# Chapter 3

# Operational Performance

# Chapter 3: Operational Performance

***The Corporation, for ensuring efficient and satisfactory public transport, was required to have at least a fleet of 5,500 buses based on directions of Hon'ble High Court. At the end of March 2023, the Corporation was having merely a fleet of 3,937 buses which included 1,770 overage buses. The Corporation could not achieve Operational efficiency as compared to All India Average in respect of fleet utilisation and vehicle productivity. Route planning was deficient. Scheduled KMs were missed. Breakdowns ranged between 2.90 and 4.57 per 10,000 KMs of Operations which was too high as compared to other State Transport Undertakings (STUs) and Cluster Buses. Cluster Buses performance was much better than that of the Corporation in almost every Operational Parameter even though both were performing in similar circumstances.***

## 3.1 Introduction

In order to comply with the directions of Hon'ble High Court (September 2007) of augmenting the city bus fleet to 11,000 buses, GNCTD came up with a new scheme which envisaged concurrent operation of buses of the Corporation and Private operators in 'Cluster' (May 2011) under a Unified Time Table. Each Cluster was to be part of a network, for providing Stage Carriage Services in Delhi through Corporation and DIMTS (Cluster) buses in equal ratio on each route (5,500 by the Corporation and 5,500 Cluster Buses). The Corporation had fleet of 3,762 buses as on 31 March 2022 and held average fleet of 3760 buses during 2021-22, out of which 3206 (85.27 *per cent)*[1] were being utilized while there was a fleet of 3,239 Cluster Buses and average fleet of 2837 buses, out of which 2,809 buses (99.01 *per cent*) were on road during 2021-22. The Corporation Buses operated on 468 routes, ferrying a total of 57 crore passengers, and covering 2,354.74 lakh KMs during 2021-22. The Operational Performance of the Corporation for the last seven years ending March 2022 is given in **Annexure 3.1**.

An analysis of the Operational Performance of the Corporation is discussed in the succeeding Paragraphs.

## 3.2 Audit observations

### 3.2.1 Fleet strength and Age profile

For ensuring efficient and satisfactory Public Transport, the Corporation was required to have at least a fleet of 5,500 buses[2]. However, during 2015-16 to 2021-22, the Corporation was not maintaining adequate number of buses as shown in **Chart 3.1**.

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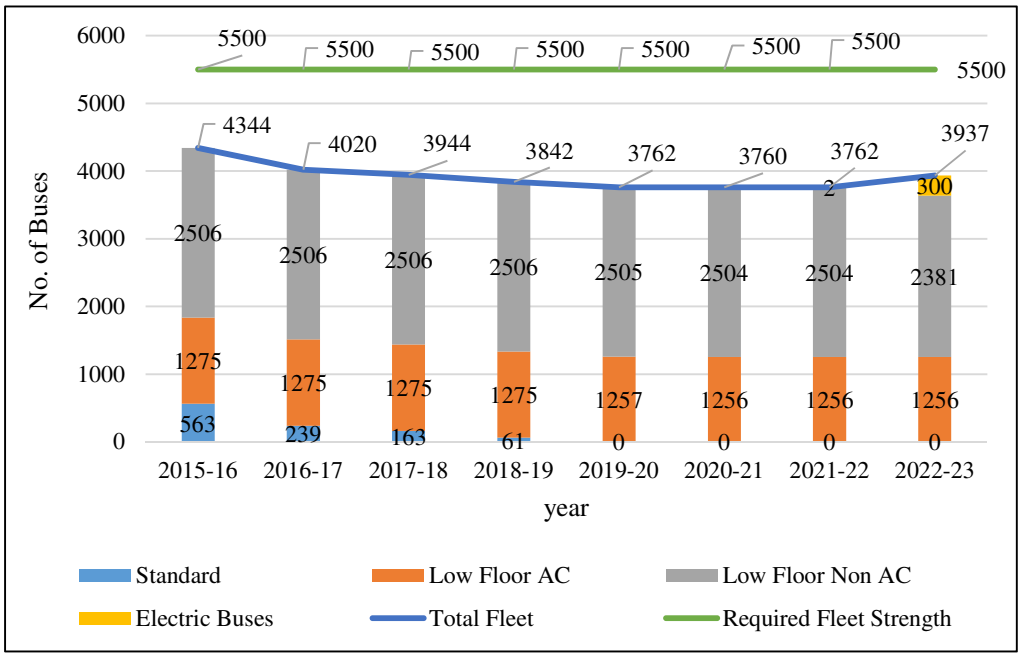
1 Fleet Utilisation ranged between 76.95 *per cent* and 85.27 *per cent* during COVID period.
2 Directions of Delhi High Court dated September 2007.

**Chart 3.1: Fleet Strength of the Corporation**




Source: Operational statistics of the Corporation.

Note: The Corporation had two Electric Buses also in 2021-22.

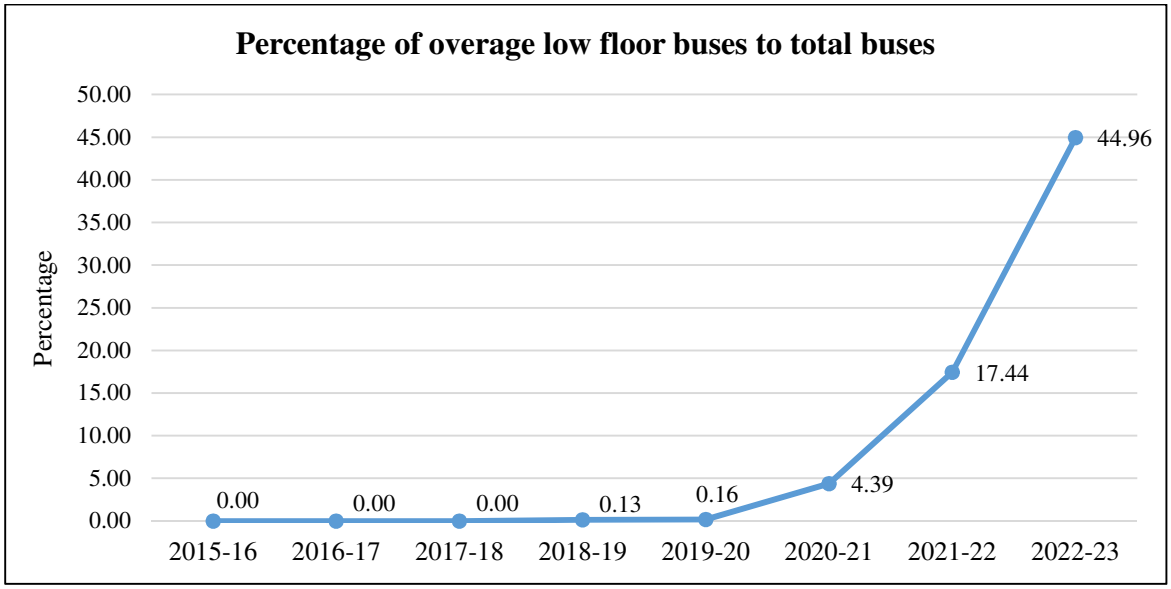
It may be seen from the above chart that the Corporation was not having adequate number of buses in all the years (2015-16 to 2021-22) hence, it was necessary to procure new buses for augmenting the existing fleet as well as for replacing the old and un-serviceable buses. Audit observed that ₹ 236.82 crore was available for procurement of buses in 2015 and ₹ 233.06 crore was available for this purpose as of March 2022. However, the Corporation failed to induct new buses (except two Electric Buses in March 2022[3] and 298 buses after March 2022 up to November 2022) into its fleet during the last 10 years (last bus was inducted in 2011-12). Further, number of buses remained same during the review period excluding Standard Floor Buses which were completely phased out in 2019-20. The issue of Procurement of buses has been discussed in Chapter 4.

The Transport Department accorded (August 2012) approval that the Corporation CNG buses having Stage Carrier Permits as well as Contract Carriage Permits may be plied within NCT of Delhi up to 15 years of age. As per norms (February 2015) prescribed by the Corporation, the life of a Low Floor AC/Non-AC Bus was 12 years or 7.50 lakh kilometers of operation, whichever was later. The Board approved (February 2015) that in specific cases

[3] Corporation entered in engagement of 300 e-buses under CAPEX Model of FAME-II scheme of Department of Heavy Industries, GoI. Under the Scheme, MHI contributed ₹ 55 lakh per bus as subsidy to Vendors which was to be routed through DTC. The Corporation has to pay the Vendor at the rate of ₹ 68.58 per KM for operating the buses. Hence, no upfront payment was to be made by the Corporation and the corpus of ₹ 233.06 crore remained unutilized. Out of these 300 e-buses scheduled to be delivered (by November 2021: 100 buses and January 2022: 200 buses), only 2 buses were received till March 2022 and remaining were received till November 2022.

where the bus remains held up for long time due to unavoidable reasons and is unable to complete 7.5 lakh KMs of operation up to 15 years, then the vehicle may be scrapped after 15 years of life with the approval of CMD upon the merit of each case. Percentage of Low Floor Buses which had completed their useful life (as prescribed by the Corporation) for the period from 2015-16 to 2022-23 is detailed in **Annexure 3.2** and summarised in **Chart 3.2**.

**Chart 3.2: Percentage of overage Low Floor Buses**




Source: Operational statistics of the Corporation.

As could be seen from Chart 3.2, the number of overage low floor buses in the Corporation fleet during 2018-23 increased from 0.13 *per cent* (five buses in 2018-19) to 44.96 *per cent* (1,770 buses in 2022-23). The percentage of overage buses of the Corporation was higher in comparison to APSRTC[4] (one *per cent)* and BESTU[5] which did not have any overage bus in its fleet. The increase in the number of overage buses was due to the inability of the Corporation to purchase new buses and scrap the overage buses in a timely manner as discussed in subsequent paras.

The Management accepted (May 2023) the fact and stated that as only 300 new buses could be procured, these overage buses could not be scrapped/deleted from the Corporation's fleet. Currently, Corporation has 3,937 buses (3,637 CNG and 300 Electric buses). The fact remains that as on 31 March 2023, 1,770 Low Floor CNG Buses (44.96 *per cent*) were overaged and being operated beyond 12 years useful life[6] prescribed (February 2015) by the Corporation.

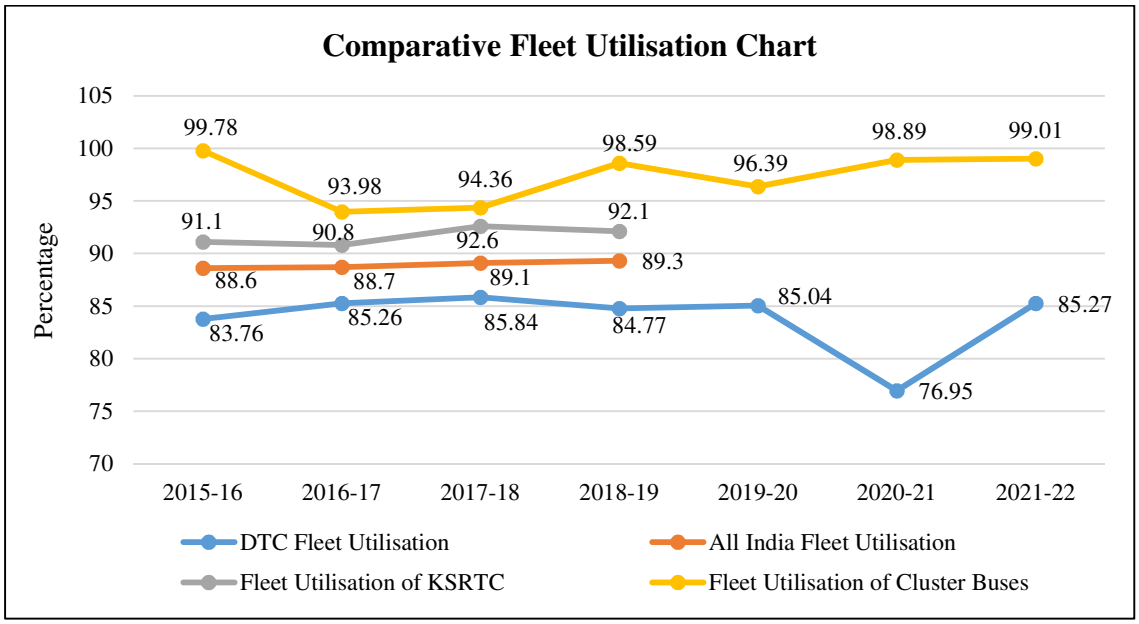
[4] Andhra Pradesh State Road Transport Corporation
[5] Brihanmumbai Electric Supply and Transport Undertaking
[6] Six buses beyond 15 years

### 3.2.2 Fleet Utilisation

Fleet Utilisation represents the Ratio of the number of buses on road to the fleet held by the Corporation. Optimum fleet utilisation is necessary for enhancing the Operational Performance of a transport undertaking. Inability to achieve optimum fleet utilisation would impact the Corporation's Operational Performance adversely.

The Corporation maintained a mixed fleet till 2019-20 of Standard floor and Low floor buses and had only low floor buses since 2020-21 in its fleet. As per the Annual Maintenance Contract (AMC) for low floor buses, the Contractors were required to ensure 95 *per cent* availability during warranty period i.e. for a period of three years or operation of the bus up to 2.10 lakh KMs, whichever is later and 92 *per cent* availability after the warranty period. However, the Contractor failed to ensure 92 *per cent* availability of low floor buses on road during the entire period of 2015-22 as shown in **Chart 3.3**. As per the provision of AMC, the Corporation deducted penalty of ₹ 21.57 crore from the bills paid to the contractors during the period 2015-22.

**Chart 3.3: Fleet Utilisation of Corporation buses vis-à-vis others**




Source: Operational statistics of the Corporation, CIRT data and Transport department data.

The fleet utilisation computed by the Corporation also does not depict the correct picture as it was being computed on the basis of buses out shed[7] in the morning shift only without taking into account the buses out shed in the evening shift.

It can be seen from chart 3.3 that trend of fleet utilisation by the Corporation was below All India Level (2015-16 to 2018-19), KSRTC[8] (which was the best performer in fleet utilisation among all the STUs) and Cluster buses. The low

[7] When the bus with driver and conductor exits the depot it is considered as out shed.
[8] KSRTC- Karnataka State Road Transport Corporation

fleet utilisation was primarily attributable to frequent breakdowns as discussed in paragraph 3.2.3 and existence of 1,770 overage buses **(Annexure 3.2)** as on 31 March 2023.

Thus, the Corporation was unable to achieve optimum utilisation of its fleet, which in turn, impacted its operational performance adversely.

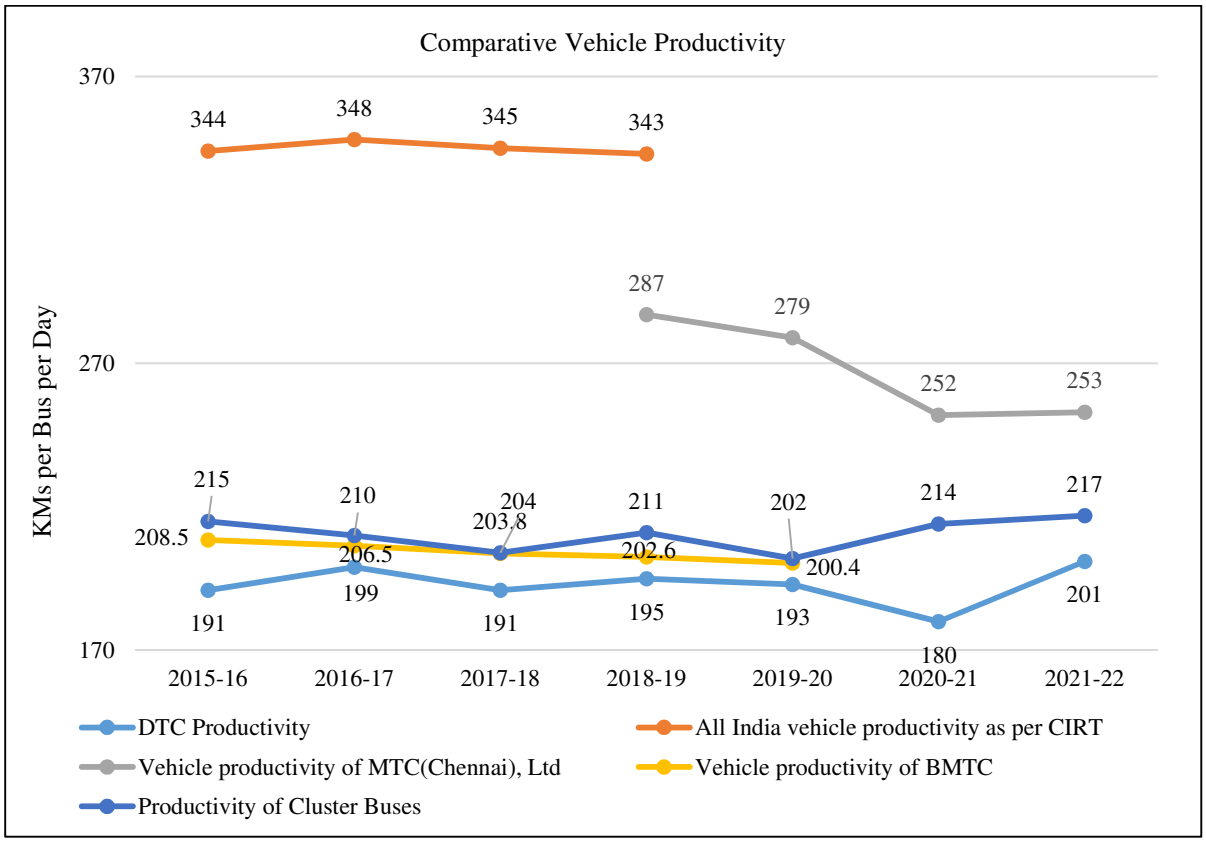
The issue was also highlighted in Paragraph 2.2.3.2 of the previous Performance Audit Report featured in the Report of the CAG on Revenue and Social & Economic Sectors (PSUs) for the year ended March 2015, Government of National Capital Territory of Delhi, (Report No.1 of the year 2016). However, no corrective measures had been taken to enhance the fleet utilisation.

***Recommendation 3.1: The Corporation needs to procure new buses, scrap overage buses and take up the matter with the AMC Contractor to ensure 92 per cent availability of all the buses for operations to increase Fleet Utilisation.***

### 3.2.3 Vehicle Productivity

Vehicle Productivity refers to the average kilometers run by each bus per day in a year. The detailed figures of Vehicle Productivity of the Corporation vis-à-vis the targets fixed during 2015-22 is shown in the **Annexure 3.3**. A summary of the same is also given in **Chart 3.4**.

**Chart 3.4: Productivity**




Source: Operational statistics of the Corporation, CIRT data and Transport Department data.

The All India Average Vehicle Productivity per bus per day was 343 KMs to 348 KMs during 2015-16 to 2018-19 (as per available data), whereas for the Corporation, it ranged from 180 KMs to 201 KMs during 2015-22. Vehicle Productivity of the Corporation was less than Vehicle Productivity of other Metropolitan Cities having higher percentage of over-aged fleet viz. Metropolitan Transport Corporation (MTC) (Chennai) Limited (252 to 287 per bus/KM/day) or Bengaluru Metropolitan Transport Corporation (200.4 to 208.5 per bus/KM/day), although these Corporations were operating in similar crowded city road conditions. Audit further observed that breakdowns of both Standard Floor Buses and Low Floor Buses were very high, as shown in **Table 3.1**, which also adversely affected the Vehicle Productivity.

The **Table 3.1** shows summary of breakdown of buses per 10,000 KMs during the period of seven years ending March 2022.

**Table 3.1: Breakdown per 10,000 KMs**

**(In numbers)**

| **Particulars** | **2015-16** | **2016-17** | **2017-18** | **2018-19** | **2019-20** | **2020-21** | **2021-22** |
|---|---|---|---|---|---|---|---|
| Std. Floor Buses | 4.63 | 2.67 | 4.58 | 4.75 | NA | NA | NA |
| Non AC Low Floor Buses | 4.15 | 4.84 | 4.90 | 4.64 | 5.21 | 3.18 | 4.22 |
| AC Low Floor Buses | 2.83 | 3.47 | 3.68 | 3.63 | 4.24 | 2.75 | 3.89 |
| **DTC as a Whole** | 4.50 | 3.83 | 4.08 | 3.96 | 4.57 | 2.90 | 4.01 |
| Breakdown in BMTC | 0.06 | 0.06 | 0.05 | 0.03 | 0.03 | 0.01 | NA |
| Breakdown in MTC (Chennai) | NA | NA | NA | 0.001 | 0.001 | 0.004 | 0.002 |
| Breakdown in BESTU | 0.57 | 0.39 | 0.33 | NA | NA | NA | NA |
| **Cluster buses** | 0.01 | 0.01 | 0.02 | 0.03 | 0.01 | 0.01 | 0.02 |

Source: Corporation data and Annual Repot of BMTC, MTC (Chennai) and BESTU. NA- not available.

The Table 3.1 shows that rate of breakdown per 10,000 KMs had fluctuated year after year. It ranged between 2.90 and 4.57 during the period of seven years ending March 2022, whereas it was 0.01 to 0.06 in case of Bangalore Metropolitan Transport Corporation, 0.001 to 0.004 in case of Metropolitan Transport Corporation (Chennai) Limited, 0.33 to 0.57 in case of the Brihanmumbai Electric Supply & Transport Undertaking (BESTU) and 0.01 to 0.03 in respect of Cluster Buses during the period of 2015-16 to 2021-22.

Further, average of four breakdowns per 10,000 KMs in respect of Corporation buses indicate that a bus breaks down in every 12 days whereas average of 0.02 breakdowns per 10,000 KM of Cluster Buses indicates that a bus breaks down only once in every 2,300 days.

Audit observed that breakdowns in respect of Low Floor Buses increased at an alarming rate. In respect of Low Floor non-AC Buses, it increased by 25.54 *per cent* between 2015-16 and 2019-20 and in respect of AC Low Floor Buses it increased by 49.82 *per cent* during the same period, then it reduced slightly in 2021-22 whereas in respect of over aged Standard Buses, it increased by 77.90 *per cent* between 2016-17 and 2018-19 and these buses were phased out in 2019-20. As all the Low Floor Buses are more than 10 years old, there was continuous increase in number of breakdowns. Moreover, the quality of

Repair and Maintenance by the Contractors under Annual Maintenance Contracts was also poor thereby adversely affecting the Vehicle Productivity and reliability of the bus service.

Due to low Vehicle Productivity, the Corporation failed to achieve even its own set targets as given in **Annexure 3.3** during 2015-22, resulting in loss of potential Revenue of ₹ 68.40 crore.

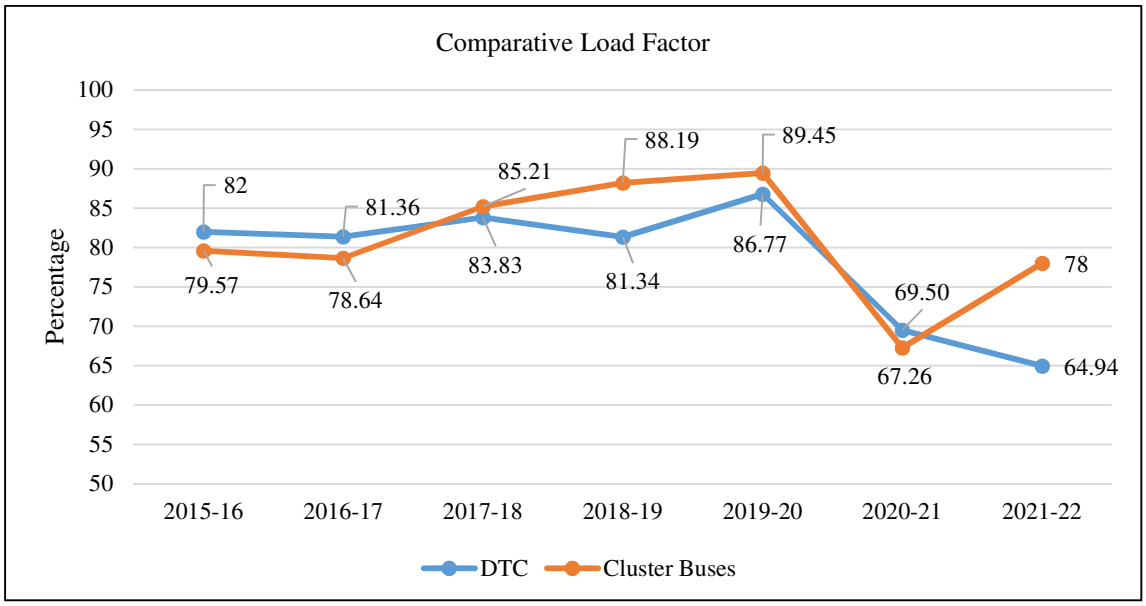
The Management stated (May 2023) that the reasons for low Vehicle Productivity were overaged buses, frequent traffic jams and route diversions in Delhi resulting in increased operating time and reduced operational kilometers. However, the fact remains that Cluster Buses, MTC and BMTC which were operating in the similar/comparable conditions had higher Vehicle Productivity.

***Recommendation 3.2: The Corporation should increase Vehicle Productivity by ensuring roadworthiness of buses through timely preventive maintenance.***

### 3.2.4 Load Factor

Capacity utilisation of a Transport undertaking is measured in terms of Load factor, which represents the percentage of seating capacity occupied to seating capacity offered. The schedules to be operated are to be decided after proper study of routes and periodical reviews are necessary to improve the Load factor. The Corporation reported Load factor in the range of 64.94 *per cent* to 86.77 *per cent* during 2015-16 to 2021-22 **(Annexure 3.4)**. A graph depicting the Corporation's Load factor vis-à-vis Cluster buses is given in **Chart 3.5**.

**Chart 3.5: Comparative Load Factor**




Source: Operational statistics of the Corporation and Transport department data.

Operation wise (City and National Capital Region) Load factor of the Corporation is detailed in **Annexure 3.4**. It can be seen that the load factor in NCR routes remained low at 28.55 to 60.91 *per cent* and in City routes, the same ranged from 37.93 to 89.62 *per cent* during 2015-16 to 2020-21. In light of the

varying load factors in the NCR and City routes, DTC need to re-strategize the distribution of buses to optimize its revenue within the ambit of its social commitment.

The Corporation computes load factor based on total Operating Revenue including Revenue from Passes, special hire and school buses as compared to the CIRT Pune formula where the load factor is computed based on only ticketed Revenue. The load factor so calculated appears to be on much higher side. Thus, load factor arrived at by Corporation does not depict a correct and realistic picture.

***Recommendation 3.3: The Corporation needs to undertake periodic review of load factor and re-strategise the distribution of buses to optimise the revenue within the ambit of its social commitment.***

### 3.2.5 Route Planning and Rationalisation

As stipulated in Section 22 of the Road Transport Corporation Act, 1950, it shall be the general principle to carrying on the Corporations' operations on Business principles. Operational Performance of a State Transport Corporation can be improved by periodic review of uneconomical routes with a view to assess their continuance, to rationalise them and to optimise operation of buses on higher Revenue earning routes. Scrutiny of records of the Corporation revealed the following deficiencies in this regard:

#### 3.2.5.1 Operation of buses not in line with Business principles

As on 31 March 2022, 657 routes were approved by the Department for operation of buses in Delhi of which the Corporation operated only on 311 routes. In addition to these 311 routes, 157 other routes were also operated by Corporation on public demand. Thus, the Corporation was operating on 468 routes (57 *per cent*) out of total 814 routes as on 31 March 2022. Analysis of the Earning per KM (EPK) and Operating cost per KM of operations in respect of 403 routes operated during 2021-22, revealed that the Corporation was unable to recover its Operational Cost in any of the routes operated by it. The Operational Loss to the Corporation during 2015-22 was ₹ 14,198.86 crore[9] which was met to a great extent from Revenue Grant of ₹ 13,381 crore from GNCTD and other Non-Operating Revenue of ₹ 612.68 crore. This reflects that the Corporation was dependent upon GNCTD for its survival and not operating on Business principles.

The Management stated (May 2023) that it did not operate all 657 routes approved by Delhi Government due to shortage of buses and increased Metro lines. Further, the Corporation had also stopped plying its buses on various routes where Cluster Buses were also being operated and the fare of the

[9] 2015-16- ₹ 1,483.80 crore, 2016-17-₹ 1,610.80 crore, 2017-18-₹ 1,960.40 crore, 2018-19-₹ 1,914.70 crore, 2019-20-₹ 2,077.94 crore, 2020-21-₹ 2,649.68 crore and 2021-22-₹ 2,501.54 crore.

Corporation/Cluster buses was lowest in India, it being Public Service. On the other hand, input cost on Salary, Pension, AMC, CNG and other overheads had increased tremendously. Hence, there was no profitability on the operation of routes by the Corporation.

The reply only confirms the Audit contention that DTC was not operating buses on all the notified routes and reassessment of routes is needed in view of increased Metro lines and plying of Cluster Buses on various routes.

### 3.2.5.2 Periodic review of routes not conducted

Given the scenario of inadequate number of buses, losses incurred by the Corporation and its obligation to serve all parts of city, the Corporation needed to decide an optimum quantum of services on different routes by conducting periodical review of routes, to optimise its Revenue while serving the cause. For this purpose, Route wise Operating Cost per KM and the Earning per kilometer (EPK) are necessary to assess the economic viability of the same. However, it was seen in Audit that no such data in terms of Route wise cost of Operation was being maintained by the Corporation. It was further stated by the Corporation that no Viability assessment / Cost benefit analysis of the routes had been carried out in terms of EPK. Thus, the Corporation had not identified the uneconomical routes to take a decision regarding their continuance.

The Management accepted (May 2023) the Audit Observation and stated that the Corporation had to serve all the routes irrespective of the economic viability of the routes considering the Passenger comfort and need. Further, periodic review of routes was also conducted by the Corporation from time to time.

The reply is not acceptable as no such Review Report was annexed with the reply nor furnished during audit. Further, the reply is in contradiction to the same mentioned in Para 3.2.5.1 that the Corporation had stopped plying its buses on various routes where Cluster Buses were also being operated.

### 3.2.5.3 Rationalisation of Routes

Change in travel pattern of commuters, personalised mode of transport, expansion of urban spread, metro network, other modes of public transport authorised by DoT, warranted rationalisation of bus routes. The Corporation had not conducted any study for Route Rationalisation during the years 2015-22. Further, based on a Route Rationalisation study conducted by DIMTS in 2021-22, 40 additional routes were allocated to the Corporation for operation but only 26 of these routes were operational as of December 2022.

The Management accepted (May 2023) the Audit Observations but it is silent on reasons for operating only 26 out of 40 additional routes allocated to the Corporation.

***Recommendation 3.4: The Corporation should conduct periodic review of routes for optimum utilisation of available buses.***

### 3.2.6 Reliability of bus service

Reliability of bus service is mainly measured in terms of Regularity percentage/Operational Ratio and breakdown rate per 10,000 KMs of operation. Regularity is the percentage of trips operated to total scheduled trips.

**Table 3.2** shows Regularity percentage of the Corporation buses during the seven years period ending March 2022.

**Table 3.2: Regularity percentage of the Corporation buses**

| Sl. No. | Particulars | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
|---|---|---|---|---|---|---|---|---|
| 1 | Average no. of trips scheduled daily | 39232 | 36115 | 35212 | 34167 | 32913 | 26795 | 33547 |
| 2 | Average no. of trips operated daily | 33497 | 33101 | 31341 | 30562 | 29832 | 24582 | 31834 |
| 3 | Regularity Percentage/Operational ratio (2/1*100) | 85.38 | 91.65 | 89.01 | 89.45 | 90.64 | 91.74 | 94.89 |

Source: Corporation data

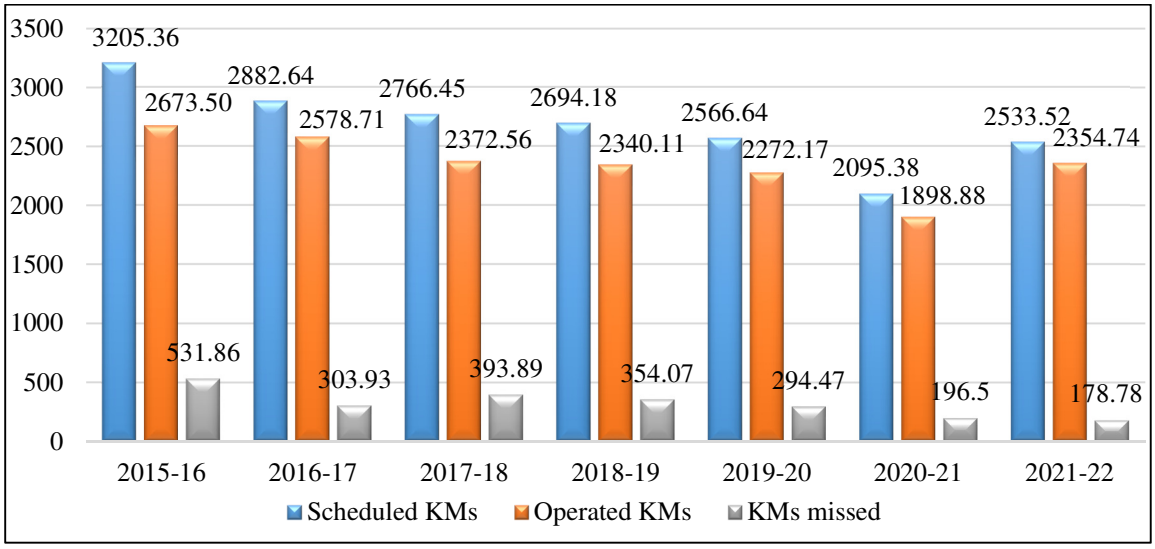
It may be seen from **Table 3.2** that about 10 *per cent* of the Scheduled trips were missed daily during 2016-17 to 2019-20 which improved slightly in 2020-21 and 2021-22.

The analysis of Missed scheduled KMs in respective years has been made in the paragraph under Table 3.3.

**Missed Scheduled KMs**

The **Chart 3.6** shows the Missed Scheduled KMs during seven years from 2015-16 to 2021-22.

**Chart 3.6: Missed Scheduled Kilometers (in lakh KMs)**




Source: Data furnished by the Corporation

It may be seen from Chart 3.6 that the percentage of Missed Scheduled KMs had decreased from 16.59 *per cent* in 2015-16 to 7.06 *per cent* in 2021-22.

However, percentage of Missed Scheduled KMs was on higher side as compared to those of KSRTC which ranged from 3.01 *per cent* to 6.52 *per cent* during 2015-16 to 2018-19. Scheduled KMs of the Corporation had come down from 3,205.36 lakh KMs in 2015-16 to 2,533.52 lakh KMs in 2021-22 due to reduction in average number of buses available from 3,817 to 3,206.

The cause wise analysis of the Missed Scheduled KMs as per information furnished by the Corporation are detailed in **Table 3.3**.

**Table 3.3: Summary of reasons for missed KMs**

**(in lakh KMs)**

| Reason Type | Reasons for Missed KMs | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
|---|---|---|---|---|---|---|---|---|
| Controllable Reasons | Late Out shedding | 36.67 | 18.90 | 19.17 | 9.84 | 7.28 | 4.68 | 5.12 |
| | Unavailability of Adequate Buses | 82.40 | 53.50 | 64.62 | 35.45 | 18.69 | 10.84 | 21.37 |
| | Unavailability of CNG | 7.72 | 4.27 | 5.12 | 3.09 | 1.68 | 1.24 | 0.23 |
| | Want of drivers/ conductors | 151.31 | 52.69 | 80.29 | 110.62 | 83.57 | 67.00 | 14.27 |
| | Breakdowns | 62.70 | 44.70 | 42.71 | 37.78 | 43.11 | 20.97 | 33.84 |
| | CNG filling, change of crew etc. | 29.06 | 17.79 | 13.71 | 7.24 | 3.75 | 2.77 | 3.10 |
| Uncontrollable | Accidents | 1.48 | 0.69 | 0.25 | 0.21 | 0.22 | 0.31 | 0.39 |
| Unidentifiable | Not identifiable by DTC | 160.52 | 111.39 | 168.02 | 149.84 | 136.17 | 88.69 | 100.46 |

Source: Data furnished by the Corporation

The observations of Audit in respect of controllable reasons stated in **Table 3.3** are as under:

i) The Fleet Utilisation of the Corporation Buses ranged from 76.95 *per cent* to 85.84 *per cent* during the period of April 2015 to March 2022 due to frequent breakdowns, unavailability of adequate buses and absenteeism of Drivers/Conductors which limited the number of buses available for operation. Cases of breakdowns could be resolved by ensuring timely preventive maintenance and ensuring 95/92 *per cent* availability of Low Floor Buses by the AMC Contractor.

ii) The major cause of Missed Scheduled KMs as identified by the Corporation was shortage of Drivers and Conductors. The data on person in position showed that there was no shortage of Drivers during 2015-16 and 2021-22 and Conductors during 2015-22. However, shortfall in Conductors occurred as they were deployed in other sections of the Corporation due to shortage of clerical staff.

iii) Delay in out shedding was due to inadequate monitoring of road worthiness of buses/availability of crew, etc.

The Corporation was, thus, deprived of ₹ 399.68 crore, as potential Revenue during 2015-16 to 2021-22 due to Missed Scheduled KMs on account of controllable reasons (43.59 *per cent* to 69.54 *per cent*) **Annexure 3.5**. Further, the Corporation could not identify the reasons for 30.18 *per cent* to

56.19 *per cent* of missed KMs during 2015-16 to 2021-22 and the consequent loss of potential Revenue amounting to ₹ 268.92 crore.

The Management accepted (May 2023) the Audit Observation and stated that the main reasons for missing of Scheduled Kms during 2015-16 to 2021-22 were breakdowns, traffic jam and absenteeism. However, continuous efforts are being made to decrease missed Kms by ensuring roadworthiness of buses through proper services/docking of vehicles and timely preventive maintenance by the service providers. Further, all the depot authorities were directed to reduce missing Kms to minimal level.

### 3.2.7 Fire Incidents

The incidents of fire in Low Floor Buses in the fleet of the Corporation, were a regular feature. During the period of seven years ending March 2022, 41 fire incidents occurred in these low floor buses. Out of these, six buses were completely burnt by Mob and neither damages could be recovered nor were the buses repaired. Records related to fire incidents of five burnt buses were not available with the Corporation to identify the extent of damage.

In respect of remaining 30 buses, main recorded reasons for other fire incidents were short circuit, High Tension (HT) lead burnt due to engine overheat, wheel overheat, HT cable /lead loose, wheel jam, lapse in maintenance by AMC, etc. This indicates poor quality of maintenance by Contractors. Further, Depot authorities cannot be absolved of their responsibility of ensuring proper maintenance of buses through inspections and checks before a bus leaves the depot. Such high occurrence of fire incidents not only raises serious concerns about the safety of Passengers but also impacts the reliability of Public Transport.

The Management stated (May 2023) that a committee had been constituted to examine the cause of individual fire incidents. In addition, directions were issued from time to time for various remedial measures/corrective actions to be taken to prevent fire incidents in Low Floor Buses. However, despite various remedial measures claimed to be taken by the Corporation, 41 fire incidents occurred during the period which shows the ineffectiveness of the measures taken by the Corporation.

***Recommendation 3.5: The Corporation need to take incidences of fire seriously and take adequate steps to mitigate the same which is important for safety of Buses and Passengers.***

### 3.2.8 Fuel Efficiency

Fuel cost is a major component of the cost for any State Transport Undertaking. For the Corporation, fuel cost constituted 16.22 *per cent* of total Operating Expenditure in 2021-22 as such fuel cost has a direct bearing on the economy of operations. As per the norms of Annual Maintenance Contract (AMC) for low floor buses, the Contractor (M/s Ashok Leyland Limited (ALL) and M/s

Tata Motors Limited (TML)) shall guarantee minimum average fuel efficiency in terms of KMs operated per Kg (KMPKG) of CNG fuel consumed, as shown in **Table 3.4**.

**Table 3.4: Minimum average fuel efficiency of CNG as per AMC**

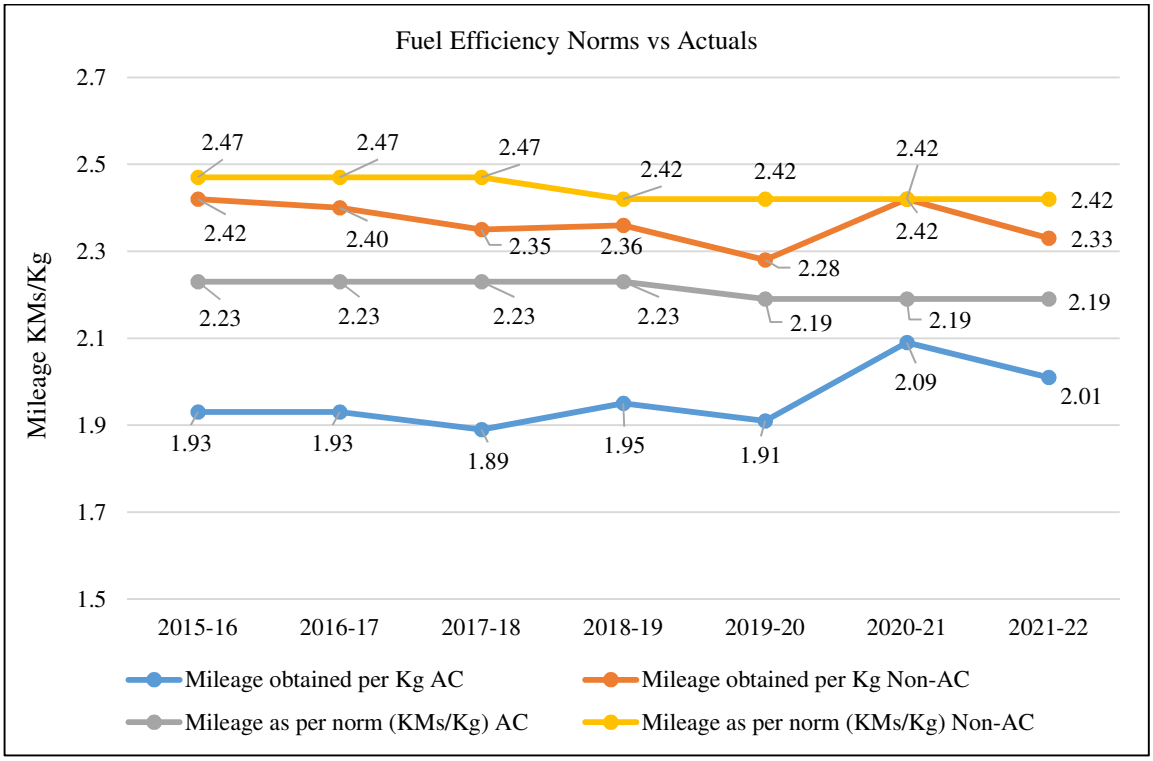
**(in KMPKG)**

| Sl. No. | Description | Non-AC | AC |
|---|---|---|---|
| 1 | During warranty period | 2.60 | 2.35 |
| 2 | After warranty period up to 8 years of operation | 2.47 | 2.23 |
| 3 | More than 8 years: 7.5 lakh KMs or 12 years of operation, whichever is later | 2.42 | 2.19 |

Source: As per AMC

Against the above norms, the actual consumption, mileage obtained per kilogram and extra expenditure on CNG consumption are detailed in **Annexure 3.6**. A summary of mileage obtained is given in **Chart 3.7**.

**Chart 3.7: Mileage obtained vis-à-vis optimum mileage**




Source: Data furnished by the Corporation and LoA with vendor.

In respect of low floor buses, penalties for consumption of CNG in excess of the norms was to be recovered by the Corporation from the Vehicle Manufacturers as per AMC. The Corporation consumed 469.55 lakh Kg of fuel in excess as compared to norms of AMC. With regard to penalties, an amount of ₹ 12.04 crore (40 *per cent* against losses) was recovered from M/s ALL against loss of ₹ 30.11 crore on account of excess CNG consumption during 2015-22. As regards M/s TML, against losses amounting ₹ 122.51 crore for excess consumption beyond norms, nothing was recovered during the same period.

Further, the Corporation had assessed recovery of ₹ 187.06 crore from M/s TML on account of excess consumption of CNG from 2009-10 to 2021-22. However, no amount could be recovered till date (December 2022) as the Arbitrator rejected the claim on the basis of methodology adopted for calculation of the penalty amount for CNG fuel KMPKG and the matter was pending for decision at Hon'ble High Court (December 2022). Similarly, an amount of ₹ 58.86 crore was assessed as recoverable from M/s ALL from 2009-10 to 2021-22. However, only ₹ 26.60 crore was recovered as of December 2022 in compliance to interim Arbitral Tribunal Orders.

The Management confirmed (May 2023) the Audit Observations and stated that up to March 2023 total penalty against excess CNG consumption of ₹ 86.10 crore was recovered from the bills of M/s TML in line with the directions from Court (3 February 2023). However, the fact remains that recovery of ₹ 100.96 crore was still pending (May 2023).

***Recommendation 3.6: The Corporation may resolve the issue of high fuel consumption with M/s ALL and TML by regular pursuance of the matter with the Arbitrator.***

### 3.2.9 Comparative Analysis of Operational Performance of Corporation vis-à-vis DIMTS

The comparative data of the Operational and Financial Performance of Corporation vis-à-vis DIMTS[10] apart from parameters already discussed in preceding paras for the period of seven years ending March 2022 is given in **Table 3.5**.

**Table 3.5: Comparison of operational performance with DIMTS**

| Sl. No. | Particulars | | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Buses held at the end of the year | Corporation | 4344 | 4020 | 3944 | 3842 | 3762 | 3760 | 3762 |
| | | DIMTS | 1293 | 1552 | 1648 | 1679 | 2741 | 2990 | 3239 |
| 2. | Accidents per One Lakh KMs | Corporation | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 |
| | | DIMTS | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 |
| 3. | Traffic Income per KM (in ₹) | Corporation | 31.21 | 30.58 | 31.26 | 30.32 | 32.37 | 22.94 | 22.28 |
| | | DIMTS | 25.92 | 27.23 | 28.51 | 27.73 | 27.81 | 14.76 | 15.54 |
| 4. | Revenue per KM (in ₹ ) | Corporation | 37.60 | 35.63 | 37.49 | 37.79 | 39.28 | 26.83 | 28.04 |
| | | DIMTS | 28.17 | 29.65 | 31.19 | 30.39 | 30.76 | 18.17 | 18.70 |
| 5. | Total Cost per KM (in ₹) | Corporation | 213.58 | 245.63 | 307.17 | 342.83 | 400.04 | 544.34 | 487.94 |
| | | DIMTS | 54.06 | 55.00 | 62.59 | 62.95 | 70.34 | 70.70 | 74.33 |
| 6. | Revenue Grants/ Viability Gap Funding (₹ in crore) | Corporation | 1174.00 | 1550.00 | 2007.00 | 1825.00 | 2030.00 | 2475.00 | 2320.00 |
| | | DIMTS | 287.50 | 288.71 | 387.57 | 393.85 | 638.90 | 1082.71 | 1350.77 |

Source: Corporation data and replies from DIMTS. Component wise breakup of Traffic income per KM, Revenue per KM and Total Cost per KM for DIMTS were not furnished by the Department, hence, reasons for variation could not be analysed.

[10] Delhi Integrated Multi-Model Transit System Limited

It may be seen from the **Table 3.5** that:

- Traffic Income and Revenue per KM of the Corporation was more than DIMTS in all the years under review. However, total cost of operations per KM in case of DIMTS ranged from ₹ 54.06 to ₹ 74.33 during 2015-22 whereas in case of the Corporation, total cost of operations per KM increased from ₹ 213.58 (2015-16) to ₹ 544.34 (2020-21). The Operational Cost of the Corporation includes interest cost of ₹ 122.60 per KM in 2015-16 and ₹ 355.67 per KM in 2021-22 which was not paid since 2011-12.
- DIMTS fleet increased from 1,293 buses in 2015-16 to 3,239 buses in 2021-22 whereas fleet of Corporation decreased from 4,344 buses to 3,762 buses during the same period due to ageing of the existing fleet and no new procurement of buses (except two Electric Buses in March 2022) during 2015-22 as discussed in detail in Chapter 4.
- Incidence of Accidents of Corporation Buses were on higher side than those in buses operated by DIMTS.
- Revenue grants/ Viability Gap funding required by DIMTS for operation of a fleet of 3,239 buses in 2021-22 was ₹ 1,350.77 crore, however, Revenue Grant received by the Corporation for operation of a fleet of 3,762 buses in 2021-22 was ₹ 2,320 crore.

The Management stated (May 2023) that DIMTS operates 12 meter 900 mm Floor Height Buses with Hydraulic ramps/Conventional Buses which are easy to maintain by own R&M staff. However, the Corporation was mandated to induct Low Floor Buses only which are highly advanced and require special purpose tools and skilled manpower for their maintenance.

The Management further stated that higher per KM Operational Cost of the Corporation and higher need for Grants was due to 6,937 permanent staff, payment of Ground Rent and Property Tax of the Depots being used by the DIMTS including Fare Collection Management System (FCMS) Depot. All the Bus Terminals owned by the Corporation are being maintained by it despite being used by DIMTS for its Cluster Buses without any cost. Further, pension payment of ₹ 50 crore per month to 20,000 pensioners was also made by the Corporation.

The reply is silent regarding the reasons for higher incidents of accidents of Corporation buses as compared to DIMTS.

Thus, DIMTS in almost each and every Operational as well as Financial aspect except Revenue per KM was performing better than the Corporation.

***Recommendation 3.7: The Corporation needs to analyse the gaps between its performance and that of DIMTS and steps needs to be taken to improve the performance.***