

A Comprehensive Research Analysis of Fast-Growing Traffic Problems in Meerut District

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Abstract

Meerut, one of the fastest-growing urban centers in Uttar Pradesh and part of India's National Capital Region (NCR), is confronting a rapidly escalating traffic crisis driven by explosive vehicle growth, insufficient road infrastructure, poor traffic management, and the inadequacy of public transportation alternatives. This research paper analyses the multidimensional traffic problems afflicting Meerut district, drawing on the latest available data from the Ministry of Road Transport and Highways (MoRTH, 2024), Uttar Pradesh Traffic Police, National Crime Records Bureau (NCRB, 2023–24), Asian Development Bank (ADB, 2024), and the National Capital Region Transport Corporation (NCRTC, 2024–25). Vehicle registrations in Meerut have grown at over 11% per annum since 2001—far exceeding road network expansion. The Delhi-Meerut expressway, despite being inaugurated in 2021, routinely experiences multikilometer jams. Urban arterials suffer daily gridlock at key nodes including Hapur Road, Baghpat Road, Delhi Road, Garh Road, and around the railway station. Road accidents remain a severe public health burden: nationally, over 1.73 lakh people were killed in road accidents in 2023 alone, and Uttar Pradesh consistently ranks among the worst-performing states. Structural causes include encroachment of road space, unregulated commercial vehicle movement, absence of integrated traffic management systems, lane indiscipline, and inadequate pedestrian infrastructure. While major interventions—the Delhi-Meerut Expressway, the RRTS Namo Bharat corridor (fully operational as of February 2026), and Meerut Metro—offer relief, intra-city traffic problems remain acute and demand urgent systemic attention.

Keywords: Meerut traffic, road congestion, road accidents, vehicle growth, Delhi-Meerut Expressway, RRTS, Meerut Metro, traffic management, Uttar Pradesh road safety, NCR transport.

Introduction

Traffic congestion is one of the defining urban challenges of 21st-century India. As cities expand at rates that infrastructure cannot match, millions of Indians spend increasing hours stranded in traffic—losing productivity, breathing polluted air, and facing elevated accident risks. Meerut district, situated just 70 km northeast of New Delhi in the heart of the Indo-Gangetic Plain, epitomizes this challenge.

Published: 22 August 2026

DOI: <https://doi.org/10.70558/IJSSR.2026.v3.i4.301264>

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Meerut is both a historic city one of the oldest continuously inhabited urban centres in India and a rapidly modernizing commercial hub. Its proximity to Delhi has made it a magnet for industrial activity, migrant workers, and peri-urban expansion. Simultaneously, it serves as a regional market and educational centre for western Uttar Pradesh, drawing large daily volumes of inter-district traffic. The Meerut-Delhi corridor alone handles millions of daily commuter trips across national highways, expressways, and state roads.

Despite its strategic importance, Meerut's road infrastructure, traffic management systems, and public transport networks have not kept pace with demand. The result is pervasive congestion—on national highways, urban arterials, and inner-city roads alike. Traffic jams at major intersections such as Begum Bridge (Begumpul), Commissioner's Square, Shastri Nagar, Hapur Road, Jail Chungi, and around Meerut Cantonment are a daily occurrence. Peak hours see city-centre speeds fall to walking pace.

This research paper provides a systematic, data-driven analysis of Meerut's traffic crisis. It examines the growth of vehicle population and road demand; documents congestion hotspots and road accident trends; explores the structural and institutional causes of the problem; reviews government interventions; and presents a set of evidence-based recommendations for sustainable traffic management in Meerut district.

2. Study Area: Meerut District

2.1 Geographic and Demographic Profile

The Meerut district is located in western Uttar Pradesh and spans approximately 2,590 square kilometers. Its center is located at 28.98°N 77.70°E. Muzaffarnagar, Baghpat, Hapur, Ghaziabad, and Bulandshahr are all nearby. The National Capital Region includes the Meerut district. is intended to assist in reducing Delhi's crowds in accordance with national plans. As of 2024, the Meerut district's population was approximately 4 million. They reside in both villages and cities. With a population of over 1.5 million, Meerut is one of the largest cities in Uttar Pradesh and is home to several factories, enterprises, and educational institutions.

2.2 Road Network and Connectivity

National route 34 (the Delhi-Haridwar route, which carries the Delhi-Meerut Expressway), National Highway 58 (to Rishikesh), National Highway 119, and a number of state highways service the area. Between 2018 and 2021, the Delhi-Meerut Expressway (originally NH-58 alignment, now largely realigned as part of the Eastern Peripheral Expressway integration) was gradually opened. The main intercity route is this 96-kilometer, 14-lane expressway that links Delhi with Meerut. Meerut's internal road system is made up of a dense network of secondary streets, many of which are narrow, badly maintained, and frequently encroached upon, in addition to a few major arterial roads that radiate from the city centre (Baghpat Road, Delhi Road, Hapur Road, Garh Road, Mawana Road, and Pallavpuram Road).

3. Explosive Vehicle Growth: The Root Cause

3.1 National Context

The number of vehicles in India has increased at a remarkable rate. Between 1981 and 2011, the annual growth rate of all registered automobiles was 11.7%, whereas the annual growth

rate of the population was only 2.0%. India has one of the biggest car fleets in the world by 2024, with over 310 million registered vehicles. Approximately 75% of all registered vehicles are two-wheelers. Rising incomes, accessible two-wheeler financing, a lack of suitable public transportation options, and fast urbanization have all contributed to this increase.

3.2 Vehicle Growth in Meerut

Meerut both mirrors and amplifies the national trend. It has above-average income growth and business activity as a part of the NCR, which directly translates into car ownership. Before the expressway was constructed, the national and state highways that connect Meerut and Delhi were already "congested and slow," with travel times of three to four hours each way, according to the Delhi-Meerut RRTS Investment Plan created for the ADB. In NCR traffic zones, the average mobility score was more than 1.9—much higher than the 1.5 cutoff point that is thought to indicate good connection. When a mobility index is higher than 1.5, it indicates that traffic is moving far more slowly than it should, which is a direct result of congestion.

The Regional Transport Office (RTO) in Meerut has continuously seen double-digit annual growth in the number of new car registrations. Traffic levels are increased by private automobiles, motorbikes, e-rickshaws (which have grown in popularity since 2016), and commercial vehicles like trucks and tempos that serve commercial and industrial areas. Inter-district commuting has increased as a result of the Delhi-Meerut expressway cutting down on intercity travel time, although the expressway does not alleviate the congestion at Meerut's internal nodes.

Table No-1(Vehicle Growth Rate and Road Accidents)

Parameter	National (India)	Uttar Pradesh / Meerut Region
Total registered vehicles	310 million (2024)	UP: ~40 million+ (2023 est.)
Annual vehicle growth rate (1981–2011)	11.7% p.a.	Similar or higher in NCR belt
Two-wheeler share	75% of total fleet	Dominant, esp. in urban Meerut
Road accidents (2023)	4,64,029 total (India)	UP: Highest NH fatalities nationally
Accident fatalities (2023)	1,73,000+ (India)	UP: largest state share on NHs
Accident fatalities (2024)	1.8 lakh (India)	UP: consistently top-ranked
Speeding as cause	58.6% of fatal accidents	Over-speeding dominant in UP too

Parameter	National (India)	Uttar Pradesh / Meerut Region
Two-wheeler fatalities	45.8% of total deaths (2023)	Reflects Meerut's vehicle mix

Source: NCRB, MoRTH, NITI Aayog, Wikipedia, The Daily Jagran

4. Traffic Congestion: Hotspots and Patterns

4.1 Intra-City Congestion Hotspots

Meerut city's daily traffic jams are concentrated in a few persistent areas. The worst is perhaps Begum Bridge (Begumpul), a narrow bridge across the Kali Nadi that directs traffic from various converging routes into a single bottleneck, creating daily traffic jams that span several kilometers. Commissioner's Square, also known as Commissionerate Chowk, is severely congested in the morning and evening at the intersection of multiple main arterials. Another region that frequently experiences traffic is the Jail Chungi area, which is notably included in UP government development recommendations. This area is where Chaudhary Charan Singh Marg (Abu Nallah crossing) narrows.

Garh Road and Hapur Road, which service industrial regions and transport large loads of commercial vehicles, are congested all day long. Because there is no designated pickup/drop zone, the arrival and departure of trains, auto-rickshaws, e-rickshaws, taxis, and private automobiles frequently congest the city railway station area. Infrastructure designs for a new railway overbridge notably identify Gate No. 29A near Cantonment Railway Station as a severe bottleneck, where a level crossing causes gate closures several times a day. Hotspots for a proposed four-lane elevated road costing Rs 120 crore include Paswara House, the Metro Plaza crossroads, and Football Chowk on Baghpat Road.

4.2 Expressway Congestion

Even with its modern 14 lanes, the Delhi-Meerut Expressway is prone to traffic jams. Thousands of commuters were stuck in a multikilometer traffic gridlock that stretched from Lal Kuan to Delhi in April 2025 due to a road accident at Sector 63 (the Lal Kuan region on the expressway). Many people were hurt when more than a dozen cars piled up close to the Bhojpur police station area in January 2025 due to heavy winter fog on the motorway. A seasonal hazard, fog-related multi-vehicle collisions on the expressway have been reported in numerous cases every year between November and February.

Traffic using the Meerut corridor has increased dramatically as a result of the expressway, which was built to cut travel times from three to four hours to about forty-five minutes. Congestion has, however, also been shifted to Meerut's entry and departure points, which are unable to absorb the extra influx.

4.3 Commercial Vehicle and E-Rickshaw Proliferation

One significant and frequently overlooked factor in Meerut's traffic pandemonium is the uncontrolled spread of e-rickshaws, or battery-powered three-wheelers. E-rickshaws drive

slowly, obstructing faster-moving traffic, and have no set routes. They can stop wherever to pick up passengers. In Meerut city, there are tens of thousands of them, and they are especially concentrated in business districts, close to bus stops, and train stations. In a similar vein, roadway width is reduced by 30 to 50 percent when overloaded tempos and mini-trucks that service Meerut's commercial marketplaces park on arterial roads for loading and unloading.

5. Road Accident Crisis: Data and Trends

5.1 National and State Context

Terrorism, natural disasters, and the majority of infectious diseases are significantly fewer common causes of traumatic mortality in India than road accidents. According to the National Crime Records Bureau (NCRB), there were 4,64,029 traffic accidents in India in 2023—17,261 more than in 2022—with over 1.73 lakh fatalities and 4.47 lakh injuries. According to the Ministry of Road Transport and Highways, 1.8 lakh persons died in traffic accidents in 2024, which is one of the highest absolute death rates in the world. Minister Nitin Gadkari claims that in just the first half of 2025, more than 26,000 people died on national roadways alone.

Uttar Pradesh routinely ranks top nationally in 2023 for the highest number of fatal traffic accidents on national highways. Particularly deadly conditions are produced by the state's dense population, mix of motorized and non-motorized traffic on shared highways, and significant volumes of trucks and commercial vehicles. In 2023, 58.6% of fatal accidents nationwide were caused by speeding; 45.8% of deaths were caused by two-wheelers; and 66% of those murdered were young, economically engaged individuals between the ages of 18 and 34.

5.2 Accident Patterns in Meerut

The profile of traffic accidents in Meerut district reflects general patterns in Uttar Pradesh with extra local severity characteristics. Despite being a controlled-access highway, the Delhi-Meerut Expressway has had a number of major accidents, mostly as a result of lane-cutting, over speeding, and fog-related visibility decrease in the winter. As part of NHAI's nationwide rollout, the expressway incorporates advanced traffic management systems (ATMS), such as AI-based Video Incident Detection and Enforcement Systems (VIDES). However, accidents continue to occur, in part because enforcement cannot completely replace behavioural change.

Many sections of Meerut's inner-city highways lack designated walkways, forcing pedestrians onto the carriageway. According to national statistics, pedestrian fatalities make up 15.9% of all traffic fatalities; this percentage is probably greater in Meerut's crowded business areas. The peak accident window in the country is between 6 and 9 p.m. (20.7% of all accidents); given Meerut's market/commercial nature and the city's generally dim street lighting, this pattern is probably repeated there.

5.3 Black Spots and Traffic Violations

There have been targeted campaigns against traffic infractions and black-spot repair in the Meerut Division, which also covers Ghaziabad, Hapur, Bulandshahr, and Noida. A conference presided over by Meerut Divisional Commissioner Bhanu Chandra Goswami in December 2024 revealed that 1,207 vehicles had more than 40 notices against them and 132 vehicles had

more than 50 pending challans each, showing systematic non-compliance with traffic laws. For more than 1,300 of these automobiles, the administration started the registration revocation process. Along with directing the completion of corrective work at designated "black spots" (accident-prone areas) throughout the division, the meeting also started enforcement campaigns against drunk driving, seat belt use, helmet use, and illegal stunts. According to national data, 3,144 black spots have been handled with long-term remedies and 8,542 black spots have received short-term remedial treatment nationwide; Meerut's black spots are included in this national remediation pipeline.

Table No-2(Road Accidents Data)

Indicator	Value	Source & Year
National road accident fatalities (2023)	1,73,000+	NCRB, 2023
National road accident fatalities (2024)	1.8 lakh	NCRB, 2024
National road accidents (2023)	4,64,029	NCRB, 2023
NH fatalities (H1 2025)	26,000+	MoRTH / Gadkari, July 2025
UP ranking in NH fatalities	1 nationally	MoRTH, 2023
Speeding as cause of fatalities	58.6%	MoRTH / NCRB, 2023
Two-wheeler share of fatalities	45.8%	NCRB, 2023
Pedestrian share of fatalities	15.9%	NCRB, 2023
18–34 age group share of fatalities	66%	NCRB, 2024
Vehicles with 50+ pending challans (Meerut Div.)	132 vehicles	Meerut Div. Commr. Dec 2024
Vehicles facing registration cancellation	1,300+	Meerut Div. Commr. Dec 2024
National black spots addressed (long-term)	3,144 locations	MoRTH, 2025

Source: NCRB, MoRTH, The Daily Jagran, NITI Aayog, Business Standard

6. Structural and Institutional Causes

6.1 Infrastructure Deficit

The population and automobile growth in Meerut have surpassed the city's road system. Shops, vendors, and parked cars encroach on the original widths of many of the city's main thoroughfares, further reducing its useful roadway. Pedestrians are forced onto roadways due

to the lack of footpaths or the presence of hawkers, which creates a hazardous mix of pedestrian and vehicle traffic. Major intersections are either poorly signalled or uncontrolled. All traffic must merge at grade because there are no grade separations (flyovers or underpasses) at important congestion points, which results in disproportionate delays.

Acknowledging this, Cantt MLA Amit Agarwal, working with Setu Nigam and PWD officials, submitted a significant infrastructure repair plan worth more than Rs 5,500 crore to the UP government. A four-lane elevated road from Paswara House to Rani Mill via Football Chowk (Rs 120 crore), a two-lane elevated road over Abu Nallah from Begumpul to Victoria Park (Rs 200 crore), a two-lane elevated road from Bacha Park to Jali Kothi on Delhi Road (Rs 57 crore), a four-lane flyover on Circuit House–Mawana Road at Commissioner's Square (Rs 76 crore), and a railway bridge at Gate 29A near Cantonment Railway Station. Implementation and budget approval are still pending.

6.2 Inadequate Public Transportation

One of the main causes of Meerut's reliance on private vehicles is the lack of a dependable, large-capacity urban public transportation infrastructure. The frequency and coverage of the city's bus service, which is operated by the Uttar Pradesh State Road Transport Corporation (UPSRTC), are restricted. City buses are late and packed. Although the Meerut Metro (Phase 1) was inaugurated on February 22, 2026, the same day as the full opening of the Namo Bharat RRTS corridor, there was no operational urban metro in Meerut city as of early 2025.

Residents have resorted to e-rickshaws, auto-rickshaws, and private vehicles in large numbers due to the lack of dependable public transportation. Although e-rickshaws offer reasonably priced last-mile connectivity, their slow speeds, haphazard stops, and lack of control have made traffic flow worse. The transition to private vehicles is a self-reinforcing cycle: as public transportation deteriorates in comparison to private vehicles, more people purchase cars and two-wheelers, which exacerbates traffic.

6.3 Traffic Management Weaknesses

Meerut city's traffic management is plagued by insufficient enforcement, poor technology integration, and understaffing. Many intersections' signals are out of sync, which causes wave effects as green lights at one intersection do not match green phases downstream, resulting in stop-start flows that exacerbate traffic. In comparison to the size and number of vehicles in the city, there are not enough traffic police officers. Poor enforcement follow-through is shown in the pending-challan backlog of more than 50 challans per car (132 such vehicles were discovered in 2024). The majority of commercial sectors have uncontrolled parking, with cars parked on road surfaces, further reducing the effective highway.

6.4 Rail Level Crossings

There are numerous rail-road level crossings in Meerut, like as the infamous Gate 29A near Cantonment, which frequently disrupts traffic flow on the roads. These gate closures, which happen many times an hour during peak train schedules, result in lengthy lines on both sides that take several minutes to clear once the gates reopen, adding up to a substantial daily delay.

6.5 Rapid Urbanisation and Peri-Urban Sprawl

The peri-urban suburbs of Meerut, including Partapur, Shatabdi Nagar, Modipuram, Meerut South, and adjacent industrial clusters, have grown quickly, creating new trip origins that the current road system was not intended to handle. During operating hours, heavy truck traffic from industrial locations (such as sugar mills, paper industries, and producers of engineering items) mixes with commuter and passenger cars on shared roadways without segregation. Road capacity is strained throughout the day by the mixed commercial and passenger traffic on the Meerut-Hapur, Meerut-Muzaffarnagar, and Meerut-Delhi sectors.

7. Major Policy Interventions and Infrastructure Projects

7.1 Delhi-Meerut Expressway (NH-34)

The Delhi-Meerut highway was built in stages between 2018 and 2021. It is a 96-kilometer, 14-lane controlled-access highway that connects Delhi and Meerut via Ghaziabad. Intercity travel times have significantly decreased as a result, going from three to four hours to roughly forty-five to sixty minutes under typical circumstances. The NHAI has installed AI-based VIDES and advanced traffic management systems (ATMS) on the motorway. However, history has proven that accidents remain a major safety concern, especially fog-related pile-ups in the winter and events caused by traffic near exit points. In addition to increasing traffic, the expressway's capacity has somewhat countered the reduction in congestion.

7.2 Namo Bharat RRTS Corridor (Delhi–Ghaziabad–Meerut)

The most important long-term answer to Meerut's intercity traffic issue is the Delhi-Ghaziabad-Meerut Regional Rapid Transit System (RRTS), also known as "Namo Bharat," which is India's first regional rapid transit system. Sarai Kale Khan in Delhi and Modipuram in Meerut are connected by an 82.15-kilometer corridor that is jointly sponsored by the Government of India, ADB (\$1 billion loan), AIIB, NDB, state governments, and equity contributions. Trains can travel between Delhi and Meerut in around 55 minutes at speeds of up to 160 km/h.

On February 22, 2026, Prime Minister Modi officially opened the entire corridor, including the underground Meerut city stations, marking the project's completion of its full operating length of 82 km. The corridor employs 25 kV AC overhead electrification, has 25 stations (including 14 in Meerut with the metro extension), and uses trains built by Alstom that can accommodate 1,750 passengers per trainset. In July 2024, the first hybrid Level 3 ETCS signalling system based on LTE was put into service. It is anticipated that the project will reduce traffic on the Delhi-Meerut corridor by rerouting large amounts of intercity automobile and bus traffic onto the rail system.

7.3 Meerut Metro

On February 22, 2026, the Meerut Metro, a 23.6-kilometer, 13-station urban metro system that runs from Modipuram to Meerut South, was also launched. At that time, Meerut's metro was the youngest in the world. With interchange connections to the Namo Bharat RRTS at four stations, the metro, which was constructed at an estimated cost of Rs 11,540 crore, links important metropolitan nodes such as Meerut Central, Bhaishali, Begumpul, Shatabdi Nagar, and Meerut South. January 2025 saw the start of trial runs. For the first time, the metro is anticipated to offer Meerut city inhabitants a dependable, high-capacity urban transit option, which may lessen their reliance on clogged city highways for cars and two-wheelers.

7.4 Meerut Division Traffic Enforcement Drive

Transport, traffic police, NHAI, PWD, health, and education departments all participated in a coordinated enforcement meeting conducted by the Meerut Divisional Commissioner in December 2024. A mandate for public awareness campaigns via FM radio and social media, direct completion of black-spot repair work, special drives on the usage of helmets and seat belts, enforcement of the law against drunk driving, and the start of registration cancellation for more than 1,300 repeat traffic violators were among the outcomes. NHAI was given explicit instructions to deal with traffic in the vicinity of medical schools and hospitals. All departments were required to provide progress reports for continuous observation.

Table No-3(Major Transport Projects in Meerut)

Project / Intervention	Status (2025)	Key Impact
Delhi-Meerut Expressway (14-lane, 96 km)	Operational since 2018–21	Reduces intercity time to 45–60 min; fog accidents remain concern
Namo Bharat RRTS (82 km, Delhi–Meerut)	Fully operational Feb 22, 2026	Delhi–Meerut in 55 min; 25 stations; diverts road traffic to rail
Meerut Metro (23.6 km, 13 stations)	Inaugurated Feb 22, 2026	Urban mobility within Meerut; connects RRTS at 4 interchange points
Rs 5,500 crore flyovers/elevated roads (proposed)	Awaiting budget approval (2025)	Addresses Begumpul, Commissioner's Sq, Gate 29A bottlenecks
ATMS / VIDES on expressway	Operational (NHAI)	AI-based incident detection; e-challans; speed enforcement
Meerut Div. enforcement drive	Initiated Dec 2024	1,300+ vehicle cancellations; black-spot correction; awareness drive

Source: Metro Rail Today, Wikipedia, UNCRD / ADB / AIIB Joint Event (2024)

8. Environmental and Health Impacts of Traffic Problems

8.1 Air Pollution

One of the main causes of air pollution in Meerut city is traffic congestion. Compared to free-flowing traffic, idling cars in slow-moving or stationary traffic produce much more carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter (PM_{2.5}, PM₁₀) per kilometre. Meerut frequently appears on lists of the most polluted cities in India, especially during the winter when temperature inversions trap car emissions near the ground. Dangerous ambient air quality conditions are produced by the mix of transportation pollution, open burning, and industrial emissions. The electric RRTS and Meerut Metro systems are intended to lower emissions from the transportation industry and enhance the quality of the air along the corridor.

8.2 Noise Pollution

In Meerut's business and residential neighbourhoods, the noise from e-rickshaws, diesel trucks, and two-stroke engine cars, along with the long-standing usage of horns—a deeply embedded driver behaviour in Indian urban traffic—causes serious noise pollution. Inner-city traffic noise frequently surpasses WHO recommendations for residential areas, which are 55 dB during the day and 45 dB at night. This leads to stress, sleep disturbances, and long-term cardiovascular effects for those who live near arterial highways.

8.3 Economic Cost

Time spent in traffic jams, gasoline wasted in idling cars, and higher logistical expenses for commercial vehicles and the transportation of products are all direct economic consequences associated with traffic congestion. According to research from IIT Delhi, the annual cost of traffic congestion on Indian roadways in large cities is estimated to be thousands of crores. Due to Meerut's substantial commercial and industrial activity, the consequences of traffic delays include missed business appointments, delayed delivery of commodities, increased transportation expenses for industry and agriculture, and decreased worker productivity. Uttar Pradesh bears a disproportionate share of the estimated INR 1.27 lakh crore (about \$15 billion) in annual health costs in India due to traffic accidents alone.

9. Recommendations

Based on the analysis of data, infrastructure gaps, and on-ground conditions, the following evidence-based recommendations are proposed for Meerut district:

Give the Rs 5,500 crore infrastructure upgrade package top priority and expedite budget approval, especially for the Begumpul flyover, Commissioner's Square flyover, and Gate 29. An overpass for railroads—to solve the worst persistent bottlenecks. Install integrated, adaptive traffic light systems with real-time coordination at all of Meerut's major intersections to produce "green waves" on important thoroughfares during rush hour. Connect signals to central control rooms.

Control and zone e-rickshaw operations by establishing designated e-rickshaw corridors, prohibiting them from using key thoroughfares during rush hour, and implementing GPS-based route licensing to minimize haphazard stops and roadblocks. To restore road width, implement stringent on-street parking management in business zones, including paid parking, tow-away enforcement, and designated loading/unloading bays for commercial vehicles.

Expand the Meerut Metro's coverage (Phase 2) to connect additional urban nodes including Hapur Road, Mawana Road, and Modipuram–Muzaffarnagar road corridors, creating a comprehensive urban rail network that reduces private vehicle dependence. Introduce Bus Rapid Transit (BRT) lanes on major arterials as an interim measure until metro coverage expands, with dedicated bus lanes, real-time passenger information systems, and integration with RRTS stations. Create a Meerut traffic management centre with integrated e-challan issuance, automated number plate recognition (ANPR), AI-based surveillance, real-time traffic monitoring, and public traffic condition displays. To lessen pedestrian-vehicle collisions and promote active transportation, all arterial roadways should have designated bike lanes and pedestrian walkways with physical barriers separating them from the traffic. Put in place year-

round fog safety measures on the Delhi-Meerut Expressway, such as required fog lights, variable speed limits that are activated by visibility sensors, more patrolling from November to February, and radio and app-based public alerts. Increase manpower at critical congestion spots during peak hours and on the expressway, implement body cameras for accountability, and regularly develop the capacity of traffic police officers.

To prevent the existing fragmented approach spanning PWD, NHAI, police, RTO, and municipal organizations, a multi-departmental Meerut Urban Mobility Authority should be established to coordinate road development, public transportation, traffic enforcement, and land-use laws in an integrated way. Targeting the 18–34 age group most at risk for fatal accidents, start a long-term public awareness campaign about traffic laws, the usage of seat belts and helmets, the hazards of speeding, and the advantages of public transportation through schools, FM radio, social media, and community events.

10. Conclusion

Decades of underinvestment in public transportation and infrastructure, coupled with the fast urbanization and explosive growth of vehicles, have resulted in Meerut's traffic issue. Millions of people deal with the repercussions every day: hours lost in traffic, lives lost in accidents, lung damage from contaminated air, and financial expenses that reduce the city's capacity for productivity. Fortunately, revolutionary infrastructure is on the way. Meerut will have high-capacity, high-speed rail access to Delhi and within the city for the first time on February 22, 2026, when the Namo Bharat RRTS line and Meerut Metro are fully operationalized. Over time, this should lessen the reliance on private vehicles and alleviate the most severe intercity traffic in the city. If authorized and put into action right once, the proposed Rs 5,500 crore flyover and elevated road package will alleviate intra-city bottlenecks.

However, infrastructure is not enough on its own. Sustained institutional attention is needed to address driver behaviour patterns, enforcement gaps, the proliferation of unregulated e-rickshaws, and deficiencies in pedestrian safety. In addition to roads and rail, Meerut requires an integrated urban mobility management system that integrates land use, public transportation, infrastructure, traffic enforcement, and public awareness into a cohesive plan. The information in this article demonstrates that this is an issue that cannot wait any longer: reducing traffic in Meerut is essential for people's lives, livelihoods, and the city's economic future.

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