JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SARDAR PATEL INDANE

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

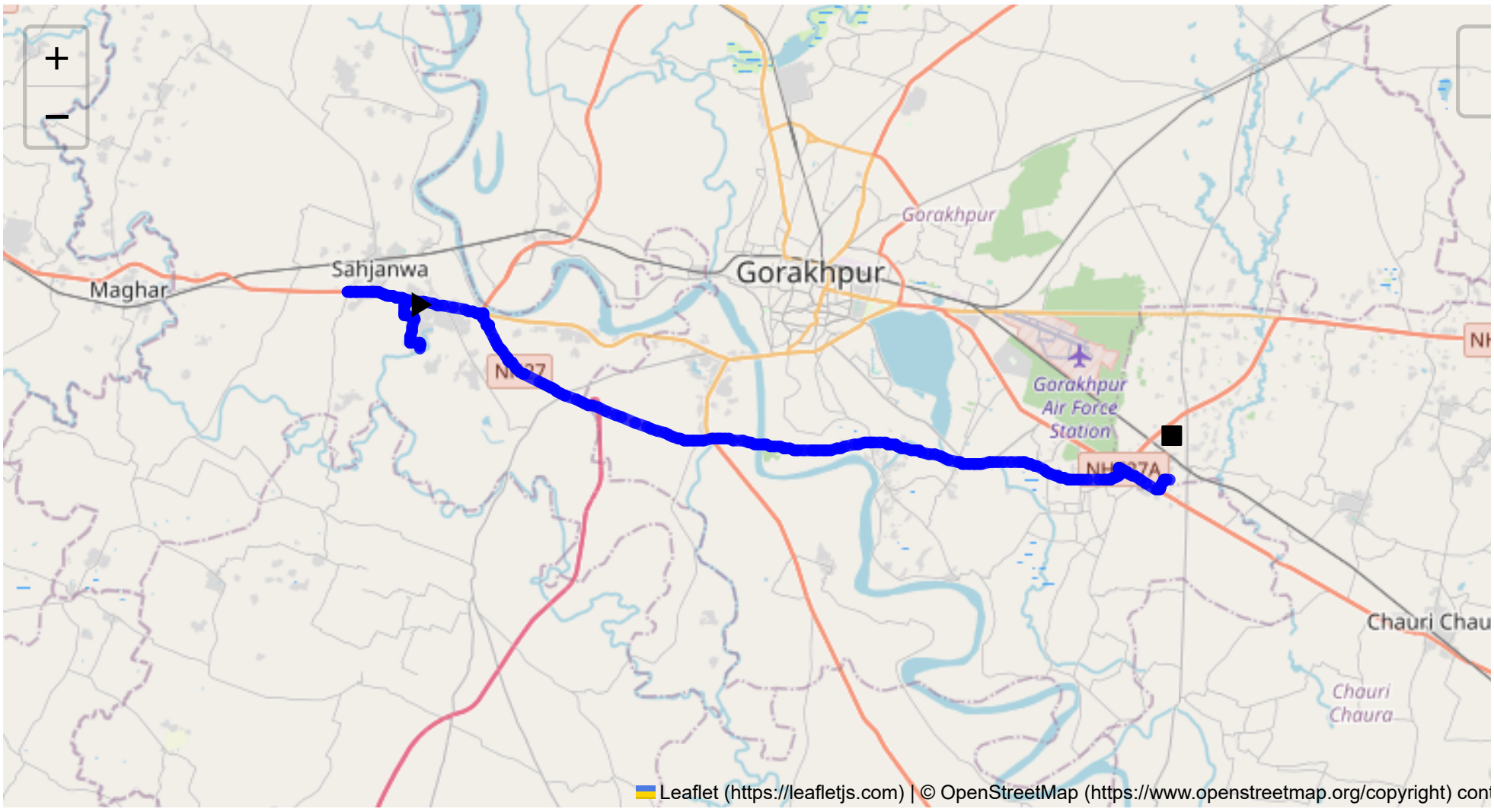
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 35.68 km
Estimated Duration: 0.8 hours
Adjusted Duration (Heavy Vehicle): 1.0 hours
Start: (26.735959, 83.229398)
End: (26.6945271, 83.492464)

Welcome to the Journey Risk Management Study

Overview of the Route Map

The route from GIDA Industrial Area Phase 1 to Ramnagar Karjaha spans approximately 35.68 kilometers and passes through several small urban and semi-rural areas. Major waypoints include Kaalesar and Jangl Ramgarh Urf Chawri. The route involves a mix of industrial and agricultural landscapes, impacting road quality and traffic patterns.

Typical Weather Conditions and Potential Weather-Related Hazards

Weather in Uttar Pradesh varies significantly with seasons. During summer, high temperatures can cause road surface issues like softening of asphalt. Monsoon season (June to September) brings heavy rains that can lead to flooding and reduced visibility. Winter may bring fog, particularly in the mornings, which can severely impact driver visibility.

Analysis of Traffic Patterns

Traffic congestion tends to peak during morning hours (8:00-10:00 AM) and the late afternoon to evening (4:00-7:00 PM). The proximity to industrial areas means that large vehicles, like trucks, are common and can cause congestion, particularly near GIDA Industrial Area and Kaalesar. The route also passes through several town areas where local traffic can slow down movement.

Assessment of Road Quality and Infrastructure

Road quality varies along this route. Industrial areas generally have better-maintained roads, but rural segments might have potholes or inadequate signage. Intersection points, particularly within town limits, may lack proper traffic signals, increasing accident risk.

Suggestions for Alternative Routes for Emergencies

An alternative route bypassing Kaalesar and Jangl Ramgarh could be considered, although it may extend travel time. Using an alternate highway or larger road through more urban areas could ensure better services and infrastructure in case of emergencies.

Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous materials is regulated with restrictions on timing within municipalities to avoid peak traffic hours. Adequate labeling and documentation are mandatory, and specific routes may need to be pre-approved by local authorities.

Overview of Historical Incidents

Historically, the area has seen incidents primarily related to overloaded vehicles and poor road conditions during the monsoon. There have been reports of accidents involving trucks due to visibility issues and road quality. Incidents involving hazardous materials are rare but present due to the industrialized segments of the route.

Environmental Considerations and Sensitive Areas

The route crosses some ecologically sensitive agricultural areas. Any spills or accidents involving hazardous materials could jeopardize local water bodies and soil. Regulatory compliance with environmental protection norms is crucial.

Analysis of Communication Coverage

The route largely has adequate cellular coverage; however, certain rural stretches may experience brief dead zones. It is advisable for drivers to remain aware of coverage maps and ensure communication devices are functional before these segments.

Estimated Emergency Response Times

Emergency response times can vary from 15-40 minutes depending on the proximity to urban centers. Urban segments tend to have faster response times, whereas rural stretches experience delays due to lesser infrastructure.

Overall Summary of Risk Assessment

The route poses moderate risk, mainly due to weather conditions, road quality, and traffic patterns. Risks related to hazardous materials can be managed through adherence to safety regulations and preparedness for environmental protection. Reliable communication and contingency plans for emergency situations are essential for safe transit.

Measures such as regular vehicle maintenance, adherence to transport safety norms, and driver training on emergency response can mitigate several of the potential risks identified in the route analysis.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73690, 83.22947	15 KM/Hr	0.07 km
3	Turn	High	26.73697, 83.22939	15 KM/Hr	0.11 km
4	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
5	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.48 km
6	Turn	Medium	26.74524, 83.22746	30 KM/Hr	1.30 km
7	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.32 km
8	Turn	Medium	26.74654, 83.22390	30 KM/Hr	1.69 km
9	Turn	Medium	26.74661, 83.22388	30 KM/Hr	1.70 km
10	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km
11	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.23 km
12	Turn	High	26.75381, 83.20466	15 KM/Hr	4.30 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.99 km
13	Turn	Medium	26.74644, 83.25150	30 KM/Hr	9.07 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
14	Turn	Medium	26.74310, 83.25343	30 KM/Hr	9.49 km
15	Turn	Medium	26.74298, 83.25343	30 KM/Hr	9.51 km
16	Turn	High	26.69632, 83.47492	15 KM/Hr	33.14 km
17	Turn	High	26.69641, 83.47493	15 KM/Hr	33.17 km
18	Turn	Medium	26.69835, 83.47489	30 KM/Hr	33.41 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.44 km
19	Blind Spot	Blind Spot	26.69844, 83.47473	10 KM/Hr	33.44 km
20	Turn	High	26.69857, 83.47481	15 KM/Hr	33.46 km
21	Turn	High	26.69135, 83.48864	15 KM/Hr	35.03 km
22	Turn	High	26.69498, 83.49110	15 KM/Hr	35.50 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Prakash Hospital	26.6957341, 83.4807387	30 km/h	Medium	34.05 km

Crowded Spots

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: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.99 km

Coordinates: 26.74681, 83.25111

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.07 km

Coordinates: 26.74644, 83.25150

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.49 km

Coordinates: 26.74310, 83.25343

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.51 km

Coordinates: 26.74298, 83.25343

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.14 km

Coordinates: 26.69632, 83.47492

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 33.41 km

Coordinates: 26.69835, 83.47489

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 33.44 km

Coordinates: 26.698439, 83.4747268

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 33.44 km

Coordinates: 26.69844, 83.47473

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.46 km

Coordinates: 26.69857, 83.47481

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 35.03 km

Coordinates: 26.69135, 83.48864

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 35.50 km

Coordinates: 26.69498, 83.49110

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