

"Moving towards Sustainable Cities"

A study on the Municipal Budgeting process for Sustainable Urban Active Transport

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Abstract: A municipal budget is a process of allocation of funds that acts as a benchmark to control fiscal operations which can serve as a guiding tool for the operations of the municipalities and municipal corporations. Furthermore, the budgeting process can assess the appropriateness of funding the various development projects and implementation of national or state-level schemes and policies at a level. Currently, in many of the developed countries across the globe, the promotion of local government for the management of urban development has been taking place. This shift in the paradigm of local governance is being emphasized to empower the urban local bodies and distribute power between the central and the state in the context of a broader interest in decentralization. This paper tries to understand the various processes through which different municipal corporations and municipalities formulate the annual session budgeting plans and their implementation in the transportation sector through the plethora of innovative projects. It tries to create an understanding of the municipal budgeting processes of various ULBs of different Indian cities and a comparative analysis made by assessing the funding and jurisdiction over the decision-making processes in an effort to provide greater devolution to the state and local representative bodies. The understanding gained would then be utilized to formulate a basic generalized framework of municipal budgeting in the urban transport field of the selected cities for the study to fulfil a variety of Sustainable Goals, specifically Sustainable Goal 11.

Keywords: Municipal Budgeting, Sustainable Transport Systems, Policy Framework, Active Mobility.

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1. Introduction

Municipal budgeting has been defined as the process of projecting expenditures and revenue generation calculated annually or over a period of time such as a five-year plan (Tassonyi, 2002), as is the case with many Indian cities. Every municipality or municipal corporation releases its annual budget, which is used to select future construction initiatives. In order to achieve its development goals and to generate revenue, the government must conduct financial transactions that are outlined in the budget, which serves

as a key component of the planning process. The money raised would be used to pay for the upkeep of the areas that fell under the purview of the concerned urban local body.

A municipal budget can be a framework for policy that serves as a standard for controlling fiscal operations and can be used as a compass for the management of municipalities and municipal corporations. Additionally, the budgeting process can be used to evaluate and assess whether funding for various development projects and the implementation of national or state-level programmes and policies are appropriate.

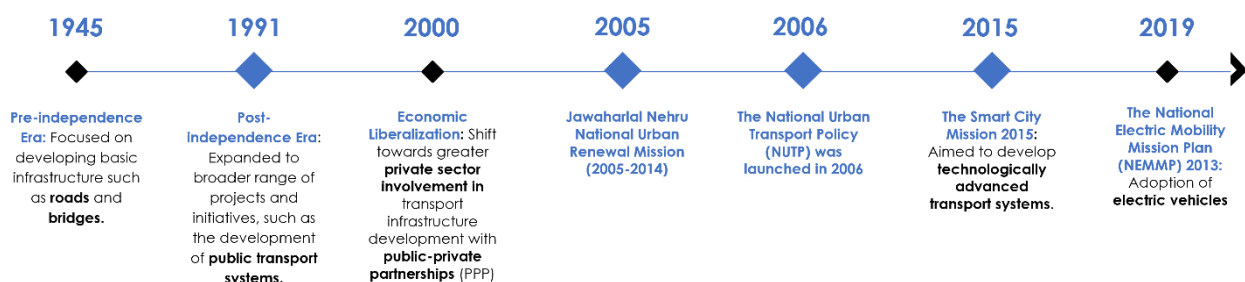


Figure 1: Evolutionary process of budget allocation for transportation (Source: Naseer MA, 2015)

The promotion of local government for the management of urban development is currently happening in many developed nations worldwide. In the context of a broader interest in decentralization, this change in the paradigm of local governance is being emphasized to empower the urban local bodies and distribute power between the central and the state which can act as a guiding tool for the operations of the municipalities and municipal corporations. Furthermore, the appropriateness of funding the various development projects, and implementation of national or state-level schemes and policies at a level can be assessed and reviewed by the budgeting process. Currently, in many of the developed countries across the globe, the promotion of local government for the management of urban development has been taking place. This shift in the paradigm of local governance is being emphasized to empower the urban local bodies and distribute power between the central and the state in the context of a wider interest in decentralization. Municipal budgeting can be defined as having five key areas which impact the effectiveness of local governance that includes structure, functions, internal organization and process, staffing, and financing (Naseer MA, 2015).

The current widespread concern is how to improve the functions and effectiveness of municipal corporations, municipalities, and urban local bodies. This is due to the rapid globalization that has occurred in recent years. In an effort to provide greater devolution to the state and local representative bodies, the municipal budgeting processes are being evaluated by giving them more funding and control over the decision-making processes. Increased delegation to municipal staff, local employees, and field officials, collaboration with non-profit organizations, increased participation of the private sector through privatization, and Public Private Participation in joint ventures are some of the processes that municipalities use to decide on their annual budgeting (Baranova O, 2022).

Although the municipal budgeting process has significantly improved as a result of decentralization and globalization, many developing nations, including India, continue to experience

inadequate and frequently dysfunctional governance systems that include ineffective resource allocation, ineffective revenue systems caused by improper funding distribution, and poor provision of crucial public services and urban infrastructure. According to the World Bank report, this type of poor governance results in unsatisfactory and unsuccessful outcomes for the poor and other disadvantaged members of society, such as women, children, and minorities, who want access to urban infrastructure and public services.

1.1 Background study

One of the major aspects of municipal budgeting includes the transportation sector. It can be assumed that municipalities play a major role in the planning process and in the development of strategies in local communities that support active transportation with public participation, such as the different non-motorized human modes of travel, such as walking and cycling. The numerous social, environmental, and economic factors are taken into account by the various urban local and municipal stakeholders involved in land-use and transportation infrastructure planning to guide decisions and investments in the transportation sectors. The paper makes the assumption that the fiscal benefits of investing in active transportation for local governments through municipal corporations and municipalities are sufficiently supported by evidence but have not been systematically identified in recent years. The paper examines the various approaches municipalities take to creating their transportation budgets and looks at the evidence that is currently available regarding investments in active transportation as well as opportunities to reduce local municipal spending and increase revenue. In the case of the Pune development plan for urban transport, there is sufficient available evidence that focuses on the potential economic benefits of active transport in the areas of property values, tax revenues, consumer spending, and employment, all of which are relevant sources of revenue generation in municipal operating budgets (PMC, 2008-2009).

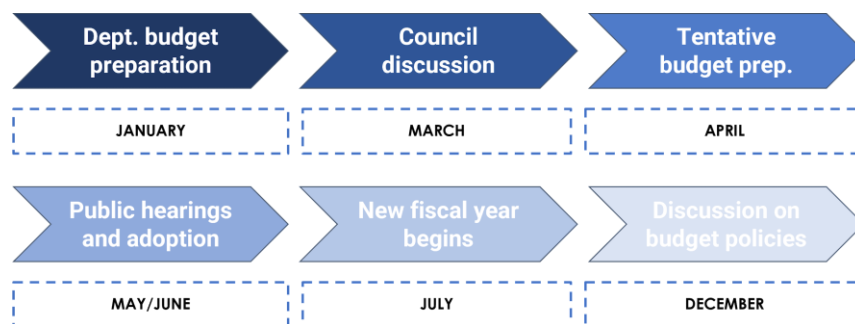


Figure 2: Annual Cycle of Municipal Budgeting (Source: Gadgil, 2016)

In case of the Chechen Republic in Siberia, the Urban Local Bodies discuss, debate and decide on the investment processes in the transport sector at a regional level and their impact on economic development. The local governing bodies emphasize the relevance and significance of attracting investments in transportation and increasing investment attractiveness through the processes of analysing the investments in the Chechen Republic's fixed capital over the past two years, the reports published by the governing body provides an evaluation of the investment processes. Based on the analysis, proposals are made to improve

the region's investment policy, with conclusions drawn from the findings. This research highlights the importance of investment in transportation for regional economic development and provides recommendations for policymakers. (Khamuradov, 2022)

According to municipal stakeholders in several Indian cities, the costs involved with developing, running, and maintaining adequate infrastructure have been some of the biggest issues that various municipalities have that serve as a barrier to investing in active transportation. The tenth five-year plan for Bangalore is governed by the strategic priorities and rules established in policy

documents, which in turn are governed by the municipal corporation budget plan for 2018 in the Transportation Master plans and Active Transport plans. Municipal corporations also conduct various analyses of the transportation industry's operations and capital budget management.

The official documents also include forecasts of how limited municipal revenues will be distributed to expenditures into the various urban sectors, development projects, and allocation of urban infrastructure. In accordance with Bangalore City's Transport Development Plan, municipal budgetary revenues are used to fund municipal expenses (BMC, 2020-2021). The capital budget details the various costs associated with various infrastructure and construction projects, whereas the operating budget includes annual costs for salaries, utilities, materials, and maintenance as well as anticipated sources of income. There is a need to determine how regional investments in active transport infrastructure may affect the expenses and revenues of municipal budgets given that economic and fiscal benefits are one factor in the planning of active transport.

In Pune's development plan for urban transport, municipal corporations and urban local governments play a critical role in the implementation of national physical activity strategies through urban local transportation in urban planning and providing appropriate transport corridors, street furniture, and urban infrastructure. Municipal sector workers and elected officials, however, must weigh a variety of factors that go beyond physical activity when designing local built environments. These factors may include, but are not limited to, issues with traffic congestion, sprawl, liveability, and economic benefits (PMC, 2008-2009). The capital budget outlines the expenses of infrastructure and construction projects, while the operating budget encompasses annual costs such as salaries, utilities, and maintenance, as well as projected sources of revenue. Given that economic and fiscal benefits are an important consideration in active transport planning, it is important to understand how regional investments in active transport infrastructure may impact municipal budgets in terms of both expenses and revenues.

1.2 Need of the study

Urban transportation in Indian cities faces several challenges, including congestion, pollution, and safety concerns. The predominant cause of these issues is the significant number of two-wheelers and cars on the roads, with a declining proportion of non-motorized and public transportation. This situation stems from the lack of comprehensive city-level transportation policies, with the de facto policy being to build more roads, construct flyovers, and expand parking lots to handle higher vehicular loads. As a result, traffic management primarily prioritizes moving vehicles at the expense of pedestrians, cyclists, and public transportation. This focus on motorized transportation has led to severe consequences, including the destruction of urban tree cover (Baranova O, 2022).

Despite the low levels of investment, a significant portion of a city's budget is still spent on transportation. The National Urban Transport Policy aims to improve public transportation and non-motorized transportation while reducing demand for private motorized modes. However, the policy does not always align with the spending, and Comprehensive Mobility Plans have been either ignored or only implemented in a lop-sided manner, with cities pursuing motor vehicle-centric projects. The ability of the Central

Government to ensure that cities invest funds, not just those received from the government under various missions, but all available funds, in compliance with the overall policy of sustainable transport, determines the success or failure of the National Urban Transport Policy, Jawaharlal Nehru National Urban Renewal Mission, and Smart Cities Mission (Dighe, 2018).

To address these problems, a better understanding of municipal budgetary procedures for the urban transportation industry is necessary. This understanding will facilitate the alignment of transportation policies with budgets, leading to a reduction in congestion, pollution, and safety concerns. The focus should be on developing comprehensive policies that prioritize public transportation, non-motorized transportation, and pedestrian and cyclist safety. Additionally, more attention should be given to promoting sustainable transportation practices, such as the use of congestion tolling, vehicle-free zones, and the creation of bike-friendly roads.

In conclusion, the challenges facing urban transportation in Indian cities require a comprehensive policy framework that prioritizes public transportation, non-motorized transportation, and pedestrian and cyclist safety. This policy framework must be supported by adequate funding and a better understanding of municipal budgetary procedures. By developing such a framework, cities can reduce congestion, pollution, and safety concerns, thereby creating a more sustainable urban environment (PMC, 2008-2009).

1.3 Urban Transportation

In the urban areas of India, transportation continues to be a major challenge due to issues such as congestion, pollution, and safety. The primary reason for this is the high number of private vehicles on the road and the low usage of public transportation and non-motorized modes of transportation. This can be attributed, in part, to the lack of comprehensive transportation regulations at the local level. Efforts to address the issue by building more roads, flyovers, and parking lots have proven to be an ineffective and illegal approach. Additionally, current congestion management policies prioritize the movement of automobiles over pedestrians, cyclists, and public transportation, thereby worsening the situation. Furthermore, building bylaws favour the addition of free parking spaces, resulting in the loss of thousands of trees and negatively impacting the urban tree cover (Naseer MA, 2015).

The absence of a single organization responsible for urban transportation, compounded by the insufficient investment in public transportation improvement, are the most frequently cited challenges. While both claims may be accurate, it is noteworthy that transportation costs are a significant part of a city's budget. The National Urban Transport Policy highlights the need to prioritize non-motorized and public transportation, while reducing the demand for private motorized modes through initiatives such as paid parking, congestion tolling, and vehicle-free zones. However, cities often do not align their spending with these principles. Despite the mandate for cities to develop a Comprehensive Mobility Plan to receive funding from the Jawaharlal Nehru National Urban Renewal Mission (JnNURM), many plans have been ignored or only partially implemented. Furthermore, initiatives that are not included in the CMPs, and are mainly focused on motor vehicles, have been explored. The success or failure of the NUTP, JnNURM, and the Smart Cities Mission depends on the Central Government's ability to ensure that cities

invest funds, including those not provided by the Central Government, in accordance with the overall policy of sustainable transport (Naseer MA, 2015).

It is through the urban transportation projects that the municipal budgets of cities to provide insights on critical issues such as the amount of funds allocated to transportation, both overall and as a percentage of the total budget, and whether these funds are primarily used for motor vehicle-centric initiatives or for improving infrastructure for non-motorized and public transportation. The understanding is also required of how the Indian cities today are practicing allocation of funds for projects that can reduce the carbon intensity of current large urban projects, which is essential to assess cities' ability to manage carbon emissions and help the nation achieve its national mitigation targets.

Additionally, the budgeting process is analysed, as the lack of regulations governing local budgets results in the allocation of funds in an ad hoc manner. While Central and State Government budgets are based on predetermined outcomes and subject to annual plans, municipal budgets are at the discretion of the city administration and councils. The study also considers the level of public participation in the budgetary process and media reporting.

The transportation challenges faced by urban areas in India are complex and require a comprehensive approach that prioritizes non-motorized and public transportation while reducing the demand for private motorized modes. The success of initiatives such as the NUTP, JnNURM, and the Smart Cities Mission

depends on cities' adherence to the overall policy of sustainable transport and effective utilization of available funds. Proper regulation of local budgets and public participation in the budgetary process is necessary to ensure efficient allocation of funds and effective implementation of transportation projects (Naseer MA, 2015).

1.4 Categories of Urban Transport Budget

Municipal budgeting for urban transport involves the allocation of financial resources to various aspects of urban transportation. There are several categories of municipal budgeting for urban transport, each of which plays a crucial role in ensuring the efficient functioning of a city's transportation system. One of the most important categories includes the provisions of Infrastructure Investment which refers to the budget allocated to the construction, repair, and maintenance of physical infrastructure such as roads, highways, bridges, and tunnels. It also includes investments in public transportation systems like buses, subways, and trains. Infrastructure investment is essential for maintaining and improving the transportation network, which is critical for the movement of people and goods. The category for Operations and Maintenance refers to the budget allocated to the day-to-day operation and maintenance of transportation infrastructure. It includes expenses such as fuel, personnel costs, and equipment maintenance. These expenses are essential for ensuring that the transportation network runs smoothly and efficiently, minimizing disruptions and delays (Khamuradov, 2022).

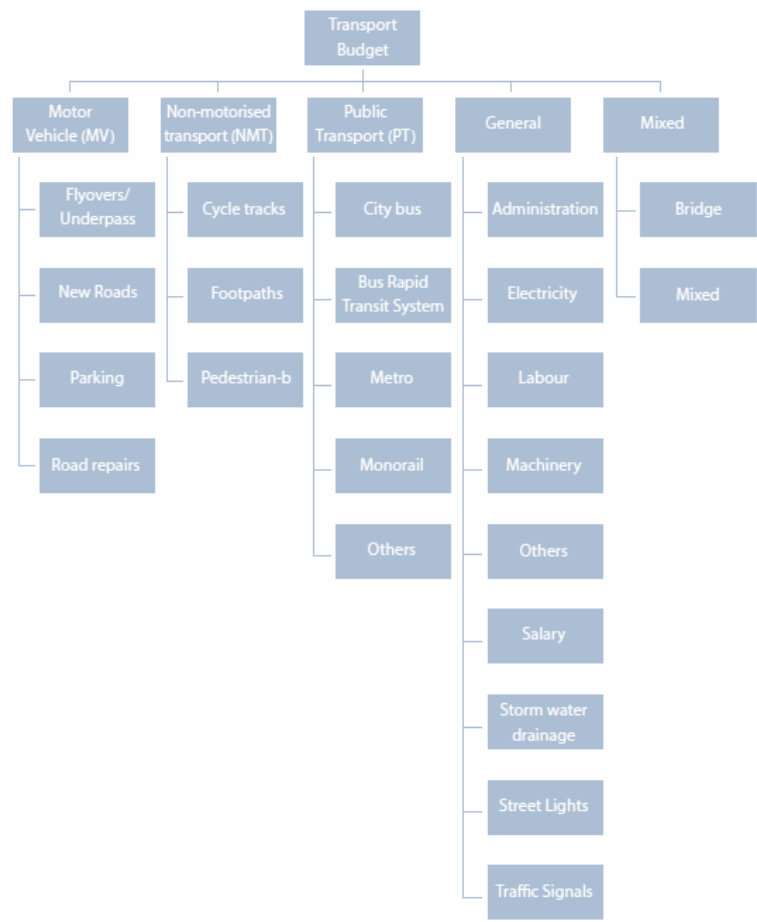


Figure 3: Categories of Transport budgets (Source: Tassonyi, 2002)

For the fulfilment SGD 11, it is vital importance to provide funds for projects relating to the Safety and Security of the citizens and public users to ensure the safety and security of all modes of transportation. It includes investments in traffic control systems, street lighting, and pedestrian and bicycle facilities. It also includes expenses related to law enforcement, emergency services, and infrastructure security, such as surveillance cameras and fences. It also includes Technology and Innovation which refers to the budget allocated to the implementation of new technologies and innovations that improve the efficiency and effectiveness of urban transportation.

It includes investments in intelligent transportation systems, such as traffic monitoring and management systems, as well as emerging technologies like electric vehicles and autonomous vehicles. And finally, the provisions for Community Engagement and Outreach referring to the budget allocated to community engagement and outreach programs that help to build support for transportation initiatives and encourage public participation in the planning and implementation of transportation projects. It includes expenses related to public meetings, community events, and education campaigns aimed at raising awareness about transportation issues and encouraging active transportation modes (Naseer MA, 2015).

The categorization of these different sectors under the umbrella of urban transport is generally specified into the 5 major categories of spatial interventions where projects can be implemented for the creation of better urban active mobility in cities (Dighe, 2018). The flow chart below describes the various categories of sectors for transportation projects.

In addition to quantitative analysis, other factors that have a correlation to the transportation in the city are also factors which impact the processes of municipal budgeting allocation. These include the institutional setup, the role of political representatives, and the media in budget making. These factors have a significant impact on the development of urban transport and should be taken into consideration while planning and implementing transportation projects.

The institutional setup of a city plays a crucial role in the implementation of transportation policies and projects. The effectiveness of the institutions responsible for transportation planning and implementation can directly affect the quality of transportation infrastructure and services. Similarly, the role of political representatives in budget making can have a significant impact on the development of urban transport. The allocation of resources and funding for transportation projects is crucial for the implementation of transportation policies and initiatives. The media can also play a crucial role in shaping public opinion and advocating for sustainable transportation policies (Gadgil R, 2017).

The categorization of different sectors under the umbrella of urban transport is an essential step towards developing a holistic approach to transportation planning and implementation. Factors such as the institutional setup, role of political representatives, and media in budget making should also be taken into consideration for the successful implementation of transportation policies and initiatives.

2. Aim and objectives

The aim of the study was to identify the lack of infrastructure for Active Transport in Bhopal and provide suggestions to transform Bhopal into a sustainable transport city.

The objectives of the study include:

1. To explore municipal budgeting in urban transportation and conduct a literature review on their challenges and opportunities
2. To evaluate the current status of municipal budgets of Bhopal and identify barriers and solutions for their allocation in urban active transportation.
3. To provide various recommendations for the ULBs, policymakers and the stakeholders at different levels of governance to promote the adoption of Active Transport, Public participation and Sustainable Goals in the process of Municipal budget allocation.

3. Scope and Methodology

This research study focuses solely on the urban transport component of municipal budgets. Specifically, we examined the actual transportation expenses from 2012-13 to 2014-15, and the proposed budget for 2015-16, where available. It is important to note that municipal budgets undergo several versions before finalization, including the Municipal Commissioner's budget, the Standing Committee version, and the General Body's approved budget. For the analysis, only the actual expenditures from the finalised Annual Budget documents of the past five years were considered.

The data is categorized into basic categories, such as Revenue and Capital Expenditure, Plan and Non-plan entries, and then further segregated into detailed transport-related entries. However, difficulties were encountered due to the significant differences in budget formats across different cities, making it challenging to normalize the data for comparison. For example, the Bangalore Municipal Budget lacks a clear demarcation of revenue and capital expenditure, making it difficult to include in certain graphs.

Additionally, the level of detail and organization varied tremendously across cities. Some cities, such as Pune, have all transport-related entries compiled into an 'Urban Transport Fund' (UTF), while other cities do not have such a provision. The absence of accessible soft copies of the budget in an editable format resulted in considerable time spent manually searching for data from the voluminous budget documents. Furthermore, information collected from secondary sources such as reports, review/research papers from journals and articles were used for researching purposes.

The methodology employed in this study utilized secondary data from various sources, including research papers, review papers, conference proceedings, reports, and books. The study focused on analysing the different types of transport-related projects, institutional setups of municipal budgeting, and processes of municipal budgeting. The aim was to identify the areas of improvement in the budgetary processes and fund allocation for the development and maintenance of the transportation network in Indian cities.

To understand the budgetary processes and fund allocation, the Annual Municipal Budgets of a time period of 5 years (2018-2022) were referred. This provided a comprehensive understanding of the budgetary processes employed by the Urban Local Bodies in Indian cities. The study identified four Indian cities for analysis of the processes of municipal budgeting employed by the Urban Local Bodies. The cities were Pune, Bangalore, Chennai, and Bhopal. The study aimed to compare the budgetary processes and fund allocation for transportation-related projects across these cities to identify the areas of improvement and best practices. Refer to figure 4.

This approach facilitated a thorough understanding of the budgetary processes adopted by the Urban Local Bodies in Indian cities. Furthermore, the study identified and analyzed four Indian cities, namely Pune, Bangalore, Chennai, and Bhopal, to evaluate the processes of municipal budgeting applied by the Urban Local Bodies. The primary objective of the analysis was to compare the budgetary procedures and fund allocation for transport-related projects across the selected cities. This comparison aimed to identify potential areas of improvement and best practices, which could lead to the effective allocation of funds and optimal management of urban transportation projects.

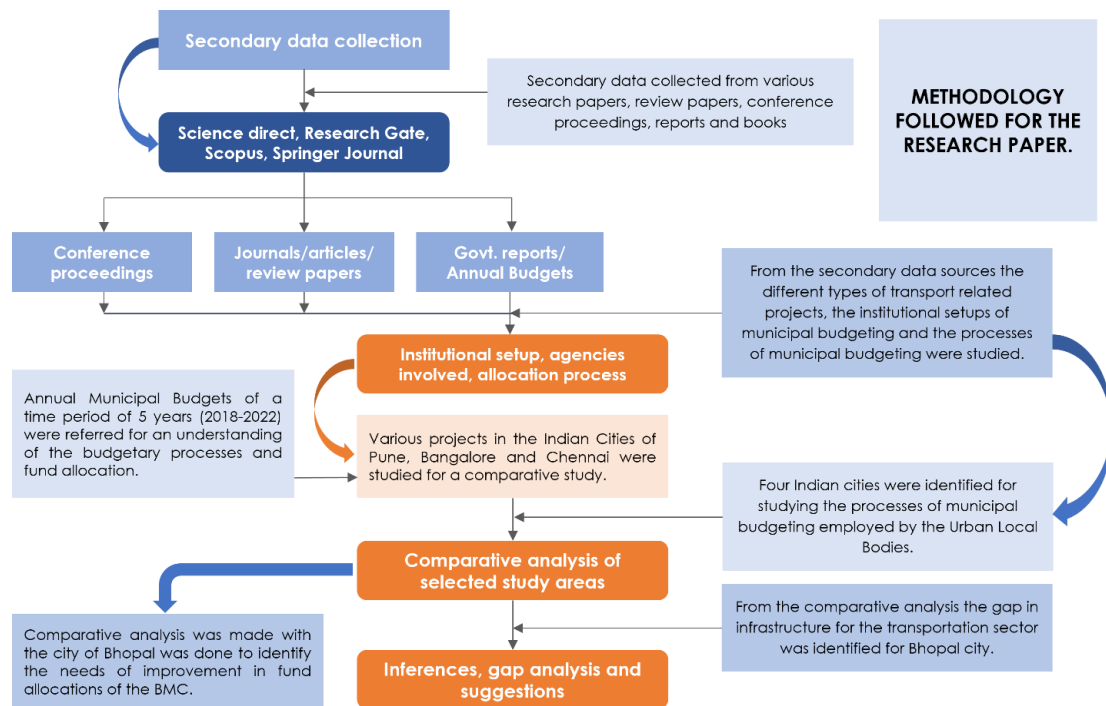


Figure 4: Methodology followed for research

Various transportation-related projects in the Indian Cities of Pune, Bangalore, and Chennai were studied for a comparative analysis. The study analyzed the projects' funding, implementation, and success rate to identify the best practices that could be implemented in other Indian cities. Furthermore, the study conducted a comparative analysis of the city of Bhopal to identify the areas where improvement was necessary in terms of fund allocation for the BMC. The study revealed a gap in infrastructure for the transportation sector, which required increased funding allocation to bridge the gap.

4. Municipal budgeting for Urban transport in India

Transportation is a critical aspect of the development of any city, and budgeting plays a crucial role in the implementation of transportation-related projects. In India, transportation budgeting is done at the municipal level, where local government bodies are responsible for allocating funds towards transportation infrastructure development and maintenance. The municipal budgeting process in India is a complex process that involves numerous stakeholders, including elected officials, transportation departments, and citizens.

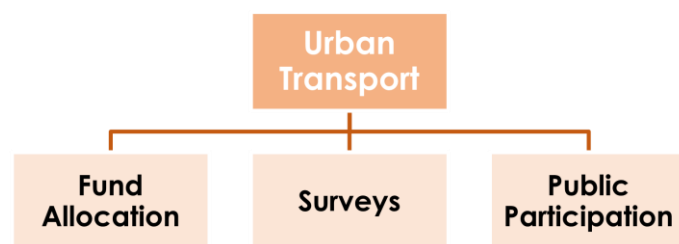


Figure 5: Methods of Municipal Budgeting for Urban Transport
(Source: Baranova O, 2022)

The transportation municipal budget in India typically covers various modes of transportation, including roadways, railways, and airways. The budget includes funds for the development and maintenance of roads, bridges, flyovers, public transport, and other transportation-related infrastructure. The budget is also used to support various transportation-related programs, such as traffic management, road safety, and vehicle emission control.

To ensure that transportation budgeting is done effectively, the Indian government has developed various guidelines and regulations. For instance, the government has mandated that a certain percentage of the municipal budget must be allocated

towards transportation. Additionally, the government has established various performance indicators to assess the effectiveness of transportation budgeting and implementation.

Despite these efforts, transportation municipal budgeting in India faces several challenges, including inadequate funding, bureaucratic hurdles, and lack of citizen participation. To overcome these challenges, there is a need for greater collaboration between the government, transportation departments, and citizens.

This can be achieved by adopting a participatory budgeting approach, where citizens are involved in the budgeting process and have a say in how funds are allocated towards transportation infrastructure development and maintenance. Overall, transportation municipal budgeting in India is a critical aspect of the country's development, and there is a need for greater investment and innovation in this area to address the challenges faced by the country's transportation infrastructure.

4.1 Institutional features, political setup and their impacts on budget

The state of urban transportation in any city is heavily influenced by the institutional set up that governs it. The number of agencies

involved in providing transport facilities, their capacity, and the coordination between them all directly affect how a city tackles its transport issues. In cities with multiple planning and implementing agencies, lack of coordination and clarity in scope of work are often observed, causing inefficiencies and delays. For example, the cities of Bangalore and Nagpur have suffered from overlapping and redundant planning and implementing agencies, leading to friction and mismanagement.

Another important factor that influences the state of urban transportation in a city is the role and influence of the ruling party on the institutions involved in it. In Bangalore, it was observed that the district-in-charge minister and the Chief Minister have a significant say in deciding transport projects whenever the ruling party in the BBMP and the State Government are the same. For instance, the Bangalore Development Minister, K.J. George, was aggressively pushing for the 1700.00 crore steel flyover in Bangalore, which was put on hold due to strong citizen and civil society opposition (Gadgil R, 2017). Pune is an excellent example of how the municipal budgetary processes for urban transport can be efficiently managed when the municipal corporation is the sole entity for planning and providing urban transport in the city.

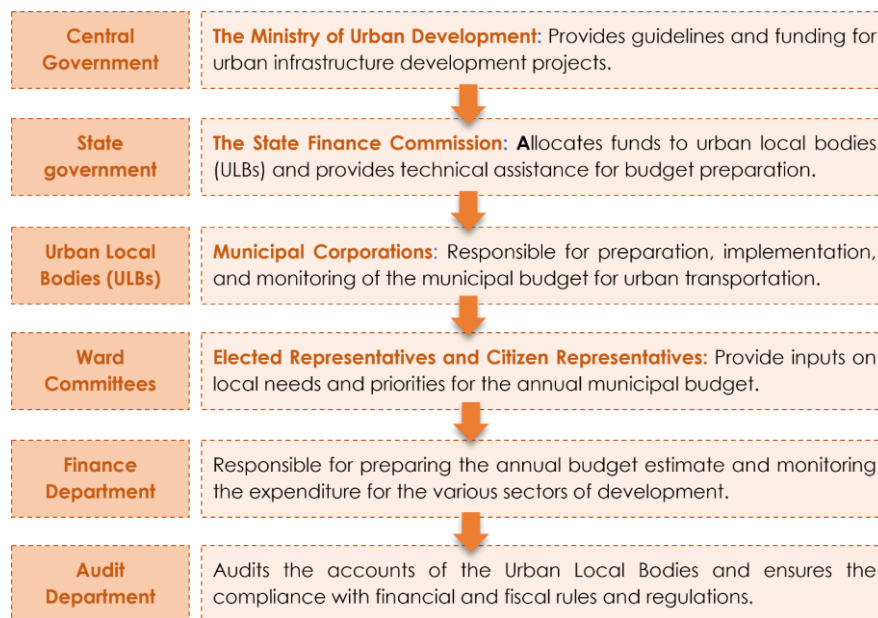


Figure 6: Institutional setup of Municipal Budgeting (Source: Naseer MA, 2015)

Unlike other cities, Pune is free of the influence of para-statal agencies and has a unique case with a functional Regional Development Authority. However, one state agency that has had a negative influence on the transport scenario in Pune is the Maharashtra State Road Development Corporation (MSRDC). The legacy of the flyover projects proposed by MSRDC is still being faced, as many of these were added without any justification to the recently sanctioned Comprehensive Mobility Plan (CMP). It is only due to disputes between the PMC and MSRDC over payments that these ill-advised projects have been stalled (PMC, 2008-2009).

The state of urban transportation in any city is influenced by the institutional set up that governs it. The number of agencies involved, their capacity, and coordination between them all play a crucial role in managing urban transport issues efficiently. Additionally, the role and influence of the ruling party on the

institutions involved cannot be ignored, and transparent and accountable municipal budgetary processes are necessary for the different systems of efficient urban transport facilities for the variety of active transport systems across the various corporations and their management processes (Naseer MA, 2015).

4.2 Processes of Budget Making

The budget-making process in Municipal Corporations of all cities follows a general pattern, wherein individual departments submit their budgets and works to the Commissioner for preparation of a consolidated budget. The Standing Committee, empowered by the Municipal Acts, reviews the budget and can make appropriate changes. Finally, the budget is tabled for councillors' discussion, debate and approval.

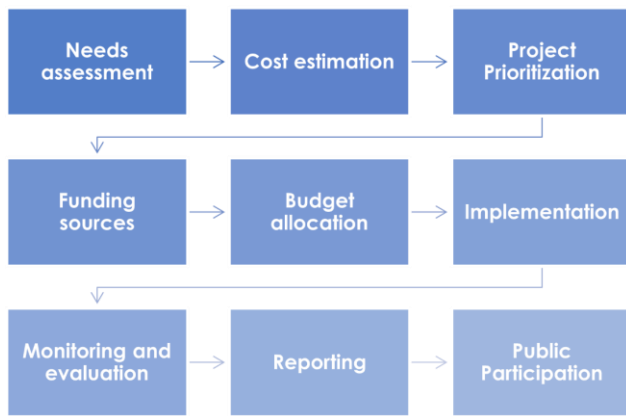


Figure 7: Processes of Budget Making (Source: Gadgil, 2016)

However, the extent of public consultation varies across cities. While the Karnataka Municipalities Act mandates public opinion seeking in Bangalore, the KMC act has no such provision.

Bangalore was the first city in India to implement participatory budgeting in 2001, which saw citizen priorities being approved in over 20% of wards. However, the concept lost ground over time. Pune implemented participatory budgeting in 2006, which saw a massive response from citizens. Transport-related items have consistently held the highest share in Pune's participatory budget.

In summary, the budget-making process in Municipal Corporations follows a standard procedure, while the extent of public consultation varies across cities. Bangalore was the first to implement participatory budgeting, while Pune witnessed significant citizen participation in its implementation (Naseer MA, 2015).

4.3 Factors affecting Transportation budgets

Infrastructure Investment is a crucial aspect of urban planning and involves the construction, repair, and maintenance of physical infrastructure. This includes investments in public transportation systems like buses, subways, and trains.

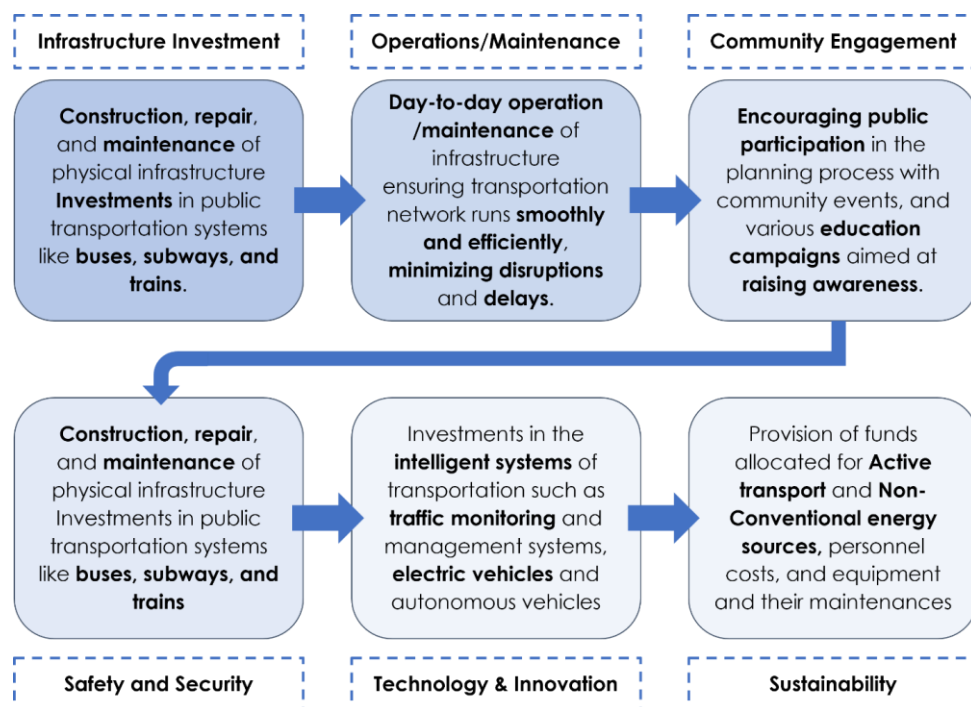


Figure 8: Factors affecting Transportation budgets (Source: Baranova O, 2022)

Operations and Maintenance is the day-to-day operation and maintenance of infrastructure, ensuring that the transportation network runs smoothly and efficiently, minimizing disruptions and delays. Regular maintenance of roads, bridges, tunnels, and public transportation systems is essential to ensure the safety and reliability of these assets. Community Engagement is an important aspect of urban planning that encourages public participation in the planning process. This is often achieved through community events and various education campaigns aimed at raising awareness of the benefits of infrastructure investment. The participation of community members is vital to ensure that the planning process is inclusive, transparent, and meets the needs of the local population.

Such investments in public transportation systems have the potential to improve access to jobs and education, reduce congestion and pollution, and provide a more efficient and cost-

effective means of transportation. A robust public transportation system is essential for the development of any city as it supports the local economy, reduces carbon emissions, and provides a reliable mode of transportation.

Safety and Security is a crucial component of infrastructure investment and maintenance. Investments in public transportation systems like buses, subways, and trains are necessary to ensure that these systems are safe and reliable. This includes the construction, repair, and maintenance of physical infrastructure, such as bridges and tunnels. It also includes investments in security measures to prevent accidents and ensure passenger safety. Technology and Innovation is an emerging field in urban planning that focuses on the intelligent systems of transportation. This includes traffic monitoring and management systems, electric vehicles, and autonomous vehicles. Investments in technology and innovation

can improve the efficiency and safety of transportation systems, reduce carbon emissions, and provide new opportunities for economic growth.

Sustainability is a key consideration in infrastructure investment and maintenance. This includes the provision of funds allocated for active transport, such as walking and cycling, and non-conventional energy sources, such as solar and wind power. The personnel costs and equipment maintenance associated with these systems can be significant, but the long-term benefits to the environment and local economy make them a sound investment.

4.4 Municipal Budgeting for Urban Transport

Urban transportation is still a concern in Indian cities, where congestion, pollution, and safety are all on the rise. The primary reason for this is that there are still a lot of two-wheelers and automobiles on the road and that the proportion of non-motorized and public transportation is declining. This is partly attributable to the lack of comprehensive transportation policies at the city level. The illegitimate policy is to build more roads, construct flyovers, and extend parking lots in an effort to handle higher vehicular loads. In terms of signal management, one-way streets, etc., congestion management nearly entirely prioritizes moving automobiles at the expense of pedestrians, bicycles, and public transportation. Building bylaws also favor additional parking that is also free. Particularly, road widening has adversely affected urban tree cover. Thousands of trees are axed to make more space for vehicles, often against massive public outcry.

The most frequently mentioned issues with urban transportation are indeed the low levels of invested capital, especially in the improvement of public transportation, and the absence of a single organization to collaborate with urban transportation, which is thought to be hindered by a vast number of governing agencies. While both of these statements may be accurate, a significant portion of a city's budget is spent on transportation. The National Urban Transport Policy, which focuses on the need for improved public transportation and non-motorized transportation while

reducing the demand for private motorized modes through actions like paid parking, congestion tolling, vehicle-free zones, etc., does not always align the spending with these principles. Cities must develop a comprehensive mobility plan as a requirement. Cities Comprehensive Mobility Plans, which were necessary for receiving funding from the Jawaharlal Nehru National Urban Renewal Mission (JnNURM), either were completely disregarded or only partially implemented. Cities have specifically explored initiatives that are not included in the CMPs, which are basically focused on motor vehicles.

The ability of the Central Government to ensure that cities invest funds, not just the funds they receive from the Central Government under these and other missions, but all the funds available to the city, in compliance with the overall policy of sustainable transport determines whether NUTP, JnNURM, and now the Smart Cities Mission succeed or fail.

The current research analyzes the municipal budgets of cities in an effort to provide information on several crucial issues: How much funds do cities spend on transportation overall and as a percentage of their total budgets and how is the money utilized in motor vehicle-centric initiatives or for enhancing infrastructure for non-motorized and public transportation?

The study connects these broad groups of projects to their carbon intensity. Understanding this is crucial for determining whether cities can actually manage their carbon emissions and support the country in meeting its national mitigation targets. The research also looks at the budgeting process. The funds are distributed in an effectively ad hoc approach as there are no rules for local budgets. Municipal budgets are entirely up to the whim of the city administration and councils, in contrast to Central Government and, to some extent, State Government budgets, which are based on 5-year plans, outcomes that have been specified, and are subject to annual plans. Additionally taken into account was the level of public participation in the budgetary process and media reporting.

4.5 Urban Transport Fund

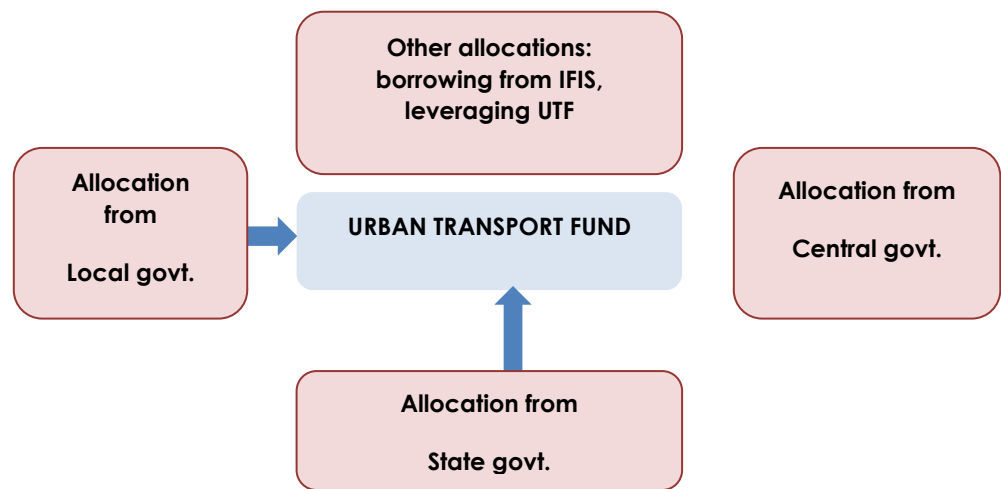


Figure 9 Allocation of urban transport fund (source :UTF Bhopal)

Efficient urban transit is essential for any dynamic and developing urban environment. It is critical that urban transit develops and grows in tandem with population expansion and economic activity in the city. However, developing an urban transport infrastructure is expensive and requires significant investment. The 12th Five Year Plan calls for an investment of more than INR 3 lakh crore in urban transport, which is divided into the following components: street network - new areas, street network - upgrade, public transport, parking, institutions, and capacity building, non-motorized transport and Intermediate para-transit system projects, innovation, research, development, and pilot projects. Many Indian states/cities confront a difficult problem in raising finances to make such initiatives.

Collection from public authorities, direct beneficiaries, indirect beneficiaries, and other sources of revenue are the four primary categories of financing sources.

Public authorities- The Central and State Governments are the primary participants in subsidising urban transit through budgetary allocations. This financing is typically used for infrastructure development and system operation. Operation funding could come from either the payment of subsidies or the direct operation of systems through city-specific entities.

Direct beneficiaries- include commuters who use transport services, businesses that benefit from the assets developed, and marketers who may be able to generate cash by advertising on rolling stock, stations, bus stops, and so on.

Indirect beneficiaries are people or organisations who profit from the presence of a transport system and the accessibility it provides without necessarily being direct users. Indirect beneficiaries include all other road users who benefit from reduced congestion and pollution as a result of an effective public transport system, such as property owners in the impact zone.

A. Objectives of UTF

1. Provide sufficient urban transit funding by leveraging creative sources

Public transport fares may not cover the complete cost of providing the necessary public transport infrastructure, equipment, operations, and maintenance. In the end, this can result in subpar service. An important purpose of the DUTF, thus, is to provide funds for urban transport activities in excess of those given by customers and other beneficiaries of urban transport systems. This necessitates the discovery of additional revenue streams that might be utilized to finance the public transportation system, such as the green tax, additional cess on transportation vehicles, cess on transportation fuels, employer taxes, etc. This would reduce the financial burden on the public sector at all levels and may even leave a surplus for meeting wider urban transport needs.

2. Provide devoted, long-term investment in urban transport

Urban transit currently needs devoted and long-term financial sources. The distribution of financial resources is a component of the overall government budget and is flexible depending on the political climate. Funding requirements for the urban transport industry are frequently disregarded in an effort to uphold social and

political duties. As a result, the first factor to take into account while developing a DUTF is the necessity for dedicated, predictable, ongoing, and sustainable sources of finance to meet the needs of an urban transport system. An essential change suggested in the NUTP to make transport investments sustainable is the introduction of a special UTF.

3. Transparency and accountability in fund management must be ensured through defined regulations and processes.

One of the primary goals of DUTF is to maintain transparency in the collection, management, and dispensing of monies. It is also critical to establish responsibility for funds received or allocated for urban transport. Accountability can be achieved by having clear and well-documented policies on DUTF fund allocation. Funding should be allocated in a prioritized manner, taking into account the cost-effectiveness and justification of the various proposals. In this setting, it is critical to develop clear policies and procedures for allocating DUTF monies. The FMD will be in charge of administering and implementing these.

B. Fund Management Division within the UMTA

To carry out the several functions given to Bhopal UMTA, its organisational structure is organised into six function-based sections. Each division will have its own roles and responsibilities in carrying out its delegated functions delegated to it. The divisions would be expected to work together to maintain the seamless and harmonious operation of the UMTA.

Functions of FMD:

1. Collection and disbursement
2. Treasury management
3. Accounting and budgeting
4. Monitoring of DUTF expenditure

Based on the functional categories listed above, the FMD is intended to execute the following functions:

Collection of funds (collection of all monies intended under the DUTF) payment of funds for addressing the demands of the Bhopal UMTA and payment of funds to implementing agencies. The preparation of a Fund Flow Statement showing inflow and outflow on a monthly basis; and working out net surplus/deficit as per Bhopal UMTA's investment/borrowing policy, raising funds by borrowing or raising money necessary for the proper discharge of its functions. Bhopal UMTA's financial records and accounting must be kept up to date.

Providing inputs in the preparation of the annual DUTF budget, selectively monitoring fund utilisation by implementing agencies, submitting annual financial reports, assistance in the preparation of the Transport Investment Programme, and management of all tax-related matters, including planning and related aspects. Creating a money management plan to streamline the treasury management function and preparing Bhopal UMTA's yearly reports and financial statements.

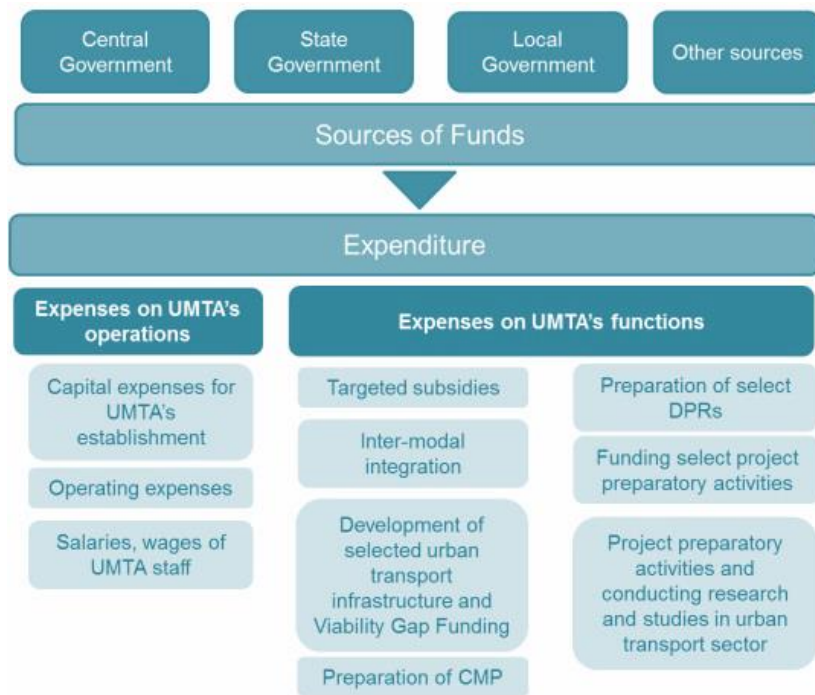


Figure 10 Estimation of excess revenue/expenditures (Source: UTF, bhopal)

The Bhopal Urban Mobility Area Transport Authority will develop a thorough Transport Investment Programme for transport initiatives in the Bhopal Urban Mobility Area. The Multi-Year Programme created by the various implementing agencies will serve as the foundation for this programme. The Multi-Year Programme would include yearly expenditure estimates for each effort as well as the expected source of funding. Each project suggested by the implementing agency is expected to be planned in accordance with the long-term CMP and the UMTA Multi-Year Programme. In this context, the DUTF might be used to fund a portion of capital and operating investments made by implementing agencies in the urban transport sector. After all other funding requirements have been assessed, the amount of funds available with DUTF could be used to fund capital and operational investments. The UMTA Governing Committee would decide on a regular basis how much funding may be allocated by DUTF to fund such initiatives.

To make the most use of the funds that are available to the Bhopal UMTA, the various utilization routes should be prioritized, and DUTF funding should be used accordingly.

Priority I - Funding UMTA Operating expenditures: It has been recommended that the first and primary priority should be to fund the operating expenditures of the Bhopal UMTA. The rationale is that UMTA can only carry out its tasks when it has sufficient funding to do so. It is not intended that the Bhopal UMTA become non-functional in the first place and that the goal of establishing the UMTA is not met.

Priority II - CMP Preparation: The second in the order of priority should be CMP preparation, which is a time-consuming and expensive job. This is regarded as the most significant action that would pave the way for the overall growth of urban mobility. Efficient planning is the first and most critical step in ensuring coordination across multiple agencies and minimizing planning overlaps and gaps.

Priority III - Funding for intermodal integration expenses: The investment for intermodal integration should be prioritized third. The various service providers who provide services independently of other modes of transportation are typically uninterested in sponsoring the development of intermodal integration. Because intermodal integration is critical for smooth public transport, DUTF can support it after it funds CMP development.

Priority IV - Funding for urban transport studies and the development of selected DPRs: It is advised that financing for urban transportation research, studies, and project preparation activities be prioritised next. Such initiatives establish a firm foundation for the sector's development and are critical in the early phases of specific projects. Generally, service providers and other organisations lack the desire to pursue research and development operations.

Priority V - Funding targeted subsidies: DUTF money could be used to fund specifically targeted subsidies, such as those for intermodal connectivity. Additional funds are necessary to offer seamless transport connectivity in an urban region because user fees are frequently insufficient to pay the cost of service operation. The second highest priority for utilizing DUTF finances should be providing targeted urban transit subsidies providing targeted subsidies for urban transit.

5. Case study

5.1 Pune

Pune, a city in India, has high expenditures due to the fact that the Pune Municipal Corporation is the only planning and executing agency in the city. Recently, a Metropolitan Development Authority was established, but its scope and powers are limited. The city has the highest per capita expenditure on transport for the first three years of comparison, with Chennai experiencing the greatest change, moving from second-last position to first, with

over a four-fold increase in per capita expenditure. The significant increase in Chennai's expenditure is due to the expansion of the city boundaries in 2011, which led to an increase in capital works. Additionally, there has been an increase in expenditures across departments, including roads, education, and health.

From the annual financial year 2012-2013 to the year 2015-2016, expenditures for street light installation and electricity increased by 153% and 88%, respectively. In the same period, expenditures increased for stormwater drainage (449%), culverts (3378%), concrete roads (535%), asphalt roads (389%), and pavements (121%). The expansion of the city's area from 174 sq km to 426 sq km, which included several towns and villages, led the Council to decide to improve the infrastructure in these areas and initiate the Mega City Scheme. Pune also had JnNURM funds that it had to spend by 2014, but which continued until 2016-17. This is the reason why capital expenditure increased rapidly during this time frame (PMC, 2008-2009).

In conclusion, Pune's high expenditure is due to the sole planning and executing agency being the Pune Municipal Corporation, and the recent establishment of the Metropolitan Development Authority has limited powers.

The expansion of the city's boundaries in 2011 led to a significant increase in capital works, and there has been an increase in expenditures across departments. The Council decided to improve the infrastructure in the newly included areas and initiated the Mega City Scheme. Additionally, JnNURM funds were available, which led to an increase in capital expenditure until 2016-17 (Dighe, 2018).

5.2 Bangalore

Municipal budgeting for transportation in Bangalore is a critical issue that requires careful planning and management. As one of the fastest-growing cities in India, Bangalore faces significant transportation challenges. The city's population has grown rapidly in recent years, leading to increased traffic congestion, pollution, and safety concerns. The municipal government must allocate adequate funds to address these issues and ensure that the transportation system meets the needs of its residents.

The first step in municipal budgeting for transportation in Bangalore is to identify the areas that require the most investment. The city has several modes of transportation, including buses, taxis, auto-rickshaws, and trains. The municipal government must determine which mode of transportation requires the most funding and prioritize its allocation accordingly. One critical aspect of transportation in Bangalore is the city's bus system. The Bangalore Metropolitan Transport Corporation (BMTC) is responsible for the operation of the city's bus system. The BMTC is one of the largest public transport corporations in India and has a fleet of over 6,500 buses. To maintain and improve this fleet, the municipal government must allocate sufficient funds to the BMTC (BMC, 2020-2021).

Another critical aspect of transportation in Bangalore is the city's road infrastructure. The municipal government must invest in the development and maintenance of roads, highways, and bridges to ensure that they are safe and accessible to all residents. This includes repairing potholes, improving road signs, and installing traffic lights at critical intersections. In addition to roads, the municipal government must also invest in other modes of

transportation. For example, the city's auto-rickshaws play a vital role in transporting residents within the city. The municipal government must ensure that these vehicles are well-maintained and meet safety standards. Similarly, the government must invest in the development of bicycle lanes and pedestrian paths to promote sustainable transportation (Dighe, 2018).

The municipal government must also consider the needs of people with disabilities when allocating funds for transportation. This includes providing wheelchair-accessible buses and trains, as well as accessible sidewalks and pedestrian crossings. To ensure that municipal budgeting for transportation in Bangalore is effective, the government must involve residents in the process. This includes holding public meetings and soliciting feedback from residents about their transportation needs. The government must also be transparent about its budgeting process, providing regular updates to residents about how funds are being allocated and spent (Dighe, 2018).

5.3 Chennai

The Chennai Metropolitan Area (CMA) has seen recent years of rapid growth, and the Corporation now faces numerous difficulties. Therefore, it is crucial for the local government entities to develop the necessary infrastructure in order to meet the rising demand. The local bodies in the CMA offer a wide range of services at various quality levels. An organised urban local body like a Municipal Corporation, as opposed to a collection of Municipalities, Town Panchayats, and Village Panchayats, has the capacity to deliver these services more effectively.

The following possible enhancements to the quality of life of the Corporation of Chennai residents can be reasonably anticipated as a result of the proposed Infrastructure Investment Plan:

- Well-designed roads with parking facilities
- Encroachment-free pedestrian-friendly footpaths
- Eco-friendly environment
- Reduced pollution level
- Hassle-free traffic amenities with necessary road furniture for public and private transportation
- Higher standards of living

The first municipal corporation in India to adopt and put into practise the Non-Motorised Transport (NMT) Policy is Greater Chennai Corporation. The Greater Chennai Corporation has started a project to widen the footpaths from 5 feet to 10 feet in order to encourage non-motorized transportation, which will lessen conflict between pedestrians and vehicles, pollution, and traffic congestion. The Corporation has finished footpath improvement works along 107 Bus Route Roads for a length of 170 Km at an estimated cost of Rs.150.34 crore to ensure the safety of pedestrians, particularly the vulnerable sections of society such as the elderly, women, children, students, and differently-abled. (CMC, 2022-2023)

The Greater Chennai Corporation maintains 779 no. of Bus Shelters built under various schemes and 637 Bus shelters under a Built Operate and Transfer (BOT) Basis, 128 no. Traffic Islands, and 173 nos of Center median. The Chennai Municipal Corporation has so far allocated a sizable budget for enhancing the city's infrastructure.

5.4 Indore

In Indore, a city in the Indian state of Madhya Pradesh, the Municipal Corporation has been making significant investments in urban transport to improve the mobility and accessibility of its citizens. According to the Annual Municipal Budget for the year 2021-22, the total budget allocation for urban transport in Indore was INR 654.73 crores. This budget was divided among various projects and initiatives aimed at improving the city's transportation infrastructure, operations, and maintenance. The largest share of the budget was allocated for the construction and maintenance of roads and flyovers, which received INR 468.89 crores. This allocation was made to ensure the development of a well-connected road network that can efficiently handle the increasing vehicular traffic in the city (IMC, 2022-2023).

Another significant allocation was made for the construction and maintenance of footpaths, cycle tracks, and pedestrian facilities, which received INR 73.70 crores. This allocation was aimed at promoting sustainable transportation modes like walking and cycling and making the city more pedestrian-friendly. The Municipal Corporation also allocated INR 52.75 crores for the construction and maintenance of public transportation infrastructure like bus stops, bus terminals, and depots. This allocation was made to improve the efficiency and reliability of the city's public transportation system. Furthermore, INR 44.18 crores were allocated for the procurement of new buses, and INR 9.86 crores were allocated for the operation and maintenance of the existing fleet of buses. This allocation was aimed at expanding the city's bus network and improving the quality of services offered to the citizens.

In addition to these allocations, the Municipal Corporation also allocated funds for various technology and innovation initiatives like the installation of Intelligent Transportation Systems (ITS) and GPS-based vehicle tracking systems. INR 4.77 crores were allocated for these initiatives, aimed at improving the efficiency

and safety of the city's transportation system. Finally, the Municipal Corporation also allocated funds for community engagement and awareness initiatives aimed at encouraging public participation in the planning process. INR 1.98 crores were allocated for these initiatives, which included various events, campaigns, and workshops aimed at raising awareness about sustainable transportation and the need for public participation in decision-making. Overall, the Municipal Corporation of Indore has been making significant investments in urban transport to improve the city's transportation infrastructure, operations, and maintenance. These investments are crucial for promoting sustainable transportation modes, improving the efficiency and reliability of the public transportation system, and ensuring the mobility and accessibility of the city's citizens (IMC, 2022-2023).

5.5 Comparative study

The present scenario of municipal budgeting of urban transport in India is characterized by a growing recognition of the importance of sustainable and efficient urban mobility systems. In recent years, there has been a significant increase in the allocation of funds for urban transport infrastructure and services, as cities grapple with growing traffic congestion, air pollution, and road safety concerns. However, challenges remain, particularly with respect to the prioritization of public transport modes, integration of different modes, and the mobilization of adequate financial resources for long-term sustainability. Many municipalities continue to rely heavily on user fees and central government grants, rather than exploring innovative financing mechanisms or engaging in effective public-private partnerships.

A basic analysis was conducted to understand the transportation expenditure as a part of the overall municipal budget in several Indian cities. The analysis included factors such as the share of transport in the total budget, share of capital in the expenditure, and per capita spending in each city. The results of this analysis are presented in two graphs.

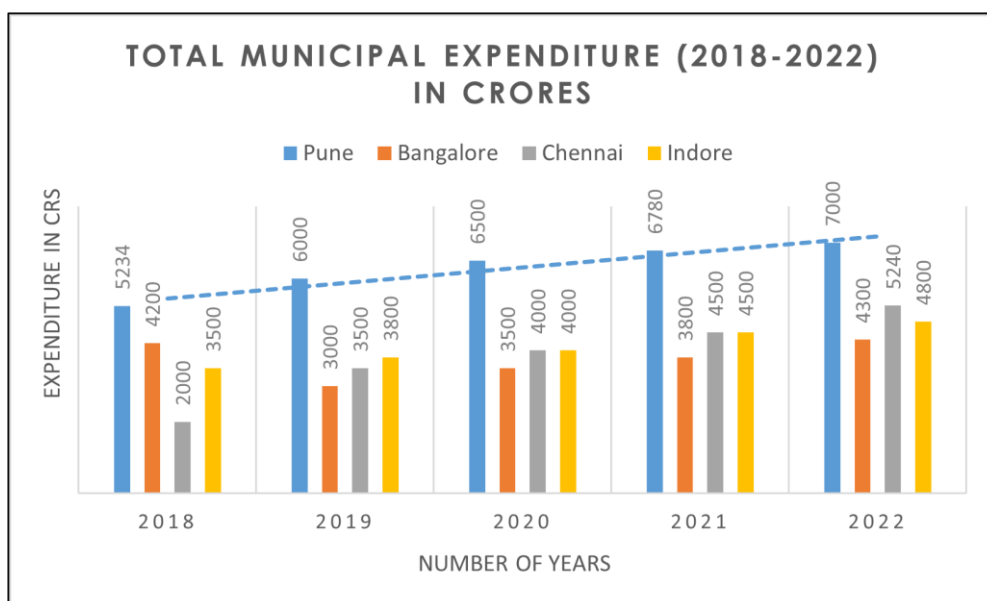


Figure 11: Total annual expenditure of 5 Indian cities between 2012 and 2016 (Source: Annual Budgets)

Figure 11 depicts the total annual expenditure of Indian cities between 2012 and 2016. When compared using per capita expenditure, all cities except Pune had similar expenditure in 2012-

13. However, Pune's per capita expenditure was almost three times that of the other cities. In subsequent years, Bangalore and Ahmedabad maintained the same per capita expenditure, while

both Pune and Chennai increased it. In 2015-16, the gap between Pune and Bangalore and Ahmedabad increased to four times their per capita expenditure, while Chennai reduced the gap to two times. Pune had the highest per capita expenditure on transport for the first three years, while Chennai made the greatest change, moving from the second last position to first place due to an increase in capital works that followed the expansion of the city boundaries in 2011 (Gadgil R, 2017).

Figure 12 shows the percentage share of budget allocated for transportation, which varies between 20-40% in cities. Ahmedabad had the largest share of its budget dedicated to transport at 32% in 2012-13, while the rest of the cities had an expenditure of transport close to 20% of the budget. However, the share of transport in Ahmedabad's budget has been reducing constantly since, while that of Bangalore, Chennai, and Nagpur has been increasing since 2013-14. Pune's expenditure on transport has remained fairly consistent at 20%.

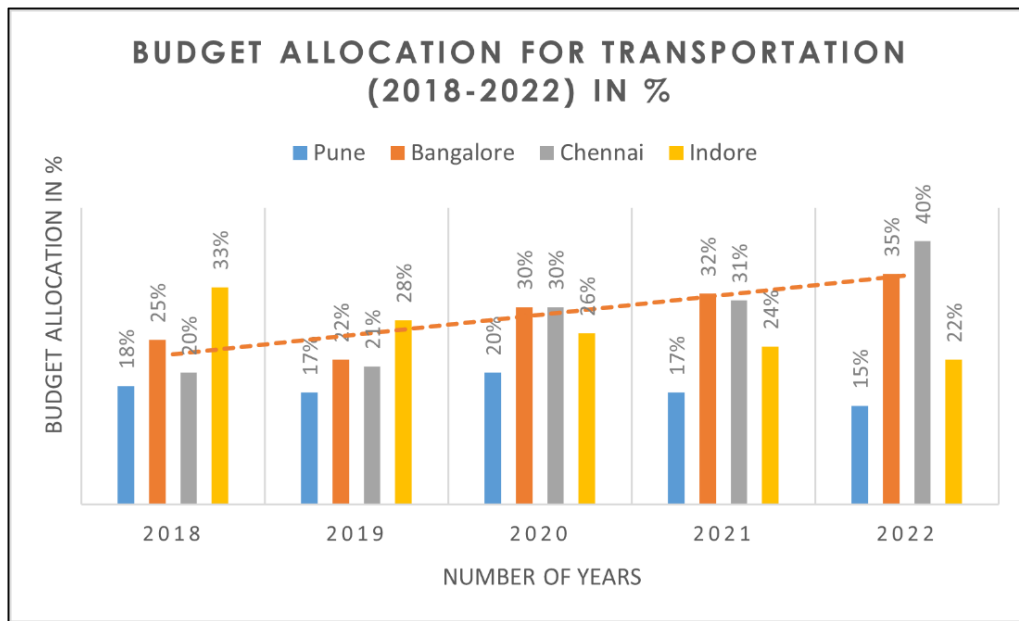


Figure 12: Percentage share of budget allocated for transportation (Source: Annual Budgets)

The per capita expenditure of a city is dependent on the scope of work that is undertaken under the municipal transport budget. Certain cities, such as Ahmedabad, run city bus services out of their municipal budgets, whereas Bangalore has a separate state agency (BMTCL) to manage bus services. Therefore, a city such as Bangalore may have a lower transport budget expenditure than Ahmedabad but have a combined effect of better transport outcomes than Ahmedabad does. This is a limitation of this study. In subsequent studies, all types of transport expenditures within the city may be included in the comparison to reflect a more realistic scenario (Gadgil R, 2017).

The analysis provides an understanding of the transportation expenditure as a part of the overall municipal budget in several Indian cities. Bangalore allocated INR 4,200 crore, Chennai INR 2,150 crore, and Pune, Indore, Bhopal allocated INR 1,000-1,500 crore (2021-22). Chennai allocated 59%, Pune 63%, while Bangalore allocated only 32% of transport budget to public transport. Indore and Bhopal prioritize non-motorized transport, allocating INR 57-66 crore (2021-22) for pedestrian and cycling infrastructure.

BUDGET ALLOCATION FOR URBAN TRANSPORT (In lakhs)						
Particulars	Pune	Bangalore	Chennai	Indore	Bhopal	Gap analysis
Roads and Pavements(New roads)	234.14	165.00	164.84	124.78	34.88	2
Cycling and jogging tracks	35.45	35.82	49.12	55.82	57.4	2
Pedestrian facilities	125.45	214.42	150.44	127.21	78.45	2
Non-motorized transport	118.36	150.00	116.30	250.00	143.08	3
Public Lighting (streetlight/solar panels)	100.00	113.91	137.52	120.00	-	1
Public Lighting (lamp post, transformers)	124.77	152.00	117.20	115.00	226.70	3
Traffic Signals (Inclusive elements)	147.64	130.62	141.27	139.35	-	1

Figure 13: Gap Analysis of Budget allocation (Source: Annual Budgets)

6. Bhopal Municipal Corporation

Bhopal Municipal Corporation's economy has been in black and white for several years. In 2006-07, BMC's revenue was R139.52 crore, while its expenditure was Rs152 crore. In 2010-11, income climbed to R277.68 crore, while expenditure increased to Rs284.17 crore. In 2012, the BMC also presented a deficit budget for 2012-2013, with a proposed income of R1166.19 crore and a budgeted expenditure of R1235.80 crore. The deficit total of Rs92.07 crore. The prior year's deficit was R94.64 crore. When BMC officers are

questioned about it, they present various arguments. Overall, the key reasons stated by BMC include its financial support to several ongoing large-scale projects in the city, payment of loan interest, and repayment of loans. The allocation for roads and footpaths has been reduced from R60.72 crore in 2011-12 to R13.47 crore in 2012-13. Roads in several parts of the city are in disrepair. Residents desired appropriate funding to improve the city's road and lane network. People in Old Bhopal, in particular, wanted dilapidated roads repaired as soon as possible and as well as the start of new projects to alleviate traffic congestion.

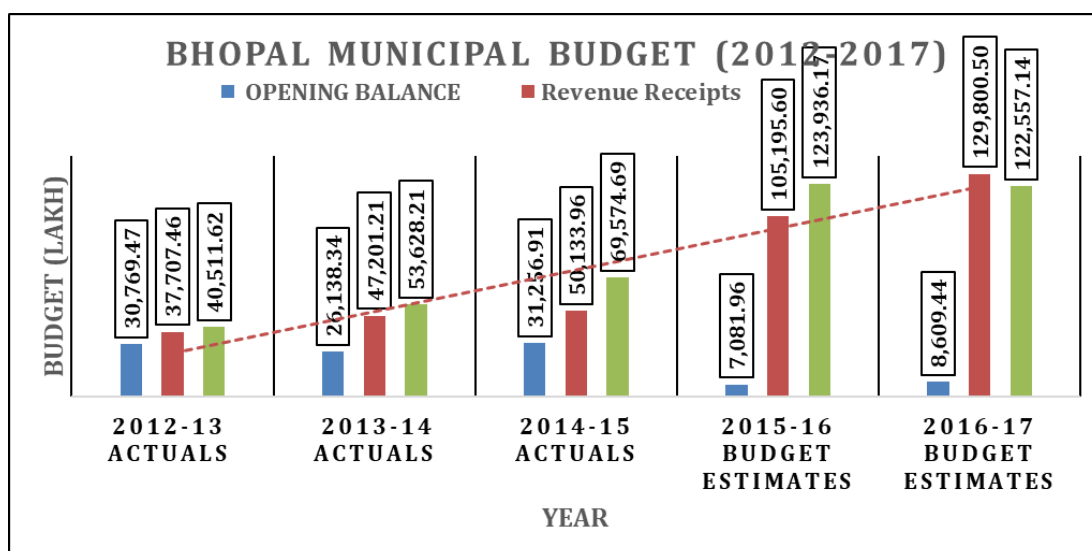


Figure 14 BMC budget (2012-2017), (Source: BMC budget 2012-17)

Particulars	2012-13 Actuals	2013-14 Budget Estimates	2013-14 Actuals	2014-15 Budget Estimates	2014-15 Actuals	2015-16 Budget Estimates	2016-17 Budget Estimates
OPENING BALANCE	30,769	3,988	26,138	8,273	31,256	7,081	8,609
Revenue Receipts	37,707	57,927	47,201	75,803	50,133	105,195	129,800
Revenue Expenditure	40,511	71,329	53,628	92,980	69,574	123,936	122,557

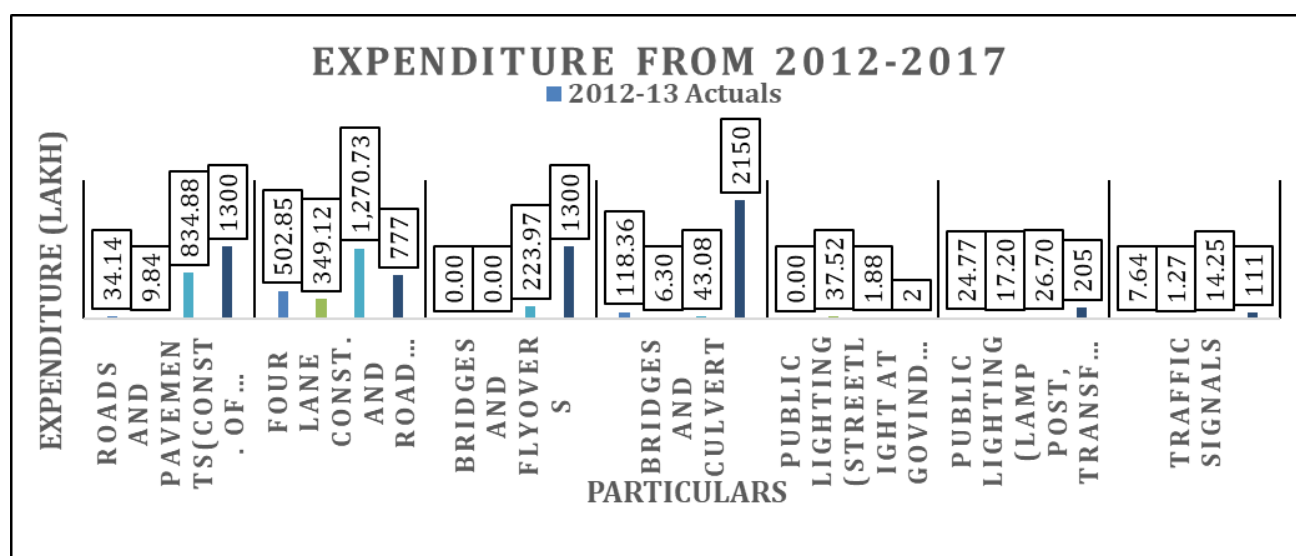


Figure 15 BMC expenditure (2012-17), (Source: BMC budget 2012-17)

BHOPAL MUNICIPAL CORPORATION EXPENDITURE (Lakh)							
Particulars	2012-13 Actuals	2013-14 Budget Estimates	2013-14 Actuals	2014-15 Budget Estimates	2014-15 Actuals	2015-16 Budget Estimates	2016-17 Budget Estimates
Roads and Pavements(Const. of new roads)	34.14	95.00	9.84	1,210	834.88	400	1,300
Four lane const. and road maintenance	502.85	535.82	349.12	535.82	1,270.73	2,495.82	777.30
Bridges and Flyovers	0.00	5,000	0.00	4,300	223.97	3,800	1,300
Bridges and culvert	118.36	2,580	6.30	2,550	43.08	3,100	2,150
Public Lighting (streetlight at Govindpura ind. area)	0.00	13.91	37.52	0.00	1.88	78	2.28
Public Lighting (lamp post, transformers)	24.77	52.00	17.20	115	26.70	105	205
Traffic Signals	7.64	130.62	1.27	139.35	14.25	125.10	111.42

"The Atma-Nirbhar MP-Budget 2022-23 has been prepared in mission mode, with the goal of making Madhya Pradesh self-sufficient." While preparing the budget, attempts were made to incorporate budget proposals submitted from the public.

Provision for total allocation of Rs2,79,237 crore, provision for total expenditure of Rs2,47,715 crore, and revenue gap of Rs3,736 crore. 12% increase in revenue expenditure in the year 2022-23 as compared to the revised estimate for the year 2021-22.

The growth in the transport sector (including storage) in the state's economy at constant prices (2021-22) was 27.08 percent in 2020-21 and 14.15 percent in 2021-22. Under the Chief Minister's Village Road Scheme, which cost Rs 3481 crore, 8294 roads connecting 8458 villages to the main road were finished by November 2022. In 2021, the entire length of roadways maintained

by the Public Works Department will be 70.95 thousand kilometers, 8.85 thousand kilometers for national highways, and 11.39 thousand kilometers for provincial highways. The number of registered automobiles in the state is expanding in tandem with the construction/upgradation of roadways. highways, and 11.39 thousand kilometers for provincial highways.

BMC has estimated an income of Rs. 3104.18 crore and an expenditure of the same amount. In the public lighting sector a new section of lighting dark spots with an amount of 1 Crore, The municipal corporation has set aside Rs 140 crore for the development of commercial complexes in the city, while Rs 26 crore will be spent on BRTS reconstruction and redevelopment along with Rs 7 crore for transportation, footpath, central verges, and cross-road construction, Rs 2 crore has been allocated for new signals at various locations throughout the city.

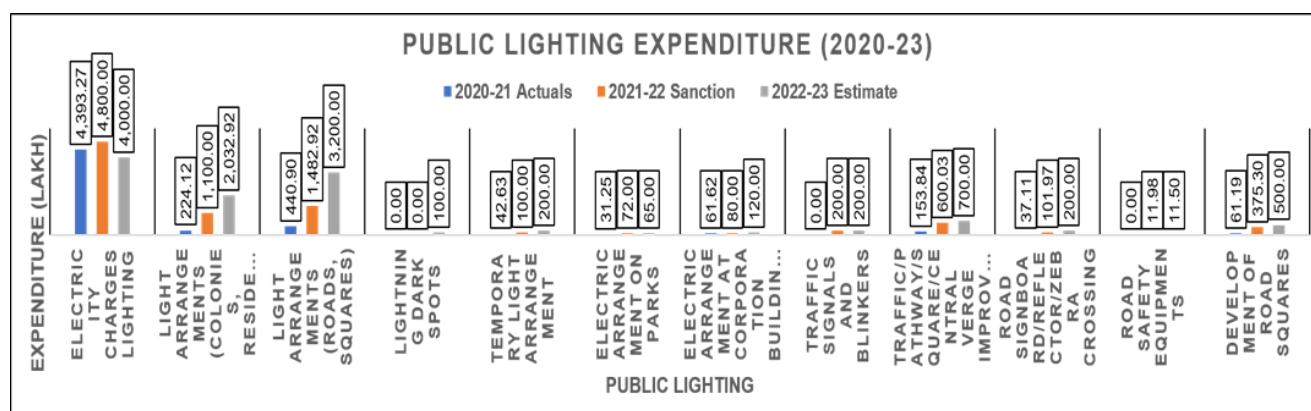


Figure 16 Public lighting expenditure (2020-23), (Source: BMC budget 2020-23)

BHOPAL MUNICIPAL CORPORATION EXPENDITURE (Lakh)							
Public lighting	2020-21 Actuals	2021-22 Sanction	2022-23 Estimate	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Electricity charges lighting	4,393.27	4,800.00	4,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Light arrangements (colonies, residential)	224.12	1,100.00	2,032.92	508.23	508.23	508.23	508.23
Light arrangements (Roads, Squares)	440.90	1,482.92	3,200.00	800.00	800.00	800.00	800.00
Lightning dark spots	0.00	0.00	100.00	25.00	25.00	25.00	25.00
Temporary light arrangement	42.63	100.00	200.00	50.00	50.00	50.00	50.00
Electric arrangement on parks	31.25	72.00	65.00	16.25	16.25	16.25	16.25
Electric arrangement at corporation buildings	61.62	80.00	120.00	30.00	30.00	30.00	30.00
Traffic signals and blinkers	0.00	200.00	200.00	50.00	50.00	50.00	50.00
Traffic/pathway/square/central verge improvement & construction	153.84	600.03	700.00	175.00	175.00	175.00	175.00
Road signboard/reflector/zebra crossing	37.11	101.97	200.00	50.00	50.00	50.00	50.00
Road safety equipment	0.00	11.98	11.50	2.88	2.88	2.88	2.88
Development of road squares	61.19	375.30	500.00	125.00	125.00	125.00	125.00

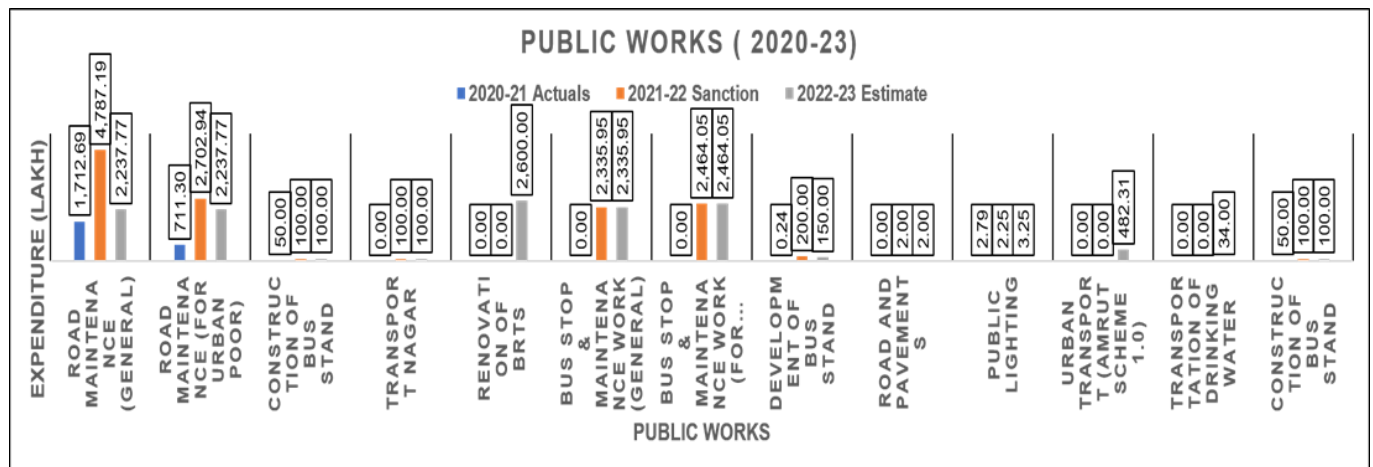


Figure 17 Public works expenditure, (Source: BMC budget (2020-23))

BHOPAL MUNICIPAL CORPORATION EXPENDITURE (Lakh)							
Public Works	2020-21 Actuals	2021-22 Sanction	2022-23 Estimate	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Road maintenance (general)	1,712.69	4,787.19	2,237.77	559.44	559.44	559.44	559.44
Road maintenance (for urban poor)	711.30	2,702.94	2,237.77	559.44	559.44	559.44	559.44
Construction of bus stand	50.00	100.00	100.00	25.00	25.00	25.00	25.00

Transport Nagar	0.00	100.00	100.00	25.00	25.00	25.00	25.00
Renovation of BRTS	0.00	0.00	2,600.00	650.00	650.00	650.00	650.00
Bus stop & maintenance work (General)	0.00	2,335.95	2,335.95	583.99	583.99	583.99	583.99
Bus stop & maintenance work (for urban poor)	0.00	2,464.05	2,464.05	616.01	616.01	616.01	616.01
Development of bus stand	0.24	200.00	150.00	37.50	37.50	37.50	37.50
Road and pavements	0.00	2.00	2.00	0.50	0.50	0.50	0.50
Public lighting	2.79	2.25	3.25	0.81	0.81	0.81	0.81
Urban transport (Amrut scheme 1.0)	-	-	482.31	120.58	120.58	120.58	120.58
Transportation of drinking water	-	-	34.00	8.50	8.50	8.50	8.50
Construction of bus stand	50.00	100.00	100.00	25.00	25.00	25.00	25.00

In public work section, an amount of 26 Crore has been allotted for renovation of BRTS. The Bhopal Municipal Corporation has decided to enhance the city's Bus Rapid Transit System (BRTS) line. The road from Habibganj to MP Nagar and Roshanpura Square to Kamala Parkas well as Roshanpura Square to Kamala Park will be redesigned, for which the management is producing a detailed project report (DPR).

The BMC has issued a tender of Rs 26.34 crore for maintaining and upgrading the 24-kilometer BRTS route from Misrod to Bairagarh. The BRTS corridor costs Rs 329 crore to build, and it costs at least Rs 25 crore annually to maintain. As the metro and flyover construction nears completion, the corridor between Ganesh temple to MP Nagar will be improved and reconstructed. After expanding the corridor, BMC plans to add 300 CNG buses. Pithampur is where they are manufactured. A tender has been issued to improve the BRTS. The corridor will be designed in such a way that more buses can pass through it.

7. Conclusion

Budget planning and preparation should be of good public expenditure management. Public spending management systems require four types of fiscal and financial discipline to be fully effective: Control of aggregate expenditure to ensure affordability; that is, compliance with macroeconomic constraints, efficient delivery of public services (productive efficiency), and

minimization of the financial costs of budgetary management (i.e., efficient budget execution and cash and debt management practices).

A thorough grasp of the budget planning and preparation system is required not only to generate expenditure predictions, but also to advise policymakers on the viability and desirability of specific budget proposals from a macroeconomic or microeconomic standpoint. From our aim and objective we analysed the lack of infrastructure for active urban transport and evaluated the current status of municipal budgets of Pune, Bangalore, Chennai and Bhopal, where in today's date in transportation and infrastructure sector.

From the comparative study of the five Indian cities, the budget allocation, expenditure and earning due to projects related to urban transport, it was found that the Bhopal Municipal Corporation, although has comparatively better projects for pedestrians and non motorised transport, it lacks several facilities required for active transportation systems. The above mentioned active transportation infrastructures include solar powered streetlights, bicycle tracks, braille systems pedestrian pathways, jogging tracks and other such facilities. So it would be a justifiable suggestion to the Bhopal Municipal Corporation to divert more focus towards the provisioning of active transport facilities to transform Bhopal into a city of Sustainable Urban Active Transport.

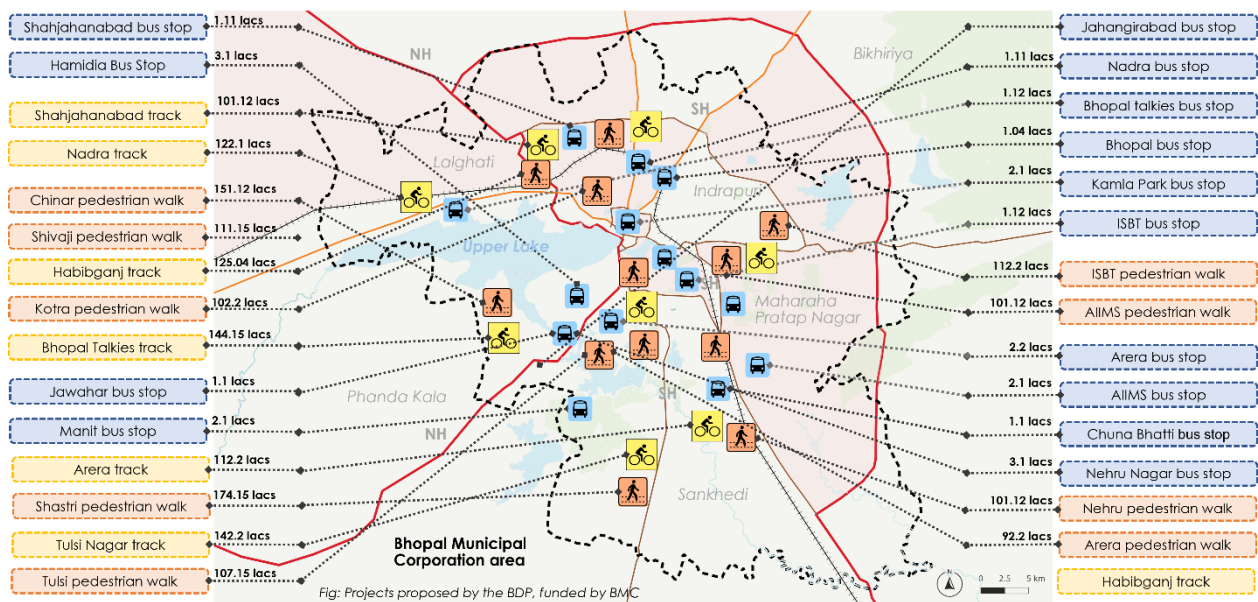


Figure 18: Expenditure on projects by BMC (Source: UMTC Report, 2012)

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