JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SATYAPAL INDANE GRAM

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

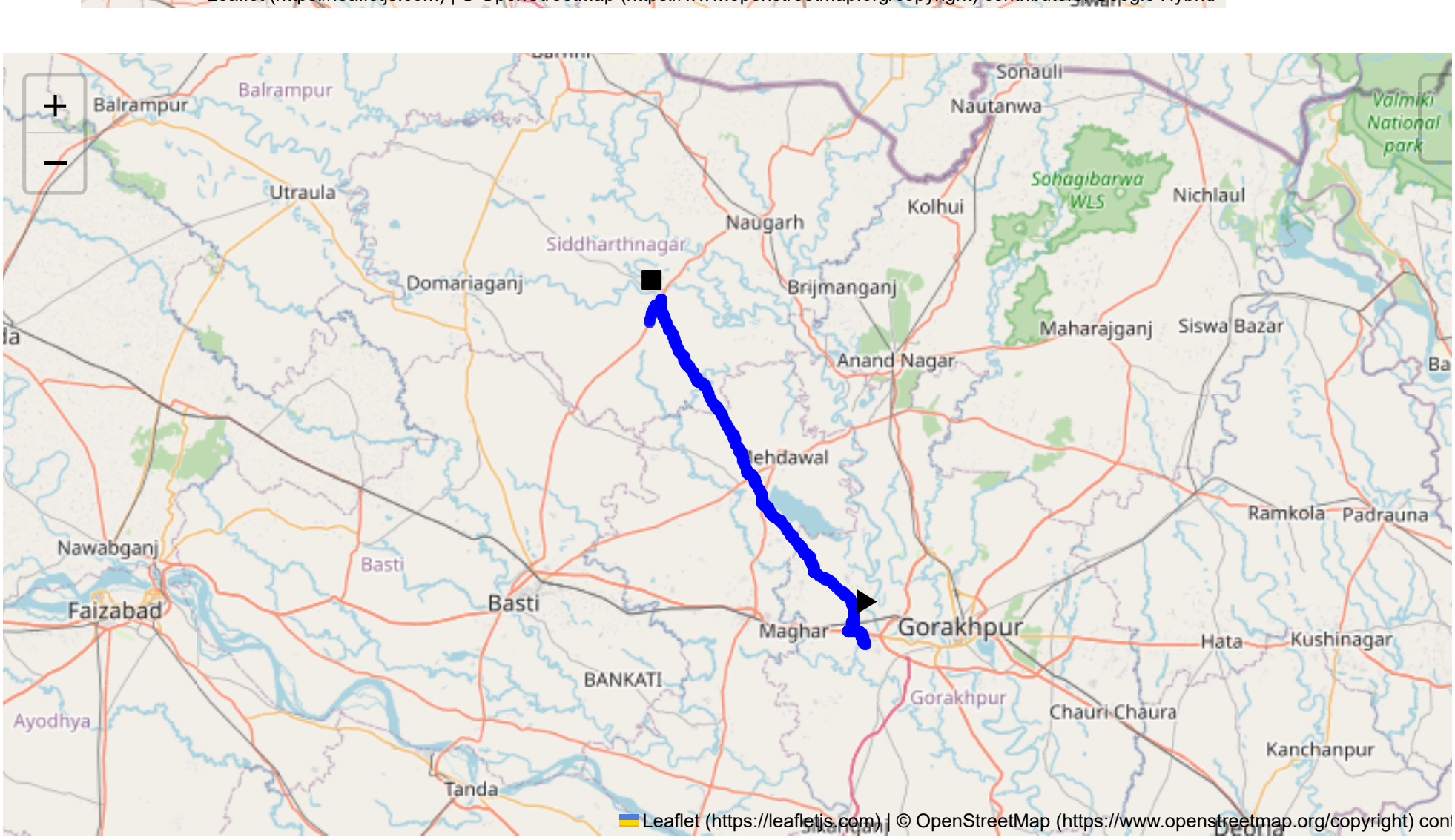
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 67.39 km

Estimated Duration: 1.8 hours

Adjusted Duration (Heavy Vehicle): 2.3 hours

Start: (26.735959, 83.229398)

End: (27.150043, 82.918774)

Welcome to the Journey Risk Management Study

1. **Overview of the Route Map**:
    - The route begins at GIDA Industrial Area Phase 1 in Sahjanwa and concludes in Urwalia, Uttar Pradesh. It passes through important waypoints such as Sahjanwa town, Nandaur in Mahdewa, and Bansi. The journey spans approximately 67.39 kilometers.
2. **Typical Weather Conditions and Potential Weather-Related Hazards**:

- The region experiences a typical North Indian climate: very hot summers (April-June) with temperatures often exceeding 40°C, and cooler winters (November-February) which can dip to around 5°C, particularly at night. The monsoon season (July-September) can bring heavy rainfall, leading to potential flooding and road waterlogging, especially in rural areas with poor drainage systems.

3. **Analysis of Traffic Patterns**:
   - Sahjanwa tends to experience peak congestion during morning hours (8-10 AM) and evening rush (5-8 PM). Market areas and school zones can cause delays. Weekends might also see increased traffic due to local market activity.
   - Main roads may face traffic bottlenecks due to narrow stretches, particularly near town centers and major crossings.
4. **Assessment of Road Quality and Infrastructure**:
   - Roads vary in quality; highways are generally well-maintained, but some rural stretches may have potholes and uneven surfaces. Pay attention to transitions from major roads to local roads, as sudden changes in road quality can occur.
5. **Suggestions for Alternative Routes for Emergencies**:
   - Consider using NH27 as a bypass for major congestion points. In case of severe flooding or road closure, it may be necessary to consult local maps or traffic updates for real-time detours.
6. **Summary of Local Regulations Affecting Hazardous Material Transport**:
   - Uttar Pradesh has regulations that restrict the movement of heavy and hazardous goods vehicles during daytime in urban areas to minimize traffic disruptions. Night-time travel might be required in specific zones, and permits are essential.
7. **Overview of Historical Incidents**:
   - Historical data indicates sporadic incidents involving heavy goods vehicles, often linked to inadequate signaling at rural crossings and intersections. Increased caution is advised near level-crossing points and market areas.
8. **Environmental Considerations and Sensitive Areas**:
   - The route runs near several agricultural areas. It’s vital to adhere to protocols preventing contamination from hazardous materials. Noise and air pollution controls are required within local towns.
9. **Analysis of Communication Coverage**:
   - Telecom networks may fluctuate, especially in remote stretches between towns. It’s advisable to ensure communication devices are fully charged and, if possible, have an alternative method ready, such as a satellite phone.
10. **Estimated Emergency Response Times**:
    - In urban areas like Sahjanwa, emergency services can typically respond within 20-30 minutes. In rural areas, response times can extend to over an hour due to terrain and communication obstacles.
11. **Overall Summary of Risk Assessment**:

- While the route is generally manageable for heavy vehicles, especially with proper route planning and weather awareness, the primary risks are linked to weather-related road conditions, uneven rural roads, and communication dead zones. Adherence to local transportation regulations and constant monitoring of weather and traffic updates can significantly mitigate these risks. Emergency preparedness, including alternate routing and communication strategies, is essential for safe transit.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
1	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
2	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
3	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
4	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
5	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
6	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
7	Blind Spot	Blind Spot	26.75377, 83.21355	10 KM/Hr	5.16 km
8	Turn	Medium	26.75640, 83.21275	30 KM/Hr	5.44 km
9	Turn	High	26.76132, 83.21435	15 KM/Hr	5.95 km
10	Turn	Medium	26.76119, 83.21159	30 KM/Hr	6.31 km
11	Turn	High	26.76131, 83.21143	15 KM/Hr	6.34 km
12	Turn	Medium	26.76403, 83.21129	30 KM/Hr	6.65 km
13	Turn	Medium	26.76569, 83.21402	30 KM/Hr	6.97 km
14	Turn	High	26.91597, 83.08449	15 KM/Hr	29.05 km
15	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	29.23 km
16	Turn	Medium	26.91843, 83.08101	30 KM/Hr	29.65 km
17	Turn	Medium	26.92258, 83.08191	30 KM/Hr	30.23 km
18	Turn	Medium	26.98317, 83.05063	30 KM/Hr	37.84 km
19	Turn	Medium	26.98353, 83.04986	30 KM/Hr	37.97 km
20	Turn	Medium	27.07125, 82.99577	30 KM/Hr	49.10 km
21	Turn	Medium	27.07137, 82.99515	30 KM/Hr	49.24 km
22	Turn	Medium	27.07062, 82.99390	30 KM/Hr	49.41 km
23	Turn	High	27.16975, 82.93429	15 KM/Hr	62.16 km
24	Blind Spot	Blind Spot	27.17842, 82.93487	10 KM/Hr	63.13 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
25	Turn	High	27.16983, 82.93416	15 KM/Hr	64.11 km
26	Turn	Medium	27.17084, 82.93265	30 KM/Hr	64.28 km
27	Turn	High	27.17161, 82.92867	15 KM/Hr	64.71 km

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.16 km

Coordinates: 26.75126, 83.22476

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.22 km

Coordinates: 26.75353, 83.20457

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.27 km

Coordinates: 26.75377, 83.20465

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.16 km

Coordinates: 26.75377, 83.21355

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.44 km

Coordinates: 26.75640, 83.21275

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.95 km

Coordinates: 26.76132, 83.21435

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.31 km

Coordinates: 26.76119, 83.21159

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 6.34 km

Coordinates: 26.76131, 83.21143

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.65 km

Coordinates: 26.76403, 83.21129

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.97 km

Coordinates: 26.76569, 83.21402

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.05 km

Coordinates: 26.91597, 83.08449

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 29.23 km

Coordinates: 26.91433, 83.08351

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 29.65 km

Coordinates: 26.91843, 83.08101

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.23 km

Coordinates: 26.92258, 83.08191

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 37.84 km

Coordinates: 26.98317, 83.05063

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 37.97 km

Coordinates: 26.98353, 83.04986

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 49.10 km

Coordinates: 27.07125, 82.99577

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 49.24 km

Coordinates: 27.07137, 82.99515

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 49.41 km

Coordinates: 27.07062, 82.99390

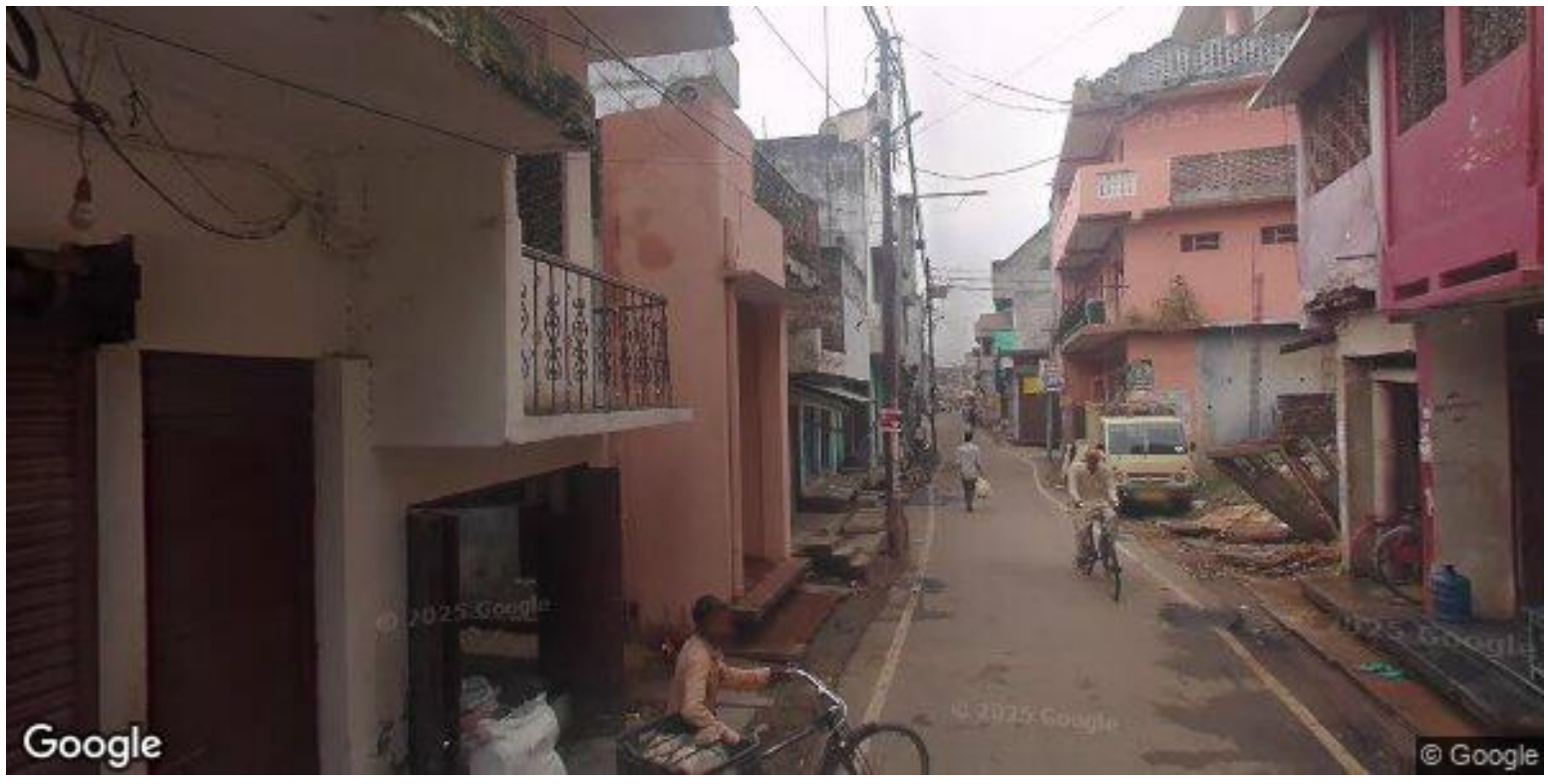
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 62.16 km

Coordinates: 27.16975, 82.93429



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 63.13 km

Coordinates: 27.17842, 82.93487

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 64.11 km

Coordinates: 27.16983, 82.93416

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 64.28 km

Coordinates: 27.17084, 82.93265

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 64.71 km

Coordinates: 27.17161, 82.92867

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