JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO JAI SHIV INDANE SERV

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

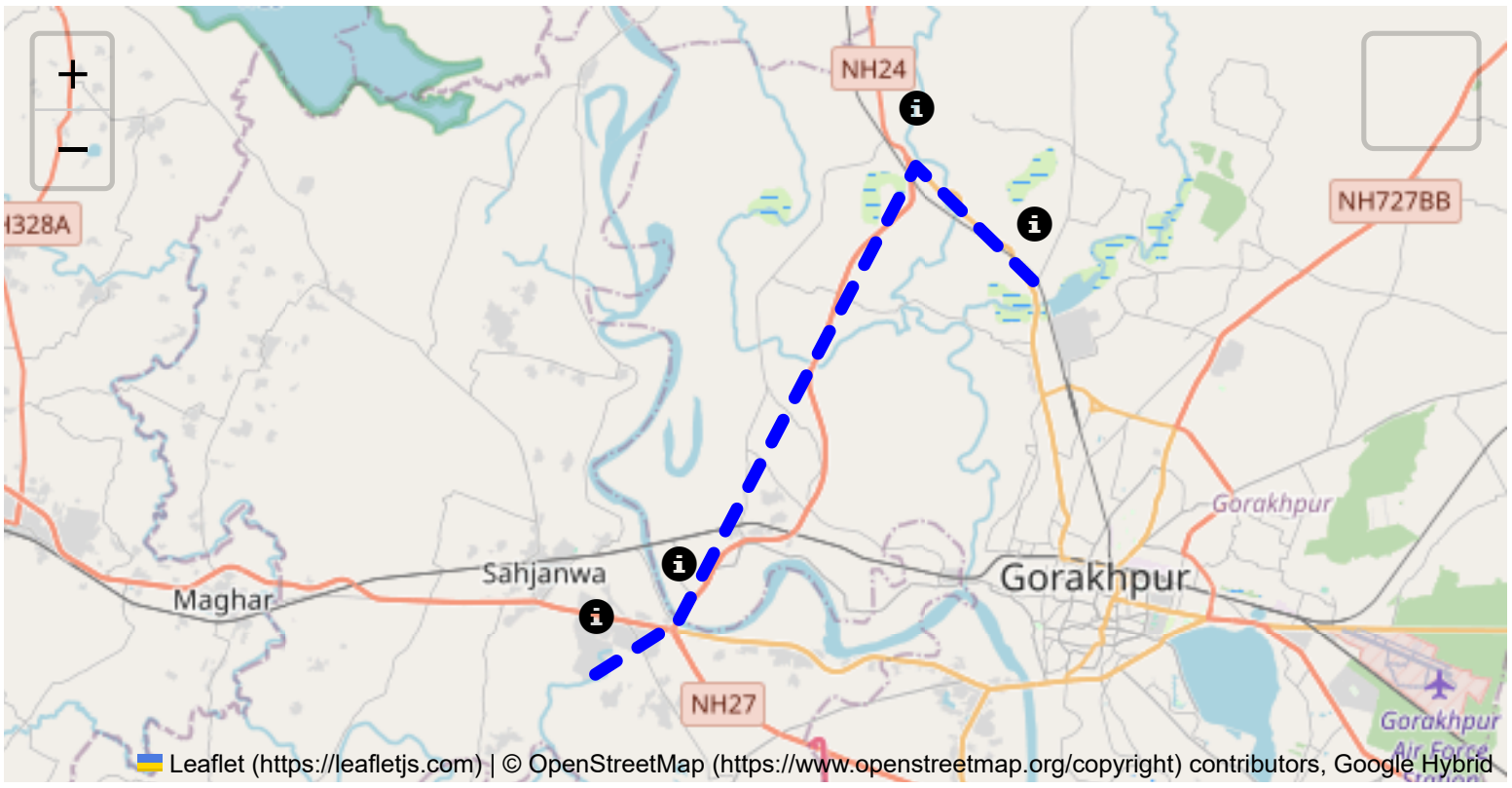
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

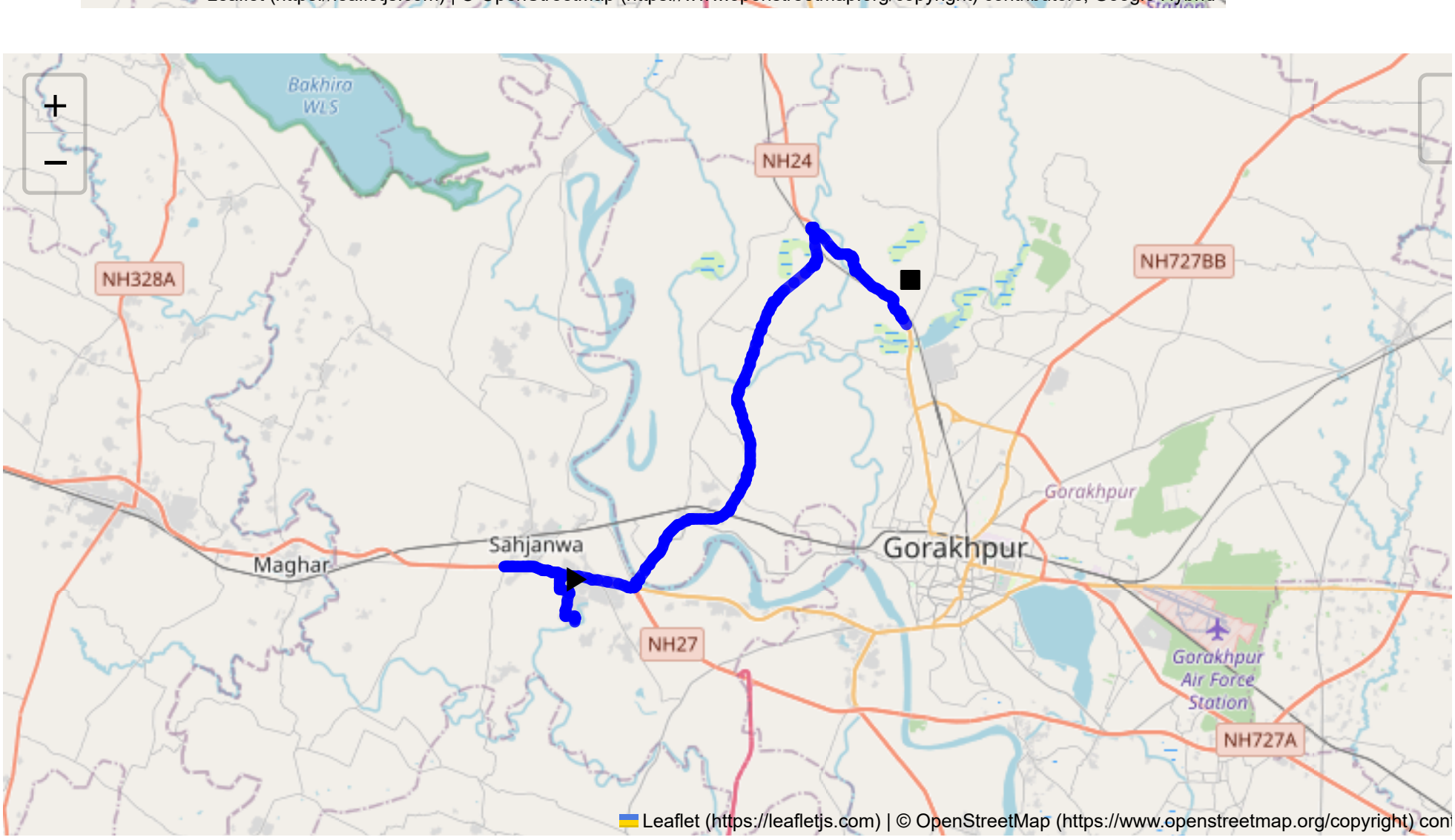
Journey Risk Mitigation

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: 30.01 km
Estimated Duration: 0.7 hours
Adjusted Duration (Heavy Vehicle): 0.8 hours
Start: (26.735959, 83.229398)
End: (26.83183, 83.34951)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from GIDA Industrial Area Phase 1, Sahjanwa to Omkar Nagar, Mahuatar, Siktaur, follows NH 24 and covers approximately 30.01 kilometers. It is a relatively straightforward route but involves multiple segments through urban areas and suburban regions, requiring careful navigation and adherence to traffic rules.

2. Typical Weather Conditions and Potential Weather-Related Hazards

The region generally experiences a humid subtropical climate. Key weather-related hazards include:

- **Monsoon Season (July to September):** Heavy rain can lead to flooding and reduced visibility.
- **Fog and Smog (December to January):** Reduced visibility can be a significant problem during winter months.
- **Heat Waves (May to June):** These can impact driver fatigue and vehicle performance.

3. Traffic Patterns and Congestion-Prone Areas

- **Peak Hours:** Morning (8:00 AM - 10:00 AM) and evening (6:00 PM - 8:00 PM).
- **Congestion Zones:** Nh 24 near urban intersections and at entry/exit points to industrial zones can be particularly congested.

4. Assessment of Road Quality and Infrastructure

- **NH 24:** Generally well-maintained, but periodic construction or maintenance work can impair driving conditions.
- **Urban Areas:** Mixed road quality with potential for potholes and uneven segments, particularly post-monsoon.

5. Suggestions for Alternative Routes for Emergencies

In case of road blockages or disruptions on NH 24, routes via local roads connecting to the parallel state highways could be considered, though these may have inferior road conditions.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous materials is regulated with restrictions on transit times (often prohibited during peak hours in urban areas), necessitating appropriate placards and documentation, and requiring adherence to designated routes.

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

Previous incidents typically involve vehicle overturns due to sharp turns or inadequate load management, with some reports of chemical spills necessitating emergency response and environmental mitigation.

8. Environmental Considerations and Sensitive Areas

The route traverses areas near agricultural lands and may pass close to minor water bodies, requiring careful management to prevent contamination during spills.

9. Analysis of Communication Coverage

The majority of the route enjoys good mobile network coverage; however, potential dead zones may exist particularly in the rural stretches between urban clusters, necessitating communication preparedness.

10. Estimated Emergency Response Times for Different Route Segments

- **Urban Areas:** 15-20 minutes average response time.
- **Rural Segments:** 30-40 minutes due to distance from emergency services.

11. Overall Summary of Risk Assessment

- **Road Quality and Weather Hazards:** Major concerns during monsoon and winter.
- **Traffic Congestion:** Expect delays during peak hours.
- **Emergency Preparedness:** Essential due to variable response times and potential for communication lag.
- **Transport Regulations:** Strict adherence necessary to avoid compliance issues and ensure safety.

In conclusion, the route presents moderate risk due to weather conditions and traffic patterns, necessitating diligent route planning and timing. Emergency response planning and adherence to regulations are key aspects for a safe journey while transporting hazardous materials.

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
12	Turn	High	26.74708, 83.24935	15 KM/Hr	8.81 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
13	Turn	Medium	26.74712, 83.24938	30 KM/Hr	8.82 km
14	Turn	Medium	26.74703, 83.25096	30 KM/Hr	8.98 km
15	Turn	Medium	26.74767, 83.25139	30 KM/Hr	9.06 km
16	Turn	High	26.74769, 83.25146	15 KM/Hr	9.07 km
0	Roundabout	High	26.86209, 83.31517	15 KM/Hr	24.88 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: 8.81 km

Coordinates: 26.74708, 83.24935

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.82 km

Coordinates: 26.74712, 83.24938

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.98 km

Coordinates: 26.74703, 83.25096

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.06 km

Coordinates: 26.74767, 83.25139

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 9.07 km

Coordinates: 26.74769, 83.25146

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 24.88 km

Coordinates: 26.86209, 83.31517

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