



Research & Consultancy Projects

Sustainable urban transport in less motorised countries: research and education

Sponsor: *Volvo Educational Research Foundations, Sweden*

Project team: *Dinesh Mohan, Geetam Tiwari, Anoop Chawla, Sudipto Mukherjee, S.R.Kale, Sanjeev Sanghi, Puneet Mahajan, Niladri Chatterjee*

Objective: To develop resources and expertise in the control of adverse health effects of road transport in as integrated a manner as possible and wide dissemination of this knowledge. This process involves: (a) prevention of pollution or crash from taking place; (b) controlling the effects of emissions and minimizing injuries once people use motorized modes and crashes occur; and (c) management of adverse health effects when they do occur.

Establishment of Centre of Excellence (CoE) in the area of urban transport

Sponsor: *Ministry of Urban Development, Government of India*

Project team: *Coordinator TRIPP*

Objective: The CoE will form part of a collaborative network set up by Ministry of Urban Development in support of its programme on urban transport at the national level. The centre will participate in the strengthening of country resources, in terms of information, services, research and training.

Public health impacts in urban environments of greenhouse gas emissions reduction strategies

Sponsor: *London School of Hygiene and Tropical Medicine, London.*

Project team: *Dinesh Mohan and Geetam Tiwari*

Objective: The overall project aim is to quantify the positive and negative impacts on health and well-being of greenhouse gas reduction strategies in urban areas of Europe, China and India and to develop and present the evidence in ways that are most relevant to major policy decisions in such areas as energy, housing/built environment, transport and food.

Estimation of emissions and fuel consumption of in-use vehicles in different driving conditions

Sponsor: *Petroleum Conservation Research Association (PCRA), India.*

Project team: *Geetam Tiwari, Dinesh Mohan and S.R. Kale*

Objective: Estimation of emissions and fuel economy on the basis of an average Indian driving cycle amongst different city sizes both in terms of infrastructure design and modal shares, and estimate emissions and fuel economy of different vehicles which are operating in this environment. A detailed methodology to document variation in traffic environment in a city (Delhi), and a methodology to select vehicles representing the vehicular fleet of the city will be developed. Vehicles thus selected will be tested on a vehicle dynamometer to estimate emissions and fuel economy. The project is expected to assist in better estimates of vehicular emissions in cities. It will also assist in estimating the impact of various traffic management strategies on vehicular emissions and fuel economy, and thereby help authorities in meeting local, national and international goals of emissions, fuel economy and ambient air quality.

Non motorised transport planning and design manual and policy guidelines for cities

Sponsor: *Climate Works Foundation, USA*

Project team: *Geetam Tiwari and Dinesh Mohan*

Objective: (i) To update the comprehensive manual for bicycle planning and infrastructure design (ii) To Review the benchmarking indicators from international literature and stakeholder consultations/workshops around manual/policy (iii) NMT policy as addendum to NUTP inclusive of walking, cycle rickshaws, hawkers/vendors, cycle CRT etc. (iv) Service level benchmarking methodology,

benchmarks and indicators and audit parameters to be developed for NMT infrastructure for planned CYLOS tool. (v) Audit on select corridors to calibrate and validate the framework, indicators and methodology. (vi) Case study application of policy and bike plan (vii) Launch, disseminations, advocacy to the city/state and national level policy and decision makers and capacity building of the NMT planners, designers and engineers at the city level.

Estimating risk to road users & impact of active traffic calming measures on vehicular speed in highway work zones

Sponsor: *Road Traffic Injuries Research Network, Mexico.*

Project team: *Geetam Tiwari*

Objective: The focus of this study is safety of workers and road users especially vulnerable road users (pedestrians, bicyclists, motorcyclists, etc.) present on highway work zones in India which includes the activities of Pillar 2 "Safer Roads and Mobility" considered under road safety as described in the Decade of Action Plan.

The proposed study aims at contributing to the development of guidelines for controlling speeds at highway work zones. The objectives of the study are: 1) to determine the speed characteristics of vehicles in highway work zones before and after the installation of Active traffic calming measures. 2) to determine the characteristics of and distribution of fatal crashes within highway work zones and risk to workers and road users and compare the differences of the distributions of work zone crashes and non-work zone crashes.

Promoting low carbon transport in India

Sponsor: *UNEP Risoe Centre, Technical University of Denmark, Denmark.*

Project Team: *Geetam Tiwari, Dinesh Mohan, K.R. Rao, Ambuj Sagar and S.R. Kale*

Objective: Create an enabling environment for coordinating policies at national level to achieve a sustainable transport system. The Project would assess the policies and actions that align climate policies and transport investments by developing "Transport Action Plans (TAP)" in cooperation with multiple stakeholders including industry associations, financial agencies and the different ministries of the Government of India.

Study of community design for traffic safety in India

Sponsor: *International Association of Traffic and Safety Sciences, Japan*

Project team: *Dinesh Mohan, Geetam Tiwari and Sudipto Mukherjee*

Objective: 1. To study the epidemiology of road traffic injury (fatal) patterns in six cities of India differentiated by population size and high and low rates of fatalities per unit population. 2. To understand the modal share of victims and vehicles involved in crashes and to estimate risk functions associated with different road users. 3. To obtain a preliminary understanding of road design from an engineering perspective, design of the built environment from a land-use perspective, and community design in a broader sense for control of road traffic fatalities in urban areas. 4. To suggest areas of detailed research for future studies.

Driver behavior study in India

Sponsor: *Nissan Motor Co Ltd., Japan.*

Project team: *Dinesh Mohan, Geetam Tiwari, Sudipto Mukherjee and Subhashis Banerjee*

Objective: 1. To understand driver behaviour characteristics in India to help introduce advanced driver assistance systems. 2. Clarify acceptance and characteristics of the systems that are under development and would be introduced to India. 3. Extract features of peculiar driver behaviour and seek opportunities of unique support function for India.

The **Transportation Research and Injury Prevention Programme (TRIPP)** at the Indian Institute of Technology Delhi, is an interdisciplinary programme focussing on the reduction of adverse health effects of road transport. TRIPP attempts to integrate all issues concerned with transportation in order to promote safety, cleaner air, and energy conservation. Faculty members are involved in planning safer urban and inter-city transportation systems, and developing designs for vehicles, safety equipment and infrastructure for the future. Activities include applied research projects, special courses and workshops, and supervision of student projects at postgraduate and undergraduate levels. Projects are done in collaboration with associated departments and centres at IIT Delhi, government departments, industry and international agencies.





Excerpts from "ROAD SAFETY POLITICAL MAPPING IN INDIA"

Prepared for the
Global Road Safety Partnership

By
Foundation for Innovation and Technology Transfer (FITT)
Indian Institute of Technology, New Delhi (India)

Road safety advocacy is a new field of action for Global Road Safety Partnership (GRSP) and the partners involved in the RS - 10 project. Therefore, GRSP wishes to initiate an assessment of the political settings and context at both a national and state level to identify levels of support for the road safety policy change. This assessment includes a political mapping of the various actors connected to the road safety legislative framework at national and state levels. The objective of this exercise is to inform the RS-10 project's advocacy strategy and activities to achieve GRSP'S objective of seeking to strengthen/close gaps in the current road safety legislations.

In support of the above objective, the present report provides some background and a mapping of the national political actors to understand the dynamics around the passing of the amended Motor Vehicles Act and the creation of a lead road safety agency, the National Road Safety and Traffic Management Board. The mapping includes a list of political actors and agencies/ministries at the national and sub-national level that are involved in, or influence, the formation and implementation of road safety policy decisions and legislation.

Against this backdrop, this study aims to develop a preliminary identification of the institutions and actors who have the power to influence the processes that can lead to final passage and implementation of legislation designed to improve road safety in India, and then to successful implementation of such legislation.

Specifically, the present study identifies the institutional and individual actors, and ranks them according to their interests and power to influence. The study team pursued a three-pronged strategy to develop a detailed map of the institutional and individual stakeholders. This included: (i) detailed background research into the existing and proposed legislative framework as it applies to road safety, including identifying the two crucial pieces of legislation designed to support greater road safety, viz., the proposed amendments to the existing Motor Vehicles Act of 1988, and the development of auxiliary laws and policies and programmes to support greater road safety, including formation of Road Safety and Traffic Management Boards at the national and state levels; (ii) content analysis of print and electronic media, and (iii) interviews with multiple senior administrators in various state transport departments responsible for state-level road safety.

A detailed identification of the critical path for the development of a stronger suite of policies, rules and programmes to support increased road safety was not a part of the scope of this study.

Road Safety is a multi-sectoral and multidimensional issue. It incorporates the development and management of road infrastructure, provision of safer vehicles, legislation and law enforcement, mobility planning, provision of health and hospital services, child safety, urban land use planning etc. In other words, its ambit spans engineering aspects of both, roads and vehicles on one hand and the provision of health and hospital services for trauma cases (in post-crash scenario) on the other." [Government of India (2007). Report of the Committee on Road Safety and Traffic Management, The Secretariat for the Committee on Infrastructure, Planning Commission, New Delhi, February 2007 (hereinafter, "Sundar Committee 2007").

Road Safety is a state subject in India, with the Central Government having little to no direct control over state transport laws and policies, or over their implementation, except setting the motor vehicles rules through the Central Motor Vehicles Rules (CMVR), 1989, and road standards through the Indian Roads Congress (IRC). It is worth noting here that the standard promulgated by the IRC does not have any statutory authority, and as such, IRC Standards are not mandatory for either the National or State Highways, or for any other road.

There is little to no coordination among different agencies. Besides, the agencies lack skilled professionals dedicated to road safety. Research issues are not being identified keeping in view the conditions in India, and research is not also being funded adequately.

As the Sundar Committee notes:

"[R]esponsibility for road safety is diffused and there is no single agency to deal with a range of problems associated with road safety. There is also no effective

mechanism for coordinating the activities of the different agencies dealing with road safety [...] [A] large number of organizations are involved in road safety. Authorities like the National Highway Authority of India (NHAI), various state public works departments, and local bodies are responsible for construction and maintenance of roads. State Transport Authorities are responsible for issue of driving licenses, registration of vehicles and fitness of vehicles. Local police is responsible for regulating traffic, enforcing laws and educating the public on road safety issues. Urban development authorities deal with land use and urban road planning. State and local health departments are responsible for medical care of accident victims. Insurance companies provide insurance cover and compensation. There is, however, little to no coordination among the different agencies. Besides, the agencies lack skilled professionals dedicated to road safety. Research issues are not being identified keeping in view the conditions in India, and research is not also being funded adequately. Furthermore, crash investigations are not carried out using modern technology and a scientific approach. The data on road accidents, injuries and mortality is both inadequate and scattered. The data is also not analyzed systematically to provide a basis for policy."

A potential gap in the path to improving road safety in India is that although the Central government provides the bulk of the funds to states for transport infrastructure, it has not explored its options with regards to linking road safety in states to funding. For instance, the Central Road Fund (CRF) provides funds for the development and maintenance of the national highways, state road networks, and for construction of rural roads, but the Central Government has not made improvement in road safety a condition for states receiving these funds. Legal options need to be explored to put such a linkage in place.

The Sundar Committee on Road Safety and Traffic Management report made the following key observations:

- Existing institutions are not fully equipped to deal with the increasing traffic on the roads or to adopt the advancements made in the techniques and technology that would promote road safety.
- The role of key ministries and public sector agencies in improving road safety is peripheral. It is not a priority area in their agenda for development.
- The NRSC [National Road Safety Council] does not have adequate statutory backing, budgetary resources or the mandate to be an effective organization for executing road safety plans in a missionary mode.

As originally proposed, the major provisions of the Motor Vehicle Act (MVA) Bill 2007 are:

1. Enhance specific pecuniary penalties for offences under MVA 1988, including provision of different penalties for first and subsequent violations.
2. Provide for civil penalty in addition to the existing criminal liability under the Indian Penal code in the case of rash and negligent driving.
3. Allow automobile association's recognized by state governments to issue driving certificates.
4. Exempt those holding driving certificates from a driving test for the issue of a license.
5. Create a Solatium Fund which is to be used to compensate hit-and-run accident victims.
6. Confer power to state governments to create inspection auditors by notifications.
7. Increase the powers to state governments in matters such as regulating stage and contract carriages, in regulating service operators, and creation of authorized testing stations.
8. Require the transport authorities to decide appeals within 45 days in case of refusal or revocation of driving licence, or record, in writing, the reasons if the case takes longer than that.
9. Empower the authority to suspend the driving licence on the spot for a period not exceeding three months if the authority is satisfied, after breath analyzer or any other test that the driver is under the influence of alcohol.
10. Empower the central government to permit the plying of vehicles with gross vehicle weight in excess of those specified in the rules subject to conditions specified by the central government.
11. Empower the central government to make rules for the design and materials used in constructing the bodies for goods carriage and medium of heavy passenger vehicles.
12. Omit Chapter X of MVA 1988 relating to "liability without fault in certain cases". Chapter X allows for a claim to be made against the owner of a vehicle involved in an accident which has caused death or permanent disablement. The



claimant is not required to prove that the incident was due to any wrongful act, neglect or default of the owner of the vehicle. This type of claim is not proposed to be compensated from the Solatium Fund [if the fault of the driver is sought to be established, the claim shall be decided by the civil court or Motor Accident Claims Tribunal, but if the claimant does not seek to establish the fault of the driver, compensation shall be based on the victim's income and age].

13. Replace the Second Schedule in MVA 1988 for a new one indicating the amount that the victim or his legal heirs shall be paid if he holds a valid insurance policy. The central government may revise the Schedule keeping in view the cost of living. Any compensation claim other than within the structured amount shall be heard by the Motor Accidents Claims Tribunal and shall be disposed of within two years of filing.
14. Allow for a compromise settlement to be reached between claimant and insurer as long as it is not voidable under the Indian Contract Act, 1872.
15. Allow for the interim payment of compensation, up to Rs. 50,000 in case of loss of limb or grievous hurt, and up to Rs. 1 Lakh in case of death or total disablement.

The amendments proposed by the MVA Bill were forwarded to the Parliamentary Standing Committee chaired by Shri Sitaram Yechury, Rajya Sabha MP. The report of the Standing Committee, its 139th report, was tabled in Parliament on April 28, 2008.

The 139th Report of the Standing Committee report made the following key recommendations:

- MVA Bill 2007 states that a person is eligible for a licence for a transport vehicle after he has held a driving licence for a light motor vehicle (LMV) for at least two years. The Committee recommends that for three wheelers and LMV transport vehicles it should remain one year.
- MVA Bill 2007 seeks to allow the licensing authority to exempt an applicant for learner's licence from the test to drive a motor vehicle (excluding transport vehicle) if he has a driving licence issued by an institution or automobile association authorized by the state government. The Committee recommends that the state government should delegate such powers to private institutions only if the government infrastructure or manpower is inadequate. Also, well defined parameters with regard to qualification, infrastructure requirement, etc. should be laid down before private institutions are given such powers.
- The Committee recommends that state governments implement registration certificates, driving licenses, etc in the smart card format. All state level databases should be linked to create national level database.
- MVA Bill 2007 proposes to curtail the time period in which a person can apply for renewal of driving license after it has ceased to be valid from five years to one year. The Committee suggests that in cases where the driving license expires when the person is out of station or settled abroad, the time limit for renewal of their licenses may be extended beyond one year.
- MVA Bill 2007 allows the specified authority to suspend the driving licence for three months if the driver is under the influence of alcohol. The Committee suggests that the government may treat deaths due to drunken driving as culpable homicide not amounting to murder. Also, if the drunk driver commits an accident his action should be treated as a premeditated commitment of a crime and he should be punishable under relevant provisions of Indian Penal Code depending on the consequences of the accident.
- The Committee is of the view that the period for issue of certificate by the registering authority may be reduced from 30 days to 15 days with a higher quantum of penalty if the owner does not get his vehicle registered.
- MVA Bill 2007 proposes to penalize the consignor or common carrier (whoever issued relevant documents) if the load carried by a vehicle is in excess of the prescribed limit. Likely under pressure from transporters, the Standing Committee recommended extending the liability to include drivers on such overloading and officials enforcing provision regarding overloading and officials enforcing provision regarding overloading and approval of tonnage of vehicles.
- MVA Bill 2007 seeks to absolve the insurer from liability in case of an accident where the vehicle was being driven by a person without a valid licence. The Committee recommends that if an insured vehicle commits an accident, the insurer may be held responsible as per the insurance policy irrespective of the fact that the vehicle was driven by a valid licence holder or not.
- The Committee recommends that every vehicle must be insured against third party liability and a fixed amount of the third party liability premium must be collected by the insurance agencies towards the corpus of the solatium fund (to

be utilized for paying compensation to persons in case of death or grievous harm). The Committee recommends that the amount of compensation may be increased to Rs 1 lakh in case of death of a person from hit and run accident and Rs. 50,000 in case of grievous hurt. The Committee also suggests that the compensation amount may be revised annually in proportion to the rate of inflation.

- MVA Bill 2007 states that compensation has to be claimed within three years of the accident. The Committee recommends that in cases of simple injury with no permanent disability the claimants should claim compensation within six months from the accident.
- The Committee recommends that the time limit of depositing the amount of award by the claims tribunal should not be increased from 30 days to 60 days.
- The Committee also noted that it felt that there is insufficiency of road signage and some of them are obsolete. The Committee recommends that the MVA Bill 2007 should be amended with comprehensive signs and symbols, road markings and signals as per the guidelines of the Indian Roads Congress. A high level committee should be formed to explore the possibilities and give suggestions.

Subsequently, the Law Commission of India issued a Consultation Paper entitled "Legal Reforms to Combat Road Accidents" in July 2008, providing recommendations to the Government of India on modifying provisions of the Indian Penal Code and explicitly linking them to serious traffic violations in order to increase the law's deterrence potential and so enhance road safety.

The salient features of MVA Bill 2012 from a road safety point of view are:

1. Enhanced penalties for various traffic offences – for instance, jumping red lights or not using seat belts and helmets will attract a penalty between Rs. 500 to Rs. 1,500.
2. Fines will multiply for repeat traffic offences – for instance, repeated use of a cell phone (or any other mobile communication device) while driving will cost an offender Rs. 5,000.
3. In addition to introducing a graded system of fines for "drunken driving." Depending on the level of blood alcohol, conviction will now also attract up to 2 years of imprisonment.
4. Imposition of penalties for "overloading" a commercial transport vehicle. Penalty to be borne by the consignor in case the documents in possession establish that the offence was committed under the order of the consignor.

But the MVA Bill 2012 leaves out a number of critical recommendations of the Expert Committee.

Analysis of key informant interviews, published reports, and media content suggests that the field of action may be divided into three broad areas: (1) Political Consensus Building, (2) Policy and Rule Framing, and (3) Programme Design, Implementations, and Awareness Building.

It is our considered opinion that efforts in the above fields of actions need to be focused on the establishment of Road Safety and Traffic Management Boards at the national and state levels as envisioned by the Sundar Committee, a modified version of which was presented to the Parliament as the National Road Safety and Traffic Management Board Bill 2010, and the passage of the MVA Bill 2012, modified to include the critical recommendations of the Expert Committee.

Several members of Parliament also pointed out that lack of compliance and lack of enforcement are much bigger problems than any gaps in the law.

A number of government departments and agencies at the central level are currently involved in road safety related governance. But the power to frame road safety policy and rules is located formally in the state governments. The enforcement agencies, as well as the departments and agencies that have an interest in promoting road safety are also part of the individual state administrations and there is very little interest/motivation/organizational infrastructure to promote road safety across state lines.

Working towards complete compliance with road safety rules and policies requires the creation and maintenance of both soft and hard infrastructure and education of all the actors. Designing and executing programmes towards the creation of such infrastructure and education needs to be vested in the agency or agencies involved in the planning and day to day management of the urban infrastructure (signaling and signage system, road junctions, overpasses and pavements). Line departments which are responsible for line functions across an entire state do not have the resources and motivation to undertake such programmes. The Ministry of Road Transport and Highways (MoRTH) and the Ministry of Urban Development (MoUD), and their state-level equivalents (in states



which have them) are the primary agencies which are the most favorably positioned to develop and implement such programmes in collaboration with the traffic police and local administrations.

Therefore, it is critical that independent Road Safety and Traffic Management Boards be created at both the national and state levels. These Boards must be staffed with experts, and must be given the statutory authority to set standards and to regulate.

We believe that the best approach to making road safety a bipartisan concern is to persuade the following three specific ministries to initiate high level initiatives related to road safety (or expand existing initiatives):

- The Ministry of Urban Development (MoUD) must be persuaded to integrate road safety in the urban planning and development process, and link JNNURM funds to road safety

In addition to being responsible for developing urban transport policies on a national level, the MoUD also disburses funds to states under the JNNURM for improvement in urban infrastructure and services, including for urban transport. All JNNURM funds are linked to the fulfillment of certain mandatory reforms as well as certain optional reforms, including putting in place procedures and practices to implement said reforms. The fact that MoUD has not linked JNNURM funds to road safety is an indication of road safety not currently being high on the list of priorities for MoUD, and not of any statutory gaps.

- The Ministry of Health and Family Welfare (MHFW) must be persuaded to look at road safety as a public health concern.
- The Ministry of Road Transport and Highways (MoRTH) must be persuaded to make road safety a priority issue as part of all its projects, and not just for the National Highways.

JNNURM – A MODEL TO LINK CENTRAL FUNDING TO ROAD SAFETY IN STATES?

Historically, in the federal structure of governance in India, the Union Government has had no formal tools to incentivize or penalize specific policy or implementation activities by state governments. However, the Union Government does exercise control over states through the Union list of subjects in which the Union alone can legislate; all India Service which deploy civil servants in all key positions of administration; grants-in-aid and the fact that the Parliament can alone adjudicate in inter-state disputes particularly in relation to rivers.

However, against this backdrop, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) developed a model of ensuring compliance on policy and implementation reforms by creating a funds disbursement system for urban renewal model which incentivizes urban governance reforms. Some of these reforms (for example those relating to land markets), make deep inroads into state governments powers to legislate. Further, in the last decade, a host of new public and private institutional actors have emerged in the area of urban planning, development and governance. Particularly in the area of transportation related infrastructure and mobility the Union Government has led the way by creating new policy and law drafting committees at the national, state and at the metropolitan levels. An interesting example of this is the creation of The Unified Metropolitan Transportation Authority at the metropolitan scale in all major urban agglomerations. While the mandate of these bodies at present is merely to coordinate the activities of various transportation providers, it is to be noted that these are created by law and mandated to provide vision for urban mobility.

While it is too early to strategize on road safety advocacy in view of the upcoming general elections, it is safe to say that there is a new energy emerging around urban mobility in India. Regardless of the vicissitudes of realpolitik, this energy is likely to not only continue but intensify over the coming years. Hence in future work, it would be useful to examine possibilities of pushing road safety agendas through these new institutions in addition to conventional lawmaking processes.

International Course

The Transportation Research and Injury Prevention Programme (TRIPP) at the Indian Institute of Technology, Delhi organized a seven day International Course on Transportation Planning and Safety from 3-10 December 2013 at the Indian Institute of Technology Delhi. The course was co-sponsored by the Volvo Research and Educational Foundations, Ministry of Urban Development, Ministry of Road Transport and Highways, and Bajaj Auto Ltd. The course (an annual feature for the last 23 years), was attended by 105 participants from 12 countries. The faculty members included Anoop Chawla (IIT Delhi), Ciaran Simms (Trinity College, Ireland), Christer Hyden (Lund University, Sweden), Dinesh Mohan (IIT Delhi), Geetam Tiwari (IIT Delhi), Girish Agarwal (IIT Delhi), Hermann Knoflacher (Technical University of Vienna, Austria), Janusz Kajzer (Chalmers University, Sweden), Karin Brodin (Chalmers University of Technology, Sweden), Kavi Bhalla (Johns Hopkins School, USA), K N Jha (IIT Delhi), Mathew Varghese (St. Stephen's Hospital, Delhi), Puneet Mahajan (IIT Delhi), Jeff Crandall (University of Virginia, USA), R.R. Kalaga (IIT Delhi), Shrikant Bangdiwala (University of North Carolina, USA), Sudipto Mukherjee (IIT Delhi), Sylvain Lassarre (IFSTTAR, France).



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Ahmedabad's BRT System A Sustainable Urban Transport Panacea?

Darshini Mahadevia, Rutul Joshi, Abhijit Datey

The Jawaharlal Nehru National Urban Renewal Mission and the National Urban Transport Policy have given a boost to bus rapid transit systems in many Indian cities and Ahmedabad's Janmarg is the largest such network now in operation. This paper shows that while catering to latent transport demand, Janmarg has not promoted inclusivity or encouraged a shift away from private motorised transport. It has also given short shrift to non-motorised transport systems, which are important for inclusivity and for reducing the city's carbon footprint. The study raises the pertinent question of whether public transport ought to be viewed as a technological fix or as part of a wider solution of urban or social issues.

This study raises the very pertinent concern of viewing public transport as a technological fix, rather than as part of a wider urban or social solution. This results in treating the BRTS as a metro on roads with exclusive characteristics. While such exclusivity does bring a good brand image, it does not necessarily attain the objectives for which the system was designed – of providing mobility to all and reducing carbon emissions. Unfortunately, the unintended message that goes out from the Ahmedabad BRTS is that it is alright to neglect walking and cycling, overlook the parking chaos, and not have affordable fares as long as buses run regularly in central median lanes. This raises the question of whether we truly have “an international best practice of BRT in the country”.

Finally, top-down transportation planning has not really taken into account the needs of the urban poor in Ahmedabad despite all the rhetoric in the project reports about including the low-income groups. It has also not achieved a significant shift away from private motorized modes.

Moving around in Indian Cities

Dinesh Mohan

Seven years after the National Urban Transport Policy was announced by the central government, the problems identified in it remain the same, or have worsened. Land use planning has not enabled the lower-income groups to live closer to work, road use is more dominated by private vehicles, and there is little money to improve facilities for pedestrians and bicyclists. At present, the transportation system is driven largely by positive feedback, encouraging people to drive longer distances at higher speeds. There are very few negative feedback loops in the system to provide stability and minimum use of energy.

Unless our transport systems build in negative feedback loops against excess consumption and positive feedback for emission-less travel, we are unlikely to see much progress. This would mean providing facilities that make walking and bicycling more pleasurable, healthier, and safer than motorised travel. Road design and speed control could ensure that door-to-door trip times remain similar for cycling and all motorised modes for trips up to about 6 km, and for greater distances (within urban areas) similar for public transit and private modes.

The above issues can only be tackled if we give more importance to non-tailpipe concerns. Engine and emission

technology will improve whether we give it importance or not – it is in the interest of large corporations to do so. However, we will have to focus on safety, urban form, and systems providing negative feedback for “bad” behaviour if we are to have any chance of survival.

Car Sewa: The Iconography of Idle Worship

Dunu Roy

Knowing full well that the private motor car is more a bane than a boon in terms of the various costs it entails, the time for policymakers in India to encourage greater use of public transport and non-motorised modes is past. Illustrating the politics of privileging car users over the vast majority that uses public transport like buses, this paper points to the vicissitudes the bus rapid transit system in Delhi has gone through from its introduction in 2005 to the present. Modern war is particularly devastating because of the mobility of armies dependent on the same internal combustion engine that drives the car, and the massive fuel consumption of this energy intensive technology has given birth to lethal amounts of air pollution leading to climate change. This gives rise to the inevitable query whether the motor vehicle is really necessary for “quality of life”. If private cars were removed from roads, would the economy collapse? Would transportation and mobility come to a grinding halt? Or would there be benefits that would accrue to a city as a whole, even make for a better society? All things considered, should not the private motor car be considered a weapon of mass destruction?

Metro Rail and the City: Derailing Public Transport

Geetam Tiwari

There is overwhelming evidence to show that capital-intensive metro rail systems serve only a small proportion of the total trips in cities in developing countries such as India. Public-private partnerships have not been very successful, and the Delhi Metro, which is considered to be the most successful project despite falling far short of its projected number of users, enjoys numerous tax benefits not offered to the bus system, which carries at least five times more trips. Metro projects around the country are planned and implemented in isolation without any concern for feeder trips and other modes of transport. In short, the current regime seems to be biased towards the magnitude of capital required for construction of a metro system, rather than the magnitude of its benefits.

Metro stations lead to an intense lead to an intense flow of pedestrians and other access modes around station areas. The design of a metro system should include redesigning the nearby road network, thus providing for the safe dispersal of metro commuters.

The Delhi Metro has been planned and implemented as an independent project with very little integration with bus or other modes of transport. It has become more of a construction project than an integrated transport system that meets the mobility needs of the majority of commuters. Metro projects that are under construction in other cities follow the same pattern. Budget analyses of selected cities shows a lack of investment in infrastructure required by pedestrians, bicyclists, and buses.

It is clear from the above analysis that metro systems will serve only a small proportion of the total trips in a city. PPS have not been very successful, and the most successful project enjoys a number of tax benefits not offered to the bus system, which carries at least five times more trips. Metro projects haven't planned and implemented in isolation without any concern for feeder trips and other modes of transport. The current pattern of planning them and investing in them in India has not benefited any citywide public transport systems.





Continued from overleaf:

Is Public Interest Litigation an Appropriate Vehicle for Advancing Road Safety?

Girish Agrawal

Public interest litigation has value as a tool for enhancing road safety. But it is unlikely to succeed if it asks courts to give directions to the government on a wide range of road safety policies, or if it asks for amendments to the law, or if it asks the judges to direct the government on desired legislation. It has a fair likelihood of success in a high court if the petitioners focus on aspects of road safety for which laws are already on the books but are not being enforced properly. The Supreme Court is likely to consider the issue favourably only if the petitioners make a convincing argument that unsafe roads have a negative impact on a fundamental constitutional right. This is a short analysis on the appropriateness of public interest litigation (PIL) as an avenue to ensure the success of policies on road safety.

None of this is to say that a PIL – based strategy does not have value as a tool for enhancing road safety in India. It does. As the cases and discussion illustrate, a PIL has a fair likelihood of success in a high court, but only if the petitioners focus on aspects of road safety for which the laws are already on the books (such as helmet laws, drinking and driving, seat belt use, and speed limits) but the state is not doing enough to enforce them.

If the litigation is narrowly tailored to address specific aspects of road safety, and the petitioners make a convincing argument that unsafe roads have a negative impact on a fundamental constitutional right, justifying an “intrusion” on the functions of the legislature and the executive, the Supreme Court is much more likely to consider the issue favourably

Analysing the Urban Public Transport Policy Regime in India

P S Kharola

The existence of the right policy regime is a precondition to any organisation achieving its objectives, and this is more so in the case of public transport systems. The central government announced the National Urban Transport Policy in 2006, a policy which aims to provide the appropriate framework for addressing transport-related challenges in India's cities. This paper examines the policy document and compares it with the policy regime now prevailing. Observing that the new policy has almost as many weaknesses as strengths, it points to the huge gap between the NUTP and the reality on the country's urban roads. It also suggests what could be done on the policy front to streamline urban public transport systems. Public transport systems are complex systems, which include various subsystems such as demography, land – use patterns, infrastructure, a legal framework, and an institutional framework. The demographic profile determines the nature of demand for transport systems. The union government should persuade the state governments to bring about the required changes by leveraging the financial assistance it gives them under various schemes for urban development. The state governments should in turn convince municipal agencies to bring about the required changes.

A periodic audit of the policy regime would be desirable so as to take mid-course corrective action policies can never be static and have to be adapted to changing situations.

Review of Twelfth Plan Proposals for Urban Transport

Ranjit Gadgil

The Twelfth Five-Year Plan aims to foster more inclusive and sustainable growth. Urban transport finds mention in its chapters on sustainable development, environment, and urban development, which focus not only on aspects of public transport, but also urban planning and governance. Identifying the three main themes that emerge from the Plan's recommendations, this paper takes a critical look at them.

Specifically, the JNNURM-II should do the following:

1. Allocate at least 10% funds to build capacity at the central, state, and city levels, in line with the recommendation in the Plan (section: 18.72).
2. Insist on full compliance with the 74th Constitutional Amendment Act, including the setting up of the DPCs/MPCs and other institutional frameworks at the regional level.
3. Remove the JNNURM's CDP process and encourage city master plans as per state town planning acts, building capacity at all levels for better-quality planning techniques.
4. Encourage cities to adopt street design guidelines that promote the equitable allocation of road space and enhance the safety of road users, in particular pedestrians and cyclists, and comply with all the IRC and disability guidelines.
5. Make mandatory comprehensive mobility plans and fund against outcomes, not just physical projects.
6. Funding for metros and other mass transit systems (BRT, monorail, and so on) should be considered only after the needs for these systems are established using alternative assessments and comprehensive cost-benefit analyses, including social and environmental impact assessments.
7. Earmark funds specifically for non-motorised transport projects, including capacity building at the city level for planning and execution.

Accidents and Road Safety Not High on the Government's Agenda

S Sundar, Akshima T Ghate

Among all countries, India has the highest number of deaths due to road traffic-related accidents. Road accidents are the sixth leading cause of death in the country, and there were nearly 1,40,000 deaths from road accidents in 2012. Despite being a major public health issue that affects the most vulnerable and also the most productive sections of society, road safety has not received the attention it deserves. This paper discusses how the government has not recognised road safety as a key mobility, health, and equity issue, and has been slow in enacting legislation to establish the institutional mechanisms to promote it.

In recommending a National Road Safety and Traffic Management Board, the committee was neither unaware of the NRSC nor did it recommend the board to merely create a new institution. It was of the view that if road safety was to be addressed as a public health issue, all the relevant interventions had to be brought under one umbrella and this needed a dedicated lead agency with the necessary funds. To fight a battle, you need a unified command.

Time and lives lost can never be regained. But wisdom lies in preventing future loss as far as possible. A government committed to building 20 kilometers of national highways every day should surely commit itself to saving at least 200 lives a day.

