JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SHREYA INDANE SERVIC

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

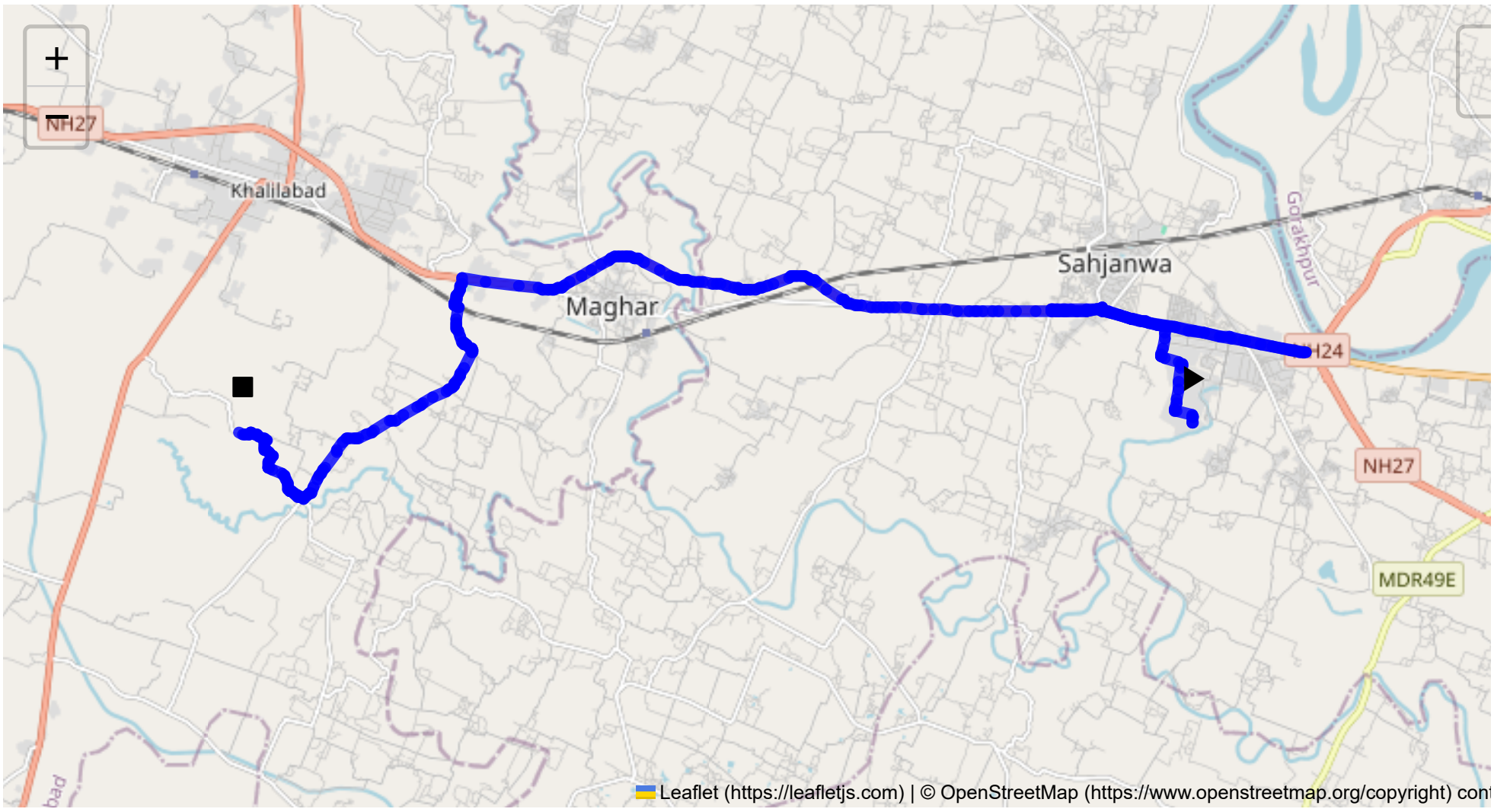
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 31.59 km
Estimated Duration: 0.9 hours
Adjusted Duration (Heavy Vehicle): 1.1 hours
Start: (26.735959, 83.229398)
End: (26.73481, 83.06238)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route spans approximately 31.59 kilometers from GIDA Industrial Area Phase 1, Sahjanwa to Gorahi in Uttar Pradesh, passing through notable checkpoints including Sahjanwa, Maghar, and Kui Kole. The journey typically takes about 0.89 hours for heavy vehicles carrying hazardous materials.

2. Typical Weather Conditions and Potential Weather-Related Hazards

In Uttar Pradesh, the climate is generally characterized by hot summers, a monsoon season (June to September), and cool winters. During the monsoon, heavy rainfall can lead to waterlogging and slippery roads, increasing the risk of skidding or accidents. Fog during the winter months can reduce visibility, which may also pose significant driving challenges.

3. Analysis of Traffic Patterns

The route involves traveling through industrial and semi-urban areas, which may experience varying traffic patterns. Peak hours generally occur between 8:00-10:00 AM and 5:00-7:00 PM. The city area around Sahjanwa and Maghar could experience congestion due to local traffic and market activities, especially near major intersections and commercial zones.

4. Assessment of Road Quality and Infrastructure

The road infrastructure along this route is a mix of state highways and local roads. The highways are generally in better condition, yet local roads, especially in rural areas, could suffer from potholes and poor maintenance. Ongoing roadworks or renovations could further impact road quality and cause delays.

5. Suggestions for Alternative Routes for Emergencies

In case of road blockages or emergencies, taking state highways like NH27, which connects to several parts within Uttar Pradesh, might be a viable alternative. Additionally, staying informed of local traffic advisories can provide more immediate detour suggestions.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials requires adherence to strict state and national guidelines. Regulations involve securing special permits, ensuring vehicular compliance with safety standards, and observing restricted timings for transport to minimize risks during high traffic periods. The use of proper placards and documentation is mandatory.

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

Historical records indicate incidents involving heavy vehicles are not uncommon in the region due to the high volume of goods transport. Accidents have often been attributed to driver fatigue, poor road conditions, and monsoon-induced hazards. However, specific incidents involving hazardous materials in this area are less documented, implying less frequency.

8. Environmental Considerations and Sensitive Areas

The route passes near agricultural zones and developing urban areas. There is a need to minimize exhaust emissions and noise pollution, especially near densely populated zones. Responsible disposal of any hazardous material spills is crucial to protect farmland and local water sources.

9. Analysis of Communication Coverage

Mobile network coverage is generally reliable along major parts of the route, but some rural stretches, especially between Maghar and Kui Kole, may have weak signal reception. Effective communication systems are important for constant updates and emergency situations.

10. Estimated Emergency Response Times for Different Route Segments

Emergency response times can vary, with quicker responses expected near urban centers like Sahjanwa. In more remote areas, the response time might be longer due to distance and road conditions. Local emergency services include police, medical facilities, and fire stations, which can be contacted for immediate assistance.

12. Overall Summary of Risk Assessment

In conclusion, while the route is mostly straightforward, it does pose certain risks typical to the region such as variable traffic conditions, potential weather hazards, and mixed road quality. Transporting hazardous materials requires careful planning, adherence to regulations, and real-time monitoring of traffic and weather conditions. Alternate routes and effective emergency measures must be in place to mitigate any unforeseen circumstances. Improvements in communication infrastructure and routine road maintenance could further enhance safety and efficiency.

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
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
0	U-Turn	High	26.7471208, 83.2490873	10 KM/Hr	8.85 km
15	Blind Spot	Blind Spot	26.74712, 83.24909	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	26.75468, 83.09984	30 KM/Hr	24.55 km
19	Turn	Medium	26.75462, 83.09988	30 KM/Hr	24.56 km
20	Turn	Medium	26.75427, 83.10047	30 KM/Hr	24.63 km
21	Turn	Medium	26.74747, 83.10305	30 KM/Hr	25.49 km
22	Turn	Medium	26.73653, 83.08968	30 KM/Hr	27.29 km
23	Turn	High	26.73367, 83.08098	15 KM/Hr	28.30 km
24	Turn	Medium	26.72805, 83.07659	30 KM/Hr	29.04 km
25	Turn	Medium	26.72791, 83.07631	30 KM/Hr	29.09 km
26	Turn	Medium	26.72521, 83.07483	30 KM/Hr	29.40 km
27	Turn	High	26.72420, 83.07351	15 KM/Hr	29.57 km
28	Turn	Medium	26.72907, 83.06724	30 KM/Hr	30.50 km
29	Turn	Medium	26.72918, 83.06720	30 KM/Hr	30.51 km
30	Turn	Medium	26.73092, 83.06793	30 KM/Hr	30.72 km
31	Turn	Medium	26.73099, 83.06791	30 KM/Hr	30.73 km
32	Turn	Medium	26.73190, 83.06656	30 KM/Hr	30.88 km
33	Turn	Medium	26.73198, 83.06649	30 KM/Hr	30.91 km
34	Turn	High	26.73339, 83.06682	15 KM/Hr	31.07 km
35	Turn	Medium	26.73461, 83.06416	30 KM/Hr	31.37 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: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 8.85 km

Coordinates: 26.7471208, 83.2490873

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: 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: 26.75468, 83.09984

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.56 km

Coordinates: 26.75462, 83.09988

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.63 km

Coordinates: 26.75427, 83.10047

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 25.49 km

Coordinates: 26.74747, 83.10305

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 27.29 km

Coordinates: 26.73653, 83.08968

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 28.30 km

Coordinates: 26.73367, 83.08098

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 29.04 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: 29.40 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: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.50 km

Coordinates: 26.72907, 83.06724

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.51 km

Coordinates: 26.72918, 83.06720

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.72 km

Coordinates: 26.73092, 83.06793

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.73 km

Coordinates: 26.73099, 83.06791

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.88 km

Coordinates: 26.73190, 83.06656

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.91 km

Coordinates: 26.73198, 83.06649

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 31.07 km

Coordinates: 26.73339, 83.06682

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 31.37 km

Coordinates: 26.73461, 83.06416

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