JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SURYANATH INDANE GAS

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

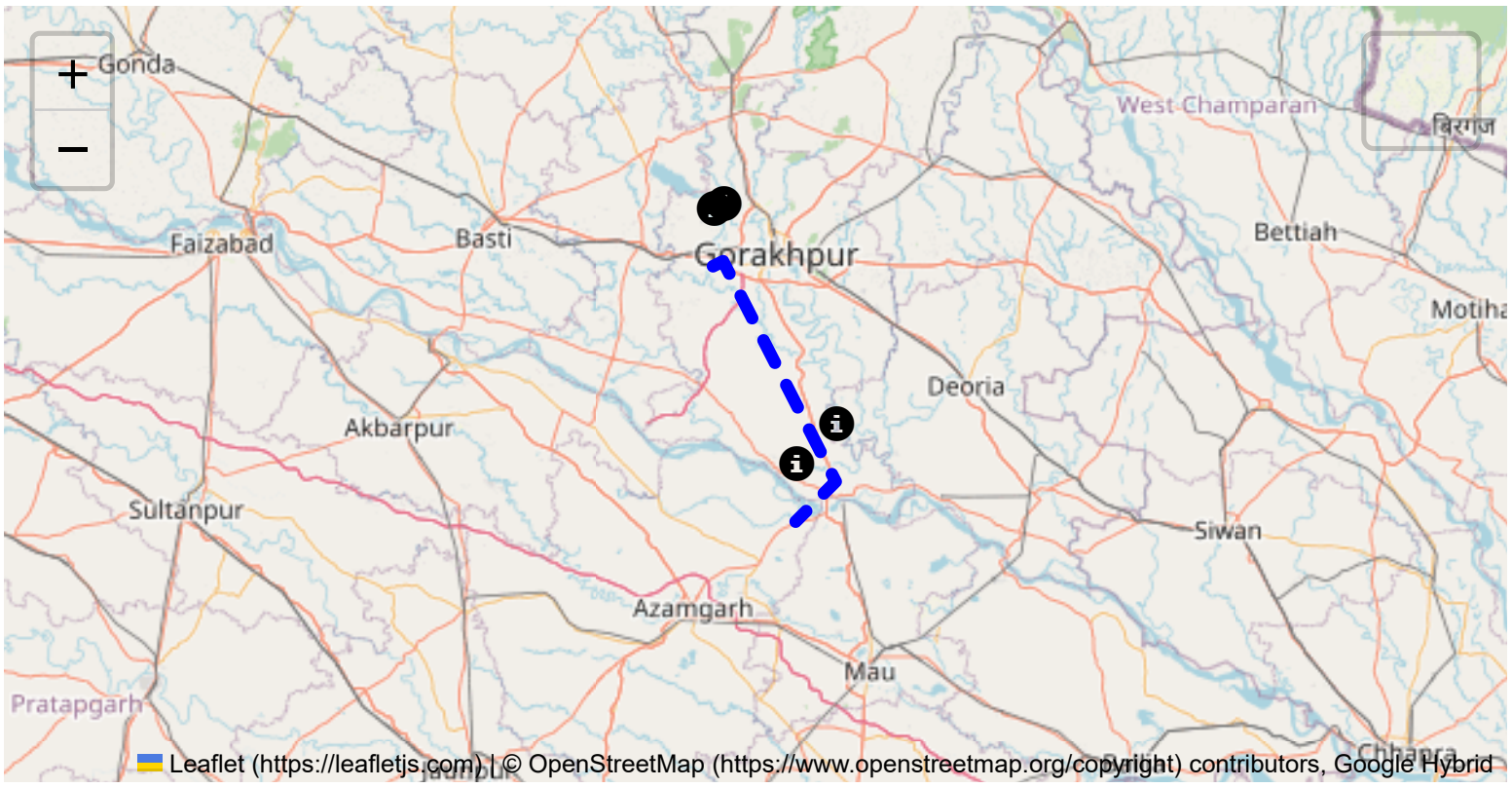
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

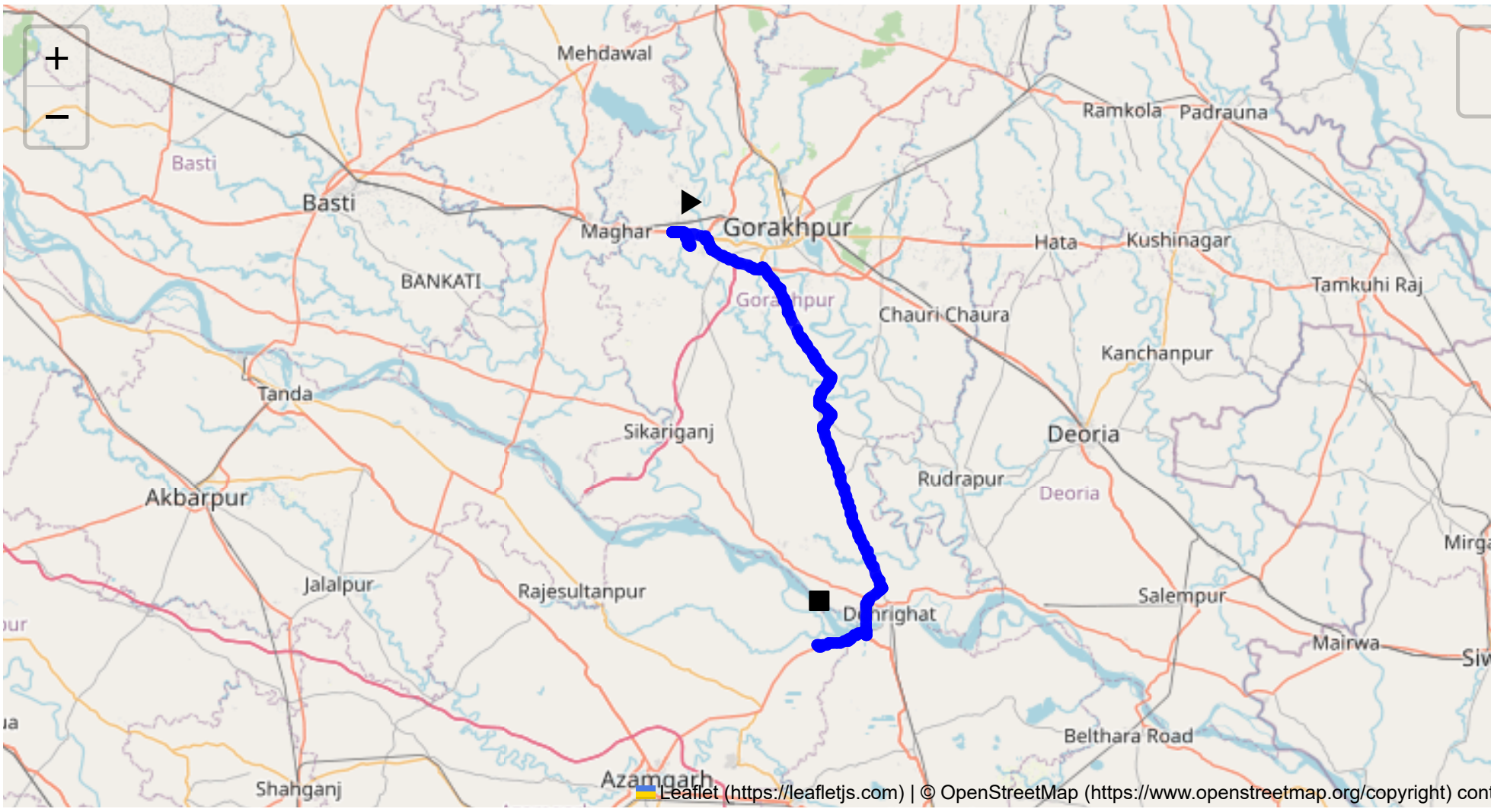
Journey Risk Mitigation

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: 84.60 km
Estimated Duration: 1.7 hours
Adjusted Duration (Heavy Vehicle): 2.2 hours
Start: (26.735959, 83.229398)
End: (26.234856, 83.408039)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from P6PH+9Q GIDA Industrial Area Phase 1 to 6CM5+W6 Chak Rauza via the specified waypoints covers approximately 84.60 kilometers. The journey includes a mixture of highways and regional roads, suitable for industrial transport, yet may have variable road conditions.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Uttar Pradesh experiences extreme temperatures, heavy monsoons, and foggy winters. During monsoon (June to September), roads can become slippery and prone to flooding. Dense fog during winter months (December and January) reduces visibility, particularly in early mornings and late evenings, increasing the risk of accidents.

3. Traffic Patterns and Congestion-Prone Areas

- **Peak Hours**: Usual peak hours are in the morning (8:00 AM to 10:00 AM) and evening (5:00 PM to 8:00 PM).
- **Congestion Areas**: Traffic congestion is often noticed around industrial loading zones and urban centers, particularly near Sahjanwa and as you approach urban areas near Gorakhpur or Kaalesar.

4. Assessment of Road Quality and Infrastructure

Road quality varies considerably:

- Major highways are relatively well-maintained.
- Regional roads may have potholes, uneven surfaces, and temporary blockage due to construction or repairs.

5. Suggestions for Alternative Routes for Emergencies

For emergencies, consider the NH-27/28 as a more reliable highway for diversions, although it could add kilometers to the journey. The state roads offer closer alternatives but might not be suitable for all heavy vehicle types.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Uttar Pradesh mandates strict adherence to national codes on hazardous material transport. These include secure containment, clear labeling, and routing through designated highways, avoiding populated zones when possible.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

Past incidents often highlight:

- **Causes**: Human error, mechanical failure, adverse weather.
- **Areas**: Accidents near densely populated regions and road intersections.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Zones**: Avoidance of agricultural areas to prevent contamination.
- **Protected Areas**: Minimal interaction but transport near sensitive zones like the Terai region needs care.

9. Analysis of Communication Coverage

Most of the route enjoys good mobile network coverage. However, rural stretches, particularly between major urban areas, might experience brief coverage gaps.

10. Estimated Emergency Response Times

- **Urban Areas (Sahjanwa, Gorakhpur)**: 15-30 minutes
- **Rural Areas**: 45 minutes to 1 hour, given variable conditions

11. Overall Summary of Risk Assessment

This route presents moderate risk levels due to:

- **Weather**: Irregular conditions requiring preparation.
- **Traffic and Congestion**: Manageable with strategic timing.
- **Road Conditions**: Mixed quality, increasing vehicle strain.
- **Communication**: Generally reliable, some gaps.

Though manageable with proper precautions and awareness, drivers need to remain vigilant, particularly during adverse weather and in traffic-dense zones. Continuous updates on road conditions and close adherence to safety protocols are crucial for reducing risks.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73690, 83.22947	15 KM/Hr	0.05 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	1.16 km
6	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.31 km
7	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
8	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km
9	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.23 km
10	Turn	High	26.75377, 83.20465	15 KM/Hr	4.28 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.75 km
11	Turn	Medium	26.74658, 83.25155	30 KM/Hr	9.04 km
12	Turn	High	26.70798, 83.33175	15 KM/Hr	18.62 km
13	Blind Spot	Blind Spot	26.24680, 83.47699	10 KM/Hr	76.18 km
14	Turn	High	26.24686, 83.47708	15 KM/Hr	76.50 km
15	Blind Spot	Blind Spot	26.25173, 83.47714	10 KM/Hr	77.04 km
16	Turn	High	26.23164, 83.41244	15 KM/Hr	83.70 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: 4.28 km

Coordinates: 26.75377, 83.20465

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.75 km

Coordinates: 26.74681, 83.25111

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.04 km

Coordinates: 26.74658, 83.25155

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 18.62 km

Coordinates: 26.70798, 83.33175

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 76.50 km

Coordinates: 26.24686, 83.47708

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 77.04 km

Coordinates: 26.25173, 83.47714

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 83.70 km

Coordinates: 26.23164, 83.41244

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