# CHAPTER–3

# PUBLIC TRANSPORT SYSTEM

# 3. Public Transport System

Adoption of public transport means shifting to mass transportation mode, which involves consumption of less fuel per passenger- kilometer travelled, thereby lesser emission per passenger-kilometer travelled.

As of March 2021, there were 1.30 crore vehicles registered in Delhi. Further, as per a report by the Ministry of Earth Sciences, Government of India, 2018, everyday vehicle load from other states in eight major entry points of Delhi was nearly 11 lakh. To mitigate vehicular emission, Governments take steps which motivate commuters to prefer public transport. As public transport carries many passengers on a single vehicle, it can reduce the cumulative amount of tailpipe emission compared to the multiple vehicles, which it substitutes. By reducing the concentration of emission from transportation in dense urban areas, public transportation can help cities to meet air quality standards, and thus decrease the health risks of poor air quality to its residents. Audit examined the adequacy and effectiveness of such measures taken by the GNCTD.

In NCT of Delhi, public transport comprises of buses (DTC and Cluster Scheme) and Delhi Metro. These are complemented by last-mile connectivity provided largely by Gramin-Sewa and Auto-rickshaws, which are privately owned but regulated by the Government.

## 3.1. Public Transport Buses

In NCT of Delhi, public transport buses are run by Delhi Transport Corporation (DTC), GNCTD and private entities under Cluster[19] Scheme buses. Audit observed the following issues in management of public transport buses in Delhi.

### 3.1.1. Shortage of Buses

As per the GNCTD's assessment (July 2012) 11,000 buses were required for NCT of Delhi and 50 *per cent* each were to be run by DTC and private entities under cluster scheme. Actual present requirement may be different, considering this assessment was done in 2012 and considering floating daily population entering Delhi.

As of April 2014, DTC was operating 5,223 buses which was reduced to 3,760 buses in March 2021. Meanwhile, the availability of buses run by private entities under cluster scheme increased from 1,292 (March 2015) to 2,990 (March 2021). Thus, only 6,750 buses were available vis-à-vis the estimated requirement of 11,000 buses for public in Delhi.

Despite the issue of delay in procurement of buses due to frequent changes in the proposal and cancellation of tender by DTC being pointed out in CAG report of 2016, no follow up action was taken by GNCTD/DTC to conclude the procurement process. Audit noted that no new buses were procured by DTC in last ten years (2011-12 to 2020-21), while some of the existing buses went off-road due to ageing/accidents/fires. It is noteworthy to mention that number of two wheelers increased from 43 lakh (March 2011) to 81 lakh (March 2021) and total number of registered vehicles increased from 69 lakh to 1.30 crore during the same period.

[19] 657 routes of Delhi were divided into 17 clusters, each serviced by a private entity and DTC. The private entities are awarded the cluster through a competitive bidding process, and required to provide a scheduled bus service according to a Unified Time Table.

Shortage of public transport may have contributed to such large increase in private vehicles. After almost ten years of induction of last bus in DTC fleet, orders for supply of 1000 CNG buses and 300 electric buses were placed (January 2021 and March 2021 respectively) by DTC. DoT stated (October 2021) that buses (CNG and Electric) are likely to inducted by November 2021 and March 2022 respectively.

Further, despite initiative taken (March 2018) by GNCTD for induction of 1000 electric buses under cluster scheme, tenders for 385 Electric Buses issued in March 2019 were not finalized on technical grounds (June 2021).

DoT stated (September/October 2021) that it was in the process of floating fresh tender for induction of Electric Buses with delivery schedule in sync with the completion of electric bus depot with requisite power load. These buses were expected to be operational in the cluster fleet during January-June 2023.

It further stated that 350 AC low floor CNG buses under Cluster fleet were expected to be operational by June 2022. It also stated that current requirement of buses is estimated to be 9,000 as the Delhi Metro network has expanded in recent years.

The fact remains that, only 6,750 buses were available in Delhi, i.e., shortage of 25 *per cent* against reassessed requirement of 9,000 buses.

### 3.1.2. Significant number of DTC Buses remaining off-road

Audit noted that out of a fleet of 4,712 (March 2015), on an average only 4,180 (89 *per cent)* DTC buses were actually on roads during 2014-15 which decreased to 3,222 (68 *per cent)* buses during 2019-20. Further, percentage of DTC buses remaining off-road for repair and maintenance ranged between 14 *per cent* to 16 *per cent* of total available fleet. Audit noted that 93 buses were off road for period between five to 11 months (June 2019) due to failure of DTC to timely extend Annual Maintenance Contract.

Less availability of number of operational buses adversely affected the reliability of public transport. With its bus fleet already short of requirement, DTC was expected to do proper upkeep and maintenance of the existing fleet.

Audit also observed that DTC was completely dependent on vehicle manufacturers for providing maintenance services of buses despite availability of 1,094 repair and maintenance (R&M) staff[20] at its disposal. The existing repair and maintenance staff were however, utilized only for record keeping and verification of AMC/repair bill submitted by the contractor. No mechanism was evolved till date (June 2021) by the DTC to train and upgrade the skill of existing R&M staff for maintenance of low floor buses.

Thus, more than 14 *per cent* of buses remained off-road worsening the availability of buses for public services. Moreover, DTC was completely dependent on manufacturers for repair and maintenance of buses in spite of having 1094 personnel for the purpose.

[20] As per Operational Statistics (March 2021) of DTC, 1094 repair and maintenance staff were available against requirement of 940 personnel.

DoT while accepting the fact stated (October 2021) that maintenance contract has been signed with original equipment manufacturers.

### 3.1.3. Short-coverage of Bus Routes

As of March 2021, there were total 657 notified bus routes in NCT of Delhi, to be covered by DTC and Cluster Scheme Buses. However, due to reduction in fleet size of DTC, 238 routes (36 *per cent*) were not being covered at all by either DTC or Cluster Scheme Buses.

There is large influx and outflux of public on daily basis from Delhi to NCR towns and vice versa. This necessitates comprehensive NCR connectivity to be provided by the public transport. Audit, however, observed that as on March 2021, no DTC buses were providing NCR connectivity.

DoT stated (September 2021) that as of August 2021, there were 310 routes under Unified Time Table and the rest of the Cluster routes would be implemented in sync with the new buses under Cluster Scheme in a phased manner.

### 3.1.4. Rationalisation of Bus Routes

Bus transport system in Delhi requires capacity expansion to cope up with the growing mass transport demand especially during peak hours as well as demand for providing new services to unconnected areas. For this route rationalization study is required to satisfy the changing mobility needs of citizens as well as to maximise utilization of the transport infrastructure of the city.

A study was submitted (June 2013) by Delhi Integrated Multi-Modal Transit System Ltd. (DIMTS) to GNCTD. The recommendations of the report were, however, not implemented by DoT. The issue of not implementing route rationalization was also flagged in the CAG's Audit Report for the year ended March 2015.

Subsequently, the Cabinet approved (December 2017) a proposal to conduct another route rationalization study by DIMTS at a fee of ₹ 2.97 crore. The Comprehensive Action Plan[21] (CAP) for air pollution control in Delhi required DoT, DTC and DIMTS to implement the recommendations of this Route Rationalization Report (RRR) by June 2018.

DIMTS submitted (September 2019) the final study report with recommendations for new routes, route modifications, frequency enhancement, additional routes and buses for NCR connectivity, etc. Audit, however observed that the Study report submitted by DIMTS in September 2019 was yet to be approved for implementation (April 2021). In order to achieve the intended objectives the recommendations proposed in Study Report should have been implemented in a time bound manner. However, Government failed to act upon either of two route

[21] CAP stipulated source-wise clean air action plan and compliance strategy for Delhi and NCR to meet clean air standards.

rationalization studies. This implies that DTC and Cluster buses were operating on routes not optimised, for more than eight years.

DoT stated (September 2021) that it had identified three prime constraints for implementation of RRR, viz. fleet availability, Covid pandemic and change of ridership data, however, it was working on implementation of RRR. It was further stated (November 2021) that DoT has taken up a pilot study for rationalization of bus routes from October 2021 and implementation of RRR is expected in 2022-23.

## 3.2. Last-mile connectivity

Last-mile connectivity refers to the commute from home to transport hubs, i.e., Bus stops, metro stations, railway stations, etc. Last-mile connectivity enables greater integration and accessibility of public transport system to commuters. In NCT of Delhi, last-mile connectivity was provided largely by Gramin-Sewa and Auto-rickshaws.

### 3.2.1. Gramin-Sewa Vehicles

In the year 2010, DoT, GNCTD introduced a new para-transit scheme namely Gramin-Sewa, wherein high-capacity three-wheelers and similar other vehicles with capacity of six passengers, were given permits to operate on specified routes allocated in rural areas, unauthorized colonies, resettlement colonies and J.J. Clusters of Delhi. The Gramin-Sewa vehicles ply only on CNG fuel.

Audit observed that though there was an estimated increase of 17 *per cent* in the population of Delhi since the year 2011, the number of registered Gramin-Sewa Vehicles remained the same at 6,153 since May 2011. Thus, there was deficiency in availability of last-mile connectivity through Gramin-Sewa. Even the vehicles for Gramin-Sewa are same as those inducted in the year 2011 indicating their old age and resultant poor fuel efficiency and higher potency to cause pollution.

DoT informed (November 2021) that, to ensure providing of last mile connectivity, it was tying up with DTIDC and DMRC for deployment of e-rickshaws.

## 3.3. Alternatives to public transport buses

Light Rail Transit (LRT) is a medium capacity mode of mass rapid transport which is a low cost, eco-friendly, electrically propelled system with no pollution. Since 2014-15, GNCTD has been allocating budget for implementation of 'Monorail and Light Rail Transit' and 'Electronic Trolley Buses' every year.

Audit, however, observed that despite allocating budget for providing alternate mode of transport in Delhi, GNCTD did not take any action and no plans/schemes for implementation of monorail project and electronic trolley bus system was made.

Though availability of public transport buses was far less than the requirement, GNCTD did not take any action for implementation of its alternatives even after keeping budget provision for the last seven years.

DoT confirmed (September 2021) that at present no plan/scheme for implementation of monorail and electronic trolley buses were under consideration, however, by allocating budget of ₹ 1.00 lakh, these schemes have been kept active for future.

## 3.4. Conclusion

In Delhi, mass public transport basically comprises of Buses and Delhi Metro along with last-mile connectivity provided largely by Gramin-Sewa and Auto-rickshaws.

As of March 2021, Delhi Transport Corporation (DTC) and Cluster Scheme buses which provide public transport buses in Delhi, had only 6,750 buses available *vis-à-vis* the estimated requirement of 9,000 buses, since no new buses were procured in the last 10 years by DTC. Significant number of these buses too remained off-road

As a result, 238 out of 657 notified bus routes were completely unserved. DTC buses had altogether stopped providing NCR connectivity. Further, the number of Gramin-Sewa Vehicles has remained the same since May 2011. No action was taken on alternatives like eco-friendly LRT and Monorail. Acute shortage of buses and absence of last mile connectivity options has led to a situation where public is forced to use personal vehicles including two wheelers resulting into doubling of number of vehicles during the last decade. This had adverse impact on air quality in Delhi.

## 3.5. Recommendations

*Recommendation #4: To arrest the deteriorating air quality due to vehicular emission, the Government should immediately address the issue of shortage of 2250 public transport buses and complement it with last-mile connectivity options.*

*Recommendation #5: The skill of existing R&M staff needs to be matched to the operational buses by training them and applying their services suitably for proper upkeep and maintenance of the buses.*

*Recommendation #6: GNCTD should do route rationalization on priority to use the existing fleet optimally.*

*Recommendation #7: GNCTD should actively consider and finalise schemes to provide suitable alternatives to public transport buses so that earmarked budget for same is used fruitfully.*