non- work, work and education) catered. Figure 5 presents basis of the fleet estimation and the components and data inputs involved in the process.

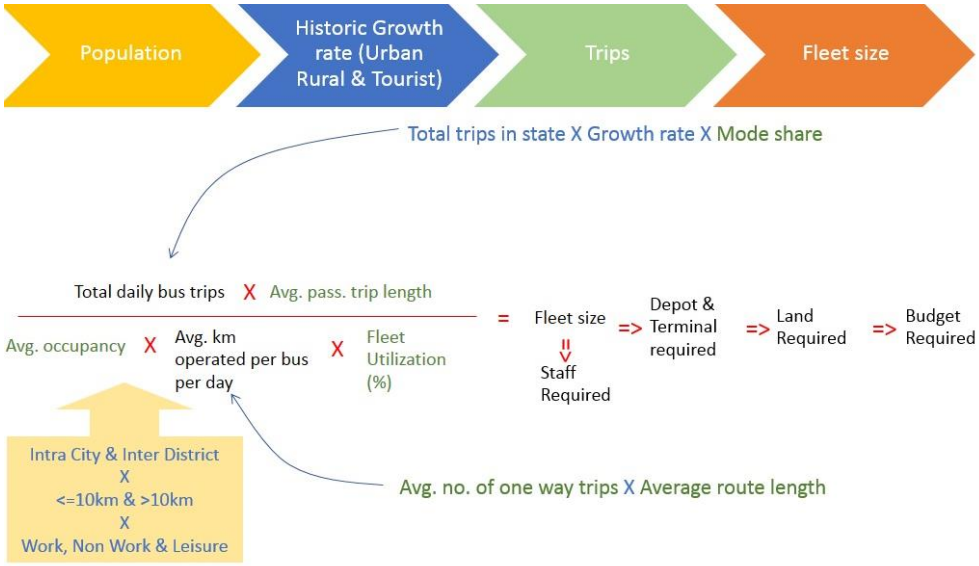


Figure 5: Fleet estimation Tool- Basis of estimation

The objective of the fleet estimation and road map development exercise is to estimate the fleet requirement in each horizon year along with associated investment and infrastructure development requirement over the next 33 years. Infrastructure requirement is dependent on the fleet size and infrastructure development needed. Thus, if fleet size requirement is known, we can determine the annual investment and infrastructure development requirement.

As discussed earlier, an inventory of data and values is required to be input in the tool to estimate annual fleet and budgetary requirement for both intra and inter city services. However, all this data (which mainly involved mean values) are not directly reported by APSRTC and nor was it available from secondary sources. This included, average passenger trip length, average kilometers operated by per bus per day, average one-way trips per bus per day, average route length, etc. The breakup of the data in these values is essential to include levers in the tool for scenario building.

Even though this data was not directly reported, it can be derived from available data. Figure 6 and Figure 7 presents calculations undertaken to estimate these missing values for APSRTC intra and intercity operations respectively. The values highlighted in green are the ones directly reported by APSRTC or available in secondary data. Values highlighted in red are the ones missing or estimated using the reported values in the given formula, while values highlighted in blue are the estimated values from previous formulas used in that particular formula.

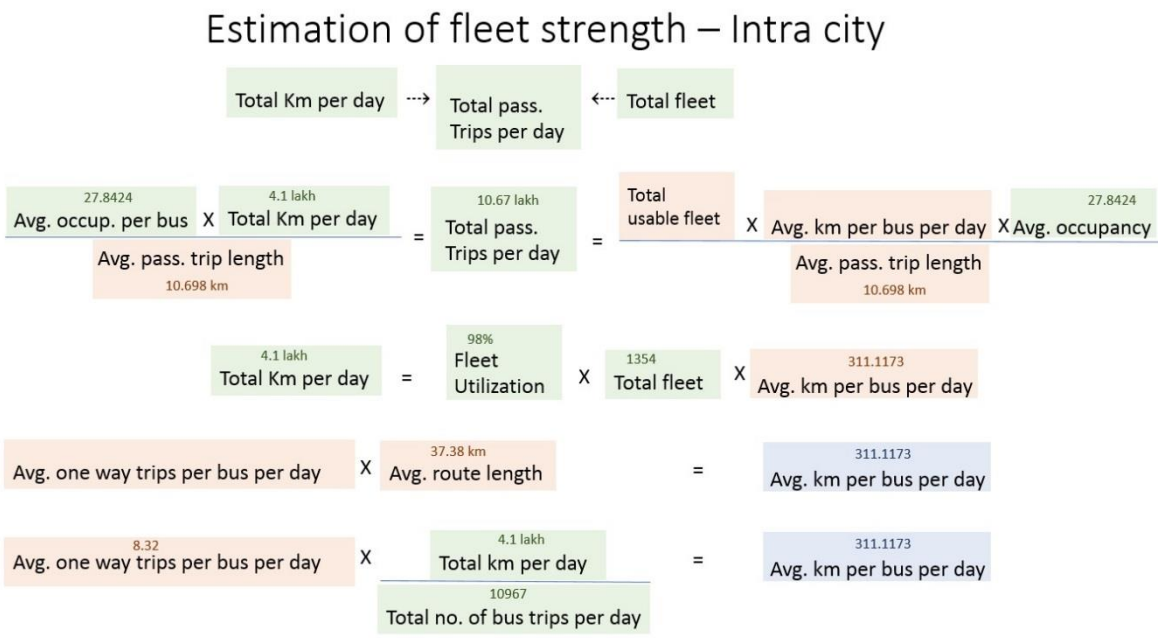


Figure 6 Estimation of Intracity fleet strength

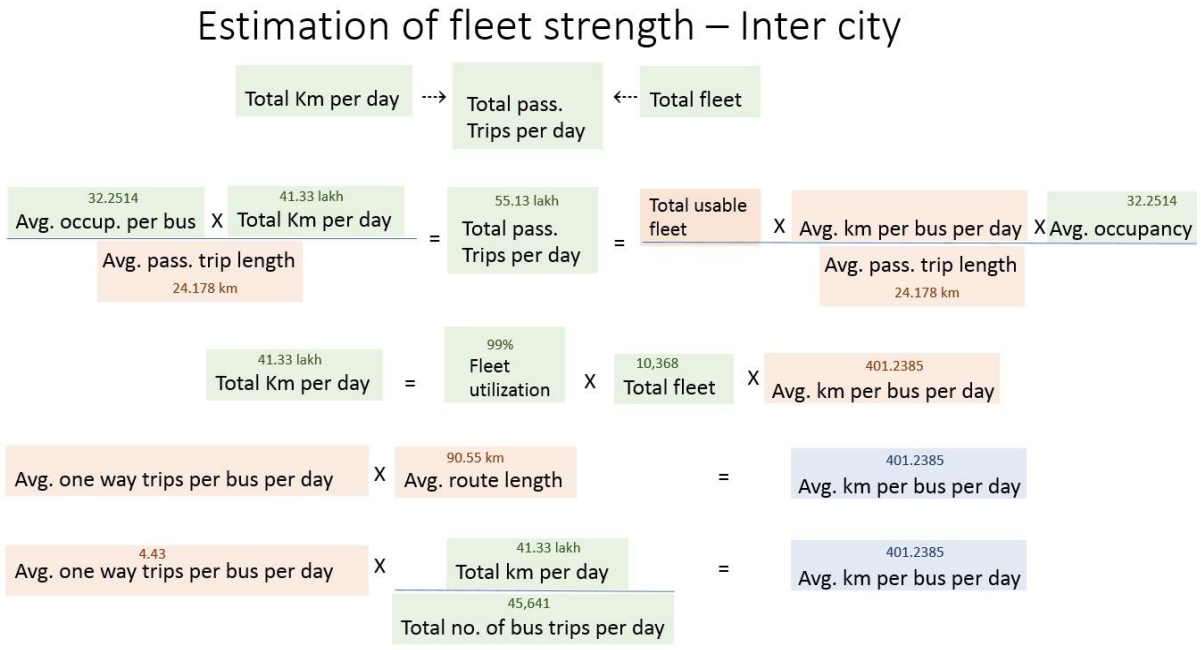


Figure 7 Estimation of Intercity fleet strength

Average passenger trip length (both for inter and intra city services) estimated as part of formulas presented above is critical in estimating annual revenue for APSRTC. This when multiplied with average per km passenger fare provides an estimate of total annual fare box revenues for the corporation. However, fare box revenues breakup as inter, and intercity revenues is not available. Also, the average passenger fare is not found to be a usable value for estimating fare box revenues

because of the slab rates. Thus, exact average per passenger per km fare would be based on the trip lengths of the passenger and thus needs to be derived from the reported revenue data. This derivation has been presented in Figure 8 For both Inter and Intra city services. This derivation is also based on the assumption that current non-operational revenues and costs are a negligible component of the EPK and CPK values provided and can thus be ignored from these estimates.

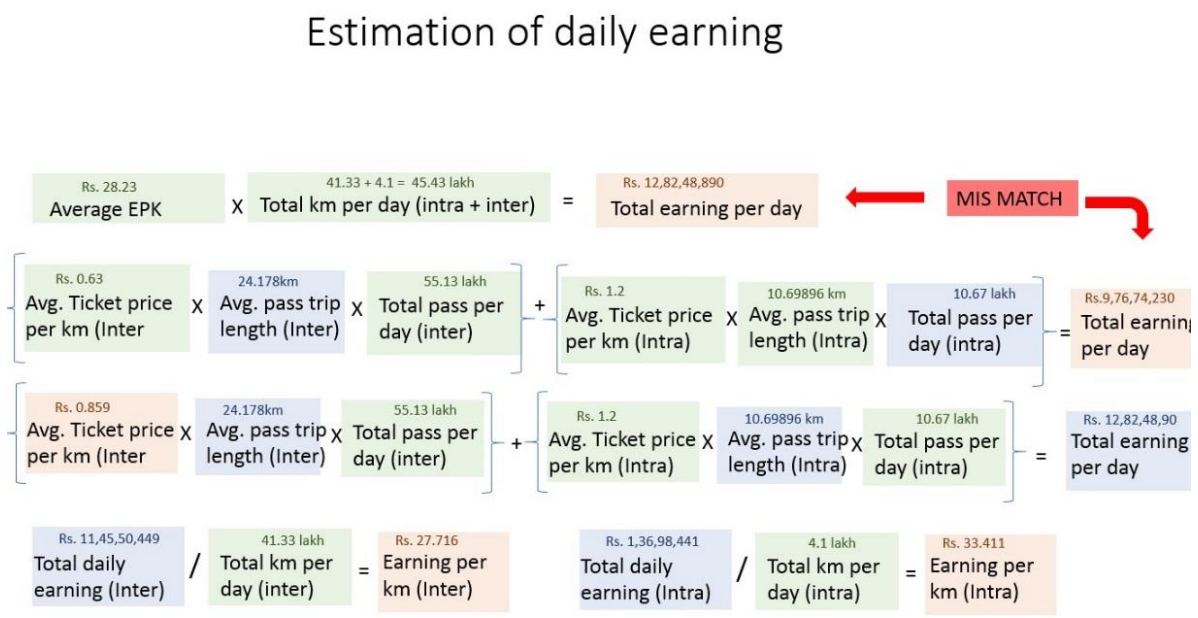


Figure 8 Estimation of Daily Earnings

Fleet size requirement is dependent on demand in terms of passenger trips (Figure 6) that need to be catered and number of kilometers that all buses cover in a day. Which in turn is dependent on the characteristics of the passengers. There are several parameters that effect the fleet size, total km per day and the passenger trips that need to be undertaken per day. These parameters are dynamic in nature and thus the sound understanding of their projections is important to correctly project fleet requirement and associated factors. Some of the key factors are:

- Expected population growth rate by trip type
- Expected fleet utilization
- Expected occupancy
- Expected efficiency (or vehicle utilization)
- Expected number of routes
- Expected average passenger trip length
- Expected average no. of seats per bus
- Expected average route length
- Expected mode share of the STU (by trip type)

Similarly, a number of factors determine the investment requirement projection, given a set of fleet and infrastructure requirement. These factors relate to operational profit/loss for the STU. These are:

- Expected cost per bus (for purchase)

- Expected per bus depot and terminal development cost
- Expected scrap cost of aged buses
- Expected staff to bus ratio
- Expected average per staff cost to STU
- Expected average ticket price
- Expected operating cost per km

The project fleet requirements for a given year values for the above parameters need to be known for that year. Thus, understanding the relationship between fleet and investment requirement and the above parameters is critical. This relationship has been explained through formulas presented below. Also, the value of each of these parameters in the current year is required to be known for the projection to be achieved. All these parameters are not reported in the APSRTC recorded data. However, their values can be extracted using the relationship they have with other reported parameters. These expected values have also been presented in Figure 9 along with the said relationships.

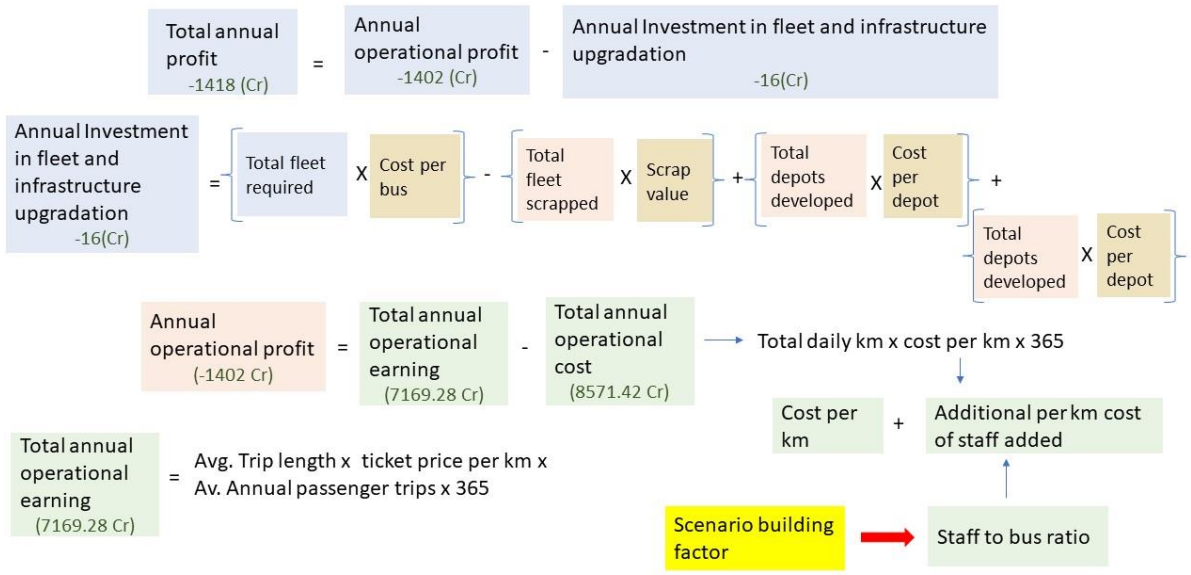


Figure 9 Cost and earning assessment

5 Interaction with STU and Data collection - APSRTC

The study initiated with the aim to develop roadmap plan for APSRTC. It was decided to kick off the project through a meeting with key officials of APSRTC and collect required data basis on which fleet estimation plan shall be developed. According to the methodology discussed in previous section, site visit to APSRTC was undertaken in November 2017.

5.1. Site Visit /Meeting with APSRTC

For the purpose, site visit was held at APSRTC head office, Vijayawada – Andhra Pradesh from 29th November 2017 to 30th November 2017. This site visit was undertaken by Mr. Satyajit Ganguly and Ms. Kanica Gola from SGArchitects. During this visit a number of APSRTC officials were met. Figure 10 presents a glimpse of meeting and Interaction with APSRTC officials during the site visit.

Figure 10: Interaction with APSRTC officials during site visit and data collection

The agenda of this visit was to introduce the team, present the objectives, methodology and timelines of the project. Additionally, the data requirement for the project was also presented and feedback sought on desired outputs and format of the same. A working mechanism agreed upon with the STU during the visit. The idea behind such a working mechanism was to allow close co-ordination for data collection and ensuring an active feedback mechanism. For this, APSRTC appointed Mr. Nageswara Rao as nodal person to assist in coordinating with the concerned team/officials from STU. A data collection form/check list was prepared for the study (Annexure-9.5), and the same was presented to the coordinating team for further action and feedback. This STU data broadly comprised of the following:

1. Current bus fleet Size (Intracity and Intercity)
2. Type/ Categorisation of Bus fleet (Mini/Midi, Standard/Ordinary and Luxury Coaches) for Intracity and Intercity.
3. Current year fleet utilization (Intracity and Intercity);
4. Current year operational efficiency (Intracity and Intercity)
5. Percent of fleet size – Age wise (Intracity and Intercity)
6. Total STU trips on daily basis (Intercity and Intra city- Urban /rural)
7. Total One-way trips on daily basis (Intercity and Intra city)

8. Average Occupancy (% of seating capacity) for intercity and intracity
9. Average route length
10. Average trip length
11. Total vehicle kilometres covered per day
12. Current bus ridership
13. Average speed of buses
14. Route Length data of the various routes
15. Current average staff per bus for the STU
16. Annual operational cost breakup
17. Annual revenue generation breakup.

For Infrastructure gap assessment separate forms/checklist developed for the STU's existing bus terminals and depots were also given to the STU officials (Annexure-9.6). These forms were presented on site to the concerned official for reviewing. After scrutinizing the forms, the required modifications were incorporated by the project team and the revised forms were handed to the STU official for its further circulation to each individual terminal and depot managers. The details of these meetings have been listed in the meeting minutes and the same have been presented in Annexure-9.8

5.2. Data and Context

As discussed in previous sections, the fleet estimation tool uses State and STU specific data to generate outputs which can be helpful for long range planning by a STU. APSRTC supported the project team by providing more than 90% of the secondary data requirement during the site visit based on the checklist provided. The remaining data was provided within a week through mail or through other means. This data was derived from the following sources:

1. Concerned departments within APSRTC. (Admin, Operations, Accounts and Engineering)
2. APSRTC annual administration reports and documents provided.
3. Data available on web which constituted census level population (2011) and trip data extracted from Tourism survey report of Andhra Pradesh.

Data Collection	APSRTC Data -2017	Source – Departments
Fleet strength	11713 buses (9009 – RTC Buses + 2704 – Hired buses	Operations – APSRTC
Fleet utilization	99%- Intercity & 98% -Intra city	Operations – APSRTC
Daily Routes Operated	3868	Operations – APSRTC
Operational Efficiency	94% - Intercity & 93% Intracity	Operations – APSRTC
STU passenger Trips catered per day	65.80 Lakhs	Administration – APSRTC
Average occupancy	67% - Intercity & 68% Intracity	Administration – APSRTC
Vehicle to staff ratio	5.30	Administration – APSRTC
Earning Per Kilometer	28.23	Accounts – APSRTC

Cost Per Kilometer	37.65	Accounts – APSRTC

This data constituted not only the static numbers such as fleet strength, at a given year (ranging from 2007 till 2017) but also included growth rates and trend information which are used to project the numbers to a base year which was selected as 2017.

Excerpts from this data have been listed in Table 3 and Table 4 respectively.

Table 3: APSRTC (STU) -Data

Table 4: Andhra Pradesh State – Web Data

Data Collection	Online source & reports	Source
Population	4.93 Cr	Census 2011
Mode share	20.99%	Census 2011
Urban Population Growth Rate	3.09%	Census 2011
Rural Population Growth Rate	0.16%	Census 2011
Tourist Growth Rate	10%	Tourism Report for Andhra Pradesh

State-wide data with reference to populations and number of overall daily trips in the State was collected through literature review, research papers, reports and studies available in the web. This included State demographics – Population (urban and rural), work trips from Census Data, urban rural and tourist applied growth rates etc. In the process the team identified key documents that are referred for secondary data collection and literature studies. Some of these are as following:

1. Government of India Census data 2011
2. Passenger Amenities of Andhra Pradesh State Transport Corporation (APSRTC): A Study By V.Vijay and Durga Prasad.
3. APSRTC – Profile and Performance – Report
4. Comparing Efficiency under State transport undertakings by Sanjay Kumar Singh and Anand Venkatesh.
5. A study on zonal-wise comparative performance of the APSRTC – An Analysis by - G.V. Chalam.
6. Report of the Sub-Group on State Road Transport Undertakings formed under the Working Group on Road Transport Constituted by Planning Commission (Twelfth Five Year Plan, 2012 – 2017)
7. Financial Performance Evaluation of APSRTC by Dr. Srinivasa Rao Chilumuri.
8. APSRTC Administration Report
9. Review of the performance of State Road Transport Undertakings (Passenger services) – April 2012 to March 2013 by Ministry of Road Transport and Highways (MoRTH) 2014.
10. Review of the performance of State Road Transport Undertakings (Passenger services) – April 2013 to March 2014 by Ministry of Road Transport and Highways (MoRTH) 2015.
11. State Transport Undertakings: Profile and Performance (2009 -10) Central Institute of Road Transport (CIRT) 2011.
12. State Transport Undertakings: Profile and Performance (2010 -11) Central Institute of Road Transport (CIRT) 2012.
13. State Transport Undertakings: Profile and Performance (2011 -12) Central Institute of Road Transport (CIRT) 2013.
14. State Transport Undertakings: Profile and Performance (2012 -13) Central Institute of Road Transport (CIRT) 2014.

The data collected from the literature studies was mostly available for undivided state Andhra-Pradesh which included both Telangana and Andhra Pradesh. Thus, as part of initial analysis the data was segregated for the present Andhra Pradesh state and the same was incurred in model for future projections. Even though significant data was available from multiple sources, critical information was missing. This included mode share bifurcation between private and APSRTC buses operating in Andhra Pradesh. This information was generated by contrasting census data with data collected from APSRTC. For example, census provides data on total bus trips, while APSRTC data included daily STU bus ridership (representing APSRTC trips). The difference of the two was used to generate data for relating to private bus trips in the state. Proxy indicators were used for detailing and bifurcating other data such as fleet age on intercity and intra city routes (fleet age details for overall APSRTC fleet were known).

6 Tool Based Projections for APSRTC

The data collection was followed by generating future projection for APSRTC. The forecasting was distributed in two broad parts.

1. In the first part of the exercise historic trend of APSRTC was captured through the 10-year historic data received from STU.
2. In the second part basis the past trend -future scenario building was undertaken. The following sections elaborates this process.

6.1. Trend Analysis - Part 1

To judge the health and status of development of APSRTC over the years STU historic trends were developed for APSRTC, basis the APSRTC performance trends for the years 2007 to 2017, collated during secondary data collection. This data included APSRTC performance indicators in terms of fleet size, fleet utilization, vehicle utilization, passenger carried per day, number of routes etc. This data over a decade was then used to generate a past trend for a few indicators. However only four indicators were useful in estimating fleet size, hence the rest of the data was not used. These were fleet size, fleet utilization, operational efficiency and routes operated. Figure 11 presents the APSRTC historic trends against the respective indicators.

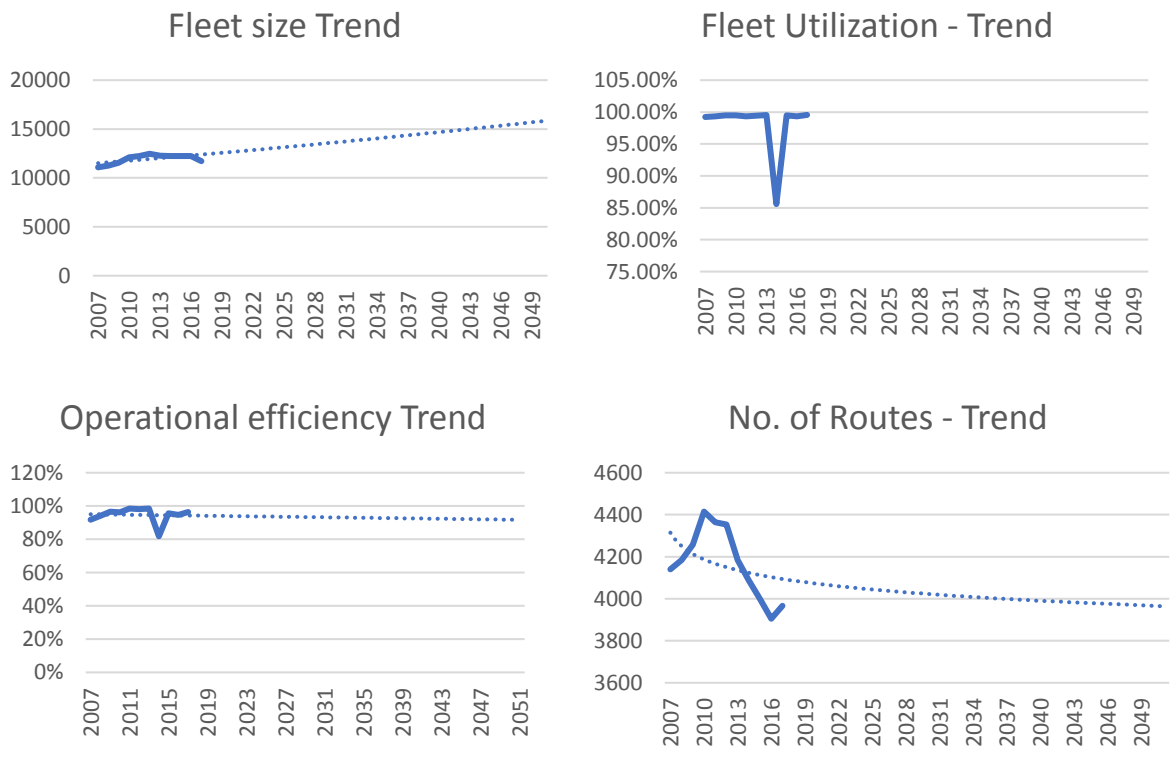


Figure 11: APSRTC Historic trends

For all the four indicators, historic trends were derived till 2050 basis APSRTC historic data. The trend analysis depicted a downward surge in terms of routes and operational efficiency. Fleet strength showed an upward trend. It was not possible to plot the trend for fleet utilizations, because barring, 2013, the fleet utilization has been close to 100% and is thus expected to remain the same in the future (Figure 12).

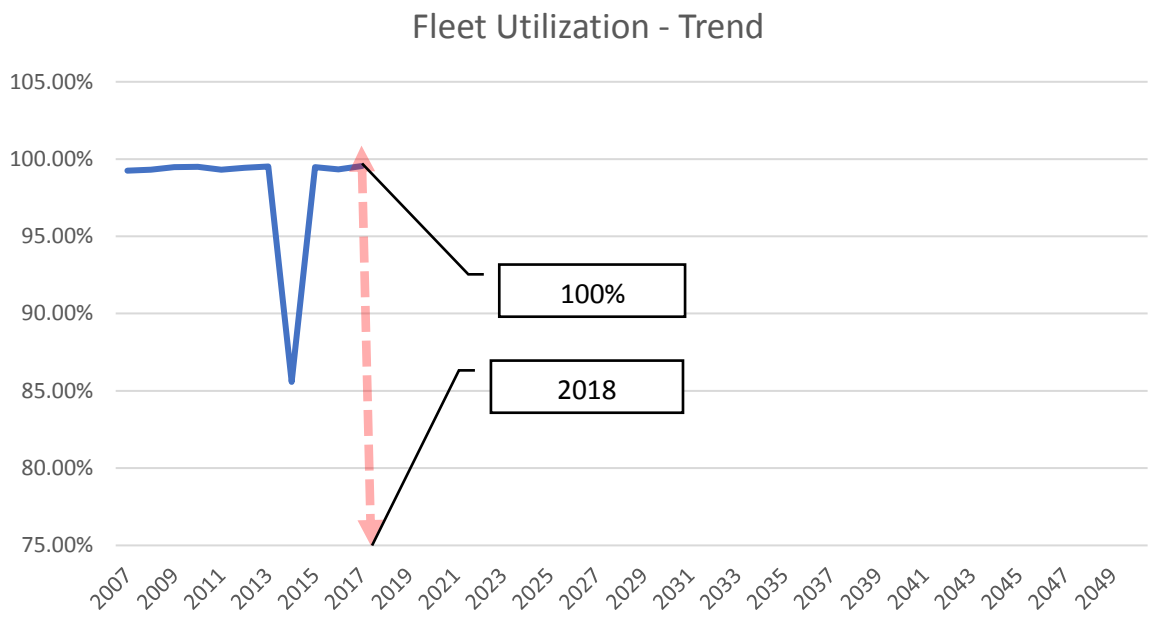


Figure 12: Fleet Utilization trend

6.2. Scenario Building – Part 2

Based on the requirements of APSRTC and existing current year data, two broad future scenarios were modelled in the tool. These scenarios have been discussed in detail below.

6.2.1 Scenario 1 – Business as usual Scenario

Business as usual scenario - forecasted fleet estimates based the current trend of APSRTC. This current trend is applied to the current year data provided by APSRTC (Refer -Table 3 and Annexure 9.9). To validate future outputs in line to the projections obtained from historic trends, both current trend and past trend required to be matched. For this, the historic trend was replicated in the current trend.

Table 5: APSRTC DATA

Data Collection	APSRTC Data -2017	Source – Departments
Fleet strength	11713 buses (9009 – RTC Buses + 2704 – Hired buses	Operations – APSRTC
Fleet utilization	99%- Intercity & 98% -Intra city	Operations – APSRTC
Daily Routes Operated	3868	Operations – APSRTC
Operational Efficiency	94% - Intercity & 93% Intracity	Operations – APSRTC

STU passenger Trips catered per day	65.80 Lakhs	Administration – APSRTC
Average occupancy	67% - Intercity & 68% Intracity	Administration – APSRTC
Vehicle to staff ratio	5.30	Administration – APSRTC
Earning Per Kilometer	28.23	Accounts – APSRTC
Cost Per Kilometer	37.65	Accounts – APSRTC

6.2.2 Replication of Historic trend

The current year trend (2017) was replicated for the same indicators. For this, the model was used to project data from 2018 up to 2051 (33-year projection). This was combined with the APSRTC past -trend generated for period between 2007 and 2051. Subsequently the default values were tweaked to replicate the historical trend (in terms of rate of change, target values etc.) Figure 13 presents the APSRTC current trend matched with the past trend.

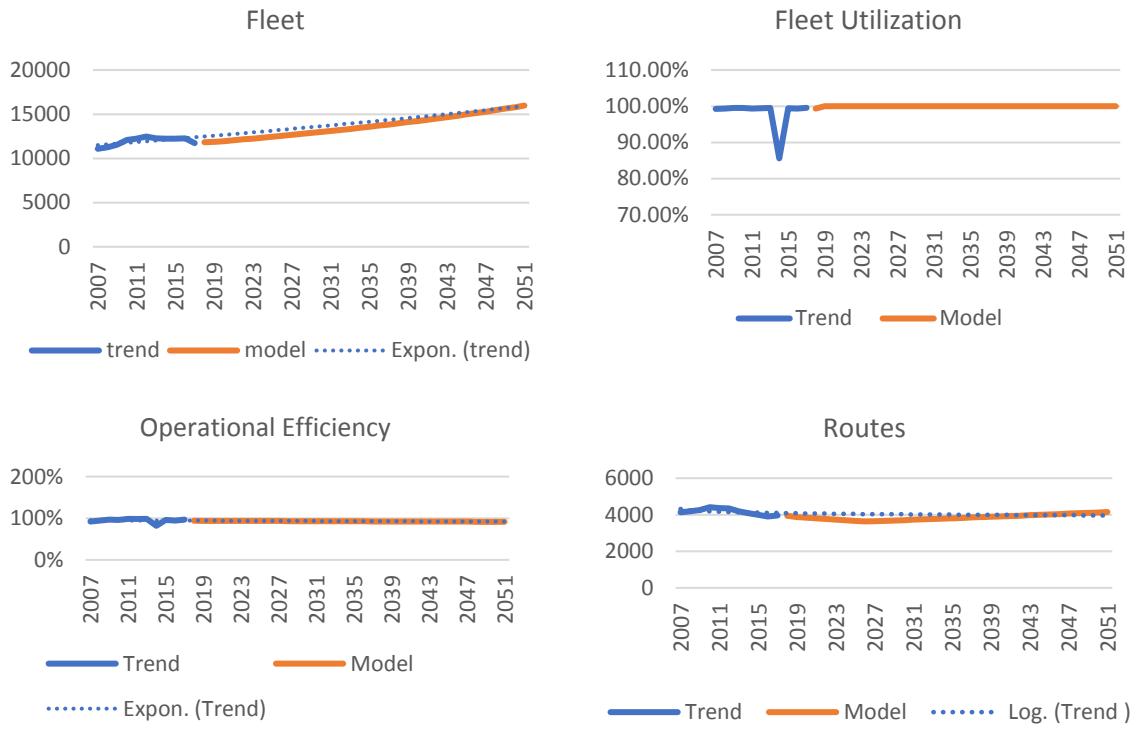


Figure 13: Replication of Historic trend

6.2.3 Historic trend and Current Trend – Comparison

The model default values (mainly related to target mode share and rate of change to achieve target mode share) were tweaked to closely replicated the historic indicators and following inferences were drawn out.

1. Fleet size is expected to increase gradually over the years. An exponential trend has been followed to project the fleet size for APSRTC. Other type of trendlines were experimented, however, exponential trend was preferred as it fitted the best. As per historic trend the fleet size will go up to 15980 by 2051 whereas for the same year the current trend also forecasts similar growth in fleet size i.e. by 2051 the fleet size will increase to 15981.The year wise forecasted fleet size as per the historic trend and the current trend is presented in the Table 6.

Table 6: Historic trend V/s Current Trend – Fleet Strength

Year	2020	2030	2040	2050	2051
Historic Trend – Fleet Strength	12210	13575	14500	15800	15980
Current Trend – Fleet Strength	11958	12988	14238	15801	15981

2. According to the historic trend the fleet utilization factor of APSRTC which is more than 99.5% (in 2017), will ride to 100%.
3. Operational efficiency shows a gradual decreasing trend. In both, historic trend and current trend, efficiency is expected to go down exponentially from 94% in 2018 to 91.42% by 2051. The year wise forecasted operational efficiency as per the historic trend and the current trend is presented in the Table 7.

Table 7: Historic trend V/s Current Trend – Operational Efficiency

Year	2020	2030	2040	2050	2051
Historic Trend – Operational Efficiency	93.82%	92.97%	92.20%	91.49%	91.42%
Current Trend – Operational Efficiency	93.82%	92.97%	92.20%	91.49%	91.42%

4. A longitudinal trend has been followed to project the operational routes for APSRTC as it fitted the best. Asper historic trend the number of routes will remain almost constant i.e. 3938 routes in 2018 to 3970 routes in 2050. However, the current trend forecasts an upsurge in numbers of routes over the years and shall reach to 4148 routes by 2051. The year wise forecasted routes as per the historic trend and the current trend is presented in the Table 8.

Table 8: Historic trend V/s Current Trend – Routes

Year	2020	2030	2040	2050	2051
Historic Trend – Operational Routes	4075	4001	3995	3975	3970
Current Trend – Operational Routes	3845	3707	3911	4126	4148

Subsequently, this validated trend was used to derive default values such as target mode share (For IPT, other buses and STU buses) with their respective annual rate of changes. Additionally, insights from interactions with APSRTC officials were applied to generate a guesstimate of mode share in

horizon year between different trip types. Below Table 9 presents the guesstimate of mode share and rate of changes applied in business as usual scenario.

Table 9: Mode share and Rate of Changes applied in default for Business as usual Scenario

Target Mode share (Defaults)	Mode Share – BAU Scenario	Rate of Change
Achievable target mode share (Intra City Trips) - IPT for less than 10km trip length	7.74%	1.80%
Achievable target mode share (Intra City Trips) - STU Bus for less than 10km trip length	7.75%	1.80%
Achievable target mode share (Intra City Trips) - Other Bus for less than 10km trip length	2.78%	1.80%
Achievable target mode share (Intra City Trips) - IPT for more than 10km trip length	38.96%	1.80%
Achievable target mode share (Intra City Trips) - STU Bus for More than 10km trip length	16.13%	1.80%
Achievable target mode share (Intra City Trips) - Other Bus for More than 10km trip length	11.20%	1.80%
Achievable target mode share (Inter City Trips) - IPT for less than 10km trip length	7.15%	1.80%
Achievable target mode share (Inter City Trips) - STU Bus for less than 10km trip length	37.67%	1.80%
Achievable target mode share (Inter City Trips) - Other Bus for less than 10km trip length	1.79%	1.80%
Achievable target mode share (Inter City Trips) - IPT for More than 10km trip length	40.72%	1.80%
Achievable target mode share (Inter City Trips) - STU Bus for More than 10km trip length	35.50%	1.80%
Achievable target mode share (Inter City Trips) - Other Bus for More than 10km trip length	20.86%	1.80%

These set of default values when used with Andhra Pradesh (census) and APSRTC base data from 2017, generated output in a business as usual scenario. It is important to note that the target mode share mentioned is not necessarily achieved by 2051 (the horizon year of projection). It indicates the minimum/maximum mode share. The actual mode share in 2051, is estimated basis an input rate of change (in the default values tab) and may be much higher/lower than the target input.

6.2.4 Outputs – Business as Usual Scenario

The tool projections revealed that by 2051, in a business as usual scenario, APSRTC fleet strength will increase by 1.3 times of the present fleet size. However, the rate of increase of the fleet size is not entirely aligned to the rate of increase in the trips in the state. This will result in decrease in overall

APSRTC mode share. Additionally, the operational efficiency will continue to decrease up to 91.4% from the current 94%. Due to reduction in Operational efficiency, the fleet availability for catering to existing trips also reduces in a business as usual scenario. The critical base values (generated through trend analysis) using which APSRTC requirements have been projected for Scenario 1 – Business as usual scenario have been listed in Table 10.

Table 10: Scenario 1 – Critical base values

S.no	Business as Usual Scenario	2018	2020	2030	2040	2050	2051
1	Fleet Utilization - Intracity	98%	98%	99 %	100%	100%	100%
2	Fleet utilization- intercity	99%	100%	100%	100%	100%	100%
3	Operational Efficiency -Intracity	93%	92.8%	92.1%	91.4%	90.7%	90.7%
4	Operational Efficiency - Intercity	94%	93.8%	93.0%	92.2%	91.5%	91.4%
5	Average Occupancy – Intercity	68%	68%	68%	68%	68%	68%
6	Average Occupancy – Intracity	67%	67%	67%	67%	67%	67%
7	Staff Ratio (overall)	5.33	5.33	5.33	5.33	5.33	5.33

Table 11 presents the details of projected requirements for APSRTC up to 2050, under the 'business as usual' scenario. The detailed outputs for this scenario have been included in Annexure-9.10.

Table 11: Scenario 1 –Outputs

S.no	Outputs – Business as Usual	2018	2020	2030	2040	2050	2051
1	Total trips per Day (State wide) in Lakh	316 .0	326.0	384.0	462.0	5680	580.0
2	Total Trips per day (APSRTC) in Lakh	66	68	75	84	95	97
3	Total Routes	3938	3845	3707	3911	4126	4148
4	Total Fleet	11828	11958	12988	14238	15801	15981
5	Fleet acquisition (Total Buses to be Procured in year)[1]	115	2512	162	361	2048	541
6	Number of terminals to be developed annually	1	1	2	1	2	1
7	Total Bus Terminal by year	225	226	238	250	264	265
8	Number of Depots to be developed annually	1	2	1	1	2	2

[1] Variation in the number of buses to be procured (in that year) is observed because this value includes buses required to be procured to replace an ageing fleet. Thus, the jump in number coincides with the year when a number of existing buses reach end of their life. This jump can also be seen in the annual budgetary requirements.

9	Total Bus Depot by year	118	120	130	142	158	160
10	Annual Land to be developed in Hectares	268	271	291	315	345	348
11	Annual Budget in Crores	45	617	56	108	522	159
12	Annual Staff requirement	63045	63738	69226	75891	84221	85178

The graphical representation of critical outputs for Scenario 1, as generated by the tool are presented in the below figures. These includes year-wise budgetary requirement for the fleet and infrastructure(Figure 14), expected year-wise number of new terminal and depots required by APSRTC(Figure 15), cumulative fleet and land requirement (Figure 16) and projected numbers of routes (Figure 17).

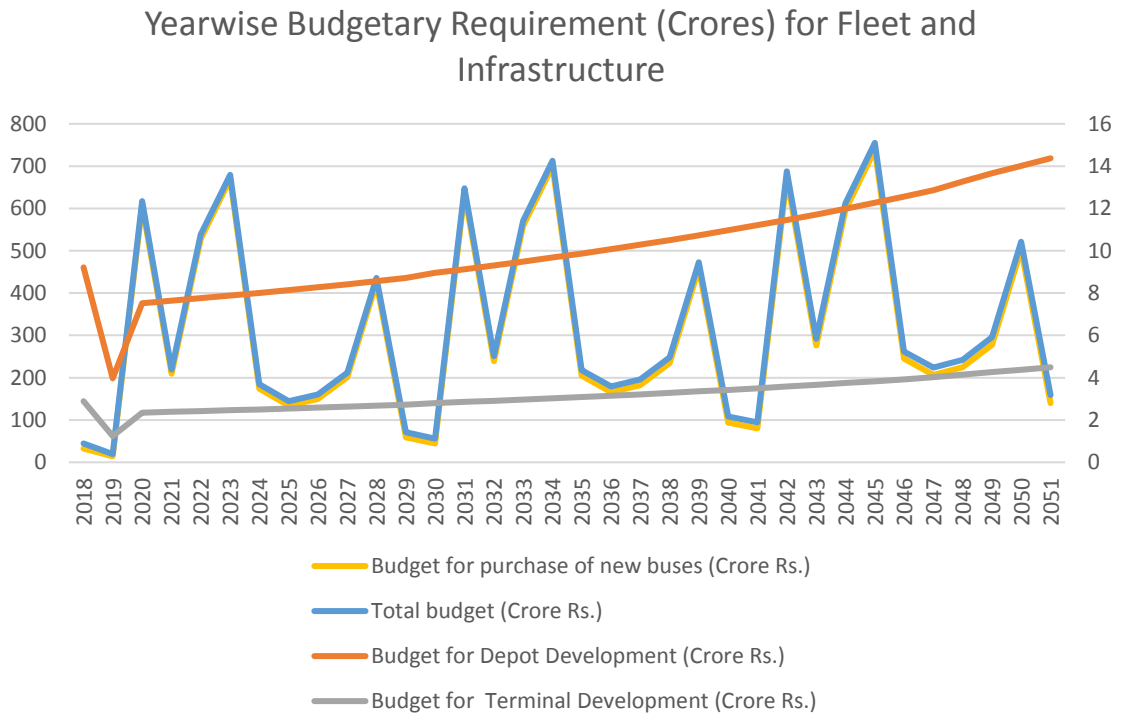


Figure 14: Year wise Fleet and Budgetary requirements

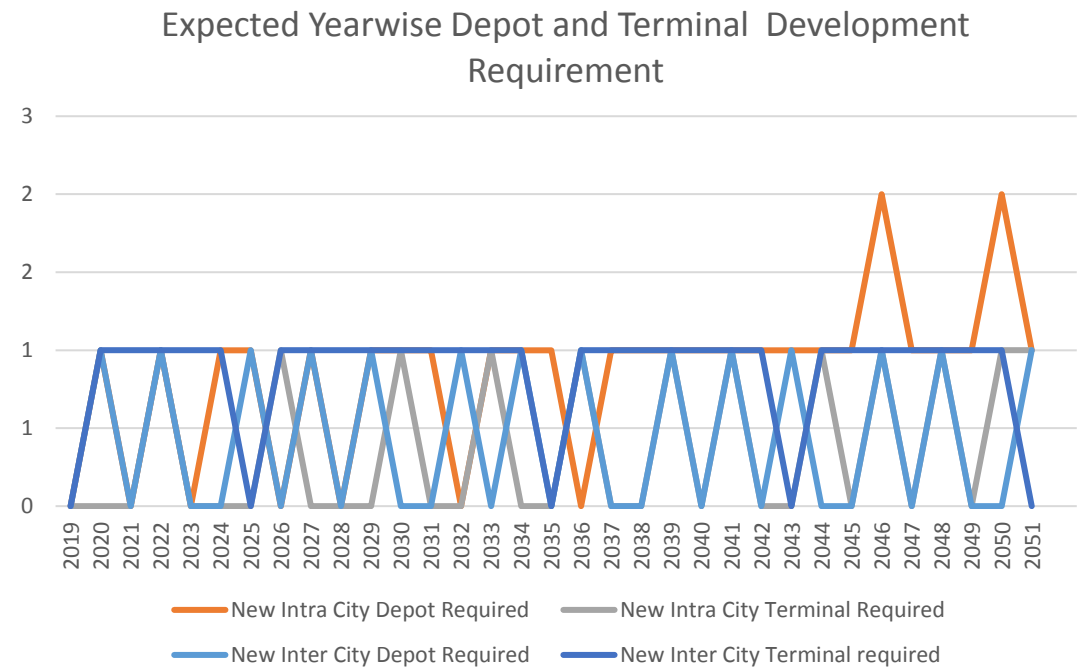


Figure 15: Year wise expected depot and terminal development

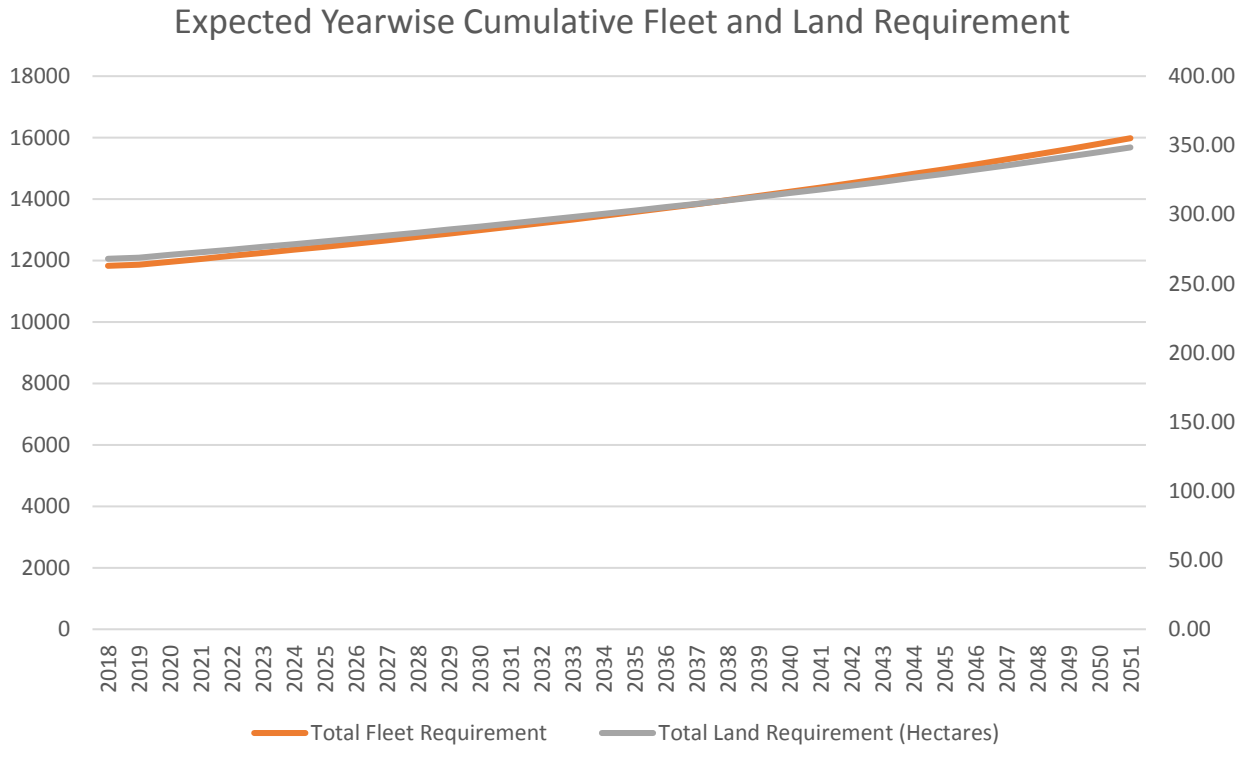


Figure 16: Year wise expected Cumulative Fleet and Land Requirement

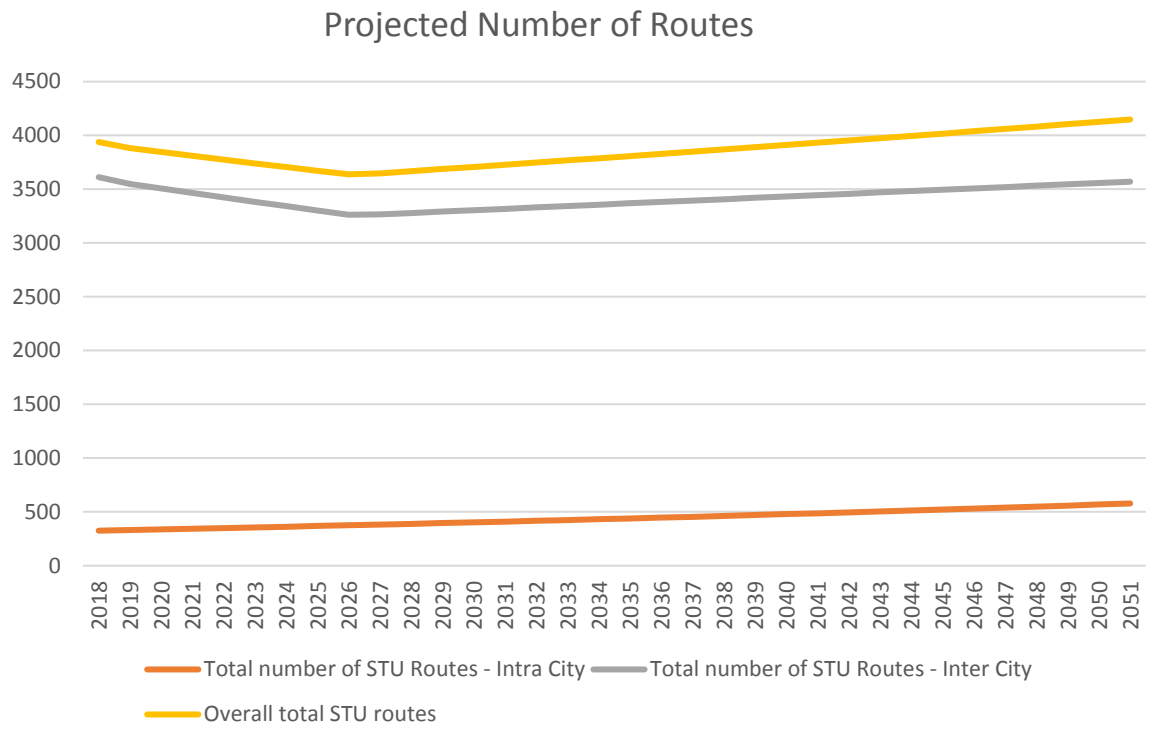


Figure 17: Year wise expected number of routes

Year wise budgetary requirement shows an overall increasing trend for budget requirement to develop infrastructure. However budgetary requirement for fleet – though increasing overall due to increase in fleet requirement, shows annual variations because of cyclic requirement of increased fleet purchase to replace scrapped buses. The land requirements to develop infrastructure increases gradually accordingly with increasing fleet size. However, number of depots and terminals required to be developed every year shows variations as these are developed in quantum (for a set number of buses). Overall routes projection shows an increasing trend in addition of new routes. However, Intercity routes shows an increasing trend while intracity routes remain almost constant.

6.2.5 Scenario 2 - Mode Share Retain Scenario

In this scenario, current mode share is retained throughout the future. The model projects the fleet, budgetary, staffing, operational and infrastructural requirements for APSRTC, based on a scenario where the current APSRTC mode share remains constant up to 2050 (same as today). In the business as usual scenario, mode share is an output derived based on number of trips that me be carried by the available fleet every year – where the available fleet is estimated based on historic trend. In the mode share retain scenario, fleet is estimated not based on historic trend but based on requirement to carry the number of trips estimated for each year. The target trips for each year is calculated using the current mode share and applying it on the total trips estimated in the state for each year. The mode share for different trip types in the current year was input as target mode share - applied with no rate of change in the default values tab. These have been listed in Table 12.

Table 12: Scenario 2 – Mode share and Rate of Changes applied in defaults for Mode- share retain Scenario

Target Mode share (Defaults)	Mode share Retain Scenario	Rate of Change
Achievable target mode share (Intra City Trips) - IPT for less than 10km trip length	7.74%	0.00 %
Achievable target mode share (Intra City Trips) - STU Bus for less than 10km trip length	**5.75%**	0.00 %
Achievable target mode share (Intra City Trips) - Other Bus for less than 10km trip length	4.28%	0.00 %
Achievable target mode share (Intra City Trips) - IPT for more than 10km trip length	38.96%	0.00 %
Achievable target mode share (Intra City Trips) - STU Bus for More than 10km trip length	**14.63%**	0.00 %
Achievable target mode share (Intra City Trips) - Other Bus for More than 10km trip length	12.70%	0.00 %
Achievable target mode share (Inter City Trips) - IPT for less than 10km trip length	7.15%	0.00 %
Achievable target mode share (Inter City Trips) - STU Bus for less than 10km trip length	**34.67%**	0.00 %
Achievable target mode share (Inter City Trips) - Other Bus for less than 10km trip length	4.79%	0.00 %
Achievable target mode share (Inter City Trips) - IPT for More than 10km trip length	40.72%	0.00 %
Achievable target mode share (Inter City Trips) - STU Bus for More than 10km trip length	**32.50%**	0.00 %
Achievable target mode share (Inter City Trips) - Other Bus for More than 10km trip length	23.86%	0.00 %

6.2.5.1 *Outputs – Mode share retain Scenario*

It was observed that projections up to 2051 in scenario 2 generated similar results/requirements (for APSRTC) as in scenario 1 i.e. business as usual scenario. The tool projections revealed that by 2051 APSRTC fleet strength will increase with a reducing operational efficiency (as per current trend), in order to maintain the current mode share (for each trip type). Additionally, the number of routes also show a gradual declining trend (as number of buses are increasing but the mode share is constant). The critical base values (generated through trend analysis) using which APSRTC requirements have been projected for Scenario 2 have been listed in Table 13.

Table 13: Scenario 2 - Critical base values

S.no	Mode Share retain Scenario	2018	2020	2030	2040	2050	2051

1	Fleet Utilization -Intracity	98%	98%	99%	100%	100%	100%
2	Fleet utilization-intercity	99%	100%	100%	100%	100%	100%
3	Operational Efficiency -Intracity	93%	92.8%	92.1%	91.4%	90.7%	90.7%
4	Operational Efficiency - Intercity	94%	93.8%	93%	92.2%	91.5%	91.4%
5	Average Occupancy – Intercity	68%	68%	68%	68%	68%	68%
6	Average Occupancy – Intracity	67%	67%	67%	67%	67%	67%
7	Staff Ratio (overall)	5.33	5.33	5.33	5.33	5.33	5.33

Table 14 presents the critical elements of output generated by the tool in a current trend mode share retain scenario. The detailed outputs for this scenario have been included in Annexure -9.11.

Table 14: Scenario 2 – Outputs

S.no	**Outputs –** Mode Share retain Scenario	2018	2020	2030	2040	2050	2051
1	Total trips per Day (State wide) in Lakh	316.0	326.0	384.0	462.0	568.0	580.0
2	Total Trips per day (APSRTC) in Lakh	66.0	68.0	73.0	80.0	90.0	91.0
3	Total Routes	3955	3881	3634	3431	3401	3420
4	Total Fleet	11828	11907	12675	13644	14884	15028
5	Fleet acquisition (Total Buses to be Procured in year)	115	2486	128	305	1958	449
6	Number of terminals to be developed annually	1	0	1	0	0	2
7	Total Bus Terminal by year	225	225	233	241	251	253
8	Number of Depots to be developed annually	1	1	1	2	1	3
9	Total Bus Depot by year	118	119	127	137	148	151
10	Annual Land to be developed in Hectares	267.9	270.0	284.9	303.4	326.6	329.3
11	Annual Budget in Crores	45	607	44	90	494	131
12	Annual Staff requirement[2]	63045	63501	67560	72722	79330	80097

The graphical representation of critical outputs for Scenario 2- Mode share retain scenario, as generated by the tool are presented in the figures below. These include year-wise budgetary requirement for the fleet and infrastructure development (Figure 18), expected year-wise number of new terminal and depots required by APSRTC (Figure 19), cumulative fleet and land requirement (Figure 20) and projected cumulative number of routes (Figure 21).

[2] This is based on the staff to bus ratio, retained as same for future years.

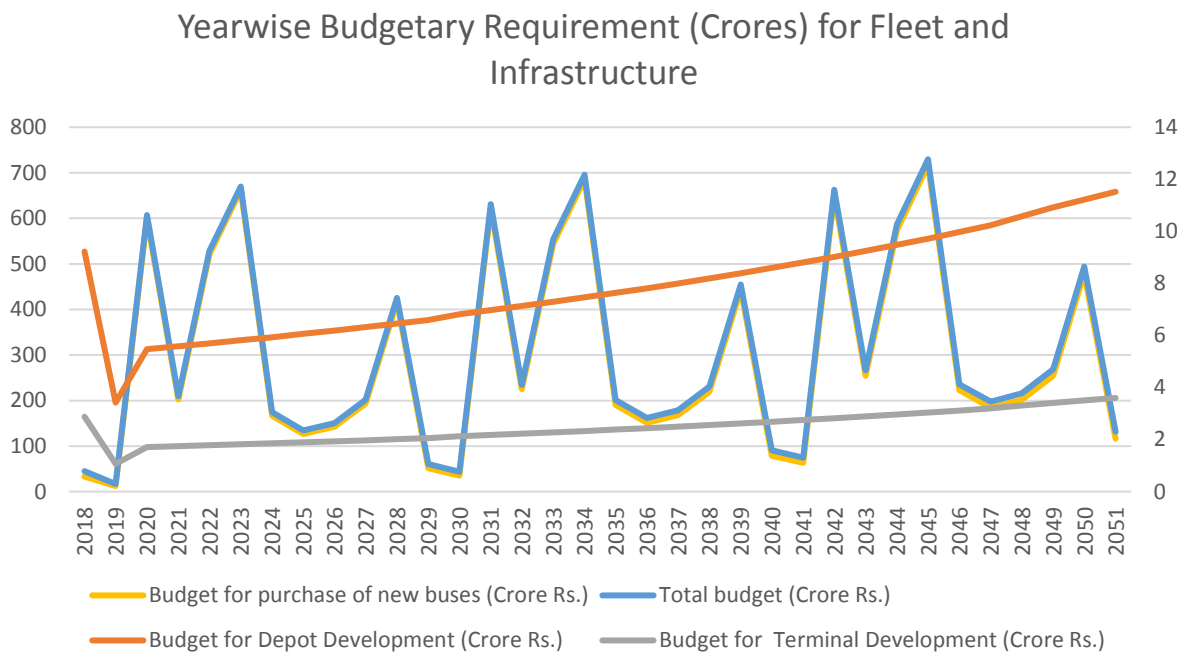


Figure 18: Year wise Fleet and Budgetary Requirement – Scenario 2

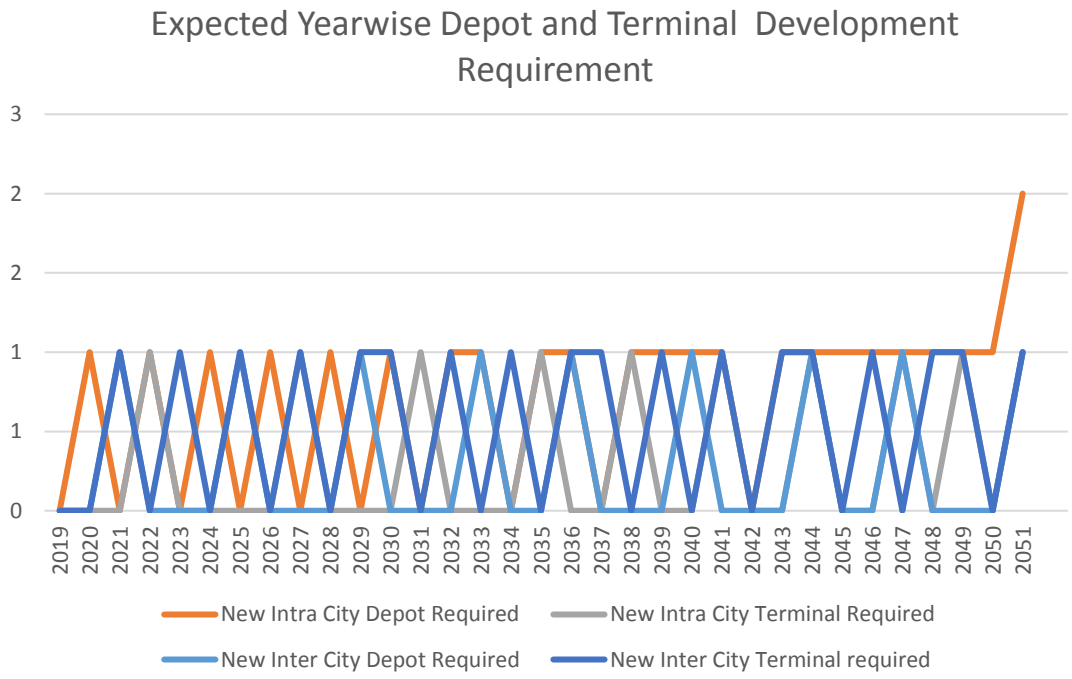


Figure 19: Year wise expected Terminal and depot development – Scenario 2

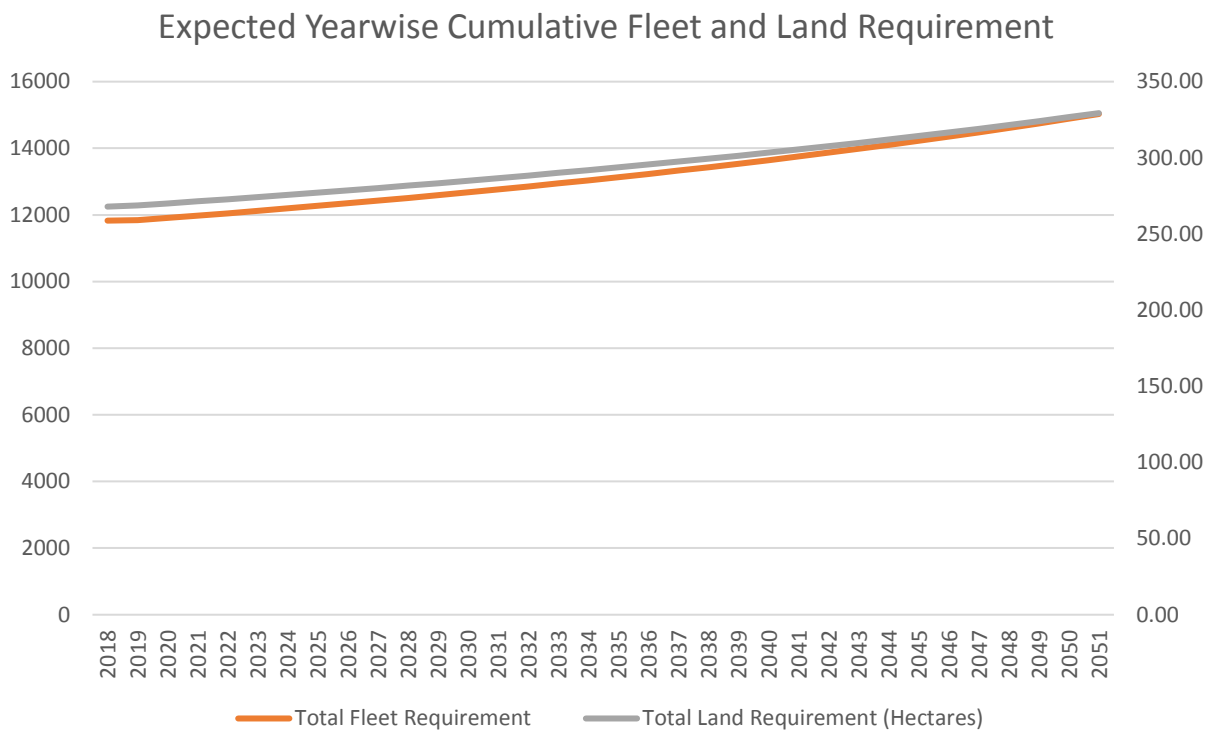


Figure 20: Year wise expected cumulative Fleet and land requirement in scenario 2

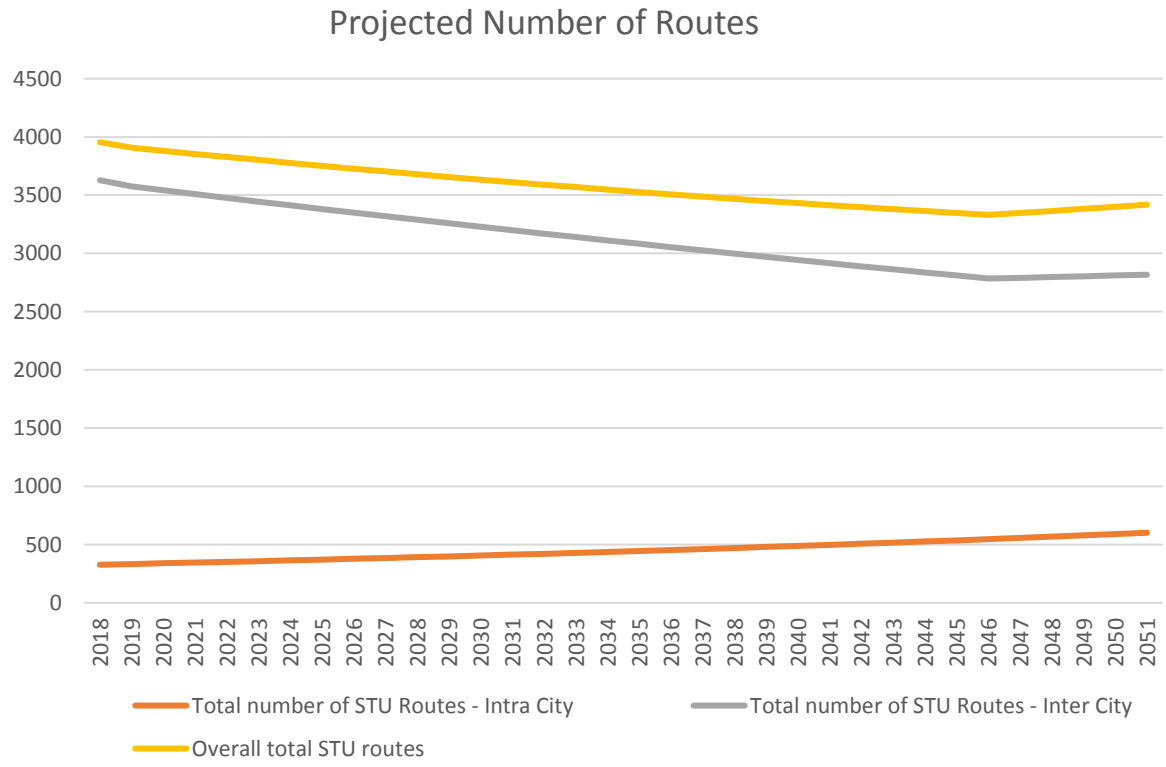


Figure 21: Year wise expected number of routes in scenario 2

6.2.6 Scenario 3 - Desirable Scenario (25% mode share)

In this scenario, a desirable mode share of 25% is targeted for 2051 i.e. the horizon year. Based on that, the model projects the fleet, budgetary, staffing, operational and infrastructural requirements for APSRTC. The mode share for different trip types in the current year was input as target mode share - applied with no rate of change in the default values tab. These have been listed in Table 15 .

Table 15: Scenario 3 – Mode share and Rate of Changes applied in defaults for Mode- share retain Scenario.

Target Mode share (Defaults)	Desirable Scenario (25% mode share)	Rate of Change
Achievable target mode share (Intra City Trips) - IPT for less than 10km trip length	6%	0.00 %
Achievable target mode share (Intra City Trips) - STU Bus for less than 10km trip length	**23%**	0.00 %
Achievable target mode share (Intra City Trips) - Other Bus for less than 10km trip length	2.7%	0.00 %
Achievable target mode share (Intra City Trips) - IPT for more than 10km trip length	24.96%	0.00 %
Achievable target mode share (Intra City Trips) - STU Bus for More than 10km trip length	**32.00%**	0.00 %
Achievable target mode share (Intra City Trips) - Other Bus for More than 10km trip length	11%	0.00 %
Achievable target mode share (Inter City Trips) - IPT for less than 10km trip length	6.75%	0.00 %
Achievable target mode share (Inter City Trips) - STU Bus for less than 10km trip length	**39.67%**	0.00 %
Achievable target mode share (Inter City Trips) - Other Bus for less than 10km trip length	2.79%	0.00 %
Achievable target mode share (Inter City Trips) - IPT for More than 10km trip length	39.72%	0.00 %
Achievable target mode share (Inter City Trips) - STU Bus for More than 10km trip length	**37.50%**	0.00 %
Achievable target mode share (Inter City Trips) - Other Bus for More than 10km trip length	19.86%	0.00 %

6.2.6.1 *Outputs –Desirable Scenario (25% mode share)*

The tool projections revealed that by 2051 APSRTC fleet strength will increase with a reducing operational efficiency (as per current trend), to achieve the target mode share. Additionally, the number of routes also show a gradual increasing trend (as number of buses are increasing but the

mode share is also increasing). The critical base values (generated through trend analysis) using which APSRTC requirements have been projected for Scenario 3 have been listed in Table 16.

Table 16: Scenario 3 - Critical base values

S.no	Mode Share retain Scenario	2018	2020	2030	2040	2050	2051
1	Fleet Utilization -Intracity	98%	98%	99%	100%	100%	100%
2	Fleet utilization-intercity	99%	100%	100%	100%	100%	100%
3	Operational Efficiency -Intracity	93%	92.8%	92.1%	91.4%	90.7%	90.7%
4	Operational Efficiency - Intercity	94%	93.8%	93%	92.2%	91.5%	91.4%
5	Average Occupancy – Intercity	68%	68%	68%	68%	68%	68%
6	Average Occupancy – Intracity	67%	67%	67%	67%	67%	67%
7	Staff Ratio (overall)	5.33	5.33	5.33	5.33	5.33	5.33

Table 17 presents the critical elements of output generated by the tool in a desirable scenario with target mode share of 25%. The detailed outputs for this scenario have been included in Annexure - 9.12.

Table 17: Scenario 3 – Outputs

S.no	**Outputs –** Mode Share retain Scenario	**2018**	**2020**	**2030**	**2040**	**2050**	**2051**
1	Total trips per Day (State wide) in Lakh	316.0	326.0	384.0	462.0	568.0	580.0
2	Total Trips per day (APSRTC) in Lakh	66.0	68.0	73.0	80.0	90.0	91.0
3	Total Routes	3938	3928	4144	4654	5144	5194
4	Total Fleet	11828	12283	15014	18223	22190	22645
5	Fleet acquisition (Total Buses to be Procured in year)	115	2675	489	750	2699	1205
6	Number of terminals to be developed annually	1	3	3	2	3	3
7	Total Bus Terminal by year	225	229	253	277	303	306
8	Number of Depots to be developed annually	1	2	3	4	5	5
9	Total Bus Depot by year	118	123	150	183	222	227
10	Annual Land to be developed in Hectares	267.9	276.54	328.58	388.19	460.48	468.7
11	Annual Budget in Crores	45	681	163	235	721	363
12	Annual Staff requirement[3]	63045	65469	80024	97128	118271	120697

[3] This is based on the staff to bus ratio, retained as same for future years.

The graphical representation of critical outputs for Scenario 3, as generated by the tool are presented in the figures below. These include year-wise budgetary requirement for the fleet and infrastructure development (Figure 22) expected year-wise number of new terminal and depots required by APSRTC (Figure 23), cumulative fleet and land requirement (Figure 24) and projected cumulative number of routes (Figure 25).

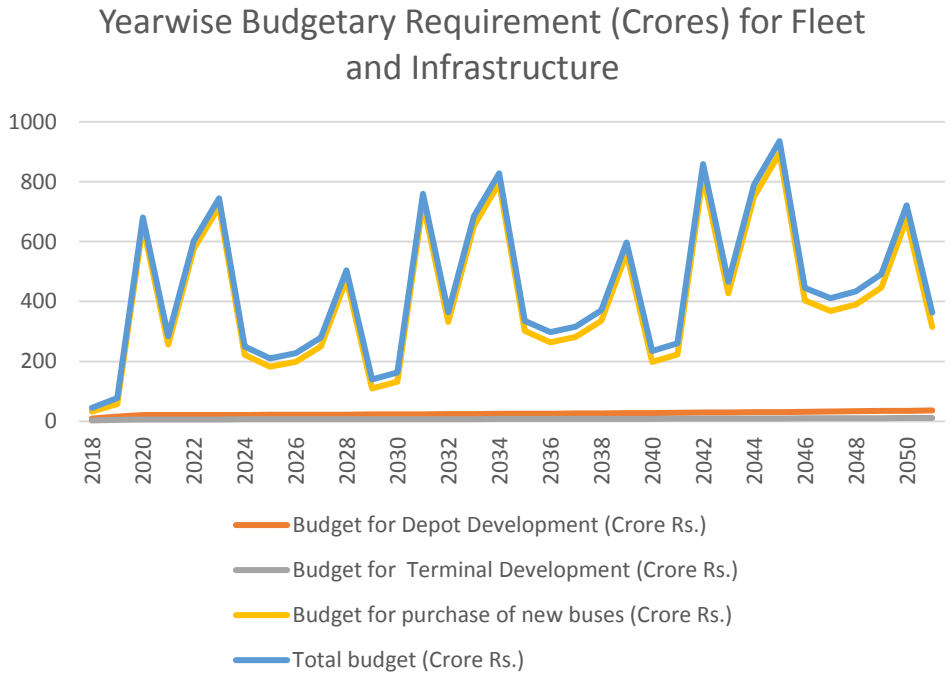


Figure 22: Year wise Fleet and Budgetary Requirement – Scenario 3

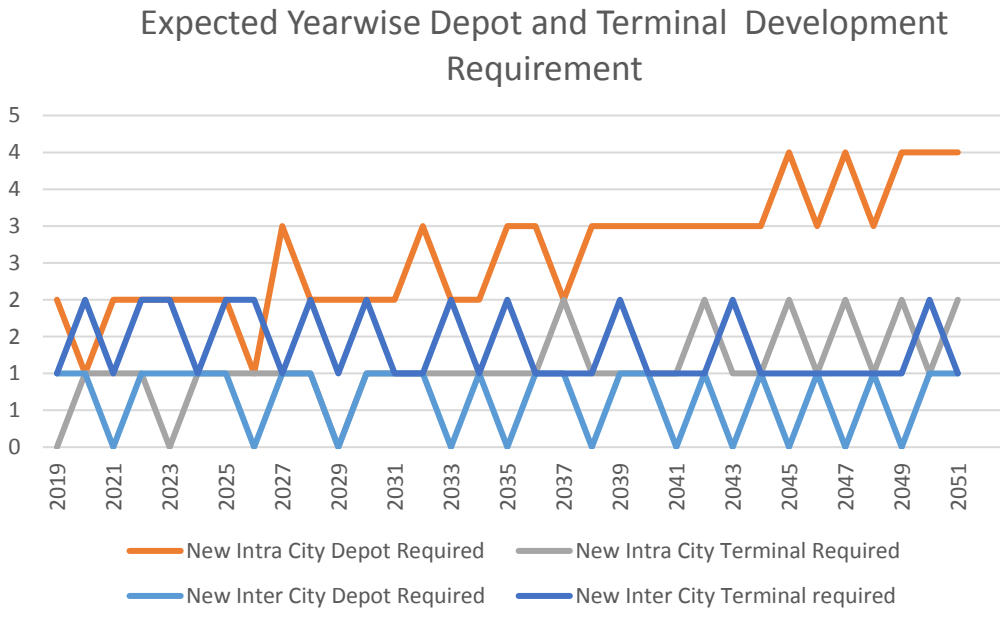


Figure 23: Year wise expected Terminal and depot development – Scenario 3

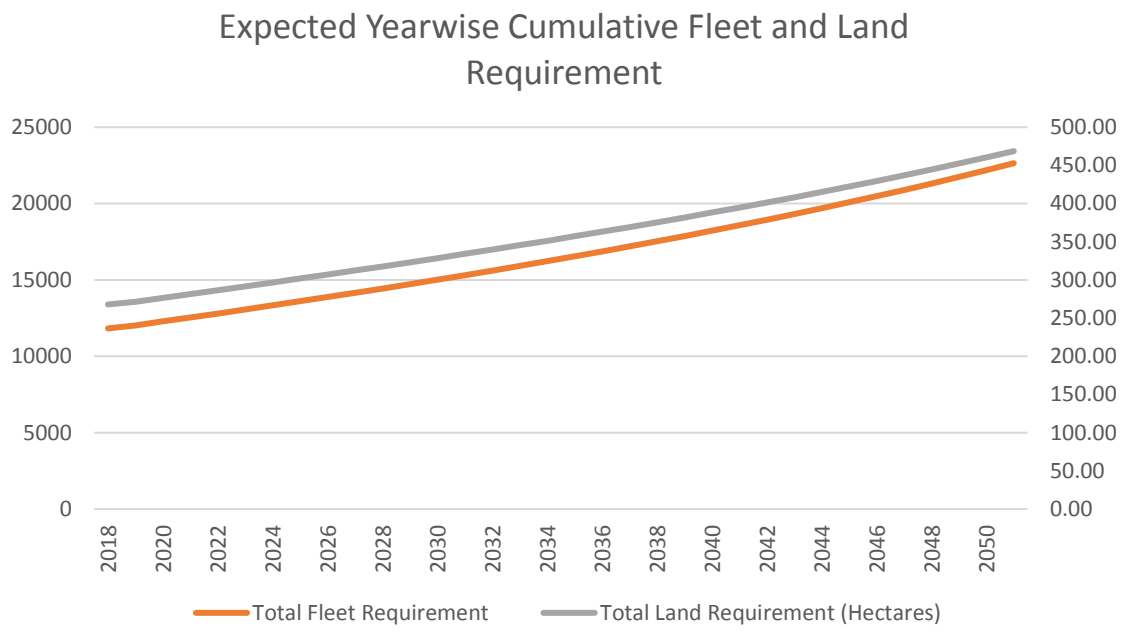


Figure 24: Year wise expected cumulative Fleet and land requirement in scenario 3

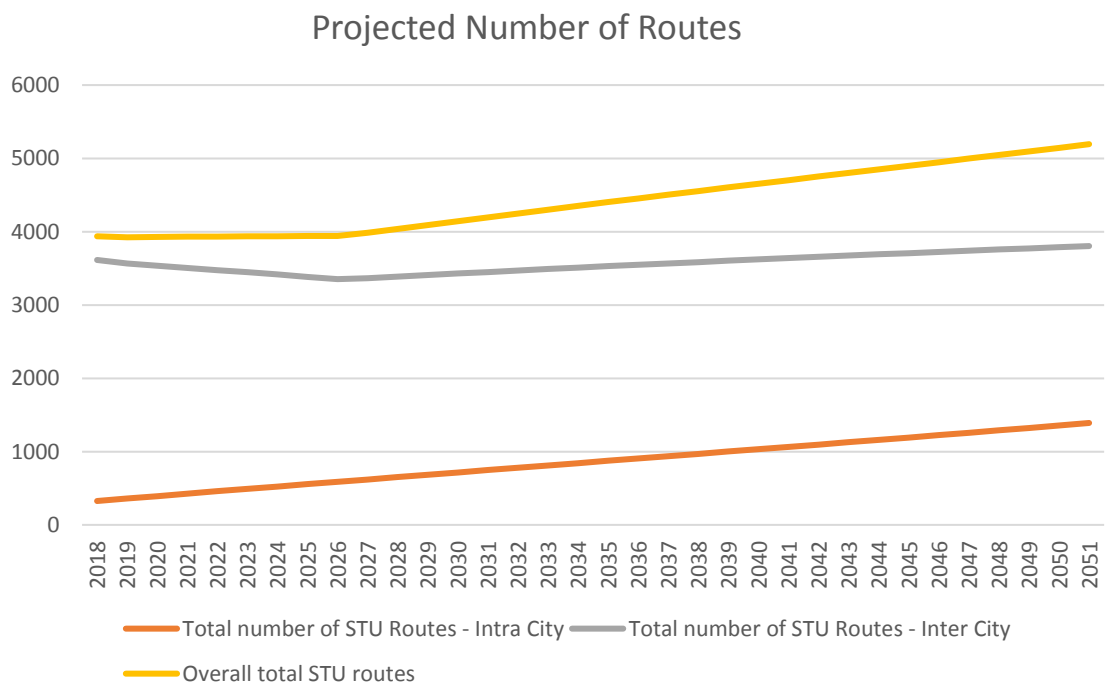


Figure 25: Year wise expected number of routes in scenario 3

6.2.6.2 *Loss reduction analysis for Desired Scenario (25%)*

The fleet estimation tool not only estimates the future fleet requirement but also aims to help the STU's in building profitability scenarios. The overall profit/loss and investment of the STU's are

dependent on several rigid[4] and flexible[5] STU parameters. As part of the study, 5 broad parameters were identified which pivot the earning and cost incurred by STU's and thus affect the profitability. These factors have a significant impact on generating profits and reducing losses. These include –

1. Staff to bus ratio
2. Operational Efficiency
3. Avg. Occupancy
4. Average passenger trip length
5. Fleet utilization

Presently, APSRTC is observed to be encountering losses of Rs.1668.0 crores in a desired scenario and the outputs generated by the tool projects that by 2051, the loss will grow up to a total of 2680.11 crores (Figure 26). The fluctuation in losses as observed in Figure 26 is a result of variation in the fleet purchasing requirements. This is because in the years when a significant fleet size reaches its age limit, additional funds are required to replace the same, thus increasing losses. Thus, the dips in the graph are caused by fleet replacement requirements in that year.

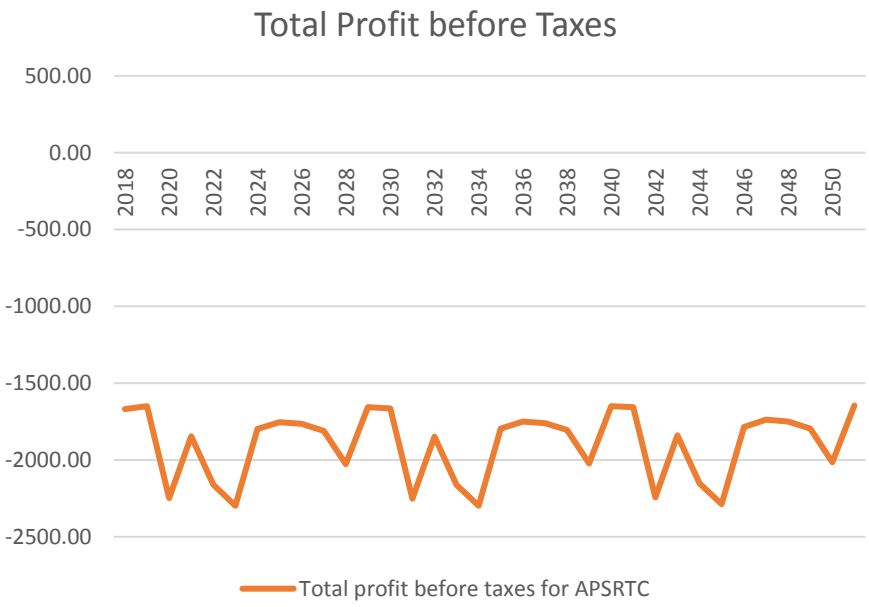


Figure 26: APSRTC's projected profit output asper Current trend

Thus, to minimize STU losses and to find the breakeven point, three of the selected parameters were tweaked to study the impact on the profitability in the business as usual scenario. These are average occupancy, staff to bus ratio and operational efficiency.

The fleet estimation tool provides the users, flexibility to set the target values under default tab to generate the desired scenarios. Out of the five factors, listed above (that are likely to affect profitability), mode share and passenger trip length do not have a clear benchmark and thus have not tweaked as a part of this study. Fleet utilization is already on an upward trend and is approaching

[4] The parameters which are not frequently changeable as these remains uniform for state-wide
[5] The parameters which can be assumed or altered as per STU requirements.

100% (in the BAU scenario) and hence the same has not been tweaked as a part of this study. The other three factors, i.e. average occupancy, staff to bus ratio and operational efficiency can be altered for improvement. It is known that the benchmark for staff to bus ratio in India is prescribed as 5.2 in existing literature and in some of the older ASRTU guidelines. However, some countries such as the Singapore have been able to bring it down to close to 4.2. To get a systematic idea of improvement in loss, modification of the parameters was done in a chronological order. This order of modification was the based on the maximum/minimum impact incurred on the STU's cost and earnings by changing the parameters. Thus, the order followed first altering average occupancy, then staff to bus ratio and then increasing the operational efficiency.

The first parameter to be tweaked was average occupancy (Figure 27). The target value of average occupancy is changed for intra and intercity operations from 67% and 68% respectively to 80% for both. While the rate of change of occupancy is changed from 1% to 2%. By doing so, average occupancy increases from 67.26% for intracity operations in 2018 to 73.46% in 2051 and from 68.24% in 2018 for intercity operations to 73.96% in 2051. Consequently, the loss reduces from 2680 crores in a normal desired scenario to 1712 crores in 2051.

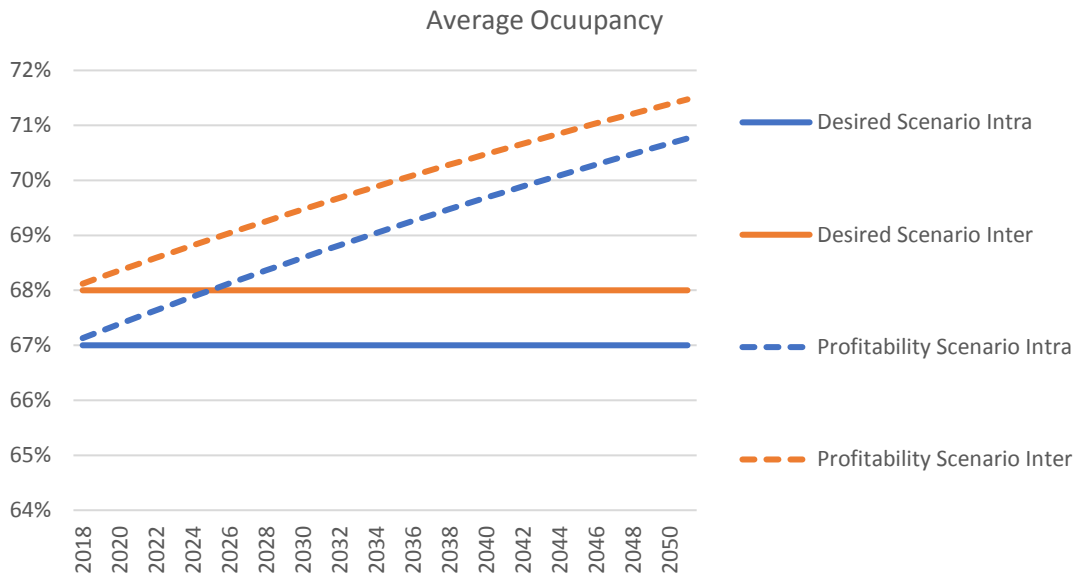


Figure 27: Average occupancy Modification

According to STU data provided APSRTC, has a bus to staff ratio of 5.33. This implies 5.33 persons per one bus which is slightly higher than what is prescribed in literature for the subcontinent, but significantly higher than what other countries are able to achieve. Following this, firstly the target bus staff ratio was reduced to 5.2, with an annual rate of change of 2% in the default tab of fleet estimation tool and the impact over profitability was noted. This achieves a staff to bus ratio of 5.26 in 2051 (Figure 28). Based on this, it was observed that the losses reduced to 1712.34 crores by 2051 (Figure 30).

Figure 28: APSRTC's Bus to staff ratio modification

In line with this, operational efficiency was also altered. The target operational efficiency value was changed from 84% to 90%. Due to this operational efficiency for intra city services reaches a value of 92.2% from 90.7% in 2051 and for intercity services, the value changes to 93% from 91.4% in 2051. Simultaneously, the overall losses are reduced to a final value of 1644 crores.

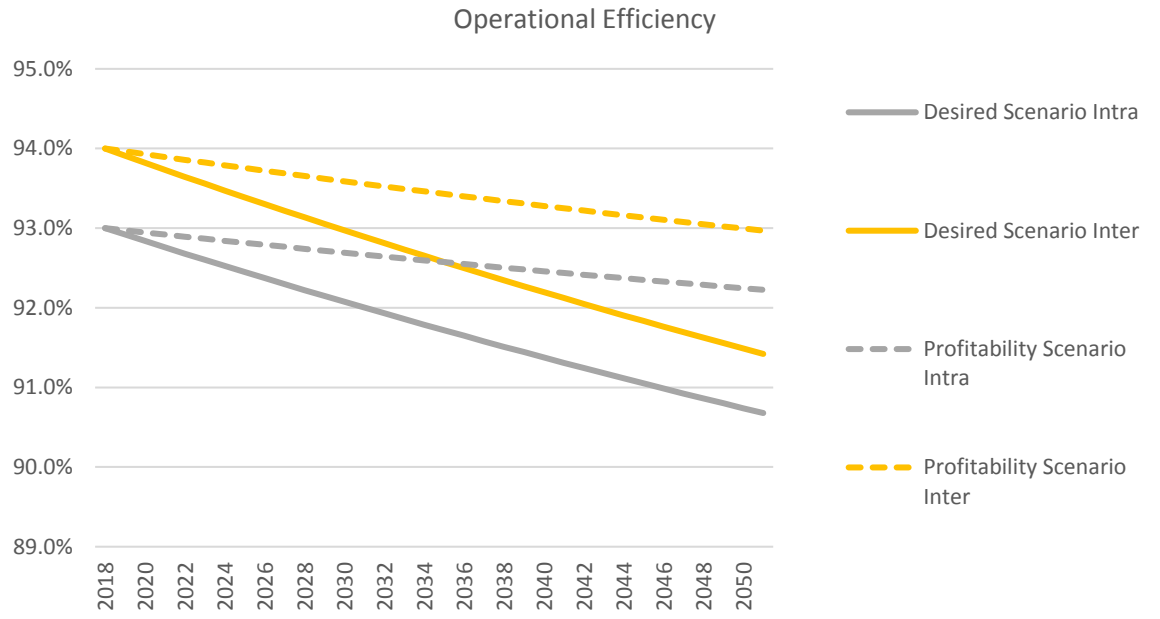


Figure 29: APSRTC's average occupancy Modification

Figure 30 represents the comparative stage-wise graphical representations of the profit outfit generated by the tool depicting the improvements in loss recovery after concurrently deploying the three scenarios discussed above (operational efficiency improvement scenario combines both average

occupancy and reduction in staff to bus ratio). The fluctuation in losses as observed in Figure 30 is a result of variation in the fleet purchasing requirements. This is because in the years when a significant fleet size reaches its age limit, additional funds are required to replace the same, thus increasing losses. Thus, the dips in the graph are caused by fleet replacement requirements in that year.

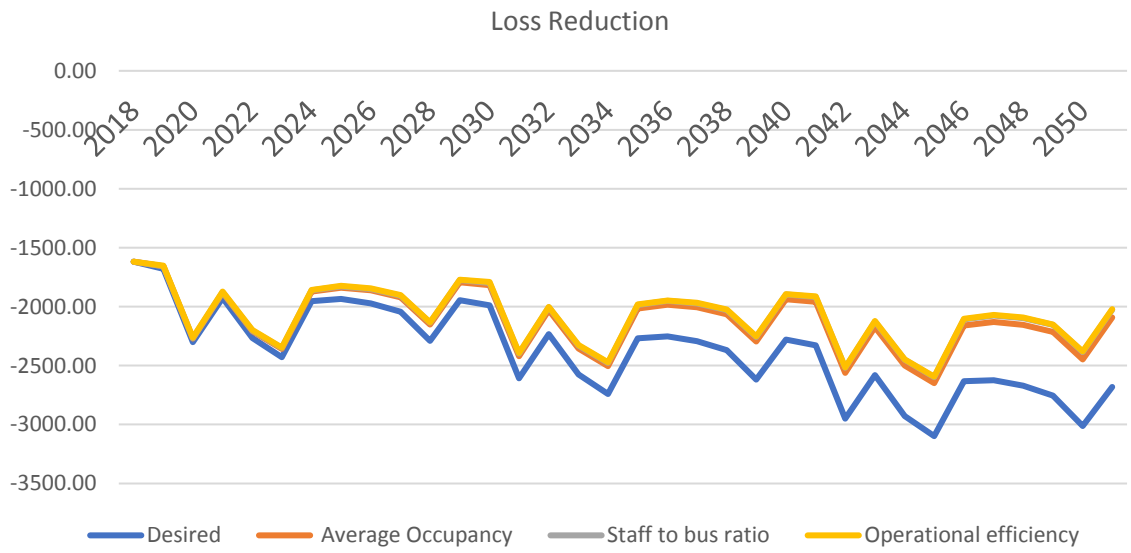


Figure 30: APSRTC's loss recovery improvements

6.2.7 Scenario 4- Desirable Scenario (30% mode share)

In this scenario, a desirable mode share of 30% is targeted for 2051 i.e. the horizon year. Based on that, the model projects the fleet, budgetary, staffing, operational and infrastructural requirements for APSRTC. The mode share for different trip types in the current year was input as target mode share - applied with no rate of change in the default values tab. These have been listed in Table 18.

Table 18: Scenario 4 – Mode share and Rate of Changes applied in defaults for Mode- share retain Scenario.

Target Mode share (Defaults)	Desirable Scenario (30% mode share)	Rate of Change
Achievable target mode share (Intra City Trips) - IPT for less than 10km trip length	5%	0.00 %
Achievable target mode share (Intra City Trips) - STU Bus for less than 10km trip length	**33%**	0.00 %
Achievable target mode share (Intra City Trips) - Other Bus for less than 10km trip length	2.5%	0.00 %
Achievable target mode share (Intra City Trips) - IPT for more than 10km trip length	22.96%	0.00 %
Achievable target mode share (Intra City Trips) - STU Bus for More than 10km trip length	**38.00%**	0.00 %

Target Mode share (Defaults)	Desirable Scenario (30% mode share)	Rate of Change
Achievable target mode share (Intra City Trips) - Other Bus for More than 10km trip length	10.20%	0.00 %
Achievable target mode share (Inter City Trips) - IPT for less than 10km trip length	6.15%	0.00 %
Achievable target mode share (Inter City Trips) - STU Bus for less than 10km trip length	**41.67%**	0.00 %
Achievable target mode share (Inter City Trips) - Other Bus for less than 10km trip length	4.79%	0.00 %
Achievable target mode share (Inter City Trips) - IPT for More than 10km trip length	38.72%	0.00 %
Achievable target mode share (Inter City Trips) - STU Bus for More than 10km trip length	**39.50%**	0.00 %
Achievable target mode share (Inter City Trips) - Other Bus for More than 10km trip length	18.86%	0.00 %

6.2.7.1 *Outputs –Desirable Scenario (30% mode share)*

The tool projections revealed that by 2051 APSRTC fleet strength will increase with a reducing operational efficiency (as per current trend), in order to achieve the target mode share. Additionally, the number of routes also show a gradual increasing trend (as number of buses are increasing but the mode share is also increasing). The critical base values (generated through trend analysis) using which APSRTC requirements have been projected for Scenario 4 have been listed in Table 19.

Table 19: Scenario 4 - Critical base values

S.no	Mode Share retain Scenario	2018	2020	2030	2040	2050	2051
1	Fleet Utilization -Intracity	98%	98%	99%	100%	100%	100%
2	Fleet utilization-intercity	99%	100%	100%	100%	100%	100%
3	Operational Efficiency -Intracity	93%	92.8%	92.1%	91.4%	90.7%	90.7%
4	Operational Efficiency - Intercity	94%	93.8%	93%	92.2%	91.5%	91.4%
5	Average Occupancy – Intercity	68%	68%	68%	68%	68%	68%
6	Average Occupancy – Intracity	67%	67%	67%	67%	67%	67%
7	Staff Ratio (overall)	5.33	5.33	5.33	5.33	5.33	5.33

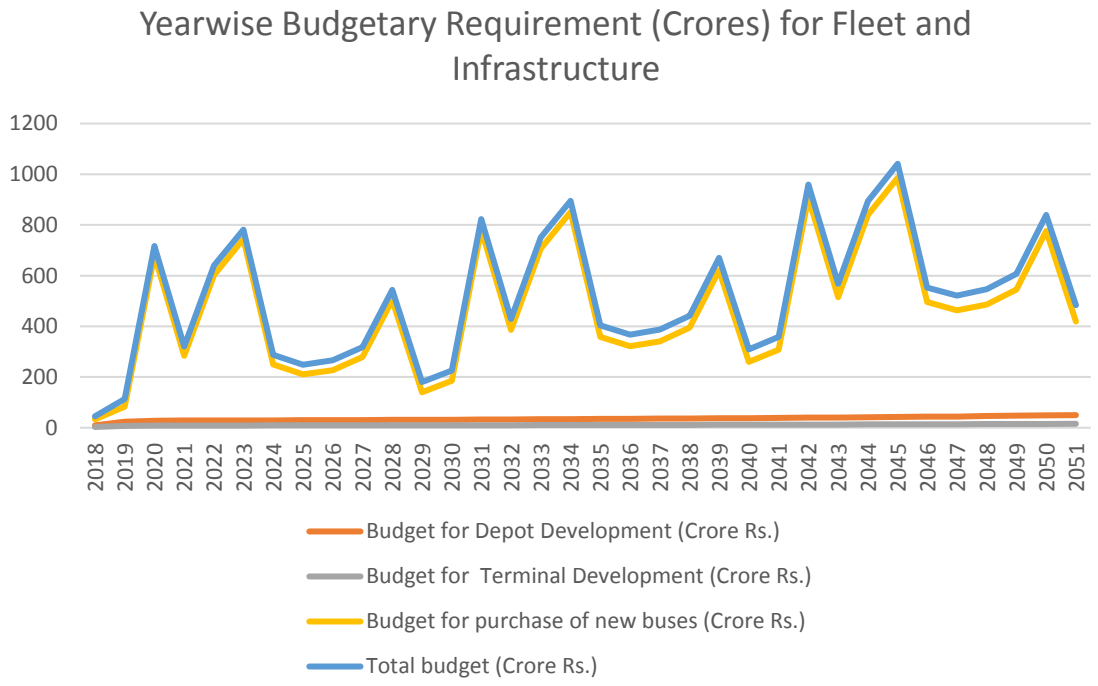
Table 20 presents the critical elements of output generated by the tool in a current trend mode share retain scenario. The detailed outputs for this scenario have been included in Annexure 9.13.

Table 20: Scenario 4 – Outputs

S.no	**Outputs –** Mode Share retain Scenario	2018	2020	2030	2040	2050	2051
1	Total trips per Day (State wide) in Lakh	316.0	326.0	384.0	462.0	568.0	580.0

2	Total Trips per day (APSRTC) in Lakh	66.0	68.0	73.0	80.0	90.0	91.0
3	Total Routes	3938	3974	4394	5084	5743	5809
4	Total Fleet	11828	12466	16172	20529	25919	26537
5	Fleet acquisition (Total Buses to be Procured in year)	115	2767	684	977	3081	1595
6	Number of terminals to be developed annually	1	4	3	3	3	4
7	Total Bus Terminal by year	225	231	262	293	326	330
8	Number of Depots to be developed annually	1	4	3	5	6	6
9	Total Bus Depot by year	118	125	161	205	259	265
10	Annual Land to be developed in Hectares	267.9	279.98	350.10	430.50	528.15	539.27
11	Annual Budget in Crores	45	717	226	310	839	483
12	Annual Staff requirement[6]	63045	66444	86197	109418	138147	141444

The graphical representation of critical outputs for Scenario 4, as generated by the tool are presented in the figures below. These include year-wise budgetary requirement for the fleet and infrastructure development (Figure 31), expected year-wise number of new terminal and depots required by APSRTC (Figure 32), cumulative fleet and land requirement (Figure 33) and projected cumulative number of routes (Figure 34).



[6] This is based on the staff to bus ratio, retained as same for future years.

Figure 31: Year wise Fleet and Budgetary Requirement – Scenario 4

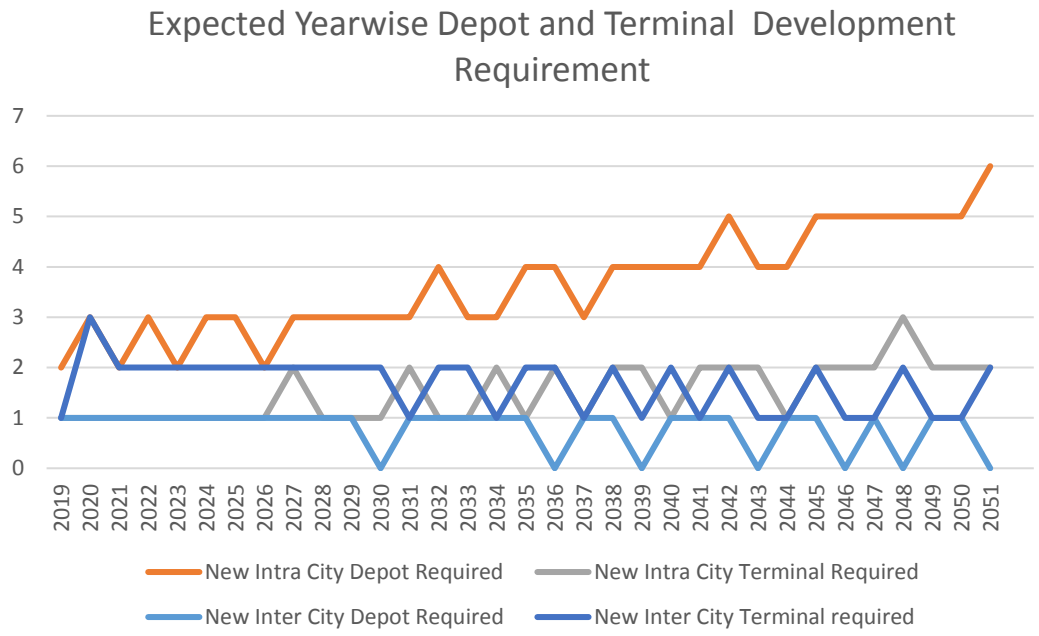


Figure 32: Year wise expected Terminal and depot development – Scenario 4

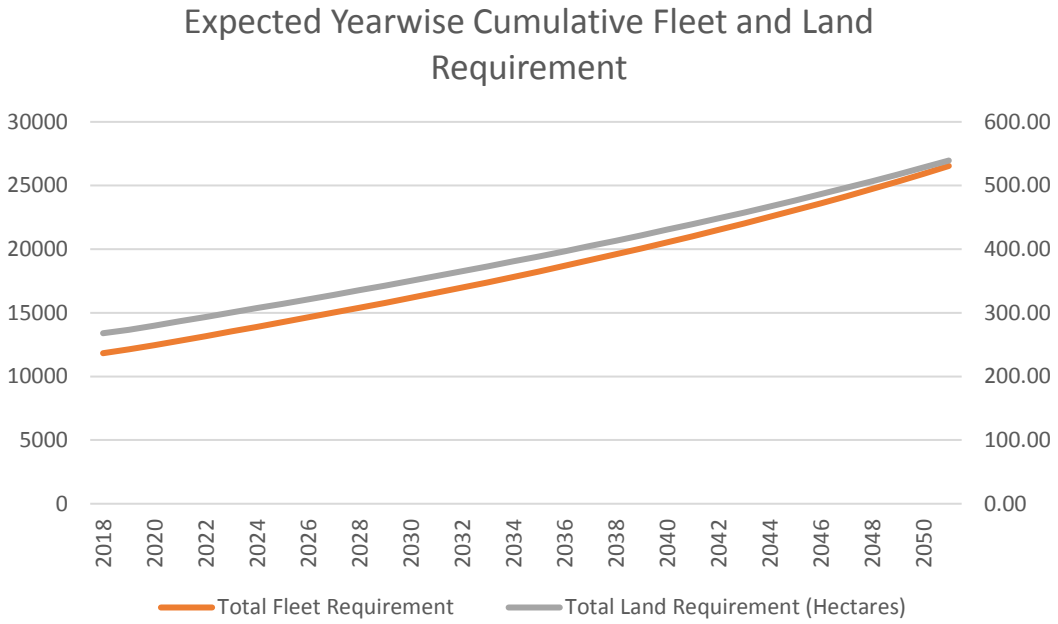


Figure 33: Year wise expected cumulative Fleet and land requirement in scenario 4

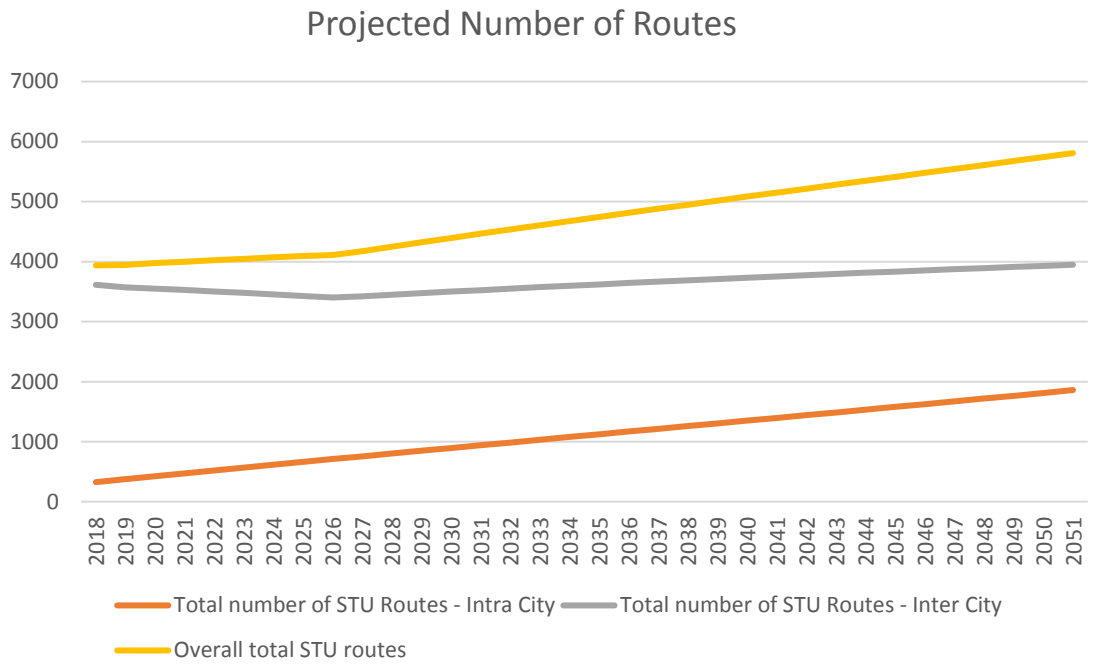


Figure 34: Year wise expected number of routes in scenario 4

6.2.7.2 *Loss reduction analysis for Desired Scenario*

As mentioned in the previous section, the first parameter to be tweaked was average occupancy. The target value of average occupancy is changed for intra and intercity operations from 67% and 68% respectively to 80% for both. While the rate of change of occupancy is changed from 1% to 2%. By doing so, average occupancy increases from 67.26% for intracity operations in 2018 to 73.46% in 2051 and from 68.24% in 2018 for intercity operations to 73.96% in 2051. Consequently, the loss reduces from 3035 crores to 1905 crores in 2051 in the desired scenario for 30% mode share.

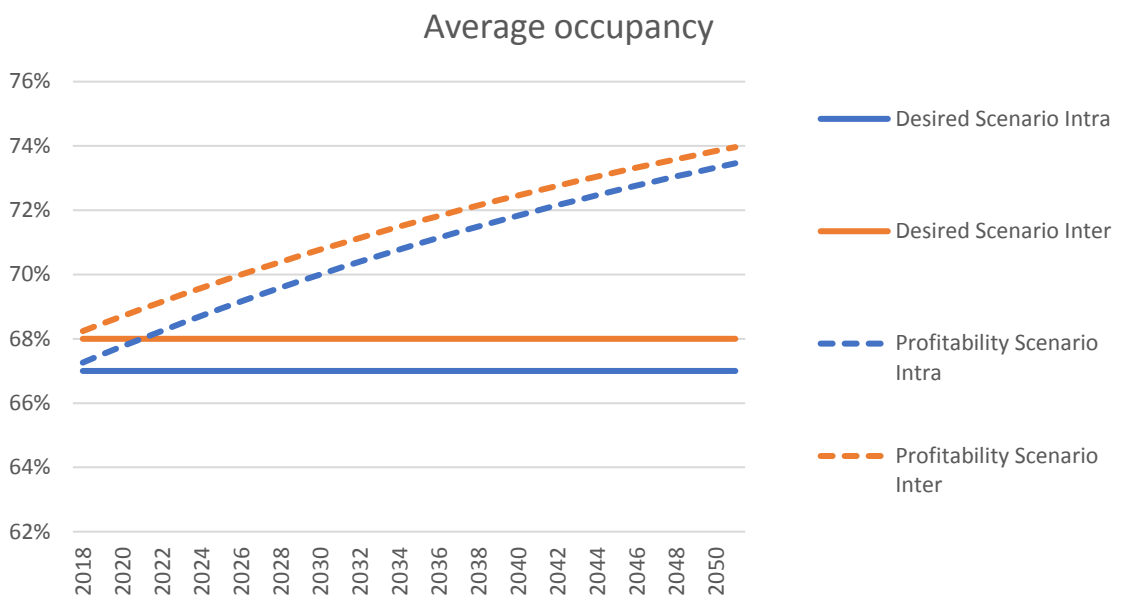


Figure 35: Average occupancy modification

According to STU data provided APSRTC, has a bus to staff ratio of 5.33. This implies 5.33 persons per one bus which is slightly higher than what is prescribed in literature for the subcontinent, but significantly higher than what other countries can achieve. Following this, firstly the target bus staff ratio was reduced to 5.2, with an annual rate of change of 2% in the default tab of fleet estimation tool and the impact over profitability was noted. This achieves a staff to bus ratio of 5.26 in 2051 (Figure 36). Based on this, it was observed that the losses reduced to 1832.41 crores by 2051 (Figure 38).

Figure 36: APSRTC's Bus to staff ratio modification

In line with this, operational efficiency was also altered. The target operational efficiency value was changed from 84% to 90%. Due to this operational efficiency for intra city services reaches a value of

92.2% from 90.7% in 2051 and for intercity services, the value changes to 93% from 91.4% in 2051. Simultaneously, the overall losses are reduced to a final value of 1826.9 crores.

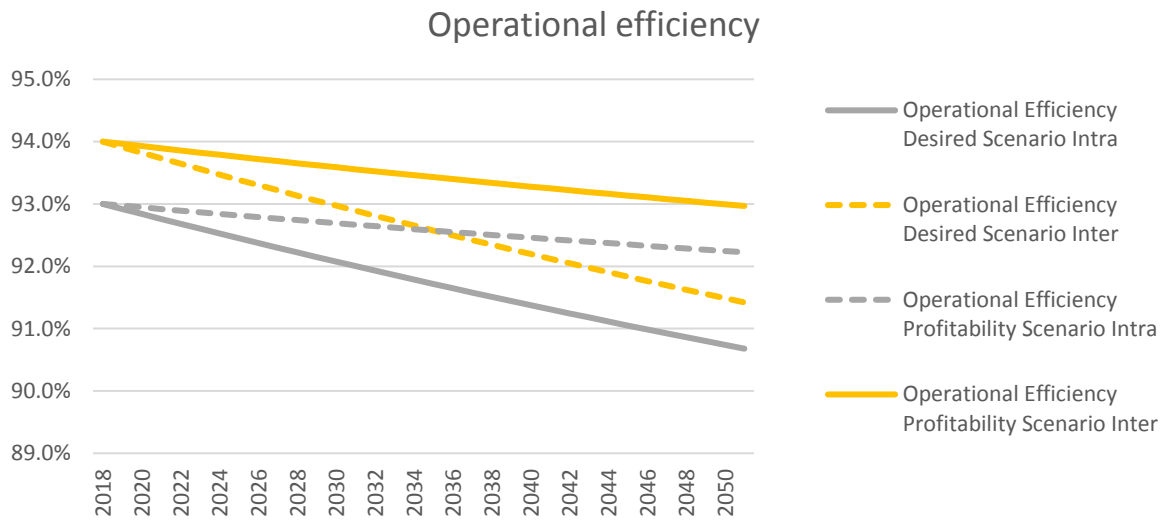


Figure 37: APSRTC's average occupancy Modification

Figure 38 represents the comparative stage-wise graphical representations of the profit outfit generated by the tool depicting the improvements in loss recovery after concurrently deploying the three scenarios discussed above (operational efficiency improvement scenario combines both average occupancy and reduction in staff to bus ratio). The fluctuation in losses as observed in Figure 38 is a result of variation in the fleet purchasing requirements. This is because in the years when a significant fleet size reaches its age limit, additional funds are required to replace the same, thus increasing losses. Thus, the dips in the graph are caused by fleet replacement requirements in that year.

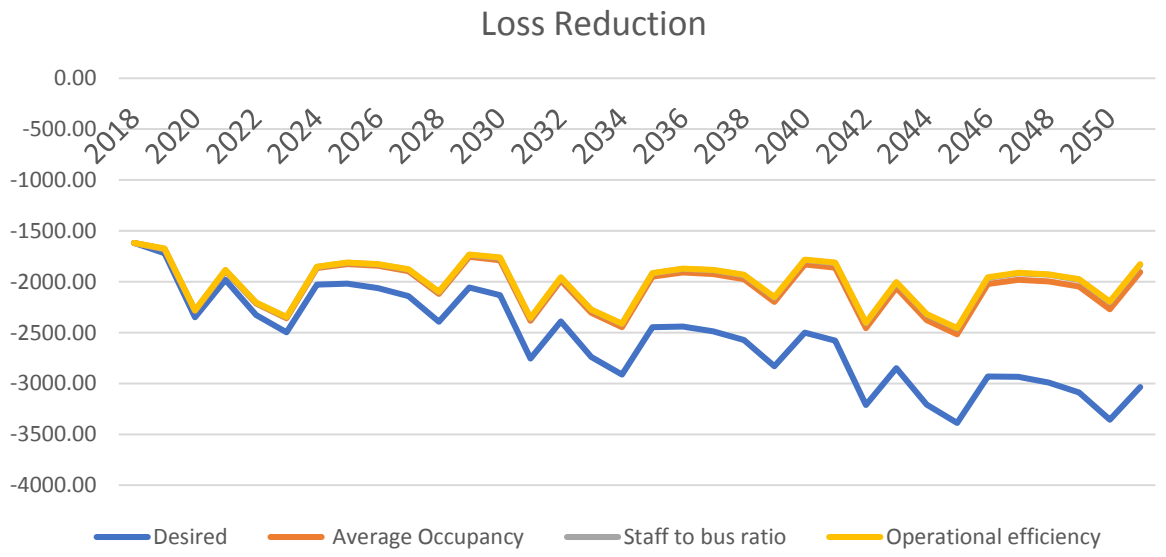


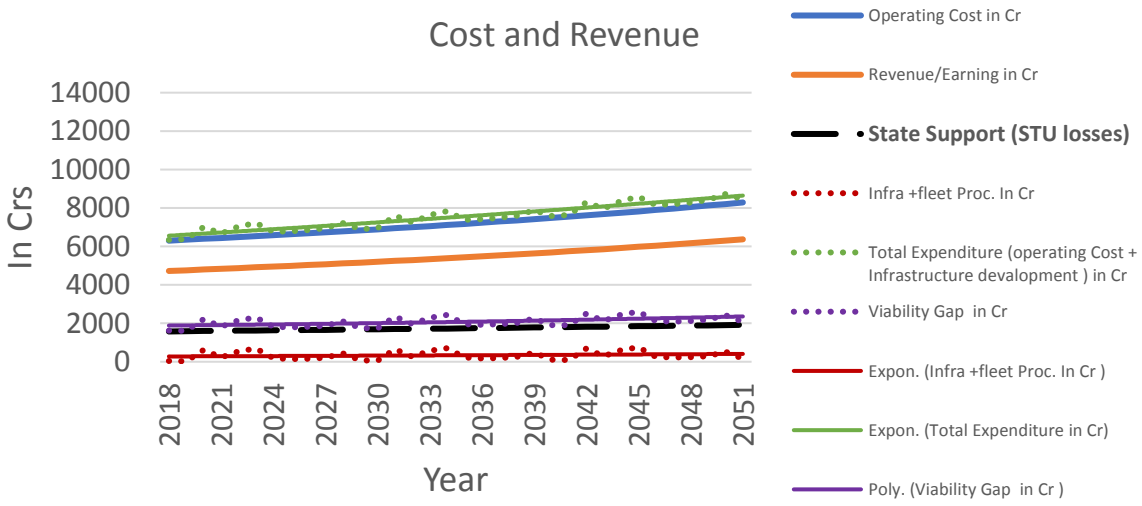
Figure 38: APSRTC's loss recovery improvement

6.2.8 Cost and Revenue Implications

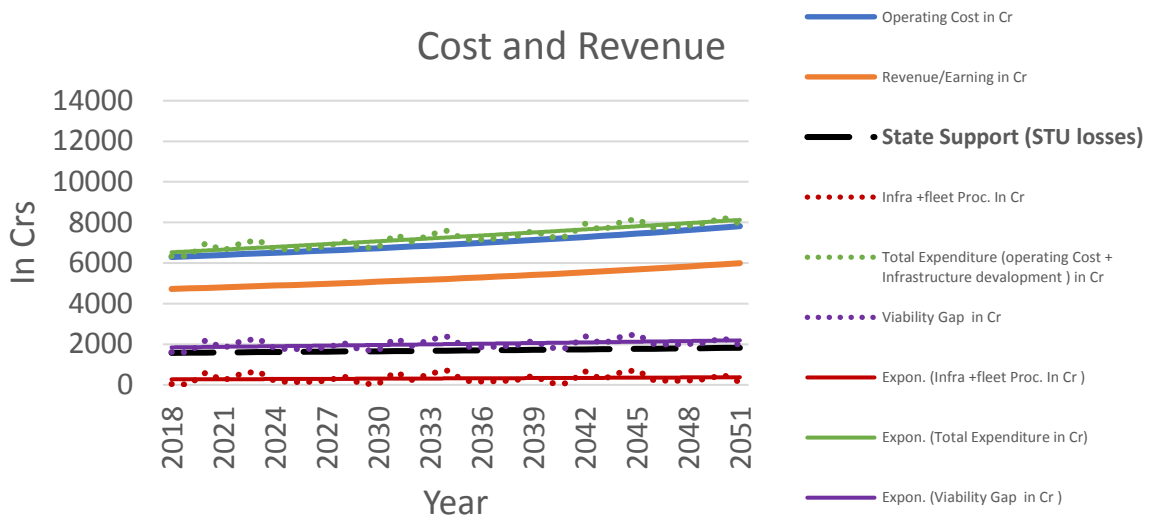
It is evident that by triggering the factors like average occupancy, bus to staff ratio and service efficiency not only contributes in reducing the losses for STU in the future but also these modifications aids APSRTC to become less dependent on the support provided by the state to compensate the existing losses. The scenario wise graphical representation presented in

Figure 39 (A, B and C) shows the state support (Indicated in the graphs - as the black line) required by the STU under each given scenario. In the business as-usual scenario and mode share retain scenario the required state support remains similar whereas in the desired scenario the state support surges up with increase in operational cost and revenue. Subsequently, as the recommended changes are applied the state support drops down.

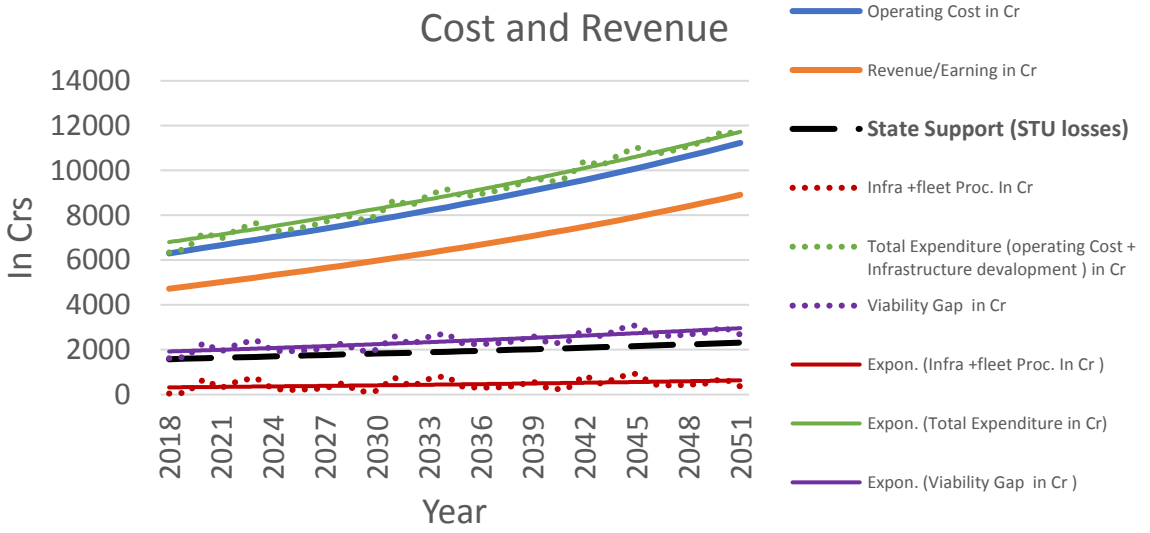
Figure 39D, shows the drop in the state support after incurring the recommended modifications. The cost and revenue graphs are presented for the desired scenario with 25 % mode share however modification applied the desired scenario developed with 30% mode share generates the similar results in terms cost and revenue generation by APSRTC.



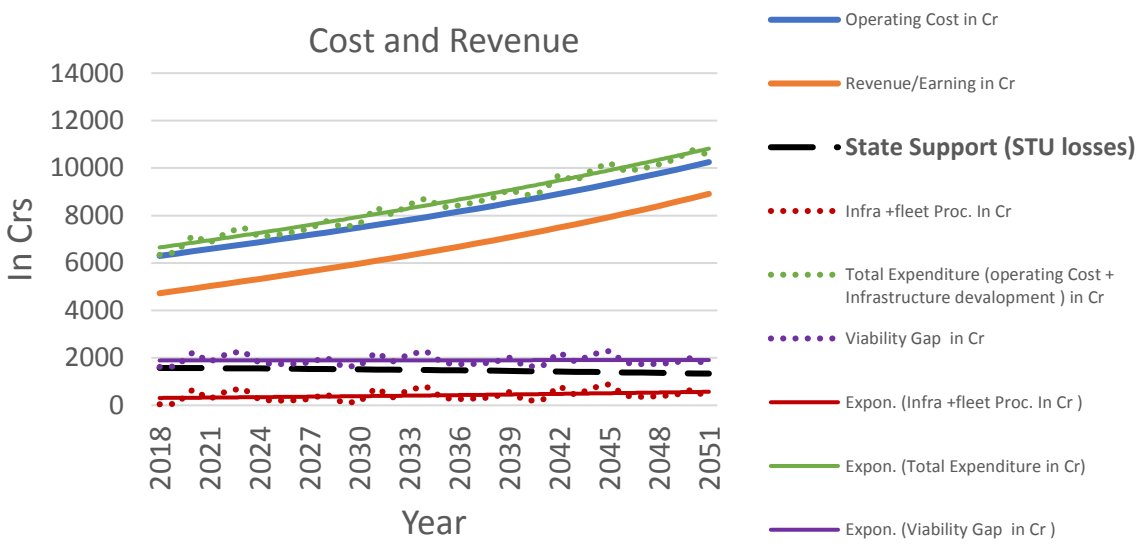
A. Business as Usual Scenario



B. Mode share retain Scenario



C. Desirable Scenario (25% Mode share)



D. Loss recovery on the desirable scenario with 25% Mode share

Figure 39: APSRTC's required State support

7 Projections for Next five years (2023)

As discussed with APSRTC officials, there is a need to identify the requirements for next five years as a priority. This section represents the projections for next five-year period in detail. Major outputs such as fleet strength, annual budget, routes, staff requirement etc. have been represented in Table 21.

Table 21: Five-year projections for all four scenarios

APSRTC : Projected Outputs for the year 2023	Business as usual	Mode Share retain	Desired (25%)	Desired (30%)
Fleet Strength	12259	12121	13068	13532
Total Routes	3740	3802	3937	4049
Total Buses to be Procured in year	2733	2707	2898	2993
Annual Staff requirement	65289	64604	69655	72123
Total Bus Terminal by year	230	228	236	240
Total Bus Depot by year	122	121	131	135
Annual Land to be developed in Hectares	274	274	291	300
Annual Budget in Crores	680	670	745	782

8 Comparison and Conclusion

Currently APSRTC is the single largest bus operator in Andhra Pradesh and faces little competition from private bus operators. APSRTC operates 90% of the bus trips in the state (Andhra Pradesh State Road Corporation , n.d.). As trips in the state shall increase in future, APSRTC needs to keep increasing its fleet strength to cater this increasing demand.

Basis the current urban/rural population growth rate, urban population will be growing at a much faster rate than rural population. Thus, share of urban trips in overall trips undertaken across the state shall increase at a faster rate than regional intercity trips. Even though total number of urban and rural trips show an increasing trend in the future. The overall mode share of buses in the state reduces in business as usual and mode share retain scenario because the share of intercity trips is much larger than the share of urban trips catered by APSRTC (Figure 40) and the share urban mode share (by APSRTC) is less than the rural/regional mode share (by APSRTC). Thus, in the future with increasing urbanization, the share of rural/regional trips (as part of total trips made in the state) reduces, thus leading to reduced overall mode share by APSRTC. This mode share coupled with the annual increase in trip demand estimates annual increase in fleet size as well annual cumulative fleet size requirement for APSRTC.

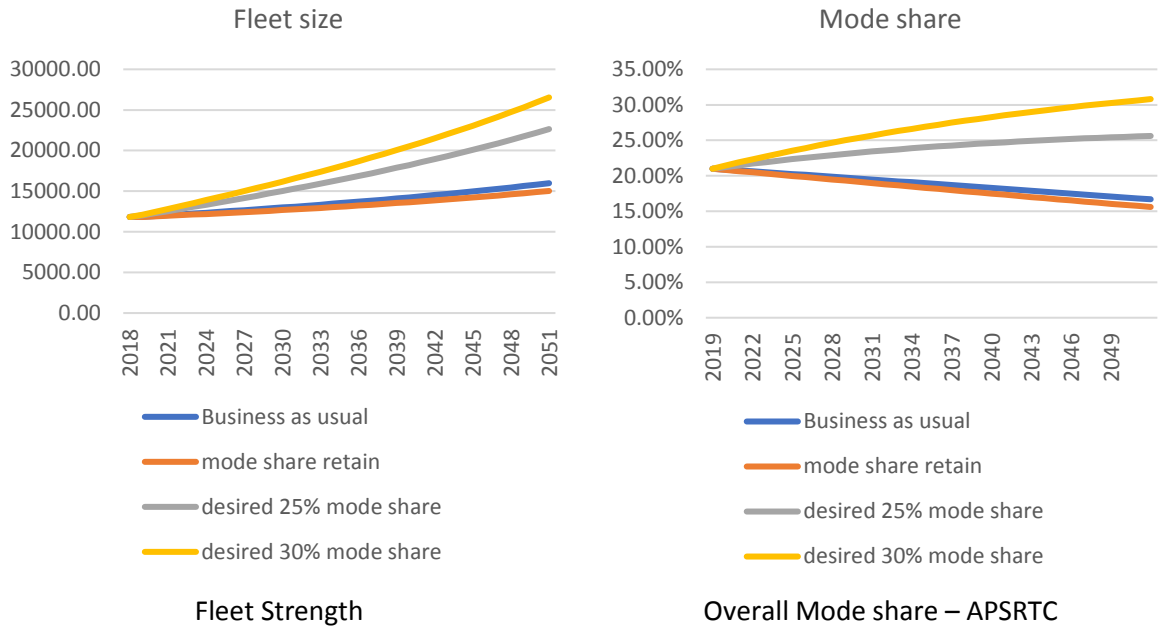


Figure 40: Comparative Graphs – fleet strength and mode share in business as usual and mode share retain scenario

The fleet size has an increasing trend in all the four scenarios. While fleet size increases marginally in business as usual and mode share retain scenario, the drift is much higher in desired scenarios. Table 22 represents the inter and intracity mode share for all the four scenarios where intercity operations remain higher leading to a higher mode share than intracity for all the four scenarios.

Table 22: Projected Horizon Year Mode Share Comparison for Intercity and Intracity buses

Mode share	Business as usual Scenario		Mode share retain Scenario		Desired Scenario-25%		Desired Scenario-30%	
Year	Intercity	Intra city	Intercity	Intra city	Intercity	Intra city	Intercity	Intra city
2018	33.65%	7.18%	33.65%	7.18%	33.65%	7.18%	33.65%	7.18%
2051	33.72%	8.58%	32.27%	7.67%	33.93%	20.62%	37.30%	27.60%

Because past trends on occupancy, staff to bus ratio, average trip length, average route length, etc. could not be derived, these values are retained as constant (based on the current year values) in all the scenarios. However, profitability scenario tweaks the occupancy, staff to bus ratio and operational efficiency, considering an achievable value in the future, to analyse the level of per bus loss reduction that can be achieved. This is important because, in the current scenario with per bus losses, the overall losses and burden for the state mounts with each bus added to the fleet. This makes it less attractive for the State Transport Undertakings to expand the current fleet. However, if the corporation becomes marginally profitable (or even if per bus loses are reduced considerably) then fleet expansion can become a viable approach.

The profitability scenarios test this hypothesis. And the analysis of the results shows that a reduction of staff to bus ratio can have a significant impact on reducing losses. Additionally, attempts at increasing ridership are also likely to bear fruits in terms of reduced losses. Table 23 and Table 24 presents the comparison of estimated losses in the two desired scenarios for profitability studied in the previous section.

Table 23: Comparison of estimated losses for profitability for desired scenario (25%)

	Profitability Factors	Desired Scenario		Modification in Average occupancy		Average occupancy+ staff to bus ratio		Average occupancy+ staff to bus ratio+ operational eff	
		2018	2051	2018	2051	2018	2051	2018	2051
1	Average Occupancy Inter-city	68%	68%	68%	73.9%	68%	73.9%	68%	73.9%
	Rate of change	1%	1%	2%	2%	2%	2%	2%	2%
2	Average Occupancy Intra-city	67%	67%	67%	73.4%	67%	73.4%	67%	73.4%
	Rate of change	1%	1%	2%	2%	2%	2%	2%	2%
3	Bus to staff ratio	5.33	5.33	5.33	5.33	5.33	5.27	5.33	5.27
	Rate of change	0%	0%	0%	0%	2%	2%	2%	2%

	Profitability Factors	Desired Scenario		Modification in Average occupancy		Average occupancy+ staff to bus ratio		Average occupancy+ staff to bus ratio+ operational eff	
		2018	2051	2018	2051	2018	2051	2018	2051
4	Operational efficiency Inter-city	94%	91.4%	94%	91.4%	94%	91.4%	94%	93%
5	Operational Efficiency Intra-city	93%	90.7%	93%	90.7%	93%	90.7%	93%	92.2%
6	Loss (in Crores)	-1668	-2680	-1668	-1712	-1668	-1649	-1668	-1644

Table 24: Comparison of estimated losses for profitability for desired scenario (30%)

	Profitability Factors	Desired Scenario		Modification in Average occupancy		Average occupancy+ staff to bus ratio		Average occupancy+ staff to bus ratio+ operational eff	
		2018	2051	2018	2051	2018	2051	2018	2051
1	Average Occupancy Inter-city	68%	68%	68%	73.9%	68%	73.9%	68%	73.9%
	Rate of change	1%	1%	2%	2%	2%	2%	2%	2%
2	Average Occupancy Intra-city	67%	67%	67.26%	73.4%	67%	73.4%	67%	73.4%
	Rate of change	1%	1%	2%	2%	2%	2%	2%	2%
3	Bus to staff ratio	5.33	5.33	5.33	5.33	5.33	5.27	5.33	5.27
	Rate of change	0%	0%	0%	0%	2%	2%	2%	2%
4	Operational efficiency Inter-city	94%	91.4%	94%	91.4%	94%	91.4%	94%	93%
5	Operational Efficiency Intra-city	93%	90.7%	93%	90.7%	93%	90.7%	93%	92.2%
6	Loss (in Crores)	-1668	-3035	-1668	-1905	-1668	-1832	-1668	-1826

Table 25 Presents the base year data inputs in the tool for both the scenario development. Table 26 presents the default mode share and rate of changes considered for developing both the scenarios and Table 27 presents the outputs generated for the both scenarios.

Table 25: Base year Inputs

Base Year Data (2017)	
Mode-share (Overall) –	20.99%
STU Trips per day in Lakhs	65.80
Fleet Strength	11713
Fleet utilization – Intercity / Intracity	99% / 98%
Efficiency – Intercity / Intracity	94% / 93%
Average Occupancy – Intercity / Intracity	68% / 67%
Total Routes	3868
Staff Ratio	5.33
Earning Per Kilometer	28.23
Cost Per Kilometer	37.65

Table 26: Target value Scenario- wise Comparison for mode share

Target Values (Defaults)	*Business as usual*	*Mode share retain*	*Desired (25%)*	*Desired (30%)*
Achievable target mode share (Intra City Trips) - IPT for less than 10km trip length	7.74%	7.74%	6%	5%
Achievable target mode share (Intra City Trips) - STU Bus for less than 10km trip length	7.75%	**5.75%**	**23%**	**33%**
Achievable target mode share (Intra City Trips) - Other Bus for less than 10km trip length	2.78%	4.28%	2.7%	2.5%
Achievable target mode share (Intra City Trips) - IPT for more than 10km trip length	38.96%	38.96%	24.96%	22.96%
Achievable target mode share (Intra City Trips) - STU Bus for More than 10km trip length	16.13%	**14.63%**	**32.00%**	**38.00%**
Achievable target mode share (Intra City Trips) - Other Bus for More than 10km trip length	11.20%	12.70%	11%	10.20%
Achievable target mode share (Inter City Trips) - IPT for less than 10km trip length	7.15%	7.15%	6.75%	6.15%
Achievable target mode share (Inter City Trips) - STU Bus for less than 10km trip length	37.67%	**34.67%**	**39.67%**	**41.67%**
Achievable target mode share (Inter City Trips) - Other Bus for less than 10km trip length	1.79%	4.79%	2.79%	4.79%

Target Values (Defaults)	*Business as usual*	*Mode share retain*	*Desired (25%)*	*Desired (30%)*
Achievable target mode share (Inter City Trips) - IPT for More than 10km trip length	40.72%	40.72%	39.72%	38.72%
Achievable target mode share (Inter City Trips) - STU Bus for More than 10km trip length	35.50%	**32.50%**	**37.50%**	**39.50%**
Achievable target mode share (Inter City Trips) - Other Bus for More than 10km trip length	20.86%	23.86%	19.86%	18.86%

Table 27: Projected Outputs Scenario- wise Comparison

APSRTC : Projected Outputs for the year - 2051(horizon year)	Business as usual	Mode Share retain	Desired (25%)	Desired (30%)
Mode-share (Overall) - APSRTC	16.69 %	15.60 %	25.61%	30.81%
APSRTC Trips per day in Lakh	97	91	91	91
Fleet Strength	15981	15028	22645	26537
Total Routes	4148	3420	5194	5809
Fleet utilization – Inter city	100%	100%	100%	100%
Fleet utilization – Intra city	100%	100%	100%	100%
Operational Efficiency – Inter city	91.42%	91.42 %	91.42%	91.42 %
Operational Efficiency – Intra city	90.7%	90.7%	90.7%	90.7%
Average Occupancy – Inter city	68%	68%	68%	68%
Average Occupancy – Intra city	67%	67%	67%	67%
Bus to staff ratio	5.33	5.33	5.33	5.33
Total Buses to be Procured in year	541	449	1205	1595
Annual Staff requirement	85178	80097	120697	141444
Total Bus Terminal by year	265	253	306	330
Total Bus Depot by year	160	151	227	265
Annual Land to be developed in Hectares	348	329.3	468.7	539
Annual Budget in Crores	159	131	363	483

9 Annexures

9.1. List of Input Data

S.no	List of Data- Inputs
1	Current Year
	FLEET DETAILS
2	Current Intra City Bus Fleet
3	Current Intra City per bus seating Capacity
4	Current Inter City Bus Fleet
5	Current Inter City per bus seating capacity
	FLEET UTILIZATION AND OPERATIONAL EFFICIENCY
6	Current year fleet utilization (Intra City)
7	Current year fleet utilization (Inter City)
8	Current year operational efficiency (Intra City)
9	Current year operational efficiency (Inter City)
	FLEET AGE
	INTRA CITY FLEET
10	Percent of fleet size with age <=1 year
11	Percent of fleet size with age >1 to 2 years
12	Percent of fleet size with age >2 to 3 years
13	Percent of fleet size with age >3 to 4 years
14	Percent of fleet size with age >4 to 5 years
15	Percent of fleet size with age >5 to 6 years
16	Percent of fleet size with age >6 to 7 years
17	Percent of fleet size with age >7 to 8 years
18	Percent of fleet size with age >8 years
	INTER CITY FLEET
19	Percent of fleet size with age <=1 year
20	Percent of fleet size with age >1 to 2 years
21	Precent of fleet size with age >2 to 3 years
22	Precent of fleet size with age >3 to 4 years
23	Precent of fleet size with age >4 to 5 years
24	Precent of fleet size with age >5 to 6 years
25	Percent of fleet size with age >6 to 7 years
26	Precent of fleet size with age >7 to 8 years
27	Precent of fleet size with age >8 years
	TRIP AND CITY PROFILE DATA (CENSUS AND OTHER REPORTS)
28	Data Year
29	Total urban population
30	Total rural population
	NO. OF TRIPS (TOTAL DAILY WORK TRIPS)

31	Total daily intra city trips from urban area (<=10km)
32	Total daily intra city trips from urban areas (>10km)
33	Total daily inter city trips from rural areas (<10km)
34	Total daily inter city trips from rural areas (>=10km)
	NO. OF TRIPS (TOTAL EDUCATION TRIPS)
35	Total daily intra city trips from urban area
36	Total daily inter city trips from rural areas
	NO. OF BUS TRIPS (TOTAL DAILY NON WORK TRIPS) Intra + Inter city
37	Daily same day trips
38	Daily overnight trips
39	Daily Foreign trips
	NO. OF IPT TRIPS (TOTAL DAILY NON WORK TRIPS) Intra + Inter city
40	Daily same day trips
41	Daily overnight trips
42	Daily trips by foreign visitors
	AVERAGE TRIP LENGTH
43	Average pass. trip length of intra city trips
44	Average pass. trip length on inter city trips
	INTRA CITY TRIPS (MODE SHARE) Wprl Trips
45	Mode share of IPT trips (trip length <=10km)
46	Mode share of Bus trips (trip length <=10km)
47	Mode share of IPT trips (trip length >10km)
48	Mode share of Bus trips (trip length >10km)
	INTER CITY TRIPS (MODE SHARE)
49	Mode share of IPT trips (trip length <=10km)
50	Mode share of Bus trips (trip length <=10km)
51	Mode share of IPT trips (trip length >10km)
52	Mode share of Bus trips (trip length >10km)
	NATURE OF tourist TRIPS
53	Tourist trips as percent of non-work same day trips
54	Tourist trips as percent of non work overnight trips
55	Tourist trips as percent of non work Foreign trips
56	Percent of inter city trips >10km originating from urban area
	STU DATA
57	Data Year
58	No. of daily intra city STU pass. trips
59	No. of daily inter city STU pass. trips
60	Total number of intra city routes operated daily
61	Average route length of intra city routes (km)
62	Total number of (bus) trips (one way) on intra city routes per day
63	Total number of inter-city routes operated daily
64	Average route length of inter city routes (km)

65	Total number of (bus) trips (one way) on inter city routes per day
66	Intra city average occupancy (% of seating capacity)
67	Inter city average occupancy (% of seating capacity)
	GROWTH RATES
68	Average annual urban population growth rate
69	Average annual rural population growth rate
70	Expected average tourism growth rate over next 30 years
	BUS STAFF RATIO
71	Current Intra City average staff per bus for the STU
72	Current Inter City average staff per bus for the STU
	COST AND EARNING
73	Earning per km Intracity
74	Earnings per Pass (Intra City)
75	Ticket price per km (Intra City)
76	Average trip length per pass. (Intra City)
77	Operating cost per km (Intra city)
78	Earning per km Inter city
79	Earnings per Pass (Inter City)
80	Ticket price per km (Inter City)
81	Average trip length per pass. (Inter City)
82	Cost per km (Intercity)

9.2. List of Default values

S.no	List of Defaults
1	Expected annual improvement in fleet utilization (if current <90%) - Intra City
2	Expected annual improvement in fleet utilization (if current <99%) - Intra City
3	Expected annual improvement in fleet utilization (if current >=99%) - Intra City
4	Expected annual improvement in fleet utilization (if current <90%) - Inter City
5	Expected annual improvement in fleet utilization (if current <99%) - Inter City
6	Expected annual improvement in fleet utilization (if current >=99%) - Inter City
7	Annual expected improvement in operational efficiency 'GAP' (other than fleet utilization) - Intra City
8	Annual expected improvement in operational efficiency 'GAP' (other than fleet utilization) - Inter City
9	Average annual increase in income levels
10	Average expected life of a Type 1 - Intra City Bus
11	Average expected life of a Type 2 - Intra City Bus
12	Average expected life of a Type 3 - Intra City Bus
13	Average expected life of a Type 1 - Inter City Bus
14	Average expected life of a Type 2 - Inter City Bus
15	Average expected life of a Type 3 - Inter City Bus
16	Achievable target mode share (Intra City Trips) - IPT for less than 10km trip length

17	Achievable target mode share (Intra City Trips) - STU Bus for less than 10km trip length
18	Achievable target mode share (Intra City Trips) - Other Bus for less than 10km trip length
19	Achievable target mode share (Intra City Trips) - IPT for more than 10km trip length
20	Achievable target mode share (Intra City Trips) - STU Bus for More than 10km trip length
21	Achievable target mode share (Intra City Trips) - Other Bus for More than 10km trip length
22	Achievable target mode share (Inter City Trips) - IPT for less than 10km trip length
23	Achievable target mode share (Inter City Trips) - STU Bus for less than 10km trip length
24	Achievable target mode share (Inter City Trips) - Other Bus for less than 10km trip length
25	Achievable target mode share (Inter City Trips) - IPT for More than 10km trip length
26	Achievable target mode share (Inter City Trips) - STU Bus for More than 10km trip length
27	Achievable target mode share (Inter City Trips) - Other Bus for More than 10km trip length
28	Annual rate of Change (Intra City Trips) - IPT for less than 10km trip length
29	Annual rate of change (Intra City Trips) - STU Bus for less than 10km trip length
30	Annual rate of change (Intra City Trips) - OTHER Bus for less than 10km trip length
31	Annual Rate of change (Intra City Trips) - IPT for more than 10km trip length
32	Annual rate of change (Intra City Trips) - STU Bus for More than 10km trip length
33	Annual rate of change (Intra City Trips) - OTHER Bus for More than 10km trip length
34	Annual rate of change (Inter City Trips) - IPT for less than 10km trip length
35	Annual rate of change (Inter City Trips) - STU Bus for less than 10km trip length
36	Annual rate of change (Inter City Trips) - OTHER Bus for less than 10km trip length
37	Annual rate of change (Inter City Trips) - IPT for More than 10km trip length
38	Annual rate of change (Inter City Trips) - STU Bus for More than 10km trip length
39	Annual rate of change (Inter City Trips) - OTHER Bus for More than 10km trip length
40	Percent of same day non work trips from within state
41	Percent of overnight non work trips from within state
42	Percent of same day non work trips less than 10km
43	Percent of overnight non work trips from within state
44	Percent of overnight non work trips less than 10km
45	Percent of same day non work trips by city bus
46	Percent of same day non work trips by intercity bus
47	Percent of overnight non work trips by city bus
48	Percent of overnight non work trips by intercity bus
49	Percent non-work trips that are intra-city
50	Intra city non work trips <10km by bus
51	Intra city non work trips >10km by bus
52	Inter city non work trips <10km by bus
53	Inter city non work trips >10km by bus
54	Intra city non work trips <10km by IPT
55	Intra city non work trips >10km by IPT
56	Inter city non work trips <10km by IPT
57	Inter city non work trips >10km by IPT
58	Percent of STU Intra city trips <10km as percent of total intra city non work trips by bus

59	Percent of STU Intra city trips >10km as percent of total intra city non work trips by bus
60	Percent of STU Inter city trips <10km as percent of total intER city non work trips by bus
61	Percent of STU Inter city trips >10km as percent of total intER city non work trips by bus
62	Percent of same day education trips less than 10km in urban areas
63	Percent of same day education trips less than 10km by public buses in urban areas
64	Percent of same day education trips less than 10km by IPT in urban areas
65	Percent of same day education trips more than 10km by public buses in urban areas
66	Percent of same day education trips more than 10km by IPT in urban areas
67	Percent of same day education trips less than 10km in rural areas
68	Percent of same day education trips less than 10km by public buses in rural areas
69	Percent of same day education trips less than 10km by IPT in rural areas
70	Percent of same day education trips more than 10km by public buses in rural areas
71	Percent of same day education trips more than 10km by IPT in rural areas
72	Non Work bus trips origin from State (travelling outside state) as percent of non-work bus trips in state
73	Non-work IPT trips origin from State (travelling outside state) as percent of Non-work IPT trips in state
74	Work bus trips origin from other states (travelling to state) as percent of work bus trips in state
75	Work IPT trips origin from outside state (travelling to state) as percent of work IPT trips in state
76	Desired/Target Average occupancy as percent of average seating capacity (Intra City buses)
77	Desired/Target Average occupancy as percent of average seating capacity (Inter City buses)
78	Ultimate achievable intra city trip length
79	Expected annual percent change in Intra city trip length
80	Ultimate achievable average inter city trip length
81	Expected annual percent change in intercity trip length
82	Ultimate achievable average number of intra city trips per bus per day
83	Expected change in average number of intra city trips per bus per day
84	Ultimate achievable average number of inter city trips per bus per day
85	Expected change in average number of inter city trips per bus per day
86	Expected maximum average route length for Intra city trips
87	Expected annual change in average intra city route length
88	Expected maximum average intercity route length
89	Expected annual change in average inter city route length
90	Average Cost of Intra City Bus Type 1
91	Average Cost of Intra City Bus Type 2
92	AverageCost of Intra City Bus Type 3
93	Average Cost of Inter City Bus Type 1
94	Average Cost of Inter City Bus Type 2
95	AverageCost of Inter City Bus Type 3
96	Average expected revenue from scrapping of Intra City Mini Bus
97	Average expected revenue from scrapping of Intra City Regular Bus

98	Average expected revenue from scrapping of Intra City Luxury Coach
99	Average expected revenue from scrapping of Inter City Mini Bus
100	Average expected revenue from scrapping of Inter City Regular Bus
101	Average expected revenue from scrapping of Inter City Luxury Coach
102	Land Required per bus for intra city depot development
103	Land Required per bus for inter city depot development
104	Land Required per bus for intra city terminal development
105	Land Required per bus for inter city terminal development
106	Cost per bus for developing intra city depot
107	Cost per bus for developing Inter city depot
108	Cost per bus for developing intra city terminal
109	Cost per bus for developing Inter City Terminal
110	Average intra city depot capacity
111	Average Inter City Depot Capacity
112	Average Intra city terminal capacity
113	Average Inter city terminal capacity
114	Factor to relate Intra city terminal capacity to bus fleet (Fleet/(Capacity*X), where X=)
115	Factor to relate Inter city terminal capacity to bus fleet (Fleet/(Capacity*X), where X=)
116	% of non local STU buses using inter city terminal (as % of STU buses)
117	Average Intra City Seating Capacity
118	Average Inter City Seating Capacity
119	Rate of change of occupancy % as % of gap (Intra City buses)
120	Rate of change of occupancy % as % of gap (Inter City buses)
121	Target/intended average staff number for each bus (Intra City)
122	Expected annual percentage change in staff to bus ration (Intra City)
123	Target/intended average staff number for each bus (Inter City)
124	Expected annual percentage change in staff to bus ratio (Inter City)
125	Target Operational Efficiency Intra City
126	Target Operational Efficiency Inter City
127	Target Intra city buses per route
128	Average annual rate of change of (as percent of current ratio) of Intra buses per route
129	Target Inter city buses per route
130	Average annual rate of change of (as percent of current ratio) of Intra buses per route
131	Current average operational hours - Intra City
132	Current average operational hours - Inter City
133	Average staff salary Intercity (per month)
134	Average staff salary Intracity (per month)
135	Target Operational Efficiency Inter City
136	Target Intra city buses per route
137	Average annual rate of change of (as percent of current ratio) of Intra buses per route
138	Target Inter city buses per route
139	Average annual rate of change of (as percent of current ratio) of Intra buses per route

140	Current average operational hours - Intra City
141	Current average operational hours - Inter City
142	Average staff salary Intercity (per month)
143	Average staff salary Intracity (per month)

9.3. List of Assumptions

S.no	List of Assumption
1	Inter city Trip rate
2	Inter city Trip rate
3	Percentage Share of Work trips of all trips
4	Percentage Share of Non-Work and tourist trips of all trips
5	Percentage Share of Educational trips of all trips
6	All buses are purchased - not rental

9.4. List of Outputs

S.no	List of Outputs
1	Yearwise Budgetary Requirement (Crores) for Fleet and Infrastructure
2	Year Wise Budgetary Requirement for Intra and Inter City Services
3	Expected Yearwise Land (Hectares) and Fleet Aquisition Requirement
4	Expected Yearwise Growth in Seat Requirement
5	Expected Yearwise Depot and Terminal Development Requirement
6	Yearwise Intracity Bus Fleet Procurement Requirement
7	Yearwise Intercity Bus Fleet Procurement Requirement
8	Expected Yearwise Intracity Fleet Growth
9	Expected Yearwise Intercity Fleet Growth
10	Expected Yearwise Cumulative Land Requirement for Intra City Fleet
11	Expected Yearwise Cumulative Land Requirement for Intercity Fleet
12	Expected Yearwise Cumulative Fleet and Land Requirement
13	Expected Yearwise Growth in Number of Trips
14	Expected Yearwise Growth in Bus Trips
15	Expected Yearwise Growth in daiy Intracity passenger intracity PT Trips
16	Expected Yearwise Growth in daily Intercity passenger intercity PT Trips
17	Yearwise Intracity Bus Trips by Puspose
18	Yearwise Intercity Bus Trips by Purpose
19	Yearwise Intracity Trips by Distance
20	Yearwise Intercity Trips by Distance
21	Yearwise PT Intra City mode share (<=10km)
22	Yearwise PT Intracity mode share (>10km)
23	Yearwise PT Intercity mode share (<=10km)
24	Yearwise PT Intercity mode share (>10km)

25	Expected/Planned Annual Intra City Services Efficiency Improvement
26	Expected/Planned Annual Intercity Services Efficiency Improvement
27	Annual Additional Staff Recruitment Requirement
28	Total Staff Strength
29	Expected Staff to Vehicle Ratio
30	Projected Number of Routes
31	Projected Headway (Minutes)
32	Expected Trip lengths City and Intercity
33	Expected Operating cost City and Intercity
34	Intra city - Expected Annual Operating cost ,Earning and Total profit
35	Inter city - Expected Annual Operating cost ,Earning and Total profit
36	Total (Inter city +Intercity) - Expected Annual Operating cost ,Earning and Total profit
37	Profit before taxes after Infrastructure development and Fleet Upgradation cost

9.5. STU Data Collection Check list

SECONDARY DATA CHECK LIST FOR STU's

Data Requirement for Year 2017							
Total Fleet Size		**Intercity/Mofussil /Rural**	..... *in numbers*	**Intracity/City Operations**	..... *in numbers*		
Bus type	Regular- Diesel, Regular -CNG, Mini, Midi, Luxury, AC-coaches or any Other type			**Average Seating Capacity** *(in numbers)*			
Seating Capacity *(individual)*	Regular Diesel -	Regular CNG -	Mini -	Midi -	Ac coaches -	Luxury -	Other - .....

A. APSRTC Fleet Break up:

A.	**Intercity /Mofussil / Rural**	**Number of Buses**										
S.no	**Bus type** (Regular- Diesel, Regular -CNG, Mini, Midi, Luxury, AC-coaches or any Other type)	< 1 Year	1 to 2 Year	2 to 3 Year	3 to 4 Year	4 to 5 Year	5 to 6 Year	6 to 7 Year	7 to 8 Year	8 to 9 Year	9 to 10 Year	> 10 years
1												
2												
3												
4												
5												
6												
B.	**Intracity /City Operations**	**Number of Buses**										
1												
2												
3												
4												
5												
6												

pg. 1

SECONDARY DATA CHECK LIST FOR STU's

B. Operational details:

No.	Data for Year 2016/2017	Intercity /Mofussil / Rural	Intracity /City operations	Comments
1	Total Number of trips undertaken by STU -			
2	Scheduled trips by STU –			
3	Total Km covered per day –			
4	Planned Km covered per day			
5	Current year fleet utilization (%) –			
	Vehicle Utilization in Km –			
6	Operational Hours			
7	No. of daily STU Trips (Nos.)-			
8	Total No. of routes operated daily (Nos.) -			
9	Total route length (km)			
10	Average route length (km)			
11	Average occupancy (Nos.)			
12	Average staff per bus (ratio)			
13	Current STU Bus daily ridership (Nos.) –			
14	Average speed of the buses (km/hr)			

C. Annual Revenue details:

Nos.	Service Revenues	Bus Fleet	Depot	Terminal	Nos.	Non-Service Revenues	Cost *(in Rs.)*
1	Annual Operational cost *(in Rs.)*				1	Monthly Advertisement revenue from buses	
2	Total buses accommodating capacity	---			2	Advertisement revenue from infrastructure	*Depot-*
3	Total land area under -	---					*Terminal-*
4	Postal/Courier service revenue				3	Any other	
5	Contract revenue				a		
6	Hiring of vehicles revenue				b		
7	Total Land holding with STU *(sq.m)*				c		
Nos.	**Non-Traffic Revenues**	**Cost *(in Rs.)***			**Nos.**	**Non-Traffic Revenues**	**Cost *(in Rs.)***
1	Subsidy/Concession				4	Parking Revenue:	
2	Rent of shops						
3	Sell of Scrap				5	Licence fees	
4	Lease & other real estate revenues				6	Private Bus Parking	

SECONDARY DATA CHECK LIST FOR STU's

D. Annual Expenditure details:

Nos.	Particulars	Cost *(in Rs.)*	Nos.	Particulars	Cost *(in Rs.)*
1	Total staff salary *(including Provident Fund & Gratuity & any other personal development cost like training, workshop, etc.)*		8	Payment for hiring buses	
2	Ticket printing cost		9	Depot infrastructure cost	
3	Cleaning and sweeping charges		10	Terminal infrastructure cost	
4	Total Fuel expenditure		11	Bus fleet maintenance cost	
5	Total Tax expenditure		12	**Loan:** Total Loan amount	
6	Payment for hiring buses			Annual interest on loan	
7	Depot infrastructure cost			Principal amount of loan	

E. Fare and Revenue details (as per service type):

Particulars	Vehicle type	Fare Box Revenue	Total Km	Total Passenger Trips	Total Passenger Km	Average per Passenger fare	Remarks
Service 1							
Service 2							
Service 3							
Service 4							
Service 5							
Service 6							

***As part of secondary data collection** ** following will be required:

1. Traffic data (such as – bus flow /hour, capacity, crew handled and any other specific requirements for terminal and depots)
2. Any Proposal, Prior studies and reports.

Name – .....

Designation – .....

Contact Number - .....

9.6. APSRTC Checklist –

a. Bus depots

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SHAKTI SUSTAINABLE ENERGY FOUNDATION

BUS DEPOT CHECKLIST

	Questions	Anwers		Explanation/Comments
A	**Basic Information**			
1	Depot Name & Location			
2	Depot Site area *(Ha)*		*Hectare*	*Write total depot site area including all functions*
3	Total Fleet size catered by the depot			*Mention number of buses catered by this depot or assigned to this depot*
4	Total Fleet size catered per day			*Mention total number of buses that visit the depot in a day*
5	Bus parking numbers			*Mention maximum number of buses that park in the depot at a given time*
B	**Bus Facilities**			
6	Bus Entry & Exit *(wether manned or not)*	Yes/No		*Does the bus entry/exit designed with security checking or not?*
7	No. of Gates		No.	*Mention number of entry/exit gates*
C	**Fleet Type and numbers**	Regular (10-12m) bus	Mini bus	
8	Diesel	*Nos.*	*Nos.*	Mention "0" if specified buses are not catered. For example if depot does not cater CNG buses mention 0 for both regular and mini buses
9	CNG	*Nos.*	*Nos.*	
10	Total Fleet (Diesel + CNG)	*Nos.*	*Nos.*	
11	Wether defined Parking bays exist in the bus parking area at te depot? *(Y/N) - Tick one*	*Yes*	*No*	*Defined parking bays are bus parking spots/boxes marked by curb stones or paint marking in the bus parking area.*
D	**Depot Operations**			
12	Bus servicing sequence	( ) Parking		*Mark the activity sequence numbers inside the bracket. For example if bus goes for fueling first, followed by inspection, mention 1 in fueling and 2 in inspection, and so on.*
		( ) Fueling		
		( ) Inspection		
		( ) Workshop		
		( ) Washing		
13	Role of the STU/Depot driver - **Tick one for each function**	STU driver/Depot driver - Parking		*Tick one to indicate which of the two - bus crew (STU driver) or depot staff (depot driver) - drives the bus to the listed functions in the depot*
		STU driver/Depot driver - Fueling		
		STU driver/Depot driver - Inspection		
		STU driver/Depot driver - Workshop		
		STU driver/Depot driver - Washing		
14	What are the access control to Bus crew (Driver & Conductor)? (Tick One)	Bus crew has limited or controlled access to bus parking only		*Explain the access control for Bus driver and conductor in the depot.*
		Bus crew has un-obstructed access to bus parking only		
		Bus crew has un-obstructed access to most depot functions including workshop		
		Any other:		
15	Does the depot has a computerisaded MIS system - Tick one	Yes	No	*MIS is a Computerised system for recording, maintaining and analysing all bus and depot*
E	**Staff Utilities at the Depot (do not include no functional or non operational utilities/fixtures)**			
16	Canteen Facility for all staff in the depot		*Nos.*	*Mention total number of canteens*
	Covered/enclosed seating area - Total for all canteens (write "0" if no canteens exist)		*sqm*	*Mention only covered/enclosed dedicated seating area for canteen*
	Kitcken area - Total for all canteens (write "0" if no canteens exist)		*sqm*	*Mention only covered/enclosed dedicated kitchen area for canteen*

b. Bus Terminals

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BUS TERMINAL CHECKLIST

FORM A - *Fill up based on site observations, secondary data and stakeholder reequirement*

A	Questions	Anwers			Comments
1	Terminal Name & Location				
2	Terminal Site area *(Ha)*	*Hectare*			*Write total terminal site area including all functions*
3	Terminal Typology *(tick one)*	*ISBT*	*Local*	*Combined*	*Select the function served by the terminal.*
4	Terminal Operation *(tick one)*	*Fixed route-bay allocatio*	*Dynamic route-bay allocation*		*Select the available bus route operation type. Whether the terminal has fixed bays for specific operational route or dynamic bays for all routes?*
5	Fleet size in peak hour				*Mention total number of buses that visit the depot in a peak hour*
6	Terminal Size *(tick one)*	Small *<= 60 buses per hour*	Medium *60 to 300 buses per hour*	Large *> 300 buses per hour*	*Select based on planned or horizon year flow Terminal Size*
7	Observed average layover time *(min)*	*min*			*Write average timetaken by bus inside terminal (including drop off, pick up, waiting and circulation time)*
8	Existing Bus bay *(numbers)*	Offloading-	Loading-	Idle-	*Write the total number of drop off, pickup and waiting bays available on site*
9	Boarding bay arrangement *(tick one)*	Saw tooth	Angular	Perpendicular	*Choose the pick up bay arrangement from the options*
		Linear	Drive Through		
10	Drop off bay arrangement *(tick one)*	Saw tooth	Angular	Perpendicular	*Choose the alighting bay arrangement from the options*
		Linear	Drive Through		
11	Idle bay arrangement *(tick one)*	Saw tooth	Angular	Perpendicular	*Choose the waiting bay arrangement from the options*
		Linear	Drive Through		
12	Bus maintenance infrastructure *(tick one)*	On site	Off site		*Bus maintenance/servicing facility available on site or off site?*
13	Designated Private vehicle parking *(numbers)*	**Yes/No**	2 Wheeler	4 Wheeler	*Designated private vehicle parking available on site, choose Yes/No. Write number of 2-wheeler and 4-wheeler parking bays available for terminal and commercial area.*
		For Terminal (Staff+Visitors)			
		Real estate			
		Total			
14	Private vehicle parking type *(tick one)*	Structured	At Grade	Shared	*Choose the private vehicle parking type option available on site*
		At Grade+building basement		On Street	
15	Private vehicle parking arrangement *(tick one)*	Angled (30, 45 or 60 degree)	Perpendicular	Parallel	*Choose the private vehicle parking arrangement option available on site*
16	Designated Feeder service infrastructure *(tick one)*	Yes/No			*Choose the availability and type of feeder infrastructure on site*
		Intermodal	Feeder Lanes	Feeder Bays	
17	Provision for parking and/or bays for feeder vehicles	Auto Rick.-	Cycle Rick.-	Taxi-	*Write the designeted bays available on site for different feeder options*
		Shared van/jeep-		Bus-	
18	Funding methdology - infra. dev. *(tick one)*	100% public funding	Private equity through PPP format		*Choose the funding option used for terminal infrastructure development.*
19	Commercial/Real estate development	Yes/No			*Is there any kind of Commercial/Real estate development available on site?*
20	Separate arrival and departure Concourse	Yes/No			*Select 'Yes' if terminal has separate Arrival and Departure blocks, otherwise select 'No'.*
21	Broad functionwise area *(sqm)*	Bus Area		*sqm*	*Write the area for each function.*
		Private vehicle parking		*sqm*	
		Feeder-pick/drop		*sqm*	
		Circulation		*sqm*	
		Building footprint		*sqm*	
		Arrival concourse		*sqm*	
		Departure concourse		*sqm*	

9.7. Dash Board with Data Inputs

	STU FLEET ESTIMATION TOOL (version 1.09)								
	Shakti Sustainable Energy Foundation		**Release**	**13-Feb-17**				**SGArchitects**	
	Please insert values/information/data in yellow boxes as per instructions provided under comments/explanations section								
	CURRENT YEAR								
S.No	Item	Value	Error Check						
1	Current Year	2018	OK						
	FLEET DETAILS								
		Bus Type 1	Error Check	Bus Type 2	Error Check	Bus Type 3	Error Check	Total	Average seating capacity
	Item	Mini/ Midi buses		Regular Buses		Luxury Coaches			
2	Current Intra City Bus Fleet	0	ERROR	1315	OK	30	OK	1345	
3	Current Intra City per bus seating Capacity	0	ERROR	41.5	OK	44	OK		41.55576208
4	Current Inter City Bus Fleet	0	ERROR	10134	OK	234	OK	10368	
5	Current Inter City per bus seating capacity	0	ERROR	47.6	OK	40	OK		47.42847222
								11713	
	FLEET UTILIZATION AND OPERATIONAL EFFICIENCY								
	Item	Value (%)	Error Check						
6	Current year fleet utilization (Intra City)	98%	OK						
7	Current year fleet utilization (Inter City)	99%	OK						
8	Current year operational efficiency (Intra City)	93%	OK						
9	Current year operational efficiency (Inter City)	94%	OK						
	FLEET AGE								
	Item	Value (%)	Error Check						
	INTRA CITY FLEET	Mini/ Midi buses		Regular Buses		Luxury Coaches			
10	Percent of fleet size with age <=1 year	0%	ERROR	2%	OK	0%	OK		
11	Precent of fleet size with age >1 to 2 years	0%	ERROR	1%	OK	0%	OK		
12	Precent of fleet size with age >2 to 3 years	0%	ERROR	14%	OK	100%	OK		
13	Precent of fleet size with age >3 to 4 years	0%	ERROR	1%	OK	0%	OK		
14	Precent of fleet size with age >4 to 5 years	0%	ERROR	0%	OK	0%	OK		
15	Precent of fleet size with age >5 to 6 years	0%	ERROR	13%	OK	0%	OK		
16	Precent of fleet size with age >6 to 7 years	0%	ERROR	10%	OK	0%	OK		
17	Precent of fleet size with age >7 to 8 years	0%	ERROR	19%	OK	0%	OK		
18	Precent of fleet size with age >8 years	0%	ERROR	39%	OK	0%	OK		
	Total	0%		100%		100%			
	INTER CITY FLEET	Mini/ Midi buses		Regular Buses		Luxury Coaches			
19	Percent of fleet size with age <=1 year	0%	ERROR	16%	OK	12%	OK		
20	Precent of fleet size with age >1 to 2 years	0%	ERROR	6%	OK	20%	OK		
21	Precent of fleet size with age >2 to 3 years	0%	ERROR	2%	OK	0%	OK		
22	Precent of fleet size with age >3 to 4 years	0%	ERROR	4%	OK	0%	OK		
23	Precent of fleet size with age >4 to 5 years	0%	ERROR	6%	OK	4%	OK		
24	Precent of fleet size with age >5 to 6 years	0%	ERROR	23%	OK	49%	OK		
25	Precent of fleet size with age >6 to 7 years	0%	ERROR	19%	OK	15%	OK		
26	Precent of fleet size with age >7 to 8 years	0%	ERROR	5%	OK	0%	OK		
27	Precent of fleet size with age >8 years	0%	ERROR	19%	OK	0%	OK		
	Total	0%		100%		100%			
	TRIP AND CITY PROFILE DATA (CENSUS AND OTHER REPORTS)								
	Item	Value (no. of trips)	Error Check						
28	Data Year	2011	OK						
29	Total urban population	16,477,146	OK						
30	Total rural population	32,909,653	OK						
	NO. OF TRIPS (TOTAL DAILY WORK TRIPS)								
31	Total daily intra city trips from urban area (<=10km)	5,473,729	OK						
32	Total daily intra city trips from urban areas (>10km)	521,917	OK						
33	Total daily inter city trips from rural areas (<10km)	4,461,388	OK						
34	Total daily inter city trips from rural areas (>=10km)	2,779,319	OK						
	NO. OF TRIPS (TOTAL EDUCATION TRIPS)								
35	Total daily intra city trips from urban area	4,919,504	OK						
36	Total daily inter city trips from rural areas	5,941,093	OK						
	NO. OF BUS TRIPS (TOTAL DAILY NON WORK TRIPS) Intra + Inter city								
37	Daily same day trips	1,717,780	OK						
38	Daily overnight trips	25,324	OK						
39	Daily Foreign trips	5	ERROR						
	NO. OF IPT TRIPS (TOTAL DAILY NON WORK TRIPS) Intra + Inter city								
40	Daily same day trips	873,405	OK						
41	Daily overnight trips	12,255	OK						
42	Daily trips by foreign visitors	397	OK						
	AVERAGE TRIP LENGTH								
	Item	Value (Km)	Error Check						
43	Average pass. trip length of intra city trips	10.70	OK						
44	Average pass. trip length on inter city trips	24.18	OK						
	Item	Value (%)	Error Check						
	INTRA CITY TRIPS (MODE SHARE) Wprl Trips								
45	Mode share of IPT trips (trip length <=10km)	7.401%	OK						
46	Mode share of Bus trips (trip length <=10km)	7.758%	OK						
47	Mode share of IPT trips (trip length >10km)	12.812%	OK						
48	Mode share of Bus trips (trip length >10km)	40.344%	OK						
	INTER CITY TRIPS (MODE SHARE)								
49	Mode share of IPT trips (trip length <=10km)	9.466%	OK						
50	Mode share of Bus trips (trip length <=10km)	10.210%	OK						
51	Mode share of IPT trips (trip length >10km)	27.429%	OK						
52	Mode share of Bus trips (trip length >10km)	45.101%	OK						
	NATURE OF tourist TRIPS								
53	Tourist trips as percent of non work same day trips	0.40%	OK						
54	Tourist trips as percent of non work overnight trips	0.40%	OK						
55	Tourist trips as percent of non work Foreign trips	100.00%	OK						
56	Percent of inter city trips >10km originating from urban area	10%	OK						

	STU DATA		
	Data Year	2017	OK
57	No. of daily intra city STU pass. trips	1067000	OK
58	No. of daily inter city STU pass. trips	5513000	OK
59	Total number of intra city routes operated daily	321.00	OK
60	Average route length of intra city routes (km)	37.38	OK
61	Total number of (bus) trips (one way) on intra city routes per	10967.00	OK
62	Total number of inter city routes operated daily	3645.00	OK
63	Average route length of inter city routes (km)	90.50	OK
64	Total number of (bus) trips (one way) on inter city routes per	45,641.00	OK
65	Intra city average occupancy (% of seating capacity)	67.00%	OK
66	Inter city average occupancy (% of seating capacity)	68.00%	OK
	GROWTH RATES		
	Item	Value	Error Check
67	Average annual urban population growth rate	0.0309	OK
68	Average annual rural population growth rate	0.0016	OK
69	Expected average tourism growth rate over next 30 years	0.1000	OK
70	Current Intra City average staff per bus for the STU	5.330	
71	Current Inter City average staff per bus for the STU	5.330	
	Cost and Earning		
	Item	Value	
72	Earning per km Intracity	33.410	
73	Earnings per Pass (Intra City)	10.848	
74	Ticket price per km (Intra City)	1.200	
75	Average trip length per pass. (Intra City)	10.698	
76	Operating cost per km (Intra city)	37.650	
77	Earning per km Inter city	27.716	
78	Earnings per Pass (Inter City)	21.164	
79	Ticket price per km (Inter City)	0.859	
80	Average trip length per pass. (Inter City)	24.178	
81	Cost per km (Intercity)	37.650	

9.8. Minutes of meeting

Meeting 1: 28.11.2017

Attended by:

Mr. Nageswara Rao, Officer on special duty (OSD) to Managing Director, APSRTC, Vijayawada.

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Administrative Department, Vijaywada

Time: 11:00am

Minutes:

- The meeting was presided by Mr. Nageswara Rao, OSD to MD, APSRTC.
- Mr. Satyajit Ganguly briefly explained about the “Roadmap for Bus fleet and Infrastructure development project”.
- Mr. Ganguly also explained to Mr. Rao, the background work done as part of other projects, which forms the basis of this project. This includes, bus terminal and depot design guidelines, Himachal fleet estimation report, etc.
- Mr. Ganguly discussed the salient features of the tool in detail with Mr. Rao, following which he discussed the data collection requirements and requested Mr. Rao to introduce SGA team with various department heads for separate one on one meeting.
- Mr. Rao mentioned that Mr. Sastry (Civil department) is not well and will not be available for next two days. Data or information required from him can be discussed over phone/ mail.

Meeting 2: 28.11.2017

Venue: APSRTC office - Engineering Department

Attended by:

Mr. Venkateswara Rao, Executive Director (Engg.), APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Minutes:

- Mr. Satyajit Ganguly again gave brief introduction to Mr. Venkateswara Rao (next to MD) about the project to seek his permission to continue the data collection process.
- He appreciated our effort and directed us to Mr. Koteswara Rao. He suggested that Mr. Koteswara be contacted for any fleet related data requirement.

Meeting 3: 28.11.2017

Attended by:

Mr. Koteswara Rao, Executive Director (Engineering – IT Department), APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Minutes:

- Mr. Ganguly briefly introduced SGA-team to Mr. Koteswara Rao explaining the requirement and need of the project.
- Mr. Koteswara stated although STUs are one of the main aspects of mobility but for the growth of public transport overall development of the state shall be considered. He mentioned that mobility is an integral part of planning. Hence, integration with other expansions in the city/state is very important for sustainable public transport. He highlighted the need to address mobility as the real challenge and not the particular STU.
- He also showed his concern for lack of organized public transport, and mentioned that PT is in dire situation hence, there is a need to take some radical steps.
- Regarding fleet data requirement, Mr. Koteswara directed his officer and provided SGA team the data on types of buses operated by APSRTC along with their age. He also provided the details of fleet size and its composition by bus type and service type.
- For leftover data, Mr. Koteswara directed Mr. Prasad (PA to ED Engg.) to provide the data to the team later in the evening.
- Afterwards, for some of the statistical data requirement, Mr. Koteswara introduced SGA team to Ms. Padmavati (officer of MIS department)

Meeting 4: 28.11.2017

Attended by:

Ms. Padmavati, MIS Officer, APSRTC, Vijaywada

MIS Officer, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - MIS Department

Minutes:

- Ms. Kanica gave the brief of the project to Ms. Padmavati and requested her to provide operations related data. Also, Mr. Ganguly explained the methodology and outcomes of the Himachal fleet estimation tool to Ms. Padmavati to make her understand the context of the project.
- Ms. Padmavati provided the required information of private vehicles in AP, APSRTC performance data of year 2016-17 and population trend of AP to SGA team.
- For leftover data, she requested SGA team to meet her next day.
- For detailed data, officer of MIS department introduced SGA team to the Deputy Chief Traffic Manager, Mr. Sudhakar Vasa.

Meeting 5: 28.11.2017

Attended by:

Mr. Sudhakar Vasa, Deputy Chief Traffic Manager, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Operations department

Minutes:

- Mr. Ganguly explained the context of the project to Mr. Sudhakar, the details of the data to be collected during this visit.
- Mr. Vasa enquired about mode share calculation and investigated on using the data source. Also, he probed with the data projections as AP's data is just two years old, on which, Mr. Ganguly clarified Mr. Vasa about the authenticity of data source and the use of segregated AP's data from Telangana's.
- Mr. Vasa enquired about if any intermodal integration concept is being considered, some innovative technological advancements (apart from conventional approach) and also asked SGA team to brief on how this tool will help APSRTC.
- Mr. Vasa also discussed his concern on increasing price and demand of land and how are we going to address this issue.
- After a fruitful discussion, understanding the details of secondary data collection format, Mr. Sudhakar directed his officials to provide the consolidated data to SGA team.
- For passenger related and ticket sales data, he directed SGA team to meet Mr. Viswanadham Kandury (Assistant Traffic Manager) of operations planning department.
- Mr. Satyajit thanked Mr. V. Sudhakar for sharing the data and informed him that it will take 3 to 4 weeks to process the information collected in this visit, post which we will visit him with the analysis or any further data requirements.

Meeting 6: 28.11.2017

Attended by:

Mr. Viswanadham Kandury, Assistant Traffic Manager, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office – Operations Planning Department

Minutes:

- Satyajit Ganguly explained the project background and purpose of the study to Mr. Kandury.
- Mr. Viswanadham Kandury explained that the APSRTC is observing big competition from private bus operators having around 50-50 share of STU & private bus operations.
- Mr. Kandury also highlighted and showed his concern for the downfall of STUs. He mentioned that in near future STUs will face the shortage of manpower (skilled drivers) due to increased and better services of private sector IPT services like OLA and UBER which offers better monetary benefits to the drivers.
- He mentioned that there is no growth of PT and it cannot flourish.
- Mr. Kandury discussed in detail, APSRTC secondary data collection format and provided SGA team the ticket sales data, work and non-work trips, private fleet statistics and assured that the remaining data shall be shared via mail soon.

Meeting 7: 28.11.2017

Attended by:

Mr. Nageswara Rao, OSD to Managing Director, APSRTC, Vijaywada

Mr. Chilam, Officer - Finance Department, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Administrative Department, Vijaywada

Minutes:

- SGA team met Mr. Nageswara Rao, updated him regarding the data and information collected during the day.
- Mr. Ganguly requested Mr. N. Rao to introduce the team to the Finance department officers.
- Mr. N.Rao introduced the SGA team to Mr. Chilam (finance deparment officer) and directed Mr. Chilam to provide the finance related data.
- Survey format including Bus stand data collection survey format and depot data collection survey format were presented to Mr. Rao. He suggested to go through it overnight and discuss it further next day.

Meeting 8: 29.11.2017

Attended by:

Mr. Nageswara Rao, OSD to Managing Director, APSRTC, Vijaywada

Mr. Challam, Officer - Finance Department, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Administrative Department, Vijaywada

Minutes:

- Basis the discussion of the SGA team, Mr. N. Rao agreed to share the survey formats with main depot and terminal officials and assured that within a week he shall be able to collate all the survey forms from respective depot and terminal officials and share with SGA.
- MR. N. Rao introduced the SGA team to Chief Accounts Officer, Mr. Satyanarayan for further finance related data collection.

Meeting 9: 29.11.2017

Attended by:

Mr. Nageswara Rao, OSD to Managing Director, APSRTC, Vijaywada

Mr. Satyanarayan, Chief Accounts Officer - Finance Department, APSRTC, Vijaywada

Ms. Deepika, Deputy Chief Accounts Officer - Finance Department, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Finance Department, Vijaywada

Minutes:

- Satyajit Ganguly briefly explained the project and requested to provide the revenue and expenditure details.
- Mr Satyanarayana provided financial report of 2016-17 report to the SGA team. For other details, he directed Ms. Deepika (Deputy Chief Accounts Officer) to provide the SGA team to provide land revenue, depot and terminal infrastructure maintenance cost and annual interest on loan information.
- Ms. Deepika requested SGA team to collect the required data later in the evening.
- Mr. Ganguly requested Mr. N. Rao to give some insights on their expectations from the fleet estimation tool, upon which, Mr. Rao advised SGA team to interact with Mr. Koteswara to take the suggestions.

Meeting 10: 29.11.2017

Attended by:

Mr. Sudhakar Vasa, Deputy Chief Traffic Manager, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Operations department

Minutes:

- Mr. Ganguly updated Mr. V. Sudhakar on the progress of data collection and also gathered information on number of trips from Mr. V. Sudhakar.
- SGA team explained the survey format of depot and terminal data collection and requested Mr. V. Sudhakar to provide his inputs to rectify the format.
- Mr. V. Sudhakar suggested SGA team to add administrative office, security office, green cover area and solar panels in the survey format.
- Basis the discussion, SGA team submitted the revised form for depot and terminal data collection.
- Mr. V. Sudhakar informed the SGA team that he will be meeting the regional officers later in the evening where he will initiate the circulation of the revised form to all depots and terminals offices.
- SGA team inquired about what are the expectations from the fleet estimation tool and what improvements are likely to be suggested for the operations.
- Mr. V. Sudhakar requested SGA team to provide the soft copy of Bus terminal, depot design guidelines, survey formats and HP fleet estimation tool report and promised to surely give his inputs on the tool after going through all the reports.
- Mr. Ganguly provided the soft copy of Bus terminal and depot design guidelines; Survey format of depot and terminal data collection and HP fleet estimation tool report to Mr. V. Sudhakar.
- MR. V. Sudhakar also mentioned that they will be switching to Oracle interface where all the information will be just one click away.

Meeting 11: 29.11.2017

Attended by:

Mr. Viswanadham Kandury, Assistant Traffic Manager, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Minutes:

- Mr. Kandury provided the online APSRTC website link - login ID to access the day wise data information.
- For passenger kms and work & non- work trips, he mentioned that he shall be sharing the data soon via mail.

Meeting 12: 29.11.2017

Attended by:

- Ms. Padmavati, MIS Officer, APSRTC, Vijaywada
- MIS Officer, APSRTC, Vijaywada
- Mr. Satyajit Ganguly, SGArchitects, New Delhi
- Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - MIS Department

Minutes:

- Ms. Padmavati provided the average trip length of both inter and intra city.
- Via mail she shared information regarding AP population and vehicular trend.
- She also requested SGA team to provide her the soft copy of HP fleet estimation tool.

Meeting 13: 29.11.2017

Attended by:

Ms. Deepika, Deputy Chief Accounts Officer - Finance Department, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Finance Department, Vijaywada

Minutes:

- Ms. Deepika provided the requested information on land revenue, infrastructure cost and annual interest on loan.
- She mentioned that the department is not collecting the land holding, private bus parking revenue and terminal infrastructure cost. She advised to collect this data from civil engineering department.

Meeting 14: 29.11.2017

Attended by:

Mr. Koteswara Rao, Executive Director (Engineering – IT Department), APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

Venue: APSRTC office - Engineering Department, Vijaywada

Minutes:

- As directed by Mr. N. Rao, OSD to Managing Director, APSRTC, Mr. Ganguly requested Mr. Koteshwara Rao to give his inputs on the tool and what are the expectations from the fleet estimation tool and what improvements are likely to be suggested.
- Mr. K. Rao mentioned if there is no mobility, there is no point of improving operations.
- He said that bus bays and bus stations shall be provided in first place.
- He mentioned that clear cut nodal points, traffic movement/ circulation pattern, junction improvements and minimum necessary requirements like bus bays all along shall be provided first.
- He also pointed that local bodies are not responsible for any mobility and do not create any facility also but all the land pieces/ parts are under their control.
- He emphasized that speed of the buses is reduced from 22-25 km/hrs to 10-12 kms due to various reasons but local bodies doesn't care. He said until and unless there is no unified control situation going to remain the same and will worsen each passing day.
- He mentioned that there is a need to bring all under one umbrella.

- He mentioned that planning is not given to the traffic department and further added that land values are going up like anything and nowadays, buying a piece of land or having your own home has become a dream for citizens. There is no affordability. People have to move 25-30 kms away from the city to sub-urbs to have their own home hence resulting in longer travel distances, increase in traffic, congestion and pollution.
- He said that planning has to go parallel with mobility. There is a dire need of strengthening the public transport. Transit points for buses are required. Short term parking locations shall be planned for buses.
- Realistic and reliable development plan has to be there in line with CRDA. Data inputs shall be actual, reality based.
- He emphasized on providing grade separated solutions as currently there are no junctions to control the traffic. Traffic /junctions/ grids has to be developed.
- At last, he mentioned that an integrated approach is needed. Shakti foundation shall influence the government to listen to the agony of AP and influence CRDA to work in unified manner.

Meeting 15: 29.11.2017

Attended by:

Mr. Nageswara Rao, OSD to Managing Director, APSRTC, Vijaywada

Mr. Satyajit Ganguly, SGArchitects, New Delhi

Ms. Kanica Gola, SGArchitects, New Delhi

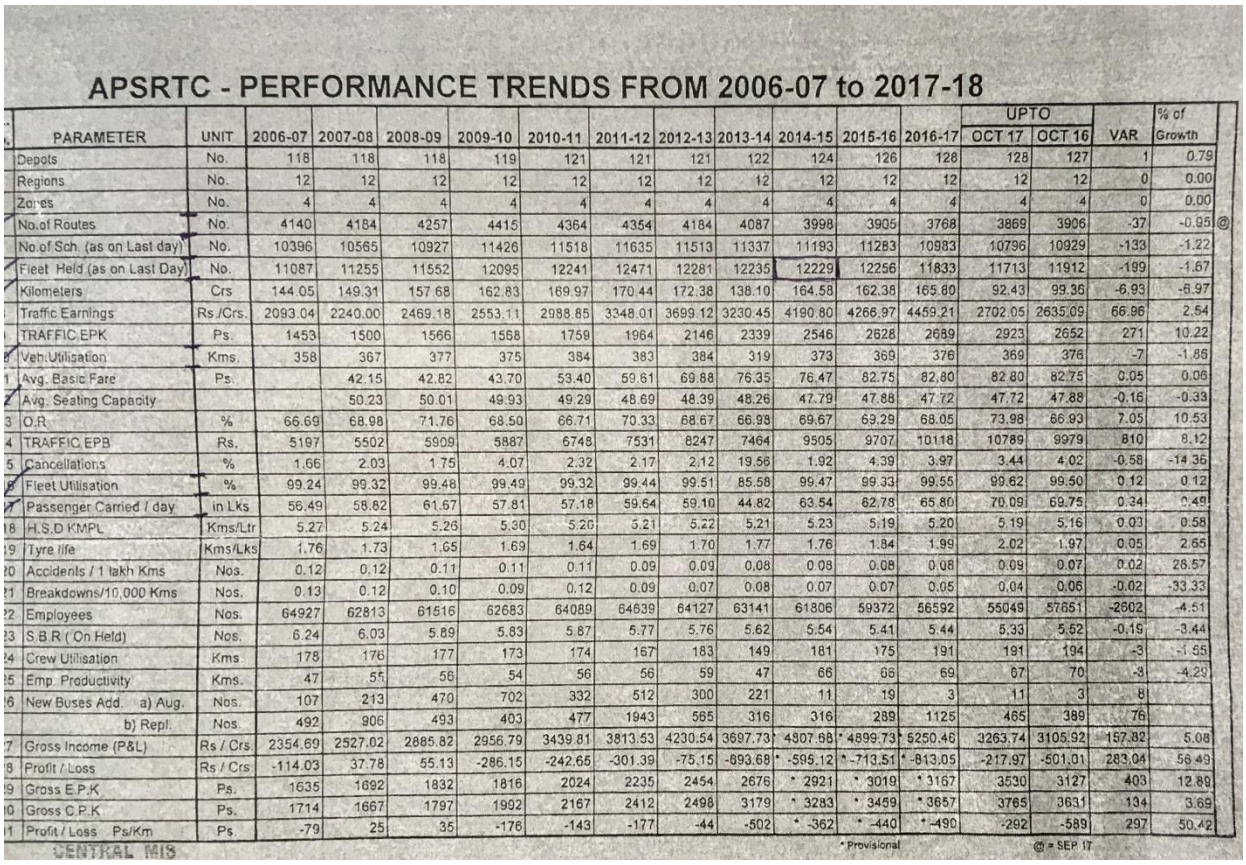
Venue: APSRTC office - Administrative Department, Vijaywada

Minutes:

- SGA team explained to Mr. N. Rao, the details of the data collected during this visit.
- It was decided that the project team shall analyse the collected data and then come back and discuss the progress in 3 to 4 weeks' time.
- Mr. Ganguly requested Mr. N. Rao to send the filled depot and terminal survey within a week's time.

9.9. APSRTC past 10 years Data

For derivation of the past trend of APSRTC, this set of data was followed.



APSRTC - PERFORMANCE TRENDS FROM 2006-07 to 2017-18

	PARAMETER	UNIT	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	UPTO OCT 17	UPTO OCT 16	VAR	% of Growth	
	Depots	No.	118	118	118	119	121	121	121	122	124	126	126	128	127	1	0.79	
	Regions	No.	12	12	12	12	12	12	12	12	12	12	12	12	12	0	0.00	
	Zones	No.	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0.00	
	No.of Routes	No.	4140	4184	4257	4415	4364	4354	4184	4087	3998	3905	3768	3869	3906	-37	-0.95	@
	No.of Sch. (as on Last day)	No.	10396	10565	10927	11426	11518	11635	11513	11337	11193	11283	10983	10796	10929	-133	-1.22	
	Fleet Held (as on Last Day)	No.	11087	11255	11552	12095	12241	12471	12281	12235	12229	12256	11833	11713	11912	-199	-1.67	
	Kilometers	Crs	144.05	149.31	157.68	162.83	169.97	170.44	172.38	138.10	164.58	162.36	165.80	92.43	99.36	-6.93	-6.97	
	Traffic Earnings	Rs./Crs.	2093.04	2240.00	2469.18	2553.11	2988.85	3348.01	3699.12	3230.45	4190.80	4266.97	4459.21	2702.05	2635.09	66.96	2.54	
	TRAFFIC EPK	Ps.	1453	1500	1566	1568	1759	1964	2146	2339	2546	2628	2689	2923	2652	271	10.22	
6	Veh.Utilisation	Kms.	358	367	377	375	384	383	384	319	373	369	376	369	376	-7	-1.86	
1	Avg. Basic Fare	Ps.		42.15	42.82	43.70	53.40	59.61	69.88	76.35	76.47	82.75	82.80	82.80	82.75	0.05	0.06	
2	Avg. Seating Capacity			50.23	50.01	49.93	49.29	48.69	48.39	48.26	47.79	47.88	47.72	47.72	47.88	-0.16	-0.33	
3	O.R.	%	66.69	68.98	71.76	68.50	66.71	70.33	68.67	66.98	69.67	69.29	68.05	73.98	66.93	7.05	10.53	
4	TRAFFIC EPB	Rs.	5197	5502	5909	5887	6748	7531	8247	7464	9505	9707	10118	10789	9979	810	8.12	
5	Cancellations	%	1.66	2.03	1.75	4.07	2.32	2.17	2.12	19.56	1.92	4.39	3.97	3.44	4.02	-0.58	-14.36	
6	Fleet Utilisation	%	99.24	99.32	99.48	99.49	99.32	99.44	99.51	85.58	99.47	99.33	99.55	99.62	99.50	0.12	0.12	
7	Passenger Carried / day	in Lks	56.49	58.82	61.67	57.81	57.18	59.64	59.10	44.82	63.54	62.78	65.80	70.09	69.75	0.34	0.49	
18	H.S.D KMPL	Kms/Ltr	5.27	5.24	5.26	5.30	5.20	5.21	5.22	5.21	5.23	5.19	5.20	5.19	5.16	0.03	0.58	
19	Tyre life	Kms/Lks	1.76	1.73	1.65	1.69	1.64	1.69	1.70	1.77	1.76	1.84	1.99	2.02	1.97	0.05	2.65	
20	Accidents / 1 lakh Kms	Nos.	0.12	0.12	0.11	0.11	0.11	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.07	0.02	28.57	
21	Breakdowns/10,000 Kms	Nos.	0.13	0.12	0.10	0.09	0.12	0.09	0.07	0.08	0.07	0.07	0.05	0.04	0.06	-0.02	-33.33	
22	Employees	Nos.	64927	62813	61516	62683	64089	64639	64127	63141	61806	59372	56592	55049	57651	-2602	-4.51	
23	S.B.R (On Held)	Nos.	6.24	6.03	5.89	5.83	5.87	5.77	5.76	5.62	5.54	5.41	5.44	5.33	5.52	-0.19	-3.44	
24	Crew Utilisation	Kms	178	176	177	173	174	167	183	149	181	175	191	191	194	-3	-1.55	
25	Emp. Productivity	Kms.	47	55	56	54	56	56	59	47	66	66	69	67	70	-3	-4.29	
26	New Buses Add. a) Aug.	Nos.	107	213	470	702	332	512	300	221	11	19	3	11	3	8		
	b) Repl.	Nos.	492	906	493	403	477	1943	565	316	316	289	1125	465	389	76		
27	Gross Income (P&L)	Rs / Crs	2354.69	2527.02	2885.82	2956.79	3439.81	3813.53	4230.54	3697.73	4807.98	* 4899.73	* 5250.46	3263.74	3105.92	157.82	5.08	
28	Profit / Loss	Rs / Crs	-114.03	37.78	55.13	-286.15	-242.65	-301.39	-75.15	-693.68	* -595.12	* -713.51	* -813.05	-217.97	-501.01	283.04	56.49	
29	Gross E.P.K	Ps.	1635	1692	1832	1816	2024	2235	2454	2676	* 2921	* 3019	* 3167	3530	3127	403	12.89	
30	Gross C.P.K	Ps.	1714	1667	1797	1992	2167	2412	2498	3179	* 3283	* 3459	* 3657	3765	3631	134	3.69	
31	Profit / Loss Ps/Km	Ps.	-79	25	35	-176	-143	-177	-44	-502	* -362	* -440	* -490	-292	-589	297	50.42	

CENTRAL MIS

* Provisional

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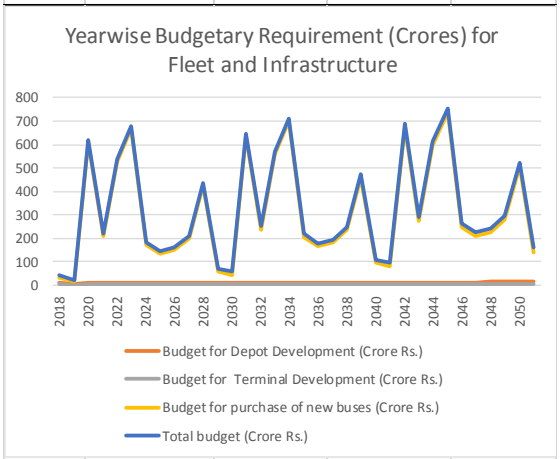
9.10. Tool Outputs–Business as usual scenario

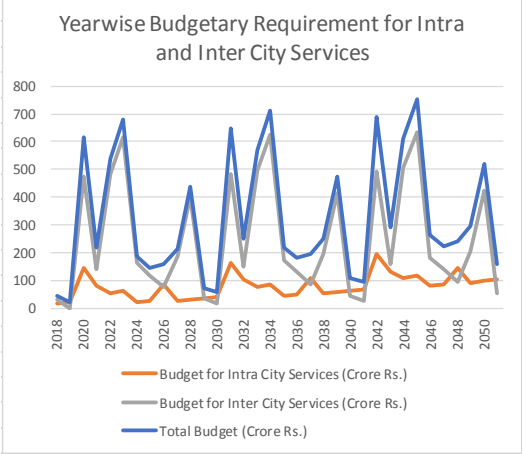
1.Year wise Budgetary Requirement (Crores) for Fleet and Infrastructure.

Year	Budget for Depot Development (Crore Rs.)	Budget for Terminal Development (Crore Rs.)	Budget for purchase of new buses (Crore Rs.)	Total budget (Crore Rs.)
2018	9	3	33	45
2019	4	1	14	20
2020	8	2	607	617
2021	8	2	210	220
2022	8	2	528	539
2023	8	2	669	680
2024	8	3	174	184
2025	8	3	134	145
2026	8	3	150	161
2027	8	3	201	212
2028	9	3	424	436
2029	9	3	59	71
2030	9	3	44	56
2031	9	3	636	648
2032	9	3	239	251
2033	9	3	558	571
2034	10	3	700	713
2035	10	3	205	218
2036	10	3	166	179
2037	10	3	182	196
2038	11	3	234	248
2039	11	3	459	473
2040	11	3	94	108
2041	11	4	80	95
2042	11	4	672	688
2043	12	4	276	292
2044	12	4	596	612
2045	12	4	739	755
2046	13	4	245	262
2047	13	4	207	224
2048	13	4	225	242
2049	14	4	278	296
2050	14	4	503	522
2051	14	4	140	159



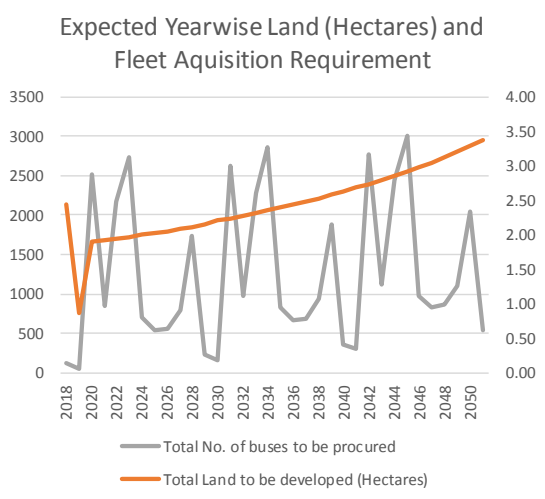
2.Year Wise Budgetary Requirement for Intra and Inter City Services.

Year	Budget for Intra City Services (Crore Rs.)	Budget for Inter City Services (Crore Rs.)	Total Budget (Crore Rs.)
2018	16	28	45
2019	20	0	20
2020	143	474	617
2021	80	140	220
2022	53	485	539
2023	64	616	680
2024	22	162	184
2025	26	119	145
2026	85	76	161
2027	28	184	212
2028	33	403	436
2029	36	34	71
2030	40	17	56
2031	164	484	648
2032	101	150	251
2033	75	496	571
2034	87	626	713
2035	46	172	218
2036	50	129	179
2037	110	86	196
2038	54	194	248
2039	60	413	473
2040	64	44	108
2041	68	26	95
2042	193	494	688
2043	132	160	292
2044	107	505	612
2045	120	636	755
2046	80	182	262
2047	85	139	224
2048	146	96	242
2049	92	204	296
2050	99	423	522
2051	105	54	159



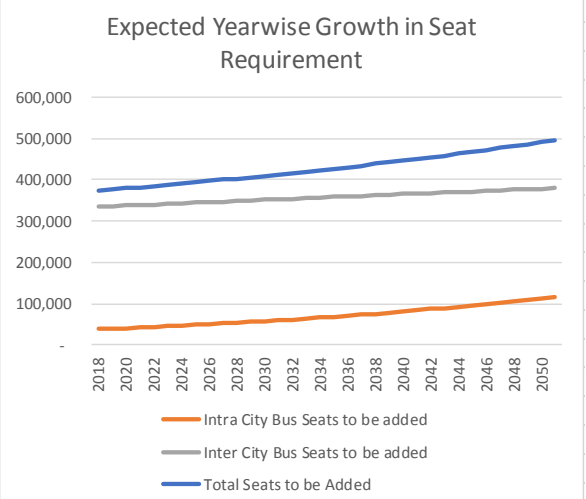
3. Expected Year-wise Land (Hectares) and Fleet Acquisition Requirement.

Year	Total Land to be developed (Hectares)	Total No. of buses to be procured
2018	2.44	115
2019	0.86	50
2020	1.90	2512
2021	1.92	855
2022	1.95	2171
2023	1.97	2733
2024	2.00	702
2025	2.03	539
2026	2.06	563
2027	2.09	801
2028	2.12	1739
2029	2.15	224
2030	2.20	162
2031	2.24	2626
2032	2.28	972
2033	2.32	2290
2034	2.36	2853
2035	2.40	826
2036	2.44	665
2037	2.49	692
2038	2.53	933
2039	2.58	1873
2040	2.63	361
2041	2.69	302
2042	2.74	2769
2043	2.80	1118
2044	2.85	2439
2045	2.91	3007
2046	2.98	983
2047	3.04	825
2048	3.13	858
2049	3.22	1103
2050	3.29	2048
2051	3.37	541



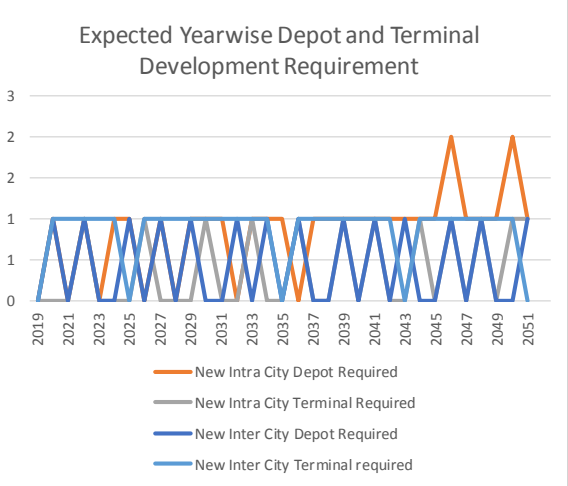
4.Expected Year-wise Growth in Seat Requirement.

Year	Intra City Bus Seats to be added	Inter City Bus Seats to be added	Total Seats to be Added
2018	38,613	336,751	375,364
2019	39,994	336,314	376,308
2020	41,384	337,738	379,122
2021	42,818	339,157	381,975
2022	44,298	340,570	384,868
2023	45,824	341,979	387,803
2024	47,399	343,382	390,781
2025	49,024	344,781	393,805
2026	50,701	346,175	396,877
2027	52,431	347,565	399,996
2028	54,216	348,951	403,167
2029	56,058	350,332	406,390
2030	57,987	351,710	409,697
2031	59,979	353,084	413,063
2032	62,035	354,453	416,489
2033	64,158	355,820	419,978
2034	66,350	357,182	423,532
2035	68,612	358,542	427,154
2036	70,949	359,898	430,846
2037	73,361	361,251	434,611
2038	75,851	362,601	438,452
2039	78,422	363,948	442,370
2040	81,078	365,292	446,370
2041	83,820	366,634	450,454
2042	86,652	367,974	454,625
2043	89,576	369,311	458,887
2044	92,597	370,645	463,242
2045	95,717	371,978	467,695
2046	98,940	373,309	472,249
2047	102,270	374,638	476,908
2048	105,742	375,965	481,707
2049	109,353	377,291	486,644
2050	113,086	378,615	491,701
2051	116,946	379,938	496,884



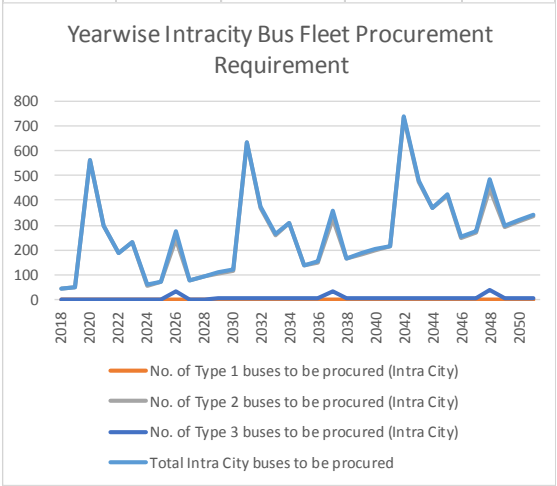
5.Expected Year-wise Depot and Terminal Development Requirement.

Year	New Intra City Depot Required	New Intra City Terminal Required	New Inter City Depot Required	New Inter City Terminal required
2018	1	0	0	1
2019	0	0	0	0
2020	1	0	1	1
2021	0	0	0	1
2022	1	1	1	1
2023	0	0	0	1
2024	1	0	0	1
2025	1	0	1	0
2026	0	1	0	1
2027	1	0	1	1
2028	0	0	0	1
2029	1	0	1	1
2030	1	1	0	1
2031	1	0	0	1
2032	0	0	1	1
2033	1	1	0	1
2034	1	0	1	1
2035	1	0	0	0
2036	0	1	1	1
2037	1	0	0	1
2038	1	0	0	1
2039	1	1	1	1
2040	1	0	0	1
2041	1	1	1	1
2042	1	0	0	1
2043	1	0	1	0
2044	1	1	0	1
2045	1	0	0	1
2046	2	1	1	1
2047	1	0	0	1
2048	1	1	1	1
2049	1	0	0	1
2050	2	1	0	1
2051	1	1	1	0



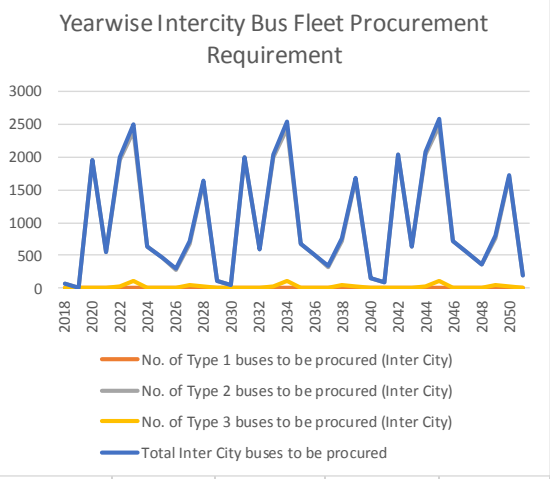
6.Yearwise Intracity Bus Fleet Procurement Requirement.

Year	No. of Type 1 buses to be procured (Intra City)	No. of Type 2 buses to be procured (Intra City)	No. of Type 3 buses to be procured (Intra City)	Total Intra City buses to be procured
2018	0	41	1	42
2019	0	48	1	50
2020	0	563	1	564
2021	0	298	1	300
2022	0	186	1	187
2023	0	231	1	232
2024	0	56	1	58
2025	0	69	1	70
2026	0	242	31	273
2027	0	76	1	77
2028	0	94	1	95
2029	0	106	2	108
2030	0	116	3	119
2031	0	633	3	635
2032	0	371	3	373
2033	0	261	3	263
2034	0	308	3	311
2035	0	136	3	139
2036	0	151	3	154
2037	0	327	33	360
2038	0	163	3	167
2039	0	184	3	187
2040	0	199	5	203
2041	0	213	5	217
2042	0	732	5	737
2043	0	473	5	478
2044	0	367	5	372
2045	0	417	5	423
2046	0	249	6	255
2047	0	268	6	274
2048	0	448	36	485
2049	0	290	6	296
2050	0	315	6	322
2051	0	334	8	342



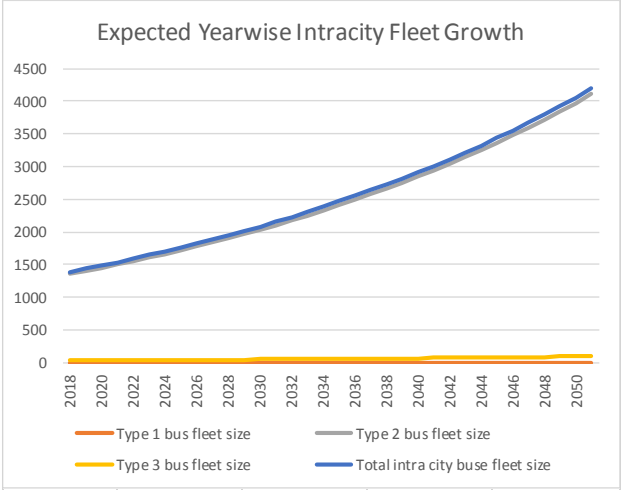
7.Year-wise Intercity Bus Fleet Procurement Requirement.

Year	No. of Type 1 buses to be procured (Inter City)	No. of Type 2 buses to be procured (Inter City)	No. of Type 3 buses to be procured (Inter City)	Total Inter City buses to be procured
2018	0	72	2	73
2019	0	0	0	0
2020	0	1946	2	1948
2021	0	555	1	556
2022	0	1947	37	1984
2023	0	2386	115	2501
2024	0	635	10	645
2025	0	467	1	468
2026	0	289	1	290
2027	0	676	48	724
2028	0	1616	28	1644
2029	0	114	3	116
2030	0	42	1	43
2031	0	1988	3	1991
2032	0	597	2	598
2033	0	1988	38	2026
2034	0	2427	116	2543
2035	0	676	11	687
2036	0	508	2	510
2037	0	330	2	332
2038	0	717	49	766
2039	0	1657	29	1686
2040	0	154	4	158
2041	0	82	2	84
2042	0	2028	4	2032
2043	0	637	3	640
2044	0	2029	39	2068
2045	0	2467	117	2584
2046	0	716	12	728
2047	0	549	3	552
2048	0	370	3	373
2049	0	757	50	807
2050	0	1697	30	1727
2051	0	194	4	199



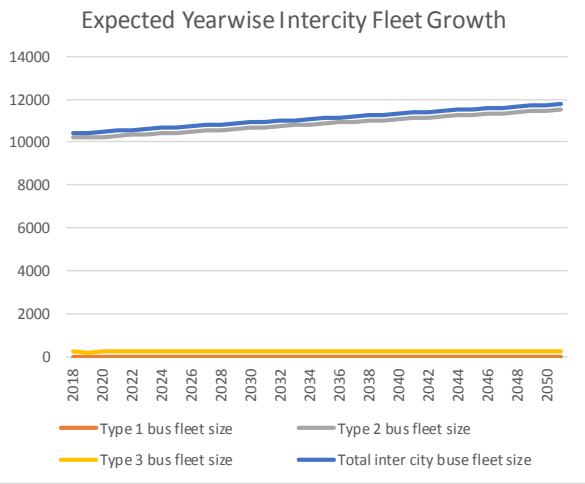
8.Expected Year- wise Intracity Fleet Growth

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total intra city buse fleet size
2018	0	1356	31	1387
2019	0	1404	32	1436
2020	0	1453	33	1486
2021	0	1504	34	1538
2022	0	1556	35	1591
2023	0	1609	37	1646
2024	0	1664	38	1702
2025	0	1722	39	1761
2026	0	1780	41	1821
2027	0	1841	42	1883
2028	0	1904	43	1947
2029	0	1968	45	2013
2030	0	2036	46	2083
2031	0	2106	48	2154
2032	0	2178	50	2228
2033	0	2253	51	2304
2034	0	2330	53	2383
2035	0	2409	55	2464
2036	0	2491	57	2548
2037	0	2576	59	2635
2038	0	2664	61	2724
2039	0	2754	63	2817
2040	0	2847	65	2912
2041	0	2943	67	3011
2042	0	3043	69	3112
2043	0	3146	72	3217
2044	0	3252	74	3326
2045	0	3361	77	3438
2046	0	3474	79	3554
2047	0	3591	82	3673
2048	0	3713	85	3798
2049	0	3840	88	3928
2050	0	3971	91	4062
2051	0	4107	94	4200



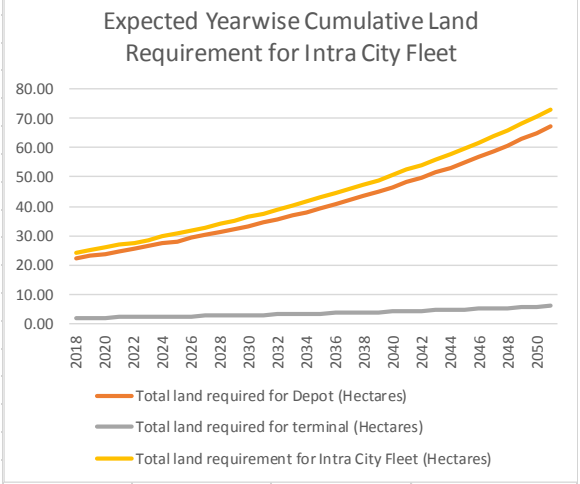
9.Expected Year-wise Intercity Fleet Growth

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total inter city buse fleet size
2018	0	10206	236	10441
2019	0	10193	235	10428
2020	0	10236	236	10472
2021	0	10279	237	10516
2022	0	10322	238	10560
2023	0	10364	239	10604
2024	0	10407	240	10647
2025	0	10449	241	10690
2026	0	10491	242	10734
2027	0	10534	243	10777
2028	0	10576	244	10820
2029	0	10617	245	10863
2030	0	10659	246	10905
2031	0	10701	247	10948
2032	0	10742	248	10990
2033	0	10784	249	11033
2034	0	10825	250	11075
2035	0	10866	251	11117
2036	0	10907	252	11159
2037	0	10948	253	11201
2038	0	10989	254	11243
2039	0	11030	255	11285
2040	0	11071	256	11326
2041	0	11111	257	11368
2042	0	11152	258	11410
2043	0	11193	258	11451
2044	0	11233	259	11492
2045	0	11273	260	11534
2046	0	11314	261	11575
2047	0	11354	262	11616
2048	0	11394	263	11657
2049	0	11434	264	11698
2050	0	11475	265	11740
2051	0	11515	266	11781



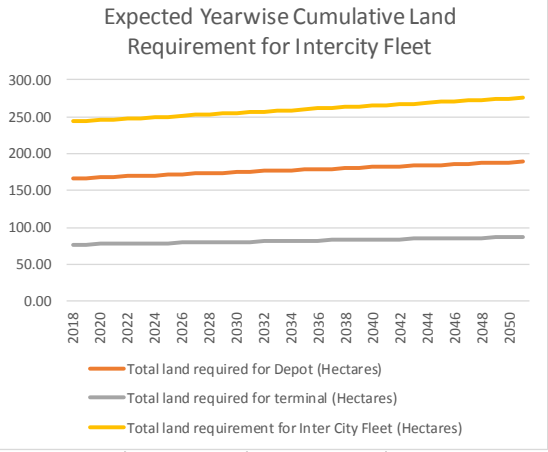
10. Expected Year-wise Cumulative Land Requirement for Intra City Fleet

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Intra City Fleet (Hectares)
2018	22.19	1.94	24.13
2019	22.98	2.01	24.99
2020	23.78	2.08	25.86
2021	24.61	2.15	26.76
2022	25.46	2.23	27.68
2023	26.33	2.30	28.64
2024	27.24	2.38	29.62
2025	28.17	2.47	30.64
2026	29.14	2.55	31.69
2027	30.13	2.64	32.77
2028	31.16	2.73	33.88
2029	32.21	2.82	35.03
2030	33.32	2.92	36.24
2031	34.47	3.02	37.48
2032	35.65	3.12	38.77
2033	36.87	3.23	40.10
2034	38.13	3.34	41.47
2035	39.43	3.45	42.88
2036	40.77	3.57	44.34
2037	42.16	3.69	45.85
2038	43.59	3.81	47.40
2039	45.07	3.94	49.01
2040	46.59	4.08	50.67
2041	48.17	4.21	52.38
2042	49.80	4.36	54.15
2043	51.48	4.50	55.98
2044	53.21	4.66	57.87
2045	55.01	4.81	59.82
2046	56.86	4.98	61.83
2047	58.77	5.14	63.91
2048	60.77	5.32	66.08
2049	62.84	5.50	68.34
2050	64.99	5.69	70.67
2051	67.20	5.88	73.09



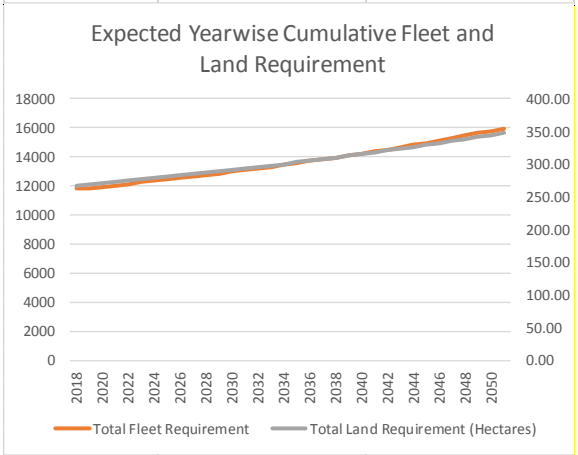
11.Expected Year-wise Cumulative Land Requirement for Intercity Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Inter City Fleet (Hectares)
2018	167.06	76.74	243.81
2019	167.06	76.74	243.81
2020	167.77	77.07	244.84
2021	168.47	77.39	245.87
2022	169.17	77.71	246.89
2023	169.87	78.04	247.91
2024	170.57	78.36	248.92
2025	171.26	78.67	249.94
2026	171.96	78.99	250.95
2027	172.64	79.31	251.95
2028	173.33	79.62	252.96
2029	174.02	79.94	253.96
2030	174.70	80.25	254.95
2031	175.38	80.57	255.95
2032	176.06	80.88	256.94
2033	176.74	81.19	257.93
2034	177.42	81.50	258.92
2035	178.09	81.81	259.90
2036	178.76	82.12	260.88
2037	179.43	82.43	261.86
2038	180.10	82.74	262.84
2039	180.77	83.04	263.81
2040	181.44	83.35	264.79
2041	182.10	83.65	265.76
2042	182.77	83.96	266.73
2043	183.43	84.26	267.70
2044	184.09	84.57	268.66
2045	184.76	84.87	269.63
2046	185.42	85.18	270.59
2047	186.08	85.48	271.55
2048	186.73	85.78	272.51
2049	187.39	86.08	273.47
2050	188.05	86.38	274.43
2051	188.70	86.69	275.39



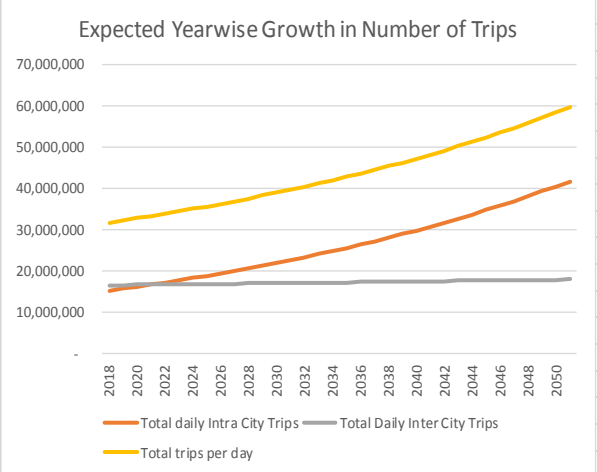
12.Expected Year- wise Cumulative Fleet and Land Requirement.

Year	Total Fleet Requirement	Total Land Requirement (Hectares)
2018	11828	267.94
2019	11864	268.80
2020	11958	270.70
2021	12054	272.62
2022	12151	274.57
2023	12249	276.55
2024	12349	278.55
2025	12451	280.58
2026	12555	282.63
2027	12660	284.72
2028	12767	286.84
2029	12876	288.99
2030	12988	291.19
2031	13102	293.43
2032	13218	295.71
2033	13337	298.03
2034	13458	300.38
2035	13581	302.78
2036	13707	305.22
2037	13836	307.71
2038	13967	310.24
2039	14101	312.82
2040	14238	315.46
2041	14379	318.14
2042	14522	320.88
2043	14668	323.68
2044	14818	326.53
2045	14972	329.45
2046	15129	332.42
2047	15289	335.47
2048	15455	338.60
2049	15626	341.81
2050	15801	345.11
2051	15981	348.48



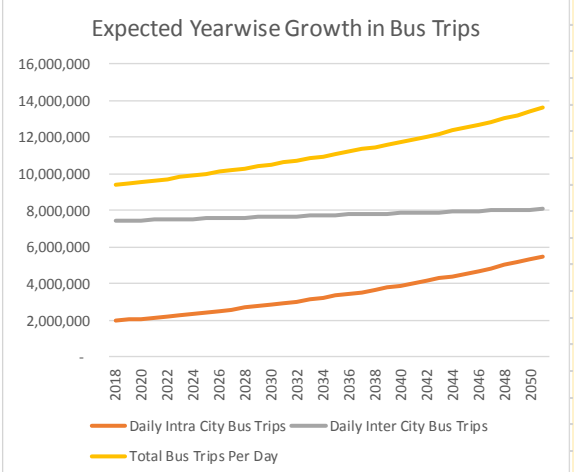
13.Expected Year-wise Growth in Number of Trips

Year	Total daily Intra City Trips	Total Daily Inter City Trips	Total trips per day
2018	15,188,281	16,488,485	31,676,766
2019	15,658,362	16,529,091	32,187,453
2020	16,143,044	16,569,828	32,712,872
2021	16,642,787	16,610,698	33,253,485
2022	17,158,064	16,651,701	33,809,765
2023	17,689,365	16,692,838	34,382,203
2024	18,237,195	16,734,109	34,971,304
2025	18,802,076	16,775,515	35,577,591
2026	19,384,546	16,817,058	36,201,604
2027	19,985,163	16,858,736	36,843,899
2028	20,604,503	16,900,552	37,505,055
2029	21,243,161	16,942,507	38,185,668
2030	21,901,751	16,984,600	38,886,351
2031	22,580,909	17,026,833	39,607,742
2032	23,281,292	17,069,207	40,350,499
2033	24,003,580	17,111,723	41,115,303
2034	24,748,477	17,154,381	41,902,858
2035	25,516,709	17,197,182	42,713,891
2036	26,309,031	17,240,129	43,549,160
2037	27,126,221	17,283,221	44,409,442
2038	27,969,086	17,326,461	45,295,547
2039	28,838,462	17,369,848	46,208,310
2040	29,735,214	17,413,385	47,148,599
2041	30,660,241	17,457,073	48,117,314
2042	31,614,472	17,500,914	49,115,386
2043	32,598,872	17,544,908	50,143,780
2044	33,614,441	17,589,058	51,203,499
2045	34,662,218	17,633,366	52,295,584
2046	35,743,280	17,677,833	53,421,113
2047	36,858,746	17,722,461	54,581,207
2048	38,009,780	17,767,253	55,777,033
2049	39,197,592	17,812,211	57,009,803
2050	40,423,437	17,857,338	58,280,775
2051	41,688,625	17,902,635	59,591,260



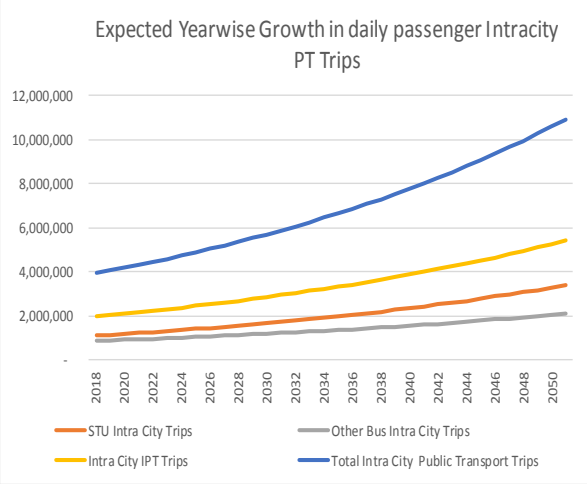
14.Expected Year-wise Growth in Bus Trips

Year	Daily Intra City Bus Trips	Daily Inter City Bus Trips	Total Bus Trips Per Day
2018	1,965,671	7,426,444	9,392,115
2019	2,027,788	7,444,712	9,472,500
2020	2,091,859	7,463,071	9,554,930
2021	2,157,947	7,481,522	9,639,469
2022	2,226,118	7,500,064	9,726,182
2023	2,296,437	7,518,699	9,815,136
2024	2,368,974	7,537,425	9,906,400
2025	2,443,802	7,556,243	10,000,045
2026	2,520,994	7,575,154	10,096,147
2027	2,600,627	7,594,156	10,194,783
2028	2,682,781	7,613,250	10,296,031
2029	2,767,539	7,632,437	10,399,975
2030	2,854,985	7,651,716	10,506,701
2031	2,945,209	7,671,088	10,616,297
2032	3,038,303	7,690,553	10,728,855
2033	3,134,361	7,710,110	10,844,472
2034	3,233,484	7,729,762	10,963,245
2035	3,335,773	7,749,506	11,085,279
2036	3,441,335	7,769,345	11,210,680
2037	3,550,282	7,789,278	11,339,560
2038	3,662,728	7,809,306	11,472,033
2039	3,778,793	7,829,429	11,608,221
2040	3,898,602	7,849,647	11,748,249
2041	4,022,285	7,869,962	11,892,246
2042	4,149,977	7,890,373	12,040,350
2043	4,281,819	7,910,882	12,192,700
2044	4,417,957	7,931,488	12,349,446
2045	4,558,546	7,952,194	12,510,740
2046	4,703,746	7,972,999	12,676,745
2047	4,853,723	7,993,904	12,847,628
2048	5,008,654	8,014,912	13,023,565
2049	5,168,720	8,036,022	13,204,741
2050	5,334,113	8,057,235	13,391,349
2051	5,505,036	8,078,554	13,583,590



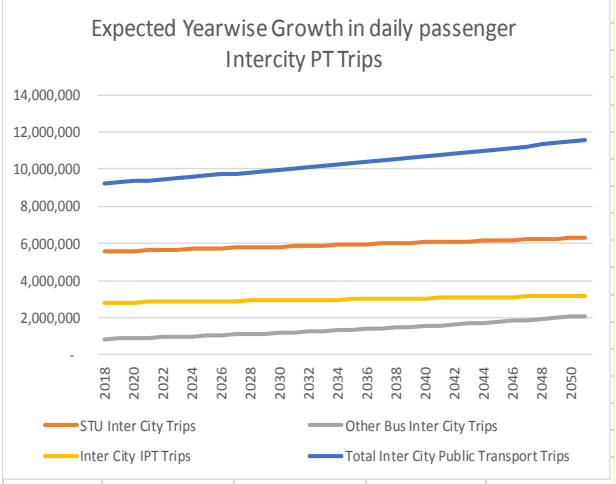
15.Expected Year-wise Growth in daily Intracity passenger intracity PT Trips.

Year	STU Intra City Trips	Other Bus Intra City Trips	Intra City IPT Trips	Total Intra City Public Transport Trips
2018	1,100,078	865,594	1,973,959	3,939,630
2019	1,139,592	888,196	2,035,053	4,062,841
2020	1,180,407	911,452	2,098,046	4,189,906
2021	1,222,564	935,384	2,162,998	4,320,945
2022	1,266,107	960,012	2,229,969	4,456,087
2023	1,311,080	985,357	2,299,023	4,595,461
2024	1,357,532	1,011,444	2,370,227	4,739,202
2025	1,405,510	1,038,294	2,443,648	4,887,451
2026	1,455,064	1,065,932	2,519,356	5,040,352
2027	1,506,246	1,094,384	2,597,424	5,198,055
2028	1,559,110	1,123,676	2,677,927	5,360,713
2029	1,613,711	1,153,833	2,760,943	5,528,488
2030	1,670,107	1,184,885	2,846,551	5,701,544
2031	1,728,358	1,216,861	2,934,835	5,880,054
2032	1,788,525	1,249,790	3,025,880	6,064,195
2033	1,850,672	1,283,704	3,119,775	6,254,151
2034	1,914,866	1,318,635	3,216,612	6,450,113
2035	1,981,176	1,354,618	3,316,485	6,652,279
2036	2,049,674	1,391,687	3,419,492	6,860,853
2037	2,120,434	1,429,878	3,525,737	7,076,049
2038	2,193,533	1,469,231	3,635,323	7,298,086
2039	2,269,051	1,509,783	3,748,360	7,527,194
2040	2,347,073	1,551,578	3,864,961	7,763,612
2041	2,427,684	1,594,657	3,985,244	8,007,585
2042	2,510,977	1,639,066	4,109,330	8,259,372
2043	2,597,043	1,684,851	4,237,345	8,519,239
2044	2,685,983	1,732,061	4,369,420	8,787,465
2045	2,777,898	1,780,749	4,505,691	9,064,338
2046	2,872,895	1,830,966	4,646,300	9,350,161
2047	2,971,085	1,882,769	4,791,392	9,645,247
2048	3,072,586	1,936,218	4,941,121	9,949,924
2049	3,177,518	1,991,372	5,095,644	10,264,535
2050	3,286,009	2,048,299	5,255,128	10,589,435
2051	3,398,192	2,107,064	5,419,743	10,924,999



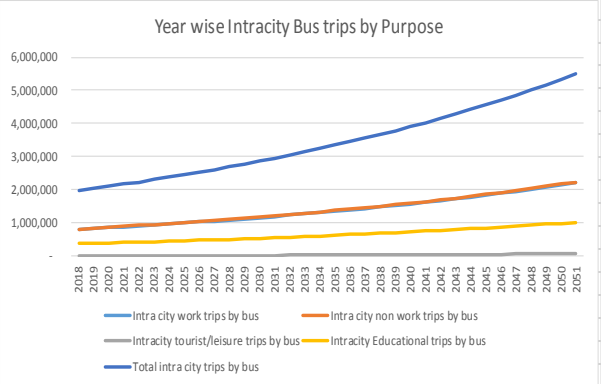
16.Expected Year-wise Growth in daily Intercity passenger intercity PT Trips

Year	STU Inter City Trips	Other Bus Inter City Trips	Inter City IPT Trips	Total Inter City Public Transport Trips
2018	5,548,693	865,594	2,811,699	9,225,986
2019	5,572,417	888,196	2,822,152	9,282,765
2020	5,596,051	911,452	2,832,650	9,340,153
2021	5,619,598	935,384	2,843,192	9,398,174
2022	5,643,060	960,012	2,853,779	9,456,851
2023	5,666,440	985,357	2,864,411	9,516,208
2024	5,689,739	1,011,444	2,875,089	9,576,272
2025	5,712,961	1,038,294	2,885,812	9,637,067
2026	5,736,108	1,065,932	2,896,581	9,698,621
2027	5,759,181	1,094,384	2,907,396	9,760,962
2028	5,782,183	1,123,676	2,918,258	9,824,117
2029	5,805,117	1,153,833	2,929,166	9,888,117
2030	5,827,984	1,184,885	2,940,122	9,952,991
2031	5,850,787	1,216,861	2,951,125	10,018,773
2032	5,873,527	1,249,790	2,962,175	10,085,493
2033	5,896,208	1,283,704	2,973,274	10,153,186
2034	5,918,830	1,318,635	2,984,421	10,221,887
2035	5,941,397	1,354,618	2,995,617	10,291,632
2036	5,963,910	1,391,687	3,006,861	10,362,458
2037	5,986,372	1,429,878	3,018,156	10,434,406
2038	6,008,784	1,469,231	3,029,500	10,507,514
2039	6,031,149	1,509,783	3,040,895	10,581,827
2040	6,053,468	1,551,578	3,052,340	10,657,386
2041	6,075,745	1,594,657	3,063,837	10,734,238
2042	6,097,980	1,639,066	3,075,385	10,812,431
2043	6,120,176	1,684,851	3,086,986	10,892,014
2044	6,142,336	1,732,061	3,098,640	10,973,038
2045	6,164,461	1,780,749	3,110,348	11,055,558
2046	6,186,554	1,830,966	3,122,110	11,139,629
2047	6,208,616	1,882,769	3,133,926	11,225,312
2048	6,230,651	1,936,218	3,145,799	11,312,667
2049	6,252,660	1,991,372	3,157,727	11,401,760
2050	6,274,645	2,048,299	3,169,714	11,492,657
2051	6,296,609	2,107,064	3,181,758	11,585,431



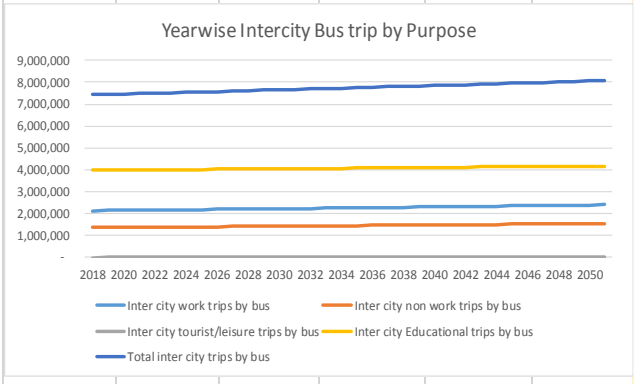
17.Year-wise Intracity Bus Trips by Purpose

Year	Intra city work trips by bus	Intra city non work trips by bus	Intracity tourist/leisure trips by bus	Intracity Educational trips by bus	Total intra city trips by bus
2018	793,858	806,616	2,992	362,205	1,965,671
2019	818,879	831,899	3,291	373,718	2,027,788
2020	844,679	857,968	3,620	385,592	2,091,859
2021	871,282	884,846	3,982	397,836	2,157,947
2022	898,714	912,560	4,380	410,463	2,226,118
2023	927,000	941,135	4,818	423,484	2,296,437
2024	956,165	970,597	5,300	436,912	2,368,974
2025	986,239	1,000,974	5,830	450,759	2,443,802
2026	1,017,248	1,032,295	6,413	465,038	2,520,994
2027	1,049,222	1,064,588	7,054	479,762	2,600,627
2028	1,082,191	1,097,884	7,760	494,946	2,682,781
2029	1,116,185	1,132,214	8,536	510,603	2,767,539
2030	1,151,237	1,167,610	9,389	526,749	2,854,985
2031	1,187,378	1,204,104	10,328	543,398	2,945,209
2032	1,224,644	1,241,731	11,361	560,566	3,038,303
2033	1,263,068	1,280,527	12,497	578,270	3,134,361
2034	1,302,686	1,320,526	13,747	596,525	3,233,484
2035	1,343,536	1,361,766	15,122	615,349	3,335,773
2036	1,385,656	1,404,286	16,634	634,759	3,441,335
2037	1,429,084	1,448,126	18,297	654,775	3,550,282
2038	1,473,862	1,493,325	20,127	675,413	3,662,728
2039	1,520,032	1,539,927	22,140	696,694	3,778,793
2040	1,567,635	1,587,975	24,353	718,638	3,898,602
2041	1,616,718	1,637,513	26,789	741,266	4,022,285
2042	1,667,325	1,688,587	29,468	764,597	4,149,977
2043	1,719,504	1,741,246	32,414	788,655	4,281,819
2044	1,773,303	1,795,537	35,656	813,462	4,417,957
2045	1,828,773	1,851,512	39,221	839,040	4,558,546
2046	1,885,965	1,909,223	43,143	865,414	4,703,746
2047	1,944,933	1,968,724	47,458	892,609	4,853,723
2048	2,005,732	2,030,069	52,204	920,650	5,008,654
2049	2,068,417	2,093,316	57,424	949,562	5,168,720
2050	2,133,049	2,158,524	63,166	979,374	5,334,113
2051	2,199,687	2,225,753	69,483	1,010,113	5,505,036



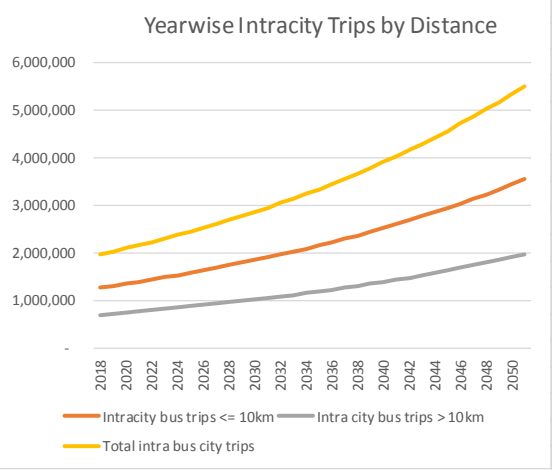
18.Year-wise Intercity Bus Trips by Purpose

Year	Inter city work trips by bus	Inter city non work trips by bus	Inter city tourist/leisure trips by bus	Inter city Educational trips by bus	Total inter city trips by bus
2018	2,114,729	1,341,778	71	3,969,866	7,426,444
2019	2,122,215	1,347,009	78	3,975,410	7,444,712
2020	2,129,741	1,352,268	86	3,980,975	7,463,071
2021	2,137,308	1,357,556	94	3,986,563	7,481,522
2022	2,144,916	1,362,873	104	3,992,172	7,500,064
2023	2,152,564	1,368,218	114	3,997,803	7,518,699
2024	2,160,252	1,373,593	125	4,003,456	7,537,425
2025	2,167,981	1,378,996	138	4,009,129	7,556,243
2026	2,175,750	1,384,428	151	4,014,824	7,575,154
2027	2,183,561	1,389,889	166	4,020,540	7,594,156
2028	2,191,412	1,395,379	183	4,026,276	7,613,250
2029	2,199,304	1,400,898	201	4,032,033	7,632,437
2030	2,207,237	1,406,447	221	4,037,811	7,651,716
2031	2,215,211	1,412,024	243	4,043,609	7,671,088
2032	2,223,227	1,417,632	268	4,049,427	7,690,553
2033	2,231,283	1,423,268	294	4,055,265	7,710,110
2034	2,239,381	1,428,934	324	4,061,123	7,729,762
2035	2,247,520	1,434,630	356	4,067,000	7,749,506
2036	2,255,701	1,440,355	392	4,072,898	7,769,345
2037	2,263,923	1,446,110	431	4,078,814	7,789,278
2038	2,272,187	1,451,894	474	4,084,750	7,809,306
2039	2,280,493	1,457,709	521	4,090,706	7,829,429
2040	2,288,841	1,463,553	573	4,096,680	7,849,647
2041	2,297,231	1,469,428	630	4,102,673	7,869,962
2042	2,305,662	1,475,332	693	4,108,685	7,890,373
2043	2,314,136	1,481,267	762	4,114,716	7,910,882
2044	2,322,652	1,487,232	838	4,120,765	7,931,488
2045	2,331,211	1,493,228	922	4,126,833	7,952,194
2046	2,339,812	1,499,254	1,014	4,132,919	7,972,999
2047	2,348,456	1,505,310	1,115	4,139,023	7,993,904
2048	2,357,142	1,511,397	1,226	4,145,146	8,014,912
2049	2,365,872	1,517,515	1,349	4,151,286	8,036,022
2050	2,374,644	1,523,663	1,484	4,157,445	8,057,235
2051	2,383,459	1,529,843	1,632	4,163,621	8,078,554



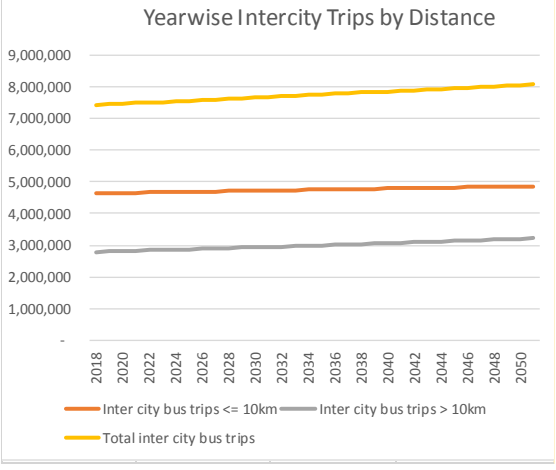
19.Year-wise Intracity Trips by Distance

Year	Intracity bus trips <= 10km	Intra city bus trips > 10km	Total intra bus city trips
2018	1,266,868	698,804	1,965,671
2019	1,307,190	720,598	2,027,788
2020	1,348,772	743,087	2,091,859
2021	1,391,654	766,293	2,157,947
2022	1,435,876	790,242	2,226,118
2023	1,481,480	814,957	2,296,437
2024	1,528,508	840,466	2,368,974
2025	1,577,005	866,797	2,443,802
2026	1,627,016	893,977	2,520,994
2027	1,678,589	922,038	2,600,627
2028	1,731,772	951,009	2,682,781
2029	1,786,614	980,924	2,767,539
2030	1,843,168	1,011,817	2,854,985
2031	1,901,486	1,043,723	2,945,209
2032	1,961,623	1,076,680	3,038,303
2033	2,023,636	1,110,725	3,134,361
2034	2,087,582	1,145,901	3,233,484
2035	2,153,523	1,182,250	3,335,773
2036	2,221,519	1,219,816	3,441,335
2037	2,291,635	1,258,647	3,550,282
2038	2,363,936	1,298,792	3,662,728
2039	2,438,489	1,340,303	3,778,793
2040	2,515,366	1,383,236	3,898,602
2041	2,594,638	1,427,647	4,022,285
2042	2,676,380	1,473,597	4,149,977
2043	2,760,667	1,521,152	4,281,819
2044	2,847,579	1,570,378	4,417,957
2045	2,937,198	1,621,349	4,558,546
2046	3,029,607	1,674,139	4,703,746
2047	3,124,893	1,728,830	4,853,723
2048	3,223,146	1,785,508	5,008,654
2049	3,324,457	1,844,263	5,168,720
2050	3,428,921	1,905,193	5,334,113
2051	3,536,636	1,968,399	5,505,036



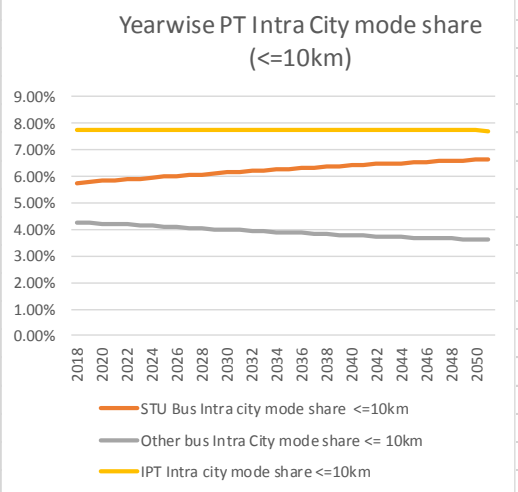
20.Year-wise Intercity Trips by Distance

Year	Inter city bus trips <= 10km	Inter city bus trips > 10km	Total inter city bus trips
2018	4,638,257	2,788,187	7,426,444
2019	4,644,744	2,799,968	7,444,712
2020	4,651,256	2,811,815	7,463,071
2021	4,657,794	2,823,728	7,481,522
2022	4,664,358	2,835,707	7,500,064
2023	4,670,946	2,847,753	7,518,699
2024	4,677,559	2,859,866	7,537,425
2025	4,684,197	2,872,046	7,556,243
2026	4,690,860	2,884,294	7,575,154
2027	4,697,547	2,896,609	7,594,156
2028	4,704,258	2,908,993	7,613,250
2029	4,710,993	2,921,444	7,632,437
2030	4,717,751	2,933,965	7,651,716
2031	4,724,534	2,946,554	7,671,088
2032	4,731,340	2,959,213	7,690,553
2033	4,738,169	2,971,942	7,710,110
2034	4,745,021	2,984,740	7,729,762
2035	4,751,896	2,997,610	7,749,506
2036	4,758,794	3,010,551	7,769,345
2037	4,765,715	3,023,563	7,789,278
2038	4,772,658	3,036,648	7,809,306
2039	4,779,624	3,049,805	7,829,429
2040	4,786,611	3,063,036	7,849,647
2041	4,793,621	3,076,341	7,869,962
2042	4,800,653	3,089,720	7,890,373
2043	4,807,706	3,103,176	7,910,882
2044	4,814,781	3,116,707	7,931,488
2045	4,821,878	3,130,316	7,952,194
2046	4,828,995	3,144,003	7,972,999
2047	4,836,135	3,157,770	7,993,904
2048	4,843,295	3,171,617	8,014,912
2049	4,850,476	3,185,545	8,036,022
2050	4,857,678	3,199,557	8,057,235
2051	4,864,901	3,213,653	8,078,554



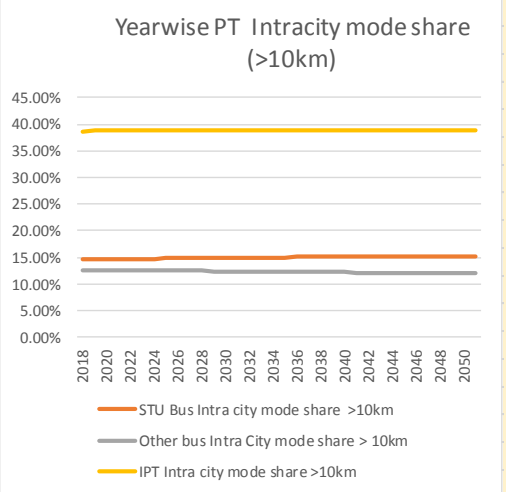
21. Year-wise PT Intra City mode share (<=10km)

Year	STU Bus Intra city mode share <=10km	Other bus Intra City mode share <= 10km	IPT Intra city mode share <=10km
2018	5.75%	4.28%	7.74%
2019	5.78%	4.25%	7.74%
2020	5.82%	4.23%	7.74%
2021	5.85%	4.20%	7.74%
2022	5.89%	4.18%	7.74%
2023	5.92%	4.15%	7.74%
2024	5.95%	4.13%	7.74%
2025	5.99%	4.10%	7.74%
2026	6.02%	4.08%	7.74%
2027	6.05%	4.06%	7.74%
2028	6.08%	4.03%	7.74%
2029	6.11%	4.01%	7.74%
2030	6.14%	3.99%	7.74%
2031	6.17%	3.97%	7.74%
2032	6.20%	3.94%	7.74%
2033	6.22%	3.92%	7.74%
2034	6.25%	3.90%	7.74%
2035	6.28%	3.88%	7.74%
2036	6.31%	3.86%	7.74%
2037	6.33%	3.84%	7.74%
2038	6.36%	3.82%	7.74%
2039	6.38%	3.81%	7.74%
2040	6.41%	3.79%	7.74%
2041	6.43%	3.77%	7.74%
2042	6.45%	3.75%	7.74%
2043	6.48%	3.73%	7.74%
2044	6.50%	3.72%	7.74%
2045	6.52%	3.70%	7.74%
2046	6.55%	3.68%	7.74%
2047	6.57%	3.67%	7.74%
2048	6.59%	3.65%	7.74%
2049	6.61%	3.64%	7.74%
2050	6.63%	3.62%	7.74%
2051	6.65%	3.60%	7.74%



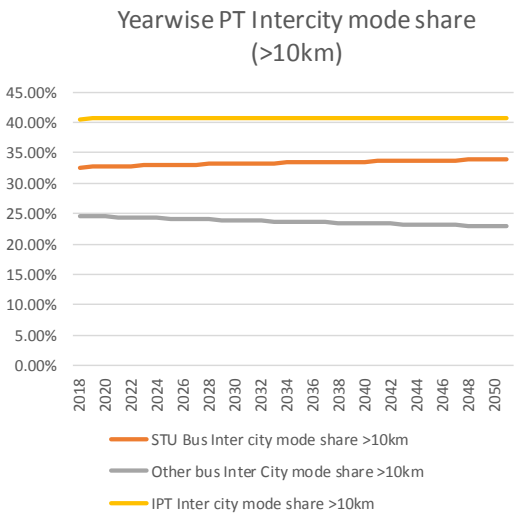
22. Year-wise PT Intra City mode share (>10km)

Year	STU Bus Intra city mode share >10km	Other bus Intra City mode share > 10km	IPT Intra city mode share >10km
2018	14.64%	12.70%	38.96%
2019	14.66%	12.68%	38.96%
2020	14.69%	12.65%	38.96%
2021	14.71%	12.62%	38.96%
2022	14.74%	12.60%	38.96%
2023	14.77%	12.57%	38.96%
2024	14.79%	12.55%	38.96%
2025	14.81%	12.52%	38.96%
2026	14.84%	12.50%	38.96%
2027	14.86%	12.48%	38.96%
2028	14.88%	12.45%	38.96%
2029	14.91%	12.43%	38.96%
2030	14.93%	12.41%	38.96%
2031	14.95%	12.39%	38.96%
2032	14.97%	12.37%	38.96%
2033	14.99%	12.34%	38.96%
2034	15.01%	12.32%	38.96%
2035	15.03%	12.30%	38.96%
2036	15.05%	12.28%	38.96%
2037	15.07%	12.26%	38.96%
2038	15.09%	12.25%	38.96%
2039	15.11%	12.23%	38.96%
2040	15.13%	12.21%	38.96%
2041	15.15%	12.19%	38.96%
2042	15.16%	12.17%	38.96%
2043	15.18%	12.15%	38.96%
2044	15.20%	12.14%	38.96%
2045	15.21%	12.12%	38.96%
2046	15.23%	12.10%	38.96%
2047	15.25%	12.09%	38.96%
2048	15.26%	12.07%	38.96%
2049	15.28%	12.06%	38.96%
2050	15.29%	12.04%	38.96%
2051	15.31%	12.03%	38.96%



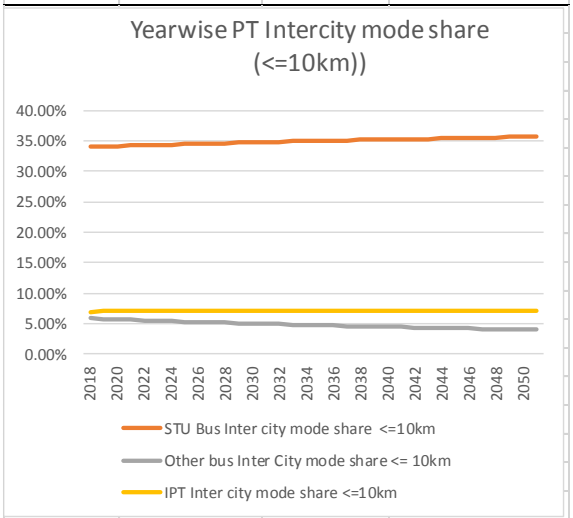
23.Year-wise PT Intercity mode share (> 10km)

Year	STU Bus Inter city mode share >10km	Other bus Inter City mode share >10km	IPT Inter city mode share >10km
2018	32.66%	24.65%	40.72%
2019	32.71%	24.58%	40.72%
2020	32.76%	24.51%	40.72%
2021	32.81%	24.45%	40.72%
2022	32.86%	24.38%	40.72%
2023	32.91%	24.32%	40.72%
2024	32.95%	24.26%	40.72%
2025	33.00%	24.19%	40.72%
2026	33.04%	24.13%	40.72%
2027	33.09%	24.07%	40.72%
2028	33.13%	24.02%	40.72%
2029	33.17%	23.96%	40.72%
2030	33.22%	23.90%	40.72%
2031	33.26%	23.85%	40.72%
2032	33.30%	23.80%	40.72%
2033	33.34%	23.74%	40.72%
2034	33.38%	23.69%	40.72%
2035	33.41%	23.64%	40.72%
2036	33.45%	23.59%	40.72%
2037	33.49%	23.54%	40.72%
2038	33.52%	23.49%	40.72%
2039	33.56%	23.45%	40.72%
2040	33.59%	23.40%	40.72%
2041	33.63%	23.35%	40.72%
2042	33.66%	23.31%	40.72%
2043	33.70%	23.26%	40.72%
2044	33.73%	23.22%	40.72%
2045	33.76%	23.18%	40.72%
2046	33.79%	23.14%	40.72%
2047	33.82%	23.10%	40.72%
2048	33.85%	23.06%	40.72%
2049	33.88%	23.02%	40.72%
2050	33.91%	22.98%	40.72%
2051	33.94%	22.94%	40.72%



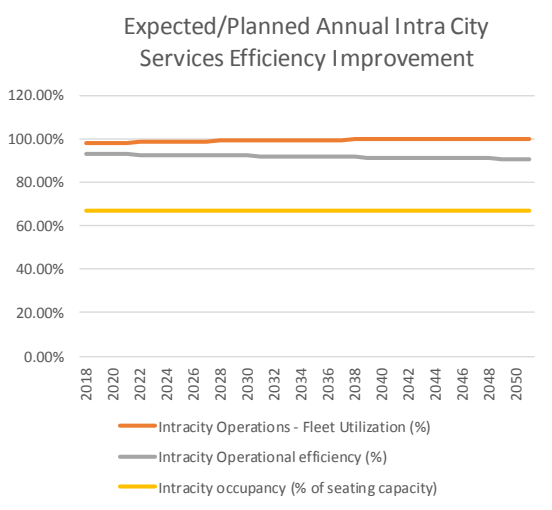
24.Year-wise PT Intercity mode share (<=10km)

Year	STU Bus Inter city mode share <=10km	Other bus Inter City mode share <= 10km	IPT Inter city mode share <=10km
2018	34.07%	5.84%	7.15%
2019	34.13%	5.77%	7.15%
2020	34.20%	5.69%	7.15%
2021	34.26%	5.62%	7.15%
2022	34.32%	5.55%	7.15%
2023	34.38%	5.49%	7.15%
2024	34.44%	5.42%	7.15%
2025	34.50%	5.36%	7.15%
2026	34.55%	5.29%	7.15%
2027	34.61%	5.23%	7.15%
2028	34.67%	5.17%	7.15%
2029	34.72%	5.11%	7.15%
2030	34.77%	5.05%	7.15%
2031	34.83%	4.99%	7.15%
2032	34.88%	4.93%	7.15%
2033	34.93%	4.87%	7.15%
2034	34.98%	4.82%	7.15%
2035	35.02%	4.76%	7.15%
2036	35.07%	4.71%	7.15%
2037	35.12%	4.66%	7.15%
2038	35.16%	4.61%	7.15%
2039	35.21%	4.55%	7.15%
2040	35.25%	4.50%	7.15%
2041	35.30%	4.46%	7.15%
2042	35.34%	4.41%	7.15%
2043	35.38%	4.36%	7.15%
2044	35.42%	4.31%	7.15%
2045	35.46%	4.27%	7.15%
2046	35.50%	4.22%	7.15%
2047	35.54%	4.18%	7.15%
2048	35.58%	4.14%	7.15%
2049	35.62%	4.10%	7.15%
2050	35.66%	4.05%	7.15%
2051	35.69%	4.01%	7.15%



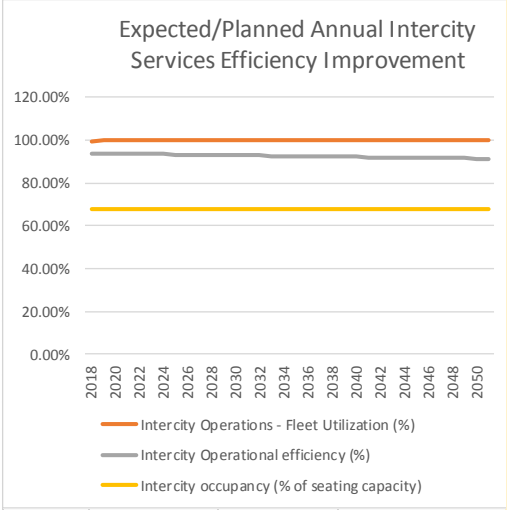
25.Expected/Planned Annual Intra City Services Efficiency Improvement

Year	Intracity Operations - Fleet Utilization (%)	Intracity Operational efficiency (%)	Intracity occupancy (% of seating capacity)
2018	97.98%	93.00%	67.00%
2019	98.08%	92.92%	67.00%
2020	98.18%	92.84%	67.00%
2021	98.28%	92.76%	67.00%
2022	98.38%	92.68%	67.00%
2023	98.48%	92.60%	67.00%
2024	98.58%	92.52%	67.00%
2025	98.68%	92.45%	67.00%
2026	98.78%	92.37%	67.00%
2027	98.88%	92.30%	67.00%
2028	98.98%	92.22%	67.00%
2029	99.08%	92.15%	67.00%
2030	99.13%	92.07%	67.00%
2031	99.18%	92.00%	67.00%
2032	99.23%	91.93%	67.00%
2033	99.28%	91.86%	67.00%
2034	99.33%	91.79%	67.00%
2035	99.38%	91.72%	67.00%
2036	99.43%	91.65%	67.00%
2037	99.48%	91.58%	67.00%
2038	99.53%	91.51%	67.00%
2039	99.58%	91.44%	67.00%
2040	99.63%	91.38%	67.00%
2041	99.68%	91.31%	67.00%
2042	99.73%	91.24%	67.00%
2043	99.78%	91.18%	67.00%
2044	99.83%	91.11%	67.00%
2045	99.88%	91.05%	67.00%
2046	99.93%	90.99%	67.00%
2047	99.98%	90.92%	67.00%
2048	100.00%	90.86%	67.00%
2049	100.00%	90.80%	67.00%
2050	100.00%	90.74%	67.00%
2051	100.00%	90.68%	67.00%



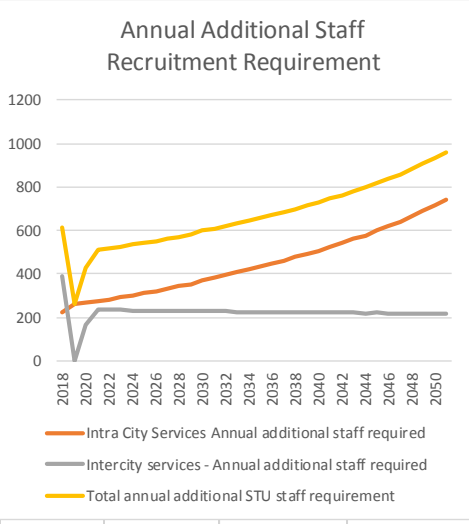
26.Expected/Planned Annual Intercity Services Efficiency Improvement

Year	Intercity Operations - Fleet Utilization (%)	Intercity Operational efficiency (%)	Intercity occupancy (% of seating capacity)
2018	99.35%	94.00%	68.00%
2019	100.00%	93.91%	68.00%
2020	100.00%	93.82%	68.00%
2021	100.00%	93.73%	68.00%
2022	100.00%	93.64%	68.00%
2023	100.00%	93.56%	68.00%
2024	100.00%	93.47%	68.00%
2025	100.00%	93.39%	68.00%
2026	100.00%	93.30%	68.00%
2027	100.00%	93.22%	68.00%
2028	100.00%	93.14%	68.00%
2029	100.00%	93.05%	68.00%
2030	100.00%	92.97%	68.00%
2031	100.00%	92.89%	68.00%
2032	100.00%	92.81%	68.00%
2033	100.00%	92.73%	68.00%
2034	100.00%	92.65%	68.00%
2035	100.00%	92.58%	68.00%
2036	100.00%	92.50%	68.00%
2037	100.00%	92.42%	68.00%
2038	100.00%	92.35%	68.00%
2039	100.00%	92.27%	68.00%
2040	100.00%	92.20%	68.00%
2041	100.00%	92.12%	68.00%
2042	100.00%	92.05%	68.00%
2043	100.00%	91.98%	68.00%
2044	100.00%	91.91%	68.00%
2045	100.00%	91.83%	68.00%
2046	100.00%	91.76%	68.00%
2047	100.00%	91.69%	68.00%
2048	100.00%	91.62%	68.00%
2049	100.00%	91.56%	68.00%
2050	100.00%	91.49%	68.00%
2051	100.00%	91.42%	68.00%



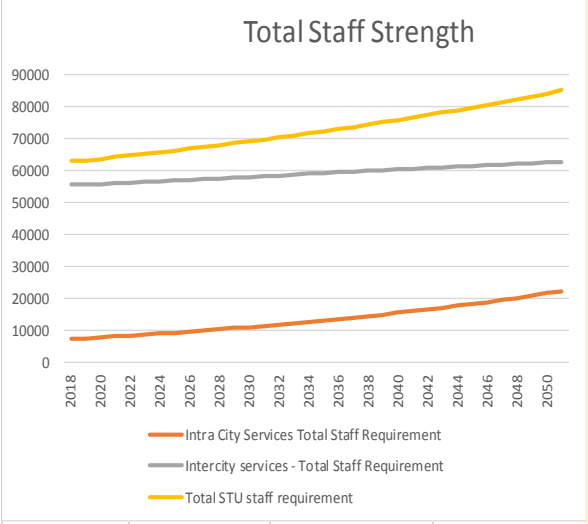
27.Annual Additional Staff Recruitment Requirement.

Year	Intra City Services Annual additional staff required	Intercity services - Annual additional staff required	Total annual additional STU staff requirement
2018	223	392	615
2019	264	0	264
2020	266	163	429
2021	275	235	510
2022	283	233	516
2023	292	233	525
2024	302	232	534
2025	311	231	542
2026	321	230	551
2027	331	230	561
2028	342	229	571
2029	352	228	580
2030	370	228	598
2031	381	227	608
2032	394	227	621
2033	406	225	631
2034	420	226	646
2035	433	224	657
2036	447	224	671
2037	462	224	686
2038	477	223	700
2039	492	223	715
2040	508	222	730
2041	525	222	747
2042	542	221	763
2043	560	221	781
2044	578	220	798
2045	598	221	819
2046	617	220	837
2047	637	219	856
2048	665	220	885
2049	691	219	910
2050	715	219	934
2051	739	218	957



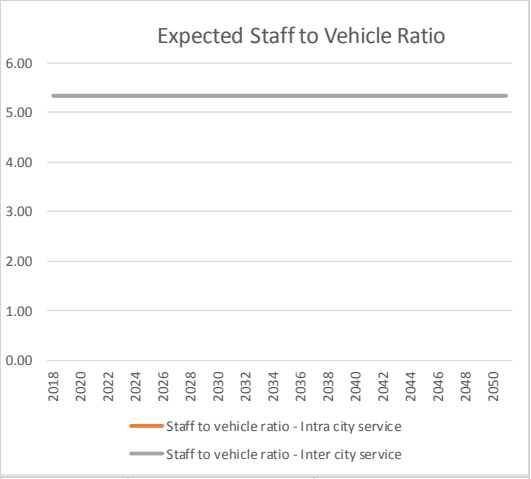
28. Total Staff Strength

Year	Intra City Services Total Staff Requirement	Intercity services - Total Staff Requirement	Total STU staff requirement
2018	7392	55653	63045
2019	7656	55653	63309
2020	7922	55816	63738
2021	8197	56051	64248
2022	8480	56284	64764
2023	8772	56517	65289
2024	9074	56749	65823
2025	9385	56980	66365
2026	9706	57210	66916
2027	10037	57440	67477
2028	10379	57669	68048
2029	10731	57897	68628
2030	11101	58125	69226
2031	11482	58352	69834
2032	11876	58579	70455
2033	12282	58804	71086
2034	12702	59030	71732
2035	13135	59254	72389
2036	13582	59478	73060
2037	14044	59702	73746
2038	14521	59925	74446
2039	15013	60148	75161
2040	15521	60370	75891
2041	16046	60592	76638
2042	16588	60813	77401
2043	17148	61034	78182
2044	17726	61254	78980
2045	18324	61475	79799
2046	18941	61695	80636
2047	19578	61914	81492
2048	20243	62134	82377
2049	20934	62353	83287
2050	21649	62572	84221
2051	22388	62790	85178



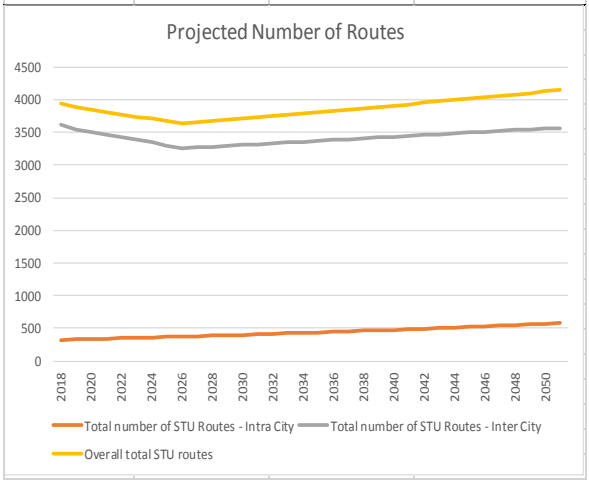
29.Expected Staff to Vehicle Ratio

Year	Staff to vehicle ratio - Intra city service	Staff to vehicle ratio - Inter city service
2018	5.33	5.33
2019	5.33	5.33
2020	5.33	5.33
2021	5.33	5.33
2022	5.33	5.33
2023	5.33	5.33
2024	5.33	5.33
2025	5.33	5.33
2026	5.33	5.33
2027	5.33	5.33
2028	5.33	5.33
2029	5.33	5.33
2030	5.33	5.33
2031	5.33	5.33
2032	5.33	5.33
2033	5.33	5.33
2034	5.33	5.33
2035	5.33	5.33
2036	5.33	5.33
2037	5.33	5.33
2038	5.33	5.33
2039	5.33	5.33
2040	5.33	5.33
2041	5.33	5.33
2042	5.33	5.33
2043	5.33	5.33
2044	5.33	5.33
2045	5.33	5.33
2046	5.33	5.33
2047	5.33	5.33
2048	5.33	5.33
2049	5.33	5.33
2050	5.33	5.33
2051	5.33	5.33



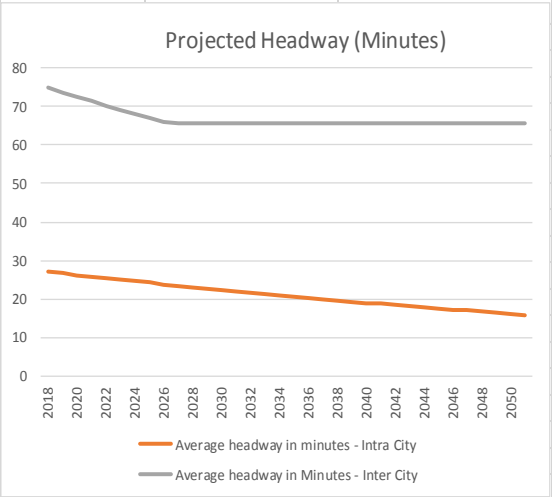
30.Projected Number of Routes

Year	Total number of STU Routes - Intra City	Total number of STU Routes - Inter City	Overall total STU routes
2018	326	3612	3938
2019	332	3549	3881
2020	338	3507	3845
2021	344	3466	3810
2022	350	3424	3774
2023	356	3383	3740
2024	363	3343	3705
2025	369	3302	3672
2026	376	3263	3638
2027	382	3266	3648
2028	389	3279	3668
2029	396	3292	3687
2030	403	3305	3707
2031	410	3318	3728
2032	417	3330	3748
2033	425	3343	3768
2034	432	3356	3788
2035	440	3369	3808
2036	447	3382	3829
2037	455	3394	3849
2038	463	3407	3870
2039	471	3420	3891
2040	479	3432	3911
2041	487	3445	3932
2042	496	3457	3953
2043	504	3470	3974
2044	513	3483	3996
2045	522	3495	4017
2046	531	3508	4038
2047	540	3520	4060
2048	549	3533	4082
2049	559	3545	4104
2050	569	3557	4126
2051	579	3570	4148



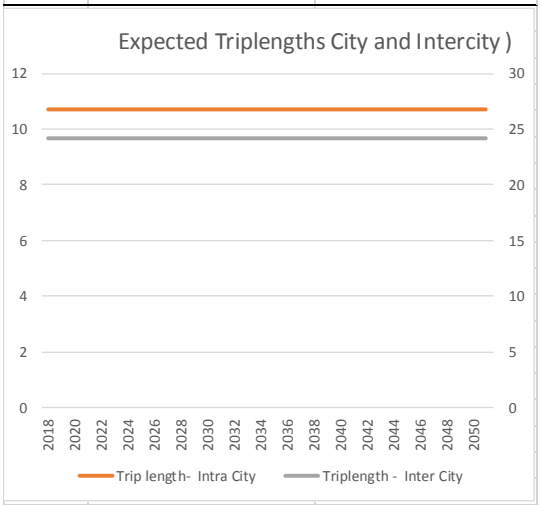
31.Projected Headway (Minutes)

Year	Average headway in minutes - Intra City	Average headway in Minutes - Inter City
2018	27	75
2019	27	74
2020	26	73
2021	26	71
2022	25	70
2023	25	69
2024	25	68
2025	24	67
2026	24	66
2027	23	66
2028	23	66
2029	23	66
2030	22	66
2031	22	66
2032	22	66
2033	21	66
2034	21	66
2035	21	66
2036	20	66
2037	20	66
2038	20	66
2039	19	66
2040	19	66
2041	19	66
2042	18	66
2043	18	66
2044	18	66
2045	18	66
2046	17	66
2047	17	66
2048	17	66
2049	16	66
2050	16	66
2051	16	66



32.Expectd Trip-lengths City and Intercity

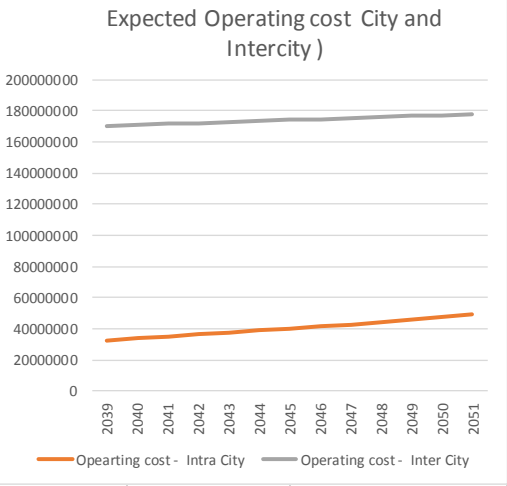
Year	Trip length- Intra City	Triplength - Inter City
2018	11	24
2019	11	24
2020	11	24
2021	11	24
2022	11	24
2023	11	24
2024	11	24
2025	11	24
2026	11	24
2027	11	24
2028	11	24
2029	11	24
2030	11	24
2031	11	24
2032	11	24
2033	11	24
2034	11	24
2035	11	24
2036	11	24
2037	11	24
2038	11	24
2039	11	24
2040	11	24
2041	11	24
2042	11	24
2043	11	24
2044	11	24
2045	11	24
2046	11	24
2047	11	24
2048	11	24
2049	11	24
2050	11	24
2051	11	24



33.Expected Operating Cost City and Intercity

Expected Operating cost City and Intercity

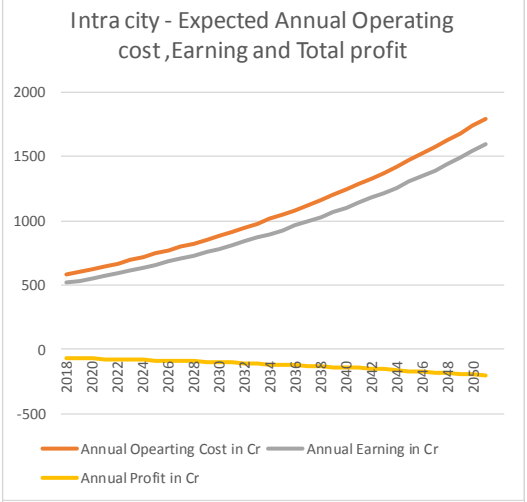
Year	Opearting cost - Intra City	Operating cost - Inter City
2018	15914644	156615369
2019	16500667	157435724
2020	17091519	158102232
2021	17701798	158766276
2022	18332136	159427923
2023	18983188	160087240
2024	19655629	160744294
2025	20350159	161399149
2026	21067502	162051872
2027	21808410	162702525
2028	22573657	163351173
2029	23364048	163997879
2030	24180416	164642703
2031	25023624	165285710
2032	25894567	165926959
2033	26794172	166566511
2034	27723403	167204427
2035	28683258	167840768
2036	29674773	168475592
2037	30699026	169108960
2038	31757134	169740931
2039	32850261	170371565
2040	33979614	171000921
2041	35146452	171629058
2042	36352083	172256037
2043	37597872	172881917
2044	38885238	173506758
2045	40215662	174130622
2046	41590691	174753571
2047	43011937	175375666
2048	44481086	175996971
2049	45999899	176617550
2050	47570220	177237470
2051	49193977	177856796



34.Intra city - Expected Annual Operating cost, Earning and Total profit.

tra city - Expected Annual Operating cost ,Earning and Total prof

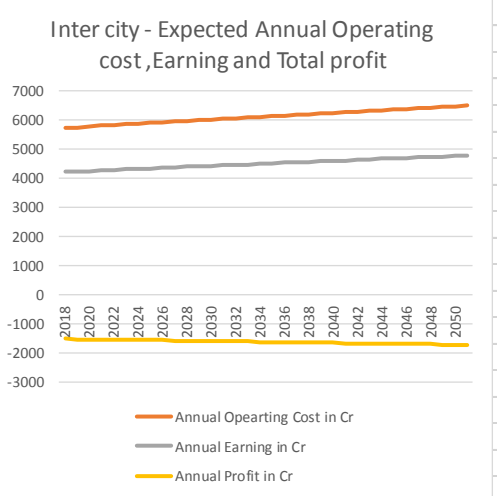
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	581	515	-65.4
2019	602	534	-68.3
2020	624	553	-70.7
2021	646	573	-73.2
2022	669	593	-75.8
2023	693	614	-78.5
2024	717	636	-81.3
2025	743	659	-84.2
2026	769	682	-87.1
2027	796	706	-90.2
2028	824	731	-93.4
2029	853	756	-96.6
2030	883	783	-100.0
2031	913	810	-103.5
2032	945	838	-107.1
2033	978	867	-110.8
2034	1012	897	-114.6
2035	1047	928	-118.6
2036	1083	960	-122.7
2037	1121	994	-126.9
2038	1159	1028	-131.3
2039	1199	1063	-135.8
2040	1240	1100	-140.5
2041	1283	1138	-145.3
2042	1327	1177	-150.2
2043	1372	1217	-155.4
2044	1419	1259	-160.7
2045	1468	1302	-166.2
2046	1518	1346	-171.9
2047	1570	1392	-177.7
2048	1624	1440	-183.8
2049	1679	1489	-190.1
2050	1736	1540	-196.5
2051	1796	1592	-203.2



35.Intercity - Expected Annual Operating cost, Earning and Total profit

er city - Expected Annual Operating cost ,Earning and Total pro

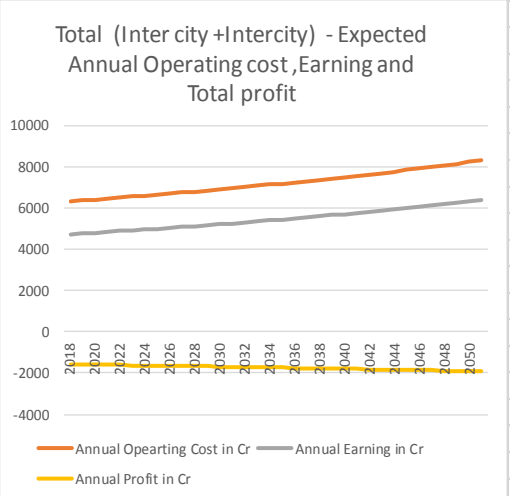
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	5716	4208	-1508.3
2019	5746	4226	-1520.3
2020	5771	4244	-1526.7
2021	5795	4262	-1533.0
2022	5819	4280	-1539.4
2023	5843	4297	-1545.7
2024	5867	4315	-1552.0
2025	5891	4333	-1558.3
2026	5915	4350	-1564.6
2027	5939	4368	-1570.9
2028	5962	4385	-1577.1
2029	5986	4403	-1583.3
2030	6009	4420	-1589.5
2031	6033	4437	-1595.7
2032	6056	4455	-1601.8
2033	6080	4472	-1608.0
2034	6103	4489	-1614.1
2035	6126	4506	-1620.2
2036	6149	4523	-1626.3
2037	6172	4540	-1632.4
2038	6196	4557	-1638.5
2039	6219	4574	-1644.5
2040	6242	4591	-1650.6
2041	6264	4608	-1656.6
2042	6287	4625	-1662.6
2043	6310	4642	-1668.6
2044	6333	4658	-1674.6
2045	6356	4675	-1680.6
2046	6379	4692	-1686.6
2047	6401	4709	-1692.6
2048	6424	4725	-1698.5
2049	6447	4742	-1704.5
2050	6469	4759	-1710.4
2051	6492	4775	-1716.4



36.Total (Intracity +Intercity) - Expected Annual Operating cost, Earning and Total profit.

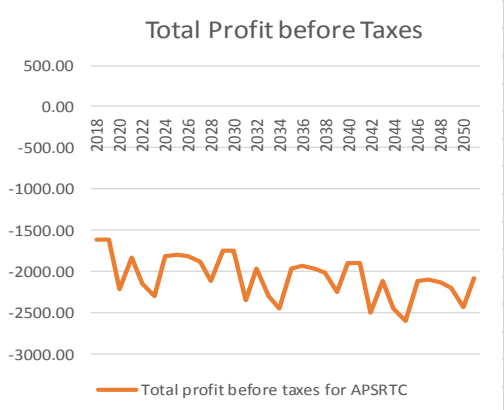
r city +Intercity) - Expected Annual Operating cost ,Earning and

Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	6297	4724	-1573.7
2019	6349	4760	-1588.5
2020	6395	4797	-1597.4
2021	6441	4835	-1606.3
2022	6488	4873	-1615.2
2023	6536	4912	-1624.3
2024	6585	4951	-1633.4
2025	6634	4991	-1642.5
2026	6684	5032	-1651.7
2027	6735	5074	-1661.1
2028	6786	5116	-1670.4
2029	6839	5159	-1679.9
2030	6892	5203	-1689.5
2031	6946	5247	-1699.1
2032	7001	5293	-1708.9
2033	7058	5339	-1718.8
2034	7115	5386	-1728.7
2035	7173	5434	-1738.8
2036	7232	5484	-1749.0
2037	7293	5534	-1759.3
2038	7355	5585	-1769.7
2039	7418	5637	-1780.3
2040	7482	5691	-1791.0
2041	7547	5745	-1801.9
2042	7614	5801	-1812.9
2043	7683	5859	-1824.0
2044	7752	5917	-1835.3
2045	7824	5977	-1846.8
2046	7897	6038	-1858.5
2047	7971	6101	-1870.3
2048	8047	6165	-1882.3
2049	8126	6231	-1894.6
2050	8205	6298	-1907.0
2051	8287	6368	-1919.6



37.Profit before taxes after Infrastructure development and Fleet Upgradation cost.

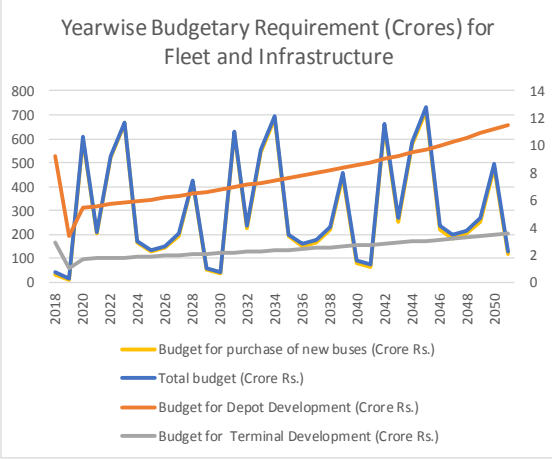
	Profit before taxes after Infrastrucuture development	
	Year	Total profit before taxes for APSRTC
	2018	-1618.64
	2019	-1608.04
	2020	-2214.53
	2021	-1825.99
	2022	-2153.77
	2023	-2304.04
	2024	-1817.67
	2025	-1787.16
	2026	-1812.49
	2027	-1873.00
	2028	-2106.16
	2029	-1750.65
	2030	-1745.57
	2031	-2347.21
	2032	-1960.19
	2033	-2289.55
	2034	-2441.46
	2035	-1956.81
	2036	-1928.09
	2037	-1955.28
	2038	-2017.73
	2039	-2252.91
	2040	-1899.51
	2041	-1896.46
	2042	-2500.37
	2043	-2115.70
	2044	-2447.52
	2045	-2601.98
	2046	-2119.99
	2047	-2094.03
	2048	-2124.55
	2049	-2190.33
	2050	-2428.67
	2051	-2078.56



9.11. Tool Outputs–Mode Share Retain scenario

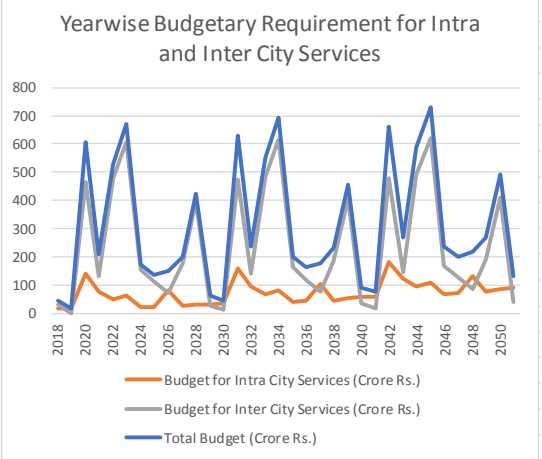
1. Year-wise Budgetary Requirement (Crores) for Fleet and Infrastructure

Year	Budget for Depot Development (Crore Rs.)	Budget for Terminal Development (Crore Rs.)	Budget for purchase of new buses (Crore Rs.)	Total budget (Crore Rs.)
2018	9	3	33	45
2019	3	1	12	17
2020	5	2	600	607
2021	6	2	202	210
2022	6	2	521	529
2023	6	2	662	670
2024	6	2	166	174
2025	6	2	127	135
2026	6	2	142	151
2027	6	2	193	202
2028	6	2	417	425
2029	7	2	52	60
2030	7	2	35	44
2031	7	2	622	631
2032	7	2	225	234
2033	7	2	544	554
2034	7	2	686	696
2035	8	2	191	201
2036	8	2	151	162
2037	8	2	168	178
2038	8	3	220	230
2039	8	3	444	455
2040	9	3	79	90
2041	9	3	63	75
2042	9	3	651	663
2043	9	3	255	267
2044	9	3	575	587
2045	10	3	717	730
2046	10	3	223	236
2047	10	3	184	198
2048	11	3	202	216
2049	11	3	255	269
2050	11	4	480	494
2051	12	4	116	131



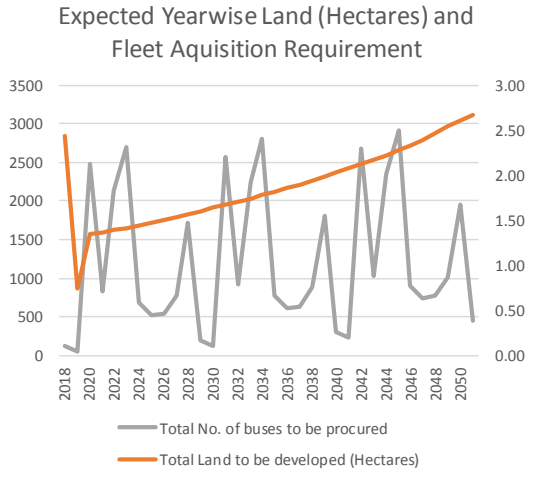
2.Year Wise Budgetary Requirement for Intra and Inter City Services.

Year	Budget for Intra City Services (Crore Rs.)	Budget for Inter City Services (Crore Rs.)	Total Budget (Crore Rs.)
2018	16	28	45
2019	17	0	17
2020	140	467	607
2021	77	133	210
2022	50	478	529
2023	61	609	670
2024	19	155	174
2025	22	112	135
2026	81	69	151
2027	24	177	202
2028	29	397	425
2029	32	28	60
2030	34	10	44
2031	158	474	631
2032	95	139	234
2033	69	485	554
2034	80	615	696
2035	39	162	201
2036	43	119	162
2037	102	76	178
2038	46	184	230
2039	51	403	455
2040	56	35	90
2041	58	17	75
2042	182	480	663
2043	120	146	267
2044	95	492	587
2045	107	622	730
2046	67	169	236
2047	72	126	198
2048	133	83	216
2049	78	191	269
2050	84	410	494
2051	89	42	131



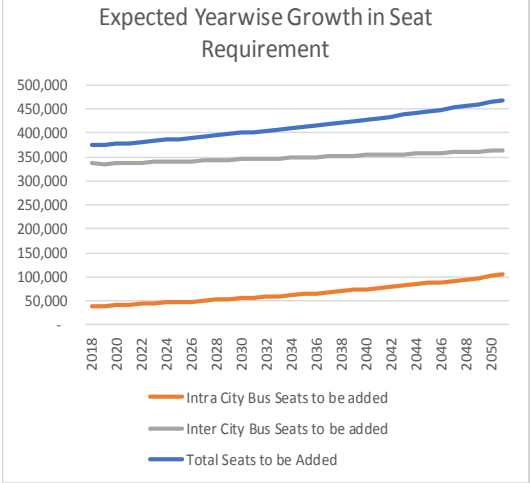
3.Expected Year-wise Land (Hectares) and Fleet Acquisition Requirement

Year	Total Land to be developed (Hectares)	Total No. of buses to be procured
2018	2.44	115
2019	0.74	43
2020	1.34	2486
2021	1.37	830
2022	1.39	2145
2023	1.42	2707
2024	1.45	676
2025	1.47	513
2026	1.50	537
2027	1.53	775
2028	1.56	1713
2029	1.59	198
2030	1.64	128
2031	1.67	2574
2032	1.71	919
2033	1.75	2236
2034	1.78	2800
2035	1.82	772
2036	1.86	610
2037	1.90	637
2038	1.94	877
2039	1.99	1818
2040	2.03	305
2041	2.08	238
2042	2.13	2686
2043	2.18	1035
2044	2.23	2355
2045	2.28	2921
2046	2.33	896
2047	2.39	738
2048	2.47	770
2049	2.54	1014
2050	2.61	1958
2051	2.68	449



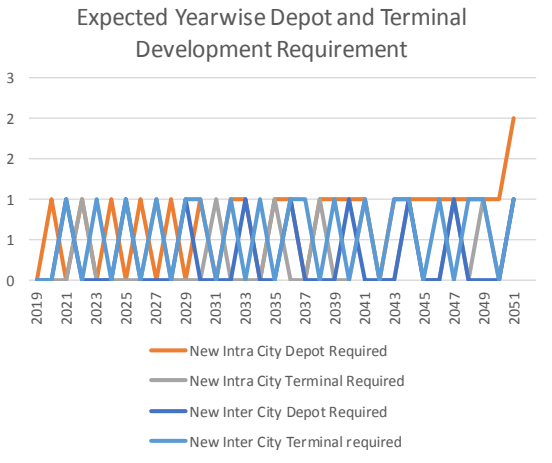
4.Expected Year-wise Growth in Seat Requirement.

Year	Intra City Bus Seats to be added	Inter City Bus Seats to be added	Total Seats to be Added
2018	38,613	336,751	375,364
2019	39,804	335,708	375,512
2020	40,997	336,533	377,530
2021	42,225	337,362	379,587
2022	43,491	338,192	381,683
2023	44,795	339,026	383,821
2024	46,139	339,862	386,001
2025	47,523	340,701	388,225
2026	48,950	341,543	390,493
2027	50,420	342,388	392,808
2028	51,934	343,235	395,170
2029	53,496	344,086	397,581
2030	55,132	344,939	400,071
2031	56,819	345,795	402,614
2032	58,559	346,653	405,213
2033	60,354	347,515	407,869
2034	62,204	348,380	410,584
2035	64,112	349,247	413,359
2036	66,080	350,118	416,198
2037	68,110	350,991	419,101
2038	70,204	351,868	422,072
2039	72,364	352,747	425,111
2040	74,592	353,630	428,222
2041	76,891	354,516	431,407
2042	79,264	355,404	434,668
2043	81,712	356,296	438,008
2044	84,238	357,191	441,429
2045	86,845	358,090	444,935
2046	89,537	358,991	448,528
2047	92,316	359,896	452,212
2048	95,213	360,804	456,017
2049	98,225	361,716	459,941
2050	101,338	362,631	463,969
2051	104,555	363,550	468,104



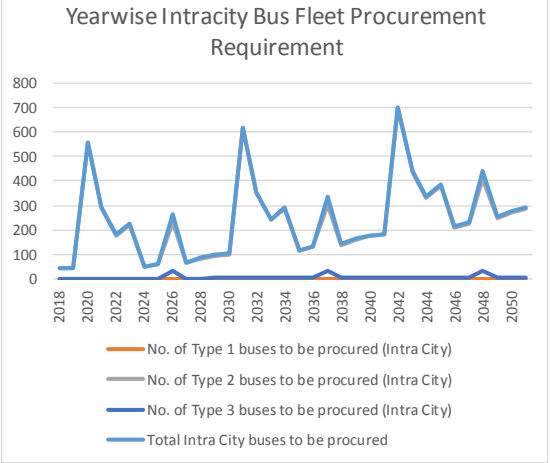
\5.Expected Year-wise Depot and Terminal Development Requirement.

Year	New Intra City Depot Required	New Intra City Terminal Required	New Inter City Depot Required	New Inter City Terminal required
2018	1	0	0	1
2019	0	0	0	0
2020	1	0	0	0
2021	0	0	1	1
2022	1	1	0	0
2023	0	0	0	1
2024	1	0	0	0
2025	0	0	1	1
2026	1	0	0	0
2027	0	1	0	1
2028	1	0	0	0
2029	0	0	1	1
2030	1	0	0	1
2031	0	1	0	0
2032	1	0	0	1
2033	1	0	1	0
2034	0	0	0	1
2035	1	1	0	0
2036	1	0	1	1
2037	0	0	0	1
2038	1	1	0	0
2039	1	0	0	1
2040	1	0	1	0
2041	1	1	0	1
2042	0	0	0	0
2043	1	0	0	1
2044	1	1	1	1
2045	1	0	0	0
2046	1	0	0	1
2047	1	1	1	0
2048	1	0	0	1
2049	1	1	0	1
2050	1	0	0	0
2051	2	1	1	1



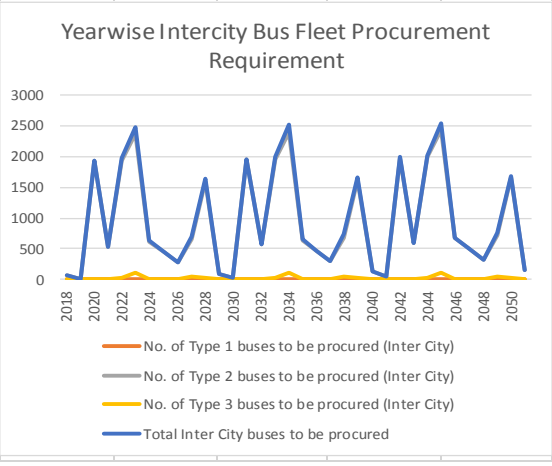
6.Yearwise Intracity Bus Fleet Procurement Requirement.

Year	No. of Type 1 buses to be procured (Intra City)	No. of Type 2 buses to be procured (Intra City)	No. of Type 3 buses to be procured (Intra City)	Total Intra City buses to be procured
2018	0	41	1	42
2019	0	42	1	43
2020	0	556	1	557
2021	0	291	1	292
2022	0	178	1	179
2023	0	223	1	224
2024	0	48	1	49
2025	0	61	1	62
2026	0	233	31	264
2027	0	67	1	68
2028	0	84	1	85
2029	0	96	2	98
2030	0	99	2	102
2031	0	615	2	617
2032	0	352	2	355
2033	0	241	2	244
2034	0	288	3	290
2035	0	115	3	118
2036	0	130	3	132
2037	0	304	33	337
2038	0	140	3	143
2039	0	160	3	163
2040	0	174	4	178
2041	0	180	4	184
2042	0	698	4	703
2043	0	438	4	443
2044	0	330	4	335
2045	0	379	5	384
2046	0	210	5	214
2047	0	227	5	232
2048	0	406	35	441
2049	0	246	5	251
2050	0	269	5	275
2051	0	287	7	293



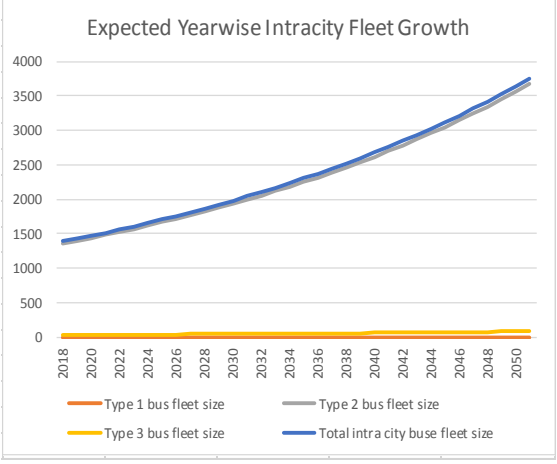
7.Year-wise Intercity Bus Fleet Procurement Requirement

Year	No. of Type 1 buses to be procured (Inter City)	No. of Type 2 buses to be procured (Inter City)	No. of Type 3 buses to be procured (Inter City)	Total Inter City buses to be procured
2018	0	72	2	73
2019	0	0	0	0
2020	0	1928	2	1930
2021	0	537	1	538
2022	0	1929	37	1966
2023	0	2368	115	2483
2024	0	617	10	627
2025	0	450	1	451
2026	0	273	1	273
2027	0	660	48	707
2028	0	1600	28	1627
2029	0	98	2	100
2030	0	26	1	26
2031	0	1954	2	1956
2032	0	563	1	564
2033	0	1955	37	1992
2034	0	2394	115	2510
2035	0	644	10	654
2036	0	477	1	478
2037	0	299	1	300
2038	0	686	48	734
2039	0	1626	28	1655
2040	0	124	3	127
2041	0	53	1	54
2042	0	1981	3	1984
2043	0	590	2	592
2044	0	1982	38	2020
2045	0	2422	116	2538
2046	0	671	11	682
2047	0	504	2	506
2048	0	327	2	328
2049	0	714	49	763
2050	0	1654	29	1683
2051	0	152	4	156



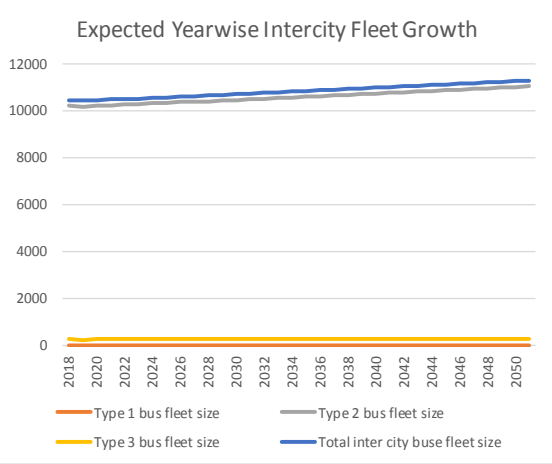
8.Expected Year-wise Intracity Fleet Growth.

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total intra city buse fleet size
2018	0	1356	31	1387
2019	0	1398	32	1430
2020	0	1440	33	1472
2021	0	1483	34	1517
2022	0	1527	35	1562
2023	0	1573	36	1609
2024	0	1620	37	1657
2025	0	1669	38	1707
2026	0	1719	39	1758
2027	0	1771	40	1811
2028	0	1824	42	1865
2029	0	1879	43	1921
2030	0	1936	44	1980
2031	0	1995	46	2041
2032	0	2056	47	2103
2033	0	2119	48	2168
2034	0	2184	50	2234
2035	0	2251	51	2303
2036	0	2320	53	2373
2037	0	2392	55	2446
2038	0	2465	56	2521
2039	0	2541	58	2599
2040	0	2619	60	2679
2041	0	2700	62	2762
2042	0	2783	63	2847
2043	0	2869	65	2935
2044	0	2958	67	3026
2045	0	3050	70	3119
2046	0	3144	72	3216
2047	0	3242	74	3316
2048	0	3343	76	3420
2049	0	3449	79	3528
2050	0	3559	81	3640
2051	0	3671	84	3755



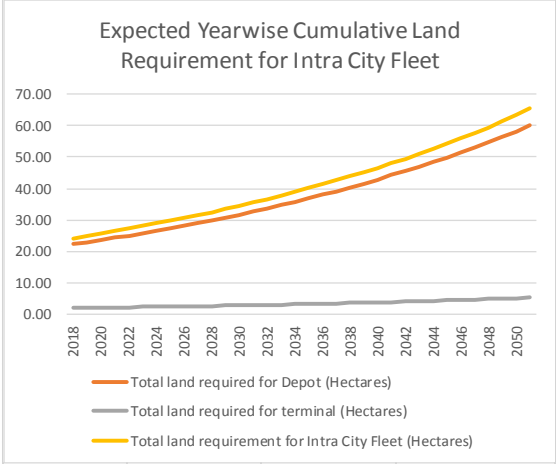
9.Expected Year-wise Intercity Fleet Growth

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total inter city buse fleet size
2018	0	10206	236	10441
2019	0	10174	235	10409
2020	0	10199	236	10435
2021	0	10224	236	10460
2022	0	10249	237	10486
2023	0	10275	237	10512
2024	0	10300	238	10538
2025	0	10326	238	10564
2026	0	10351	239	10590
2027	0	10377	240	10616
2028	0	10402	240	10643
2029	0	10428	241	10669
2030	0	10454	241	10695
2031	0	10480	242	10722
2032	0	10506	243	10748
2033	0	10532	243	10775
2034	0	10558	244	10802
2035	0	10585	244	10829
2036	0	10611	245	10856
2037	0	10637	246	10883
2038	0	10664	246	10910
2039	0	10691	247	10937
2040	0	10717	247	10965
2041	0	10744	248	10992
2042	0	10771	249	11020
2043	0	10798	249	11047
2044	0	10825	250	11075
2045	0	10852	251	11103
2046	0	10880	251	11131
2047	0	10907	252	11159
2048	0	10935	252	11187
2049	0	10962	253	11216
2050	0	10990	254	11244
2051	0	11018	254	11272



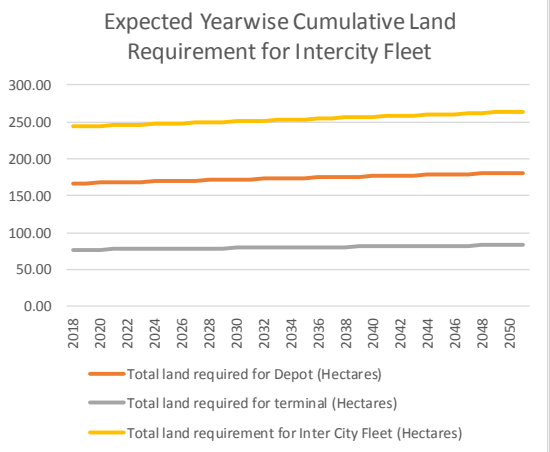
10.Expected Year-wise Cumulative Land Requirement for Intra City Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Intra City Fleet (Hectares)
2018	22.19	1.94	24.13
2019	22.87	2.00	24.88
2020	23.56	2.06	25.62
2021	24.27	2.12	26.39
2022	24.99	2.19	27.18
2023	25.74	2.25	27.99
2024	26.51	2.32	28.83
2025	27.31	2.39	29.70
2026	28.13	2.46	30.59
2027	28.97	2.54	31.51
2028	29.84	2.61	32.46
2029	30.74	2.69	33.43
2030	31.68	2.77	34.45
2031	32.65	2.86	35.51
2032	33.65	2.94	36.60
2033	34.68	3.03	37.72
2034	35.75	3.13	38.87
2035	36.84	3.22	40.07
2036	37.97	3.32	41.30
2037	39.14	3.42	42.57
2038	40.34	3.53	43.87
2039	41.59	3.64	45.22
2040	42.87	3.75	46.62
2041	44.19	3.87	48.05
2042	45.55	3.99	49.54
2043	46.96	4.11	51.07
2044	48.41	4.24	52.64
2045	49.91	4.37	54.27
2046	51.45	4.50	55.96
2047	53.05	4.64	57.69
2048	54.72	4.79	59.50
2049	56.45	4.94	61.39
2050	58.24	5.10	63.33
2051	60.08	5.26	65.34



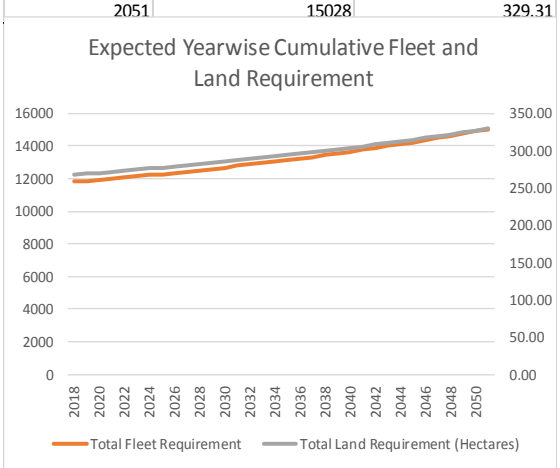
11.Expected Year-wise Cumulative Land Requirement for Intercity Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Inter City Fleet (Hectares)
2018	167.06	76.74	243.81
2019	167.06	76.74	243.81
2020	167.47	76.93	244.41
2021	167.88	77.12	245.00
2022	168.30	77.31	245.61
2023	168.71	77.50	246.21
2024	169.12	77.69	246.82
2025	169.54	77.88	247.42
2026	169.96	78.07	248.03
2027	170.38	78.27	248.64
2028	170.80	78.46	249.26
2029	171.22	78.65	249.87
2030	171.64	78.85	250.49
2031	172.07	79.04	251.11
2032	172.49	79.24	251.73
2033	172.92	79.44	252.36
2034	173.35	79.63	252.98
2035	173.78	79.83	253.61
2036	174.21	80.03	254.24
2037	174.65	80.23	254.87
2038	175.08	80.43	255.51
2039	175.52	80.63	256.14
2040	175.95	80.83	256.78
2041	176.39	81.03	257.42
2042	176.83	81.23	258.07
2043	177.28	81.44	258.71
2044	177.72	81.64	259.36
2045	178.17	81.85	260.01
2046	178.61	82.05	260.66
2047	179.06	82.26	261.32
2048	179.51	82.46	261.98
2049	179.97	82.67	262.64
2050	180.42	82.88	263.30
2051	180.88	83.09	263.97



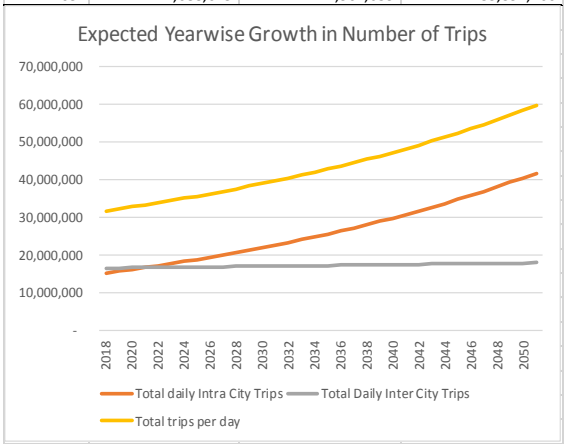
12.Expected Year-wise Cumulative Fleet and Land Requirement.

Year	Total Fleet Requirement	Total Land Requirement (Hectares)
2018	11828	267.94
2019	11839	268.68
2020	11907	270.03
2021	11977	271.39
2022	12048	272.79
2023	12121	274.20
2024	12195	275.65
2025	12271	277.12
2026	12348	278.62
2027	12427	280.15
2028	12508	281.71
2029	12590	283.31
2030	12675	284.95
2031	12763	286.62
2032	12852	288.33
2033	12943	290.07
2034	13036	291.86
2035	13132	293.68
2036	13229	295.54
2037	13329	297.44
2038	13432	299.38
2039	13537	301.37
2040	13644	303.40
2041	13754	305.48
2042	13867	307.60
2043	13982	309.78
2044	14101	312.01
2045	14222	314.29
2046	14347	316.62
2047	14475	319.01
2048	14607	321.48
2049	14743	324.02
2050	14884	326.63
2051	15028	329.31



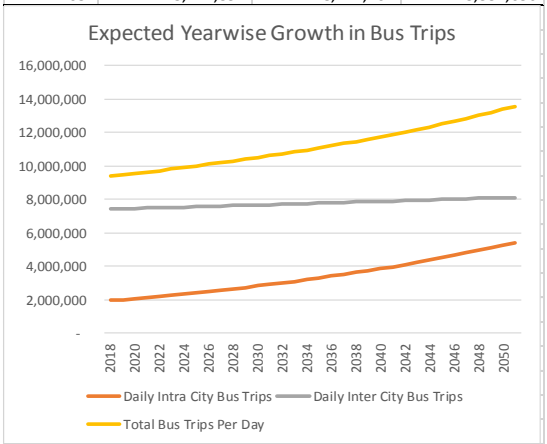
13.Expected Year-wise Growth in Number of Trips.

Year	Total daily Intra City Trips	Total Daily Inter City Trips	Total trips per day
2018	15,188,281	16,488,485	31,676,766
2019	15,658,362	16,529,091	32,187,453
2020	16,143,044	16,569,828	32,712,872
2021	16,642,787	16,610,698	33,253,485
2022	17,158,064	16,651,701	33,809,765
2023	17,689,365	16,692,838	34,382,203
2024	18,237,195	16,734,109	34,971,304
2025	18,802,076	16,775,515	35,577,591
2026	19,384,546	16,817,058	36,201,604
2027	19,985,163	16,858,736	36,843,899
2028	20,604,503	16,900,552	37,505,055
2029	21,243,161	16,942,507	38,185,668
2030	21,901,751	16,984,600	38,886,351
2031	22,580,909	17,026,833	39,607,742
2032	23,281,292	17,069,207	40,350,499
2033	24,003,580	17,111,723	41,115,303
2034	24,748,477	17,154,381	41,902,858
2035	25,516,709	17,197,182	42,713,891
2036	26,309,031	17,240,129	43,549,160
2037	27,126,221	17,283,221	44,409,442
2038	27,969,086	17,326,461	45,295,547
2039	28,838,462	17,369,848	46,208,310
2040	29,735,214	17,413,385	47,148,599
2041	30,660,241	17,457,073	48,117,314
2042	31,614,472	17,500,914	49,115,386
2043	32,598,872	17,544,908	50,143,780
2044	33,614,441	17,589,058	51,203,499
2045	34,662,218	17,633,366	52,295,584
2046	35,743,280	17,677,833	53,421,113
2047	36,858,746	17,722,461	54,581,207
2048	38,009,780	17,767,253	55,777,033
2049	39,197,592	17,812,211	57,009,803
2050	40,423,437	17,857,338	58,280,775
2051	41,688,625	17,902,635	59,591,260



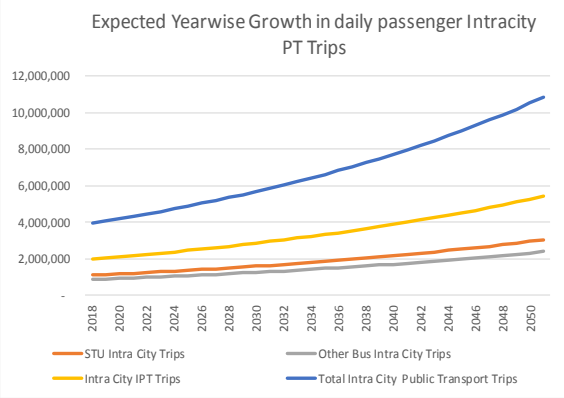
14.Expected Year-wise Growth in Bus Trips

Year	Daily Intra City Bus Trips	Daily Inter City Bus Trips	Total Bus Trips Per Day
2018	1,965,671	7,426,444	9,392,115
2019	2,026,617	7,446,477	9,473,095
2020	2,089,467	7,466,581	9,556,048
2021	2,154,282	7,486,756	9,641,038
2022	2,221,124	7,507,001	9,728,126
2023	2,290,060	7,527,318	9,817,378
2024	2,361,156	7,547,707	9,908,863
2025	2,434,482	7,568,168	10,002,650
2026	2,510,110	7,588,702	10,098,812
2027	2,588,115	7,609,308	10,197,424
2028	2,668,576	7,629,988	10,298,564
2029	2,751,571	7,650,743	10,402,313
2030	2,837,184	7,671,571	10,508,755
2031	2,925,502	7,692,474	10,617,976
2032	3,016,614	7,713,453	10,730,067
2033	3,110,612	7,734,508	10,845,120
2034	3,207,594	7,755,639	10,963,232
2035	3,307,658	7,776,847	11,084,505
2036	3,410,910	7,798,132	11,209,042
2037	3,517,456	7,819,496	11,336,952
2038	3,627,410	7,840,939	11,468,349
2039	3,740,888	7,862,461	11,603,349
2040	3,858,011	7,884,064	11,742,075
2041	3,978,906	7,905,748	11,884,654
2042	4,103,706	7,927,513	12,031,219
2043	4,232,547	7,949,362	12,181,909
2044	4,365,572	7,971,295	12,336,867
2045	4,502,932	7,993,312	12,496,244
2046	4,644,783	8,015,415	12,660,198
2047	4,791,288	8,037,605	12,828,893
2048	4,942,618	8,059,884	13,002,502
2049	5,098,953	8,082,252	13,181,205
2050	5,260,478	8,104,712	13,365,190
2051	5,427,392	8,127,264	13,554,656



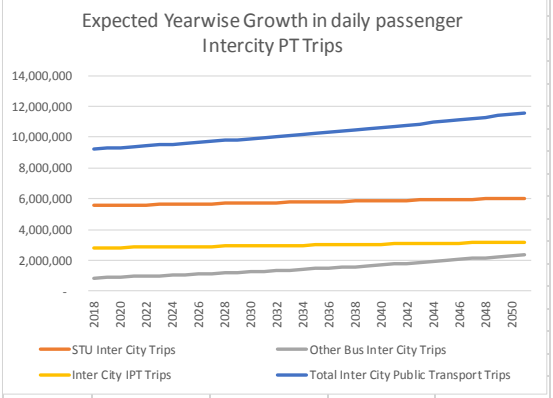
15.Expected Year-wise Growth in daily Intracity passenger intracity PT Trips.

Year	STU Intra City Trips	Other Bus Intra City Trips	Intra City IPT Trips	Total Intra City Public Transport Trips
2018	1,100,078	865,594	1,973,959	3,939,630
2019	1,134,188	892,429	2,035,060	4,061,677
2020	1,169,364	920,103	2,098,060	4,187,527
2021	1,205,641	948,641	2,163,019	4,317,301
2022	1,243,052	978,072	2,229,997	4,451,122
2023	1,281,635	1,008,424	2,299,060	4,589,119
2024	1,321,428	1,039,727	2,370,272	4,731,427
2025	1,362,470	1,072,012	2,443,701	4,878,183
2026	1,404,800	1,105,310	2,519,418	5,029,528
2027	1,448,461	1,139,654	2,597,496	5,185,611
2028	1,493,497	1,175,078	2,678,009	5,346,584
2029	1,539,953	1,211,618	2,761,035	5,512,606
2030	1,587,874	1,249,310	2,846,654	5,683,838
2031	1,637,310	1,288,192	2,934,948	5,860,450
2032	1,688,311	1,328,303	3,026,005	6,042,618
2033	1,740,928	1,369,684	3,119,911	6,230,524
2034	1,795,216	1,412,378	3,216,760	6,424,354
2035	1,851,231	1,456,427	3,316,646	6,624,304
2036	1,909,031	1,501,879	3,419,667	6,830,577
2037	1,968,677	1,548,780	3,525,925	7,043,381
2038	2,030,231	1,597,179	3,635,525	7,262,935
2039	2,093,760	1,647,128	3,748,577	7,489,465
2040	2,159,331	1,698,680	3,865,194	7,723,205
2041	2,227,015	1,751,891	3,985,493	7,964,399
2042	2,296,888	1,806,818	4,109,595	8,213,301
2043	2,369,025	1,863,522	4,237,627	8,470,174
2044	2,443,507	1,922,065	4,369,720	8,735,293
2045	2,520,419	1,982,513	4,506,010	9,008,942
2046	2,599,848	2,044,935	4,646,638	9,291,421
2047	2,681,887	2,109,402	4,791,750	9,583,038
2048	2,766,630	2,175,988	4,941,499	9,884,117
2049	2,854,180	2,244,773	5,096,044	10,194,997
2050	2,944,641	2,315,838	5,255,550	10,516,028
2051	3,038,124	2,389,268	5,420,188	10,847,580



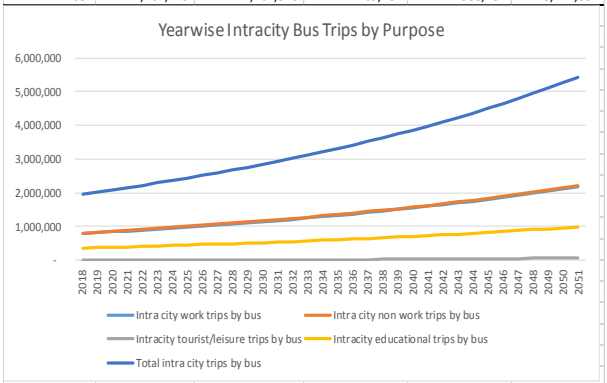
16.Expected Year-wise Growth in daily Intercity passenger intercity PT Trips.

Year	STU Inter City Trips	Other Bus Inter City Trips	Inter City IPT Trips	Total Inter City Public Transport Trips
2018	5,548,693	865,594	2,811,699	9,225,986
2019	5,562,368	892,429	2,822,142	9,276,939
2020	5,576,088	920,103	2,832,629	9,328,820
2021	5,589,852	948,641	2,843,161	9,381,654
2022	5,603,662	978,072	2,853,738	9,435,472
2023	5,617,516	1,008,424	2,864,360	9,490,300
2024	5,631,416	1,039,727	2,875,028	9,546,171
2025	5,645,361	1,072,012	2,885,741	9,603,114
2026	5,659,352	1,105,310	2,896,501	9,661,163
2027	5,673,390	1,139,654	2,907,306	9,720,350
2028	5,687,473	1,175,078	2,918,159	9,780,710
2029	5,701,603	1,211,618	2,929,058	9,842,279
2030	5,715,780	1,249,310	2,940,004	9,905,095
2031	5,730,005	1,288,192	2,950,998	9,969,195
2032	5,744,276	1,328,303	2,962,040	10,034,619
2033	5,758,596	1,369,684	2,973,130	10,101,410
2034	5,772,963	1,412,378	2,984,268	10,169,609
2035	5,787,380	1,456,427	2,995,455	10,239,262
2036	5,801,845	1,501,879	3,006,692	10,310,415
2037	5,816,359	1,548,780	3,017,978	10,383,117
2038	5,830,923	1,597,179	3,029,314	10,457,416
2039	5,845,537	1,647,128	3,040,701	10,533,366
2040	5,860,201	1,698,680	3,052,138	10,611,020
2041	5,874,917	1,751,891	3,063,627	10,690,435
2042	5,889,684	1,806,818	3,075,168	10,771,670
2043	5,904,503	1,863,522	3,086,761	10,854,786
2044	5,919,375	1,922,065	3,098,407	10,939,848
2045	5,934,300	1,982,513	3,110,107	11,026,921
2046	5,949,279	2,044,935	3,121,862	11,116,076
2047	5,964,313	2,109,402	3,133,671	11,207,386
2048	5,979,402	2,175,988	3,145,536	11,300,926
2049	5,994,547	2,244,773	3,157,458	11,396,778
2050	6,009,750	2,315,838	3,169,437	11,495,025
2051	6,025,010	2,389,268	3,181,475	11,595,753



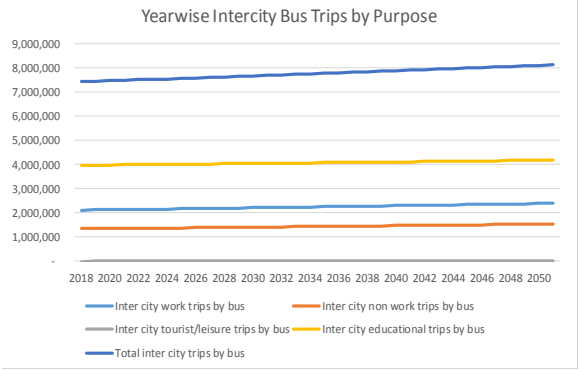
17. Year-wise Intracity Bus Trips by Purpose

Year	Intra city work trips by bus	Intra city non work trips by bus	Intracity tourist/leisure trips by bus	Intracity educational trips by bus	Total intra city trips by bus
2018	793,858	806,616	2,992	362,205	1,965,671
2019	818,389	831,541	3,291	373,397	2,026,617
2020	843,677	857,236	3,620	384,935	2,089,467
2021	869,746	883,724	3,982	396,829	2,154,282
2022	896,622	911,031	4,380	409,091	2,221,124
2023	924,327	939,182	4,818	421,732	2,290,060
2024	952,889	968,203	5,300	434,764	2,361,156
2025	982,333	998,120	5,830	448,198	2,434,482
2026	1,012,687	1,028,962	6,413	462,047	2,510,110
2027	1,043,979	1,060,757	7,054	476,325	2,588,115
2028	1,076,238	1,093,534	7,760	491,043	2,668,576
2029	1,109,494	1,127,325	8,536	506,216	2,751,571
2030	1,143,777	1,162,159	9,389	521,858	2,837,184
2031	1,179,120	1,198,070	10,328	537,984	2,925,502
2032	1,215,555	1,235,090	11,361	554,607	3,016,614
2033	1,253,116	1,273,254	12,497	571,745	3,110,612
2034	1,291,837	1,312,598	13,747	589,412	3,207,594
2035	1,331,755	1,353,157	15,122	607,624	3,307,658
2036	1,372,906	1,394,970	16,634	626,400	3,410,910
2037	1,415,329	1,438,074	18,297	645,756	3,517,456
2038	1,459,062	1,482,511	20,127	665,710	3,627,410
2039	1,504,147	1,528,320	22,140	686,280	3,740,888
2040	1,550,626	1,575,545	24,354	707,486	3,858,011
2041	1,598,540	1,624,230	26,789	729,348	3,978,906
2042	1,647,935	1,674,419	29,468	751,884	4,103,706
2043	1,698,856	1,726,158	32,415	775,118	4,232,547
2044	1,751,351	1,779,496	35,657	799,069	4,365,572
2045	1,805,467	1,834,483	39,222	823,760	4,502,932
2046	1,861,256	1,891,168	43,144	849,214	4,644,783
2047	1,918,769	1,949,605	47,459	875,455	4,791,288
2048	1,978,059	2,009,848	52,205	902,506	4,942,618
2049	2,039,181	2,071,953	57,425	930,394	5,098,953
2050	2,102,192	2,135,976	63,168	959,143	5,260,478
2051	2,167,149	2,201,978	69,484	988,781	5,427,392



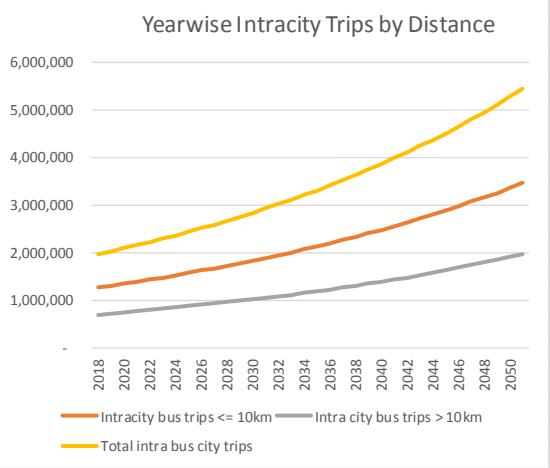
18. Year-wise Intercity Bus Trips by Purpose

Year	Inter city work trips by bus	Inter city non work trips by bus	Inter city tourist/leisure trips by bus	Inter city educational trips by bus	Total inter city trips by bus
2018	2,114,729	1,341,778	71	3,969,866	7,426,444
2019	2,122,791	1,347,391	78	3,976,218	7,446,477
2020	2,130,888	1,353,028	86	3,982,580	7,466,581
2021	2,139,019	1,358,690	94	3,988,952	7,486,756
2022	2,147,186	1,364,377	104	3,995,334	7,507,001
2023	2,155,387	1,370,090	114	4,001,727	7,527,318
2024	2,163,624	1,375,828	125	4,008,130	7,547,707
2025	2,171,895	1,381,592	138	4,014,543	7,568,168
2026	2,180,202	1,387,382	152	4,020,966	7,588,702
2027	2,188,545	1,393,197	167	4,027,400	7,609,308
2028	2,196,924	1,399,038	184	4,033,843	7,629,988
2029	2,205,338	1,404,905	202	4,040,298	7,650,743
2030	2,213,789	1,410,798	222	4,046,762	7,671,571
2031	2,222,275	1,416,718	244	4,053,237	7,692,474
2032	2,230,799	1,422,664	269	4,059,722	7,713,453
2033	2,239,358	1,428,636	296	4,066,218	7,734,508
2034	2,247,955	1,434,635	325	4,072,724	7,755,639
2035	2,256,588	1,440,661	358	4,079,240	7,776,847
2036	2,265,259	1,446,713	394	4,085,767	7,798,132
2037	2,273,966	1,452,793	433	4,092,304	7,819,496
2038	2,282,711	1,458,900	476	4,098,852	7,840,939
2039	2,291,494	1,465,034	524	4,105,410	7,862,461
2040	2,300,314	1,471,195	576	4,111,978	7,884,064
2041	2,309,173	1,477,384	634	4,118,558	7,905,748
2042	2,318,069	1,483,600	697	4,125,147	7,927,513
2043	2,327,004	1,489,844	767	4,131,748	7,949,362
2044	2,335,977	1,496,116	844	4,138,358	7,971,295
2045	2,344,988	1,502,416	928	4,144,980	7,993,312
2046	2,354,039	1,508,744	1,021	4,151,612	8,015,415
2047	2,363,128	1,515,101	1,123	4,158,254	8,037,605
2048	2,372,256	1,521,485	1,235	4,164,907	8,059,884
2049	2,381,424	1,527,898	1,359	4,171,571	8,082,252
2050	2,390,631	1,534,340	1,494	4,178,246	8,104,712
2051	2,399,878	1,540,811	1,644	4,184,931	8,127,264



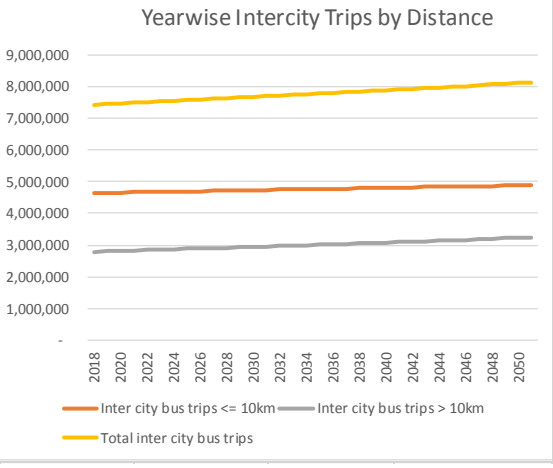
19.Year-wise Intracity Trips by Distance

Year	Intracity bus trips <= 10km	Intra city bus trips > 10km	Total intra bus city trips
2018	1,266,868	698,804	1,965,671
2019	1,306,015	720,602	2,026,617
2020	1,346,372	743,095	2,089,467
2021	1,387,976	766,306	2,154,282
2022	1,430,866	790,258	2,221,124
2023	1,475,081	814,979	2,290,060
2024	1,520,663	840,493	2,361,156
2025	1,567,653	866,828	2,434,482
2026	1,616,096	894,014	2,510,110
2027	1,666,035	922,080	2,588,115
2028	1,717,518	951,057	2,668,576
2029	1,770,592	980,979	2,751,571
2030	1,825,306	1,011,878	2,837,184
2031	1,881,712	1,043,790	2,925,502
2032	1,939,860	1,076,754	3,016,614
2033	1,999,806	1,110,806	3,110,612
2034	2,061,604	1,145,990	3,207,594
2035	2,125,312	1,182,346	3,307,658
2036	2,190,990	1,219,920	3,410,910
2037	2,258,697	1,258,759	3,517,456
2038	2,328,497	1,298,913	3,627,410
2039	2,400,455	1,340,433	3,740,888
2040	2,474,636	1,383,375	3,858,011
2041	2,551,111	1,427,795	3,978,906
2042	2,629,950	1,473,756	4,103,706
2043	2,711,225	1,521,321	4,232,547
2044	2,795,013	1,570,559	4,365,572
2045	2,881,392	1,621,541	4,502,932
2046	2,970,440	1,674,343	4,644,783
2047	3,062,242	1,729,047	4,791,288
2048	3,156,881	1,785,737	4,942,618
2049	3,254,447	1,844,506	5,098,953
2050	3,355,029	1,905,449	5,260,478
2051	3,458,721	1,968,671	5,427,392



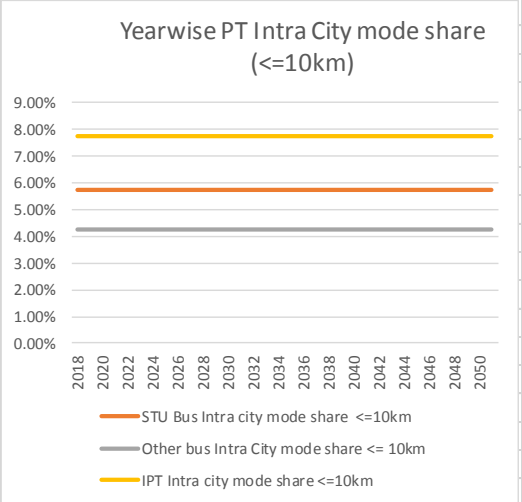
20. Year-wise Intercity Trips by Distance

Year	Inter city bus trips <= 10km	Inter city bus trips > 10km	Total inter city bus trips
2018	4,638,257	2,788,187	7,426,444
2019	4,645,678	2,800,799	7,446,477
2020	4,653,112	2,813,470	7,466,581
2021	4,660,557	2,826,199	7,486,756
2022	4,668,014	2,838,988	7,507,001
2023	4,675,482	2,851,836	7,527,318
2024	4,682,963	2,864,744	7,547,707
2025	4,690,456	2,877,712	7,568,168
2026	4,697,961	2,890,741	7,588,702
2027	4,705,478	2,903,831	7,609,308
2028	4,713,006	2,916,982	7,629,988
2029	4,720,547	2,930,195	7,650,743
2030	4,728,100	2,943,471	7,671,571
2031	4,735,665	2,956,809	7,692,474
2032	4,743,243	2,970,210	7,713,453
2033	4,750,832	2,983,676	7,734,508
2034	4,758,433	2,997,205	7,755,639
2035	4,766,047	3,010,800	7,776,847
2036	4,773,673	3,024,459	7,798,132
2037	4,781,311	3,038,185	7,819,496
2038	4,788,961	3,051,978	7,840,939
2039	4,796,624	3,065,837	7,862,461
2040	4,804,299	3,079,765	7,884,064
2041	4,811,986	3,093,762	7,905,748
2042	4,819,685	3,107,828	7,927,513
2043	4,827,397	3,121,965	7,949,362
2044	4,835,121	3,136,173	7,971,295
2045	4,842,858	3,150,454	7,993,312
2046	4,850,607	3,164,808	8,015,415
2047	4,858,368	3,179,237	8,037,605
2048	4,866,142	3,193,742	8,059,884
2049	4,873,929	3,208,324	8,082,252
2050	4,881,728	3,222,984	8,104,712
2051	4,889,539	3,237,725	8,127,264



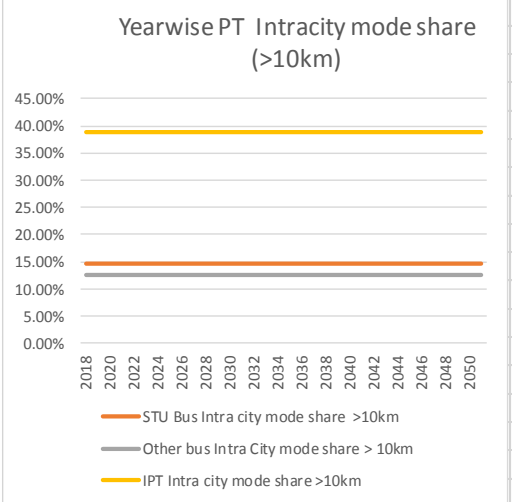
21.Yearwise PT Intra City mode share (<=10km)

Year	STU Bus Intra city mode share <=10km	Other bus Intra City mode share <= 10km	IPT Intra city mode share <=10km
2018	5.75%	4.28%	7.74%
2019	5.75%	4.28%	7.74%
2020	5.75%	4.28%	7.74%
2021	5.75%	4.28%	7.74%
2022	5.75%	4.28%	7.74%
2023	5.75%	4.28%	7.74%
2024	5.75%	4.28%	7.74%
2025	5.75%	4.28%	7.74%
2026	5.75%	4.28%	7.74%
2027	5.75%	4.28%	7.74%
2028	5.75%	4.28%	7.74%
2029	5.75%	4.28%	7.74%
2030	5.75%	4.28%	7.74%
2031	5.75%	4.28%	7.74%
2032	5.75%	4.28%	7.74%
2033	5.75%	4.28%	7.74%
2034	5.75%	4.28%	7.74%
2035	5.75%	4.28%	7.74%
2036	5.75%	4.28%	7.74%
2037	5.75%	4.28%	7.74%
2038	5.75%	4.28%	7.74%
2039	5.75%	4.28%	7.74%
2040	5.75%	4.28%	7.74%
2041	5.75%	4.28%	7.74%
2042	5.75%	4.28%	7.74%
2043	5.75%	4.28%	7.74%
2044	5.75%	4.28%	7.74%
2045	5.75%	4.28%	7.74%
2046	5.75%	4.28%	7.74%
2047	5.75%	4.28%	7.74%
2048	5.75%	4.28%	7.74%
2049	5.75%	4.28%	7.74%
2050	5.75%	4.28%	7.74%
2051	5.75%	4.28%	7.74%



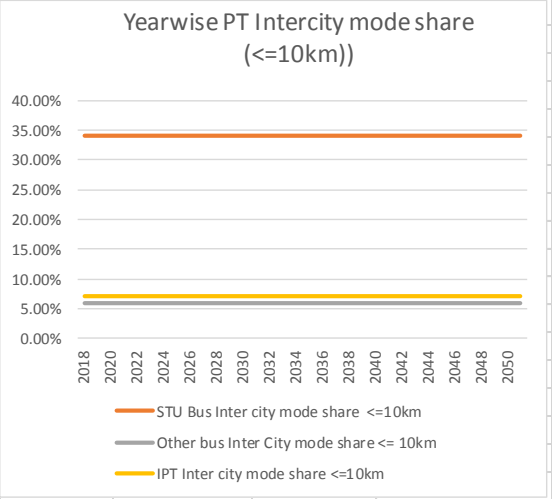
22. Year-wise PT Intracity mode share (>10km)

Year	STU Bus Intra city mode share >10km	Other bus Intra City mode share > 10km	IPT Intra city mode share >10km
2018	14.64%	12.70%	38.96%
2019	14.64%	12.70%	38.96%
2020	14.64%	12.70%	38.96%
2021	14.64%	12.70%	38.96%
2022	14.64%	12.70%	38.96%
2023	14.64%	12.70%	38.96%
2024	14.64%	12.70%	38.96%
2025	14.64%	12.70%	38.96%
2026	14.64%	12.70%	38.96%
2027	14.64%	12.70%	38.96%
2028	14.64%	12.70%	38.96%
2029	14.64%	12.70%	38.96%
2030	14.64%	12.70%	38.96%
2031	14.64%	12.70%	38.96%
2032	14.64%	12.70%	38.96%
2033	14.64%	12.70%	38.96%
2034	14.64%	12.70%	38.96%
2035	14.64%	12.70%	38.96%
2036	14.64%	12.70%	38.96%
2037	14.64%	12.70%	38.96%
2038	14.64%	12.70%	38.96%
2039	14.64%	12.70%	38.96%
2040	14.64%	12.70%	38.96%
2041	14.64%	12.70%	38.96%
2042	14.64%	12.70%	38.96%
2043	14.64%	12.70%	38.96%
2044	14.64%	12.70%	38.96%
2045	14.64%	12.70%	38.96%
2046	14.64%	12.70%	38.96%
2047	14.64%	12.70%	38.96%
2048	14.64%	12.70%	38.96%
2049	14.64%	12.70%	38.96%
2050	14.64%	12.70%	38.96%
2051	14.64%	12.70%	38.96%



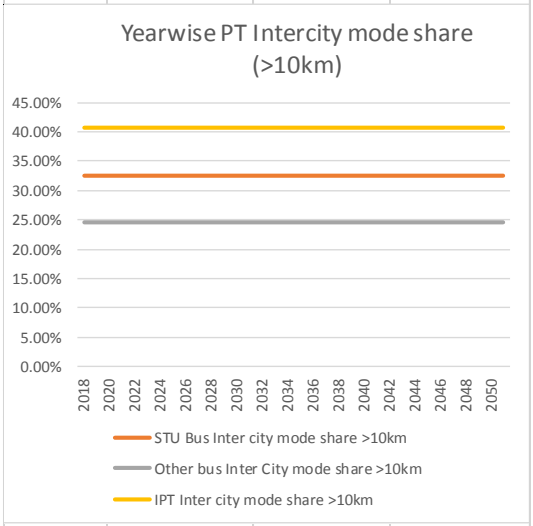
23.Year-wise PT Intercity mode share (<=10km)

Year	STU Bus Inter city mode share <=10km	Other bus Inter City mode share <= 10km	IPT Inter city mode share <=10km
2018	34.07%	5.84%	7.15%
2019	34.07%	5.84%	7.15%
2020	34.07%	5.84%	7.15%
2021	34.07%	5.84%	7.15%
2022	34.07%	5.84%	7.15%
2023	34.07%	5.84%	7.15%
2024	34.07%	5.84%	7.15%
2025	34.07%	5.84%	7.15%
2026	34.07%	5.84%	7.15%
2027	34.07%	5.84%	7.15%
2028	34.07%	5.84%	7.15%
2029	34.07%	5.84%	7.15%
2030	34.07%	5.84%	7.15%
2031	34.07%	5.84%	7.15%
2032	34.07%	5.84%	7.15%
2033	34.07%	5.84%	7.15%
2034	34.07%	5.84%	7.15%
2035	34.07%	5.84%	7.15%
2036	34.07%	5.84%	7.15%
2037	34.07%	5.84%	7.15%
2038	34.07%	5.84%	7.15%
2039	34.07%	5.84%	7.15%
2040	34.07%	5.84%	7.15%
2041	34.07%	5.84%	7.15%
2042	34.07%	5.84%	7.15%
2043	34.07%	5.84%	7.15%
2044	34.07%	5.84%	7.15%
2045	34.07%	5.84%	7.15%
2046	34.07%	5.84%	7.15%
2047	34.07%	5.84%	7.15%
2048	34.07%	5.84%	7.15%
2049	34.07%	5.84%	7.15%
2050	34.07%	5.84%	7.15%
2051	34.07%	5.84%	7.15%



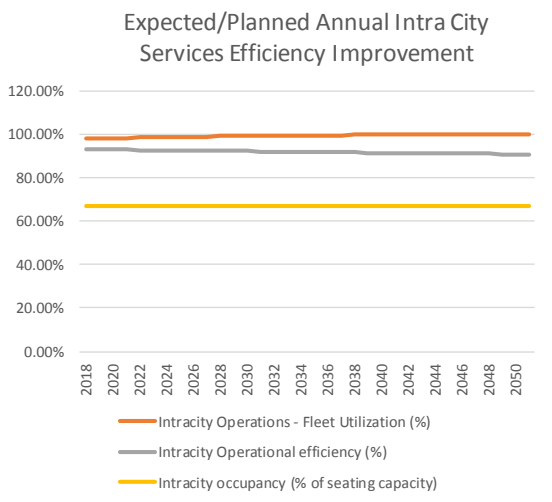
24. Year-wise PT Intercity mode share (>10km)

Year	STU Bus Inter city mode share >10km	Other bus Inter City mode share >10km	IPT Inter city mode share >10km
2018	32.66%	24.65%	40.72%
2019	32.66%	24.65%	40.72%
2020	32.66%	24.65%	40.72%
2021	32.66%	24.65%	40.72%
2022	32.66%	24.65%	40.72%
2023	32.66%	24.65%	40.72%
2024	32.66%	24.65%	40.72%
2025	32.66%	24.65%	40.72%
2026	32.66%	24.65%	40.72%
2027	32.66%	24.65%	40.72%
2028	32.66%	24.65%	40.72%
2029	32.66%	24.65%	40.72%
2030	32.66%	24.65%	40.72%
2031	32.66%	24.65%	40.72%
2032	32.66%	24.65%	40.72%
2033	32.66%	24.65%	40.72%
2034	32.66%	24.65%	40.72%
2035	32.66%	24.65%	40.72%
2036	32.66%	24.65%	40.72%
2037	32.66%	24.65%	40.72%
2038	32.66%	24.65%	40.72%
2039	32.66%	24.65%	40.72%
2040	32.66%	24.65%	40.72%
2041	32.66%	24.65%	40.72%
2042	32.66%	24.65%	40.72%
2043	32.66%	24.65%	40.72%
2044	32.66%	24.65%	40.72%
2045	32.66%	24.65%	40.72%
2046	32.66%	24.65%	40.72%
2047	32.66%	24.65%	40.72%
2048	32.66%	24.65%	40.72%
2049	32.66%	24.65%	40.72%
2050	32.66%	24.65%	40.72%
2051	32.66%	24.65%	40.72%



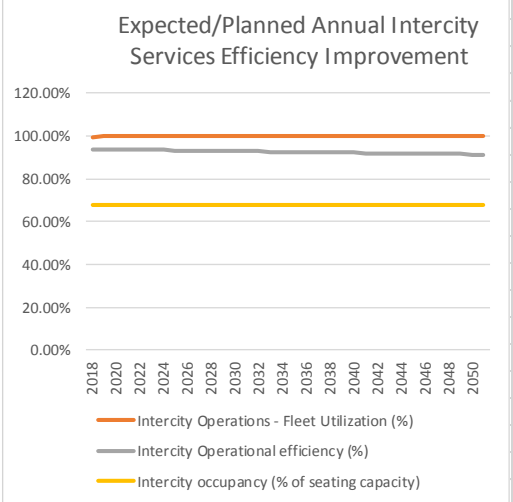
25.Expected/Planned Annual Intra City Services Efficiency Improvement

Year	Intracity Operations - Fleet Utilization (%)	Intracity Operational efficiency (%)	Intracity occupancy (% of seating capacity)
2018	97.98%	93.00%	67.00%
2019	98.08%	92.92%	67.00%
2020	98.18%	92.84%	67.00%
2021	98.28%	92.76%	67.00%
2022	98.38%	92.68%	67.00%
2023	98.48%	92.60%	67.00%
2024	98.58%	92.52%	67.00%
2025	98.68%	92.45%	67.00%
2026	98.78%	92.37%	67.00%
2027	98.88%	92.30%	67.00%
2028	98.98%	92.22%	67.00%
2029	99.08%	92.15%	67.00%
2030	99.13%	92.07%	67.00%
2031	99.18%	92.00%	67.00%
2032	99.23%	91.93%	67.00%
2033	99.28%	91.86%	67.00%
2034	99.33%	91.79%	67.00%
2035	99.38%	91.72%	67.00%
2036	99.43%	91.65%	67.00%
2037	99.48%	91.58%	67.00%
2038	99.53%	91.51%	67.00%
2039	99.58%	91.44%	67.00%
2040	99.63%	91.38%	67.00%
2041	99.68%	91.31%	67.00%
2042	99.73%	91.24%	67.00%
2043	99.78%	91.18%	67.00%
2044	99.83%	91.11%	67.00%
2045	99.88%	91.05%	67.00%
2046	99.93%	90.99%	67.00%
2047	99.98%	90.92%	67.00%
2048	100.00%	90.86%	67.00%
2049	100.00%	90.80%	67.00%
2050	100.00%	90.74%	67.00%
2051	100.00%	90.68%	67.00%



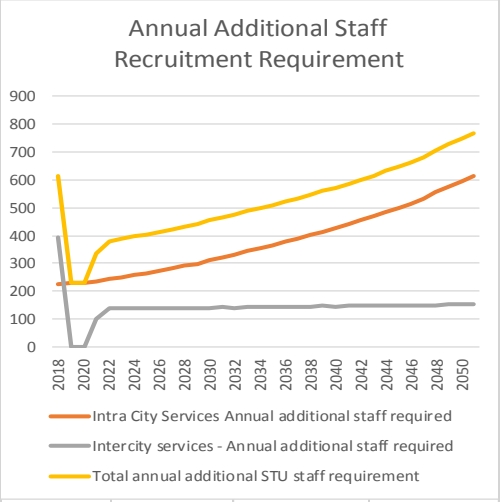
26.Expected/Planned Annual Intercity Services Efficiency Improvement

Year	Intercity Operations - Fleet Utilization (%)	Intercity Operational efficiency (%)	Intercity occupancy (% of seating capacity)
2018	99.35%	94.00%	68.00%
2019	100.00%	93.91%	68.00%
2020	100.00%	93.82%	68.00%
2021	100.00%	93.73%	68.00%
2022	100.00%	93.64%	68.00%
2023	100.00%	93.56%	68.00%
2024	100.00%	93.47%	68.00%
2025	100.00%	93.39%	68.00%
2026	100.00%	93.30%	68.00%
2027	100.00%	93.22%	68.00%
2028	100.00%	93.14%	68.00%
2029	100.00%	93.05%	68.00%
2030	100.00%	92.97%	68.00%
2031	100.00%	92.89%	68.00%
2032	100.00%	92.81%	68.00%
2033	100.00%	92.73%	68.00%
2034	100.00%	92.65%	68.00%
2035	100.00%	92.58%	68.00%
2036	100.00%	92.50%	68.00%
2037	100.00%	92.42%	68.00%
2038	100.00%	92.35%	68.00%
2039	100.00%	92.27%	68.00%
2040	100.00%	92.20%	68.00%
2041	100.00%	92.12%	68.00%
2042	100.00%	92.05%	68.00%
2043	100.00%	91.98%	68.00%
2044	100.00%	91.91%	68.00%
2045	100.00%	91.83%	68.00%
2046	100.00%	91.76%	68.00%
2047	100.00%	91.69%	68.00%
2048	100.00%	91.62%	68.00%
2049	100.00%	91.56%	68.00%
2050	100.00%	91.49%	68.00%
2051	100.00%	91.42%	68.00%



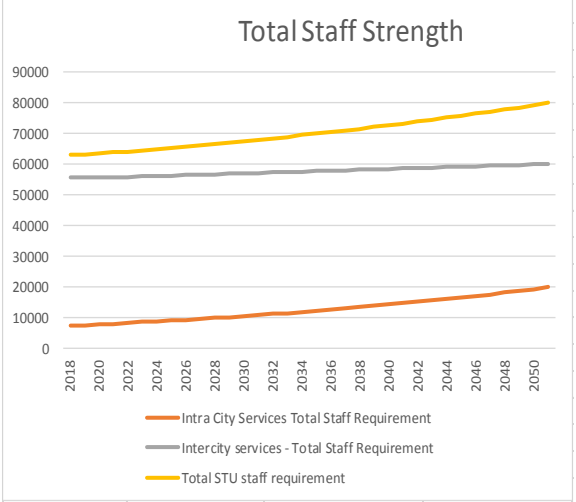
27.Annual Additional Staff Recruitment Requirement

Year	Intra City Services Annual additional staff required	Intercity services - Annual additional staff required	Total annual additional STU staff requirement
2018	223	392	615
2019	228	0	228
2020	228	0	228
2021	235	101	336
2022	243	137	380
2023	249	138	387
2024	258	138	396
2025	265	139	404
2026	273	139	412
2027	281	140	421
2028	290	140	430
2029	299	140	439
2030	313	141	454
2031	323	142	465
2032	333	141	474
2033	344	143	487
2034	354	143	497
2035	365	143	508
2036	377	144	521
2037	389	144	533
2038	401	145	546
2039	413	146	559
2040	427	145	572
2041	440	147	587
2042	454	147	601
2043	468	147	615
2044	484	148	632
2045	499	148	647
2046	515	149	664
2047	532	150	682
2048	555	150	705
2049	577	151	728
2050	596	151	747
2051	615	152	767



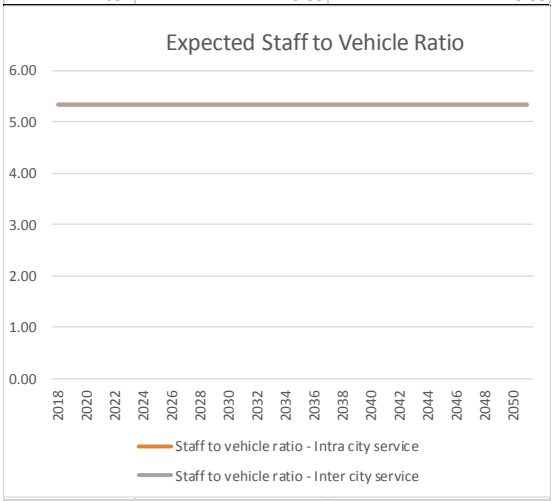
28. Total Staff Strength

Year	Intra City Services Total Staff Requirement	Intercity services - Total Staff Requirement	Total STU staff requirement
2018	7392	55653	63045
2019	7620	55653	63273
2020	7848	55653	63501
2021	8083	55754	63837
2022	8326	55891	64217
2023	8575	56029	64604
2024	8833	56167	65000
2025	9098	56306	65404
2026	9371	56445	65816
2027	9652	56585	66237
2028	9942	56725	66667
2029	10241	56865	67106
2030	10554	57006	67560
2031	10877	57148	68025
2032	11210	57289	68499
2033	11554	57432	68986
2034	11908	57575	69483
2035	12273	57718	69991
2036	12650	57862	70512
2037	13039	58006	71045
2038	13440	58151	71591
2039	13853	58297	72150
2040	14280	58442	72722
2041	14720	58589	73309
2042	15174	58736	73910
2043	15642	58883	74525
2044	16126	59031	75157
2045	16625	59179	75804
2046	17140	59328	76468
2047	17672	59478	77150
2048	18227	59628	77855
2049	18804	59779	78583
2050	19400	59930	79330
2051	20015	60082	80097



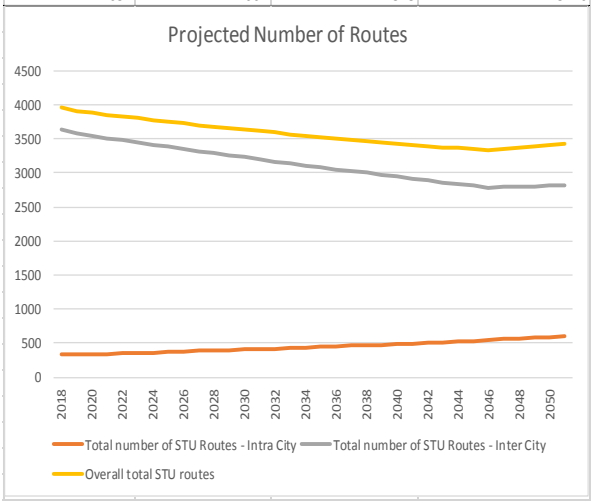
29. Expected Staff to Vehicle Ratio

Year	Staff to vehicle ratio - Intra city service	Staff to vehicle ratio - Inter city service
2018	5.33	5.33
2019	5.33	5.33
2020	5.33	5.33
2021	5.33	5.33
2022	5.33	5.33
2023	5.33	5.33
2024	5.33	5.33
2025	5.33	5.33
2026	5.33	5.33
2027	5.33	5.33
2028	5.33	5.33
2029	5.33	5.33
2030	5.33	5.33
2031	5.33	5.33
2032	5.33	5.33
2033	5.33	5.33
2034	5.33	5.33
2035	5.33	5.33
2036	5.33	5.33
2037	5.33	5.33
2038	5.33	5.33
2039	5.33	5.33
2040	5.33	5.33
2041	5.33	5.33
2042	5.33	5.33
2043	5.33	5.33
2044	5.33	5.33
2045	5.33	5.33
2046	5.33	5.33
2047	5.33	5.33
2048	5.33	5.33
2049	5.33	5.33
2050	5.33	5.33
2051	5.33	5.33



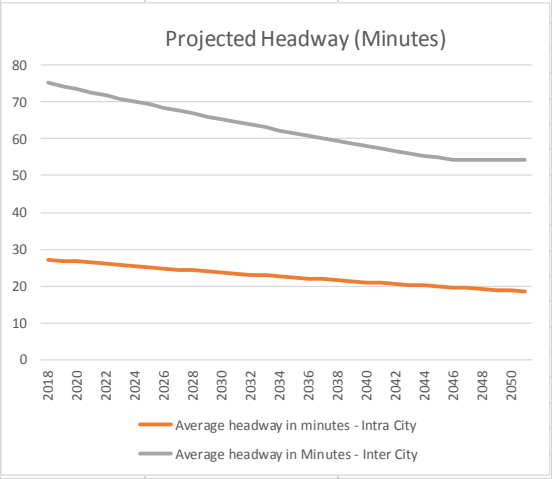
30.Projected Number of Routes

Year	Total number of STU Routes - Intra City	Total number of STU Routes - Inter City	Overall total STU routes
2018	327	3628	3955
2019	333	3575	3908
2020	339	3542	3881
2021	345	3509	3854
2022	352	3477	3828
2023	358	3444	3802
2024	364	3413	3777
2025	371	3381	3752
2026	378	3350	3728
2027	384	3319	3703
2028	391	3289	3680
2029	398	3258	3657
2030	406	3228	3634
2031	413	3199	3612
2032	421	3169	3590
2033	429	3140	3569
2034	437	3111	3548
2035	445	3082	3527
2036	453	3054	3507
2037	462	3026	3488
2038	470	2998	3468
2039	479	2971	3450
2040	488	2943	3431
2041	497	2916	3414
2042	507	2889	3396
2043	516	2863	3379
2044	526	2837	3363
2045	536	2811	3347
2046	546	2785	3331
2047	557	2790	3346
2048	567	2797	3364
2049	578	2804	3382
2050	590	2811	3401
2051	601	2818	3420



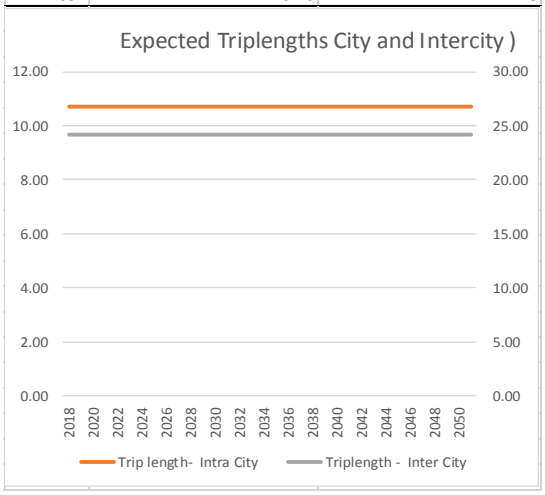
31. Projected Headway (Minutes)

Year	Average headway in minutes - Intra City	Average headway in Minutes - Inter City
2018	27	75
2019	27	74
2020	27	74
2021	26	73
2022	26	72
2023	26	71
2024	25	70
2025	25	69
2026	25	69
2027	24	68
2028	24	67
2029	24	66
2030	24	65
2031	23	65
2032	23	64
2033	23	63
2034	23	62
2035	22	62
2036	22	61
2037	22	60
2038	22	60
2039	21	59
2040	21	58
2041	21	57
2042	21	57
2043	20	56
2044	20	55
2045	20	55
2046	20	54
2047	19	54
2048	19	54
2049	19	54
2050	19	54
2051	18	54



32.Expected Trip-lengths City and Intercity

Year	Trip length- Intra City	Triplength - Inter City
2018	10.70	24.18
2019	10.70	24.18
2020	10.70	24.18
2021	10.70	24.18
2022	10.70	24.18
2023	10.70	24.18
2024	10.70	24.18
2025	10.70	24.18
2026	10.70	24.18
2027	10.70	24.18
2028	10.70	24.18
2029	10.70	24.18
2030	10.70	24.18
2031	10.70	24.18
2032	10.70	24.18
2033	10.70	24.18
2034	10.70	24.18
2035	10.70	24.18
2036	10.70	24.18
2037	10.70	24.18
2038	10.70	24.18
2039	10.70	24.18
2040	10.70	24.18
2041	10.70	24.18
2042	10.70	24.18
2043	10.70	24.18
2044	10.70	24.18
2045	10.70	24.18
2046	10.70	24.18
2047	10.70	24.18
2048	10.70	24.18
2049	10.70	24.18
2050	10.70	24.18
2051	10.70	24.18



33.Expected Operating Cost City and Intercity

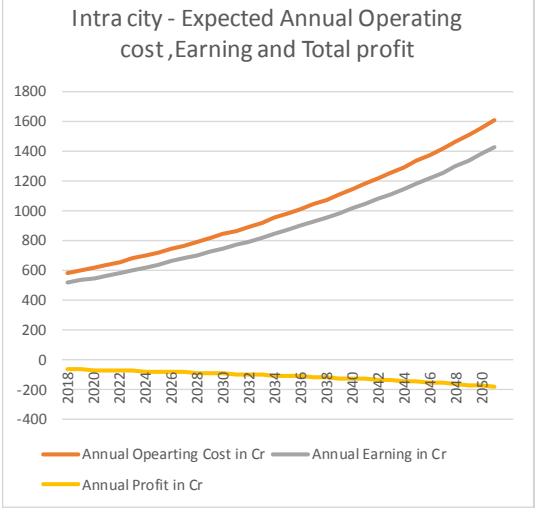
Expected Operating cost City and Intercity

Year	Opearting cost - Intra City	Operating cost - Inter City
2018	15914644	156615369
2019	16422419	157151829
2020	16931632	157538234
2021	17456766	157925903
2022	17998330	158314843
2023	18556854	158705059
2024	19132882	159096559
2025	19726983	159489350
2026	20339741	159883437
2027	20971763	160278829
2028	21623677	160675533
2029	22296136	161073556
2030	22989814	161472906
2031	23705410	161873593
2032	24443652	162275623
2033	25205291	162679007
2034	25991111	163083754
2035	26801923	163489873
2036	27638570	163897375
2037	28501930	164306271
2038	29392914	164716573
2039	30312471	165128291
2040	31261588	165541440
2041	32241293	165956033
2042	33252659	166372084
2043	34296801	166789609
2044	35374887	167208623
2045	36488133	167629145
2046	37637811	168051194
2047	38825250	168474789
2048	40051840	168899953
2049	41319039	169326707
2050	42628372	169755078
2051	43981439	170185093

34.Intra city - Expected Annual Operating cost, Earning and Total profit

tra city - Expected Annual Operating cost ,Earning and Total prof

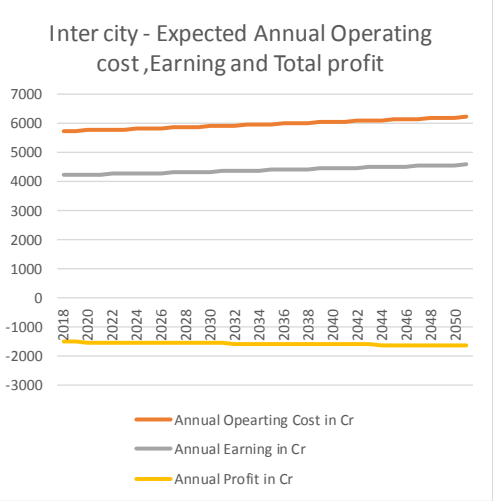
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	581	515	-65.40
2019	599	531	-67.95
2020	618	548	-70.06
2021	637	565	-72.23
2022	657	582	-74.46
2023	677	601	-76.77
2024	698	619	-79.15
2025	720	638	-81.60
2026	742	658	-84.13
2027	765	679	-86.74
2028	789	700	-89.43
2029	814	722	-92.21
2030	839	744	-95.07
2031	865	767	-98.03
2032	892	791	-101.08
2033	920	816	-104.22
2034	949	841	-107.46
2035	978	867	-110.81
2036	1009	895	-114.26
2037	1040	922	-117.83
2038	1073	951	-121.50
2039	1106	981	-125.30
2040	1141	1012	-129.22
2041	1177	1044	-133.26
2042	1214	1076	-137.43
2043	1252	1110	-141.74
2044	1291	1145	-146.19
2045	1332	1181	-150.79
2046	1374	1218	-155.53
2047	1417	1257	-160.43
2048	1462	1296	-165.49
2049	1508	1337	-170.72
2050	1556	1380	-176.12
2051	1605	1424	-181.70



35. Intercity - Expected Annual Operating cost, Earning and Total profit

er city - Expected Annual Operating cost ,Earning and Total prc

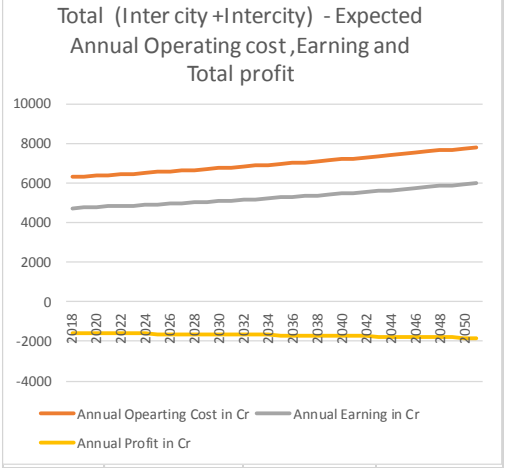
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	5716	4208	-1508.31
2019	5736	4219	-1517.52
2020	5750	4229	-1521.22
2021	5764	4239	-1524.93
2022	5778	4250	-1528.65
2023	5793	4260	-1532.39
2024	5807	4271	-1536.13
2025	5821	4281	-1539.89
2026	5836	4292	-1543.67
2027	5850	4303	-1547.45
2028	5865	4313	-1551.25
2029	5879	4324	-1555.06
2030	5894	4335	-1558.89
2031	5908	4346	-1562.73
2032	5923	4356	-1566.58
2033	5938	4367	-1570.44
2034	5953	4378	-1574.32
2035	5967	4389	-1578.21
2036	5982	4400	-1582.11
2037	5997	4411	-1586.03
2038	6012	4422	-1589.96
2039	6027	4433	-1593.90
2040	6042	4444	-1597.86
2041	6057	4456	-1601.83
2042	6073	4467	-1605.82
2043	6088	4478	-1609.82
2044	6103	4489	-1613.83
2045	6118	4501	-1617.86
2046	6134	4512	-1621.91
2047	6149	4523	-1625.97
2048	6165	4535	-1630.04
2049	6180	4546	-1634.13
2050	6196	4558	-1638.24
2051	6212	4569	-1642.36



36. Total (Intercity +Intercity) - Expected Annual Operating cost, Earning and Total profit

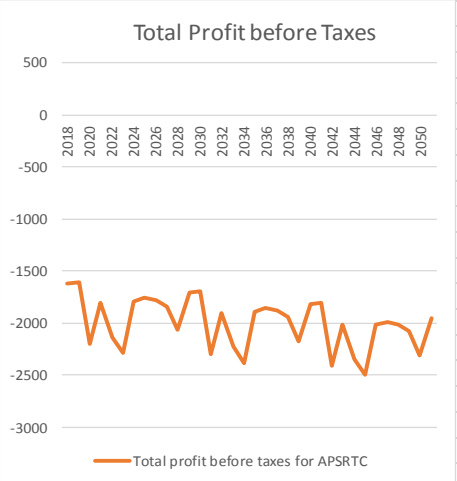
r city +Intercity) - Expected Annual Operating cost ,Earning and T

Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	6297	4724	-1573.71
2019	6335	4750	-1585.47
2020	6368	4777	-1591.27
2021	6401	4804	-1597.15
2022	6435	4832	-1603.11
2023	6470	4861	-1609.16
2024	6505	4890	-1615.28
2025	6541	4920	-1621.50
2026	6578	4950	-1627.80
2027	6616	4981	-1634.20
2028	6654	5013	-1640.69
2029	6693	5046	-1647.27
2030	6733	5079	-1653.96
2031	6774	5113	-1660.75
2032	6815	5148	-1667.65
2033	6858	5183	-1674.66
2034	6901	5219	-1681.78
2035	6946	5257	-1689.02
2036	6991	5295	-1696.37
2037	7037	5334	-1703.85
2038	7085	5374	-1711.46
2039	7134	5414	-1719.20
2040	7183	5456	-1727.08
2041	7234	5499	-1735.09
2042	7286	5543	-1743.25
2043	7340	5588	-1751.56
2044	7394	5634	-1760.03
2045	7450	5682	-1768.65
2046	7508	5730	-1777.44
2047	7566	5780	-1786.40
2048	7627	5831	-1795.53
2049	7689	5884	-1804.85
2050	7752	5938	-1814.36
2051	7817	5993	-1824.06



37. Profit before taxes after Infrastructure development and Fleet Upgradation cost.

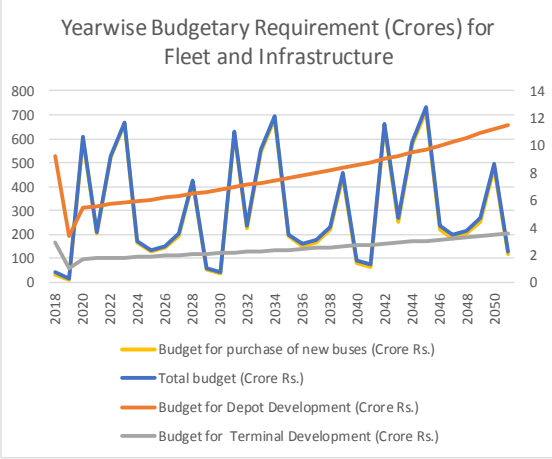
Profit before taxes after Infrastrucuture development and Fleet Upgradation cost	
Year	Total profit before taxes for APSRTC
2018	-1619
2019	-1602
2020	-2198
2021	-1807
2022	-2132
2023	-2279
2024	-1790
2025	-1756
2026	-1778
2027	-1836
2028	-2066
2029	-1708
2030	-1698
2031	-2292
2032	-1902
2033	-2228
2034	-2377
2035	-1890
2036	-1858
2037	-1882
2038	-1942
2039	-2174
2040	-1818
2041	-1810
2042	-2406
2043	-2018
2044	-2347
2045	-2498
2046	-2013
2047	-1984
2048	-2011
2049	-2074
2050	-2309
2051	-1955



9.12. Tool Outputs– Desired scenario (25% mode share)

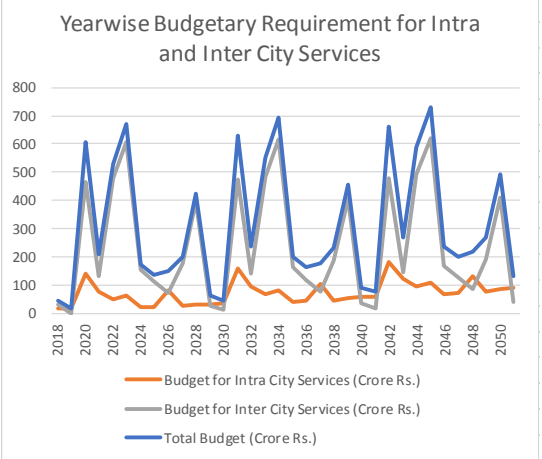
1. Year-wise Budgetary Requirement (Crores) for Fleet and Infrastructure

Year	Budget for Depot Development (Crore Rs.)	Budget for Terminal Development (Crore Rs.)	Budget for purchase of new buses (Crore Rs.)	Total budget (Crore Rs.)
2018	9	3	33	45
2019	3	1	12	17
2020	5	2	600	607
2021	6	2	202	210
2022	6	2	521	529
2023	6	2	662	670
2024	6	2	166	174
2025	6	2	127	135
2026	6	2	142	151
2027	6	2	193	202
2028	6	2	417	425
2029	7	2	52	60
2030	7	2	35	44
2031	7	2	622	631
2032	7	2	225	234
2033	7	2	544	554
2034	7	2	686	696
2035	8	2	191	201
2036	8	2	151	162
2037	8	2	168	178
2038	8	3	220	230
2039	8	3	444	455
2040	9	3	79	90
2041	9	3	63	75
2042	9	3	651	663
2043	9	3	255	267
2044	9	3	575	587
2045	10	3	717	730
2046	10	3	223	236
2047	10	3	184	198
2048	11	3	202	216
2049	11	3	255	269
2050	11	4	480	494
2051	12	4	116	131



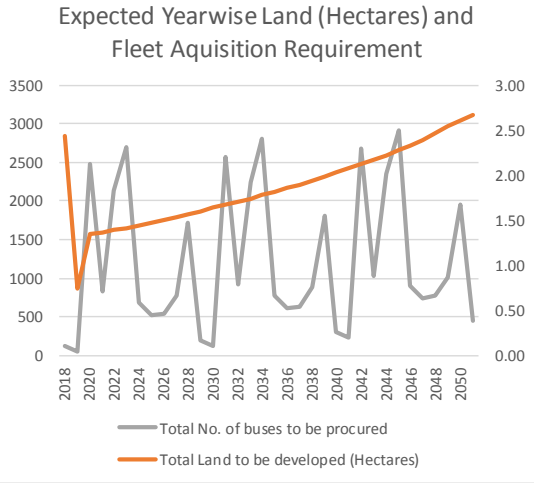
2.Year Wise Budgetary Requirement for Intra and Inter City Services.

Year	Budget for Intra City Services (Crore Rs.)	Budget for Inter City Services (Crore Rs.)	Total Budget (Crore Rs.)
2018	16	28	45
2019	17	0	17
2020	140	467	607
2021	77	133	210
2022	50	478	529
2023	61	609	670
2024	19	155	174
2025	22	112	135
2026	81	69	151
2027	24	177	202
2028	29	397	425
2029	32	28	60
2030	34	10	44
2031	158	474	631
2032	95	139	234
2033	69	485	554
2034	80	615	696
2035	39	162	201
2036	43	119	162
2037	102	76	178
2038	46	184	230
2039	51	403	455
2040	56	35	90
2041	58	17	75
2042	182	480	663
2043	120	146	267
2044	95	492	587
2045	107	622	730
2046	67	169	236
2047	72	126	198
2048	133	83	216
2049	78	191	269
2050	84	410	494
2051	89	42	131



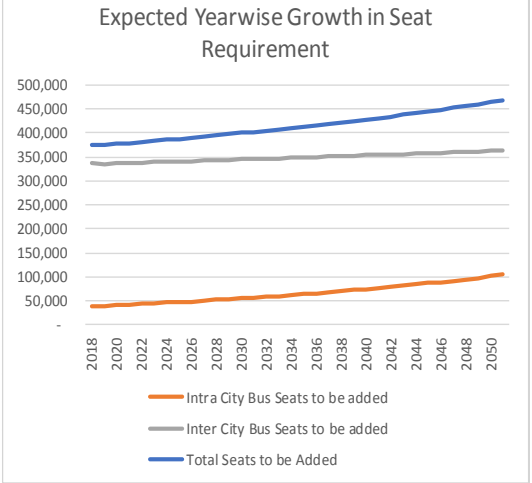
3.Expected Year-wise Land (Hectares) and Fleet Acquisition Requirement

Year	Total Land to be developed (Hectares)	Total No. of buses to be procured
2018	2.44	115
2019	0.74	43
2020	1.34	2486
2021	1.37	830
2022	1.39	2145
2023	1.42	2707
2024	1.45	676
2025	1.47	513
2026	1.50	537
2027	1.53	775
2028	1.56	1713
2029	1.59	198
2030	1.64	128
2031	1.67	2574
2032	1.71	919
2033	1.75	2236
2034	1.78	2800
2035	1.82	772
2036	1.86	610
2037	1.90	637
2038	1.94	877
2039	1.99	1818
2040	2.03	305
2041	2.08	238
2042	2.13	2686
2043	2.18	1035
2044	2.23	2355
2045	2.28	2921
2046	2.33	896
2047	2.39	738
2048	2.47	770
2049	2.54	1014
2050	2.61	1958
2051	2.68	449



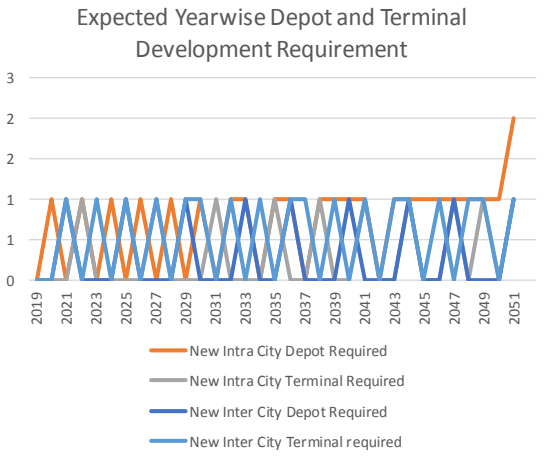
4.Expected Year-wise Growth in Seat Requirement.

Year	Intra City Bus Seats to be added	Inter City Bus Seats to be added	Total Seats to be Added
2018	38,613	336,751	375,364
2019	39,804	335,708	375,512
2020	40,997	336,533	377,530
2021	42,225	337,362	379,587
2022	43,491	338,192	381,683
2023	44,795	339,026	383,821
2024	46,139	339,862	386,001
2025	47,523	340,701	388,225
2026	48,950	341,543	390,493
2027	50,420	342,388	392,808
2028	51,934	343,235	395,170
2029	53,496	344,086	397,581
2030	55,132	344,939	400,071
2031	56,819	345,795	402,614
2032	58,559	346,653	405,213
2033	60,354	347,515	407,869
2034	62,204	348,380	410,584
2035	64,112	349,247	413,359
2036	66,080	350,118	416,198
2037	68,110	350,991	419,101
2038	70,204	351,868	422,072
2039	72,364	352,747	425,111
2040	74,592	353,630	428,222
2041	76,891	354,516	431,407
2042	79,264	355,404	434,668
2043	81,712	356,296	438,008
2044	84,238	357,191	441,429
2045	86,845	358,090	444,935
2046	89,537	358,991	448,528
2047	92,316	359,896	452,212
2048	95,213	360,804	456,017
2049	98,225	361,716	459,941
2050	101,338	362,631	463,969
2051	104,555	363,550	468,104



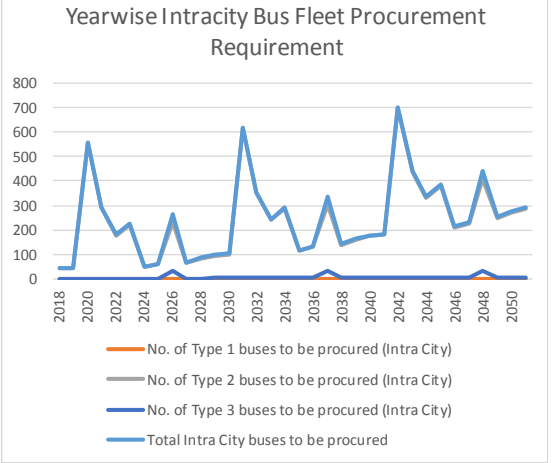
5.Expected Year-wise Depot and Terminal Development Requirement.

Year	New Intra City Depot Required	New Intra City Terminal Required	New Inter City Depot Required	New Inter City Terminal required
2018	1	0	0	1
2019	0	0	0	0
2020	1	0	0	0
2021	0	0	1	1
2022	1	1	0	0
2023	0	0	0	1
2024	1	0	0	0
2025	0	0	1	1
2026	1	0	0	0
2027	0	1	0	1
2028	1	0	0	0
2029	0	0	1	1
2030	1	0	0	1
2031	0	1	0	0
2032	1	0	0	1
2033	1	0	1	0
2034	0	0	0	1
2035	1	1	0	0
2036	1	0	1	1
2037	0	0	0	1
2038	1	1	0	0
2039	1	0	0	1
2040	1	0	1	0
2041	1	1	0	1
2042	0	0	0	0
2043	1	0	0	1
2044	1	1	1	1
2045	1	0	0	0
2046	1	0	0	1
2047	1	1	1	0
2048	1	0	0	1
2049	1	1	0	1
2050	1	0	0	0
2051	2	1	1	1



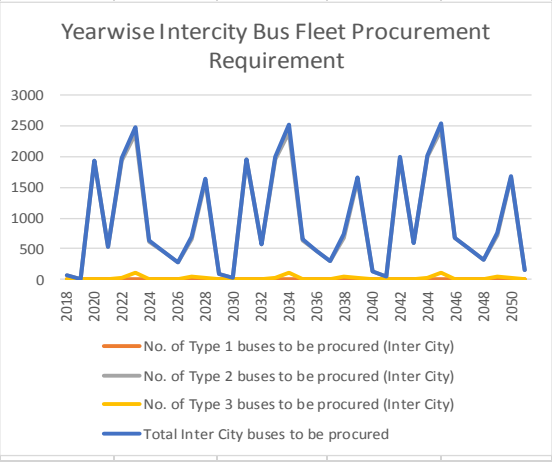
6.Yearwise Intracity Bus Fleet Procurement Requirement.

Year	No. of Type 1 buses to be procured (Intra City)	No. of Type 2 buses to be procured (Intra City)	No. of Type 3 buses to be procured (Intra City)	Total Intra City buses to be procured
2018	0	41	1	42
2019	0	42	1	43
2020	0	556	1	557
2021	0	291	1	292
2022	0	178	1	179
2023	0	223	1	224
2024	0	48	1	49
2025	0	61	1	62
2026	0	233	31	264
2027	0	67	1	68
2028	0	84	1	85
2029	0	96	2	98
2030	0	99	2	102
2031	0	615	2	617
2032	0	352	2	355
2033	0	241	2	244
2034	0	288	3	290
2035	0	115	3	118
2036	0	130	3	132
2037	0	304	33	337
2038	0	140	3	143
2039	0	160	3	163
2040	0	174	4	178
2041	0	180	4	184
2042	0	698	4	703
2043	0	438	4	443
2044	0	330	4	335
2045	0	379	5	384
2046	0	210	5	214
2047	0	227	5	232
2048	0	406	35	441
2049	0	246	5	251
2050	0	269	5	275
2051	0	287	7	293



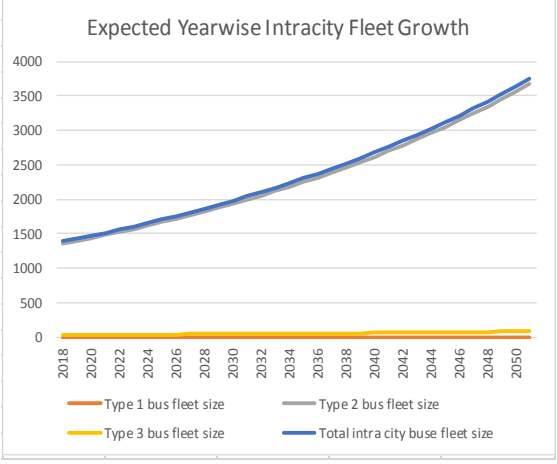
7.Year-wise Intercity Bus Fleet Procurement Requirement

Year	No. of Type 1 buses to be procured (Inter City)	No. of Type 2 buses to be procured (Inter City)	No. of Type 3 buses to be procured (Inter City)	Total Inter City buses to be procured
2018	0	72	2	73
2019	0	0	0	0
2020	0	1928	2	1930
2021	0	537	1	538
2022	0	1929	37	1966
2023	0	2368	115	2483
2024	0	617	10	627
2025	0	450	1	451
2026	0	273	1	273
2027	0	660	48	707
2028	0	1600	28	1627
2029	0	98	2	100
2030	0	26	1	26
2031	0	1954	2	1956
2032	0	563	1	564
2033	0	1955	37	1992
2034	0	2394	115	2510
2035	0	644	10	654
2036	0	477	1	478
2037	0	299	1	300
2038	0	686	48	734
2039	0	1626	28	1655
2040	0	124	3	127
2041	0	53	1	54
2042	0	1981	3	1984
2043	0	590	2	592
2044	0	1982	38	2020
2045	0	2422	116	2538
2046	0	671	11	682
2047	0	504	2	506
2048	0	327	2	328
2049	0	714	49	763
2050	0	1654	29	1683
2051	0	152	4	156



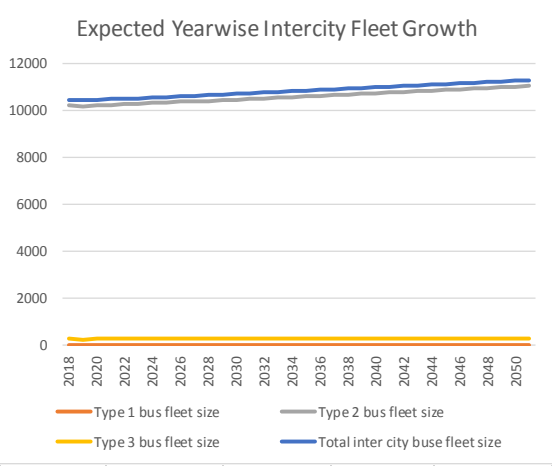
8.Expected Year-wise Intracity Fleet Growth.

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total intra city buse fleet size
2018	0	1356	31	1387
2019	0	1398	32	1430
2020	0	1440	33	1472
2021	0	1483	34	1517
2022	0	1527	35	1562
2023	0	1573	36	1609
2024	0	1620	37	1657
2025	0	1669	38	1707
2026	0	1719	39	1758
2027	0	1771	40	1811
2028	0	1824	42	1865
2029	0	1879	43	1921
2030	0	1936	44	1980
2031	0	1995	46	2041
2032	0	2056	47	2103
2033	0	2119	48	2168
2034	0	2184	50	2234
2035	0	2251	51	2303
2036	0	2320	53	2373
2037	0	2392	55	2446
2038	0	2465	56	2521
2039	0	2541	58	2599
2040	0	2619	60	2679
2041	0	2700	62	2762
2042	0	2783	63	2847
2043	0	2869	65	2935
2044	0	2958	67	3026
2045	0	3050	70	3119
2046	0	3144	72	3216
2047	0	3242	74	3316
2048	0	3343	76	3420
2049	0	3449	79	3528
2050	0	3559	81	3640
2051	0	3671	84	3755



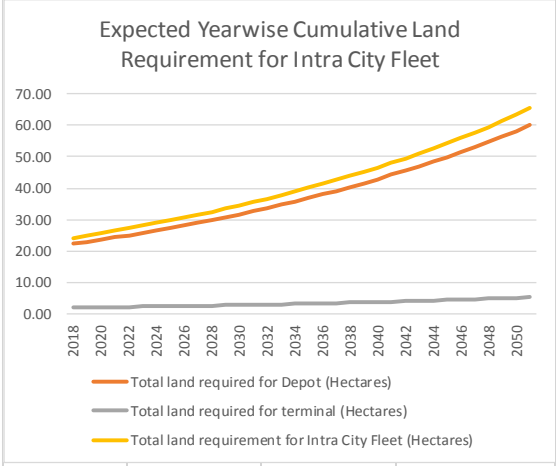
9.Expected Year-wise Intercity Fleet Growth

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total inter city buse fleet size
2018	0	10206	236	10441
2019	0	10174	235	10409
2020	0	10199	236	10435
2021	0	10224	236	10460
2022	0	10249	237	10486
2023	0	10275	237	10512
2024	0	10300	238	10538
2025	0	10326	238	10564
2026	0	10351	239	10590
2027	0	10377	240	10616
2028	0	10402	240	10643
2029	0	10428	241	10669
2030	0	10454	241	10695
2031	0	10480	242	10722
2032	0	10506	243	10748
2033	0	10532	243	10775
2034	0	10558	244	10802
2035	0	10585	244	10829
2036	0	10611	245	10856
2037	0	10637	246	10883
2038	0	10664	246	10910
2039	0	10691	247	10937
2040	0	10717	247	10965
2041	0	10744	248	10992
2042	0	10771	249	11020
2043	0	10798	249	11047
2044	0	10825	250	11075
2045	0	10852	251	11103
2046	0	10880	251	11131
2047	0	10907	252	11159
2048	0	10935	252	11187
2049	0	10962	253	11216
2050	0	10990	254	11244
2051	0	11018	254	11272



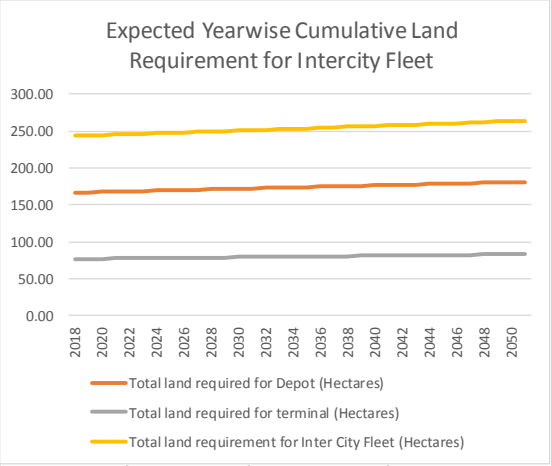
10.Expected Year-wise Cumulative Land Requirement for Intra City Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Intra City Fleet (Hectares)
2018	22.19	1.94	24.13
2019	22.87	2.00	24.88
2020	23.56	2.06	25.62
2021	24.27	2.12	26.39
2022	24.99	2.19	27.18
2023	25.74	2.25	27.99
2024	26.51	2.32	28.83
2025	27.31	2.39	29.70
2026	28.13	2.46	30.59
2027	28.97	2.54	31.51
2028	29.84	2.61	32.46
2029	30.74	2.69	33.43
2030	31.68	2.77	34.45
2031	32.65	2.86	35.51
2032	33.65	2.94	36.60
2033	34.68	3.03	37.72
2034	35.75	3.13	38.87
2035	36.84	3.22	40.07
2036	37.97	3.32	41.30
2037	39.14	3.42	42.57
2038	40.34	3.53	43.87
2039	41.59	3.64	45.22
2040	42.87	3.75	46.62
2041	44.19	3.87	48.05
2042	45.55	3.99	49.54
2043	46.96	4.11	51.07
2044	48.41	4.24	52.64
2045	49.91	4.37	54.27
2046	51.45	4.50	55.96
2047	53.05	4.64	57.69
2048	54.72	4.79	59.50
2049	56.45	4.94	61.39
2050	58.24	5.10	63.33
2051	60.08	5.26	65.34



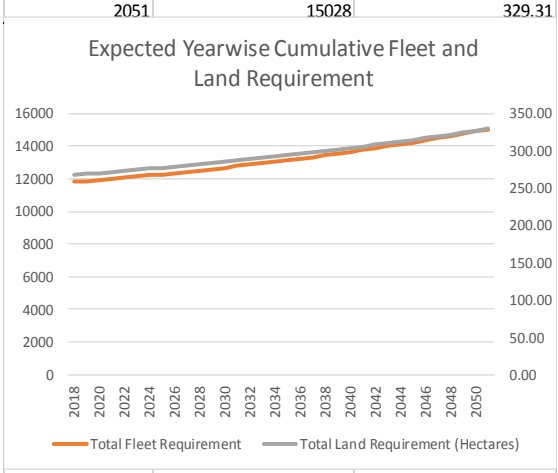
11.Expected Year-wise Cumulative Land Requirement for Intercity Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Inter City Fleet (Hectares)
2018	167.06	76.74	243.81
2019	167.06	76.74	243.81
2020	167.47	76.93	244.41
2021	167.88	77.12	245.00
2022	168.30	77.31	245.61
2023	168.71	77.50	246.21
2024	169.12	77.69	246.82
2025	169.54	77.88	247.42
2026	169.96	78.07	248.03
2027	170.38	78.27	248.64
2028	170.80	78.46	249.26
2029	171.22	78.65	249.87
2030	171.64	78.85	250.49
2031	172.07	79.04	251.11
2032	172.49	79.24	251.73
2033	172.92	79.44	252.36
2034	173.35	79.63	252.98
2035	173.78	79.83	253.61
2036	174.21	80.03	254.24
2037	174.65	80.23	254.87
2038	175.08	80.43	255.51
2039	175.52	80.63	256.14
2040	175.95	80.83	256.78
2041	176.39	81.03	257.42
2042	176.83	81.23	258.07
2043	177.28	81.44	258.71
2044	177.72	81.64	259.36
2045	178.17	81.85	260.01
2046	178.61	82.05	260.66
2047	179.06	82.26	261.32
2048	179.51	82.46	261.98
2049	179.97	82.67	262.64
2050	180.42	82.88	263.30
2051	180.88	83.09	263.97



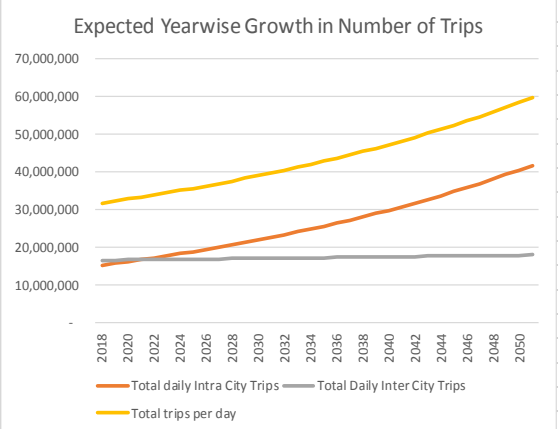
12.Expected Year-wise Cumulative Fleet and Land Requirement.

Year	Total Fleet Requirement	Total Land Requirement (Hectares)
2018	11828	267.94
2019	11839	268.68
2020	11907	270.03
2021	11977	271.39
2022	12048	272.79
2023	12121	274.20
2024	12195	275.65
2025	12271	277.12
2026	12348	278.62
2027	12427	280.15
2028	12508	281.71
2029	12590	283.31
2030	12675	284.95
2031	12763	286.62
2032	12852	288.33
2033	12943	290.07
2034	13036	291.86
2035	13132	293.68
2036	13229	295.54
2037	13329	297.44
2038	13432	299.38
2039	13537	301.37
2040	13644	303.40
2041	13754	305.48
2042	13867	307.60
2043	13982	309.78
2044	14101	312.01
2045	14222	314.29
2046	14347	316.62
2047	14475	319.01
2048	14607	321.48
2049	14743	324.02
2050	14884	326.63
2051	15028	329.31



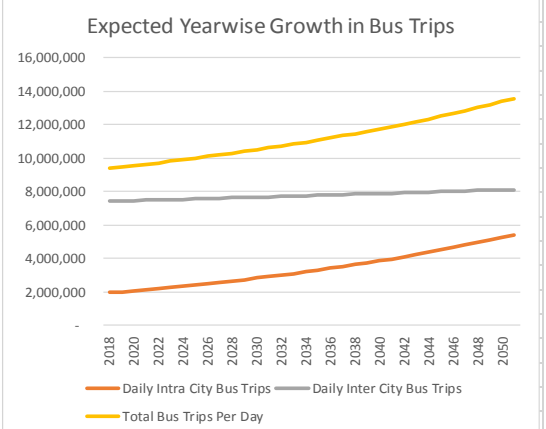
13.Expected Year-wise Growth in Number of Trips.

Year	Total daily Intra City Trips	Total Daily Inter City Trips	Total trips per day
2018	15,188,281	16,488,485	31,676,766
2019	15,658,362	16,529,091	32,187,453
2020	16,143,044	16,569,828	32,712,872
2021	16,642,787	16,610,698	33,253,485
2022	17,158,064	16,651,701	33,809,765
2023	17,689,365	16,692,838	34,382,203
2024	18,237,195	16,734,109	34,971,304
2025	18,802,076	16,775,515	35,577,591
2026	19,384,546	16,817,058	36,201,604
2027	19,985,163	16,858,736	36,843,899
2028	20,604,503	16,900,552	37,505,055
2029	21,243,161	16,942,507	38,185,668
2030	21,901,751	16,984,600	38,886,351
2031	22,580,909	17,026,833	39,607,742
2032	23,281,292	17,069,207	40,350,499
2033	24,003,580	17,111,723	41,115,303
2034	24,748,477	17,154,381	41,902,858
2035	25,516,709	17,197,182	42,713,891
2036	26,309,031	17,240,129	43,549,160
2037	27,126,221	17,283,221	44,409,442
2038	27,969,086	17,326,461	45,295,547
2039	28,838,462	17,369,848	46,208,310
2040	29,735,214	17,413,385	47,148,599
2041	30,660,241	17,457,073	48,117,314
2042	31,614,472	17,500,914	49,115,386
2043	32,598,872	17,544,908	50,143,780
2044	33,614,441	17,589,058	51,203,499
2045	34,662,218	17,633,366	52,295,584
2046	35,743,280	17,677,833	53,421,113
2047	36,858,746	17,722,461	54,581,207
2048	38,009,780	17,767,253	55,777,033
2049	39,197,592	17,812,211	57,009,803
2050	40,423,437	17,857,338	58,280,775
2051	41,688,625	17,902,635	59,591,260



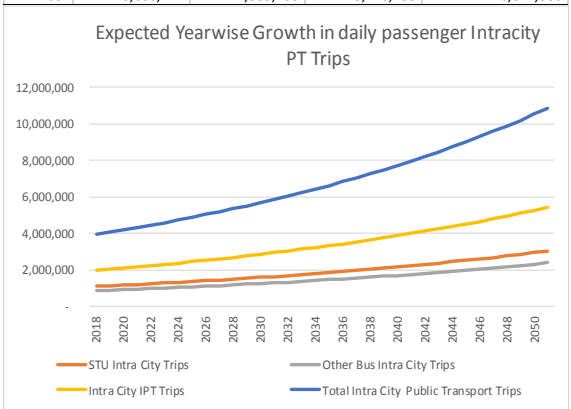
14.Expected Year-wise Growth in Bus Trips

Year	Daily Intra City Bus Trips	Daily Inter City Bus Trips	Total Bus Trips Per Day
2018	1,965,671	7,426,444	9,392,115
2019	2,026,617	7,446,477	9,473,095
2020	2,089,467	7,466,581	9,556,048
2021	2,154,282	7,486,756	9,641,038
2022	2,221,124	7,507,001	9,728,126
2023	2,290,060	7,527,318	9,817,378
2024	2,361,156	7,547,707	9,908,863
2025	2,434,482	7,568,168	10,002,650
2026	2,510,110	7,588,702	10,098,812
2027	2,588,115	7,609,308	10,197,424
2028	2,668,576	7,629,988	10,298,564
2029	2,751,571	7,650,743	10,402,313
2030	2,837,184	7,671,571	10,508,755
2031	2,925,502	7,692,474	10,617,976
2032	3,016,614	7,713,453	10,730,067
2033	3,110,612	7,734,508	10,845,120
2034	3,207,594	7,755,639	10,963,232
2035	3,307,658	7,776,847	11,084,505
2036	3,410,910	7,798,132	11,209,042
2037	3,517,456	7,819,496	11,336,952
2038	3,627,410	7,840,939	11,468,349
2039	3,740,888	7,862,461	11,603,349
2040	3,858,011	7,884,064	11,742,075
2041	3,978,906	7,905,748	11,884,654
2042	4,103,706	7,927,513	12,031,219
2043	4,232,547	7,949,362	12,181,909
2044	4,365,572	7,971,295	12,336,867
2045	4,502,932	7,993,312	12,496,244
2046	4,644,783	8,015,415	12,660,198
2047	4,791,288	8,037,605	12,828,893
2048	4,942,618	8,059,884	13,002,502
2049	5,098,953	8,082,252	13,181,205
2050	5,260,478	8,104,712	13,365,190
2051	5,427,392	8,127,264	13,554,656



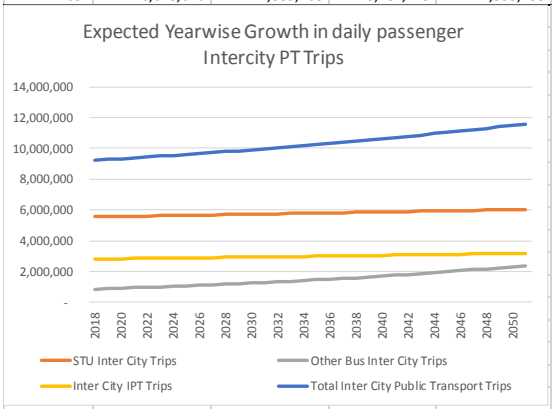
15.Expected Year-wise Growth in daily Intracity passenger intracity PT Trips.

Year	STU Intra City Trips	Other Bus Intra City Trips	Intra City IPT Trips	Total Intra City Public Transport Trips
2018	1,100,078	865,594	1,973,959	3,939,630
2019	1,134,188	892,429	2,035,060	4,061,677
2020	1,169,364	920,103	2,098,060	4,187,527
2021	1,205,641	948,641	2,163,019	4,317,301
2022	1,243,052	978,072	2,229,997	4,451,122
2023	1,281,635	1,008,424	2,299,060	4,589,119
2024	1,321,428	1,039,727	2,370,272	4,731,427
2025	1,362,470	1,072,012	2,443,701	4,878,183
2026	1,404,800	1,105,310	2,519,418	5,029,528
2027	1,448,461	1,139,654	2,597,496	5,185,611
2028	1,493,497	1,175,078	2,678,009	5,346,584
2029	1,539,953	1,211,618	2,761,035	5,512,606
2030	1,587,874	1,249,310	2,846,654	5,683,838
2031	1,637,310	1,288,192	2,934,948	5,860,450
2032	1,688,311	1,328,303	3,026,005	6,042,618
2033	1,740,928	1,369,684	3,119,911	6,230,524
2034	1,795,216	1,412,378	3,216,760	6,424,354
2035	1,851,231	1,456,427	3,316,646	6,624,304
2036	1,909,031	1,501,879	3,419,667	6,830,577
2037	1,968,677	1,548,780	3,525,925	7,043,381
2038	2,030,231	1,597,179	3,635,525	7,262,935
2039	2,093,760	1,647,128	3,748,577	7,489,465
2040	2,159,331	1,698,680	3,865,194	7,723,205
2041	2,227,015	1,751,891	3,985,493	7,964,399
2042	2,296,888	1,806,818	4,109,595	8,213,301
2043	2,369,025	1,863,522	4,237,627	8,470,174
2044	2,443,507	1,922,065	4,369,720	8,735,293
2045	2,520,419	1,982,513	4,506,010	9,008,942
2046	2,599,848	2,044,935	4,646,638	9,291,421
2047	2,681,887	2,109,402	4,791,750	9,583,038
2048	2,766,630	2,175,988	4,941,499	9,884,117
2049	2,854,180	2,244,773	5,096,044	10,194,997
2050	2,944,641	2,315,838	5,255,550	10,516,028
2051	3,038,124	2,389,268	5,420,188	10,847,580



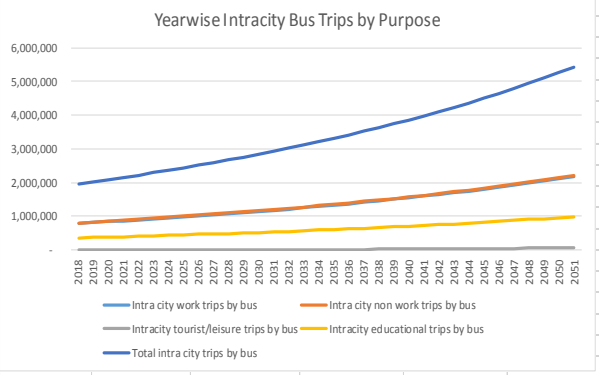
16.Expected Year-wise Growth in daily Intercity passenger intercity PT Trips.

Year	STU Inter City Trips	Other Bus Inter City Trips	Inter City IPT Trips	Total Inter City Public Transport Trips
2018	5,548,693	865,594	2,811,699	9,225,986
2019	5,562,368	892,429	2,822,142	9,276,939
2020	5,576,088	920,103	2,832,629	9,328,820
2021	5,589,852	948,641	2,843,161	9,381,654
2022	5,603,662	978,072	2,853,738	9,435,472
2023	5,617,516	1,008,424	2,864,360	9,490,300
2024	5,631,416	1,039,727	2,875,028	9,546,171
2025	5,645,361	1,072,012	2,885,741	9,603,114
2026	5,659,352	1,105,310	2,896,501	9,661,163
2027	5,673,390	1,139,654	2,907,306	9,720,350
2028	5,687,473	1,175,078	2,918,159	9,780,710
2029	5,701,603	1,211,618	2,929,058	9,842,279
2030	5,715,780	1,249,310	2,940,004	9,905,095
2031	5,730,005	1,288,192	2,950,998	9,969,195
2032	5,744,276	1,328,303	2,962,040	10,034,619
2033	5,758,596	1,369,684	2,973,130	10,101,410
2034	5,772,963	1,412,378	2,984,268	10,169,609
2035	5,787,380	1,456,427	2,995,455	10,239,262
2036	5,801,845	1,501,879	3,006,692	10,310,415
2037	5,816,359	1,548,780	3,017,978	10,383,117
2038	5,830,923	1,597,179	3,029,314	10,457,416
2039	5,845,537	1,647,128	3,040,701	10,533,366
2040	5,860,201	1,698,680	3,052,138	10,611,020
2041	5,874,917	1,751,891	3,063,627	10,690,435
2042	5,889,684	1,806,818	3,075,168	10,771,670
2043	5,904,503	1,863,522	3,086,761	10,854,786
2044	5,919,375	1,922,065	3,098,407	10,939,848
2045	5,934,300	1,982,513	3,110,107	11,026,921
2046	5,949,279	2,044,935	3,121,862	11,116,076
2047	5,964,313	2,109,402	3,133,671	11,207,386
2048	5,979,402	2,175,988	3,145,536	11,300,926
2049	5,994,547	2,244,773	3,157,458	11,396,778
2050	6,009,750	2,315,838	3,169,437	11,495,025
2051	6,025,010	2,389,268	3,181,475	11,595,753



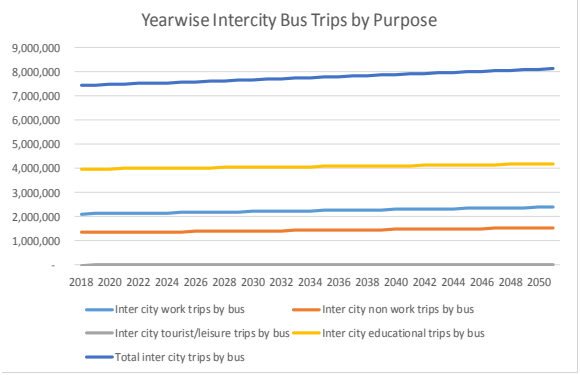
17. Year-wise Intracity Bus Trips by Purpose

Year	Intra city work trips by bus	Intra city non work trips by bus	Intracity tourist/leisure trips by bus	Intracity educational trips by bus	Total intra city trips by bus
2018	793,858	806,616	2,992	362,205	1,965,671
2019	818,389	831,541	3,291	373,397	2,026,617
2020	843,677	857,236	3,620	384,935	2,089,467
2021	869,746	883,724	3,982	396,829	2,154,282
2022	896,622	911,031	4,380	409,091	2,221,124
2023	924,327	939,182	4,818	421,732	2,290,060
2024	952,889	968,203	5,300	434,764	2,361,156
2025	982,333	998,120	5,830	448,198	2,434,482
2026	1,012,687	1,028,962	6,413	462,047	2,510,110
2027	1,043,979	1,060,757	7,054	476,325	2,588,115
2028	1,076,238	1,093,534	7,760	491,043	2,668,576
2029	1,109,494	1,127,325	8,536	506,216	2,751,571
2030	1,143,777	1,162,159	9,389	521,858	2,837,184
2031	1,179,120	1,198,070	10,328	537,984	2,925,502
2032	1,215,555	1,235,090	11,361	554,607	3,016,614
2033	1,253,116	1,273,254	12,497	571,745	3,110,612
2034	1,291,837	1,312,598	13,747	589,412	3,207,594
2035	1,331,755	1,353,157	15,122	607,624	3,307,658
2036	1,372,906	1,394,970	16,634	626,400	3,410,910
2037	1,415,329	1,438,074	18,297	645,756	3,517,456
2038	1,459,062	1,482,511	20,127	665,710	3,627,410
2039	1,504,147	1,528,320	22,140	686,280	3,740,888
2040	1,550,626	1,575,545	24,354	707,486	3,858,011
2041	1,598,540	1,624,230	26,789	729,348	3,978,906
2042	1,647,935	1,674,419	29,468	751,884	4,103,706
2043	1,698,856	1,726,158	32,415	775,118	4,232,547
2044	1,751,351	1,779,496	35,657	799,069	4,365,572
2045	1,805,467	1,834,483	39,222	823,760	4,502,932
2046	1,861,256	1,891,168	43,144	849,214	4,644,783
2047	1,918,769	1,949,605	47,459	875,455	4,791,288
2048	1,978,059	2,009,848	52,205	902,506	4,942,618
2049	2,039,181	2,071,953	57,425	930,394	5,098,953
2050	2,102,192	2,135,976	63,168	959,143	5,260,478
2051	2,167,149	2,201,978	69,484	988,781	5,427,392



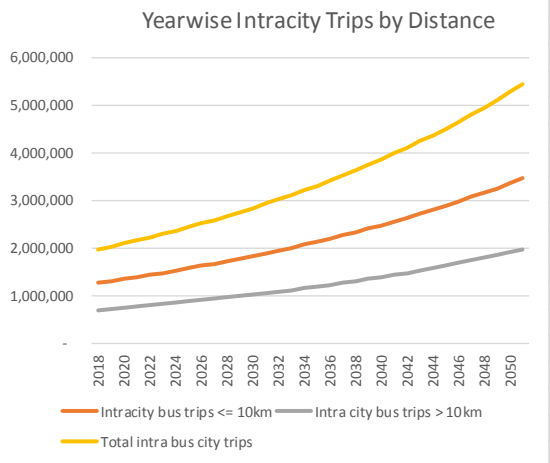
18. Year-wise Intercity Bus Trips by Purpose

Year	Inter city work trips by bus	Inter city non work trips by bus	Inter city tourist/leisure trips by bus	Inter city educational trips by bus	Total inter city trips by bus
2018	2,114,729	1,341,778	71	3,969,866	7,426,444
2019	2,122,791	1,347,391	78	3,976,218	7,446,477
2020	2,130,888	1,353,028	86	3,982,580	7,466,581
2021	2,139,019	1,358,690	94	3,988,952	7,486,756
2022	2,147,186	1,364,377	104	3,995,334	7,507,001
2023	2,155,387	1,370,090	114	4,001,727	7,527,318
2024	2,163,624	1,375,828	125	4,008,130	7,547,707
2025	2,171,895	1,381,592	138	4,014,543	7,568,168
2026	2,180,202	1,387,382	152	4,020,966	7,588,702
2027	2,188,545	1,393,197	167	4,027,400	7,609,308
2028	2,196,924	1,399,038	184	4,033,843	7,629,988
2029	2,205,338	1,404,905	202	4,040,298	7,650,743
2030	2,213,789	1,410,798	222	4,046,762	7,671,571
2031	2,222,275	1,416,718	244	4,053,237	7,692,474
2032	2,230,799	1,422,664	269	4,059,722	7,713,453
2033	2,239,358	1,428,636	296	4,066,218	7,734,508
2034	2,247,955	1,434,635	325	4,072,724	7,755,639
2035	2,256,588	1,440,661	358	4,079,240	7,776,847
2036	2,265,259	1,446,713	394	4,085,767	7,798,132
2037	2,273,966	1,452,793	433	4,092,304	7,819,496
2038	2,282,711	1,458,900	476	4,098,852	7,840,939
2039	2,291,494	1,465,034	524	4,105,410	7,862,461
2040	2,300,314	1,471,195	576	4,111,978	7,884,064
2041	2,309,173	1,477,384	634	4,118,558	7,905,748
2042	2,318,069	1,483,600	697	4,125,147	7,927,513
2043	2,327,004	1,489,844	767	4,131,748	7,949,362
2044	2,335,977	1,496,116	844	4,138,358	7,971,295
2045	2,344,988	1,502,416	928	4,144,980	7,993,312
2046	2,354,039	1,508,744	1,021	4,151,612	8,015,415
2047	2,363,128	1,515,101	1,123	4,158,254	8,037,605
2048	2,372,256	1,521,485	1,235	4,164,907	8,059,884
2049	2,381,424	1,527,898	1,359	4,171,571	8,082,252
2050	2,390,631	1,534,340	1,494	4,178,246	8,104,712
2051	2,399,878	1,540,811	1,644	4,184,931	8,127,264



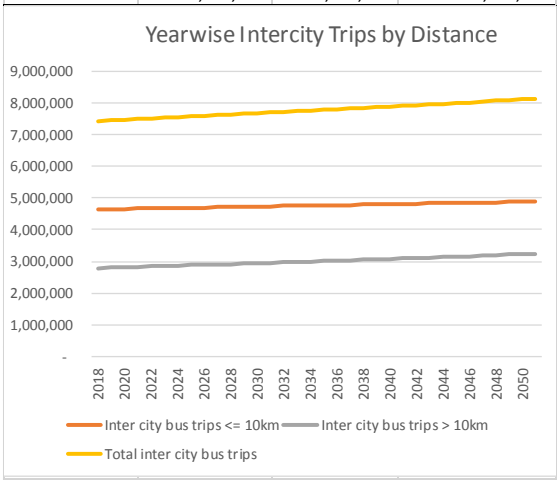
19.Year-wise Intracity Trips by Distance

Year	Intracity bus trips <= 10km	Intra city bus trips > 10km	Total intra bus city trips
2018	1,266,868	698,804	1,965,671
2019	1,306,015	720,602	2,026,617
2020	1,346,372	743,095	2,089,467
2021	1,387,976	766,306	2,154,282
2022	1,430,866	790,258	2,221,124
2023	1,475,081	814,979	2,290,060
2024	1,520,663	840,493	2,361,156
2025	1,567,653	866,828	2,434,482
2026	1,616,096	894,014	2,510,110
2027	1,666,035	922,080	2,588,115
2028	1,717,518	951,057	2,668,576
2029	1,770,592	980,979	2,751,571
2030	1,825,306	1,011,878	2,837,184
2031	1,881,712	1,043,790	2,925,502
2032	1,939,860	1,076,754	3,016,614
2033	1,999,806	1,110,806	3,110,612
2034	2,061,604	1,145,990	3,207,594
2035	2,125,312	1,182,346	3,307,658
2036	2,190,990	1,219,920	3,410,910
2037	2,258,697	1,258,759	3,517,456
2038	2,328,497	1,298,913	3,627,410
2039	2,400,455	1,340,433	3,740,888
2040	2,474,636	1,383,375	3,858,011
2041	2,551,111	1,427,795	3,978,906
2042	2,629,950	1,473,756	4,103,706
2043	2,711,225	1,521,321	4,232,547
2044	2,795,013	1,570,559	4,365,572
2045	2,881,392	1,621,541	4,502,932
2046	2,970,440	1,674,343	4,644,783
2047	3,062,242	1,729,047	4,791,288
2048	3,156,881	1,785,737	4,942,618
2049	3,254,447	1,844,506	5,098,953
2050	3,355,029	1,905,449	5,260,478
2051	3,458,721	1,968,671	5,427,392



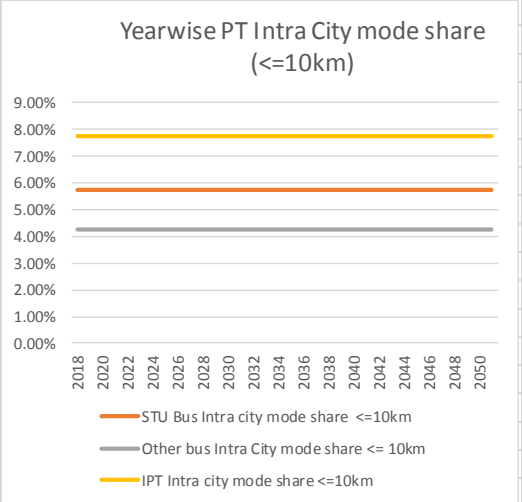
20. Year-wise Intercity Trips by Distance

Year	Inter city bus trips <= 10km	Inter city bus trips > 10km	Total inter city bus trips
2018	4,638,257	2,788,187	7,426,444
2019	4,645,678	2,800,799	7,446,477
2020	4,653,112	2,813,470	7,466,581
2021	4,660,557	2,826,199	7,486,756
2022	4,668,014	2,838,988	7,507,001
2023	4,675,482	2,851,836	7,527,318
2024	4,682,963	2,864,744	7,547,707
2025	4,690,456	2,877,712	7,568,168
2026	4,697,961	2,890,741	7,588,702
2027	4,705,478	2,903,831	7,609,308
2028	4,713,006	2,916,982	7,629,988
2029	4,720,547	2,930,195	7,650,743
2030	4,728,100	2,943,471	7,671,571
2031	4,735,665	2,956,809	7,692,474
2032	4,743,243	2,970,210	7,713,453
2033	4,750,832	2,983,676	7,734,508
2034	4,758,433	2,997,205	7,755,639
2035	4,766,047	3,010,800	7,776,847
2036	4,773,673	3,024,459	7,798,132
2037	4,781,311	3,038,185	7,819,496
2038	4,788,961	3,051,978	7,840,939
2039	4,796,624	3,065,837	7,862,461
2040	4,804,299	3,079,765	7,884,064
2041	4,811,986	3,093,762	7,905,748
2042	4,819,685	3,107,828	7,927,513
2043	4,827,397	3,121,965	7,949,362
2044	4,835,121	3,136,173	7,971,295
2045	4,842,858	3,150,454	7,993,312
2046	4,850,607	3,164,808	8,015,415
2047	4,858,368	3,179,237	8,037,605
2048	4,866,142	3,193,742	8,059,884
2049	4,873,929	3,208,324	8,082,252
2050	4,881,728	3,222,984	8,104,712
2051	4,889,539	3,237,725	8,127,264



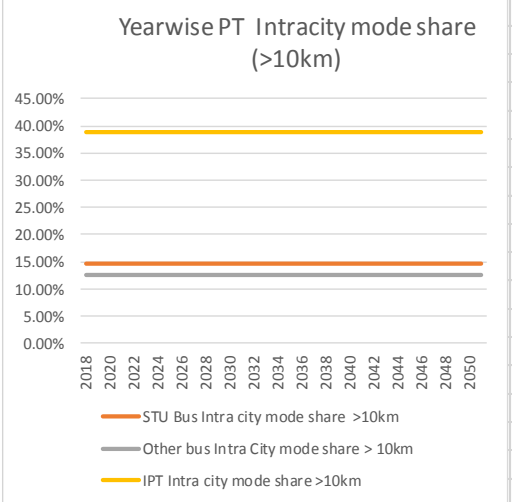
21.Yearwise PT Intra City mode share (<=10km)

Year	STU Bus Intra city mode share <=10km	Other bus Intra City mode share <= 10km	IPT Intra city mode share <=10km
2018	5.75%	4.28%	7.74%
2019	5.75%	4.28%	7.74%
2020	5.75%	4.28%	7.74%
2021	5.75%	4.28%	7.74%
2022	5.75%	4.28%	7.74%
2023	5.75%	4.28%	7.74%
2024	5.75%	4.28%	7.74%
2025	5.75%	4.28%	7.74%
2026	5.75%	4.28%	7.74%
2027	5.75%	4.28%	7.74%
2028	5.75%	4.28%	7.74%
2029	5.75%	4.28%	7.74%
2030	5.75%	4.28%	7.74%
2031	5.75%	4.28%	7.74%
2032	5.75%	4.28%	7.74%
2033	5.75%	4.28%	7.74%
2034	5.75%	4.28%	7.74%
2035	5.75%	4.28%	7.74%
2036	5.75%	4.28%	7.74%
2037	5.75%	4.28%	7.74%
2038	5.75%	4.28%	7.74%
2039	5.75%	4.28%	7.74%
2040	5.75%	4.28%	7.74%
2041	5.75%	4.28%	7.74%
2042	5.75%	4.28%	7.74%
2043	5.75%	4.28%	7.74%
2044	5.75%	4.28%	7.74%
2045	5.75%	4.28%	7.74%
2046	5.75%	4.28%	7.74%
2047	5.75%	4.28%	7.74%
2048	5.75%	4.28%	7.74%
2049	5.75%	4.28%	7.74%
2050	5.75%	4.28%	7.74%
2051	5.75%	4.28%	7.74%



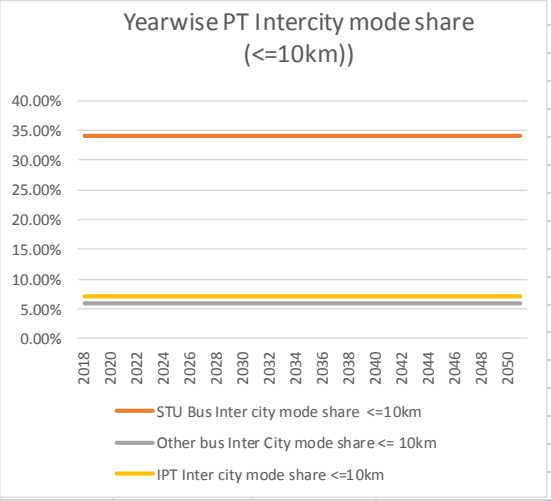
22. Year-wise PT Intracity mode share (>10km)

Year	STU Bus Intra city mode share >10km	Other bus Intra City mode share > 10km	IPT Intra city mode share >10km
2018	14.64%	12.70%	38.96%
2019	14.64%	12.70%	38.96%
2020	14.64%	12.70%	38.96%
2021	14.64%	12.70%	38.96%
2022	14.64%	12.70%	38.96%
2023	14.64%	12.70%	38.96%
2024	14.64%	12.70%	38.96%
2025	14.64%	12.70%	38.96%
2026	14.64%	12.70%	38.96%
2027	14.64%	12.70%	38.96%
2028	14.64%	12.70%	38.96%
2029	14.64%	12.70%	38.96%
2030	14.64%	12.70%	38.96%
2031	14.64%	12.70%	38.96%
2032	14.64%	12.70%	38.96%
2033	14.64%	12.70%	38.96%
2034	14.64%	12.70%	38.96%
2035	14.64%	12.70%	38.96%
2036	14.64%	12.70%	38.96%
2037	14.64%	12.70%	38.96%
2038	14.64%	12.70%	38.96%
2039	14.64%	12.70%	38.96%
2040	14.64%	12.70%	38.96%
2041	14.64%	12.70%	38.96%
2042	14.64%	12.70%	38.96%
2043	14.64%	12.70%	38.96%
2044	14.64%	12.70%	38.96%
2045	14.64%	12.70%	38.96%
2046	14.64%	12.70%	38.96%
2047	14.64%	12.70%	38.96%
2048	14.64%	12.70%	38.96%
2049	14.64%	12.70%	38.96%
2050	14.64%	12.70%	38.96%
2051	14.64%	12.70%	38.96%



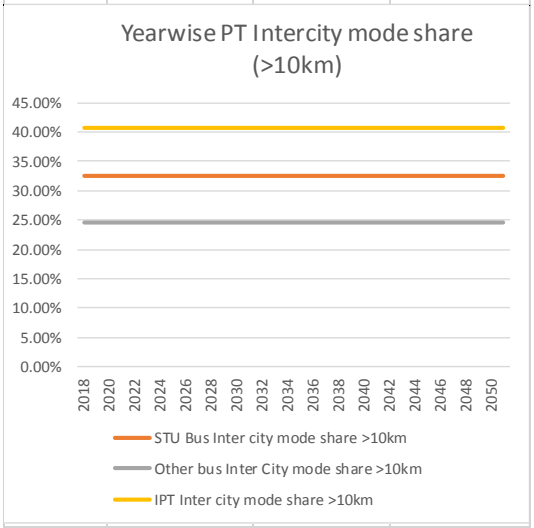
23.Year-wise PT Intercity mode share (<=10km)

Year	STU Bus Inter city mode share <=10km	Other bus Inter City mode share <= 10km	IPT Inter city mode share <=10km
2018	34.07%	5.84%	7.15%
2019	34.07%	5.84%	7.15%
2020	34.07%	5.84%	7.15%
2021	34.07%	5.84%	7.15%
2022	34.07%	5.84%	7.15%
2023	34.07%	5.84%	7.15%
2024	34.07%	5.84%	7.15%
2025	34.07%	5.84%	7.15%
2026	34.07%	5.84%	7.15%
2027	34.07%	5.84%	7.15%
2028	34.07%	5.84%	7.15%
2029	34.07%	5.84%	7.15%
2030	34.07%	5.84%	7.15%
2031	34.07%	5.84%	7.15%
2032	34.07%	5.84%	7.15%
2033	34.07%	5.84%	7.15%
2034	34.07%	5.84%	7.15%
2035	34.07%	5.84%	7.15%
2036	34.07%	5.84%	7.15%
2037	34.07%	5.84%	7.15%
2038	34.07%	5.84%	7.15%
2039	34.07%	5.84%	7.15%
2040	34.07%	5.84%	7.15%
2041	34.07%	5.84%	7.15%
2042	34.07%	5.84%	7.15%
2043	34.07%	5.84%	7.15%
2044	34.07%	5.84%	7.15%
2045	34.07%	5.84%	7.15%
2046	34.07%	5.84%	7.15%
2047	34.07%	5.84%	7.15%
2048	34.07%	5.84%	7.15%
2049	34.07%	5.84%	7.15%
2050	34.07%	5.84%	7.15%
2051	34.07%	5.84%	7.15%



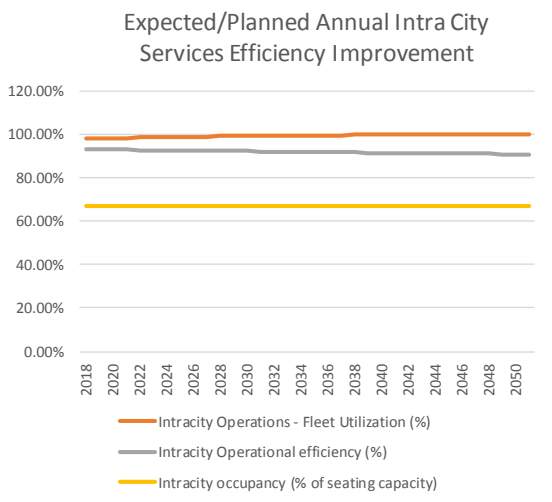
24. Year-wise PT Intercity mode share (>10km)

Year	STU Bus Inter city mode share >10km	Other bus Inter City mode share >10km	IPT Inter city mode share >10km
2018	32.66%	24.65%	40.72%
2019	32.66%	24.65%	40.72%
2020	32.66%	24.65%	40.72%
2021	32.66%	24.65%	40.72%
2022	32.66%	24.65%	40.72%
2023	32.66%	24.65%	40.72%
2024	32.66%	24.65%	40.72%
2025	32.66%	24.65%	40.72%
2026	32.66%	24.65%	40.72%
2027	32.66%	24.65%	40.72%
2028	32.66%	24.65%	40.72%
2029	32.66%	24.65%	40.72%
2030	32.66%	24.65%	40.72%
2031	32.66%	24.65%	40.72%
2032	32.66%	24.65%	40.72%
2033	32.66%	24.65%	40.72%
2034	32.66%	24.65%	40.72%
2035	32.66%	24.65%	40.72%
2036	32.66%	24.65%	40.72%
2037	32.66%	24.65%	40.72%
2038	32.66%	24.65%	40.72%
2039	32.66%	24.65%	40.72%
2040	32.66%	24.65%	40.72%
2041	32.66%	24.65%	40.72%
2042	32.66%	24.65%	40.72%
2043	32.66%	24.65%	40.72%
2044	32.66%	24.65%	40.72%
2045	32.66%	24.65%	40.72%
2046	32.66%	24.65%	40.72%
2047	32.66%	24.65%	40.72%
2048	32.66%	24.65%	40.72%
2049	32.66%	24.65%	40.72%
2050	32.66%	24.65%	40.72%
2051	32.66%	24.65%	40.72%



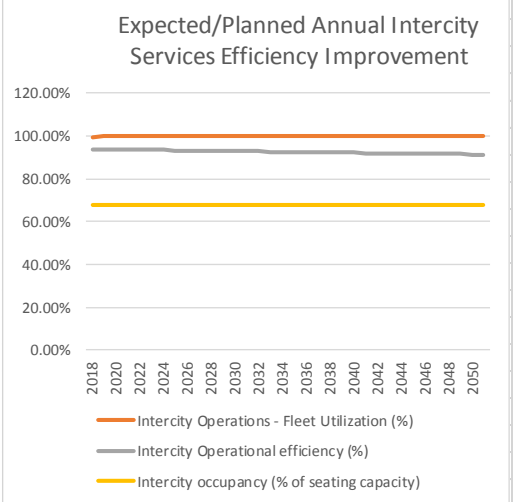
25.Expected/Planned Annual Intra City Services Efficiency Improvement

Year	Intracity Operations - Fleet Utilization (%)	Intracity Operational efficiency (%)	Intracity occupancy (% of seating capacity)
2018	97.98%	93.00%	67.00%
2019	98.08%	92.92%	67.00%
2020	98.18%	92.84%	67.00%
2021	98.28%	92.76%	67.00%
2022	98.38%	92.68%	67.00%
2023	98.48%	92.60%	67.00%
2024	98.58%	92.52%	67.00%
2025	98.68%	92.45%	67.00%
2026	98.78%	92.37%	67.00%
2027	98.88%	92.30%	67.00%
2028	98.98%	92.22%	67.00%
2029	99.08%	92.15%	67.00%
2030	99.13%	92.07%	67.00%
2031	99.18%	92.00%	67.00%
2032	99.23%	91.93%	67.00%
2033	99.28%	91.86%	67.00%
2034	99.33%	91.79%	67.00%
2035	99.38%	91.72%	67.00%
2036	99.43%	91.65%	67.00%
2037	99.48%	91.58%	67.00%
2038	99.53%	91.51%	67.00%
2039	99.58%	91.44%	67.00%
2040	99.63%	91.38%	67.00%
2041	99.68%	91.31%	67.00%
2042	99.73%	91.24%	67.00%
2043	99.78%	91.18%	67.00%
2044	99.83%	91.11%	67.00%
2045	99.88%	91.05%	67.00%
2046	99.93%	90.99%	67.00%
2047	99.98%	90.92%	67.00%
2048	100.00%	90.86%	67.00%
2049	100.00%	90.80%	67.00%
2050	100.00%	90.74%	67.00%
2051	100.00%	90.68%	67.00%



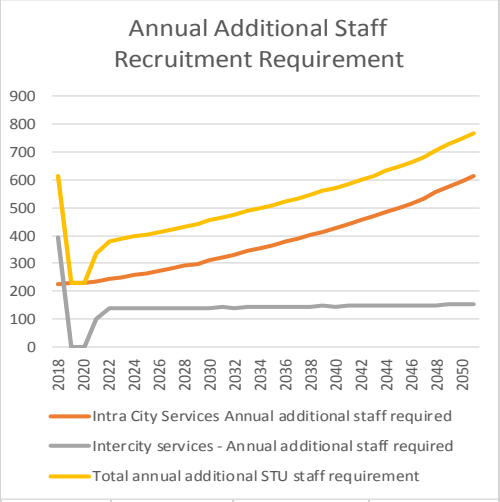
26.Expected/Planned Annual Intercity Services Efficiency Improvement

Year	Intercity Operations - Fleet Utilization (%)	Intercity Operational efficiency (%)	Intercity occupancy (% of seating capacity)
2018	99.35%	94.00%	68.00%
2019	100.00%	93.91%	68.00%
2020	100.00%	93.82%	68.00%
2021	100.00%	93.73%	68.00%
2022	100.00%	93.64%	68.00%
2023	100.00%	93.56%	68.00%
2024	100.00%	93.47%	68.00%
2025	100.00%	93.39%	68.00%
2026	100.00%	93.30%	68.00%
2027	100.00%	93.22%	68.00%
2028	100.00%	93.14%	68.00%
2029	100.00%	93.05%	68.00%
2030	100.00%	92.97%	68.00%
2031	100.00%	92.89%	68.00%
2032	100.00%	92.81%	68.00%
2033	100.00%	92.73%	68.00%
2034	100.00%	92.65%	68.00%
2035	100.00%	92.58%	68.00%
2036	100.00%	92.50%	68.00%
2037	100.00%	92.42%	68.00%
2038	100.00%	92.35%	68.00%
2039	100.00%	92.27%	68.00%
2040	100.00%	92.20%	68.00%
2041	100.00%	92.12%	68.00%
2042	100.00%	92.05%	68.00%
2043	100.00%	91.98%	68.00%
2044	100.00%	91.91%	68.00%
2045	100.00%	91.83%	68.00%
2046	100.00%	91.76%	68.00%
2047	100.00%	91.69%	68.00%
2048	100.00%	91.62%	68.00%
2049	100.00%	91.56%	68.00%
2050	100.00%	91.49%	68.00%
2051	100.00%	91.42%	68.00%



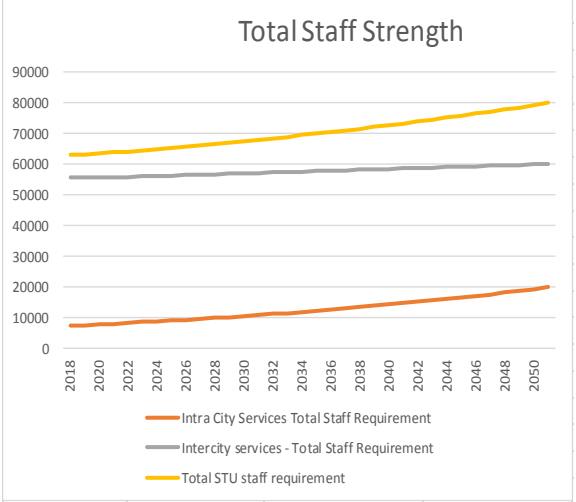
27.Annual Additional Staff Recruitment Requirement

Year	Intra City Services Annual additional staff required	Intercity services - Annual additional staff required	Total annual additional STU staff requirement
2018	223	392	615
2019	228	0	228
2020	228	0	228
2021	235	101	336
2022	243	137	380
2023	249	138	387
2024	258	138	396
2025	265	139	404
2026	273	139	412
2027	281	140	421
2028	290	140	430
2029	299	140	439
2030	313	141	454
2031	323	142	465
2032	333	141	474
2033	344	143	487
2034	354	143	497
2035	365	143	508
2036	377	144	521
2037	389	144	533
2038	401	145	546
2039	413	146	559
2040	427	145	572
2041	440	147	587
2042	454	147	601
2043	468	147	615
2044	484	148	632
2045	499	148	647
2046	515	149	664
2047	532	150	682
2048	555	150	705
2049	577	151	728
2050	596	151	747
2051	615	152	767



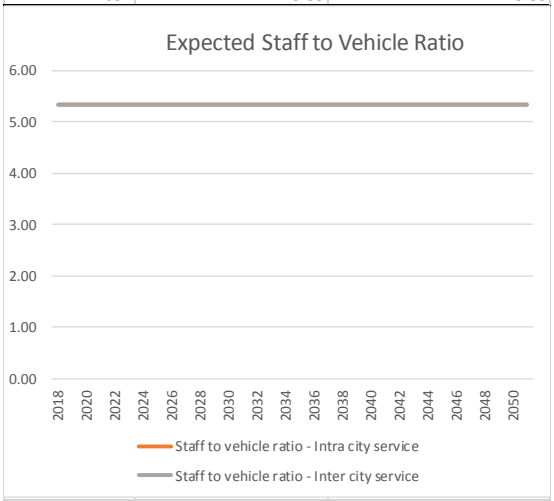
28. Total Staff Strength

Year	Intra City Services Total Staff Requirement	Intercity services - Total Staff Requirement	Total STU staff requirement
2018	7392	55653	63045
2019	7620	55653	63273
2020	7848	55653	63501
2021	8083	55754	63837
2022	8326	55891	64217
2023	8575	56029	64604
2024	8833	56167	65000
2025	9098	56306	65404
2026	9371	56445	65816
2027	9652	56585	66237
2028	9942	56725	66667
2029	10241	56865	67106
2030	10554	57006	67560
2031	10877	57148	68025
2032	11210	57289	68499
2033	11554	57432	68986
2034	11908	57575	69483
2035	12273	57718	69991
2036	12650	57862	70512
2037	13039	58006	71045
2038	13440	58151	71591
2039	13853	58297	72150
2040	14280	58442	72722
2041	14720	58589	73309
2042	15174	58736	73910
2043	15642	58883	74525
2044	16126	59031	75157
2045	16625	59179	75804
2046	17140	59328	76468
2047	17672	59478	77150
2048	18227	59628	77855
2049	18804	59779	78583
2050	19400	59930	79330
2051	20015	60082	80097



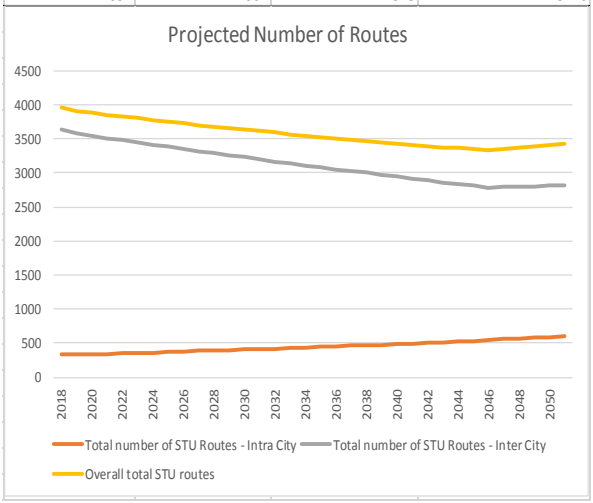
29. Expected Staff to Vehicle Ratio

Year	Staff to vehicle ratio - Intra city service	Staff to vehicle ratio - Inter city service
2018	5.33	5.33
2019	5.33	5.33
2020	5.33	5.33
2021	5.33	5.33
2022	5.33	5.33
2023	5.33	5.33
2024	5.33	5.33
2025	5.33	5.33
2026	5.33	5.33
2027	5.33	5.33
2028	5.33	5.33
2029	5.33	5.33
2030	5.33	5.33
2031	5.33	5.33
2032	5.33	5.33
2033	5.33	5.33
2034	5.33	5.33
2035	5.33	5.33
2036	5.33	5.33
2037	5.33	5.33
2038	5.33	5.33
2039	5.33	5.33
2040	5.33	5.33
2041	5.33	5.33
2042	5.33	5.33
2043	5.33	5.33
2044	5.33	5.33
2045	5.33	5.33
2046	5.33	5.33
2047	5.33	5.33
2048	5.33	5.33
2049	5.33	5.33
2050	5.33	5.33
2051	5.33	5.33



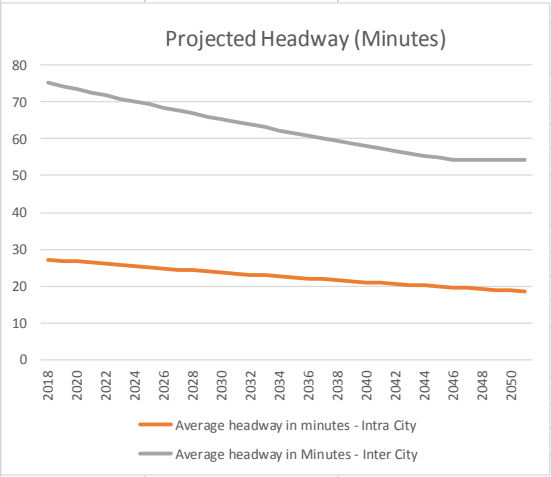
30.Projected Number of Routes

Year	Total number of STU Routes - Intra City	Total number of STU Routes - Inter City	Overall total STU routes
2018	327	3628	3955
2019	333	3575	3908
2020	339	3542	3881
2021	345	3509	3854
2022	352	3477	3828
2023	358	3444	3802
2024	364	3413	3777
2025	371	3381	3752
2026	378	3350	3728
2027	384	3319	3703
2028	391	3289	3680
2029	398	3258	3657
2030	406	3228	3634
2031	413	3199	3612
2032	421	3169	3590
2033	429	3140	3569
2034	437	3111	3548
2035	445	3082	3527
2036	453	3054	3507
2037	462	3026	3488
2038	470	2998	3468
2039	479	2971	3450
2040	488	2943	3431
2041	497	2916	3414
2042	507	2889	3396
2043	516	2863	3379
2044	526	2837	3363
2045	536	2811	3347
2046	546	2785	3331
2047	557	2790	3346
2048	567	2797	3364
2049	578	2804	3382
2050	590	2811	3401
2051	601	2818	3420



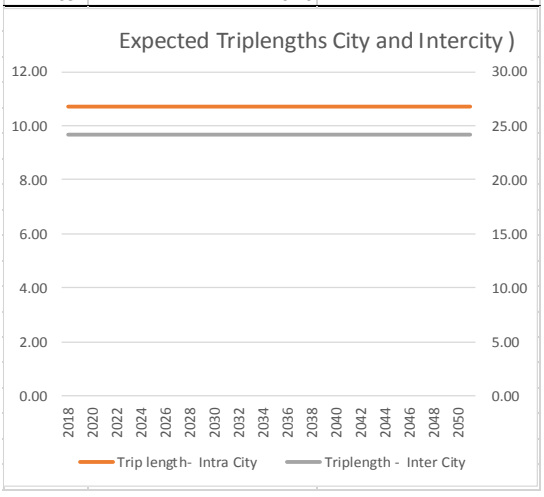
31. Projected Headway (Minutes)

Year	Average headway in minutes - Intra City	Average headway in Minutes - Inter City
2018	27	75
2019	27	74
2020	27	74
2021	26	73
2022	26	72
2023	26	71
2024	25	70
2025	25	69
2026	25	69
2027	24	68
2028	24	67
2029	24	66
2030	24	65
2031	23	65
2032	23	64
2033	23	63
2034	23	62
2035	22	62
2036	22	61
2037	22	60
2038	22	60
2039	21	59
2040	21	58
2041	21	57
2042	21	57
2043	20	56
2044	20	55
2045	20	55
2046	20	54
2047	19	54
2048	19	54
2049	19	54
2050	19	54
2051	18	54



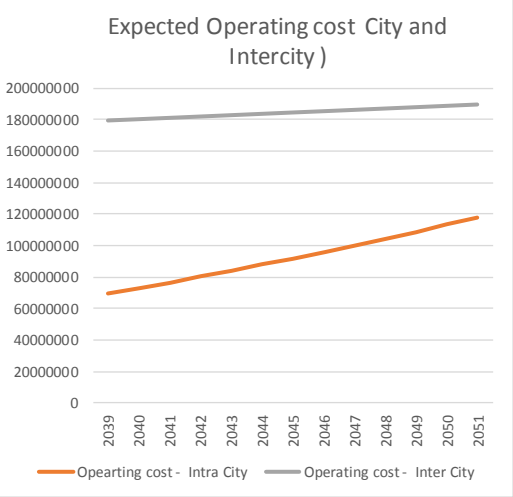
32.Expected Trip-lengths City and Intercity

Year	Trip length- Intra City	Triplength - Inter City
2018	10.70	24.18
2019	10.70	24.18
2020	10.70	24.18
2021	10.70	24.18
2022	10.70	24.18
2023	10.70	24.18
2024	10.70	24.18
2025	10.70	24.18
2026	10.70	24.18
2027	10.70	24.18
2028	10.70	24.18
2029	10.70	24.18
2030	10.70	24.18
2031	10.70	24.18
2032	10.70	24.18
2033	10.70	24.18
2034	10.70	24.18
2035	10.70	24.18
2036	10.70	24.18
2037	10.70	24.18
2038	10.70	24.18
2039	10.70	24.18
2040	10.70	24.18
2041	10.70	24.18
2042	10.70	24.18
2043	10.70	24.18
2044	10.70	24.18
2045	10.70	24.18
2046	10.70	24.18
2047	10.70	24.18
2048	10.70	24.18
2049	10.70	24.18
2050	10.70	24.18
2051	10.70	24.18



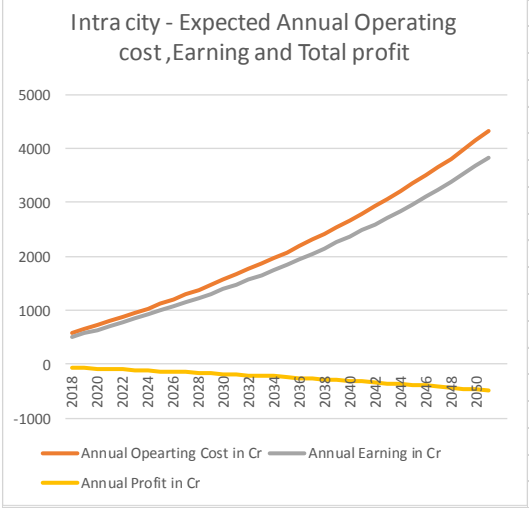
33.Expected Operating Cost City and Intercity

Expected Operating cost City and Intercity		
Year	Opearting cost - Intra City	Operating cost - Inter City
2018	15914644	156615369
2019	17871315	158080974
2020	19863844	159366516
2021	21907869	160624366
2022	24005095	161855544
2023	26157282	163061037
2024	28366249	164241798
2025	30633877	165398744
2026	32962108	166532765
2027	35352949	167644718
2028	37808476	168735432
2029	40330836	169805705
2030	42922247	170856311
2031	45585007	171887996
2032	48321491	172901482
2033	51134160	173897465
2034	54025559	174876619
2035	56998327	175839594
2036	60055195	176787021
2037	63198994	177719507
2038	66432660	178637640
2039	69759237	179541989
2040	73181881	180433105
2041	76703871	181311520
2042	80328610	182177750
2043	84059631	183032295
2044	87900608	183875637
2045	91855360	184708247
2046	95927861	185530577
2047	100122246	186343071
2048	104442821	187146154
2049	108894074	187940245
2050	113480684	188725747
2051	118207533	189503055



34.Intra city - Expected Annual Operating cost, Earning and Total profit

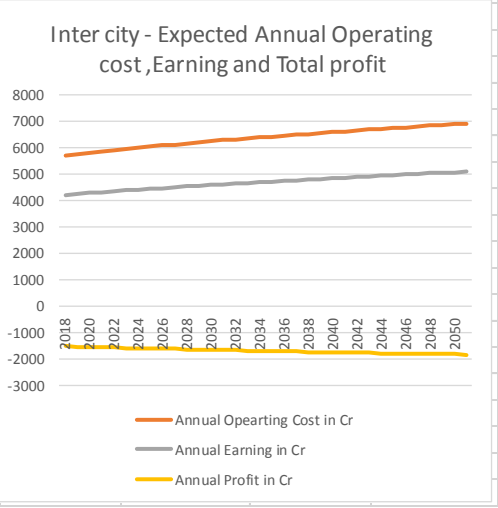
tra city - Expected Annual Operating cost ,Earning and Total prof			
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	581	515	-65.4
2019	652	578	-73.9
2020	725	643	-82.2
2021	800	709	-90.6
2022	876	777	-99.3
2023	955	847	-108.2
2024	1035	918	-117.3
2025	1118	991	-126.7
2026	1203	1067	-136.3
2027	1290	1144	-146.2
2028	1380	1224	-156.4
2029	1472	1305	-166.8
2030	1567	1389	-177.5
2031	1664	1475	-188.5
2032	1764	1564	-199.8
2033	1866	1655	-211.4
2034	1972	1749	-223.4
2035	2080	1845	-235.7
2036	2192	1944	-248.3
2037	2307	2045	-261.3
2038	2425	2150	-274.6
2039	2546	2258	-288.4
2040	2671	2369	-302.5
2041	2800	2483	-317.0
2042	2932	2600	-332.0
2043	3068	2721	-347.4
2044	3208	2845	-363.3
2045	3353	2973	-379.6
2046	3501	3105	-396.4
2047	3654	3241	-413.7
2048	3812	3381	-431.5
2049	3975	3525	-449.9
2050	4142	3673	-468.8
2051	4315	3826	-488.4



35. Intercity - Expected Annual Operating cost, Earning and Total profit

er city - Expected Annual Operating cost ,Earning and Total pro

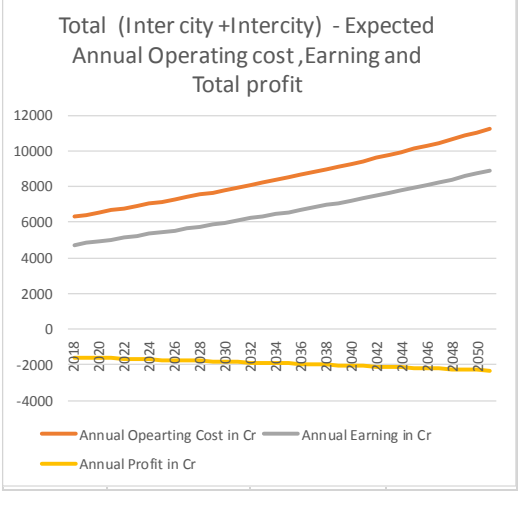
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	5716	4208	-1508.3
2019	5770	4243	-1526.5
2020	5817	4278	-1538.9
2021	5863	4312	-1551.0
2022	5908	4345	-1562.8
2023	5952	4377	-1574.4
2024	5995	4409	-1585.8
2025	6037	4440	-1597.0
2026	6078	4471	-1607.9
2027	6119	4500	-1618.6
2028	6159	4530	-1629.1
2029	6198	4559	-1639.4
2030	6236	4587	-1649.5
2031	6274	4615	-1659.4
2032	6311	4642	-1669.2
2033	6347	4669	-1678.7
2034	6383	4695	-1688.2
2035	6418	4721	-1697.4
2036	6453	4746	-1706.5
2037	6487	4771	-1715.5
2038	6520	4796	-1724.3
2039	6553	4820	-1733.0
2040	6586	4844	-1741.6
2041	6618	4868	-1750.0
2042	6649	4891	-1758.4
2043	6681	4914	-1766.6
2044	6711	4937	-1774.7
2045	6742	4959	-1782.7
2046	6772	4981	-1790.6
2047	6802	5003	-1798.4
2048	6831	5025	-1806.1
2049	6860	5046	-1813.8
2050	6888	5067	-1821.3
2051	6917	5088	-1828.8



36. Total (Intercity +Intercity) - Expected Annual Operating cost, Earning and Total profit

r city +Intercity) - Expected Annual Operating cost ,Earning and

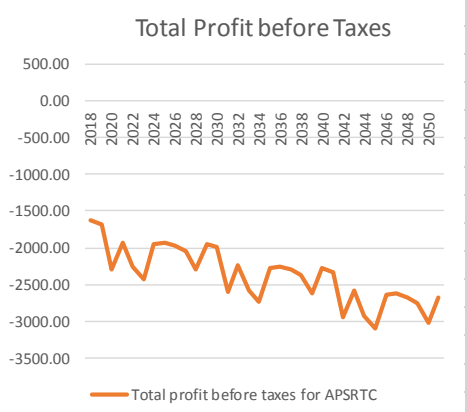
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	6297	4724	-1573.7
2019	6422	4822	-1600.4
2020	6542	4921	-1621.1
2021	6662	5021	-1641.6
2022	6784	5122	-1662.2
2023	6906	5224	-1682.7
2024	7030	5327	-1703.2
2025	7155	5432	-1723.7
2026	7282	5537	-1744.2
2027	7409	5645	-1764.8
2028	7539	5753	-1785.4
2029	7670	5864	-1806.2
2030	7803	5976	-1827.0
2031	7938	6090	-1847.9
2032	8075	6206	-1869.0
2033	8214	6323	-1890.2
2034	8355	6443	-1911.5
2035	8499	6566	-1933.1
2036	8645	6690	-1954.8
2037	8794	6817	-1976.8
2038	8945	6946	-1999.0
2039	9099	7078	-2021.4
2040	9257	7213	-2044.1
2041	9418	7350	-2067.1
2042	9581	7491	-2090.4
2043	9749	7635	-2114.0
2044	9920	7782	-2138.0
2045	10095	7932	-2162.3
2046	10273	8086	-2187.0
2047	10456	8244	-2212.1
2048	10643	8405	-2237.7
2049	10834	8571	-2263.7
2050	11031	8740	-2290.2
2051	11231	8914	-2317.1



37. Profit before taxes after Infrastructure development and Fleet Upgradation cost.

Profit before taxes after Infrastrucuture development

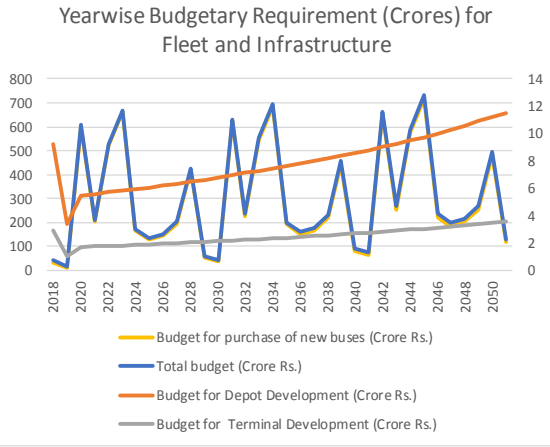
Year	Total profit before taxes for APSRTC
2018	-1618.64
2019	-1678.19
2020	-2301.99
2021	-1925.47
2022	-2265.23
2023	-2427.44
2024	-1953.01
2025	-1934.44
2026	-1971.72
2027	-2044.20
2028	-2289.37
2029	-1945.94
2030	-1989.89
2031	-2607.28
2032	-2232.85
2033	-2574.95
2034	-2739.77
2035	-2268.19
2036	-2252.73
2037	-2293.39
2038	-2369.51
2039	-2618.60
2040	-2279.35
2041	-2327.49
2042	-2949.59
2043	-2580.16
2044	-2927.56
2045	-3097.97
2046	-2632.31
2047	-2623.07
2048	-2671.32
2049	-2755.15
2050	-3011.61
2051	-2680.11



9.13. Tool Outputs– Desired scenario (30% mode share)

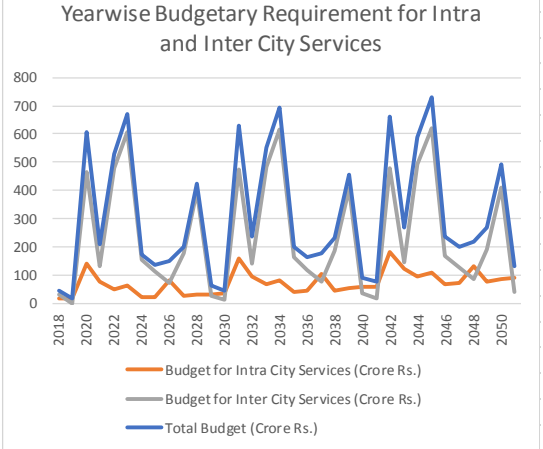
1. Year-wise Budgetary Requirement (Crores) for Fleet and Infrastructure

Year	Budget for Depot Development (Crore Rs.)	Budget for Terminal Development (Crore Rs.)	Budget for purchase of new buses (Crore Rs.)	Total budget (Crore Rs.)
2018	9	3	33	45
2019	3	1	12	17
2020	5	2	600	607
2021	6	2	202	210
2022	6	2	521	529
2023	6	2	662	670
2024	6	2	166	174
2025	6	2	127	135
2026	6	2	142	151
2027	6	2	193	202
2028	6	2	417	425
2029	7	2	52	60
2030	7	2	35	44
2031	7	2	622	631
2032	7	2	225	234
2033	7	2	544	554
2034	7	2	686	696
2035	8	2	191	201
2036	8	2	151	162
2037	8	2	168	178
2038	8	3	220	230
2039	8	3	444	455
2040	9	3	79	90
2041	9	3	63	75
2042	9	3	651	663
2043	9	3	255	267
2044	9	3	575	587
2045	10	3	717	730
2046	10	3	223	236
2047	10	3	184	198
2048	11	3	202	216
2049	11	3	255	269
2050	11	4	480	494
2051	12	4	116	131



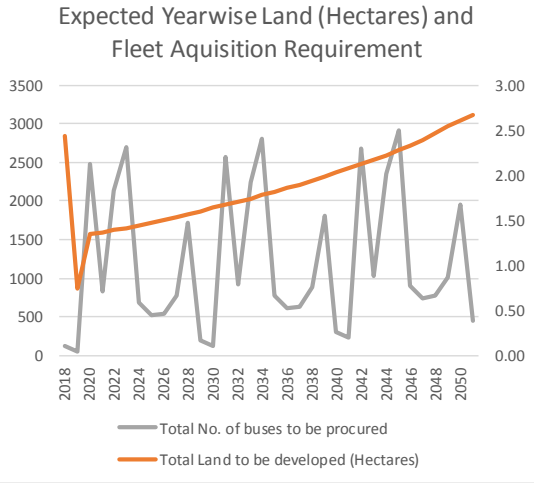
2.Year Wise Budgetary Requirement for Intra and Inter City Services.

Year	Budget for Intra City Services (Crore Rs.)	Budget for Inter City Services (Crore Rs.)	Total Budget (Crore Rs.)
2018	16	28	45
2019	17	0	17
2020	140	467	607
2021	77	133	210
2022	50	478	529
2023	61	609	670
2024	19	155	174
2025	22	112	135
2026	81	69	151
2027	24	177	202
2028	29	397	425
2029	32	28	60
2030	34	10	44
2031	158	474	631
2032	95	139	234
2033	69	485	554
2034	80	615	696
2035	39	162	201
2036	43	119	162
2037	102	76	178
2038	46	184	230
2039	51	403	455
2040	56	35	90
2041	58	17	75
2042	182	480	663
2043	120	146	267
2044	95	492	587
2045	107	622	730
2046	67	169	236
2047	72	126	198
2048	133	83	216
2049	78	191	269
2050	84	410	494
2051	89	42	131



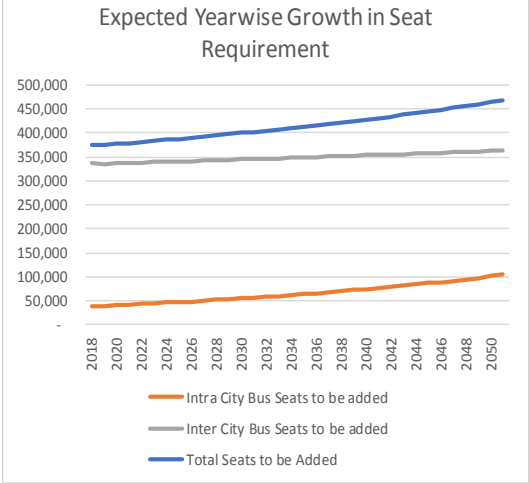
3.Expected Year-wise Land (Hectares) and Fleet Acquisition Requirement

Year	Total Land to be developed (Hectares)	Total No. of buses to be procured
2018	2.44	115
2019	0.74	43
2020	1.34	2486
2021	1.37	830
2022	1.39	2145
2023	1.42	2707
2024	1.45	676
2025	1.47	513
2026	1.50	537
2027	1.53	775
2028	1.56	1713
2029	1.59	198
2030	1.64	128
2031	1.67	2574
2032	1.71	919
2033	1.75	2236
2034	1.78	2800
2035	1.82	772
2036	1.86	610
2037	1.90	637
2038	1.94	877
2039	1.99	1818
2040	2.03	305
2041	2.08	238
2042	2.13	2686
2043	2.18	1035
2044	2.23	2355
2045	2.28	2921
2046	2.33	896
2047	2.39	738
2048	2.47	770
2049	2.54	1014
2050	2.61	1958
2051	2.68	449



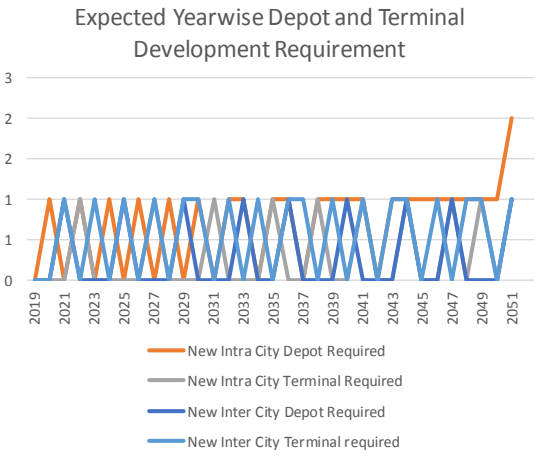
4.Expected Year-wise Growth in Seat Requirement.

Year	Intra City Bus Seats to be added	Inter City Bus Seats to be added	Total Seats to be Added
2018	38,613	336,751	375,364
2019	39,804	335,708	375,512
2020	40,997	336,533	377,530
2021	42,225	337,362	379,587
2022	43,491	338,192	381,683
2023	44,795	339,026	383,821
2024	46,139	339,862	386,001
2025	47,523	340,701	388,225
2026	48,950	341,543	390,493
2027	50,420	342,388	392,808
2028	51,934	343,235	395,170
2029	53,496	344,086	397,581
2030	55,132	344,939	400,071
2031	56,819	345,795	402,614
2032	58,559	346,653	405,213
2033	60,354	347,515	407,869
2034	62,204	348,380	410,584
2035	64,112	349,247	413,359
2036	66,080	350,118	416,198
2037	68,110	350,991	419,101
2038	70,204	351,868	422,072
2039	72,364	352,747	425,111
2040	74,592	353,630	428,222
2041	76,891	354,516	431,407
2042	79,264	355,404	434,668
2043	81,712	356,296	438,008
2044	84,238	357,191	441,429
2045	86,845	358,090	444,935
2046	89,537	358,991	448,528
2047	92,316	359,896	452,212
2048	95,213	360,804	456,017
2049	98,225	361,716	459,941
2050	101,338	362,631	463,969
2051	104,555	363,550	468,104



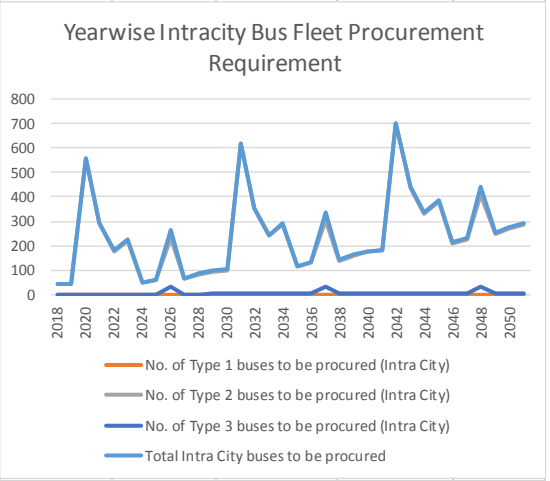
5.Expected Year-wise Depot and Terminal Development Requirement.

Year	New Intra City Depot Required	New Intra City Terminal Required	New Inter City Depot Required	New Inter City Terminal required
2018	1	0	0	1
2019	0	0	0	0
2020	1	0	0	0
2021	0	0	1	1
2022	1	1	0	0
2023	0	0	0	1
2024	1	0	0	0
2025	0	0	1	1
2026	1	0	0	0
2027	0	1	0	1
2028	1	0	0	0
2029	0	0	1	1
2030	1	0	0	1
2031	0	1	0	0
2032	1	0	0	1
2033	1	0	1	0
2034	0	0	0	1
2035	1	1	0	0
2036	1	0	1	1
2037	0	0	0	1
2038	1	1	0	0
2039	1	0	0	1
2040	1	0	1	0
2041	1	1	0	1
2042	0	0	0	0
2043	1	0	0	1
2044	1	1	1	1
2045	1	0	0	0
2046	1	0	0	1
2047	1	1	1	0
2048	1	0	0	1
2049	1	1	0	1
2050	1	0	0	0
2051	2	1	1	1



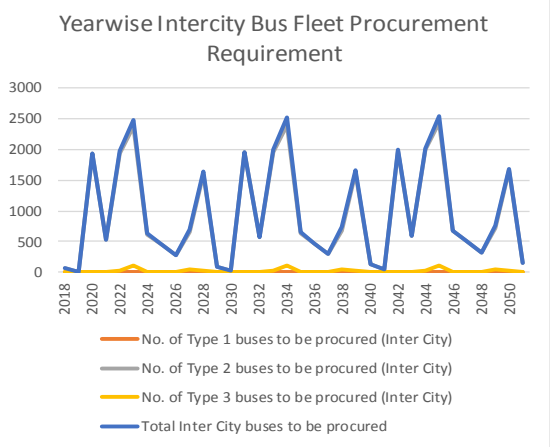
6.Yearwise Intracity Bus Fleet Procurement Requirement.

Year	No. of Type 1 buses to be procured (Intra City)	No. of Type 2 buses to be procured (Intra City)	No. of Type 3 buses to be procured (Intra City)	Total Intra City buses to be procured
2018	0	41	1	42
2019	0	42	1	43
2020	0	556	1	557
2021	0	291	1	292
2022	0	178	1	179
2023	0	223	1	224
2024	0	48	1	49
2025	0	61	1	62
2026	0	233	31	264
2027	0	67	1	68
2028	0	84	1	85
2029	0	96	2	98
2030	0	99	2	102
2031	0	615	2	617
2032	0	352	2	355
2033	0	241	2	244
2034	0	288	3	290
2035	0	115	3	118
2036	0	130	3	132
2037	0	304	33	337
2038	0	140	3	143
2039	0	160	3	163
2040	0	174	4	178
2041	0	180	4	184
2042	0	698	4	703
2043	0	438	4	443
2044	0	330	4	335
2045	0	379	5	384
2046	0	210	5	214
2047	0	227	5	232
2048	0	406	35	441
2049	0	246	5	251
2050	0	269	5	275
2051	0	287	7	293



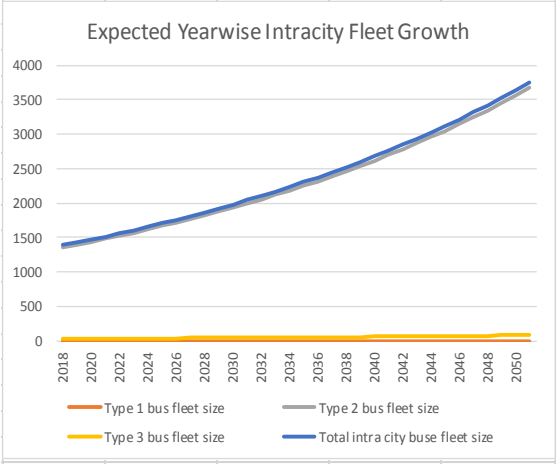
7.Year-wise Intercity Bus Fleet Procurement Requirement

Year	No. of Type 1 buses to be procured (Inter City)	No. of Type 2 buses to be procured (Inter City)	No. of Type 3 buses to be procured (Inter City)	Total Inter City buses to be procured
2018	0	72	2	73
2019	0	0	0	0
2020	0	1928	2	1930
2021	0	537	1	538
2022	0	1929	37	1966
2023	0	2368	115	2483
2024	0	617	10	627
2025	0	450	1	451
2026	0	273	1	273
2027	0	660	48	707
2028	0	1600	28	1627
2029	0	98	2	100
2030	0	26	1	26
2031	0	1954	2	1956
2032	0	563	1	564
2033	0	1955	37	1992
2034	0	2394	115	2510
2035	0	644	10	654
2036	0	477	1	478
2037	0	299	1	300
2038	0	686	48	734
2039	0	1626	28	1655
2040	0	124	3	127
2041	0	53	1	54
2042	0	1981	3	1984
2043	0	590	2	592
2044	0	1982	38	2020
2045	0	2422	116	2538
2046	0	671	11	682
2047	0	504	2	506
2048	0	327	2	328
2049	0	714	49	763
2050	0	1654	29	1683
2051	0	152	4	156



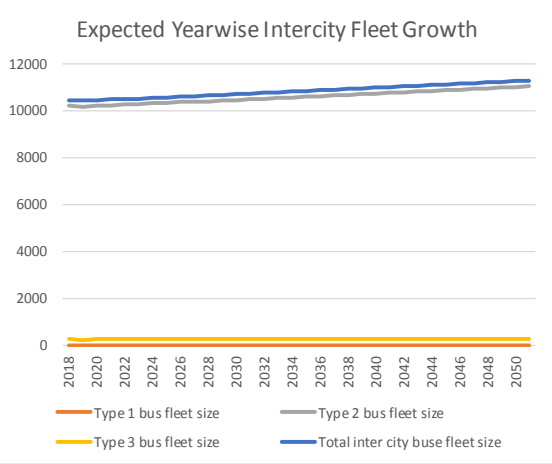
8.Expected Year-wise Intracity Fleet Growth.

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total intra city buse fleet size
2018	0	1356	31	1387
2019	0	1398	32	1430
2020	0	1440	33	1472
2021	0	1483	34	1517
2022	0	1527	35	1562
2023	0	1573	36	1609
2024	0	1620	37	1657
2025	0	1669	38	1707
2026	0	1719	39	1758
2027	0	1771	40	1811
2028	0	1824	42	1865
2029	0	1879	43	1921
2030	0	1936	44	1980
2031	0	1995	46	2041
2032	0	2056	47	2103
2033	0	2119	48	2168
2034	0	2184	50	2234
2035	0	2251	51	2303
2036	0	2320	53	2373
2037	0	2392	55	2446
2038	0	2465	56	2521
2039	0	2541	58	2599
2040	0	2619	60	2679
2041	0	2700	62	2762
2042	0	2783	63	2847
2043	0	2869	65	2935
2044	0	2958	67	3026
2045	0	3050	70	3119
2046	0	3144	72	3216
2047	0	3242	74	3316
2048	0	3343	76	3420
2049	0	3449	79	3528
2050	0	3559	81	3640
2051	0	3671	84	3755



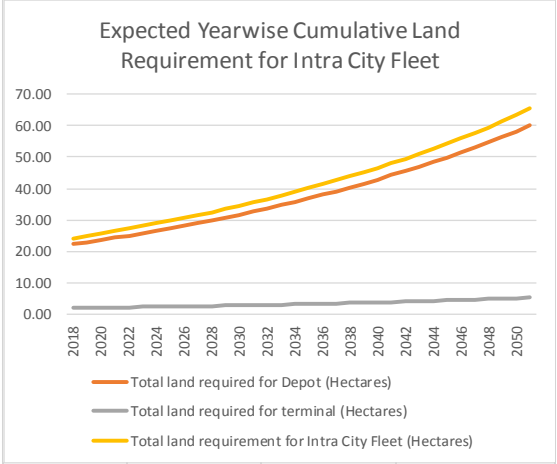
9.Expected Year-wise Intercity Fleet Growth

Year	Type 1 bus fleet size	Type 2 bus fleet size	Type 3 bus fleet size	Total inter city buse fleet size
2018	0	10206	236	10441
2019	0	10174	235	10409
2020	0	10199	236	10435
2021	0	10224	236	10460
2022	0	10249	237	10486
2023	0	10275	237	10512
2024	0	10300	238	10538
2025	0	10326	238	10564
2026	0	10351	239	10590
2027	0	10377	240	10616
2028	0	10402	240	10643
2029	0	10428	241	10669
2030	0	10454	241	10695
2031	0	10480	242	10722
2032	0	10506	243	10748
2033	0	10532	243	10775
2034	0	10558	244	10802
2035	0	10585	244	10829
2036	0	10611	245	10856
2037	0	10637	246	10883
2038	0	10664	246	10910
2039	0	10691	247	10937
2040	0	10717	247	10965
2041	0	10744	248	10992
2042	0	10771	249	11020
2043	0	10798	249	11047
2044	0	10825	250	11075
2045	0	10852	251	11103
2046	0	10880	251	11131
2047	0	10907	252	11159
2048	0	10935	252	11187
2049	0	10962	253	11216
2050	0	10990	254	11244
2051	0	11018	254	11272



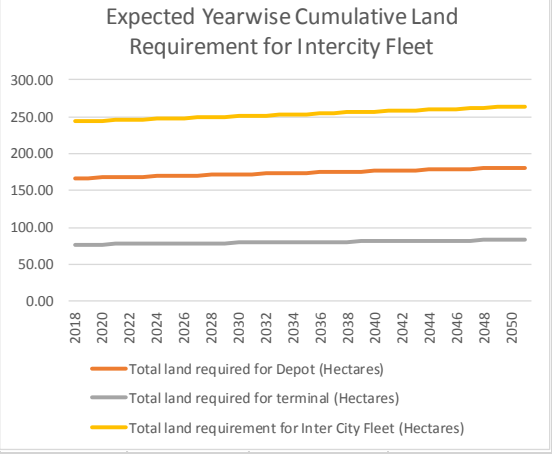
10.Expected Year-wise Cumulative Land Requirement for Intra City Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Intra City Fleet (Hectares)
2018	22.19	1.94	24.13
2019	22.87	2.00	24.88
2020	23.56	2.06	25.62
2021	24.27	2.12	26.39
2022	24.99	2.19	27.18
2023	25.74	2.25	27.99
2024	26.51	2.32	28.83
2025	27.31	2.39	29.70
2026	28.13	2.46	30.59
2027	28.97	2.54	31.51
2028	29.84	2.61	32.46
2029	30.74	2.69	33.43
2030	31.68	2.77	34.45
2031	32.65	2.86	35.51
2032	33.65	2.94	36.60
2033	34.68	3.03	37.72
2034	35.75	3.13	38.87
2035	36.84	3.22	40.07
2036	37.97	3.32	41.30
2037	39.14	3.42	42.57
2038	40.34	3.53	43.87
2039	41.59	3.64	45.22
2040	42.87	3.75	46.62
2041	44.19	3.87	48.05
2042	45.55	3.99	49.54
2043	46.96	4.11	51.07
2044	48.41	4.24	52.64
2045	49.91	4.37	54.27
2046	51.45	4.50	55.96
2047	53.05	4.64	57.69
2048	54.72	4.79	59.50
2049	56.45	4.94	61.39
2050	58.24	5.10	63.33
2051	60.08	5.26	65.34



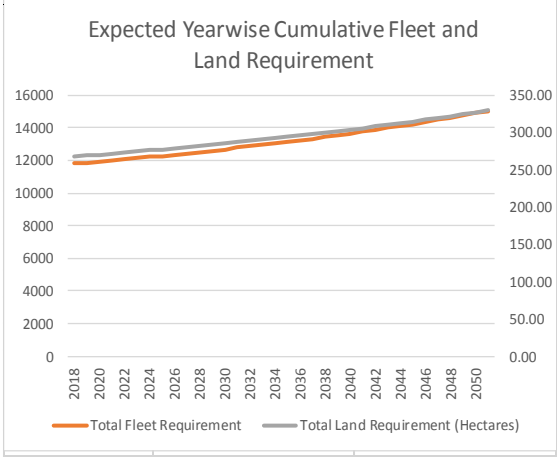
11.Expected Year-wise Cumulative Land Requirement for Intercity Fleet.

Year	Total land required for Depot (Hectares)	Total land required for terminal (Hectares)	Total land requirement for Inter City Fleet (Hectares)
2018	167.06	76.74	243.81
2019	167.06	76.74	243.81
2020	167.47	76.93	244.41
2021	167.88	77.12	245.00
2022	168.30	77.31	245.61
2023	168.71	77.50	246.21
2024	169.12	77.69	246.82
2025	169.54	77.88	247.42
2026	169.96	78.07	248.03
2027	170.38	78.27	248.64
2028	170.80	78.46	249.26
2029	171.22	78.65	249.87
2030	171.64	78.85	250.49
2031	172.07	79.04	251.11
2032	172.49	79.24	251.73
2033	172.92	79.44	252.36
2034	173.35	79.63	252.98
2035	173.78	79.83	253.61
2036	174.21	80.03	254.24
2037	174.65	80.23	254.87
2038	175.08	80.43	255.51
2039	175.52	80.63	256.14
2040	175.95	80.83	256.78
2041	176.39	81.03	257.42
2042	176.83	81.23	258.07
2043	177.28	81.44	258.71
2044	177.72	81.64	259.36
2045	178.17	81.85	260.01
2046	178.61	82.05	260.66
2047	179.06	82.26	261.32
2048	179.51	82.46	261.98
2049	179.97	82.67	262.64
2050	180.42	82.88	263.30
2051	180.88	83.09	263.97



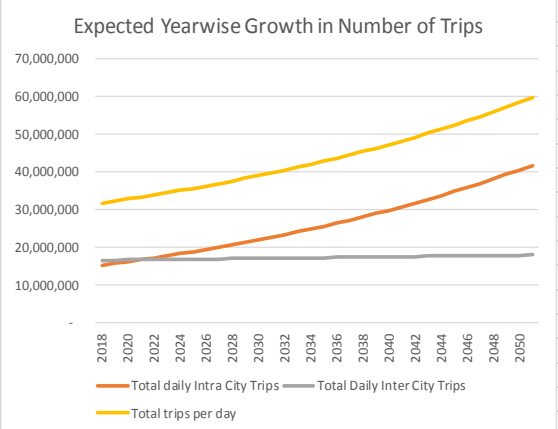
12.Expected Year-wise Cumulative Fleet and Land Requirement.

Year	Total Fleet Requirement	Total Land Requirement (Hectares)
2018	11828	267.94
2019	11839	268.68
2020	11907	270.03
2021	11977	271.39
2022	12048	272.79
2023	12121	274.20
2024	12195	275.65
2025	12271	277.12
2026	12348	278.62
2027	12427	280.15
2028	12508	281.71
2029	12590	283.31
2030	12675	284.95
2031	12763	286.62
2032	12852	288.33
2033	12943	290.07
2034	13036	291.86
2035	13132	293.68
2036	13229	295.54
2037	13329	297.44
2038	13432	299.38
2039	13537	301.37
2040	13644	303.40
2041	13754	305.48
2042	13867	307.60
2043	13982	309.78
2044	14101	312.01
2045	14222	314.29
2046	14347	316.62
2047	14475	319.01
2048	14607	321.48
2049	14743	324.02
2050	14884	326.63
2051	15028	329.31



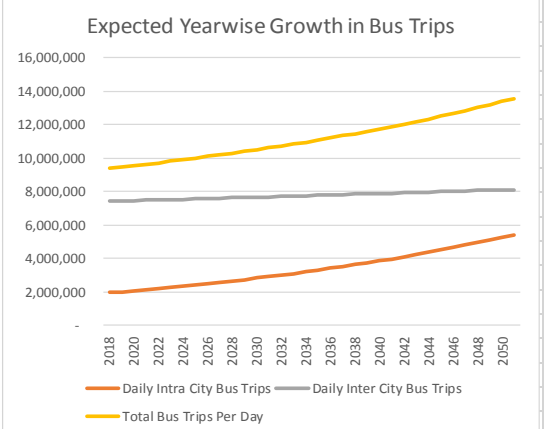
13.Expected Year-wise Growth in Number of Trips.

Year	Total daily Intra City Trips	Total Daily Inter City Trips	Total trips per day
2018	15,188,281	16,488,485	31,676,766
2019	15,658,362	16,529,091	32,187,453
2020	16,143,044	16,569,828	32,712,872
2021	16,642,787	16,610,698	33,253,485
2022	17,158,064	16,651,701	33,809,765
2023	17,689,365	16,692,838	34,382,203
2024	18,237,195	16,734,109	34,971,304
2025	18,802,076	16,775,515	35,577,591
2026	19,384,546	16,817,058	36,201,604
2027	19,985,163	16,858,736	36,843,899
2028	20,604,503	16,900,552	37,505,055
2029	21,243,161	16,942,507	38,185,668
2030	21,901,751	16,984,600	38,886,351
2031	22,580,909	17,026,833	39,607,742
2032	23,281,292	17,069,207	40,350,499
2033	24,003,580	17,111,723	41,115,303
2034	24,748,477	17,154,381	41,902,858
2035	25,516,709	17,197,182	42,713,891
2036	26,309,031	17,240,129	43,549,160
2037	27,126,221	17,283,221	44,409,442
2038	27,969,086	17,326,461	45,295,547
2039	28,838,462	17,369,848	46,208,310
2040	29,735,214	17,413,385	47,148,599
2041	30,660,241	17,457,073	48,117,314
2042	31,614,472	17,500,914	49,115,386
2043	32,598,872	17,544,908	50,143,780
2044	33,614,441	17,589,058	51,203,499
2045	34,662,218	17,633,366	52,295,584
2046	35,743,280	17,677,833	53,421,113
2047	36,858,746	17,722,461	54,581,207
2048	38,009,780	17,767,253	55,777,033
2049	39,197,592	17,812,211	57,009,803
2050	40,423,437	17,857,338	58,280,775
2051	41,688,625	17,902,635	59,591,260



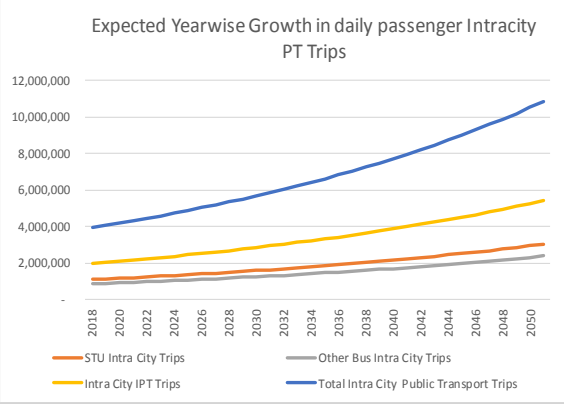
14.Expected Year-wise Growth in Bus Trips

Year	Daily Intra City Bus Trips	Daily Inter City Bus Trips	Total Bus Trips Per Day
2018	1,965,671	7,426,444	9,392,115
2019	2,026,617	7,446,477	9,473,095
2020	2,089,467	7,466,581	9,556,048
2021	2,154,282	7,486,756	9,641,038
2022	2,221,124	7,507,001	9,728,126
2023	2,290,060	7,527,318	9,817,378
2024	2,361,156	7,547,707	9,908,863
2025	2,434,482	7,568,168	10,002,650
2026	2,510,110	7,588,702	10,098,812
2027	2,588,115	7,609,308	10,197,424
2028	2,668,576	7,629,988	10,298,564
2029	2,751,571	7,650,743	10,402,313
2030	2,837,184	7,671,571	10,508,755
2031	2,925,502	7,692,474	10,617,976
2032	3,016,614	7,713,453	10,730,067
2033	3,110,612	7,734,508	10,845,120
2034	3,207,594	7,755,639	10,963,232
2035	3,307,658	7,776,847	11,084,505
2036	3,410,910	7,798,132	11,209,042
2037	3,517,456	7,819,496	11,336,952
2038	3,627,410	7,840,939	11,468,349
2039	3,740,888	7,862,461	11,603,349
2040	3,858,011	7,884,064	11,742,075
2041	3,978,906	7,905,748	11,884,654
2042	4,103,706	7,927,513	12,031,219
2043	4,232,547	7,949,362	12,181,909
2044	4,365,572	7,971,295	12,336,867
2045	4,502,932	7,993,312	12,496,244
2046	4,644,783	8,015,415	12,660,198
2047	4,791,288	8,037,605	12,828,893
2048	4,942,618	8,059,884	13,002,502
2049	5,098,953	8,082,252	13,181,205
2050	5,260,478	8,104,712	13,365,190
2051	5,427,392	8,127,264	13,554,656



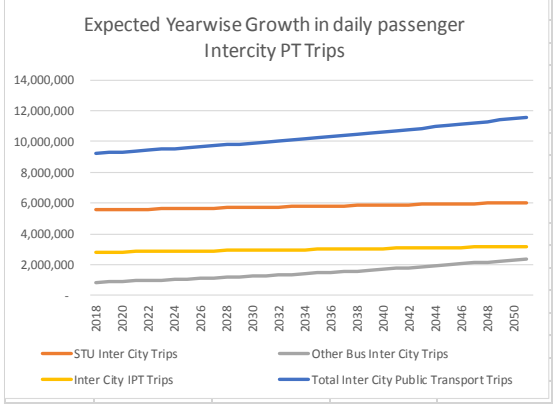
15.Expected Year-wise Growth in daily Intracity passenger intracity PT Trips.

Year	STU Intra City Trips	Other Bus Intra City Trips	Intra City IPT Trips	Total Intra City Public Transport Trips
2018	1,100,078	865,594	1,973,959	3,939,630
2019	1,134,188	892,429	2,035,060	4,061,677
2020	1,169,364	920,103	2,098,060	4,187,527
2021	1,205,641	948,641	2,163,019	4,317,301
2022	1,243,052	978,072	2,229,997	4,451,122
2023	1,281,635	1,008,424	2,299,060	4,589,119
2024	1,321,428	1,039,727	2,370,272	4,731,427
2025	1,362,470	1,072,012	2,443,701	4,878,183
2026	1,404,800	1,105,310	2,519,418	5,029,528
2027	1,448,461	1,139,654	2,597,496	5,185,611
2028	1,493,497	1,175,078	2,678,009	5,346,584
2029	1,539,953	1,211,618	2,761,035	5,512,606
2030	1,587,874	1,249,310	2,846,654	5,683,838
2031	1,637,310	1,288,192	2,934,948	5,860,450
2032	1,688,311	1,328,303	3,026,005	6,042,618
2033	1,740,928	1,369,684	3,119,911	6,230,524
2034	1,795,216	1,412,378	3,216,760	6,424,354
2035	1,851,231	1,456,427	3,316,646	6,624,304
2036	1,909,031	1,501,879	3,419,667	6,830,577
2037	1,968,677	1,548,780	3,525,925	7,043,381
2038	2,030,231	1,597,179	3,635,525	7,262,935
2039	2,093,760	1,647,128	3,748,577	7,489,465
2040	2,159,331	1,698,680	3,865,194	7,723,205
2041	2,227,015	1,751,891	3,985,493	7,964,399
2042	2,296,888	1,806,818	4,109,595	8,213,301
2043	2,369,025	1,863,522	4,237,627	8,470,174
2044	2,443,507	1,922,065	4,369,720	8,735,293
2045	2,520,419	1,982,513	4,506,010	9,008,942
2046	2,599,848	2,044,935	4,646,638	9,291,421
2047	2,681,887	2,109,402	4,791,750	9,583,038
2048	2,766,630	2,175,988	4,941,499	9,884,117
2049	2,854,180	2,244,773	5,096,044	10,194,997
2050	2,944,641	2,315,838	5,255,550	10,516,028
2051	3,038,124	2,389,268	5,420,188	10,847,580



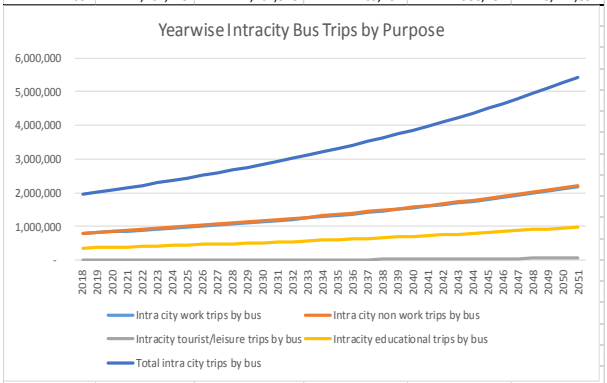
16.Expected Year-wise Growth in daily Intercity passenger intercity PT Trips.

Year	STU Inter City Trips	Other Bus Inter City Trips	Inter City IPT Trips	Total Inter City Public Transport Trips
2018	5,548,693	865,594	2,811,699	9,225,986
2019	5,562,368	892,429	2,822,142	9,276,939
2020	5,576,088	920,103	2,832,629	9,328,820
2021	5,589,852	948,641	2,843,161	9,381,654
2022	5,603,662	978,072	2,853,738	9,435,472
2023	5,617,516	1,008,424	2,864,360	9,490,300
2024	5,631,416	1,039,727	2,875,028	9,546,171
2025	5,645,361	1,072,012	2,885,741	9,603,114
2026	5,659,352	1,105,310	2,896,501	9,661,163
2027	5,673,390	1,139,654	2,907,306	9,720,350
2028	5,687,473	1,175,078	2,918,159	9,780,710
2029	5,701,603	1,211,618	2,929,058	9,842,279
2030	5,715,780	1,249,310	2,940,004	9,905,095
2031	5,730,005	1,288,192	2,950,998	9,969,195
2032	5,744,276	1,328,303	2,962,040	10,034,619
2033	5,758,596	1,369,684	2,973,130	10,101,410
2034	5,772,963	1,412,378	2,984,268	10,169,609
2035	5,787,380	1,456,427	2,995,455	10,239,262
2036	5,801,845	1,501,879	3,006,692	10,310,415
2037	5,816,359	1,548,780	3,017,978	10,383,117
2038	5,830,923	1,597,179	3,029,314	10,457,416
2039	5,845,537	1,647,128	3,040,701	10,533,366
2040	5,860,201	1,698,680	3,052,138	10,611,020
2041	5,874,917	1,751,891	3,063,627	10,690,435
2042	5,889,684	1,806,818	3,075,168	10,771,670
2043	5,904,503	1,863,522	3,086,761	10,854,786
2044	5,919,375	1,922,065	3,098,407	10,939,848
2045	5,934,300	1,982,513	3,110,107	11,026,921
2046	5,949,279	2,044,935	3,121,862	11,116,076
2047	5,964,313	2,109,402	3,133,671	11,207,386
2048	5,979,402	2,175,988	3,145,536	11,300,926
2049	5,994,547	2,244,773	3,157,458	11,396,778
2050	6,009,750	2,315,838	3,169,437	11,495,025
2051	6,025,010	2,389,268	3,181,475	11,595,753



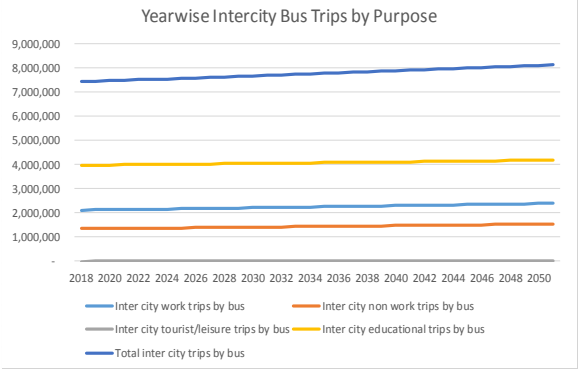
17. Year-wise Intracity Bus Trips by Purpose

Year	Intra city work trips by bus	Intra city non work trips by bus	Intracity tourist/leisure trips by bus	Intracity educational trips by bus	Total intra city trips by bus
2018	793,858	806,616	2,992	362,205	1,965,671
2019	818,389	831,541	3,291	373,397	2,026,617
2020	843,677	857,236	3,620	384,935	2,089,467
2021	869,746	883,724	3,982	396,829	2,154,282
2022	896,622	911,031	4,380	409,091	2,221,124
2023	924,327	939,182	4,818	421,732	2,290,060
2024	952,889	968,203	5,300	434,764	2,361,156
2025	982,333	998,120	5,830	448,198	2,434,482
2026	1,012,687	1,028,962	6,413	462,047	2,510,110
2027	1,043,979	1,060,757	7,054	476,325	2,588,115
2028	1,076,238	1,093,534	7,760	491,043	2,668,576
2029	1,109,494	1,127,325	8,536	506,216	2,751,571
2030	1,143,777	1,162,159	9,389	521,858	2,837,184
2031	1,179,120	1,198,070	10,328	537,984	2,925,502
2032	1,215,555	1,235,090	11,361	554,607	3,016,614
2033	1,253,116	1,273,254	12,497	571,745	3,110,612
2034	1,291,837	1,312,598	13,747	589,412	3,207,594
2035	1,331,755	1,353,157	15,122	607,624	3,307,658
2036	1,372,906	1,394,970	16,634	626,400	3,410,910
2037	1,415,329	1,438,074	18,297	645,756	3,517,456
2038	1,459,062	1,482,511	20,127	665,710	3,627,410
2039	1,504,147	1,528,320	22,140	686,280	3,740,888
2040	1,550,626	1,575,545	24,354	707,486	3,858,011
2041	1,598,540	1,624,230	26,789	729,348	3,978,906
2042	1,647,935	1,674,419	29,468	751,884	4,103,706
2043	1,698,856	1,726,158	32,415	775,118	4,232,547
2044	1,751,351	1,779,496	35,657	799,069	4,365,572
2045	1,805,467	1,834,483	39,222	823,760	4,502,932
2046	1,861,256	1,891,168	43,144	849,214	4,644,783
2047	1,918,769	1,949,605	47,459	875,455	4,791,288
2048	1,978,059	2,009,848	52,205	902,506	4,942,618
2049	2,039,181	2,071,953	57,425	930,394	5,098,953
2050	2,102,192	2,135,976	63,168	959,143	5,260,478
2051	2,167,149	2,201,978	69,484	988,781	5,427,392



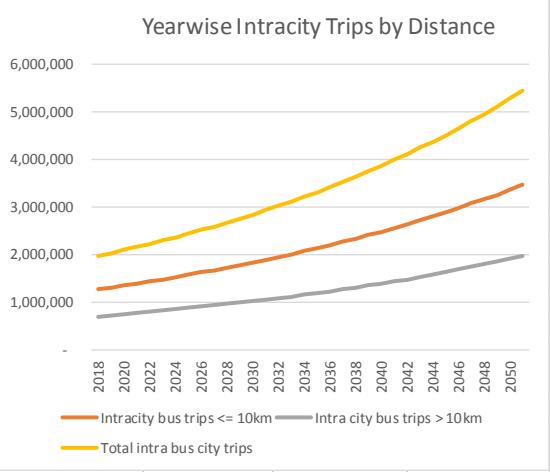
18. Year-wise Intercity Bus Trips by Purpose

Year	Inter city work trips by bus	Inter city non work trips by bus	Inter city tourist/leisure trips by bus	Inter city educational trips by bus	Total inter city trips by bus
2018	2,114,729	1,341,778	71	3,969,866	7,426,444
2019	2,122,791	1,347,391	78	3,976,218	7,446,477
2020	2,130,888	1,353,028	86	3,982,580	7,466,581
2021	2,139,019	1,358,690	94	3,988,952	7,486,756
2022	2,147,186	1,364,377	104	3,995,334	7,507,001
2023	2,155,387	1,370,090	114	4,001,727	7,527,318
2024	2,163,624	1,375,828	125	4,008,130	7,547,707
2025	2,171,895	1,381,592	138	4,014,543	7,568,168
2026	2,180,202	1,387,382	152	4,020,966	7,588,702
2027	2,188,545	1,393,197	167	4,027,400	7,609,308
2028	2,196,924	1,399,038	184	4,033,843	7,629,988
2029	2,205,338	1,404,905	202	4,040,298	7,650,743
2030	2,213,789	1,410,798	222	4,046,762	7,671,571
2031	2,222,275	1,416,718	244	4,053,237	7,692,474
2032	2,230,799	1,422,664	269	4,059,722	7,713,453
2033	2,239,358	1,428,636	296	4,066,218	7,734,508
2034	2,247,955	1,434,635	325	4,072,724	7,755,639
2035	2,256,588	1,440,661	358	4,079,240	7,776,847
2036	2,265,259	1,446,713	394	4,085,767	7,798,132
2037	2,273,966	1,452,793	433	4,092,304	7,819,496
2038	2,282,711	1,458,900	476	4,098,852	7,840,939
2039	2,291,494	1,465,034	524	4,105,410	7,862,461
2040	2,300,314	1,471,195	576	4,111,978	7,884,064
2041	2,309,173	1,477,384	634	4,118,558	7,905,748
2042	2,318,069	1,483,600	697	4,125,147	7,927,513
2043	2,327,004	1,489,844	767	4,131,748	7,949,362
2044	2,335,977	1,496,116	844	4,138,358	7,971,295
2045	2,344,988	1,502,416	928	4,144,980	7,993,312
2046	2,354,039	1,508,744	1,021	4,151,612	8,015,415
2047	2,363,128	1,515,101	1,123	4,158,254	8,037,605
2048	2,372,256	1,521,485	1,235	4,164,907	8,059,884
2049	2,381,424	1,527,898	1,359	4,171,571	8,082,252
2050	2,390,631	1,534,340	1,494	4,178,246	8,104,712
2051	2,399,878	1,540,811	1,644	4,184,931	8,127,264



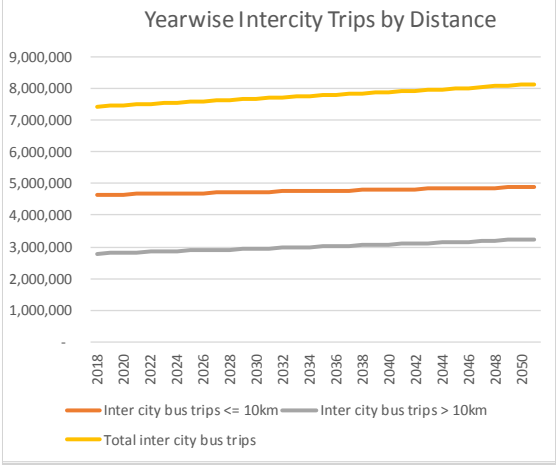
19.Year-wise Intracity Trips by Distance

Year	Intracity bus trips <= 10km	Intra city bus trips > 10km	Total intra bus city trips
2018	1,266,868	698,804	1,965,671
2019	1,306,015	720,602	2,026,617
2020	1,346,372	743,095	2,089,467
2021	1,387,976	766,306	2,154,282
2022	1,430,866	790,258	2,221,124
2023	1,475,081	814,979	2,290,060
2024	1,520,663	840,493	2,361,156
2025	1,567,653	866,828	2,434,482
2026	1,616,096	894,014	2,510,110
2027	1,666,035	922,080	2,588,115
2028	1,717,518	951,057	2,668,576
2029	1,770,592	980,979	2,751,571
2030	1,825,306	1,011,878	2,837,184
2031	1,881,712	1,043,790	2,925,502
2032	1,939,860	1,076,754	3,016,614
2033	1,999,806	1,110,806	3,110,612
2034	2,061,604	1,145,990	3,207,594
2035	2,125,312	1,182,346	3,307,658
2036	2,190,990	1,219,920	3,410,910
2037	2,258,697	1,258,759	3,517,456
2038	2,328,497	1,298,913	3,627,410
2039	2,400,455	1,340,433	3,740,888
2040	2,474,636	1,383,375	3,858,011
2041	2,551,111	1,427,795	3,978,906
2042	2,629,950	1,473,756	4,103,706
2043	2,711,225	1,521,321	4,232,547
2044	2,795,013	1,570,559	4,365,572
2045	2,881,392	1,621,541	4,502,932
2046	2,970,440	1,674,343	4,644,783
2047	3,062,242	1,729,047	4,791,288
2048	3,156,881	1,785,737	4,942,618
2049	3,254,447	1,844,506	5,098,953
2050	3,355,029	1,905,449	5,260,478
2051	3,458,721	1,968,671	5,427,392



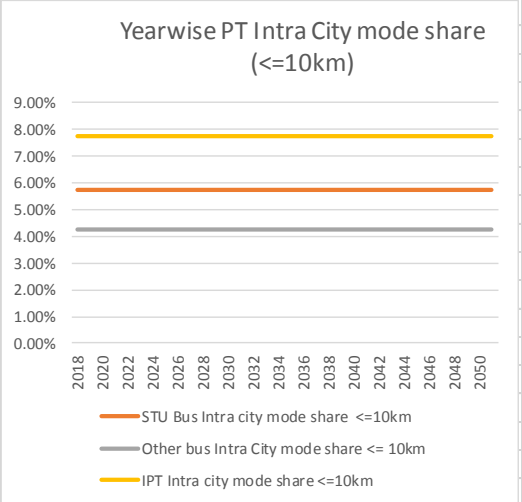
20. Year-wise Intercity Trips by Distance

Year	Inter city bus trips <= 10km	Inter city bus trips > 10km	Total inter city bus trips
2018	4,638,257	2,788,187	7,426,444
2019	4,645,678	2,800,799	7,446,477
2020	4,653,112	2,813,470	7,466,581
2021	4,660,557	2,826,199	7,486,756
2022	4,668,014	2,838,988	7,507,001
2023	4,675,482	2,851,836	7,527,318
2024	4,682,963	2,864,744	7,547,707
2025	4,690,456	2,877,712	7,568,168
2026	4,697,961	2,890,741	7,588,702
2027	4,705,478	2,903,831	7,609,308
2028	4,713,006	2,916,982	7,629,988
2029	4,720,547	2,930,195	7,650,743
2030	4,728,100	2,943,471	7,671,571
2031	4,735,665	2,956,809	7,692,474
2032	4,743,243	2,970,210	7,713,453
2033	4,750,832	2,983,676	7,734,508
2034	4,758,433	2,997,205	7,755,639
2035	4,766,047	3,010,800	7,776,847
2036	4,773,673	3,024,459	7,798,132
2037	4,781,311	3,038,185	7,819,496
2038	4,788,961	3,051,978	7,840,939
2039	4,796,624	3,065,837	7,862,461
2040	4,804,299	3,079,765	7,884,064
2041	4,811,986	3,093,762	7,905,748
2042	4,819,685	3,107,828	7,927,513
2043	4,827,397	3,121,965	7,949,362
2044	4,835,121	3,136,173	7,971,295
2045	4,842,858	3,150,454	7,993,312
2046	4,850,607	3,164,808	8,015,415
2047	4,858,368	3,179,237	8,037,605
2048	4,866,142	3,193,742	8,059,884
2049	4,873,929	3,208,324	8,082,252
2050	4,881,728	3,222,984	8,104,712
2051	4,889,539	3,237,725	8,127,264



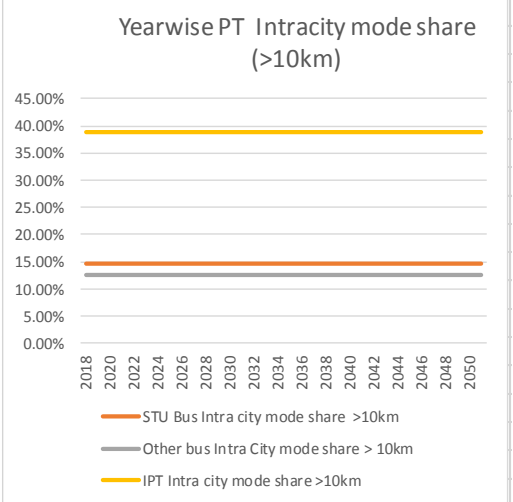
21.Yearwise PT Intra City mode share (<=10km)

Year	STU Bus Intra city mode share <=10km	Other bus Intra City mode share <= 10km	IPT Intra city mode share <=10km
2018	5.75%	4.28%	7.74%
2019	5.75%	4.28%	7.74%
2020	5.75%	4.28%	7.74%
2021	5.75%	4.28%	7.74%
2022	5.75%	4.28%	7.74%
2023	5.75%	4.28%	7.74%
2024	5.75%	4.28%	7.74%
2025	5.75%	4.28%	7.74%
2026	5.75%	4.28%	7.74%
2027	5.75%	4.28%	7.74%
2028	5.75%	4.28%	7.74%
2029	5.75%	4.28%	7.74%
2030	5.75%	4.28%	7.74%
2031	5.75%	4.28%	7.74%
2032	5.75%	4.28%	7.74%
2033	5.75%	4.28%	7.74%
2034	5.75%	4.28%	7.74%
2035	5.75%	4.28%	7.74%
2036	5.75%	4.28%	7.74%
2037	5.75%	4.28%	7.74%
2038	5.75%	4.28%	7.74%
2039	5.75%	4.28%	7.74%
2040	5.75%	4.28%	7.74%
2041	5.75%	4.28%	7.74%
2042	5.75%	4.28%	7.74%
2043	5.75%	4.28%	7.74%
2044	5.75%	4.28%	7.74%
2045	5.75%	4.28%	7.74%
2046	5.75%	4.28%	7.74%
2047	5.75%	4.28%	7.74%
2048	5.75%	4.28%	7.74%
2049	5.75%	4.28%	7.74%
2050	5.75%	4.28%	7.74%
2051	5.75%	4.28%	7.74%



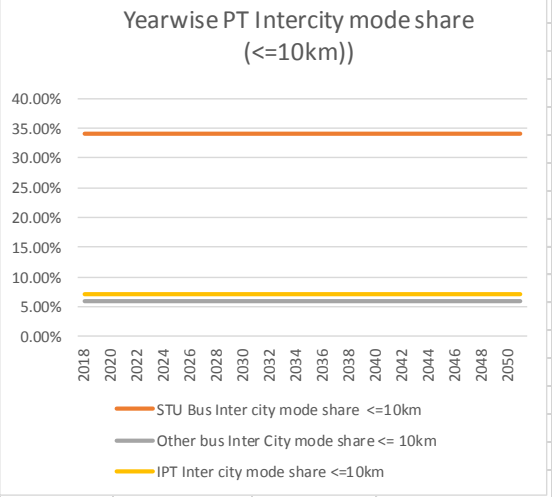
22. Year-wise PT Intracity mode share (>10km)

Year	STU Bus Intra city mode share >10km	Other bus Intra City mode share > 10km	IPT Intra city mode share >10km
2018	14.64%	12.70%	38.96%
2019	14.64%	12.70%	38.96%
2020	14.64%	12.70%	38.96%
2021	14.64%	12.70%	38.96%
2022	14.64%	12.70%	38.96%
2023	14.64%	12.70%	38.96%
2024	14.64%	12.70%	38.96%
2025	14.64%	12.70%	38.96%
2026	14.64%	12.70%	38.96%
2027	14.64%	12.70%	38.96%
2028	14.64%	12.70%	38.96%
2029	14.64%	12.70%	38.96%
2030	14.64%	12.70%	38.96%
2031	14.64%	12.70%	38.96%
2032	14.64%	12.70%	38.96%
2033	14.64%	12.70%	38.96%
2034	14.64%	12.70%	38.96%
2035	14.64%	12.70%	38.96%
2036	14.64%	12.70%	38.96%
2037	14.64%	12.70%	38.96%
2038	14.64%	12.70%	38.96%
2039	14.64%	12.70%	38.96%
2040	14.64%	12.70%	38.96%
2041	14.64%	12.70%	38.96%
2042	14.64%	12.70%	38.96%
2043	14.64%	12.70%	38.96%
2044	14.64%	12.70%	38.96%
2045	14.64%	12.70%	38.96%
2046	14.64%	12.70%	38.96%
2047	14.64%	12.70%	38.96%
2048	14.64%	12.70%	38.96%
2049	14.64%	12.70%	38.96%
2050	14.64%	12.70%	38.96%
2051	14.64%	12.70%	38.96%



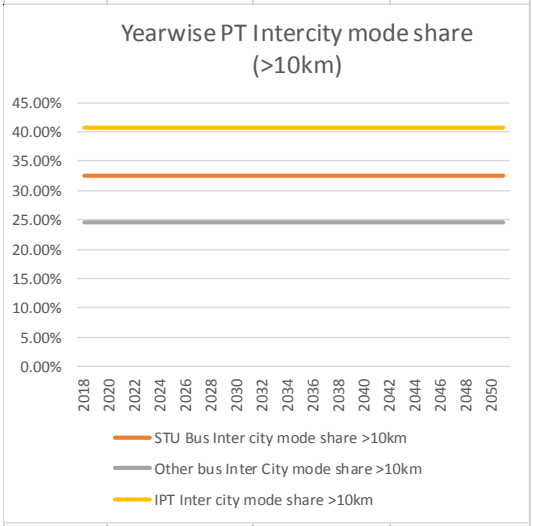
23.Year-wise PT Intercity mode share (<=10km)

Year	STU Bus Inter city mode share <=10km	Other bus Inter City mode share <= 10km	IPT Inter city mode share <=10km
2018	34.07%	5.84%	7.15%
2019	34.07%	5.84%	7.15%
2020	34.07%	5.84%	7.15%
2021	34.07%	5.84%	7.15%
2022	34.07%	5.84%	7.15%
2023	34.07%	5.84%	7.15%
2024	34.07%	5.84%	7.15%
2025	34.07%	5.84%	7.15%
2026	34.07%	5.84%	7.15%
2027	34.07%	5.84%	7.15%
2028	34.07%	5.84%	7.15%
2029	34.07%	5.84%	7.15%
2030	34.07%	5.84%	7.15%
2031	34.07%	5.84%	7.15%
2032	34.07%	5.84%	7.15%
2033	34.07%	5.84%	7.15%
2034	34.07%	5.84%	7.15%
2035	34.07%	5.84%	7.15%
2036	34.07%	5.84%	7.15%
2037	34.07%	5.84%	7.15%
2038	34.07%	5.84%	7.15%
2039	34.07%	5.84%	7.15%
2040	34.07%	5.84%	7.15%
2041	34.07%	5.84%	7.15%
2042	34.07%	5.84%	7.15%
2043	34.07%	5.84%	7.15%
2044	34.07%	5.84%	7.15%
2045	34.07%	5.84%	7.15%
2046	34.07%	5.84%	7.15%
2047	34.07%	5.84%	7.15%
2048	34.07%	5.84%	7.15%
2049	34.07%	5.84%	7.15%
2050	34.07%	5.84%	7.15%
2051	34.07%	5.84%	7.15%



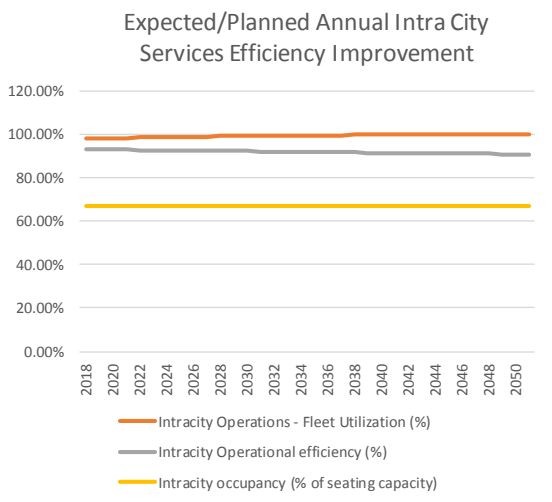
24. Year-wise PT Intercity mode share (>10km)

Year	STU Bus Inter city mode share >10km	Other bus Inter City mode share >10km	IPT Inter city mode share >10km
2018	32.66%	24.65%	40.72%
2019	32.66%	24.65%	40.72%
2020	32.66%	24.65%	40.72%
2021	32.66%	24.65%	40.72%
2022	32.66%	24.65%	40.72%
2023	32.66%	24.65%	40.72%
2024	32.66%	24.65%	40.72%
2025	32.66%	24.65%	40.72%
2026	32.66%	24.65%	40.72%
2027	32.66%	24.65%	40.72%
2028	32.66%	24.65%	40.72%
2029	32.66%	24.65%	40.72%
2030	32.66%	24.65%	40.72%
2031	32.66%	24.65%	40.72%
2032	32.66%	24.65%	40.72%
2033	32.66%	24.65%	40.72%
2034	32.66%	24.65%	40.72%
2035	32.66%	24.65%	40.72%
2036	32.66%	24.65%	40.72%
2037	32.66%	24.65%	40.72%
2038	32.66%	24.65%	40.72%
2039	32.66%	24.65%	40.72%
2040	32.66%	24.65%	40.72%
2041	32.66%	24.65%	40.72%
2042	32.66%	24.65%	40.72%
2043	32.66%	24.65%	40.72%
2044	32.66%	24.65%	40.72%
2045	32.66%	24.65%	40.72%
2046	32.66%	24.65%	40.72%
2047	32.66%	24.65%	40.72%
2048	32.66%	24.65%	40.72%
2049	32.66%	24.65%	40.72%
2050	32.66%	24.65%	40.72%
2051	32.66%	24.65%	40.72%



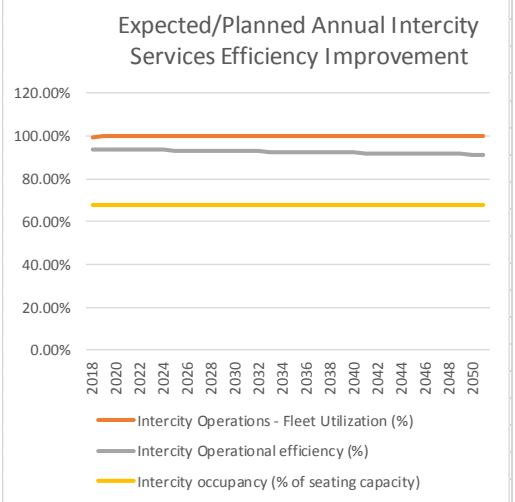
25.Expected/Planned Annual Intra City Services Efficiency Improvement

Year	Intracity Operations - Fleet Utilization (%)	Intracity Operational efficiency (%)	Intracity occupancy (% of seating capacity)
2018	97.98%	93.00%	67.00%
2019	98.08%	92.92%	67.00%
2020	98.18%	92.84%	67.00%
2021	98.28%	92.76%	67.00%
2022	98.38%	92.68%	67.00%
2023	98.48%	92.60%	67.00%
2024	98.58%	92.52%	67.00%
2025	98.68%	92.45%	67.00%
2026	98.78%	92.37%	67.00%
2027	98.88%	92.30%	67.00%
2028	98.98%	92.22%	67.00%
2029	99.08%	92.15%	67.00%
2030	99.13%	92.07%	67.00%
2031	99.18%	92.00%	67.00%
2032	99.23%	91.93%	67.00%
2033	99.28%	91.86%	67.00%
2034	99.33%	91.79%	67.00%
2035	99.38%	91.72%	67.00%
2036	99.43%	91.65%	67.00%
2037	99.48%	91.58%	67.00%
2038	99.53%	91.51%	67.00%
2039	99.58%	91.44%	67.00%
2040	99.63%	91.38%	67.00%
2041	99.68%	91.31%	67.00%
2042	99.73%	91.24%	67.00%
2043	99.78%	91.18%	67.00%
2044	99.83%	91.11%	67.00%
2045	99.88%	91.05%	67.00%
2046	99.93%	90.99%	67.00%
2047	99.98%	90.92%	67.00%
2048	100.00%	90.86%	67.00%
2049	100.00%	90.80%	67.00%
2050	100.00%	90.74%	67.00%
2051	100.00%	90.68%	67.00%



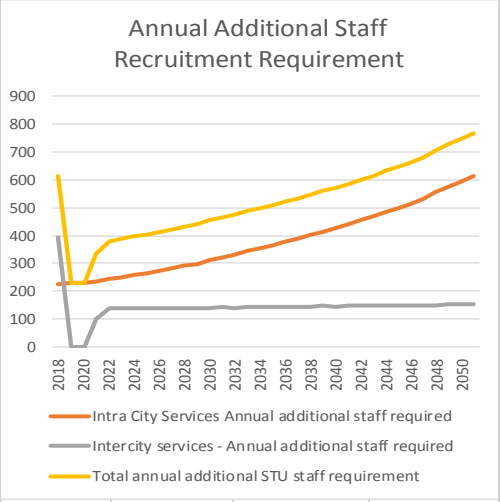
26.Expected/Planned Annual Intercity Services Efficiency Improvement

Year	Intercity Operations - Fleet Utilization (%)	Intercity Operational efficiency (%)	Intercity occupancy (% of seating capacity)
2018	99.35%	94.00%	68.00%
2019	100.00%	93.91%	68.00%
2020	100.00%	93.82%	68.00%
2021	100.00%	93.73%	68.00%
2022	100.00%	93.64%	68.00%
2023	100.00%	93.56%	68.00%
2024	100.00%	93.47%	68.00%
2025	100.00%	93.39%	68.00%
2026	100.00%	93.30%	68.00%
2027	100.00%	93.22%	68.00%
2028	100.00%	93.14%	68.00%
2029	100.00%	93.05%	68.00%
2030	100.00%	92.97%	68.00%
2031	100.00%	92.89%	68.00%
2032	100.00%	92.81%	68.00%
2033	100.00%	92.73%	68.00%
2034	100.00%	92.65%	68.00%
2035	100.00%	92.58%	68.00%
2036	100.00%	92.50%	68.00%
2037	100.00%	92.42%	68.00%
2038	100.00%	92.35%	68.00%
2039	100.00%	92.27%	68.00%
2040	100.00%	92.20%	68.00%
2041	100.00%	92.12%	68.00%
2042	100.00%	92.05%	68.00%
2043	100.00%	91.98%	68.00%
2044	100.00%	91.91%	68.00%
2045	100.00%	91.83%	68.00%
2046	100.00%	91.76%	68.00%
2047	100.00%	91.69%	68.00%
2048	100.00%	91.62%	68.00%
2049	100.00%	91.56%	68.00%
2050	100.00%	91.49%	68.00%
2051	100.00%	91.42%	68.00%



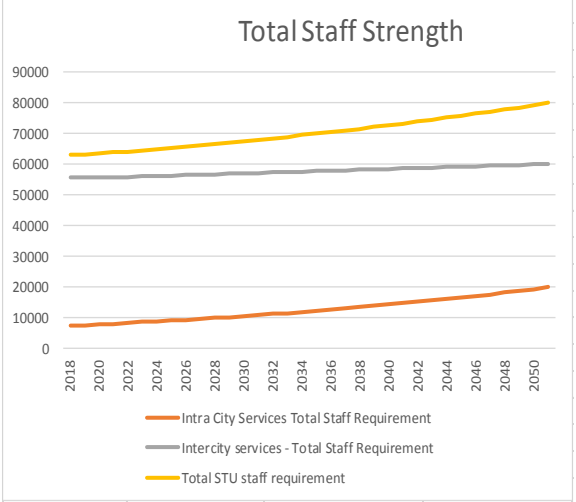
27.Annual Additional Staff Recruitment Requirement

Year	Intra City Services Annual additional staff required	Intercity services - Annual additional staff required	Total annual additional STU staff requirement
2018	223	392	615
2019	228	0	228
2020	228	0	228
2021	235	101	336
2022	243	137	380
2023	249	138	387
2024	258	138	396
2025	265	139	404
2026	273	139	412
2027	281	140	421
2028	290	140	430
2029	299	140	439
2030	313	141	454
2031	323	142	465
2032	333	141	474
2033	344	143	487
2034	354	143	497
2035	365	143	508
2036	377	144	521
2037	389	144	533
2038	401	145	546
2039	413	146	559
2040	427	145	572
2041	440	147	587
2042	454	147	601
2043	468	147	615
2044	484	148	632
2045	499	148	647
2046	515	149	664
2047	532	150	682
2048	555	150	705
2049	577	151	728
2050	596	151	747
2051	615	152	767



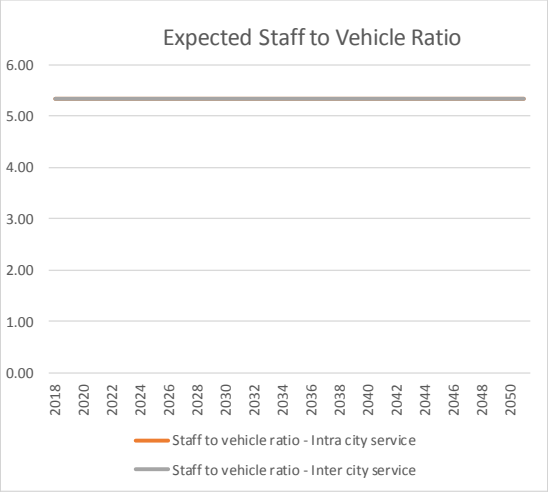
28. Total Staff Strength

Year	Intra City Services Total Staff Requirement	Intercity services - Total Staff Requirement	Total STU staff requirement
2018	7392	55653	63045
2019	7620	55653	63273
2020	7848	55653	63501
2021	8083	55754	63837
2022	8326	55891	64217
2023	8575	56029	64604
2024	8833	56167	65000
2025	9098	56306	65404
2026	9371	56445	65816
2027	9652	56585	66237
2028	9942	56725	66667
2029	10241	56865	67106
2030	10554	57006	67560
2031	10877	57148	68025
2032	11210	57289	68499
2033	11554	57432	68986
2034	11908	57575	69483
2035	12273	57718	69991
2036	12650	57862	70512
2037	13039	58006	71045
2038	13440	58151	71591
2039	13853	58297	72150
2040	14280	58442	72722
2041	14720	58589	73309
2042	15174	58736	73910
2043	15642	58883	74525
2044	16126	59031	75157
2045	16625	59179	75804
2046	17140	59328	76468
2047	17672	59478	77150
2048	18227	59628	77855
2049	18804	59779	78583
2050	19400	59930	79330
2051	20015	60082	80097



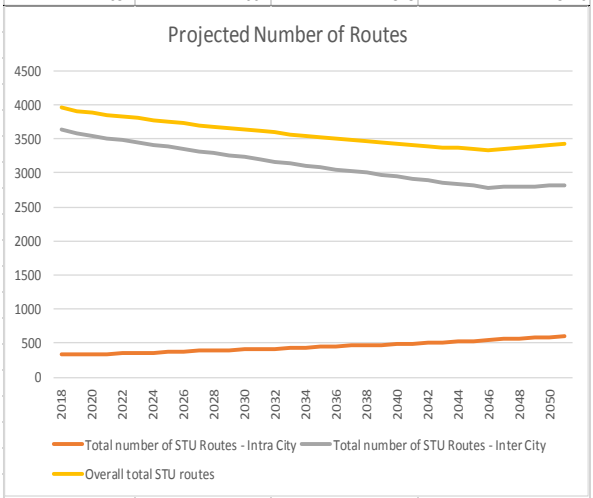
29. Expected Staff to Vehicle Ratio

Year	Staff to vehicle ratio - Intra city service	Staff to vehicle ratio - Inter city service
2018	5.33	5.33
2019	5.33	5.33
2020	5.33	5.33
2021	5.33	5.33
2022	5.33	5.33
2023	5.33	5.33
2024	5.33	5.33
2025	5.33	5.33
2026	5.33	5.33
2027	5.33	5.33
2028	5.33	5.33
2029	5.33	5.33
2030	5.33	5.33
2031	5.33	5.33
2032	5.33	5.33
2033	5.33	5.33
2034	5.33	5.33
2035	5.33	5.33
2036	5.33	5.33
2037	5.33	5.33
2038	5.33	5.33
2039	5.33	5.33
2040	5.33	5.33
2041	5.33	5.33
2042	5.33	5.33
2043	5.33	5.33
2044	5.33	5.33
2045	5.33	5.33
2046	5.33	5.33
2047	5.33	5.33
2048	5.33	5.33
2049	5.33	5.33
2050	5.33	5.33
2051	5.33	5.33



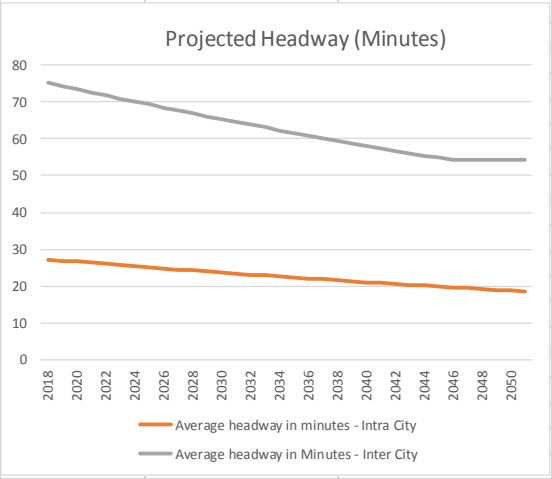
30.Projected Number of Routes

Year	Total number of STU Routes - Intra City	Total number of STU Routes - Inter City	Overall total STU routes
2018	327	3628	3955
2019	333	3575	3908
2020	339	3542	3881
2021	345	3509	3854
2022	352	3477	3828
2023	358	3444	3802
2024	364	3413	3777
2025	371	3381	3752
2026	378	3350	3728
2027	384	3319	3703
2028	391	3289	3680
2029	398	3258	3657
2030	406	3228	3634
2031	413	3199	3612
2032	421	3169	3590
2033	429	3140	3569
2034	437	3111	3548
2035	445	3082	3527
2036	453	3054	3507
2037	462	3026	3488
2038	470	2998	3468
2039	479	2971	3450
2040	488	2943	3431
2041	497	2916	3414
2042	507	2889	3396
2043	516	2863	3379
2044	526	2837	3363
2045	536	2811	3347
2046	546	2785	3331
2047	557	2790	3346
2048	567	2797	3364
2049	578	2804	3382
2050	590	2811	3401
2051	601	2818	3420



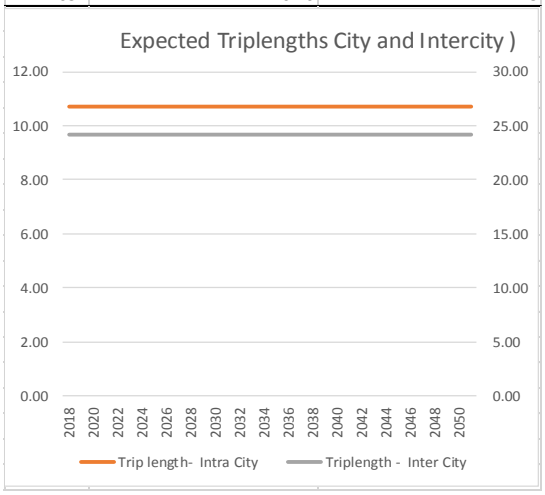
31. Projected Headway (Minutes)

Year	Average headway in minutes - Intra City	Average headway in Minutes - Inter City
2018	27	75
2019	27	74
2020	27	74
2021	26	73
2022	26	72
2023	26	71
2024	25	70
2025	25	69
2026	25	69
2027	24	68
2028	24	67
2029	24	66
2030	24	65
2031	23	65
2032	23	64
2033	23	63
2034	23	62
2035	22	62
2036	22	61
2037	22	60
2038	22	60
2039	21	59
2040	21	58
2041	21	57
2042	21	57
2043	20	56
2044	20	55
2045	20	55
2046	20	54
2047	19	54
2048	19	54
2049	19	54
2050	19	54
2051	18	54



32.Expected Trip-lengths City and Intercity

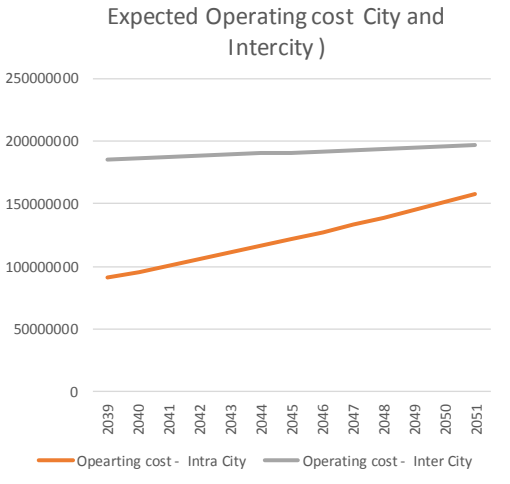
Year	Trip length- Intra City	Triplength - Inter City
2018	10.70	24.18
2019	10.70	24.18
2020	10.70	24.18
2021	10.70	24.18
2022	10.70	24.18
2023	10.70	24.18
2024	10.70	24.18
2025	10.70	24.18
2026	10.70	24.18
2027	10.70	24.18
2028	10.70	24.18
2029	10.70	24.18
2030	10.70	24.18
2031	10.70	24.18
2032	10.70	24.18
2033	10.70	24.18
2034	10.70	24.18
2035	10.70	24.18
2036	10.70	24.18
2037	10.70	24.18
2038	10.70	24.18
2039	10.70	24.18
2040	10.70	24.18
2041	10.70	24.18
2042	10.70	24.18
2043	10.70	24.18
2044	10.70	24.18
2045	10.70	24.18
2046	10.70	24.18
2047	10.70	24.18
2048	10.70	24.18
2049	10.70	24.18
2050	10.70	24.18
2051	10.70	24.18



33.Expected Operating Cost City and Intercity

Expected Operating cost City and Intercity

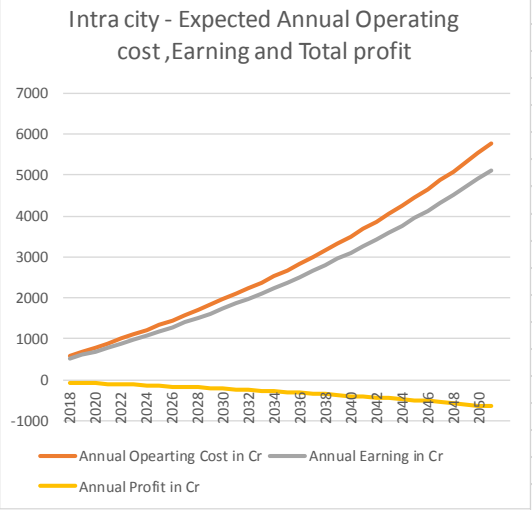
Year	Opearting cost - Intra City	Operating cost - Inter City
2018	15914644	156615369
2019	18653712	158426557
2020	21447192	160046582
2021	24311343	161628201
2022	27248511	163172812
2023	30261115	164681762
2024	33351656	166156353
2025	36522718	167597841
2026	39776967	169007439
2027	43117159	170386320
2028	46546142	171735615
2029	50066861	173056416
2030	53682357	174349779
2031	57395776	175616724
2032	61210374	176858234
2033	65129515	178075262
2034	69156682	179268725
2035	73295479	180439513
2036	77549638	181588483
2037	81923023	182716464
2038	86419636	183824257
2039	91043625	184912638
2040	95799288	185982356
2041	100691083	187034136
2042	105723635	188068679
2043	110901742	189086662
2044	116230384	190088744
2045	121714737	191075559
2046	127360175	192047723
2047	133172287	193005835
2048	139156887	193950472
2049	145320023	194882196
2050	151667995	195801552
2051	158207364	196709070



34.Intra city - Expected Annual Operating cost, Earning and Total profit

tra city - Expected Annual Operating cost ,Earning and Total prof

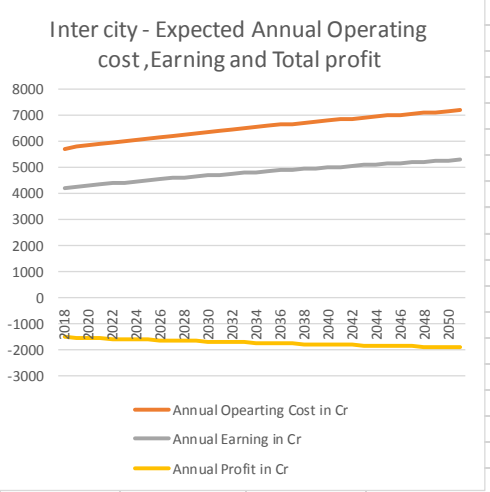
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	581	515	-65.4
2019	681	604	-77.2
2020	783	694	-88.7
2021	887	787	-100.6
2022	995	882	-112.7
2023	1105	979	-125.2
2024	1217	1079	-138.0
2025	1333	1182	-151.1
2026	1452	1287	-164.5
2027	1574	1395	-178.3
2028	1699	1506	-192.5
2029	1827	1620	-207.1
2030	1959	1737	-222.0
2031	2095	1858	-237.3
2032	2234	1981	-253.1
2033	2377	2108	-269.3
2034	2524	2238	-285.9
2035	2675	2372	-303.0
2036	2831	2510	-320.6
2037	2990	2652	-338.7
2038	3154	2797	-357.2
2039	3323	2947	-376.3
2040	3497	3101	-396.0
2041	3675	3259	-416.2
2042	3859	3422	-437.0
2043	4048	3590	-458.3
2044	4242	3762	-480.3
2045	4443	3940	-503.0
2046	4649	4122	-526.3
2047	4861	4311	-550.3
2048	5079	4504	-575.0
2049	5304	4704	-600.4
2050	5536	4909	-626.6
2051	5775	5121	-653.6



35. Intercity - Expected Annual Operating cost, Earning and Total profit

er city - Expected Annual Operating cost ,Earning and Total pro

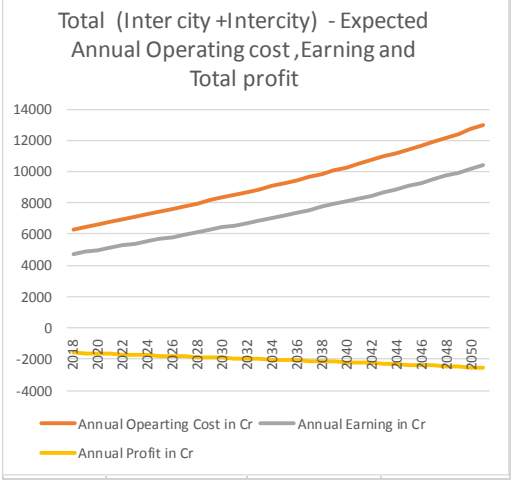
Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	5716	4208	-1508.3
2019	5783	4253	-1529.8
2020	5842	4296	-1545.4
2021	5899	4339	-1560.7
2022	5956	4380	-1575.6
2023	6011	4421	-1590.1
2024	6065	4460	-1604.3
2025	6117	4499	-1618.2
2026	6169	4537	-1631.8
2027	6219	4574	-1645.0
2028	6268	4610	-1658.0
2029	6317	4646	-1670.8
2030	6364	4681	-1683.2
2031	6410	4715	-1695.4
2032	6455	4748	-1707.4
2033	6500	4781	-1719.1
2034	6543	4813	-1730.6
2035	6586	4844	-1741.8
2036	6628	4875	-1752.9
2037	6669	4905	-1763.7
2038	6710	4935	-1774.4
2039	6749	4964	-1784.9
2040	6788	4993	-1795.2
2041	6827	5021	-1805.3
2042	6865	5049	-1815.2
2043	6902	5077	-1825.0
2044	6938	5104	-1834.7
2045	6974	5130	-1844.2
2046	7010	5156	-1853.5
2047	7045	5182	-1862.7
2048	7079	5207	-1871.8
2049	7113	5232	-1880.8
2050	7147	5257	-1889.6
2051	7180	5282	-1898.3



36. Total (Intercity +Intercity) - Expected Annual Operating cost, Earning and Total profit

r city +Intercity) - Expected Annual Operating cost ,Earning and

Year	Annual Opearting Cost in Cr	Annual Earning in Cr	Annual Profit in Cr
2018	6297	4724	-1573.7
2019	6463	4856	-1607.0
2020	6625	4990	-1634.2
2021	6787	5126	-1661.3
2022	6950	5262	-1688.3
2023	7115	5400	-1715.3
2024	7282	5540	-1742.3
2025	7450	5681	-1769.3
2026	7621	5824	-1796.3
2027	7793	5970	-1823.4
2028	7967	6117	-1850.5
2029	8144	6266	-1877.8
2030	8323	6418	-1905.2
2031	8505	6572	-1932.7
2032	8690	6729	-1960.5
2033	8877	6889	-1988.4
2034	9068	7051	-2016.5
2035	9261	7216	-2044.9
2036	9459	7385	-2073.5
2037	9659	7557	-2102.4
2038	9864	7732	-2131.6
2039	10072	7911	-2161.2
2040	10285	8094	-2191.1
2041	10502	8281	-2221.5
2042	10723	8471	-2252.2
2043	10950	8666	-2283.4
2044	11181	8866	-2315.0
2045	11417	9070	-2347.1
2046	11658	9279	-2379.8
2047	11906	9493	-2413.0
2048	12158	9712	-2446.8
2049	12417	9936	-2481.2
2050	12683	10166	-2516.2
2051	12954	10403	-2551.9



37. Profit before taxes after Infrastructure development and Fleet Upgradation cost.

	Profit before taxes after Infrastrucuture development	
	Year	Total profit before taxes for APSRTC
	2018	-1618.64
	2019	-1720.43
	2020	-2351.07
	2021	-1981.39
	2022	-2328.00
	2023	-2497.08
	2024	-2029.55
	2025	-2017.91
	2026	-2062.15
	2027	-2141.64
	2028	-2393.87
	2029	-2057.56
	2030	-2131.26
	2031	-2756.11
	2032	-2389.25
	2033	-2739.03
	2034	-2911.63
	2035	-2447.96
	2036	-2440.52
	2037	-2489.34
	2038	-2573.76
	2039	-2831.30
	2040	-2500.65
	2041	-2580.06
	2042	-3211.32
	2043	-2851.24
	2044	-3208.20
	2045	-3388.40
	2046	-2932.74
	2047	-2933.75
	2048	-2992.84
	2049	-3087.70
	2050	-3355.25
	2051	-3035.10