JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO BANKATA INDANE GRAMI

Objective of the JRM Report

This JRM report is designed to ensure compliance with the Central Motor Vehicle Rules, 1989 (CMVR), AIS 140 standards, and the Road Transport Safety Policy (RTSP). It provides a comprehensive risk assessment for the transportation of hazardous materials along specified routes. By integrating these legal frameworks, the report offers a broad strategy for identifying and mitigating route-specific risks.

Regulatory Compliance

The report complies with the Central Motor Vehicles (Eleventh Amendment) Rules, 2022, mandating safe transportation practices for N2 and N3 category vehicles carrying hazardous materials. These rules require detailed route assessments, especially regarding road conditions, speed limits, and risk areas, to ensure safety compliance.

Risk Management Strategy

This report categorizes transportation routes into high-risk and medium-risk areas, with a focus on factors such as sharp turns, accident-prone regions, and elevation changes. The goal is to provide actionable

recommendations to minimize these risks, including speed regulations, driver warnings for hazardous zones, and the option of alternate routes.

Compliance with the Road Transport Safety Policy (RTSP)

The report integrates RTSP provisions, including mandatory driving hours, rest periods, and nighttime driving restrictions. It ensures that drivers follow official guidelines, such as taking prescribed rest breaks and avoiding dangerous road conditions like poor visibility, heavy crowds, or high-traffic areas during peak hours.

Emergency Preparedness and Response

The report highlights the significance of predetermined emergency stops for refueling, rest, and overnight stays. It includes protocols for safe responses to road hazards, alternative routes, and rerouting processes if roads are closed or severe weather arises. This aligns with the RTSP emphasis on driver safety and rapid emergency response.

Environmental Considerations

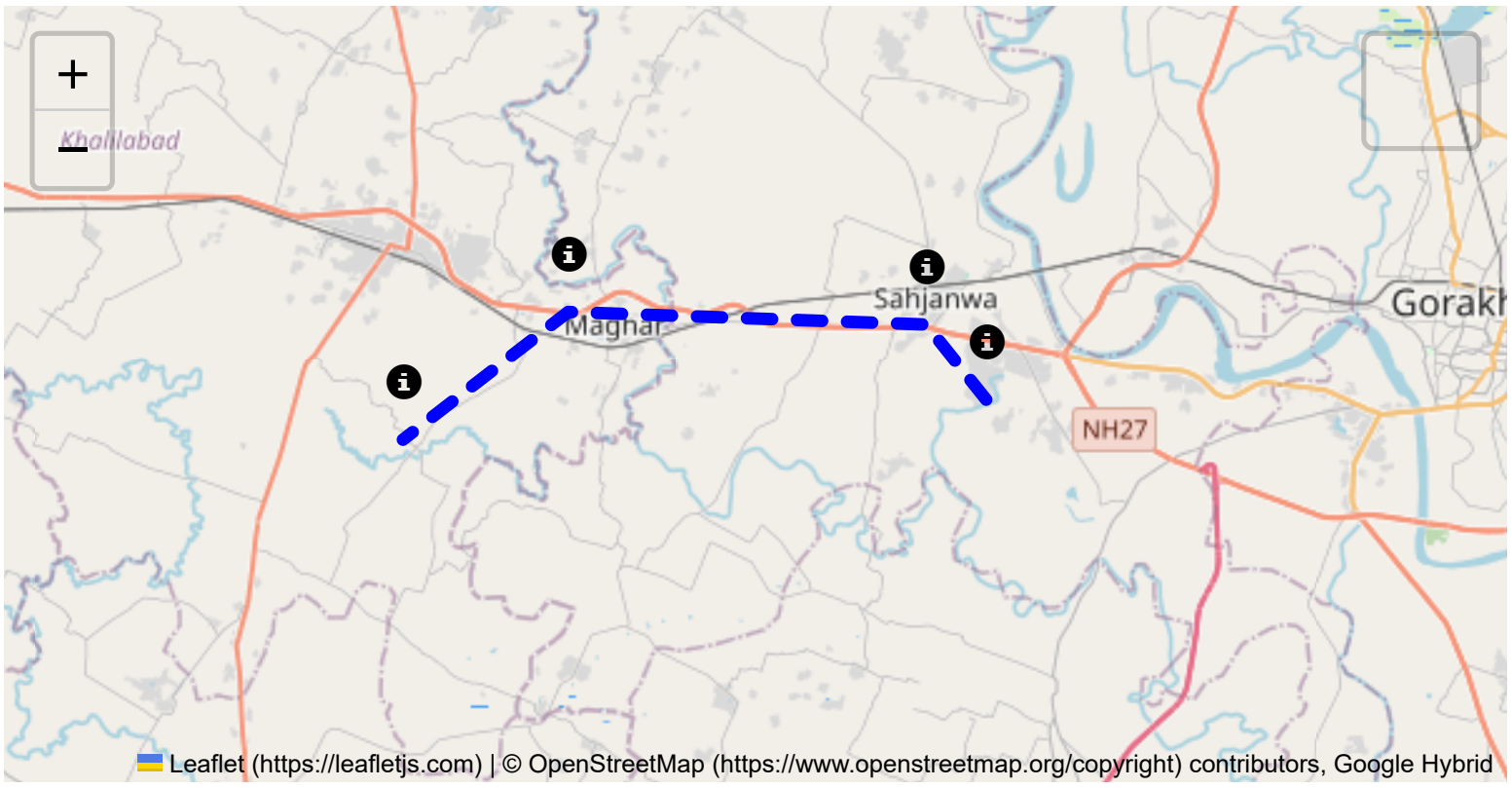
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

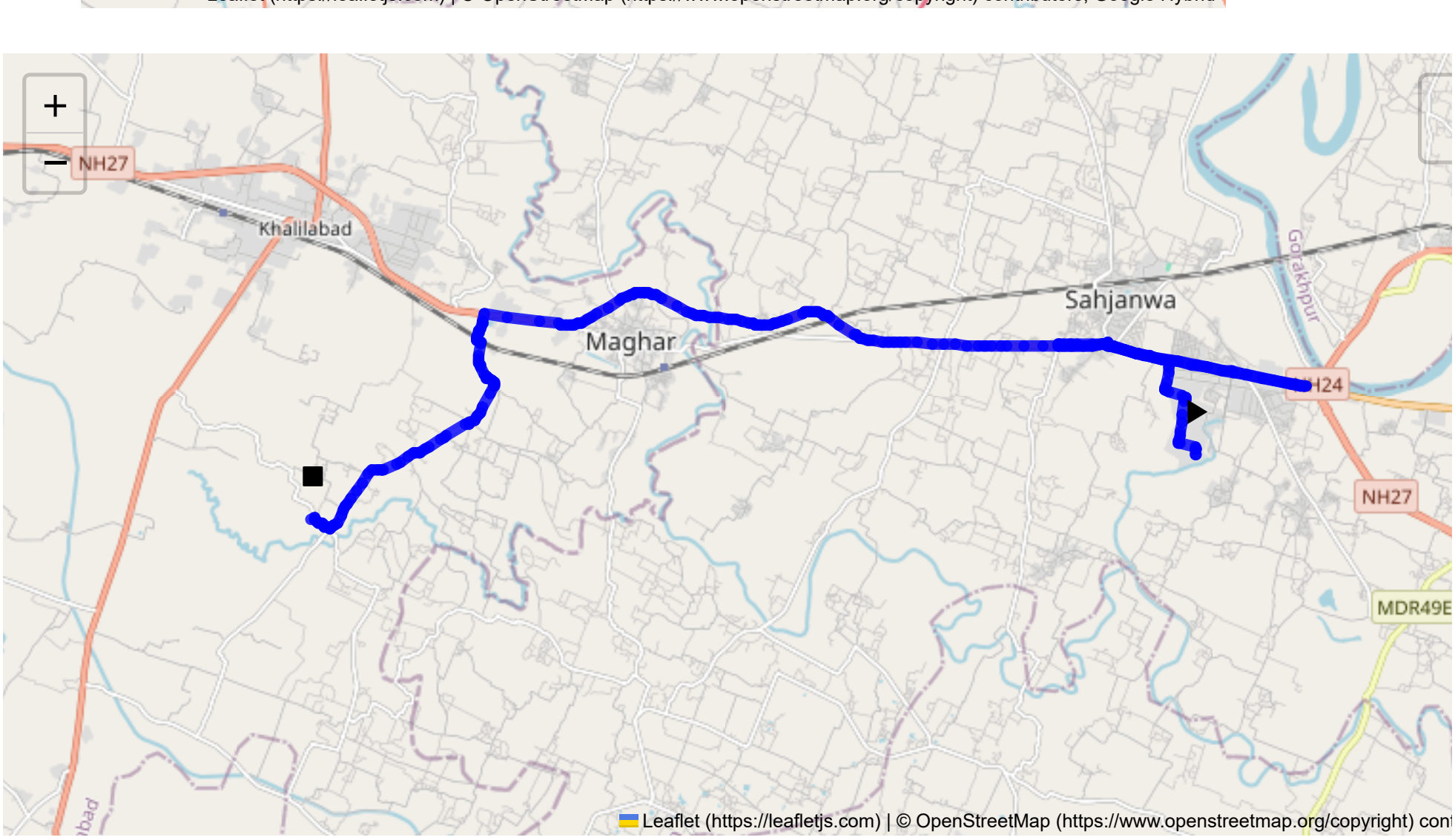
Journey Risk Mitigation

The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety norms.

Compliance with Government Directives

This report fully adheres to governmental directives regarding hazardous material transportation, implementing mandatory speed limits, nighttime driving restrictions, and comprehensive driver briefings and real-time alerts about route-related risks.





Route Summary:

Total Distance: 30.07 km

Estimated Duration: 0.8 hours

Adjusted Duration (Heavy Vehicle): 1.0 hours

Start: (26.735959, 83.229398)

End: (26.72582, 83.06988)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map: The route begins in GIDA Industrial Area Phase 1, Sahjanwa, moves through the village of Maghar and ends in Bankatwa, Imil Diha. It includes the key waypoints of Sahjanwa and Maghar, covering industrial and rural regions. The trajectory is roughly linear with small deviations due to local road layouts.

2. Typical Weather Conditions and Potential Weather-Related Hazards: The region experiences a subtropical climate with distinct seasons. Summers can be extremely hot, reaching up to 45°C, increasing the risk of vehicle overheating and road damage. The monsoon season (July to September) can result in heavy rains, causing flooding and waterlogging, particularly problematic in rural and low-lying areas. Winter is mild, with occasional fog that can severely reduce visibility.

3. Traffic Patterns: Traffic flow is generally moderate but can increase significantly around industrial shift changes, typically 8-9 AM and 5-6 PM. Generally, congestion is more likely in the key industrial spots and when entering/exiting urban settlements like Maghar and Sahjanwa.

4. Assessment of Road Quality and Infrastructure: Road conditions can vary. The initial sections in industrial areas typically have better quality roads. As the route progresses towards Maghar and Bankatwa, expect narrower, less maintained roads, with possible potholes and uneven surfaces. Infrastructure may lack sufficient signage and lighting, mainly outside urban centers.

5. Suggestions for Alternative Routes: In emergencies, consider using NH27, which runs near Sahjanwa and offers better connectivity and reliable conditions, though still subject to typical highway congestion.

6. Local Regulations Affecting Hazardous Material Transport: Uttar Pradesh follows national guidelines under the Motor Vehicles Act for transporting hazardous materials. These include restrictions on timing (avoidance of high traffic periods), mandatory permits, and specific route approvals. Check local requirements for updates.

7. Overview of Historical Incidents: While detailed historical data is limited, previous incidents including vehicle breakdowns and minor accidents, particularly during monsoon due to slippery roads, have been reported. Such events underscore the importance of regular vehicle maintenance and weather caution.

8. Environmental Considerations and Sensitive Areas: Although primarily industrial and agricultural, ensure minimal disturbance near populated areas and natural water bodies encountered en route. Adherence to environmental guidelines on emission controls is crucial.

9. Analysis of Communication Coverage: Generally, good mobile network coverage is expected near Sahjanwa and Maghar due to the presence of infrastructure. However, coverage may be patchy in rural segments approaching Bankatwa. Drivers should familiarize themselves with network areas and plan necessary communication in advance.

10. Estimated Emergency Response Times: Response times can be quick in Sahjanwa due to proximity to facilities but likely delayed (around 30-45 minutes) in more remote areas like Maghar and especially Bankatwa, owing to sparse emergency services and challenging road conditions.

11. Overall Summary of Risk Assessment: The route is moderate in terms of risk, primarily due to variable weather and road conditions outside urban regions. Attention is needed for potential congestion, especially near industrial hubs. Safety can be enhanced by adhering to local transport regulations, maintaining consistent vehicle checks, and planning for weather contingencies. Communication preparedness and awareness of emergency contacts throughout the route are also essential measures for optimal risk management.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73690, 83.22947	15 KM/Hr	0.07 km
2	Turn	High	26.73697, 83.22939	15 KM/Hr	0.11 km
3	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
4	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.48 km
5	Turn	Medium	26.74524, 83.22746	30 KM/Hr	1.30 km
6	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.32 km
7	Turn	Medium	26.74654, 83.22390	30 KM/Hr	1.69 km
8	Turn	Medium	26.74661, 83.22388	30 KM/Hr	1.70 km
9	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km
10	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.23 km
11	Turn	High	26.75381, 83.20466	15 KM/Hr	4.30 km
14	Turn	High	26.75377, 83.21355	15 KM/Hr	5.17 km
12	Blind Spot	Blind Spot	26.75377, 83.21355	10 KM/Hr	5.17 km
13	Blind Spot	Blind Spot	26.75407, 83.21347	10 KM/Hr	5.21 km
15	Blind Spot	Blind Spot	26.74712, 83.24909	10 KM/Hr	8.85 km
0	U-Turn	High	26.7471208, 83.2490873	10 KM/Hr	8.85 km
16	Turn	High	26.74703, 83.24907	15 KM/Hr	8.86 km
17	Turn	High	26.75869, 83.10123	15 KM/Hr	23.88 km
18	Turn	Medium	26.75467, 83.09984	30 KM/Hr	24.55 km
19	Turn	Medium	26.75463, 83.09986	30 KM/Hr	24.56 km
20	Turn	Medium	26.75430, 83.10045	30 KM/Hr	24.62 km
21	Turn	Medium	26.75423, 83.10048	30 KM/Hr	24.64 km
22	Turn	Medium	26.73653, 83.08968	30 KM/Hr	27.31 km
23	Turn	High	26.73367, 83.08098	15 KM/Hr	28.27 km
24	Turn	Medium	26.72805, 83.07659	30 KM/Hr	29.02 km
25	Turn	Medium	26.72791, 83.07631	30 KM/Hr	29.09 km
26	Turn	Medium	26.72521, 83.07483	30 KM/Hr	29.38 km
27	Turn	High	26.72420, 83.07351	15 KM/Hr	29.57 km
28	Turn	Medium	26.72529, 83.07116	30 KM/Hr	29.87 km
29	Turn	High	26.72606, 83.07077	15 KM/Hr	29.96 km

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.17 km

Coordinates: 26.75126, 83.22476

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.23 km

Coordinates: 26.75353, 83.20457

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.30 km

Coordinates: 26.75381, 83.20466

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.17 km

Coordinates: 26.75377, 83.21355

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.17 km

Coordinates: 26.75377, 83.21355

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.21 km

Coordinates: 26.75407, 83.21347

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 8.85 km

Coordinates: 26.74712, 83.24909

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 8.85 km

Coordinates: 26.7471208, 83.2490873

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.86 km

Coordinates: 26.74703, 83.24907

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 23.88 km

Coordinates: 26.75869, 83.10123

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.55 km

Coordinates: 26.75467, 83.09984

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.56 km

Coordinates: 26.75463, 83.09986

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.62 km

Coordinates: 26.75430, 83.10045

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.64 km

Coordinates: 26.75423, 83.10048

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 27.31 km

Coordinates: 26.73653, 83.08968

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 28.27 km

Coordinates: 26.73367, 83.08098

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 29.02 km

Coordinates: 26.72805, 83.07659

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 29.09 km

Coordinates: 26.72791, 83.07631

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 29.38 km

Coordinates: 26.72521, 83.07483

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.57 km

Coordinates: 26.72420, 83.07351

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.96 km

Coordinates: 26.72606, 83.07077

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