

Training Needs Assessment

in Sustainable Urban Transport



Gujarat

Urban Management Centre

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UMC's conclusions are based on research of the relevant region, data collected and author's sector knowledge. UMC was provided with written and verbal information by urban local bodies, State Government, private service providers, subject experts and respondents to survey questionnaires. Nothing has come to UMC's attention to believe that the data provided is not true or not correct. No warranty, express or implied, is given by UMC to the accuracy or completeness of the information. This work is copyright protected and written permission from UMC should be taken for its reproduction in print or digital medium.

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Training Needs Assessment of City Managers in Urban Transport in Gujarat

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a study by
Urban Management Centre (UMC)

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Rapidly growing cities and increasing economic activities in urban areas have exacerbated issues in urban transportation. A majority of cities in India face challenges of providing integrated urban transportation. These problems could be mostly attributed to inadequate transport infrastructure and its sub-optimal use, no integration of land use and transport planning and few improvements in city bus service. Most such problems arise due to complex institutional arrangements, insufficient finances to create infrastructure, and inadequacies in ULBs.

In view of these issues, the Government of India approved the National Urban Transport Policy (NUTP) in April 2006. The JNNURM has also been supporting transportation sector-linked investments in the areas of bus, rail and related infrastructure. City governments' capacity to undertake the responsibility of providing appropriate urban transport needs assessing. With this objective in mind, UMC, with financial support from ClimateWorks Foundation and Shakti Sustainable Energy Foundation, assessed the capacity of city governments in Gujarat and Madhya Pradesh to understand, plan, operate and manage sustainable urban transportation systems. This study period covered 2012-2013.

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Manvita Baradi
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ABBREVIATIONS

| | |
|---------------------|--|
| BMC | Bhavnagar Municipal Corporation |
| BPMC | Bombay Provincial Municipal Corporations Act |
| BRTS | Bus Rapid Transit System |
| CEO | Chief Executive Officer |
| CADS | City Assessment and Development Strategies |
| CDP | City Development Plan |
| CSP | City Sanitation Plan |
| CAGR | Compounded Annual Growth Rate |
| CMP | Comprehensive Mobility Plan |
| CAA | Constitutional Amendment Act |
| DUTF | Dedicated Urban Transport Fund |
| DPR | Detailed Project Report |
| DCR | Development Control Regulations |
| DP | Development Plan |
| GIDB | Gujarat Infrastructure Development Board |
| GSRTC | Gujarat State Regional Transport Corporation |
| GUDC | Gujarat Urban Development Company limited. |
| GUDM | Gujarat Urban Development Mission |
| IPT | Intermediate Public Transport |
| JADA | Jamnagar Area Development Authority |
| JMSTSMML | Jamnagar Maji Sainik Transport Shahkari Mandli Limited |
| JMC | Jamnagar Municipal Corporation |
| JNNURM | Jawaharlal National Urban Renewal Mission |
| JUDA | Junagadh Urban Development Authority |
| MoUD | Ministry of Urban Development |
| NUTP | National Urban Transport Policy |
| NMT | Non-Motorized Transport |
| PPP | Public Private Partnership |
| PWD | Public Work Department |
| RTO | Regional Transport Office |
| SPV | Special Purpose Vehicles |
| TCPO | Town and Country Planning Office |
| TPS | Town Planning Scheme |
| TOD | Transit Oriented Development |
| UD & UHD | Urban Development and Urban Housing Department |
| UIDSSMT | Urban Infrastructure Development scheme for Small & Medium Towns |
| ULB | Urban Local Body |
| UMTA | Urban Metropolitan Transport Authority |

CONTEXT

Urban India with a population of over 377 million people residing in 7935 cities and towns constitutes the world's second largest urban system (Census , 2011). Cities in India are growing, in terms of population, area as well as economic activity. Ensuring smooth and efficient movement of people and goods through efficient urban transport systems is amongst the basic needs of a well functioning city.

With land uses and activities becoming increasingly dispersed, the spatial footprint of cities has expanded resulting in an increasing need for mobility. Unfortunately the urban transport infrastructure in our cities has not kept pace with this increasing demand for movement of people and goods. Because of lack of investment in high quality pedestrian and cycling infrastructure and reliable and efficient public transport, urban dwellers are increasingly turning to personalized motor vehicles. Organized public transport mode share in most Indian cities is less than 20 per cent whereas share of personalized motor vehicles has grown significantly over the last two decades.

Gujarat is one of the most urbanized states in India with 43% of the State population living in urban areas and is at the forefront of urban infrastructure development. The State Government has supported several urban transport projects in cities and benefitted from the first round of JNNURM funds. The Janmarg BRT system in Ahmedabad has proven itself to be one of the first successful BRT projects in the country.

Three other cities in the State – Surat, Vadodara and Rajkot – are in various stages of planning and implementing a BRT system. Majority of the investment in urban transport in Gujarat is concentrated in larger cities with populations more than ten lakh. There are more than 15 cities in the state with a population within the range of 1 to 10 lakh also in need of urban transport infrastructure up-gradation. With little support from the State and local government, the transport situation in these cities is worsening every day. The number of motorized vehicles, especially two-wheelers, is on a rise. Public transport in these cities is limited with the private-sector fulfilling the large demand for public transport. Large three-wheeled rickshaws and newer vehicles such as TATA Magic operating as shuttle services between designated points are the most popular mode of transport. In some cities such as Jamnagar and Bhavnagar, private operators are also operating city bus services in the city but with little oversight from the Municipal Corporations. The transport infrastructure in these cities is also inadequate with no proper bus stops, terminals and parking spaces for IPT vehicles. The new investment is largely in the form of road widening and adding vehicular lanes. Few cities have streets that cater to the relatively high number of pedestrians and cyclists.

Challenges in urban transport in smaller cities in Gujarat:

- Increasing demand for transport due to increasing urban area
- Increasing car & two-wheeler ownership
- Auto oriented transport solutions such as road widening and flyovers are more popular
- Inadequate investment in public transport
- Rise in congestion, pollution and consumption of fossil fuels
- Current public transport options are unsafe, unreliable and unaffordable for a large sector of population
- Lack of integrated planning / coordination between various agencies

Objectives of TNA Study

The objective of the study is to assess the gap in the capacities of senior and middle management staff in Municipal Corporations and Development Authorities to plan, operate and manage sustainable urban transport systems.

Strengthening urban local governments by capacity-building and better financial management is identified as a key strategy for urban development in the Government of India's 11th five-year plan. The plan identifies lack of skilled manpower as one of the key concerns in urban development and recommends capacity-building programs to address capacity gaps in urban local bodies. Phase I of JNNURM launched in 65 cities in India has also clearly highlighted the need for long-term capacity-building support to the cities in successful implementation of projects. Training Needs Assessment is the first step in the establishment of a comprehensive training and capacity development program for cities in Gujarat in the area of sustainable urban transport.

“While the JNNURM has had some success in building physical capacity, it needs to invest more in financial and human capacity. Many states and cities have been unable to leverage available funds or implement reforms because of a lack of local capacity and technical expertise”

-- India's urban awakening:
Building inclusive cities, sustaining economic growth, McKinsey Global Institute, 2010

Scope and Limitation of study

The scope of the study was to assess the capacities of technical staff in select ULBs in Gujarat. This is extended to include the staff of development authorities and Bus Companies. There are several agencies (Traffic Police, RTO, District Collector's office etc.) other than the ULBs and development authorities that are involved in implementation and management of transport in Gujarat. While these authorities were identified as key stakeholders in this study to understand the institutional framework for transport, the staff of these agencies is not included in the capacity assessment.

There is no urban transport department within ULBs in Gujarat with dedicated staff. A shortage of technical staff was also identified in all cities with staff holding multiple positions across sectors. Due to these limitations the assessment is conducted with select staff from allied departments such as PWD and Town Planning which are somewhat involved in urban transport.

Study Methodology

The Training Needs Assessment study was carried out across 4 cities in Gujarat (Jamnagar, Bhavnagar, Junagadh and Navsari). The following methodology was adopted for the study:

- Review of institutional framework
- Site visits and interviews with technical staff to understand existing transport situation
- Consultations with administrative heads
- Capacity assessment survey of technical staff
- Target group specific training needs

Review of institutional framework

UMC understands that having efficient institutional structures is critical to the efficient functioning of the urban transport system. UMC conducted a comprehensive review of existing governance including roles and responsibilities of various state and city-level stakeholders involved in the planning and implementation of urban transport. The aim of this exercise was to understand the existing city administration structure, flow of decisions, flow of funds and finances, flow of information, current monitoring regime and key linkages between various departments involved in transport.

Understanding of existing urban transport situation

To understand the current situation of urban transport in smaller cities in Gujarat, existing documents including CDPs, DPRs and other visioning and policy documents were reviewed. Site visits were conducted to observe the existing transport situation and the status of planned sustainable transport projects. These field visits allowed for a focused interaction with technical staff and helped identify key areas of improvement. Preliminary meetings with relevant municipal officials were also conducted to validate the existing data.

The Strengths Weaknesses Opportunities and Threats (SWOT) tool was used to facilitate discussions on urban transport and development aspects of the city including land use and spatial growth, existing and planned transport infrastructure, condition of streets, traffic management, perception of public transport, etc.

Consultations with Administrative and Technical heads

Key informant interviews were conducted with key stakeholders and decision-makers including City Commissioners, Dy. Commissioners, Chief Engineers, SP-Traffic Police, and CEOs of Development Authorities to understand key institutional and capacity barriers to successful implementation of sustainable transport in respective cities. Interviews with elected officials including Mayor and Councillors were also conducted, where possible, to assess the understanding of sustainable transport among elected officials.

Capacity assessment survey of technical staff

The individual capacity assessment identified specific gaps in terms of skills and knowledge in sustainable transport within an organization or a department. For conducting the capacity assessment staff from the ULBs, BUS SPVs and development authorities involved in various aspects of urban transport such as road construction, bus operations, town planning etc. were identified.

A selection of such transport managers including senior and mid level officers were chosen for in-person interviews. The capacity assessment interviews were conducted using a questionnaire-based tool which covered aspects such as educational qualifications, understanding in sustainable urban transport as well as management and behavioural needs. The questionnaire covered the following key areas:

- Educational background and technical qualifications
- Designation and job profile
- Awareness about sustainable urban transport principles
- Ability to plan and implement transport projects
- Areas of training that will help the staff meet their goals and successfully fulfill responsibilities.
- Preferred duration and mode of training

Capacity-building strategy for Gujarat and target group specific training needs

The first-hand data from visits, interactions with administrators and senior staff and questionnaire survey was analyzed and key training needs for officers were arrived upon. The report also presents key strategies for training including a list of resources training calendar identifying short-, medium- and long-term needs for key officials.



Interviews with key decision-makers in Gujarat

INSTITUTIONAL FRAMEWORK FOR URBAN TRANSPORT

National Agenda for Sustainable Urban Transport

The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) launched in December 2005 by the national government is one of the leading reform-based programs in the country. The mission was launched across 65 cities in India with the purpose of financing development of urban infrastructure, and the central financial assistance was linked to urban sector reforms to strengthen municipal governance in accordance with the 74th constitutional amendment. Urban transport was identified as a key component of the program.

To guide the funding for the Urban Transport component of the mission, the National Urban Transport Policy (NUTP) was launched in 2006 by the Ministry of Urban Development (MoUD). The objective of NUTP is to promote reliable, affordable and sustainable access of city residents to jobs, education, and recreation by encouraging investments in public transport and walking and cycling infrastructure, fostering the equitable allocation of road space and integrating urban transport and urban planning.

In order to put NUTP into practice, one of MoUD's focus area is the capacity-building of cities by sharing best practices, training and preparation of toolkits

In order to put the NUTP into practice, MoUD's focus is on the following areas:

- To promote investments in NMT and public transport (buses, BRT and Metro) using JNNURM funds
- Streamlining institutional framework for Urban Transport by formation of Urban Metropolitan Transport Authority (UMTA) in cities with a population of 10 lakh and above.
- Putting in place reforms (setting up Special Purpose Vehicles (SPVs) for transport and the Dedicated Urban Transport Fund (DUTF) etc.) to improve transport planning and management
- Promote comprehensive transport planning by making Comprehensive Mobility Plans (CMPs) for cities
- Capacity-building of cities by sharing best practices, trainings and the preparation of toolkits. The MoUD has set-up four centres of excellence across India to promote capacity-building initiatives.

Though the NUTP was successful in bringing focus to the worsening transport situation in the country and recommending a more sustainable approach to dealing with transport, more than 6 years of the launch of JNNURM and NUTP, many states and cities have not been able to leverage available funds or implement reforms. One key reason cited by the High-Powered Expert Committee (HPEC) Report on Indian Urban Infrastructure and Services for slow progress of JNNURM reforms is the lack of capacity at local government level to prepare and implement projects in urban infrastructure (HPEC, 2011).

One of the key recommendations of the HPEC for the next round of JNNURM is to focus on capacity-building and support urban reforms within a program approach and strengthen and secure the financial base of ULBs.

Institutional framework for urban transport in Gujarat

Transport is a state subject in the Constitution of India which means that the primary major responsibility for Urban Transport policy and infrastructure rests with state governments and respective urban local bodies. The existing institutional arrangements for managing urban transport in India were developed at a time when urban transport was not a major issue; hence, the urban transport sector is extremely fragmented. Multiple agencies under different legal enactments are involved in the planning, implementation and management of urban transport. Each of the agencies is in charge of a single component of urban transport and there is no authority that is in charge of coordination between these different bodies.

At the central level, Ministry of Urban Development is the nodal ministry for urban transport and is responsible for providing policy guidance as well as some financial assistance to states and ULBs to plan and execute urban transport projects.

In Gujarat, the state wields considerable authority over different aspects of urban transport. The Urban Development & Urban Housing Development department (UD&UHD) is the parent organization for municipal corporations at state level, responsible for urban sector reforms and development in Urban Local Bodies. The UD&UHD has supported the construction of BRT systems in three cities in Gujarat under the JNNURM program. The Town Planning and Valuation Department under the Urban Development and Urban Housing Department is the authority responsible for approving the long term development plans (DP) of cities in the State. The Master Plan is a statutory document in the state which charts the long term growth plan for the city and also provides for major roads and thoroughfares in cities. The Development Plan is prepared by the Development Authorities which are regional level autonomous bodies established under the Gujarat Town Planning Act, 1976. The development authorities implement the DP by the means of developing Town Planning (TP) schemes – a participatory land pooling mechanism for the development of urban infrastructure

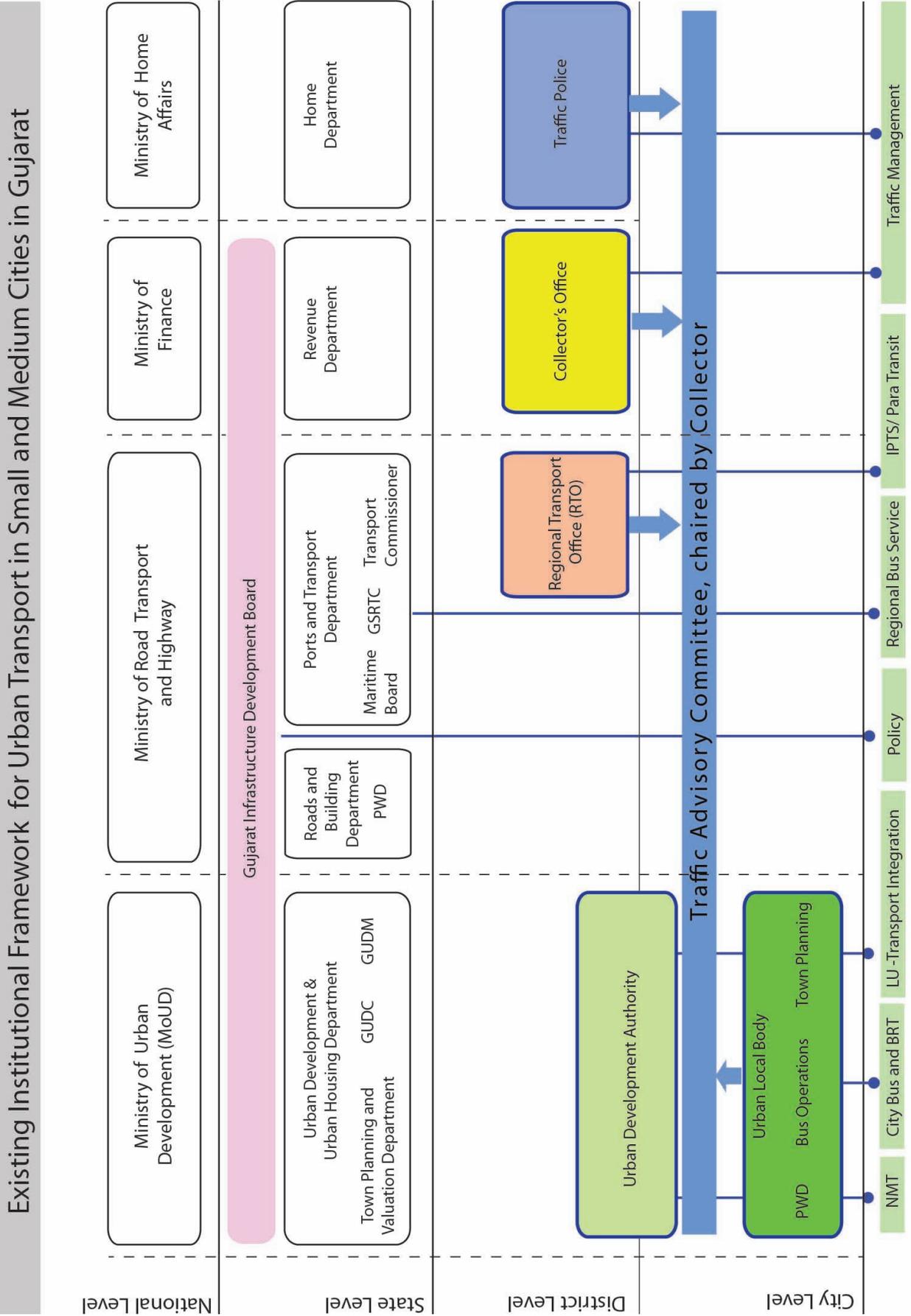
such as roads, parks and schools.

The State transport department is responsible for enforcing the Motor Vehicles Act and ensure road and traffic safety in cities. The transport department also plays a more hand son role in traffic management through the Regional Transport Office (RTOs) setup at district level.

The District Collector’s office is also involved in the urban transport in the state especially in smaller cities where IPT vehicles such as rickshaws and vans play an important role in ensuring intercity and intra-city connectivity within the district. The Collector is also the chair of Traffic Advisory Committees that are present in all major cities in the state. Traffic police is another state level department which plays a key role in traffic management and enforcement.

The ULBs of smaller cities in Gujarat are primarily responsible for implementing a street network by the development of TP schemes, providing and maintaining road infrastructure in the city, and the supervision and monitoring of organized public transport such as buses and BRT.

The following chart presents the institutional framework for urban transport in the state of Gujarat. Detailed roles and responsibilities in urban transport of these state level departments and ULBs are presented in the next section.



State and para-statal agencies in urban transport

This section presents an overview of the state level departments in Gujarat involved in urban transport along with their specific responsibilities in the sector.

Urban Development & Urban Housing Development Department (UD & UHD)

Established in 1983, the Urban Development and Urban Housing Department is responsible for ensuring planned development of urban areas and is the nodal agency for land use planning and urban transport. The State government has constituted 12 urban development authorities, 2 area development authorities and designated 116 municipalities as area development authorities for planned urban development in the state. UD&UHD department is responsible for monitoring the progress and success of JNNURM-funded projects in the state. Recent initiatives by the UD&HD in the urban transport sector include the Janmarg BRT in Ahmedabad and the upcoming Ahmedabad - Gandhinagar metro project. The key institutions/ departments under UD&HD dealing with urban transport include:

The Gujarat Town Planning and Valuation Department (TP &VD)

The Town Planning and Valuation Department is the technical wing of the State Government for urban planning and is headed by the Chief Town Planner (CTP) for the state. The TP department advocates and promotes Planning Activities in the State and scrutinizes the Development Plans and Town Planning Schemes of the cities and towns prepared by the Appropriate Authorities under the provisions of the Gujarat Town Planning and Urban Development Act, 1976. The department advises the State Government on framing of policies related to urban development, urban renewal, town planning, development controls etc., and provides technical support to appropriate authorities in the preparation of development plans and town planning schemes.

Gujarat Urban Development Company (GUDC)

GUDC facilitates urban development by assisting state government and existing agencies in formulation of policy, institutional capacity-building and project implementation, and to assist in the funding and implementation of projects. GUDC implements urban reforms as an agent of the State Government. GUDC assists ULBs and UDAs in identification, preparation and execution of projects in local infrastructure including investments in transport infrastructure such as roads and public transport systems. GUDC has undertaken City Assessment and Development Strategies (CADS) for ten medium-sized and smaller towns in Gujarat under the Gujarat Urban Development Project (GUDP) program in the year 2006-2007. GUDP is a World Bank-aided program initiated by the World Bank, Government of Gujarat and ULBs with an investment share of 80:10:10 respectively. Three cities included in the study (Bhavnagar, Jamnagar and Junagadh) are part of this program.

Gujarat Urban Development Mission (GUDM)

The Government of Gujarat established Gujarat Urban Development Mission (GUDM) in 2006 as a State Level Nodal Agency (SLNA) for implementing the Jawaharlal Nehru National Urban Renewal Mission (JnNURM). One of the key objectives of the Mission is to strengthen the urban transport system in the State by adopting new technologies of integrated transportation system, traffic management and by promoting private-sector participation.

Port & Transport Department

The Ports and Transport Department is primarily responsible for licensing motorized vehicles through enforcing the provisions and rules of the Motor Vehicles Act. The department is also responsible for managing water transport and developing and managing ports in the State. The department has the following three key divisions:

Commissionerate of Transport

The Commissionerate of Transport is the responsible authority for managing traffic and transport-related activities such as enforcement of the Motor Vehicles Act, collection of road taxes, issuance of various licenses and permits for motorized vehicles in the State and monitoring vehicular pollution. The department is administered by the Transport Commissioner who is the head of the Transport Department. Regional Transport Offices (RTOs) are established under the Commissionerate of Transport at the regional/ district level and are responsible for licensing motorized vehicles and regulating Intermediate Public Transport (IPT).

Gujarat Maritime Board

Gujarat Maritime Board was created under the Gujarat Maritime Board Act, 1981, to manage, control and administer the minor ports of Gujarat. Gujarat Maritime Board becomes an important stakeholder in provision of urban infrastructure in coastal cities such as Bhavnagar and Jamnagar. The Gujarat Maritime Board is responsible for the construction and maintenance of some major roads in these cities for providing better accessibility to ports.

GSRTC

Gujarat State Road Transport Corporation (GSRTC) a Government undertaking under the Ports and Transport Department provides intercity bus services both within Gujarat and into neighbouring states. GSRTC has a bus fleet of over 8000 buses and 126 depot facilities and manages 16 divisions across the state.

Earlier, GSRTC also used to run urban bus services in some cities in the State like Vadodara, Jamnagar and Surat, but the urban bus services were discontinued owing to financial unviability and management issues. GSRTC still provides regional connectivity from big cities to adjacent suburbs, towns and villages and hence is an important stakeholder in urban transport management.

Any private operators or government undertakings interested in providing urban-rural connectivity need to obtain a NOC from GSRTC to ply buses on the nationalized routes in the State.

State Traffic Police, Home Department

Traffic Police is a state function in Gujarat. Under the state home department, the police department operates in a district level setup. The Traffic Police is part of the district's Police Department. In urban areas, the Traffic Police is primarily responsible for managing traffic and monitoring traffic signals at intersections. Traffic Police also enforce the proper use of ROW to ensure road safety and organized movement of vehicles.

The towing away of illegally parked vehicles in the ROW is also a traffic police function. Discussions with police department staff in Gujarat revealed that there is a shortage of qualified and trained Traffic Police to bolster enforcement actions in cities. For example there is a field staff of only 10-12 Traffic Police for the entire district of Jamnagar.

Road and Building Department

The State Roads and Building Department is responsible for all activities relevant to planning, construction and maintenance of all categories of roads (regional and inter-city) and all government owned buildings in the State of Gujarat. In smaller cities where national and state highways also act as major arterials for inter-city traffic, the Roads and Building Department is particularly an important stakeholder in urban transport management.

Gujarat Infrastructure Development Board

Gujarat Infrastructure Development Board (GIDB) was set-up in 1995 to facilitate the flow of funds into infrastructure sector and to ensure coordination among various government agencies. The board is chaired by the Chief Minister and has ministers and secretaries from various state level departments as members. In addition to project formulation, implementation and monitoring in various areas of infrastructure including industrial parks, transport, ports and roads GIDB contributes to capacity-building of government agencies and their staff. GIDB partners with outside agencies and multilateral institutions from time to time to facilitate infrastructure development in the State.

Urban transport is a priority area for GIDB and the Board has introduced several initiatives in the sector. Some key projects related to urban transport policy, management and infrastructure development are mentioned below:

- GIDB initiated the Gujarat Urban Transport Policy in 2005 to establish priorities for urban transport in the State in accordance with the NUTP. The policy addresses issues such as promoting sustainable transport, promoting greener vehicles, institutional frameworks, financing and capacity-building. The Policy is currently under consideration by the State.
- In 2003, the Urban Development and Urban Housing Department through GIDB initiated Short Term Traffic and Transportation Improvement Plan for small and medium cities in the State, including Bhavnagar and Jamnagar. The main aim of the study was to plan for an appropriate transport system and promote safe, equitable and efficient public transport in these cities.
- GIDB has created a model RFP including a concession agreement to enable urban local bodies to implement urban bus systems on a PPP mode.
- GIDB has undertaken studies in IPT systems and cleaner fuel technology.
- GIDB has formulated the Draft Unified Regulatory Commission for Gujarat in 2009 on the lines of UMTA as proposed in NUTP. The proposal is submitted for further discussions.

Office of District Collector

District Collector is the chief administrative and revenue officer of a district. The District Collector's office comes under the aegis of the State Revenue Department. District Collectors are appointed by the State Government, from among the pool of Indian Administrative Service (IAS) officers and is higher-ranked officer than the Chief Officers who are the administrative heads of smaller cities in Gujarat like Navsari.

As per the mandate of the 74th Amendment, gradually the current roles and responsibilities of the Collector in the urban transport sector should be devolved to respective city commissioners and chief officers.

The role of municipal corporations in urban transport

Urban local bodies must play a key role in urban transport management in cities because they are the closest to communities and have a mandate to ensure that their cities are healthy and sustainable.

The NUTP and JNNURM advocates for a stronger role of urban local bodies in the planning and management of urban transport infrastructure in cities. In view of the existing situation where most ULBs exhibit limited financial and institutional capacities to deal with urban transport, JNNURM proposes to build financial, managerial and technical competencies in ULBs through institutional restructuring, capacity-building, monetary and non-monetary incentives, and managerial support.

Key roles and responsibilities of ULBs in transport sector

The enactment of the Constitution (74th) Amendment Act (CAA) in 1992 was an important milestone towards strengthening municipal governance. The CAAs focus is to improve the performance ability of ULBs, so that they are able to discharge their duties efficiently.

The National Institute of Urban Affairs (NIUA) conducted a study in 2007 to review the implementation status of selected mandatory discretionary provision of the CAA. The findings revealed that in most states there is full compliance in respect to some provisions such as constitution of three types of ULBs, reservation of seats, and constitution of SFCs. However, only a few states conform to other provisions such as constitution of wards committees and district planning committees. The twelfth schedule of the 74th Constitutional Amendment delineates eighteen essential functions including urban planning, roads and bridges, provision of urban amenities and facilities such as parks, parking lots, and streetlights. It is clear that the ULB has the mandate to manage certain aspects of urban transport but as a comprehensive sector, urban transport is not the responsibility of the ULBs given the current legal framework of India.

The Ministry of Urban Development (MoUD) released the Model Municipal Law (MML) of India in, October, 2003 with the objective of helping state governments implement in totality the provisions of the 74th Amendment. The Model Municipal Law identifies the following two areas in the realm of urban transport as part of the obligatory duties of ULBs:

- Construction and maintenance of roads, footpaths, pedestrian pathways, transportation terminals, both for passengers and goods, bridges, over-bridges, subways, ferries, and inland water transport system.
- Transport system accessories including traffic engineering schemes, street furniture, street lighting, parking areas, and bus stops.

The provision of public transport in a city is listed as a discretionary function of ULBs. The MML also delineates provisions for the formation of a 'Municipal Streets Technical Committee' within the corporation with the purpose of ensuring the expeditious, convenient and safe movement of traffic, including pedestrian traffic, and suitable and adequate parking facilities on and off public streets.

It is the responsibility of the ULB to ensure provision on footpaths on all roads (within a reasonable time, and subject to the availability of resources). The ULBs also holds the power to prohibit or regulate vehicular traffic in any public street. (Ministry of Urban Development, Government of India, 2003)

Some states in India have revised their municipal acts based on the Model Municipal Law. The matrix on the following page compares obligatory and discretionary functions related to urban transport in MP and Gujarat, which were the two states in which this study was undertaken.

Obligatory and discretionary functions of ULB in urban transport

| | Bombay Provincial Municipal Corporation Act, 1949 Gujarat Municipalities Act, 1963 | | Madhya Pradesh Municipal Corporation Act, 1956 | |
|--|---|-------------------------|--|-------------------------|
| | Obligatory Functions | Discretionary Functions | Obligatory Functions | Discretionary Functions |
| Urban Planning and Development | | | | |
| Urban planning including town planning | | | | ● |
| Regulation of land use and construction of buildings | | | | ● |
| Street Infrastructure | | | | |
| Laying out whether in areas previously built upon or not, new public streets, and acquiring land for that purpose | | ● | | |
| Construction, maintenance, alteration and improvement of public streets, bridges, subways, culverts, causeways and the like | ● | | ● | |
| Removal of obstructions and projections in or upon streets, bridges and other public places | ● | | ● | |
| Planting and maintenance of trees on road-sides and elsewhere | | ● | | ● |
| Lighting of public streets | ● | | ● | |
| Public Transport | | | | |
| Construction, purchase, organization, maintenance or management of light railways, tramways, trackless trams, or motor transport facilities for the conveyance of the public or goods within or without the city | | ● | | |
| Traffic Management | | | | |
| Provision of traffic signs | | | | ● |

The table above indicates that urban transport and planning as a comprehensive sector is not included as a mandatory subject either in Madhya Pradesh or Gujarat. Both these acts have not yet been amended to include the provisions of the 74th Amendment. In Gujarat urban planning responsibility is provided to the development authorities under the Town Planning Act.

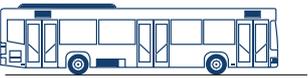
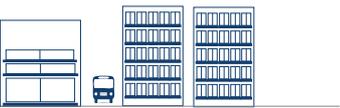
The BMC Act does indicate public transport as a discretionary function of the ULBs. The Madhya Pradesh Municipal Corporation Act, 1956, however does not include public transport or provision of facilities such as footpaths even as discretionary functions of the ULBs.

Gap analysis in implementation of sustainable transport

Once various departments involved in the planning and implementation of urban transport in Gujarat were identified, a gap analysis was conducted to assess how successful a particular authority/ department has been in implementing sustainable transport projects and policy reforms that are within its domain.

The gap analysis was primarily conducted based on a review of existing documents, field visits, interviews with administrative and technical staff and UMC’s understanding of sustainable transport. The following six broad principles of sustainable urban transport that are relevant for medium sized cities in India were used for the assessment.

Sustainable Transport Principles

| | | |
|---|---|--|
| 1 |  | Design and construction of “complete streets” that are walking- and cycling-friendly |
| 2 |  | Create dense, inter-connected street networks that enhance accessibility |
| 3 |  | Ensure efficient use of right of way through traffic management and organized and paid parking |
| 4 |  | Support high quality public transport which is reliable, comfortable and frequent |
| 5 |  | Maintain a compact city footprint by facilitating public transport-oriented development |
| 6 |  | Strengthen and improve intermediate public transport for last mile connectivity |

The following table compares sustainable transport actions against their successful implementation by concerned agencies.

| Principle | Actions |
|---|--|
|  <p data-bbox="105 730 671 763">Design and construction of “complete streets”</p> | <p data-bbox="786 573 1294 607">Establishing design guidelines and standards</p> <p data-bbox="786 633 1449 701">Design and construction of streets with quality pedestrian and cycling infrastructure</p> <p data-bbox="786 719 1353 752">Upkeep, maintenance and up gradation of streets</p> |
|  <p data-bbox="105 969 703 1003">Connected street grid that enhances accessibility</p> | <p data-bbox="786 819 1473 853">Planning macro-level street grid & major transport corridors</p> <p data-bbox="786 880 1385 947">Micro-level planning and delineation of a dense and connected street network</p> <p data-bbox="786 965 1313 999">Implementing the master plan and street grid</p> |
|  <p data-bbox="105 1267 727 1301">Efficient use of ROW through parking management</p> | <p data-bbox="786 1066 1318 1099">Managing traffic flow and ensuring road safety</p> <p data-bbox="786 1126 1142 1160">Traffic advisory & coordination</p> <p data-bbox="786 1187 1342 1254">Formulate parking policy with a focus on parking management</p> <p data-bbox="786 1272 1485 1305">Removing street encroachment & implementing paid parking</p> |
|  <p data-bbox="105 1514 727 1547">High quality, reliable and frequent public transport</p> | <p data-bbox="786 1357 1481 1391">Procurement & regular renewal of bus fleet to meet demand</p> <p data-bbox="786 1417 1417 1485">Management of bus operations to ensure frequent and reliable service</p> <p data-bbox="786 1503 1445 1536">Construction & maintenance of stops, depots & terminals</p> <p data-bbox="786 1547 959 1581">Route planning</p> |
|  <p data-bbox="124 1776 715 1843">Compact city and Transit Oriented Development (TOD)</p> | <p data-bbox="786 1626 1182 1659">Delineate mass transport corridors</p> <p data-bbox="786 1709 1034 1742">Formulate TOD policy</p> <p data-bbox="786 1760 1473 1827">MP and DCRs to align densities and parking requirements to public transport</p> |
|  <p data-bbox="225 2000 616 2033">Strengthen and improve IPTS</p> | <p data-bbox="786 1895 1102 1928">Formulate PT and IPT Policy</p> <p data-bbox="786 1955 1289 1989">Encourage use of safer and greener vehicles</p> <p data-bbox="786 2000 1182 2033">Regularization of routing and stops</p> |

EXISTING INSTITUTIONAL FRAMEWORK



Green Indicates: Realized



Yellow indicates: Partially Realized



Red indicates: Not Realized

Responsible Authority

Analysis

| | |
|---|--------|
| Gujarat Infrastructure Development Board (GIDB) | Yellow |
| Municipal Corporation | Red |
| Development Authority | Red |
| Municipal Corporation | Yellow |
| Development Authority | Yellow |
| Municipal Corporation | Green |
| Development Authority | Green |
| Development Authority | Green |
| District Traffic Police | Yellow |
| District Collector's Office, Revenue Department | Yellow |
| Municipal Corporation | Red |
| Municipal Corporation | Yellow |
| Municipal Corporation, Bus Company | Yellow |
| Municipal Corporation | Yellow |
| Development Authority | Red |
| State Urban Development and Urban Housing Department (UD&UHD) | Red |
| Municipal Corporation | Red |
| Development Authority | Red |
| Municipal Corporation | Red |
| Regional Transport Office | Red |
| District Collector's Office, Revenue Department | Red |

IMPROVING GOVERNANCE STRUCTURES

Proposed Institutional Structure by MoUD

The multiplicity of institutions involved in urban transport at the ULB, State and National level is now well understood. To coordinate and integrate the planning, delivery and management of urban transport, the National Urban Transport Policy calls for a Unified Metropolitan Transport Authority (UMTA) to be set-up in all metropolitan cities with a population of 10 lakh and above. NUTP also encourages the setting up of professional bodies (SPV) that have representation from all major operators and stakeholders with the capacity to make scientific assessments of all operational aspect for comprehensive public transport. Various cities such as Mumbai, Bangalore, Delhi and Chennai have initiated the process of establishment of a transport planning and coordinating authority on the guidelines of UMTA.

Since there is no clear directive on the organisational structure and powers and authorities of UMTA, cities are taking different approaches that suit their context and needs. While some cities like Chennai have drafted new legislation to support the formation of a legal body, others are envisioning UMTA as a transport committee which meets once in a while to make decisions on pressing transport issues in the city and the region.

In cities with a population between 5 to 10 lakh, MoUD recommends the formation of Urban Transport Cells under the urban local body. The transport cell will be responsible for urban transport functions, as defined by the Urban Local Body.

Some states like Karnataka have also formed state-level bodies to provide policy guidance on urban transport. The Directorate of Urban Land Transport (DULT) has been set-up by the Government of Karnataka under the Urban Development Department with the objective to coordinate planning and implementation of Urban Transport projects and programs.

Strengthening role of Urban Local Bodies in Transport

ULBs have a mandate to ensure health and safety of their residents and it is imperative that they take responsibility for planning and managing urban transport integrated with land development. Gujarat State Government should empower ULBs to address urban transport functions such as street design public transport and parking enforcement. We suggest the following strategies to gradually build the technical and financial capacity of ULBs to more efficiently handle urban transport functions in future:

- Support State and para-statal agencies in the preparation of CMP and other urban transport-related reports and publications.
- Plan for sustainable transport projects such as pedestrianization; inter-modal integration and parking management.
- Manage the contracting and monitoring of consultants for urban transport projects.

Transport cell in ULBs

The urban transport cell should be an independent unit within ULBs with dedicated transport staff dealing with comprehensive transport planning and implementation. What follows is a representative sample of the roles and responsibilities of the transport cell in smaller cities in Gujarat

- Creating and maintaining an updated transport database for the city which includes inventory of road infrastructure including right of way, pavement and footpath condition, parking spaces, mode share, traffic and pedestrian volumes on various streets and intersections, etc.
- Coordinate with private bus operators to ensure a reliable, safe and convenient bus service in the city. The transport cell should monitor the bus service as per the contract agreement.
- Coordinate with other stakeholders in urban transport including RTO officers, Traffic Police, etc. to ensure proper traffic management in the city.

Augmenting Staff

The working group on Urban Transport for the 12th Five-Year-Plan recommends the following number of staff in the urban transport sector:

Suggested staff norms for urban transport sector

| S. No. | Population Range (in million) | No. of cities (2017) | Assumed no. of staff per city | Estimated cost per city for 5 years (Rs. in crore) | Total no. of staff | Total cost for 5 years (Rs. in crore) |
|--------|-------------------------------|----------------------|-------------------------------|--|--------------------|---------------------------------------|
| 1 | > 10 | 4 | 20 | 15 | 80 | 60 |
| 2 | 4 to 10 | 10 | 16 | 13 | 160 | 130 |
| 3 | 1 to 4 | 42 | 12 | 10 | 500 | 420 |
| 4 | 0.5 to 1.0 | 125 | 5 | 3.5 | 625 | 435 |
| 5 | < 0.5 | 425 | 3 | 2.0 | 1275 | 850 |
| | Total | 606 | | | 2640 | 1895 |

The technical staff in the urban transport cell shall comprise one senior transport planner/engineer and two junior planners with knowledge and training in carrying out transport surveys, drafting transport plans and preparing basic reports.

It is understood that there is a shortage of staff in the cities in Gujarat and it will take a while before the transport cell is established and new staff hired as part of that. This study is an exercise in assessing the capacity of existing staff in the urban transport sector and identifying training needs for the existing staff. Chapter 3 provides the result of the capacity assessment carried out across 6 cities in Gujarat. Chapter 4 identifies key training needs for the existing staff to equip them with better knowledge and skills to perform their duties and plan and implement urban transport projects that are in compliance with NUTP.

TRAINING NEEDS ASSESSMENT

The capacity assessment of urban transport staff was carried out in four cities of Gujarat. The results of the assessment are summarized in this chapter. Detailed city-wise assessments are presented in later sections of this chapter.

Summary of Gujarat

Following summary is based on the training needs assessment done in four cities in Gujarat i.e. Jamnagar, Bhavnagar, Junagadh and Navsari.

Educational Qualifications

The following table presents a summary of educational qualifications of staff employed in the urban transport sector in selected ULBs:

Educational Qualifications of Urban Transport Staff in Gujarat

| | |
|---|----|
| Number of staff interviewed | 43 |
| Number of staff with Master Degree | 08 |
| Number of staff with Bachelors Degree | 14 |
| Number of staff with Diploma | 18 |
| Number of staff with education in transport planning | 00 |
| Number of staff who have received training in urban transport | 03 |

Other than the ULB staff, UMC conducted interviews with private bus operators and development authorities in these four cities to understand their views and issues in operation of bus services in smaller cities.

What follows are key observations related to staffing and educational qualifications in cities in Gujarat:

- There is a shortage of staff in all the three cities with current staff holding multiple positions across sectors, across departments and across agencies. Several staff in these four cities are state-deputed.
- None of the City Managers interviewed have had any formal education in transport planning/engineering.
- Most staff working in the urban transport sector have received education in the field of civil engineering and lack skills and aptitude to solve complex urban transport problems.
- While the senior administrators in most cities understand the nuances of sustainable urban transport, there is a lack of exposure among middle management and junior staff regarding current trends, policies and new ideas in urban transport. Very few have received any training in sustainable urban transport.

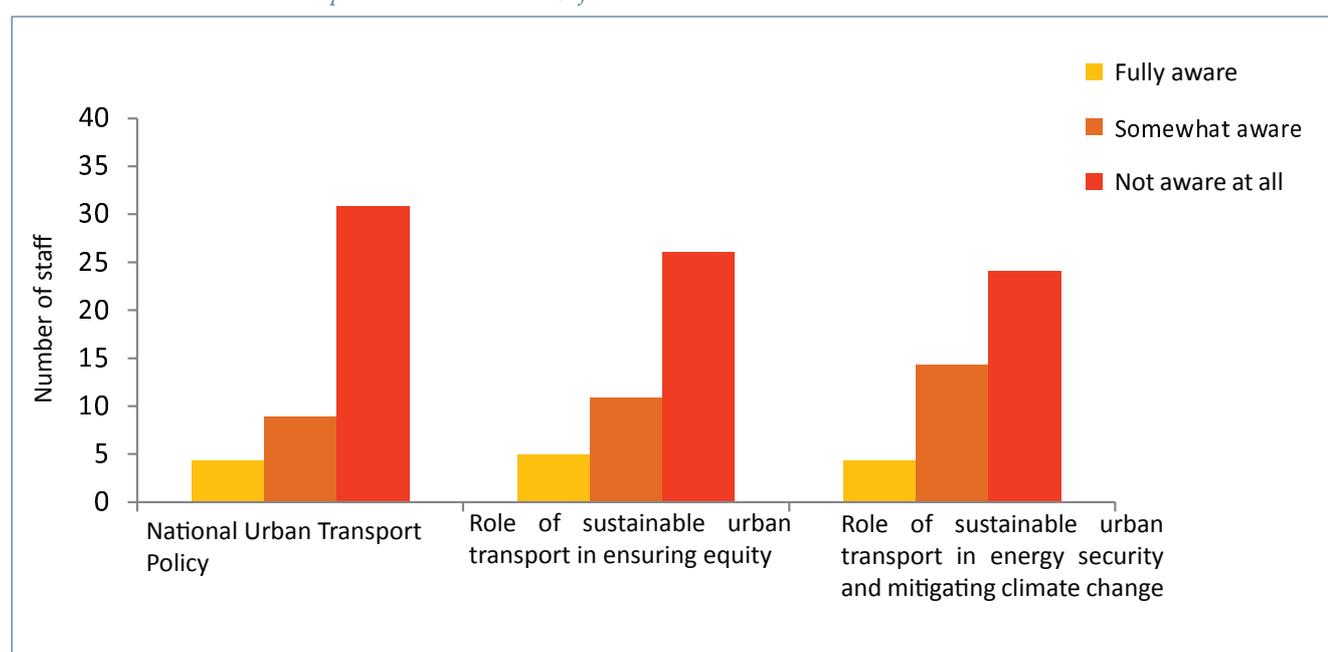
Awareness about Sustainable Transport

The following table and chart presents awareness on sustainable transport concepts and principles among administrative and technical staff selected cities in Gujarat.

Awareness about sustainable transport in smaller cities in Gujarat

| | Number of Staff | | | |
|--|-----------------|----------------|------------------|-----------|
| | Fully aware | Somewhat aware | Not aware at all | No Answer |
| National Urban Transport Policy | 4 | 8 | 31 | 0 |
| Role of sustainable urban transport in ensuring equity | 5 | 11 | 26 | 1 |
| Role of sustainable urban transport in energy security and mitigating climate change | 4 | 14 | 24 | 1 |
| Concept of "complete Streets" | 2 | 11 | 26 | 4 |
| Managing urban bus services | 4 | 8 | 19 | 12 |
| Parking management and pricing | 5 | 13 | 24 | 1 |

Awareness about sustainable transport in smaller cities in Gujarat

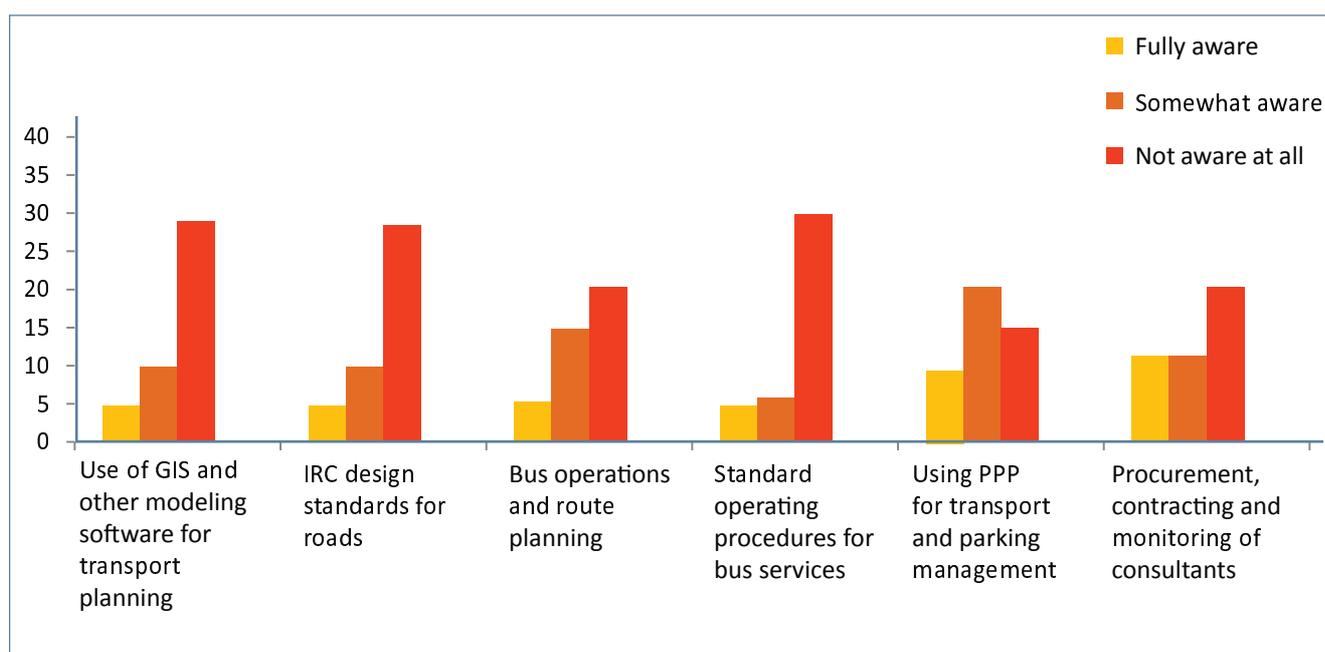


Capacity in planning and implementing urban Transport

The following table presents the capacities in staff in small cities in Gujarat to successfully implement urban transport projects.

Capacity in planning and implementing urban transport

| | Number of Staff | | | |
|---|-----------------|----------------|------------------|--------------|
| | Fully aware | Somewhat aware | Not aware at all | Not relevant |
| Use of GIS and other modeling software for transport planning | 5 | 9 | 29 | 0 |
| IRC design standards for roads | 5 | 9 | 28 | 1 |
| Bus operations and route planning | 6 | 15 | 21 | 1 |
| Standard operating procedures for bus services | 5 | 6 | 30 | 2 |
| Using PPP for transport and parking management | 8 | 19 | 16 | 0 |
| Procurement, contracting and monitoring of consultants | 11 | 11 | 19 | 2 |



Key Findings from Gujarat

What follows are some key findings from the TNA interviews:

- A limited understanding about the concept of sustainable urban transport across all cities.
- While there is significant understanding about the NUTP at the State level and in bigger cities in Gujarat, smaller cities are lagging behind on the sustainable transport agenda. 31 of the 40 staff interviewed stated that they were 'not aware at all' about the policy and its tenets.
- Three out of four cities have some sort of organized bus service operated by private operators. Yet the awareness of most staff in managing urban services was rated very low. This is reflected in the way the current bus operations are running with limited support from ULBs.
- Transport studies and plans for smaller cities are prepared by State agencies such as GIDB. There is limited capacity in ULB staff to do transport modelling and planning
- A basic understanding in street design and implementation is also lacking.
- Bus services in smaller cities are operated by private players. There is limited interest and understanding in ULB to manage and supervise bus services to ensure better service.

Training Needs

Based on the questionnaire survey and interviews with ULB and Development Authority staff in four cities in Gujarat, the following are some key observations regarding training needs for smaller cities in the state.

- In smaller cities in Gujarat, city bus services are primarily managed by private operators with minimum supervision or support from ULBs. Buses are procured by private operators who run them on routes designated by the RTO and pay a premium to ULBs. Since the ULB currently is playing no role in ensuring a convenient and quality bus service, the bus system in most cities has deteriorated with badly maintained buses, infrequent service, overcrowding, irregular stoppage etc. Staff in smaller cities should be educated in newer means of urban bus service management including implementing successful PPP contracts.
- Similarly organizing and improving IPTS has also emerged as a critical area of training in smaller cities in Gujarat.
- Smaller cities in Gujarat are still relatively compact. But congestion in inner city areas is now driving development in fringe areas without a proper provision for public transport in the future. Since most cities in Gujarat prepare their own master plan in coordination with development authorities, there is an opportunity to include key decisions regarding urban transport in the land use planning process itself. ULBs and state agencies therefore should be educated about the need for comprehensive planning in urban transport and its association with land use planning.
- Training strategies for city managers in Gujarat include classroom trainings, interactive workshops, exposure visits, peer-to-peer learning and hand holding support in key areas of transport planning and management.
- Since there are multiple agencies involved in the delivery and management of urban transport services in the state, there is a need for frequent cross trainings and multi- stakeholder workshops focussing on city issues.

BHAVNAGAR

Context

Bhavnagar with a population of six lakh is the fifth-largest city in Gujarat and the second-largest city in the Saurashtra region. The city was founded in 1723 AD by Bhavsinhji Gohil (1703-64 AD) and was named after its founder and ruler. Bhavnagar State was the first princely state to merge with the democratic Indian Union in 1948. Due to its strategic location next to the Gulf of Khambat, Bhavnagar remained a major port, for almost two centuries, trading commodities with Africa, Mozambique, Zanzibar, Singapore and the Persian Gulf. Bhavnagar's economy was primarily tied to the ship-breaking industries at Alang and various diamond cutting and polishing units in the city. Both these activities have greatly reduced in recent times. Bhavnagar still has various small scale industries such as ceramics, chemicals and textiles which are major employment generators.

The old town of Bhavnagar was a fortified town with four gates leading to other important towns of the region, namely Vartej, Khar, Ruvapari and Ghogha. In the 19th century, city planning gained momentum through implementation of town planning schemes in newer areas of city and development of public infrastructure and institutional buildings such as Barton Library, the High Court, Alfred High School and Sir Takhtsinhji Hospital.



Barton Library in Bhavnagar

All these institutions were designed and implemented under the guidance of progressive rulers of Bhavnagar. Modern Bhavnagar comprises of Takhteshwar Plots, Krishnanagar, Sardarnagar and surrounding area. During 1935-1937, Krishnanagar area was planned and developed by the late Shri Virendrabhai C. Mehta, the official town planner for the State of Bhavnagar.

The city's population has grown from five lakh in 2001 to around six lakh in 2011 (Provisional Population, Census of India) showing a comparatively low compounded annual growth rate (CAGR) of 1.63%. While the population has grown in absolute numbers, the population growth rate of the city is on a decline.

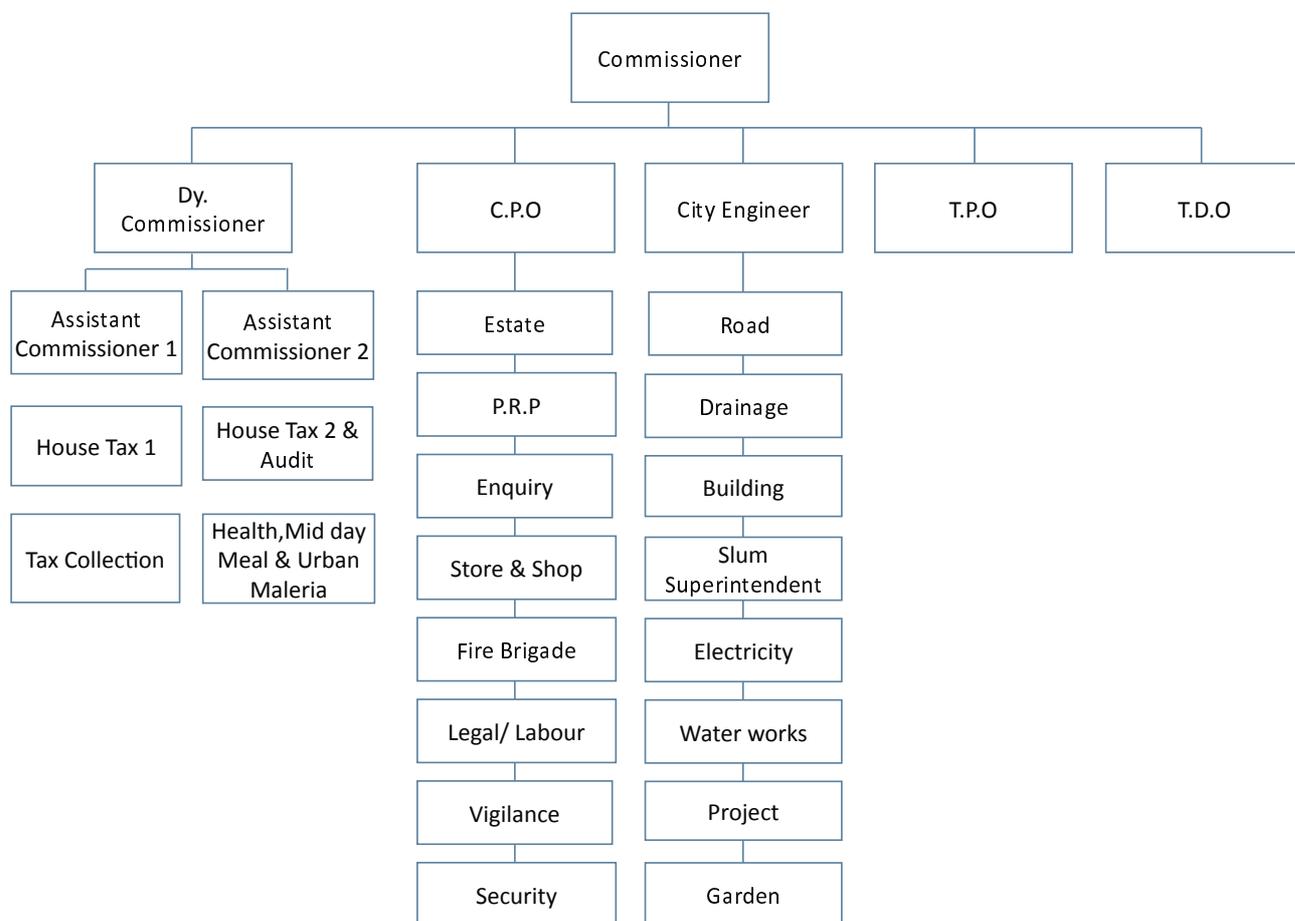
| Year | BMC Population (lakh) | CAGR % | Area (sqkm) | Density (person/sqkm) |
|------|-----------------------|--------|-------------|-----------------------|
| 1991 | 41 | 2.84 | 53.30 | 7692.31 |
| 2001 | 51 | 2.21 | 53.30 | 9568.48 |
| 2011 | 59 | 1.63 | 53.30 | 11140.11 |

The decrease in population could be primarily attributed to the shutting down of large-scale industries in ship-breaking and diamond polishing. The city, largely dependent on its industrial base, has failed to diversify its economy in other potential sectors such as service industry, education and trade. For Bhavnagar to reinvent itself, it will have to attract businesses and spur the growth of the city in the right direction. Enhancing intercity and intra city connectivity is crucial to boosting Bhavnagar's economy.

Local Governance

The Bhavnagar Municipal Corporation is governed by the Bombay Provincial Municipal Corporation Act of 1949. BMC has 51 elected members representing 17 electoral wards. The Mayor is the political head of the Corporation who is supported by an elected general body which functions for a 5-year term. The Mayor has a term of 30 months or 2.5 years. The Deputy Mayor, Standing Committee and Sectoral Committee members are chosen for a term of 1 year. There are nine department committees in BMC each dealing with Public Building and Construction, Public Health, Drainage, Water works, Town Planning and City Development, Social Welfare, Recreation and Culture, Garden, Street Light, and Legal issues. There is no separate committee on Transport.

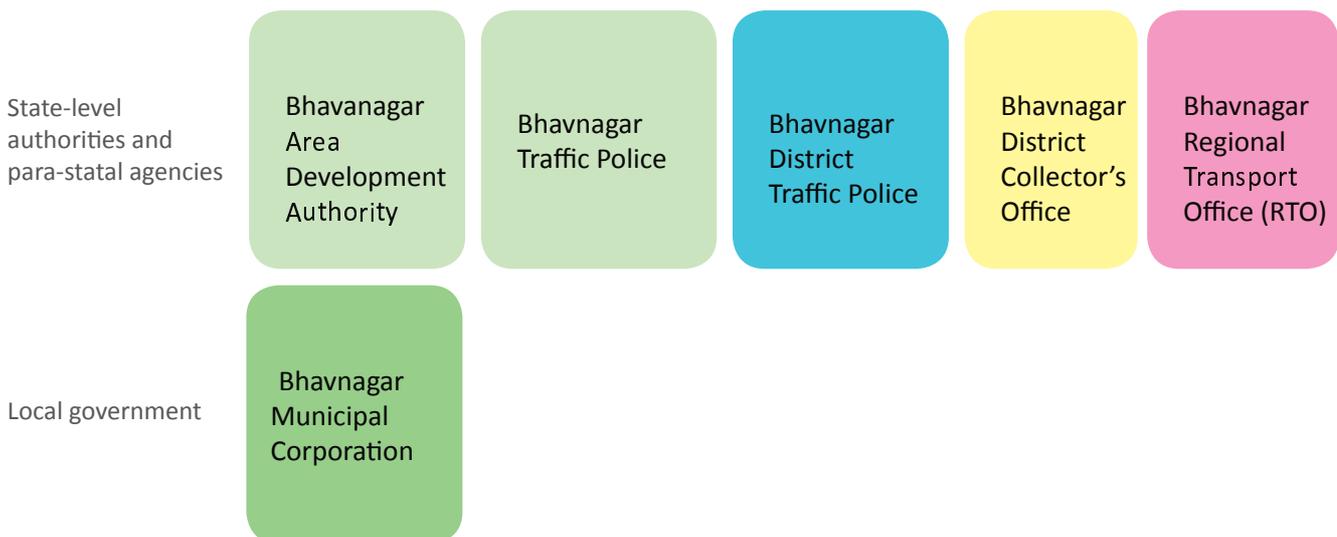
Organizational Diagram of Bhavnagar Corporation



City-level Departments and para-statal agencies in Urban Transport

The role of planning for traffic and transportation in Bhavnagar at present rests with a number of agencies, including the Bhavnagar Municipal Corporation, Bhavnagar Development Authority (BADA), RTO, private bus operators, etc. The following departments in BMC and other city-level bodies are responsible for managing one or more aspects of urban transport in the city. The roles and responsibilities of the Traffic Police, RTO and Collector's office have been explained in earlier sections of the report.

City-level departments and Para-statal agencies in urban transport, Bhavnagar



Road Department:

Road department of Bhavnagar Municipal Corporation is responsible for road design and development which is fundamental to efficient transport system in the city. Functions carried out by the road department include construction of new roads, traffic islands, speed breakers, dividers, footpaths, bridge culverts and repair and routine maintenance of roads. The road department of BMC has recently constructed several kilometers of footpaths in the city. The Road department in coordination with the traffic police also erects traffic sign boards and street boards on major roads. Other than the civil construction work, the department is also involved in cutting of thorny trees along roadsides and collection of road breaking charge.

Electrical / Lighting Department:

Lighting Department of Bhavnagar Municipal Corporation carries out repair and maintenance of street lights, garden lights, lighting of public building and traffic rotary light within the municipal limits. The electrical maintenance of traffic signals is also carried out by the Lighting Department.

Town Planning Department:

The Town Planning Department prepares and implements new TP Schemes within the Municipal Corporation limits in coordination with the State Government. The TP Department is also the responsible department for granting permissions for new construction, addition alteration in building, division of plots and amalgamation and approval of layout. The TP Department also issues occupancy certificate on completion of the construction. Since the TP Department approves large scale layouts in the city, it plays an important role in transport ensuring connected and continuous street networks in the city.

Bhavnagar Area Development Authority (BADA)

Bhavnagar Area Development Authority (BADA) was established in 1978 under Gujarat town Planning and Urban Development Act 1976 and is primarily responsible for planning and development of Bhavnagar urban area.

The urban area includes the area inside the corporation limits and adjoining 17 villages. BADA prepares the Development Plan (DP) which is the long range plan for the Bhavnagar urban area. The implementation of the development plan is done by preparing town planning schemes which is a micro level planning tool using the land pooling mechanism. The TP scheme is an equitable method of land development which allows for the development of planned public infrastructure such as roads, parks and schools.

Transport Profile

Bhavnagar is experiencing a rapid growth in the number of personal motorized vehicles. Today there are around 128,321 vehicles in Bhavnagar. Vehicle ownership is growing at 9.6 percent per annum for passenger vehicles and 8.8 percent for commercial vehicles. Owing to the rapid growth of vehicles, Bhavnagar faces major challenges in terms of congestion, worsening air quality, as well as compromised safety and quality of life especially in the old city area.

Road Infrastructure

Bhavnagar is well-connected to cities in Gujarat and the rest of the country by roads and highways. Most of the city also has a good internal road network of arterials, sub-arterials, and distributor and collector streets. The total road length in BMC area as per available data is 327 km. About 240.85 km of roads are bituminous-topped, 19.87 km are WBM roads, 10.54 km are cement concrete, and the remaining roads are dirt roads.

Walking and cycling are still popular modes of transport in Bhavnagar, but the lack of safe and convenient pedestrian and cycling spaces on roads is driving pedestrians and cyclists away. The old city area with narrow roads, active commercial activity on the side and low vehicle speeds is conducive to walking but the pedestrian environment in these areas is also deteriorating because of haphazardly-parked vehicles and constant noise because of honking. Some of the newly-constructed roads, especially in the Krushnanagar TP Scheme, have footpaths but the city-wide network is sparse. There are no dedicated cycling tracks in the city.

Public Transportation

Bhavnagar is one city in Gujarat with an established history in organized public transport. Prior to independence, Bhavnagar State used to operate 3-4 public buses in the city. The operation of the public buses was transferred to the local body after independence and the bus fleet increased from 3 to 30. However, poor management of the bus operations led to neglect and lack of maintenance of buses. By 1982, the bus fleet in Bhavnagar was reduced to 1982. Increasing access to personal motorized vehicles during this time resulted in further neglect and deterioration of the public transport system which was slowly phased out.

For some time after that, GSRTC (and later BMC) operated city buses till 2001, when the bus operation was handed over to Valbhipur Transportation Co-operative Society Limited (VTCOS), a private agency on PPP mode. The bus fleet in 2001 included 14 diesel buses. Currently, VTCOS is operating 60 CNG buses in the city providing a fairly frequent service. Yet the bus service is facing stiff competition from the IPT system which provides a better frequency and flexibility of boarding and alighting.

The IPT system in Bhavnagar is disorganized and is not efficiently regulated. The IPT system comprises large 6-seater rickshaws which operate as shuttle services and smaller autorickshaws operating as a taxi service. Large rickshaws are permitted to carry a maximum of 6 passengers but usually carry 10-12 passengers, much beyond capacity; this compromises the safety of public transport users.

Other issues facing the public transport system in the city include irregular stoppage, vehicles that are badly maintained and polluting and lack of supporting infrastructure such as proper bus stops, depots and maintenance sheds. BMC provides limited support to VTCOS to operate buses in terms of infrastructure and monitoring and supervision. There are only a few proper bus stops in the city constructed by BMC, which are also not maintained well. There is one major bus terminus in the city centre (Gangajalia Talav).

Parking Management and Pricing

On-street parking in Bhavnagar is haphazard and mismanaged. There is no pricing system for parking on streets and two-wheelers and cars park illegally along road-sides and on footpaths.

Intermediate Public Transportation System (IPT) in Bhavnagar



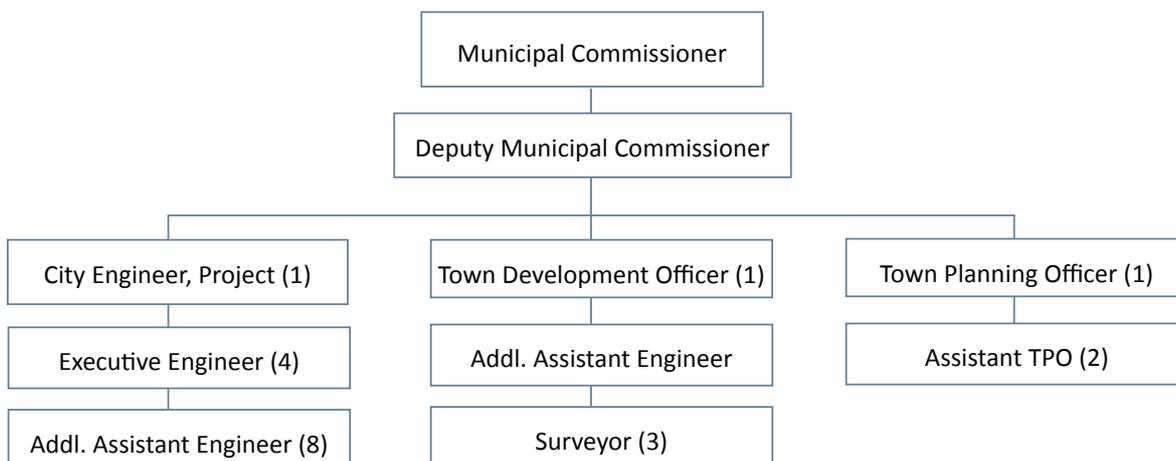
City buses operated by VTCOS in Bhavnagar



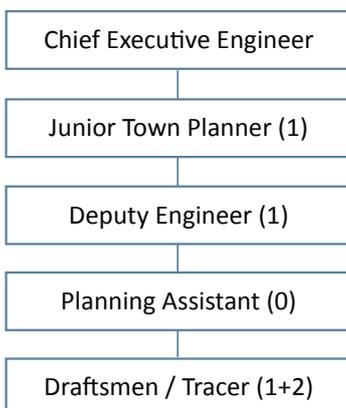
Capacity Assessment of Technical Staff in Urban Transport

For the purpose of this training need assessment, all existing staff (dedicated and shared) in urban transport within BMC and BADA was identified as below of which select people were interviewed for this TNA exercise.

Staff involved in Urban Transport in Bhavnagar Municipal Corporation



Technical staff involved in urban transport in BADA



The following table indicates the educational qualifications of urban transport staff in Bhavnagar. None of the staff interviewed have had a formal education in transport planning/ engineering. Many of the current staff members in BMC are in charge of multiple positions across departments. Most staff have received a basic education (diploma or degree) largely in the field of civil engineering. Only three officers have participated in trainings and workshops on the subject of urban transport.

Educational Qualifications of Staff in Bhavnagar

| | |
|---|---|
| Number of staff interviewed | 9 |
| Number of staff with Master Degree | 1 |
| Number of staff with Bachelors Degree | 3 |
| Number of staff with Diploma | 5 |
| Number of staff with education in transport planning | 0 |
| Number of staff who have received training in urban transport | 3 |

Awareness about Sustainable Transport in Bhavnagar

| | Fully aware | Somewhat aware | Not aware at all | No Answer |
|--|-------------|----------------|------------------|-----------|
| National Urban Transport Policy | 1 | 0 | 8 | 0 |
| Role of sustainable urban transport in ensuring equity | 1 | 3 | 5 | 0 |
| Role of sustainable urban transport in energy security and mitigating climate change | 1 | 4 | 4 | 0 |
| Street design guidelines on design of "complete streets" | 1 | 1 | 7 | 0 |
| Guidelines by MoUD and other organizations on managing urban bus services | 1 | 4 | 4 | 0 |
| Parking management and pricing | 1 | 5 | 2 | 1 |

The following table presents staff capacities among staff in Bhavnagar necessary to successfully implement public transport projects. Awareness in city bus operations and comprehensive transport planning was observed to be lowest.

Capacity in Planning and Implementing Sustainable Transport in Bhavnagar

| | Fully aware | Somewhat aware | Not aware at all | Not relevant |
|---|-------------|----------------|------------------|--------------|
| | Fully aware | Somewhat aware | Not aware at all | Not relevant |
| Use of GIS and other modeling software for transport planning | 0 | 3 | 6 | 0 |
| IRC design standards for roads | 2 | 3 | 4 | 0 |
| Bus operations and route planning | 2 | 2 | 5 | 0 |
| Standard operating procedures for bus services | 1 | 1 | 7 | 0 |
| Using PPP for transport and parking management | 4 | 3 | 2 | 0 |
| Procurement, contracting and monitoring of consultants | 3 | 3 | 3 | 0 |

The technical staff was also asked to share their vision for urban transport in Bhavnagar. Select ideas that were shared are presented in the box below.

“There is a need to expand road connectivity to new developing areas like Gogha, Dahej SIR, etc.”

“More parking and flyovers are needed to improve urban transport situation in the city”

“Augmenting staff and technology in transport is required”

“Good public transport such as BRT and Metro should be planned and implemented in Bhavnagar like in the cities of Ahmedabad and Delhi”

“People should be educated on traffic awareness. Flyover, under-bridges and ring roads should be constructed to ease traffic”

“Government should support good public transport in the city”

“Need for integrating IPTS with existing PT system.”

“Wider roads are needed”

These views expressed by the technical staff bring to light the following concerns to do with understanding of sustainable transport in Bhavnagar:

- There is a general interest and understanding among staff on the importance of a good public transport systems in the city.
- Little understanding and acceptance on regulating private vehicle use.
- Traditional engineering approaches to solving congestion such as road widening and construction of flyovers are more popular.
- Comprehensive transport planning is less understood.

- New public transport projects such as BRT and metro are considered the image of urbanization and a developed city and hence are popular. The staff in urban transport is not equipped with a planning thought process and accompanying tools and means to select an appropriate public transport system based on their own context.

In addition to identifying knowledge and skill gaps in urban transport, the questionnaire-based assessment also identified key organisational and management training needs. The top three short term needs requiring immediate training as identified by the Bhavnagar staff are as follows:

1. Working with elected representatives
2. Conflict resolution, counselling and ombudsmen
3. Proposal/project preparation

Based on the questionnaire survey, interviews and UMCs assessment of staff capacities, the following training needs in sustainable urban transport are identified for Bhavnagar:

Top training needs for Bhavnagar

| Training Area | Target Audience | Training Methodology |
|---|---|---|
| Managing bus operations contracts | Technical staff, BMC | Classroom training on writing contract documents and dissemination of sample contracts |
| Street design with a focus on pedestrian comfort and safety | Technical staff, BMC, BADA | Hands-on design workshop accompanied with field visit. Dissemination of street design guidelines. |
| Traffic coordination, management and planning | Technical staff, BMC, BADA, RTO, Traffic Police | Workshop on comprehensive transport planning and institutional mechanisms such as formation of a transport coordination committee |

JAMNAGAR

Context

Jamnagar is the biggest urban centre in the coastal Saurashtra region of Gujarat. Available historical references suggest that Jam Rawal founded Jamnagar in its present location in A.D. 1540, as the capital of the princely state of Nawanagar as Darbargarh.

The City is a major industrial centre owing to its rich deposits of oil and minerals and its proximity to the sea. Major industries in and around Jamnagar include oil refineries, salt industries, brass parts, brass casting, hardware, building materials, cement, textiles, and engineering machineries etc. Jamnagar region is home to the world's largest oil refinery established by Reliance Industries. There are also several other oil refineries and related industries. The town is also famous for its handicrafts, brass products, bandhani sarees and textiles. The city also enjoys the privilege of being a centre for all three wings of the Indian armed forces (Army, Navy and Air Force).

Most industrial development in Jamnagar region is happening outside the Jamnagar municipal limits in Sikka, located on the southwest of the city. The establishment of large scale industry was accompanied with huge public and private-sector investment and the mushrooming of large residential townships associated with the industries. This development has had a tremendous impact on development as well as transport patterns of the city.

The city's population has grown from 4 lakh in 2001 to 5.3 lakh in 2011 (Provisional Population, Census of India). Jamnagar sees a large influx of floating population owing to the development of industries in Sikka. The last decade exhibits a compounded annual growth rate (CAGR) of 1.88%. While the population has grown in absolute numbers, the population growth rate in Jamnagar has declined.

Local Governance

Jamnagar Municipal Corporation(JMC) was established as per the Provisions of the Bombay Provincial Municipal Corporation Act, 1949. The organisational set-up of JMC comprises a political wing (deliberative) headed by the Mayor and executive wing headed by the Commissioner. The political wing of the corporation has three distinct statutory authorities i.e. General Board, Standing Committee and other specialized committee for specialized functions.

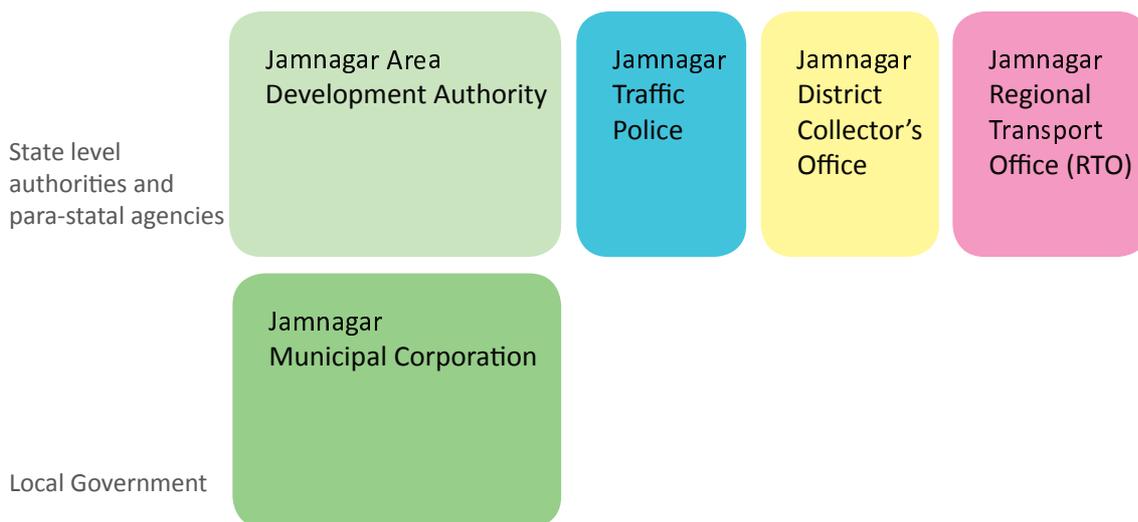
General Board is constituted by elected members from each wards. Three members are elected from each ward for a term of 5 years. The 17 wards constitute a total of 51 councillors. One third of the seats are reserved for women. Standing Committee has the powers to sanction and award major works. It is also vested with financial powers.

| Year | JMC Population (Lakh) | CAGR % | Area sq km | Density person/sq km |
|------|-----------------------|--------|------------|----------------------|
| | million | | | |
| 1991 | 0.34 | - | 26.15 | 13065 |
| 2001 | 0.44 | 2.61 | 26.15 | 16961 |
| 2011 | 0.53 | 1.88 | 34.10 | 15522 |

City-level Departments and Para Statal agencies in Urban Transport

The role of planning for traffic and transportation in Jamnagar at present rests with a number of agencies, including Municipal Corporation, JDA, RTO, private bus operators, etc. The following departments in JMC and other city-level bodies are responsible for managing one or more aspects of urban transport in the city. The roles and responsibilities of the Traffic Police, RTO and Collector’s office have been explained in earlier sections of the report.

City-level departments and para-statal Agencies in urban transport, Jamnagar



Public Works Department (PWD), JMC

The Public Works Department in Jamnagar Municipal Corporation is responsible for the construction and maintenance of road and other infrastructure in the city. The PWD is headed by the City Engineer who is supported by executive engineers. The major transport related functions of the PWD department include the construction and maintenance of roads along with proper footpaths, street lighting, construction of traffic islands and grade separators, and construction of bus shelters.

Town Planning Department, JMC

The Town Planning Department plays a crucial role in city development by the planning and implementation of TP Schemes in newer areas of the city. The Town Planning Department is responsible for laying the macro and micro-level street grid in the city when laying out TP Schemes. In addition the Town Planning Department also is responsible for giving building permissions within Corporation limits. This department is headed by the Town Planning Officer who is supported by an Assistant Town Planning officer.

Tax Department, JMC

The Tax Department in JMC is responsible for collecting a premium for the city bus service operated by Jamnagar Maji Sainik Transport Shahkari Mandli Limited, a private trust.

Jamnagar Area Development Authority

Jamnagar Area Development Authority (JADA) was established in February 1978 by the Government of Gujarat under the Gujarat Town Planning and Urban Development Act, 1976. The JADA Jurisdiction consists of Jamnagar Municipal Corporation city limits and 26 surrounding villages. JADA has an area of 285 sq km under its jurisdiction, which includes 33.70 sq km area of JMC.

The prime objective behind JADA's formation was to carry out sustained and planned development of the area falling outside the Jamnagar Municipal Corporation city limits. Key functions of the Authority include the preparation of a Development Plan for the Jamnagar Urban Agglomeration, preparation of draft TP Schemes, implementation of the sanctioned TP Schemes and to monitor and control development activities in accordance with the approved Development Plan. JADA is also responsible for infrastructure development including roads, sewerage, water supply and other basic civic amenities.

Transport Profile

Jamnagar region has a strong industrial economy which has shaped the city's transportation pattern. The industries around Jamnagar City employ thousands of people—executives, engineers, industrial workers, labourers in oil refineries and other support staff. Large refinery units such as Reliance and Essar have developed large scale residential townships on the outskirts of Jamnagar to house their executive staff. Township residents make frequent travel trips into the city for recreation, shopping and other needs. These trips happen on personal motorized modes as well as some form of regional public transport. Conversely, several industrial workers residing in Jamnagar commute everyday to these industrial units, primarily on their cycles. Jamnagar thus has a unique travel pattern based on its regional economy which needs to be taken into consideration while planning for future development in and around the city.

Road Infrastructure

Jamnagar has a fairly good network of roads and is well-connected via National and State Highways. The total length of road network under the jurisdiction of JMC is around 850 km, out of which around 486 km is surfaced and 264 km is unsurfaced. Also out of the total surfaced roads, 305 km is black top, 171 km is cement concrete and the rest 110 km is water bound macadam (WBM).

The city has very little NMT-supportive infrastructure. Some roads constructed as part of the newer TP schemes have functional footpaths but are lacking in majority of the city. Illegal encroachments by commercial establishments and parked vehicles on road-sides force pedestrians to work alongside motorized vehicles jeopardizing their safety. Being an industrial town there are a significant number of trips made on cycles but the streets are designed largely for motorized vehicles with no shared/ slow zones.

There is a shortage of traffic police staff in the city to efficiently manage the ROW including enforcement and towing of illegally parked vehicles.

Public Transport

In the past JMC had an organized bus service operated by Jamnagar Municipal Transport Service (JMST) which was a municipal undertaking. In July 1995, after incurring heavy financial losses, JMST discontinued bus service in the city. All the buses owned by JMST were handed over to Jamnagar Maji Sainik Transport Shahkari Mandli, a private entity to be operated on a PPP mode. Jamnagar Maji Sainik Transport Shahkari Mandli Limited is an ex-army personal trust operating city bus services in Jamnagar.

Jamnagar Maji Sainik Transport Shahkari Mandli (JMSTSM) got 25 old buses from the Corporation to start the bus service in 1995. The trust has added more buses and the total fleet size today is 30 with 25 buses operational at any given time. JMSTSM is supposed to pay the Corporation a premium every month to operate the buses but has been defaulting on the same. The private trust cites the lack of support from JMC in terms of infrastructure such as bus stops, maintenance sheds and proper terminal facilities as the reason for not paying the premium. JMSTSM is also incurring heavy losses and considers the current model of city bus operation unviable and unsustainable in the long term.

Other than the city bus service, GSRTC also plays a crucial role in urban transport in Jamnagar connecting the city to surrounding industries and townships. There are frequent intra-state buses connecting Jamnagar to Rajkot, Porbander, Bhuj, Bhavnagar, Ahmedabad, Baroda and Surat. The State Transport Corporation runs several buses at a regular interval to all the major cities and towns of Gujarat as well as other states of India. These buses ply on the highway with stops in Sikka and Jamnagar.

Most public transport demand in the Jamnagar urban area is being met by Para-transit vehicles such as autorickshaws, *chakdas* and TATA Magic. These vehicles operate as shuttle services between important points in the city and also connect Jamnagar to peripheral towns and industrial townships.

Parking Management and Pricing

On-street parking in Jamnagar is haphazard and mismanaged and vehicles illegally park along road-sides and on footpaths. JMC had initiated paid parking in the market area but the corporation was not able to efficiently enforce it and hence the project was scrapped.

Lack of Footpaths and parking on roadside



City buses in Jamnagar



Haphazardly parked vehicles in Jamnagar



Most public transport demand in Jamnagar is met by IPT



City bus services at night in market area

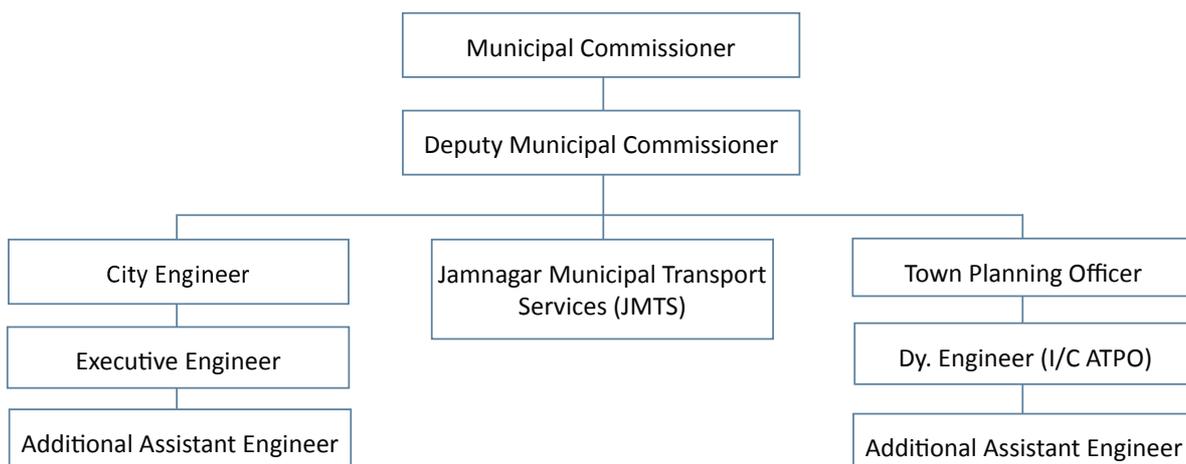


Capacity assessment of technical staff in urban transport

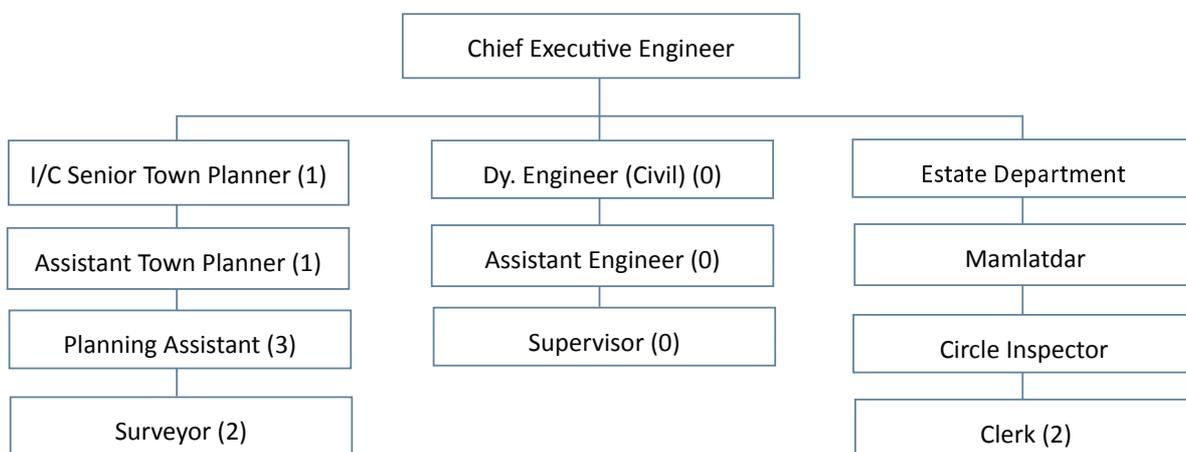
For the purpose of this training need assessment, all existing staff (dedicated and shared) in urban transport within JMC and JADA was identified as below from which a select few people were interviewed.

In the Jamnagar Municipal Corporation Public Works Department and Town planning department are the two departments involved in some aspect of urban transport such as road network planning, construction of streets, etc.

Jamnagar Municipal Corporation staff involved in Urban Transport



Technical Staff in Jamnagar Area Development Authority involved in Land-use Planning



The following table indicates the educational qualifications of urban transport staff in Jamnagar. None of the staff interviewed have had a formal education in transport planning/engineering or has received any training in urban transport. Most staff have been educated in the field of civil engineering and construction. Two officers interviewed have received some training in urban transport.

Educational qualifications of staff in Jamnagar

| | |
|---|----|
| Number of staff interviewed | 17 |
| Number of staff with Master Degree | 1 |
| Number of staff with Bachelors Degree | 3 |
| Number of staff with Diploma | 5 |
| Number of staff with education in Transport Planning | 0 |
| Number of staff who have received training in Urban Transport | 2 |

The following tables present staff awareness in Jamnagar on sustainable transport concepts and processes for successful implementation of urban transport projects. Awareness in city bus operations and comprehensive transport planning was observed to be lowest.

Awareness on sustainable transport concepts in Jamnagar

| | Fully aware | Somewhat aware | Not aware at all | No Answer |
|--|-------------|----------------|------------------|-----------|
| National Urban Transport Policy | 2 | 3 | 12 | 0 |
| Role of sustainable urban transport in ensuring equity | 2 | 3 | 11 | 1 |
| Role of sustainable transport in energy security and mitigating climate change | 1 | 5 | 10 | 1 |
| Street design guidelines on design of "Complete Streets" | 1 | 5 | 8 | 3 |
| Guidelines by MoUD and other organizations on managing urban bus services | 2 | 4 | 11 | 0 |
| Parking management and pricing | 1 | 3 | 12 | 1 |
| Use of GIS and other modeling software for transport planning | 3 | 3 | 11 | 0 |
| IRC design standards for roads | 2 | 5 | 9 | 1 |
| Bus operations and route planning | 3 | 8 | 6 | 0 |
| Standard operating procedures for bus services | 2 | 3 | 12 | 0 |
| Using PPP for transport and parking management | 2 | 9 | 6 | 0 |
| Procurement, contracting and monitoring of consultants | 3 | 6 | 7 | 1 |

The technical staff was also asked to share their vision for urban transport in Jamnagar. Select ideas that were shared are presented in the box below.

“Urban transport has a vital role in city development. Transport system does not only mean vehicular movements. It involves all over development of available streets for all users. A master plan must be prepared for city transportation for next 10 years.”

“City bus service should be pollution-free and should provide services to various sectors of population at reasonable cost.”

“There is a need to implement BRTS, Monorail and fly-overs”

“Currently urban transport is a pressing issue because of heavy congestion and population. Small streets in the city are a constraint. There is a need for traffic planning.”

“Urban transport knowledge is very important to improve the management of city”

“More parking spaces are required in the city to decrease congestion”

These views expressed by the technical staff bring to light the following points regarding understanding of sustainable transport in Jamnagar:

- Good understanding regarding the need for long-range transport planning that includes street design and prioritization and public transport for all users.
- Widespread understanding regarding the need for nonpolluting, efficient and public transport of quality.
- Greater inclination towards the development of new infrastructure such as flyovers, monorail and BRT rather than low cost management solutions. Such infrastructure projects are often viewed as a sign of growth and development.
- Little understanding and acceptance about regulating private vehicle use. Greater numbers of motor vehicles are perceived as a sign of growth and prosperity and not a problem. Most staff thinks that there is a need to accommodate growing number of vehicles by increasing parking spaces in the city. Solutions such as parking management and pricing are little understood.

In addition to identifying knowledge and skill gaps in urban transport, the questionnaire-based assessment also identified key organisational and management training needs. The top three short-term needs requiring immediate training as identified by the Jamnagar staff are as follows:

- **Human resource management**
- **Information, education and communication**
- **Proposal/project preparation**

Based on the questionnaire survey, interviews and UMCs assessment of staff capacities, the following training needs in sustainable urban transport are identified for Jamnagar:

Top Training Needs for Jamnagar

| Training Area | Target Audience | Training Methodology |
|---|--|---|
| Contract management for bus operations | Technical Staff, JMC | Classroom training on writing contract documents and dissemination of sample contracts |
| PPP for traffic and parking management | Technical Staff, JMC and Traffic Police | Study trips to understand the working of PPP and dissemination of sample contracts |
| Street design with a focus on pedestrian and cyclist comfort and safety | Technical Staff, JMC and JADA | Hands-on design workshop accompanied with field visit. Dissemination of street design guidelines. |
| Regional transport planning with a focus on the integration of GSRTC, urban bus service and various IPT modes | JMC, JDA, GSRTC, bus operator, rickshaw unions | Multi-stakeholder workshop and dissemination of best practices |

JUNAGADH

Context



Old city of Junagadh

Junagadh is the 7th largest city in Gujarat located on the foothills of Girnar Hills and is 355 km south west of the state capital Gandhinagar and the city of Ahmedabad. The current population of Junagadh is 3.2 lakh. The name of the city translates to 'old fort' and is derived from Uperkot, an impressive fort built by the Mauryan dynasty in 319 BC.

Junagadh is a city of religious and cultural importance for the State with a history dating back to 250 BC. The city has an influence of multiple cultures including Hindu, Mughal, Buddhist and Jain which is reflected in its architecture. Junagadh has always been an important city in Gujarat an administrative headquarters and a center of pilgrimage, and has produced a number of saints, the most famous being the Gujarati saint-poet, Narsimha Mehta. Junagadh has remained an important religious city and is a popular tourist destination. Key economic activities in Junagadh include agriculture, mineral-based industries and power sector. Tourism is a growing sector in Junagadh.

The city's population has grown from 1.7 lakh in 2001 to 3.2 lakh in 2011 (Provisional Population, Census of India), exhibiting a compounded annual growth rate (CAGR) of almost 7%. The city has also significantly grown in land area. The Junagadh city limits were extended in 2004, increasing its area from 13.47 sq km to 57.16 sq km. The huge increase in population between 2001 and 2011 can be attributed to this increase in municipal limits. In 2004, 8 grampanchayats and 1 municipality was merged with the Junagadh city limit.

Because of the increase in its spatial footprint, the population density of the city has reduced from 12,510 per sq km in 2001 to 5,603 per sq km in 2011.

Junagadh has seen little development in urban infrastructure in the last few years. Politically, the city has always had an unsteady municipal governance with the city elections being closely contested by the two leading parties.

Urbanization in Junagadh

| Year | JMC Population (million) | CAGR (%) | Area (sq km) | Density (person / sq km) |
|------|--------------------------|----------|--------------|--------------------------|
| 1991 | 0.13 | - | - | - |
| 2001 | 0.17 | 2.72 | 13.47 | 12510 |
| 2011 | 0.32 | 6.53 | 57.16 | 5603 |

Local Governance

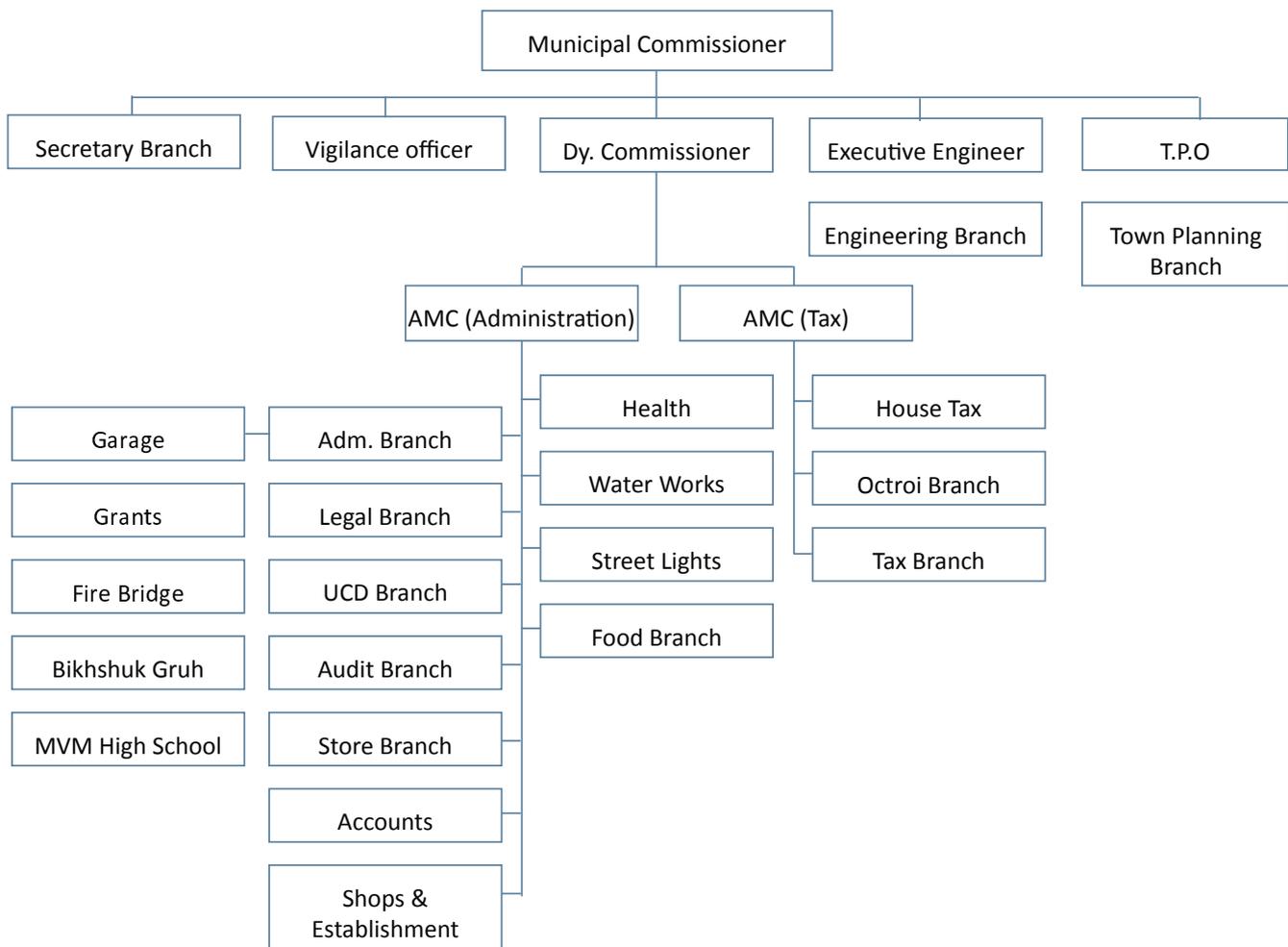
The Municipal Corporations of Gujarat are governed under the Bombay Provincial Municipal Corporations Act, 1949. Junagadh Municipality was established on 1st November 1933 under the Junagadh State Municipal Act, 1889. Since its inception in 1970, the Municipality provided civic services including sanitation, education, street light and bus services to its citizens.

Since the formation of the Gujarat State in 1948, all municipalities in the state are governed by the Gujarat Municipality Act, 1963.

Junagadh Municipality was upgraded to the status of Municipal Corporation on 15th September 2002 with an area of 13.47 sq km. The area was further increased to 52.47 sq km from 23rd January 2004 by merging eight villages—Timbavadi, Khamdhrol, Zanzarda, Chobari, Dolatpara, Saragvada, Sabalpur, Bhavnath and one Nagar Panchyat named Joshipura.

The Municipal Commissioner is the head of the executive arm of the Municipal Corporation. The Mayor is the head of the legislative body that lays down policies for governance and is indirectly elected from among the 51 corporators representing the 17 wards in the city. 12 councillors of the 51 are elected as members of a Standing Committee which takes important financial decisions regarding civic projects in the city.

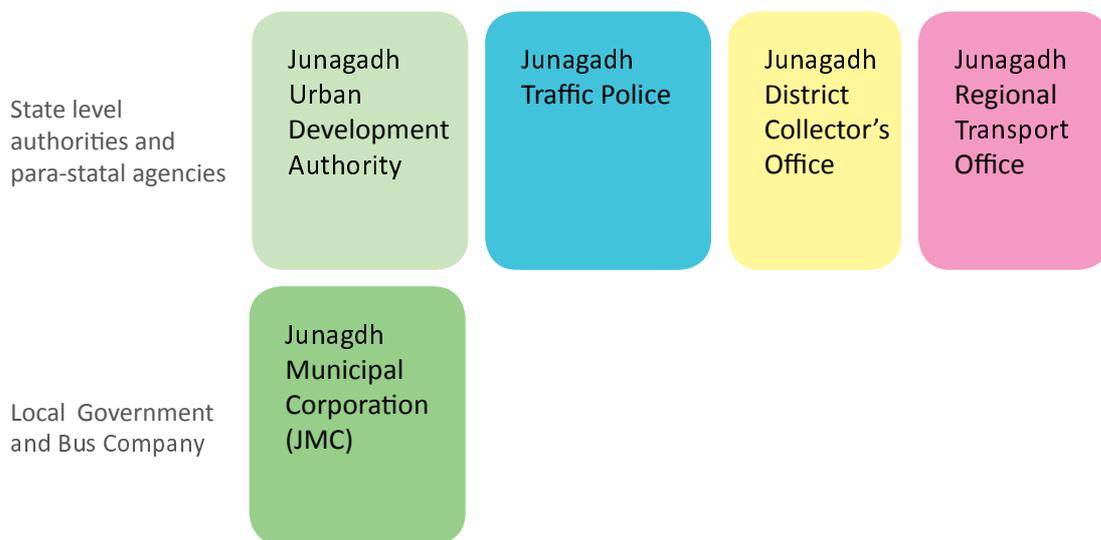
Organisational Chart of JMC



City-level departments and para-statal agencies in urban transport

The following departments in JMC and other city-level bodies are responsible for managing one or more aspects of urban transport in the city. The roles and responsibilities of the Traffic Police, RTO and Collectors office have been explained in earlier sections of the report.

City-level Departments and Para-statal Agencies in UT, Junagadh



Building Branch/Engineering Department

The Building Branch of JMC is involved in the designing and construction of roads, public toilets, shopping complexes, public buildings and other civic infrastructure in the city.

The department is headed by a city engineer who is assisted by deputy engineers and assistant engineers. Currently, assistant engineers are in-charge of deputy engineer posts and are also responsible for the supervision and monitoring of routine construction activities at the ward level.

Street Lighting Department

The Street Lighting branch ensures the installation and proper functioning of street lights in the city along with lighting other public places in JMC.

Town Planning Branch

The Town Planning Branch is responsible for preparing Town Planning Schemes to implement the DP prepared by the Development Authority. The Town Planning Branch plays an important role in ensuring a continuous street grid in the city. The TP branch also approves building construction based on the GDCRs. The Department is headed by a Town Planning Officer supported by Assistant Town Planner and Surveyor and Draftsmen. Currently the Town Planning Officer is a deputed officer of the state government who serves as the Chief Town Planner for both JMC and the Development Authority.

Assistant Municipal Commissioner (Tax)

The Assistant Municipal Commissioner (taxes) supervises management activities of city bus services in the city and is responsible for collecting a monthly premium from the private operator for running city bus services.

Junagadh Urban Development Authority

The Junagadh Urban Development Authority (JUDA) was established by the State Government in July 2008 to ensure planned growth of the Junagadh urban area.

The key functions of the Authority include the preparation of Development Plan for the Junagadh Urban Agglomeration, to prepare draft Town Planning Schemes, to implement revised Town Planning Schemes and to monitor and control development activities in accordance with the Development Plan. JDA is also responsible for the development of civic infrastructure like roads, sewerage, water supply and other basic civic amenities in its jurisdiction.

The JDA is largely dormant because it lacks staff. The Deputy Municipal Commissioner of JMC is currently the in-charge Chief Executive Officer for JUDA. The Senior Town Planner in JUDA is a state-deputed officer and is also the in-charge own planning officer for JMC. The total sanctioned staff for JDA is 27. The current number of staff in JUDA is 7 including deputed and temporary positions.

Transport Profile

Junagadh is a religious city with a beautiful architectural heritage and a huge potential to be developed as an important tourist destination. The old city, however is marred by congestion, noise pollution and haphazardly-parked vehicles. The deteriorating quality of the environment makes it unpleasant for tourists to walk around and experience the beautiful heritage.

The old city should be revitalized with a focus on pedestrian friendly transport infrastructure.

Road Infrastructure

Junagadh is well-connected by State and National highways (SH 31 V via NH 8 and NH 8B) to other cities in Gujarat including Ahmedabad, Rajkot, Amreli, Porbandar, and Veraval. The total road network of the city is about 256 km, out of which 230 km is surfaced and 27 km is unsurfaced.

Many roads in the city have sufficiently wide footpaths which were constructed under the 'Integrated Tourist Plan for Junagadh, Veraval, Patan and Anand. The project was supported by the Gujarat Yatradham Vikas Board and tendered through GUDM, which is a State body. Since the local government was not involved in the process, JMC has little ownership and interest in maintaining these footpaths.

Several footpaths in the city are not well-maintained and are encroached upon by parked vehicles, etc., forcing pedestrians to walk on the road alongside fast-moving vehicles.

IPT vehicles in Junagadh



Lack of parking enforcement



Public Transportation

Formal public transport has existed in Junagadh for several decades. Junagadh Municipality earlier provided a city bus service to its citizens. After the conversion of Junagadh Municipality into Junagadh Municipal Corporation, the city bus operations were handed over to a private operator.

Currently, bus operations in the city are managed by Vinayak Travels which is operating 8 mid-sized buses in the city on 7 routes approved by the RTO. There is a Concession Agreement in place between the JMC and Vinayak Travels to facilitate an Urban Bus System through PPP mode where the private operator is responsible for financing, procuring and maintaining buses.

JMC is responsible for constructing supporting infrastructure such as bus stops, depots and maintenance sheds for the bus service. However such infrastructure is severely lacking. In the absence of designated bus stops, the buses stop irregularly, sometimes in the middle of the road. Also, the buses are not washed and maintained regularly.

The city bus service faces strong competition from the unregulated IPT system which fulfills a majority of the public transport demand in the city. The IPT system comprises large rickshaws or *chakdas* which operate as shuttle services between major points in the city, and three-wheeled autorickshaws which operate as a taxi service.

Because of the strong competition from IPT and financial unviability of the city bus service, the private operator is interested in extending the bus service to nearby villages and towns. Currently, GSRTC provides the regional bus service from Junagadh to other towns and villages and hence has to provide a NOC to the private operator to start regional services. Once the operator gets a NOC from GSRTC, he will have to apply for a route permit at RTO.

Parking Management and Pricing

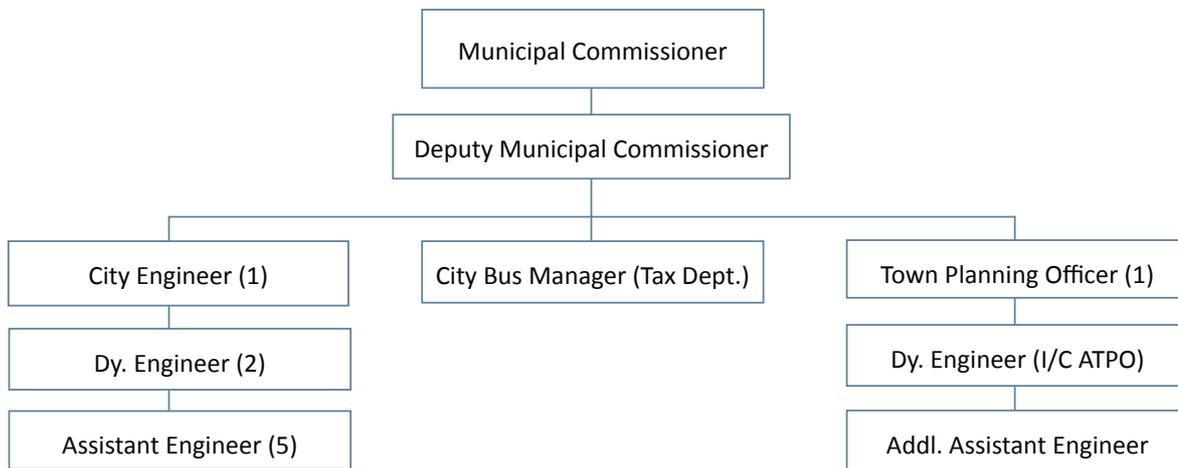
Most on-street parking in Junagadh is illegal and haphazard. The fines collected for parking violations are shared between the traffic police and the corporation.

There are around 5-7 off-street parking lots owned and maintained by the Land Estate Department at JMC; however, these are also not pay and park lots and provide free parking space to vehicle owners. On-street and off-street parking is not integrated.

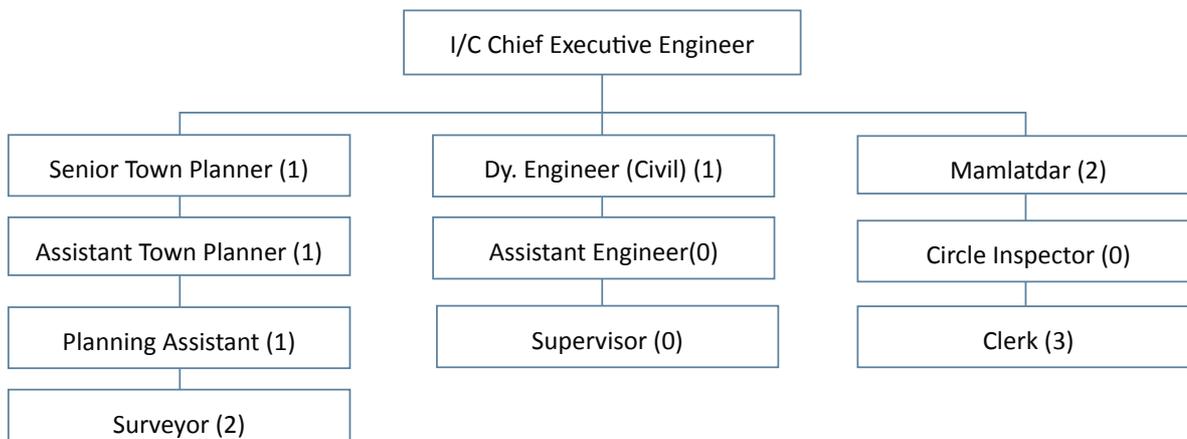
Capacity assessment of technical staff in urban transport

For the purpose of this training needs assessment, all existing staff members who are directly (dedicated) or indirectly (shared) involved in urban transport within Junagadh Municipal Corporation and Junagadh Urban Development Authority were identified as below from which a select few people were interviewed

Junagadh Municipal Corporation staff involved in Urban Transport



Technical staff in Junagadh Urban Development Authority involved in Land-use planning



The following table indicates the educational qualifications of urban transport staff in Junagadh. None of the staff interviewed had a formal education in transport planning/ Engineering. Only two officers have received one day training in urban transport.

Educational qualifications of staff in Junagadh

| | |
|---|---|
| Number of staff interviewed | 7 |
| Number of staff with Masters Degree | 5 |
| Number of staff with Bachelors Degree | 1 |
| Number of staff with Diploma | 0 |
| Number of staff with education in transport planning | 0 |
| Number of staff who have received training in urban transport | 0 |

The table below indicates the awareness of technical staff on sustainable transport concepts. 4 out of the 7 staff interviewed for this study had not heard about NUTP which forms the basis of sustainable transport projects and policies in India. The awareness on various aspects of sustainable transport such as equitable allocation of road space, promoting NMT infrastructure and parking pricing was also observed to be low in Junagadh.

Awareness on sustainable transport concepts in Junagadh

| | Fully aware | Somewhat aware | Not aware at all | No Answer |
|--|-------------|----------------|------------------|-----------|
| National Urban Transport Policy | 1 | 2 | 4 | 0 |
| Role of sustainable urban transport in ensuring equity | 2 | 3 | 2 | 0 |
| Role of sustainable transport in energy security and mitigating climate change | 1 | 3 | 3 | 0 |
| Street design guidelines on design of "complete streets" | 0 | 3 | 3 | 1 |
| Guidelines by MoUD and other organizations on managing urban bus services | 1 | 0 | 4 | 2 |
| Parking management and pricing | 2 | 3 | 2 | 0 |

The urban transport staff in Junagadh also shared their vision for improving urban transport in the city. Select ideas that were shared are presented in the box below.

“There is a need for wider roads and especially to run an efficient bus service.”

“The city bus fleet should be high quality and nonpolluting. The bus routes should be rationalized and integrated with other IPT modes.”

“Along with city bus services there is a need for radio taxis in the city..”

These views expressed by the technical staff bring to light the following concerns regarding understanding of sustainable transport in Junagadh:

- There is widespread acceptance of organized bus service in the city. Interest among technical staff and elected officials alike to improve and augment it.
- JDA staff is more inclined towards the development of new infrastructure such as wider roads and flyovers.
- Very few technical staff mentioned the importance of providing pedestrian and cycling facilities, indicating a low priority for NMT.
- A greater focus is on new development. Few staff talked about the improvement of old city areas and upgrading infrastructure to make it more conducive for pedestrians and religious tourists.

The following table presents the capacities of staff in Junagadh to successfully implement urban transport projects.

Capacity in planning and implementing sustainable transport

| | Fully aware | Somewhat aware | Not aware at all | Not relevant |
|---|-------------|----------------|------------------|--------------|
| Use of GIS and other modeling software for transport planning | 2 | 2 | 3 | 0 |
| IRC design standards for roads | 1 | 0 | 6 | 0 |
| Bus operations and route planning | 1 | 2 | 3 | 1 |
| Standard operating procedures for Bus Services | 2 | 0 | 3 | 2 |
| Using PPP for transport and parking management | 1 | 5 | 1 | 0 |
| Procurement, contracting and monitoring of consultants | 4 | 1 | 1 | 0 |

In addition to identifying knowledge and skill gaps in urban transport, the questionnaire-based assessment also identified key organizational and management training needs. The top three short-term needs requiring immediate training as identified by the Junagadh staff are as follows:

- **Human resource management**
- **Information, education and communication**
- **Media handling and management**

Based on the questionnaire-survey, interviews and UMCs assessment of staff capacities, the following training needs in sustainable urban transport are identified for Junagadh:

Top Training Needs for Junagadh

| Training Area | Target Audience | Training Methodology |
|---|---|--|
| Parking management | Technical Staff, JMC | Classroom training on concepts of parking management and introducing charged parking in the city |
| Organization of IPT | Technical Staff, JMC, RTO, Traffic Police | Multi-stakeholder workshop and dissemination of best practices |
| Revitalization of old city areas with a focus on ensuring pedestrian comfort to encourage heritage tourism. | Technical Staff, JMC | Interactive workshop, field surveys and sharing of best practices |

NAVSARI

Context

Navsari is a Class A municipality and one of the oldest cities in Gujarat. Navsari is also the twin city of Surat, situated about 37 km south of the city.

Navsari has a history of over 2000 years and has been associated with many names such as Nag Vardhana, Nag Shahi, Nag Sarika, Nag Mandal, Nav Sarika and Nav Sareh. About fourteen hundred years ago, the kings of the Chalukya Dynasty governed the region of Navsari. Later the Parsis, who migrated from Iran, ruled this small town for more than two hundred years. The reign of the Parsis ended as the Muslim rulers took over in the fourteenth century. For the past century until India's independence in 1947, Navsari was under the rule of the Gaekwads of Baroda.

The city's population has grown from 1.3 lakh in 2001 to 1.6 lakh in 2011 (Provisional Population, Census of India) showing a low compounded annual growth rate (CAGR) of 1.86%. The Navsari Nagar palika comprises of an area of 18 sq km. For a fairly small area the population of the city is extremely large.

Local Governance

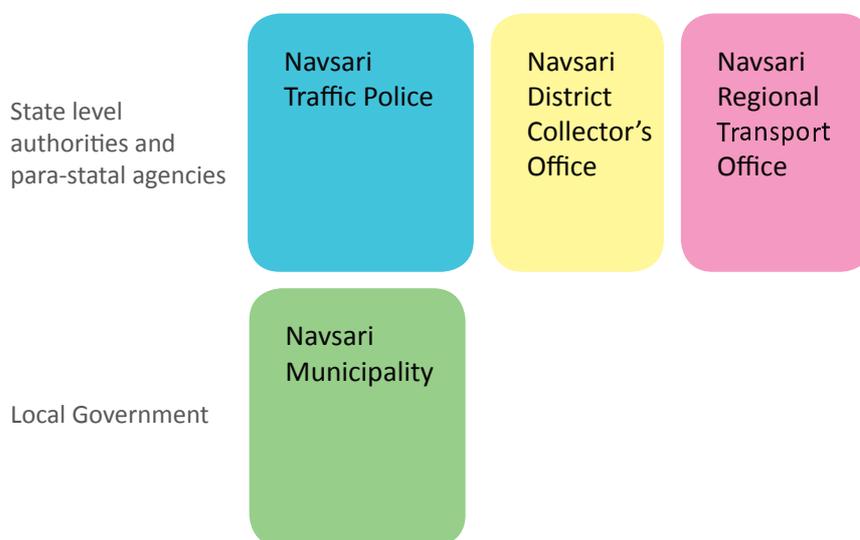
Navsari Municipality was formed under the Gujarat Municipalities Act, 1963 and is responsible for the provision of basic services city like Public Works, Water Works, Town Planning, Light & Fire, Drainage, Health etc.

The Navsari Municipality has a very basic organisational structure, with all executive staff reporting to the Chief Officer. The president of the Municipality is the head of the political wing which comprises 35 elected representatives from 13 wards.

City-level departments and para-statal agencies in Urban Transport

The following departments and authorities in Navsari are responsible for managing one or more aspects of urban transport in the city. The roles and responsibilities of the Traffic Police, RTO and Collectors office have been explained in earlier sections of the report.

City-level departments and para-statal agencies in urban transport, Navsari



Public Work Department

Public Works Department in Navsari municipality is headed by the city engineer who is supported by one overseer (Deputy Engineer-level officer) and three assistant engineers. The Public Works Department is responsible for the construction of roads and its related works. Major work in transport sectors includes the construction of main asphalt and concrete roads and widening of existing roads, construction of ring roads and development of TP roads and road marking, and improvements including block paving on city roads, solving day-to-day traffic problems, including the development of dividers or traffic *patta* and installation of automatic traffic signals.

Town Planning Department

The Town Planning Department is responsible for implementing the DP by implementing TP Schemes. Navsari Nagarpalika has prepared four Town Planning Schemes. The Town Planning Department is also responsible for giving building permissions in accordance with the building bye laws sanctioned by the Government of Gujarat.

Transport Profile

The key transport challenges facing the city include lack of traffic management and enforcement, growing use of motorized modes and lack of public transport leading to congestion and noise pollution on all major roads.

Road Infrastructure

Navsari, just 40 km from Surat is well-connected by NH 228, also known as Sabarmati - Dandi Highway. NH8 also passes through the city. The city lies on the Mumbai-Delhi railway link, one of the busiest railway routes in India. The nearest local airport is in Surat.

Navsari has good coverage of roads in the city. The city is well-connected through an internal road network of about 248 km, out of which 222 km is surfaced and the rest is unsurfaced. Recently block paving has been done around recreational areas like Dudhiya Talav (800m), Sharbatia Talav (500 m) and Unsikugaon (700 m). Majority of the roads in the city are narrow (17 ft or less).

Most city roads are paved from edge to edge; however no designated footpaths or cycle tracks are available.

Public Transport

Historically, the city had an urban bus service was being operated by GSRTC. However, the service was discontinued in 1988. Since then, the city has been making efforts to restart a public bus service through a private organization, but has not succeeded yet.

Due to absence of public bus service, rickshaws are the major mode of public transport in the city. Currently more than 4000 autos ply the city roads. The ease of availability and very nominal fares make them a preferred mode of transport.

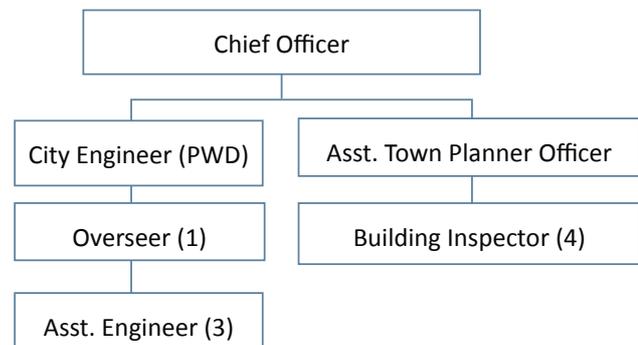
Parking Management and Pricing

Many streets in Navsari are encroached by private vehicles illegally parked along road-sides. There is no system of on-street parking management. Currently, the city has 4 designated parking lots situated mostly in the market area. Whereas all of these are pay and park, only one functions as the same and the rest are used to park vehicles for free.

Capacity Assessment of Technical Staff in Urban Transport

For the purpose of this training need assessment, all existing staff (dedicated and shared) in urban transport within the Navsari Municipality was identified and were interviewed for the TNA study.

Urban Transport Staff in Navsari



The following table indicates the educational qualifications of urban transport staff in Navsari. None of the staff interviewed has had a formal education in transport planning/ engineering.

Educational Qualifications of Staff in Navsari

| | |
|--|----|
| Number of staff interviewed | 10 |
| Number of staff with Masters Degree | 1 |
| Number of staff with Bachelors Degree | 2 |
| Number of staff with Diploma | 7 |
| Number of staff with education in transport planning | 0 |

The table below indicates the awareness of technical staff about sustainable transport concepts. A majority of the staff interviewed were not aware about NUTP and its guiding principles. The awareness about various aspects of sustainable transport including the design and construction of complete streets, parking management and urban bus services was also observed to be low.

Awareness of sustainable transport concepts in Navsari

| | Fully aware | Somewhat aware | Not aware at all | No Answer |
|--|-------------|----------------|------------------|-----------|
| National Urban Transport Policy | 0 | 3 | 7 | 0 |
| Role of sustainable urban transport in ensuring equity | 0 | 2 | 8 | 0 |
| Role of sustainable urban transport in energy security and mitigating climate change | 1 | 2 | 7 | 0 |
| Concept of "complete streets" | 0 | 2 | 8 | 0 |
| Managing urban bus services | 0 | 0 | 0 | 0 |
| Parking management and pricing | 0 | 2 | 8 | 0 |

The following table presents the capacities among staff in Navsari to successfully implement urban transport projects.

Capacity in Planning and Implementing Sustainable Transport in Navsari

| | Fully aware | Somewhat aware | Not aware at all | Not relevant |
|--|-------------|----------------|------------------|--------------|
| Use of GIS and other modelling software for transport planning | 0 | 1 | 9 | 0 |
| IRC design standards for roads | 0 | 1 | 9 | 0 |
| Bus operations and route planning | 0 | 4 | 6 | 0 |
| Standard Operating Procedures for bus services | 0 | 2 | 8 | 0 |
| Using PPP for transport and parking management | 0 | 2 | 8 | 0 |
| Procurement, contracting and monitoring of consultants | 1 | 1 | 8 | 0 |

A general lack of awareness was observed regarding processes for implementing urban transport including IRC codes for road construction, managing urban services and PPP mechanisms for infrastructure development.

The technical staff in Navsari also shared their vision for improving urban transport in the city. Select ideas that were shared are presented in the box below.

“The city has a good road network in terms of connectivity and coverage but encroachment by hawkers makes it difficult for pedestrians to walk comfortably.”

“A considerable part of the town is the old walled area where making improvements and enforcement is a challenge”

“Well-developed business areas in the 4 TPs.”

“There is a need for more parking spaces in the city”

These views expressed by the technical staff bring to light the following concerns regarding understanding of sustainable transport in Navsari:

- There is an understanding among staff on improving public transport systems in the city.
- senior administrators understand sustainable transport well. They are concerned about safeguarding the interests of pedestrians and other vulnerable groups
- The vision of better urban transport among technical staff is largely auto oriented and reflects traditional engineering thinking.

In addition to identifying knowledge and skill gaps in urban transport, the questionnaire-based assessment also identified key organizational and management training needs. The top three short-term needs requiring immediate training as identified by the Navsari staff are as follows:

- **Human resource management**
- **Proposal/project preparation**
- **Media handling and management**

Based on the questionnaire survey, interviews and UMC’s assessment of staff capacities, the following training needs in sustainable urban transport are identified for Navsari:

Top training needs for Navsari

| Training Area | Target Audience | Training Methodology |
|--|-------------------------|--|
| Urban Transport solutions for inner-city areas | ULB | Classroom training and exposure visits |
| Design of streets and intersections that are pedestrian and cyclist-friendly | ULB | Classroom training, field visits and workshops |
| Organizing IPT system in the city | ULB, RTO | Classroom training and exposure Visits |
| Introducing intra-city and intercity urban bus service | ULB, Collector’s Office | Classroom training and exposure Visits |

KEY STRATEGIES AND RESOURCES FOR TRAINING

For the successful implementation of sustainable urban transport projects in Gujarat, systematic training, study tour visits and reorientation exercises are required. Utilizing appropriate approach for training and capacity-building will help urban transport staff become more proficient at their current jobs and will equip them with the skills to plan and implement sustainable transport projects in their cities. This chapter provides key strategies on training at various levels of employees in the ULB and development authorities.

Capacity Enhancement Strategy for Gujarat

The following tactics are suggested in order to foster a conducive environment for training in the state.

Creation of job descriptions for unique staff positions

Drafting proper job descriptions is the first step towards prioritizing training needs in ULBs. The job descriptions for all staff (permanent and shared) should be drafted or reviewed where present. Necessary changes to those job descriptions should be identified and analyzed in light of the new thinking towards integrated sustainable transport and likely changes in the institutional structures in the sector. Job descriptions for future dedicated staff in urban transport should be drafted. Based on the job descriptions, a gap analysis between current skills and required skills of all staff should be undertaken.

Maintaining a staff database at the ULB

A detailed sector-wise database of all employees should be maintained in ULBs.

Constitute a training cell in UD&UHD

A state-level training cell should be constituted which keeps tab of training needs of ULB staff in various sectors. The training cell should maintain a database all employees of the ULBs, of different levels of officers showing intervals and details of training received in their careers. The database should also include a list of eligible employees for various training programs which would be prepared in a participatory manner with concerned departments. The training cell should also maintain a list of training providers in various sectors and work on developing a partnership with them to ensure that training is demand-driven and specific.

Constitute a policy on job rotation

Administrative heads and management staff of various departments in ULB undergo frequent job rotation. It is also observed that because of shortage of staff at all levels; technical staff is shared/rotated across various departments within the ULB. It is recommended that UD&UHD develop a job rotation policy to assist ULBs in structured job rotation after evaluating the aptitude and knowledge base of the staff. An induction training course for various sectors should also be developed to equip staff to smoothly transition into their new job profile.

Adopt training modules by category

Depending on needs of individuals and the nature of work carried out, training areas should be defined and a variety of training methods adopted for different levels of officials in the organization. Different categories of ULB staff and their training needs are described in further sections.

Training as a prerequisite to Promotion

Training should be made prerequisite to promotion to ensure that all staff is well acquainted with current trends and happening in their sector. Minimum person-days of annual training could be made mandatory for employees for promotions or grade changes. 8 person-days of training for administrators and managers and 4 person-days of training .

Training Budget

ULBs should allocate a fixed amount in the yearly budget for training and exposure visits in various sectors.

Sustainability of capacity-building programs

Along with training inputs, it is recommended that the Government of Gujarat also undertake the following reforms to become an efficient and effective service-oriented institution:

- Rationalization of institutional structure in urban transport at state and city-level.
- Formation of an urban transport cell in municipal corporations.
- Implementation of 74th Amendment to the constitution.

Training needs for each category of ULB Staff and Elected Officials

The earlier section provides a comprehensive list of specific training areas in which to foster a better understanding and implementation of sustainable transport in Gujarat. This section provides suggested training modules for various levels of ULB staff in urban transport management. The Training requirements have been identified for all unique positions of all departments of the ULB.

Staff Categories

1. **Executive Officers and Senior Management**
This category of staff includes administrators and senior management including the Commissioner, Deputy Municipal Commissioners, Zonal heads and CEOs of Government Special Purpose Vehicles. The training requirements for this category primarily focus on leadership, direction setting and management.
2. **Managerial/ Supervisory Staff:**
Management/ Supervisors are responsible for the quality and efficiency of services in various departments of the Corporation. This category would include chief engineers, superintending engineers, chief city planner and general managers of Government special purpose vehicles. The training areas for this category include advanced functional knowledge on sustainable urban transport and managerial aspects of successfully planning and implementing projects.
3. **Technical Staff:** The technical staff actually carries out the tasks associated with implementing projects on the ground. Skilled technical staff are crucial to ensuring efficient and effective service delivery. This group should include Assistant Engineers, Sub Engineers, Assistant Town Planners, and Field Staff, etc., and the training areas for this category focus on enhancing knowledge in functional areas of transport and improving technical skills.
4. **Elected Officials :** The role of elected officials is to safeguard public interest. They are often the final decision-making authority on several improvement projects in the city. This category would include the Mayor, Standing Committee members and councillors. The training areas for this group focus on goal-setting, leadership and current trends and ideas in urban transport and land-use planning.

The table on the adjacent page presents a list of training modules for these staff categories.

Training Modules for Different Staff Categories in ULB

| Category of ULB staff | Training Areas |
|--|---|
| Executive officers and senior management | Visioning and goal setting for transport |
| | Urban management |
| | Role of private-sector participation |
| | Institutional reforms in urban transport |
| | Governing laws, rules and regulations |
| | Best practices in transport |
| | Public and media relations |
| | Emerging financial models in transport |
| Managerial/ supervisory staff | Best practices in transport |
| | Transport planning and budgeting |
| | Project formulation and proposal writing |
| | Trends, reforms, policy changes in transport at national and state level |
| | Recruiting and monitoring of consultants |
| | Understanding contract mechanisms |
| | Inter-departmental coordination |
| | Use of technology |
| Technical staff | Trends, reforms, policy changes in transport at national and state level |
| | Best practices in transport |
| | Policies, rules, regulations and guidelines for various urban transport elements |
| | Engineering and technical skills relating to the planning and design of transport systems |
| | Use of technology |
| | Recruiting and monitoring consultants |
| Elected officials | Best practices in transport |
| | Trends, reforms, policy changes in transport at national and state level |
| | Transport and equity |
| | Role of private-sector participation |
| | Fostering community involvement |

The table on the following page presents a comprehensive list of training areas for the State.

Knowledge, Technology and Skill-Enhancement Areas for Training in Gujarat

The following table presents a comprehensive list of training areas in urban transport for small cities in Gujarat

Training Areas

Department/ Authority

Comprehensive Planning for Urban Transport

| | | |
|---|---|-----------------------------------|
| 1 | Visioning and goal setting for sustainable transport | UD&UHD,ULB, Development Authority |
| 3 | Integrating transport plan with statutory master plan | UD&UHD,ULB, Development Authority |

Public Transport and IPT

| | | |
|----|---|---|
| 7 | Planning for an appropriate organized public transport system | ULB |
| 9 | Formation of Bus SPV for bus operations | ULB |
| 9 | Traffic demand surveys for route planning and preparing PT plan | Bus companies, ULB |
| 11 | PPP contracts for bus operations | ULB |
| 13 | Infrastructure requirements such as depots & terminal for bus systems | ULB |
| 15 | Integrating organized PT with other para transit modes | ULB,Development Authority, RTO, Collectors Office |
| 17 | Organization and management of para transit | ULB,Development Authority, RTO, Collectors Office |

Street Design with a focus on Pedestrian and Cycle Safety

| | | |
|----|--|----------------------------|
| 19 | Principles and elements of complete street design | ULB, Development Authority |
| 20 | Conducting Primary surveys such as street audits and pedestrian counts | ULB, Development Authority |
| 21 | Standards and guidelines including IRC codes for footpath and cycle track construction | ULB, Development Authority |
| 22 | Intersection Design for pedestrian and cyclist safety | ULB, Development Authority |

Parking Management

| | | |
|----|---|-----|
| 23 | Formulating and adopting a progressive parking policy | ULB |
| 25 | PPP for on-street parking enforcement and management | ULB |

Knowledge, Technology and Skill- Enhancement Areas for Training in Gujarat

Training Areas

Department/ Authority

Pedestrian and Transport Oriented Development

| | | |
|----|-------------------------------------|------------------------------------|
| 27 | Revitalizing old city areas | ULB |
| 28 | Pedestrian oriented micro planning | ULB, Development Authority |
| 29 | Reorientation of zoning regulations | ULB, Development Authority |
| 31 | Transit Oriented Development (TOD) | UD&UHD, ULB, Development Authority |

Administration and Management Areas

| | | |
|----|--|----------------------------|
| 32 | Proposal/project preparation | ULB, Development Authority |
| 33 | Working with elected representatives | ULB |
| 34 | Information, education and communication | ULB |
| 35 | Media handling & management | ULB, Development Authority |
| 36 | Leadership & team building | ULB, Development Authority |
| 37 | Human resource management | ULB, Development Authority |

Training Providers in Urban Transport

The role of training providers is to organize training programs and workshops which cater to the training needs of city managers identified through this study. This section provides a list of training providers in India which provide training in the urban transport sector. It includes academic institutions, research organizations, nonprofit companies and technical advisories. The list has been collated based upon secondary research as of April 2013.

Centers of excellence in urban development & urban transport, MoUD

The Ministry of Urban Development, Government of India, has established 13 'Centers for Excellence' in the area of urban development and urban transport. These centers were selected from among national level institutes and organizations of repute who demonstrated long-term expertise and quality work either in urban development or urban transportation. Centers of excellence would join hands with municipal bodies to work on specific issues in the sector, capacity-building, promoting awareness, research and training on specific topics in these areas.

| Center Name | Focus Area | Contact |
|---|--|--|
| Administrative Staff College of India Hyderabad | Municipal service delivery, urban reforms and public private partnership | Director-General Bella Vista, Raj Bhavan Road, Khairatabad, Hyderabad 500 082, India. Tel : +91-40-66533000. Fax : +91-40-23312954 email: skrao@asci.org.in |
| Centre for Environment and Development Thiruvananthapuram | Waste water management and solid waste management | Centre For Environment And Development (CED) Thozhuvancode, Vattiyoorkavu P.O, Thiruvananthapuram – 695 01. Website:www.cedindia.org |
| Centre for Science and Environment, New Delhi | Sustainable water management | Centre for Science and Environment 41, Tughlakabad Institutional Area New Delhi-110062, India Phone: (91) (11) 29955124, 29956110, Fax: (91) (11) 29955879 Email: cse@cseindia.org |
| Indian Institute of Management Bangalore | Urban administration and financial management | Centre for Public Policy IIMB Bannerghatta Road, Bangalore-560076 Tel: 91-80-26993323 Fax:91-80-26584050 / 26993359 email:cpp@iimb.ernet.in web: www.iimb.ernet.in |
| Indian Institute of Technology Guwahati | Integrated land use planning & water resource management | Indian Institute of Technology Guwahati Guwahati 781039, Assam, India Tel : +91 - 361 - 2690401 (O) Fax : +91 - 361 - 2692321 e-mail: director [AT] iitg.ernet.in |

| Centre Name | Focus Area | Contact |
|--|---|---|
| Indian Institute of Technology Chennai | Decentralised waste water management and PPP | Indian Institute of Technology Madras Chennai - 600 036 Phone : +91 (44) 2257 8100/8101 |
| Integrated Research and Action for Development(IRADe) , New Delhi | Climate change vulnerability and adaptation | C-80, Shivalik, Malviya Nagar, New Delhi - 110017 Telephone:+91 11 2667 6181 Fax:+91 11 2667 6180 |
| Lal Bahadur Shastri National Academy of Administration Mussoorie | Urban development and management | Lal Bahadur Shastri National Academy of Administration, Mussoorie-248179 Uttarakhand Website: http://www.lbsnaa.gov.in |
| The Energy and Resources Institute New Delhi | Urban development | Director-General Darbari Seth Block, IHC Complex, Lodhi Road, New Delhi - 110 003, INDIA Tel:+91-11-2468 2100/ 41504900 Fax: +91-11-24682144/ 24682145 |
| Indian Institute of Technology Delhi | Public transit planning, design and optimization with special focus on BRT; integrating of urban planning, traffic flow, use of ITS, impact / benefits to environment including NMV; road safety factors in urban areas | TRIPP, Indian Institute of Technology, Hauz Khas, New Delhi - 110 016 india Phone: 91-11-26596361, 26858703 Fax: 91-11-6858703, 26851169 email:maresh@cbme.iitd.ernet.in |
| CEPT University Ahmedabad | Land use-transport integration, transit oriented development; BRT planning & management; fiscal tools for urban transport management; transit impact assessment, social and environmental aspects of urban transit; sustainable urban transport | Director (CoE-UT) CEPT University, Kasturbhai Lalbhai Campus, University Road, Ahmedabad-380009, Gujarat, India. Tel: +91-79-26302470 / 26302740 Fax: +91-79-26302075 |
| National Institute of Technology Warangal | Strategy for improving mass transit patronage; modelling urban growth landuse-transport integration; development of capacity analysis for urban streets; is based traffic & road safety management system; modelling & mapping environmental pollution. | National Institute of Technology, Warangal - 506004, A.P, INDIA Phone: +91-870-2459191 FAX : +91-870-2459547 |
| Indian Institute of Technology Chennai | ITS application in urban areas; urban transport systems planning; urban transportation infrastructure management. | Transportation Engineering Division Department of Civil Engineering IIT Madras Chennai 600 036 |

Centre for Green Mobility (CGM)

Centre for Green Mobility is an Ahmedabad-based non-profit organization that support local governments to implement sustainable urban transport solutions. Currently, CGM is providing technical support to the cities of Bhopal, Jaipur and Vadodara on NMT initiatives. CGM conducts workshops and trainings on NMT and BRT.

Contact:

Chief Executive Officer
Centre for Green Mobility,
1, Sigma Corporates - I, 2nd Floor,
b/h Rajpath Club, off S G Highway,
Ahmedabad 380059
Phone: +91-9725005514
Email: anuj@cgm.org.in

Central Institute of Road Transport (CIRT)

CIRT offers management development programs covering general management, transport operations and maintenance engineering. The programs are meant for practising managers in STUs and other organizations operating transport services besides road transport officials. The Institute undertakes consultancy and research assignments on transport policy, transportation planning, traffic management, maintenance management, materials management, human resource management and management information systems.

Contact:

Central Institute of Road Transport
Bhosari, Pune - 411026, India
Phone: +91-20- 67345300
Fax: +91-20-67345407
Website: <http://www.cirtindia.com>

EMBARQ

EMBARQ is an international non-profit whose mission is to catalyze and help implement sustainable transport solutions to improve quality of life in cities. Since 2002, the EMBARQ network has expanded to Mexico, Brazil, China, India, Turkey and the Andean Region, collaborating with local transport authorities to reduce pollution, improve public health, and create safe, accessible and attractive urban public spaces. EMBARQ India started activities in 2006 in Mumbai and has since then expanded to the cities of Bangalore and Delhi. Embarq has published several resources on bus operations and BRT design and also provides training in these areas.

Contact:

Embarq India
Godrej and Boyce Premises Gaswork Lane,
Lalbaug Parel Mumbai 400012 India
Tel: +91-22-24713565

Engineering Staff College of India (ESCI), Hyderabad

Engineering Staff College of India (ESCI) is a unique institution which deals with the professional development of engineers & executives. ESCI was set up in October 1981 by the premier body of professional engineers of India, The Institution of Engineers (India). ESCI has almost three decades of experience in imparting training in different disciplines such as climate change, civil & transportation engineering, environment management, information technology, management & technology, power & energy, quality & productivity, water resources development, as well as providing consultancy services to the industry and government agencies.

Contact:

Old Bombay Road, Gachibowli,
Postal Code : 500032
Hyderabad
Andhra Pradesh, India
Phone : +91-40-66304100/ 23000465
Fax : +91-40-23000336 /fax@escihyd.org
Email : ic@escihyd.org
Web Site : www.escihyd.org

Indian Institute for Human Settlements (IIHS)

The Indian Institute for Human Settlements, the promoter of the IIHS University, is a Section 25 not-for-profit company under the Indian Companies Act. It has been brought into existence, nurtured and led by a group of eminent Indians from all walks of life. The IIHS functions out of two city campus facilities in New Delhi and Bengaluru. IIHS organizes residential training courses throughout the year in areas such as GIS applications in planning, transport and urban development.

Contact:

Head of Operations, IIHS Bengaluru,
City Campus No. 197/36, 2nd Main Road, Sadashivanagar,
Bangalore 560080, India
Tel: +91-80-67606666

Institute of Urban Transport (IUT)

Institute of Urban Transport was set-up in 1997 with the objective of promoting and coordinating urban transport, in India. The membership of the institute includes academics, architects, economists, engineers, transport planners, town planners and professionals from various disciplines. The institute manages the affairs of the National Urban Transport Information Centre of the Ministry of Urban Development, which has been set-up to compile data on urban transport in scientifically designed formats and maintain it methodically. IUT publishes various toolkits and organizes training workshops in urban transport areas such as road safety, street design, bus operations etc. in partnership with national and international experts.

Contact:

Director General,

Institute of Urban Transport

1st Floor, Anand Vihar Metro Station Building,

(Entry adjacent to Gate No 1), Delhi - 110 092

Tel.: (91) 11 66578700- 709 (10 lines)

E-mail : iutindia@gmail.com,

Website : www.iutindia.org

The Institute for Transportation and Development Policy (ITDP)

The Institute for Transportation and Development Policy (ITDP) is an international non-profit founded in 1985 to promote environmentally sustainable and socially equitable transportation worldwide. ITDP works with city governments and local advocacy groups to implement projects that reduce poverty, pollution, and oil dependence. ITDP India works in Chennai, Pimpri-Chinchwad, Pune, and Rajkot. In 2009, with technical support from ITDP, Ahmedabad's Janmarg bus rapid transit (BRT) system opened and earned the city the 2010 Sustainable Transportation Award. ITDP supports local government in planning and executing BRT infrastructure and systems for pedestrian and cyclist safety and comfort, parking management, and pricing. ITDP also works on sustainable transport policy to encourage reduced car use and transit-oriented development. ITDP has provided training in the areas of BRT, operational planning and street design.

Contact:

Senior Program Director

ITDP India

16/14, First Floor, 2nd Street Nehrunagar

Adyar, Chennai-600020, Tamilnadu,

Tel:+91- 44- 45562426

GIZ International Services: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

GIZ was established in 1975 as a private company owned by the German Federal Government with two registered offices in Eschborn and Bonn.

GIZ International Services (GIZ IS) started its activities in India in 2006 concentrating its portfolio on projects with international organizations, governments, foundations and companies with worldwide operations. Currently, there are 69 international and national staff working for GIZ IS in India to support on vocational education, corporate social responsibility, environment and energy, but extend across the full range of themes covered by GIZ. Projects are currently being implemented throughout the country on behalf of the European Commission, Indian state governments and international companies. GIZ is supporting the SUTP project in India. It has published various resources on transport planning and provides training in the areas of pedestrian and cycle systems, public transport etc.

Contact:

Regional Director South-Asia & South-East-Asia

GIZ International Services Deutsche Gesellschaft für

Internationale Zusammenarbeit (GIZ) GmbH

S-35 A, Panchsheel Park

New Delhi 110 017 India

Tel: +91-11- 47773500

Email: hans-h.dube@giz.de

www.giz.de

National Institute of Urban Affairs (NIUA)

National Institute of Urban Affairs (NIUA) is a premier institute for research, training and information dissemination in urban development and management. Established in 1976 as an autonomous body under the Societies Registration Act, the Institute enjoys the support and commitment of the Ministry of Urban Development, Government of India, state governments, urban and regional development authorities and other agencies concerned with urban issues.

Contact:

Director, NIUA

National Institute of Urban Affairs

Core 4B, India Habitat Centre, Lodhi Road, New Delhi 110003

Tel: +91-11-24643284/24617517

National Transportation Planning and Research Centre (NATPAC)

National Transportation Planning and Research Centre (NATPAC) was established in 1976 as a Division of Kerala State Electronics Development Corporation (KELTRON), a Public Sector Enterprise under the Government of Kerala. In 1982, NATPAC was reconstituted as an R&D institution under the Department of Science, Technology and Environment, Government of Kerala. The Centre undertakes research, training and consultancy work in the fields of traffic engineering and transportation planning, highway engineering, public transport system, alternate options for transport system, transport energy, inland water transport, tourism planning and rural roads.

Contact:

National Transportation Planning and Research Centre
Sasthra Bhavan, Pattom Palace (PO), Thiruvananthapuram,
Kerala; Tel : + 91-471-2548200/2548209
Fax : +91-471-2543677
Email: natpac@asianetindia.com

Urban Management Centre(UMC)

The Urban Management Centre (UMC) is a not-for-profit organization based in Ahmedabad that works towards professionalizing urban management in India and South Asia. UMC provides technical assistance and support to city governments in areas of urban water & sanitation, transport, institutional frameworks and heritage and facilitates change through peer-to-peer learning processes.

UMC combines its network of experts, resource people and training organizations with adult learning methodologies, tailor-made capacity building plans, study tours and internships tools to create specific training programs.

Contact:

Director
Urban Management Centre(UMC)
c/o III Floor, Ahmedabad Urban Development Authority
Usmanpura, Ahmedabad - 380 014, India
Email:info@umcasia.org

Resources and Publications on Sustainable Urban Transport

| Urban Transport Parameter | Title | Organization | Link |
|---|---|-------------------------------------|---|
| Design and construction of “complete streets” that are walking and cycling friendly | Guidelines and toolkits for urban transport development in medium sized cities in india : module five : non motorized transport | MoUD, ADB | http://sti-india-uttoolkit.adb.org/ |
| | Better streets, better cities: A guide to street design in urban India | ITDP, EPC | http://www.itdp.org/documents/BetterStreets111221.pdf |
| | Street design guidelines | UTTIPEC, DDA | http://uttipec.nic.in/writereaddata/linkimages/7554441800.pdf |
| Create dense and inter-connected street networks that enhance accessibility | Guidelines and toolkits for urban transport development in medium sized cities in india : module one: cmp | MoUD, ADB | http://sti-india-uttoolkit.adb.org/ |
| | Urban road safety toolkit | MoUD, TRIPP-IIT-Delhi | http://www.iutindia.org/CapacityBuilding/Toolkits.aspx |
| | The town planning mechanism in gujarat, india | The World Bank World Bank Institute | http://www.hcp.co.in/file_manager/publications/Town-Planning-of-Gujarat_Research-Paper.pdf |
| Ensure efficient use of ROW through traffic management and organized and paid parking | Guidelines and toolkits for urban transport development in medium sized cities in india : module four : parking | MoUD, ADB | http://sti-india-uttoolkit.adb.org/ |
| | Guidelines for road markings | UTTIPEC, DDA | http://uttipec.nic.in/writereaddata/linkimages/5074369330.pdf |

| Urban Transport Parameter | Title | Organization | Link |
|---|---|---|---|
| Support high quality public transport which is reliable, comfortable and frequent | Bus Karo: A Guidebook on Bus Planning & Operations | EMBARQ | http://www.embarq.org/en/bus-karo-a-guidebook-bus-planning-operations |
| | Guidelines and Toolkits for Urban Transport Development in Medium Sized Cities in India : Module Two: BRT | MoUD, ADB | http://sti-india-uttoolkit.adb.org/ |
| | Guidelines and Toolkits for Urban Transport Development in Medium Sized Cities in India : Module Three: Bus Service | MoUD, ADB | http://sti-india-uttoolkit.adb.org/ |
| | Urban Bus Toolkit: Tools and Options for reforming urban bus systems | The World Bank, PPIAF | http://www.ppiaf.org/sites/ppiaf.org/files/documents/toolkits/UrbanBusToolkit/assets/home.html |
| | TCRP Report 118 : Bus Rapid Transit Practitioner's Guide | Transportation Research Board | http://www.fltod.com/research/bus_rapid_transit/transit_cooperative_research_program_bus_rapid_transit_practitioners_guide.pdf |
| | Bus System Toolkit | MoUD, DFID, Wilbur Smith Associates | http://www.iutindia.org/CapacityBuilding/Toolkits.aspx |
| Maintain compact city footprint by facilitating public transport oriented development | Transit Oriented Development (TOD) Road Map for Delhi | UTTIPEC, DDA | http://uttipec.nic.in/writereaddata/linkimages/8729211245.pdf |
| Strengthen and improve intermediate public transport for last mile connectivity | Toolkit for public cycle sharing system | MoUD, ITDP | http://www.urbanindia.nic.in/programme/ut/PublicCycleSharingToolkit.pdf |
| | The Alwar Vahini Story : Transforming Town Urban Transport | District Administration, Alwar | http://alwarvahini.com/avstory.html |
| Urban transport planning and institutional framework | PPP TOOLKIT for Improving PPP Decision-Making Processes | Ministry of Finance, GoI | http://toolkit.pppindia.com/urban-transport/module1-intro.php?links=intro1 |
| | Toolkit For Alternative Analysis | MoUD, DFID, Wilbur Smith Associates | http://www.iutindia.org/CapacityBuilding/Toolkits.aspx |
| | Toolkit For Institutional Framework for Urban Transport | MoUD, DFID, Wilbur Smith Associates, CRISIL | http://www.iutindia.org/CapacityBuilding/Toolkits.aspx |
| | Toolkit For PPP in Urban Transport | MoUD, DFID, Wilbur Smith Associates | http://www.iutindia.org/CapacityBuilding/Toolkits.aspx |

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LIST OF CITY MANAGERS INTERVIEWED FOR TNA

| | City | Name | Designation | Department |
|----|-----------|----------------------|--|--|
| 1 | Bhavnagar | Mr. P.J.Chudasama | Dy. Engineer (I/C Executive Engineer Mechanical) | Engineer Branch, Bhavnagar Municipal Corporation |
| 2 | Bhavnagar | Mr. Ajay Bhatt | Town Development Officer | Town Development Dept.,Bhavnagar Municipal Corporation |
| 3 | Bhavnagar | Mr. Himanshu Bhatt | Additional Assistant Engineer | City Engineer office, Bhavnagar Municipal Corporation |
| 4 | Bhavnagar | Mr. K.M.Joshi | Town Planning Officer | Town Planning Dept., Bhavnagar Municipal Corporation |
| 5 | Bhavnagar | Mr. V.H.Maru | In-charge Additional Assistant Engineer | Bhavnagar Municipal Corporation |
| 6 | Bhavnagar | Mr. L.M.Patel | Additional Assistant Engineer | Town Development Dept.,Bhavnagar Municipal Corporation |
| 7 | Bhavnagar | Mr. Rajesh Dhameliya | Additional Assistant Engineer | Engineer Road Dept., Bhavnagar Municipal Corporation |
| 8 | Bhavnagar | Mr. R.N.Gosai | Dy. Executive Engineer | Bhavnagar Area Development Authority |
| 9 | Bhavnagar | Mr. Hussain Mankad | Director | VitCOS Private Bus Operator |
| 10 | Jamnagar | Mr. M.K. Kumbharana | Dy. Municipal Commissioner | Jamnagar Municipal Corporation |
| 11 | Jamnagar | Mr. Jagdish V.Sedani | Town Planning (Estate) Officer | TPO Estate, Jamnagar Municipal Corporation |
| 12 | Jamnagar | Mr. Shailesh Joshi | City Engineer | Jamnagar Municipal Corporation |
| 12 | Jamnagar | Mr. Rajesh Vithalani | Planning Assistant | Jamnagar Area Development Authority |
| 13 | Jamnagar | Mr. Kirit Kansagra | Planning Assistant | Jamnagar Area Development Authority |
| 14 | Jamnagar | Mr. Deepak V.Nimavat | Assistant Town Planner | Jamnagar Area Development Authority |
| 15 | Jamnagar | Mr. R.R.Thaker | In-charge Building Supervisor | Jamnagar Area Development Authority |
| 16 | Jamnagar | Mr. Haresh Vaniya | Additional Assistant Engineer | Jamnagar Municipal Corporation |
| 17 | Jamnagar | Mr.Himanshu H.Jethva | Work Assistant | TPDP, Jamnagar Municipal Corporation |
| 18 | Jamnagar | Mr.Shaikh Shakil H. | Additional Assistant Engineer | TPDP, Jamnagar Municipal Corporation |
| 19 | Jamnagar | Mr.C.G.Rathod | Dy. Engineer | Jamnagar Municipal Corporation |
| 20 | Jamnagar | Mr.Narsh Patel | Dy. Engineer | Jamnagar Municipal Corporation |
| 21 | Jamnagar | Mr.Kiritkumar Bhatti | Dy. Engineer | Light Dept. Jamnagar Municipal Corporation |
| 22 | Jamnagar | Ms.Shital Vaghela | - | Town Planning Office, Jamnagar Municipal Corporation |
| 23 | Jamnagar | Mr.Nayan Bhatt | Work Assistant | Civil Dept, Jamnagar Municipal Corporation |
| 24 | Jamnagar | Mr.Shailesh Nimavat | - | Jamnagar Area Development Authority |

| | | | | |
|----|----------|-----------------------|----------------------------|---|
| 25 | Jamnagar | Mr. K.P.Singh | City General Manager | JMSTSL, Bus Operator |
| 26 | Junagadh | Mr. M.C.Dabhi | Senior Town Planner | Junagadh Municipal Corporation & Junagadh Urban Development Authority |
| 27 | Junagadh | Mr. Jignesh Parmar | E.D.P. Manager | Junagadh Municipal Corporation |
| 28 | Junagadh | Mr. Hitesh Vamja | I/C Dy. Executive Engineer | Road Dept., Junagadh Municipal Corporation |
| 29 | Junagadh | Mr. Viral Joshi | Environment Engineer | Junagadh Municipal Corporation |
| 30 | Junagadh | Mr. M.M.Kavadia | Dy.Mamlatdar | Junagadh Urban Development Authority |
| 31 | Junagadh | Mr. Vijay Kasia | Dy.Mamlatdar | Junagadh Urban Development Authority |
| 32 | Junagadh | Mr. Shailendra Saxena | Private Operator | Vinayak City Bus Travel |

| | | | | |
|----|---------|----------------------|---------------------|---|
| 33 | Navsari | Mr. Raju Gupta | City Engineer | PWD, Navsari Nagarpalika |
| 34 | Navsari | Mr. Harsad Patel | Chief Officer | Navsari Nagarpalika |
| 35 | Navsari | Mr. Rohit M.Patel | Engineer | Water Works, Navsari Nagarpalika |
| 36 | Navsari | Mr. Yatin Patel | Engineer | Water Works, Navsari Nagarpalika |
| 37 | Navsari | Mr. Nitish M. Shah | Assistant Engineer | PWD, Navsari Nagarpalika |
| 38 | Navsari | Mr. Ratibhai Patel | Hydraulic Engineer | Water Works, Navsari Nagarpalika |
| 39 | Navsari | Mr. Yogeshbhai Ravut | Sub Engineer | PWD, Navsari Nagarpalika |
| 40 | Navsari | Mr. Rajesh Gandhi | Drainage Inspector | Drainage, Navsari Nagarpalika |
| 41 | Navsari | Mr. Dharmesh D. | Surveyor | Town Planning Dept, Navsari Nagarpalika |
| 42 | Navsari | Ms. Neha Tushar Sule | Town Planning Dept. | Navsari Nagarpalika |
| 43 | Navsari | Mr. Jayan Mehta | Planner | Private Firm |

CAPACITY ASSESSMENT QUESTIONNAIRE

Section II- व्यक्तिगत क्षमता प्रश्नावली (Individual Capacity Questionnaire)

Objective: to assess the human capacities and training needs within ULBs/UDAs

उद्देश्य: उज्जैन नगर निगम में मानव क्षमता और परिवहन क्षेत्र में प्रशिक्षण आवश्यकताओं का आंकलन

| | |
|--|--|
| Name of Individual नाम | |
| Designation/Department उपाधि/ विभाग/ शाखा | |
| Date दिनांक | |
| Time समय | |
| Gender (लिंग) | Male पुरुष Female महिला |
| M.No & E.Mail ID (संपर्क नंबर) | |

Sub section I - बुनियादी जानकारी (Basic Information)

1. Class / Position officer [select ONE]:
अधिकारी की श्रेणी [एक का चयन करें]:
 1. Class I
 2. Class II
 3. Class III
2. Age [Select ONE]
आयु [एक का चयन करें]
 1. Below 25 years
 2. 25 – 30 years
 3. 30 – 40 years
 4. 40 -50 years
 5. Above 50 years
3. Education [Select ONE]
शिक्षा [एक का चयन करें]
 1. Diploma
 2. Degree
 3. Post Graduate / Masters
 4. M.Phil. / Doctorate
 5. Other _____
4. Type of position [Select ONE]
पद का प्रकार [एक का चयन करें]
 1. Permanent
 2. Contract
 3. Deputation
5. Have you attended any training programmes / workshops / conferences / seminars related to transport? [Select ONE]

क्या आपने परिवहन से संबंधित किसी भी प्रशिक्षण/ कार्यक्रमों / कार्यशालाओं / सम्मेलनों में भाग लिया है? [एक का चयन]

1. YES [if Yes; how many?] [यदि हाँ, तो कितने ?]
 2. NO
6. Were the above relevant to your function/job duties? [Select ONE]
क्या वह प्रशिक्षण आपके कार्य से संबन्धित थे? [एक का चयन]
1. Not at all
 2. relevant
 3. highly relevant
7. Are you comfortable in trainings delivered in English language?
आप अंग्रेजी भाषा में दिये गए प्रशिक्षण से सहमत हैं?
1. Yes
 2. No
8. How did the training help you?
प्रशिक्षण से आपको किस रूप में मदद मिली ?
1. Increase in knowledge
 2. Increase in skills and hands on working
 3. Changed your attitudes
 4. Helped you network with other colleagues
9. What were the difficulties in not putting in to practice the learning?
प्रशिक्षण में प्राप्त सीखों पर अमल करने में किस प्रकार की काठिनाइयाँ रहीं?
1. Superiors did not agree
 2. Needed other resources
 3. No time
 4. No reason but did not implement

Sub section II - Thematic Trainings Needs Assessment (sustainable urban transportation)

जन परिवहन के क्षेत्र में प्रशिक्षण की आवश्यकता

10. Is the city currently implementing any sustainable transport projects? क्या आपके शहर में बढ़ते वाहनो को सुचारु रूप से नियंत्रित करने के लिए कोई नीति तथा प्रस्ताव रखे गए हैं?

Yes
No

11. Do you experience any knowledge gaps in implementing such projects?

इन प्रस्तावों को लागू करने के लिए आपको किस प्रकार के प्रशिक्षण की आवश्यकता है?

12. Please indicate your awareness in following table

निम्नलिखित क्षेत्रों में आपकी जागरूकता सूचित करें

| Sr.No. | Training Area प्रशिक्षण क्षेत्र | Awareness Level (जागरूकता का स्तर) | | |
|-----------------------|---|------------------------------------|------------------------------------|--------------------------------------|
| | | Fully Aware पूरी तरह से अवगत | Somewhat aware सीमित जानकारी | Not aware at all कोई जानकारी नहीं |
| 11.1 | Principles of integrating land use and public transport नगर विकास योजनाओं में जन परिवहन तथा भू उपयोग को एकीकृत करने के सिद्धान्त | | | |
| 11.2 | Aspects of public transport oriented/adjacent development ट्रांसिट ओरिएंटेड डेवलपमेंट (TOD) | | | |
| 11.3 | Indian Road Congress (IRC) Design Standards for Roads भारतीय रोड कांग्रेस (आईआरसी) के सड़क व मार्ग विकास हेतु मापदंड | | | |
| 11.4 | Any other street design guidelines अन्य मार्ग विकास दिशानिर्देश | | | |
| 11.5 | GIS based planning परिवहन योजनाओं की संरचना में GIS का उपयोग | | | |
| 11.6 | Procurement, contracting and monitoring consultants सलाहकारों और ठेकेदारों की नियुक्ति एवं निगरानी | | | |
| Traffic Lights | | | | |
| 11.7 | Design/ operation/ maintenance of traffic signals ट्रेफिक सिग्नलों का संचलन | | | |
| Parking | | | | |
| 11.8 | Identifying locations for creating parking पार्किंग हेतु उपयुक्त स्थानों का आवंटन | | | |
| 11.9 | Public Private Partnership (PPP) in Pay & Use parking पार्किंग नियंत्रण में जन निजी भागीदारी (पीपीपी) का प्रयोग | | | |

| Sr.No. | Training Area प्रशिक्षण क्षेत्र | Awareness Level (जागरूकता का स्तर) | | |
|------------------------------|---|------------------------------------|------------------------------------|--------------------------------------|
| | | Fully Aware पूरी तरह से अवगत | Somewhat aware सीमित जानकारी | Not aware at all कोई जानकारी नहीं |
| 11.10 | Integrated parking and public transport ticket पार्किंग तथा जन परिवहन का एकीकृत टिकट | | | |
| Public Transportation | | | | |
| | Route Planning | | | |
| 11.11 | Method of planning bus routes बस व्यवस्था का संचालन तथा रूट प्लानिंग | | | |
| 11.12 | Method of locating bus stops बस स्टॉप के लिए उचित स्थानों का आवंटन | | | |
| | Management of City Bus Services | | | |
| 11.13 | Ministry of Urban Development's guidelines for specifications of city buses. MOUD द्वारा जारी बसों के दिशानिर्देश | | | |
| 11.14 | Concept of off peak concessions, group discounts, etc. on public transport बसों का किराया निर्धारित करते हुए यात्रियों के हितों का संरक्षण | | | |
| 11.15 | Concept of PPP for maintenance of bus shelters बस स्टैंड के उन्नयन तथा आधुनिकरण के लिए जन निजी भागीदारी (पीपीपी) का प्रयोग | | | |
| 11.16 | Existence of Standard Operating Procedures for Bus Service बस सेवा संचालन के प्रबंध | | | |

13. Principles of Sustainable Urban Transportation

| S.N. | Training Parameters प्रशिक्षण प्राचल | Fully Aware पूरी तरह से अवगत | Somewhat aware थोड़ा जागरूक | Not aware at all बिल्कुल जागरूक नहीं |
|------|---|---------------------------------|--------------------------------|---|
| 12.1 | National Urban Transport Policy राष्ट्रीय शहरी परिवहन नीति (एनयूटीपी) | | | |
| 12.2 | National Mission on Sustainable Habitat (NMSH) (एनएमएसएच) | | | |
| 12.3 | Transportation and Health – impact on individual health परिवहन का स्वास्थ्य पर प्रभाव | | | |
| 12.4 | Transportation and Energy Security - use of fossil fuels by vehicles impacting overall energy security, introduction of fuel efficient vehicle technology, etc परिवहन और ऊर्जा सुरक्षा | | | |
| 12.5 | Transportation and Climate Change - mitigating impacts of climate change, GHG emissions by using fuel efficient vehicles, policies promoting walking/cycling/public transport, etc. परिवहन और जलवायु परिवर्तन: (साइकिल/सार्वजनिक परिवहन, नीतियों आदि को बढ़ावा देना) | | | |
| 12.6 | Equity and Transportation Planning – designing pro poor urban transportation, sensitization to the needs of differently-abled population, women, etc. परिवहन और सामाजिक विकास: शहरी गरीब, महिलाएँ, विकलांगों आदि के हित का संरक्षण | | | |
| 12.7 | Service level benchmarking for urban transportation functions like, infrastructure, public transport, etc, indicators and methodology शहरी परिवहन के विभिन्न उपायों का बेंचमार्किंग | | | |
| 12.8 | Generating public awareness (IEC) जन जागरूकता अभियान | | | |

Sub section III - Organizational Behavior/Management and Miscellaneous

14. Do you wish to undertake training in some/ all topics listed below:

क्या आप निम्नलिखित विषयों में प्रशिक्षण लेने ईच्छुक हैं?

| S.N. | Training Parameters | Required | | |
|------|--|--------------------------------------|-------------------------------------|---------------------------------------|
| | | Immediate (within next 1 year) | Midterm (within next 3 years) | Long-term (within next 5 years) |
| 13.1 | Human Resource Management मानव संसाधन प्रबंधन | | | |
| 13.2 | Proposal/project preparation प्रस्ताव / प्रोजेक्ट रिपोर्ट तैयार करना | | | |
| 13.3 | Media handling & management मीडिया का उचित उपयोग | | | |
| 13.4 | Working with elected representatives जन प्रतिनिधियों के साथ सुचारु रूप से काम करना | | | |
| 13.5 | Information, education and communication जन जागरूकता अभियान चलाना | | | |
| 13.6 | Leadership & Team Building नेतृत्व और टीम बिल्डिंग | | | |
| 13.7 | Conflict Resolution, Counselling and Ombudsmen विरोधों, विवादों का निराकरण | | | |
| 13.8 | Mentoring मेंटोरींग | | | |

Publications by Urban Management Centre(UMC)

Training Needs Assessment of City Managers In Urban Transport in Madhya Pradesh, 2013, ISBN 978-81-909120-3-7

What Works in water and Sanitation: Case studies from Urban Gujarat, 2013 ISBN 978-81-909120-4-4

Best Practices Sangrah (in Gujarati), edited and published by UMC under the PAS program, 2012, ISBN 978-81-909120-2-0

At the Core-Understanding Built Heritage of Surat and Rander, authored by Manvita Baradi and Meghna Malhotra, 2011, ISBN 978-81-909120-1-3

Afghanistan Urbanscapes, authored by Manvita Baradi and Meghna Malhotra, 2010, ISBN 978-81-909120-0-6

Mega Cities-Poised for Change: Leading Practices Catalogue, knowledge management by UMC, published by International City/County Management Association, 2007

Inclusive Development through Partnership and Reforms in Urban Management In Gujarat (2001- 2006), knowledge management by UMC, published by Gujarat Urban Development Company Limited, Government of Gujarat, 2007

Films by Urban Management Centre (UMC)

Lathi Gujarat, 2012 , Duration: 12 minutes

What Works- Ensuring Water Quality in SMC, 2011, Duration: 10 minutes

Performance Measurement and Improvement of Urban Gujarat, 2010, Duration: 9 minutes

Introduction to PAS program, 2009, Duration: 8 minutes

Inclusive Development through Partnership and Reforms in Gujarat, 2007, Duration: 13 minutes

Playground Design and Execution – in Nagapattinam and Cuddlore, Tamil Nadu under Post Tsunami Recovery Program 2005 – 2007, 2007 Duration: 16 minutes

Learning Beyond Borders : Afghanistan, 2009, Duration: 17 minutes

Strengthening Local Governance in Sri Lanka, 2008, Duration: 7 minutes

Final Film – CityLinks-Nagapattinam and Cuddlore, Tamil Nadu - Post Tsunami Recovery Program (2005 – 2007), 2007, Duration: 19 minutes

CityLinks Indore Jabalpur Bangalore (2002 – 2004), 2004, Duration: 17 minutes

Mainstreaming HIV/AIDS Program in City Governments, 2005, Duration: 15 minutes

Towards Professionalizing Urban Management, 2003, Duration: 13 minutes

Lessons Learned, Lessons Shared – ICMA Annual Conference and Study Tour 2005, Duration: 10 minutes



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