Chapter 6

6.1 POLICY MEASURES FOR COMBATING THE DEFICIENCIES

An economic analysis drew upon a state of completeness, only when an exhaustive set of probable measures to ward off the deficiencies in the system that emerge in the course of analysis, are planned for. The same tenet have been the guiding force in the present study, though of course some elements of restrictions lie embedded in the process as a result of failing to identify the whole spectrum of problem due to the restricted domain of the study.

The observance of the results and their interpretations showed that policies, both general and mode-specific needs to be framed in order to narrow down the divergence of the actual modal choice with the predicted ones based on utility maximizing concept of the trip-makers. While the general policies should aim at reducing infrastructural deficiencies that raises travel-time and cost which are found to accrue disutility to a section of trip-makers of Haldia Municipal Area and Howrah Municipal Area, steps towards rejuvenating the safety and comfort of the modes which the higher income-class trip-makers of Howrah prefers should also be framed.

6.2 GENERAL POLICIES

Traffic plying pattern for the two cities, dealt with in this study are matched with the existing road network so as to expose the deficiencies:

Analyzing the probabilistic modal behaviour pattern of the income-classes for both the towns, the same picture of deficiency manifested by

(a) the mismanagement of the present set-up.

(b) lack of road infrastructure

(c) insufficiency in the basic amenities offered by the plying passenger modes

lie bared for both the urban areas. To prevail over them, a grapple of the problems through utilization of appropriate measures needs to be implemented.

To combat infrastructural deficiencies of the two cities under scrutiny, both short and long-term measures could be thought of.

Short term measures

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These are usually low investment options that seeks optimal utilization of the present framework to edge-past the drawbacks at least in the short run.

Long term measures

These consist of high investment options targeted towards enhancing the capacity of the infrastructure to help achieve a complete eradication of the deficiencies in the future (i.e. during a plan period).

6.2.1 SHORT-TERM MEASURES

(A) SMOOTHING OUT JUNCTIONAL IMPAIRMENT

Junctional impairment is considered a major factor in explaining the lengthening of the travel-time that reduces utility of the riders. Enhanced commercial activities, spilling over to carriageways especially along these junctions added by unauthorized parkings are considered major reasons to such impairments. The antidote to deal with it lies in the improvement of the road intersections through their geometric modifications. The beneficial effect of such modifications lies in the judicious mix of

Traffic engineering and management options like

1. aligning the size of the junction-rotary as per requirement.
2. improvement of the turning radii as per volume of traffic flow.
3. induction of channels for smoother approach to the junctions.
4. relocating the junctions, if feasible and necessary, to an uncongested place with lesser commercial activities.
5. introducing appropriate road-markings and traffic-signs (as per IRC:35-1970) like
   - carriage-way restrictions
   - object-markings
   - centre-lines (where there are no physical lane demarcations).
   - stop-lines
   - pedestrian-crossings (like the Zebra crossings).
   - route-direction arrows.
   - parking limitations, etc. to induce semblance of order for the plying vehicles as well as the pedestrians.
- Prohibiting bus-stops in the immediate periphery of the junctions.
- Installing proper signaling system to optimize movements at the best possible time.

For instance, in Haldia town, almost all the junctions [e.g. Ranichak, Manjushree Chak, City Centre Chak, Chaitnapur Chak, Brajalal Chak, Makhan Babu Bazaar crossing, SBI (Durgapur Chak) crossing, Vidyasagar More, IOC Gate Crossing, CPT Operation Building Crossing, Haldia Railway Station Crossing] needs almost all the options specified above for their improvement. For Howrah town, all the junctions (e.g. crossing of G.T.Road with H.B. Road, Dr. A.D. Road, Benaras Road, Naskarpara Road, J.B.Ghat Road, crossing of Arabinda Road and J.N.M. Road, crossing of Dr. A.D. Road with Salkia School Road and Dobson Road, Bankim Setu crossing on H.M.B.Road, crossing of Makarda Road and East-West Road, crossing of Kona-Expressway and Drainage Canal road, crossing of D.P.S. Road and N.D.Road etc.) needs careful selection for the implementation of the specified options for their improvement.

(B) IMPROVEMENT OF ROAD / RAIL / FERRY GHATS

From the parameter estimates, especially that of the trip-makers of the various income classes of Howrah Municipal Area (HMC), the acute lack of comfort during travel gets revealed. Also, the increased social-costs of accidents, congestion and pollutions for both the areas that form the ground for taking up this study indicated the deficiency of the road network. Such deficiencies lay partly to the decadence of the existing roads, and partly due to the added effect of the insufficiency of the road space. To prevail over these shortfalls, the improvement of the roads needs to be taken up for both the urban areas. The first deficiency needs appropriate re-surfacing of the worn-out roads through patch-works so as to make them fit for existing traffic load at desirable speed besides ensuring smooth and comfortable rides. The second deficiency is dealt with by widening the existing roads where possible to expand their capacity on par with volume. Executing the objective in a cost effective manner and in a short-time span involves

- Complete removal of the encroachers along major roads
- Exploring and ensuring optimal use of the existing bye-roads (if they exists) for diverting a sizeable section of the plying traffic along main roads through them to their destinations
Strengthening the rail and river transport services to act as subsidiaries to road transport in an effort towards inter-modal shift of the trips towards rail and / or river transport.

For example, ferry ghats spread along the contours of Haldia town are mostly submerged in water and the passengers have to board and alight through earthen, sandy and muddy passage. It is of utmost importance to construct permanent jetties for the ferry ghats for smooth movement. In Howrah Municipal Corporation Area, some vital stretches of Andul road needs to have a concrete surface as well as raised-level to clear-off constant water-logging. G.T. Road through HMC needs matching patchwork with the heavy traffic load that it bears. Most of the arterial roads are heavily encroached upon by hawkers that need to be cleared. Optimum usage of Drainage Canal Road, East-West Road should be ensured in the effort towards relieve of traffic loads along arterial roads.

(C) APPROPRIATE CONTROL OF PLYING TRAFFIC

As is the characteristics of Indian roads, the road transport of the two urban areas under study also have the usual mix of slow and fast moving vehicles. Such a mix impedes smooth flow to a great extent. Various traffic management measures like

Earmarking specific roads for motorized and manually driven traffic in an effort towards segregating their movement. Besides, re-routing of long distance bus routes.

Introducing one-way system along various arterial roads that do not have lane-demarcations.

Imposing restrictions in the plying of slow-modes along the periphery of the Central Business District (CBD).

Imposing restriction on the movement of freight traffic during peak hours.

Haphazard growth of Intermediate Public Transport (IPT), a major obstacle to smooth traffic flow, should be contained to a permissible level so as to provide some reprieve from the problem.

In Haldia, the newly built bus terminus (flanking the Hatibera Railway Station) needs to be immediately operational to relieve bottlenecks to some extent. Haphazard plying of unlicensed cycle-rickshaws should be strictly forbidden and specifying traffic flow direction
in the vicinity of Vidyasagar More should be implemented. Similarly, in Howrah town, the heavy traffic volume along major traffic corridors should be dealt with by introducing unidirectional flow.

(D) INTRODUCTION / UPGRADEATION OF VARIOUS AREA MANAGEMENT SCHEMES

Feasible short-term schemes to optimize the vehicle plying and the welfare of the riders need to be taken up. Each area of the two townships should be individually assessed in terms of

1. determining the status of bus terminals in the light of stops and parking slots and their degree of contribution in congestion.
2. orderly control of the pedestrians. Lack of such a measure needs to be addressed through improved pedestrian management schemes like introducing guard-rails along footpaths, removal of hawkers from the footpaths of main thoroughfares (especially along the footpaths of roads in Howrah town).
3. specifying the traffic flow direction of each road in the area.
4. proper illumination to prevent accidents and providing the secondary purpose of some comfort to the riders passing through these lighted streets.
5. better management of the vehicles and the pedestrians of each specified area through use of signaling, road markings, proper policing in line with the IRC norms and Motor Vehicles Act.

The study of the mode choice probabilities for both the towns showed a heavy inclination towards bus as the most favoured mode that maximizes the utility of a rider when the actually chosen mode fails to provide him / her with requisite utility. Hence, the need for strengthening the operational efficiency of it in resonance with the judicious implementation of the short-term measures (as above) shall provide an ideal solution to tackling all the facets of the transport problems of these two towns.

6.2.2 LONG TERM MEASURES
So far the short-term measures along with strengthening the public passenger (bus) transport system are focused upon as probable general steps to rectify the malady plaguing the modal-choice of the area under study. However, the said measures are all of temporary nature and hence the solution to the problem may not be a lasting one. The need is for a permanent solution where the long-run policy measures serves as the only feasible alternatives. A generalized view of the principal measures applicable to both the urban areas are outlined below.

**Road Improvement Measures**

The betterment of roads (extending from expansion of capacity to smoothing out) as was also taken up in the short-term policy options, needs to be implemented on a permanent scale. That amounts to taking up the task of complete over-hauling and constructing more lanes for the existing roads as also building new roads to enhance the linkages among the various points within the town areas. Constructions of flyovers to enhance the capacity as well as for an uninterrupted vehicular flow over a bottlenecked road stretch (determined as per IRC: 1990 criteria) that lacks the appropriate space for lane expansion can also be thought of.

For example, in Haldia town, the part of NH-41 that lies within and serving the purpose of a main feeder road and bearing a heavy volume needs further laning as well as flyovers over certain sections. Also construction of North –South / East-West links along the town area allowing connectivity with the arterial roads like the NH-41, SH-6, or link road (joining the City Centre Chak with Manjushree Chak) needs serious considerations. In Howrah town also, further laning of G.T.Road, Andul Road, Kona Expressway, etc. that bore the brunt of a huge traffic load as also constructing flyovers over the congested G.T.Road along its major junctional stretch seemed essential. Also constructing a North-South link to supplement the G.T.Road will be highly appreciative.

**6.3 MODE SPECIFIC POLICIES**

Modal deficiency plays a major role in most of the divergence of the actual with the utility-maximizing modal choice of the trip-makers of the two urban areas considered. Hence, for a coincidence of the actual choice with the one providing the maximum utility (from the point of travel-time and costs), it is necessary to fine-tune the efficiency level for each of the
competing modes faced by the trip-makers. Such measures involves framing separate rules towards

(a) specifying vehicle-size limits
(b) restricting Gross-Vehicular Weight (GVW) and maximum safe axle weight.
(c) appropriate check on the emission level (both for engine exhausts and noise).
(d) strict control to restrict overloading, especially during rush hours.

For each of the modes of the two areas, shortcomings that exists in the West Bengal Motor Vehicles Rules (WB-MVR), 1989 that forms the core mechanism for increasing modal efficiency should be tuned towards achieving the aforementioned objectives. The Regional Transport Authorities, the implementing authority for putting into effect WB-MVR, 1989, should be revamped to take on the extra challenge.

6.4 DEVELOPING AN EFFECTIVE PUBLIC PASSENGER TRANSPORT (BUS) SYSTEM FOR HALDIA AND HOWRAH TOWNSHIPS.

For both the towns the bus operation remained inefficient and non-dependable. The bus transport system for both the towns are operated by Public and Private transport operators. To reverse the situation, the objectives of a dependable and secure bus transport system should be outlined. Of them, the private bus transport operators are guided mainly by the profit-motive leading to scheduling of trips through routes that are revenue-generating in nature while the public operators do not behave commercially at all. Thus, to settle-in for an effective system, from operator's point of view, a balance between these two diametrically opposite motives have to be struck. What this usually means in practice is that the over-exploitation of the customer by the private bus operators should be dispensed with on the one hand and on the other, public operators should be financially self-supporting, earning a target rate of return on capital employed and possibly financing part or all of their capital requirements internally. From an economic point of view, such an objective is attained by maximizing the passenger-mileage through which the alternative strategies to remove the imperfections are ranked in terms of passenger miles gained / lost per rupee change in profitability.

The travelers' choice of routes should be based on the idea that the shortest route links the major traffic generators in the study areas so as to optimize travel-time along with some level of comfort.
The government’s role lies in regulating the price and service level of the public passenger transport system so as to ensure safety of journey and preventing “wasteful competition”.

Since prevention of competition belies the natural logic of economics, it is necessary to elucidate the meaning of “preventing wasteful competition”.

Competition usually leads to bidding down of average loads and hence raising of unit costs and even in cases where excess profit is eliminated, a situation of monopolistic competition characterized by excess capacity and extremely high unit cost emerges. The universal criticism associated with monopolistic competition – that it assumes excessive shortsightedness fits the situation. If it is assumed that the transport operators on realizing the gravity of the situation settles for operations at minimum average cost along with ensuring just the normal rate of profit, then the incentive for new entry will be curtailed to zero and hence, they could reap the benefit of a larger market share. In such a situation new entrants with better offerings in terms of product quality or cost can survive. However, conceiving such a situation in reality is a difficult concept, taken the fact that elimination of existing excess capacity necessitates a sustainable financial resource capacity for the operators to cope up with a price war.

Still then if new operators come in and reduces the load factors, then it leads to increase in operated service along with rise in quality of service. Such an increase however, has the strong probability of duplicating the existing service rather than initiating new ones. Hence, the beneficial effect of such a move remained questionable.

The arguments advanced above speak of prevention of competition by the government in an effort towards an efficient maintenance of Public Passenger Transport Service. Viewing from a radically different perspective, it can be said that competition ensures efficiency in production, greater innovativeness and variety in the type of service provided along with effective marketing. Especially, the scope of competitiveness under regulation where such regulation serves the welfare of the community is a welcome one. For instance, it is through competition that a selection among operators with the one providing the most attractive bid in terms of fares, service quality, etc. should be made.
Thus, the appropriate role for the government in their effort towards an efficient, well planned and well coordinated public passenger transport system is to allow competition to the extent that these may be exploited without excessive damage to the integration of service, i.e. prevent wasteful competition. For example, to prevent competition among different operators on a typical route, it requires

(a) creation of area monopoly whereby the ownership of the public passenger bus transport system for different areas of the town should be vested with a single body, usually controlled by the local authority.

(b) operators are allowed to operate on a particular route of an urban area only after granted permission by a licensing authority.

In order to fulfill the above objectives, the following actions at the grass-root level are deemed suitable

1. appropriate set-up of bus-terminals as primary nodes for ensuring uniform linkages throughout the study area.
2. routes to be designed so as to provide linkages to the major traffic generators.
3. ensure a standard minimum level of comfort through strict regulation (as specified in detail in Section 6.5) of the design standard and the load bearing capacity of the buses.
4. formation of a committee to look into various aspects of bus service like the appropriate fixation of fares, determining the service frequency and approving the routes.
5. quality of drivers as well as vehicles, failures of which should attract sufficient penalties to work as deterrent.

Proper implementation of the remedial / developmental steps as above shall in all likelihood shall strengthen the public passenger (bus) transport system tallying with the modal preference of a majority of travelers of the two towns. It also shall prove beneficial to the environment by way of

(a) reducing noise and emission at source.

(b) reducing environmental cost of new infrastructural construction.
(c) reducing frequency and length of trips by other modes.

6.5 ENHANCING THE SAFETY AND COMFORT OF THEE TRIP-MAKERS

As suggested by the coefficient estimates supplemented by the accident data (especially for the various income-classes of HMC area), the spectre of a looming deficiency of some vital qualitative attributes as safety, comfort, efficiency, etc. writ large. It is hence of utmost necessity to attempt for a change-over. Various short term measures towards achieving those objectives in accordance with that laid down in the Central Motor Vehicle Rules (1989) {amended on 2001} and the West Bengal Motor Vehicles Rules, 1989 and implemented through Regional Transport Authorities (RTA) of the two areas are deemed necessary. They are

1. comfortable seating arrangements i.e. seats (of foam and leather) should not be less than 15” in breadth with the back support not less than 16” in height. There should also have appropriate leg-space at least 12”.

2. appropriate arrangements for proper ventilation through bigger windows

3. for easy entry and exit to the vehicle, the door should be at least 30” broad.

4. establishing a modulation of the axle-load limits for the various plying vehicles in function of the type of roads, e.g., specific set to be utilized for National Highways and some designated major roads.

- Another set for scarcely used roads.

5. specifying the vehicle load such that it does not out-weigh the cost of maintenance of the road.

6. Enacting a “road-safety act” or an amendment to the West Bengal Motor Vehicle Act through incorporation of

- strict rules of Motor Vehicles registration as well as their renewal after satisfaction of mandatory fitness rules.

- creation of a specialized State road police force for proper enforcement.
- creation of a safety cell to look into all aspects of safety (specific area-wise).
- mandatory training / refresher course for drivers of passenger vehicles at regular intervals

(7) ensuring acceptable standard of vehicle-size in keeping with the availability of area-wise road space.

(8) furnishing the vehicle-interior so as to ensure standard levels of comfort.

In Haldia town, such schemes are in dire needs for various areas, notably among them being the Manjushree Chak to Durga Chak stretch. In Howrah areas like the Bangabasi, Salkia Chowrashta or Kadamtala are the major ones in need of proper management.