JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO PRATIKSHA INDANE SER

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

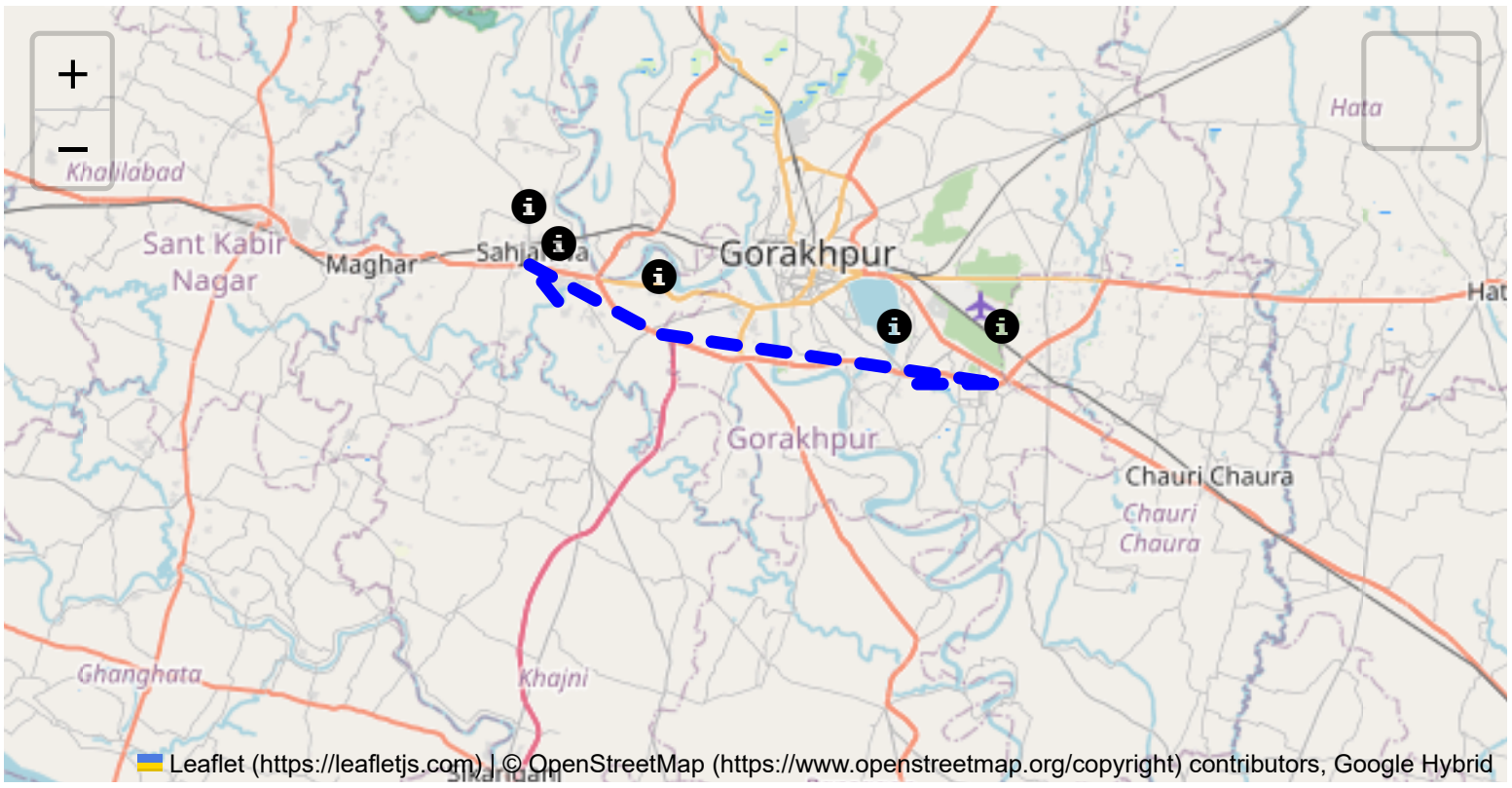
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

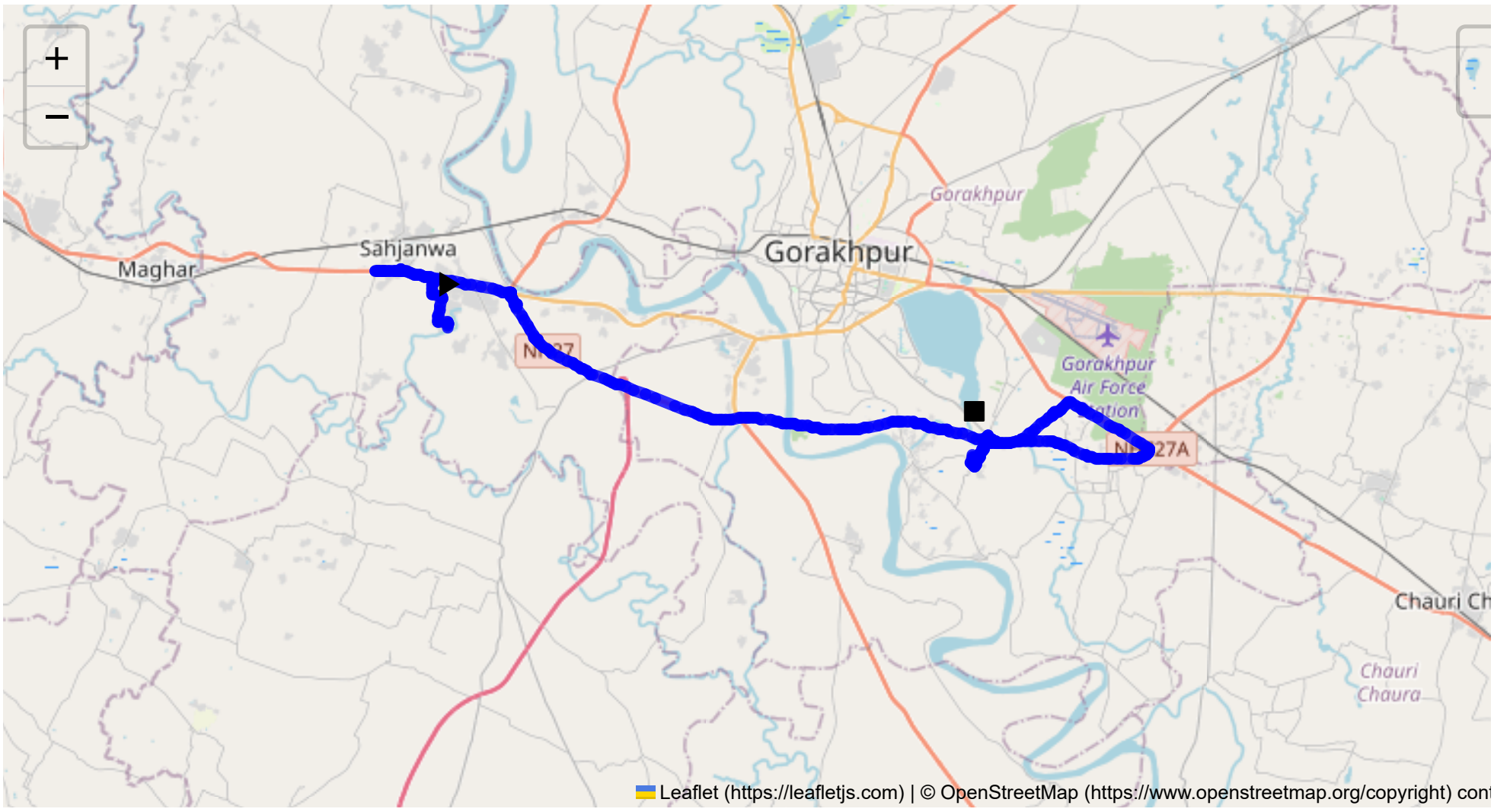
Journey Risk Mitigation

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: 41.69 km
Estimated Duration: 1.0 hours
Adjusted Duration (Heavy Vehicle): 1.2 hours
Start: (26.735959, 83.229398)
End: (26.695774, 83.413383)

Welcome to the Journey Risk Management Study

Route Overview

The route from GIDA Industrial Area Phase 1, Sahjanwa to Hakkabad, Gorakhpur encompasses approximately 41.69 kilometers and typically takes about 0.95 hours for heavy vehicles carrying hazardous materials. It passes through various points including Chak Fateh and NH 28, moving through both urban and rural settings.

1. Overview of the Route Map

The journey progresses primarily on major highways and local roads. Key locations include Sahjanwa, Chak Fateh, and parts of NH 28, culminating in Hakkabad, Gorakhpur. This mix of road types suggests varied driving conditions, with potential transitions between highway speeds and local road limitations.

2. Typical Weather Conditions and Hazards

Uttar Pradesh experiences a humid subtropical climate. Common weather patterns include:

- **Summer (April to June):** High temperatures with potential for heat waves. Road conditions may become challenging due to tire overheating.
- **Monsoon (June to September):** Heavy rains can cause flooding and reduced visibility.
- **Winter (December to February):** Morning fogs and reduced visibility are common, increasing accident risks.

3. Traffic Patterns and Congestion

- **Peak Hours:** Morning between 8:30-10:30 AM and evening 5-7 PM.
- **Congestion-Prone Areas:** The entrance and exit points of Gorakhpur and intersections along NH 28 are susceptible to traffic jams, especially during peak times.

4. Road Quality and Infrastructure

- **NH 28:** Generally well-maintained, suitable for heavy vehicles.
- **Local Roads:** Mixed quality; some sections may show wear and tear with potholes or narrow lanes.
- **Bridges and Underpasses:** Keep an eye on height and weight restrictions.

5. Alternative Routes for Emergencies

- **Emergency Bypass:** Consider using NH 27 as an alternative route if NH 28 is blocked or congested.
- **Local Detours:** Use local road networks through nearby villages if a detour around congestion or blockages is required.

6. Local Regulations on Hazardous Materials

- **Permit Requirements:** Ensure all required permits for transporting hazardous materials are acquired.
- **Timing Restrictions:** Movement may be restricted during peak urban travel times.
- **Safety Protocols:** Strict adherence to safety protocols and signage is mandatory.

7. Historical Incidents

- **Recent Accidents:** Ny incidents involving heavy vehicles have occurred primarily due to fog and vehicle malfunction.
- **Common Causes:** Overloading, mechanical failures, and driver fatigue.

8. Environmental Considerations and Sensitive Areas

- **Protected Areas:** Avoid routes through sensitive ecological zones.
- **Pollution Concerns:** Ensure proper containment of materials to prevent leaks.

9. Communication Coverage

- **Mobile Coverage:** Generally reliable along NH 28 and urban areas, but some rural stretches may have weak signals.
- **Potential Dead Zones:** Anticipate sporadic coverage in rural sections between major urban centers.

10. Emergency Response Times

- **Urban Areas (Gorakhpur):** Emergency services estimated to arrive within 15-20 minutes.
- **Rural Sections:** Response times can extend to 30-45 minutes depending on road conditions and proximity to local emergency facilities.

11. Overall Summary of Risk Assessment

The route poses moderate risks, primarily due to weather-related visibility issues and intermittent road quality challenges. Maintaining adherence to safety regulations and being prepared for changes in traffic patterns are critical. Emergency response efficacy varies with location, and drivers should remain informed of alternative routes. Additional precautions are advised during adverse weather conditions, particularly in the monsoon and winter months due to visibility issues. Frequent checks on communication capabilities and staying updated on local traffic advisories are recommended for ensuring a safer journey.

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

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
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
12	Blind Spot	Blind Spot	26.75377, 83.21355	10 KM/Hr	5.17 km
14	Turn	High	26.75377, 83.21355	15 KM/Hr	5.17 km
13	Blind Spot	Blind Spot	26.75407, 83.21347	10 KM/Hr	5.21 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	9.04 km
15	Turn	Medium	26.74644, 83.25150	30 KM/Hr	9.14 km
16	Turn	Medium	26.74306, 83.25344	30 KM/Hr	9.56 km
17	Turn	Medium	26.74300, 83.25343	30 KM/Hr	9.57 km
18	Turn	High	26.69632, 83.47492	15 KM/Hr	33.21 km
19	Turn	High	26.69641, 83.47493	15 KM/Hr	33.24 km
20	Turn	Medium	26.69835, 83.47489	30 KM/Hr	33.48 km
21	Turn	High	26.71257, 83.44780	15 KM/Hr	36.61 km
22	Blind Spot	Blind Spot	26.70186, 83.41900	10 KM/Hr	40.01 km
23	Turn	Medium	26.69263, 83.41444	30 KM/Hr	41.16 km
24	Turn	High	26.69245, 83.41410	15 KM/Hr	41.20 km
25	Turn	High	26.69359, 83.41317	15 KM/Hr	41.34 km
26	Blind Spot	Blind Spot	26.69522, 83.41426	10 KM/Hr	41.53 km
27	Turn	High	26.69551, 83.41351	15 KM/Hr	41.62 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: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.17 km

Coordinates: 26.75377, 83.21355

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: 5.21 km

Coordinates: 26.75407, 83.21347

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 9.04 km

Coordinates: 26.74681, 83.25111

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.14 km

Coordinates: 26.74644, 83.25150

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.56 km

Coordinates: 26.74306, 83.25344

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.57 km

Coordinates: 26.74300, 83.25343

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.21 km

Coordinates: 26.69632, 83.47492

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 33.48 km

Coordinates: 26.69835, 83.47489

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 36.61 km

Coordinates: 26.71257, 83.44780

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 40.01 km

Coordinates: 26.70186, 83.41900

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 41.16 km

Coordinates: 26.69263, 83.41444

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 41.20 km

Coordinates: 26.69245, 83.41410

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 41.34 km

Coordinates: 26.69359, 83.41317

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 41.53 km

Coordinates: 26.69522, 83.41426

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 41.62 km

Coordinates: 26.69551, 83.41351

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