



## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Gorakhpur LPG BP TO SHAGUN INDANE GRAMIN**

#### **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**

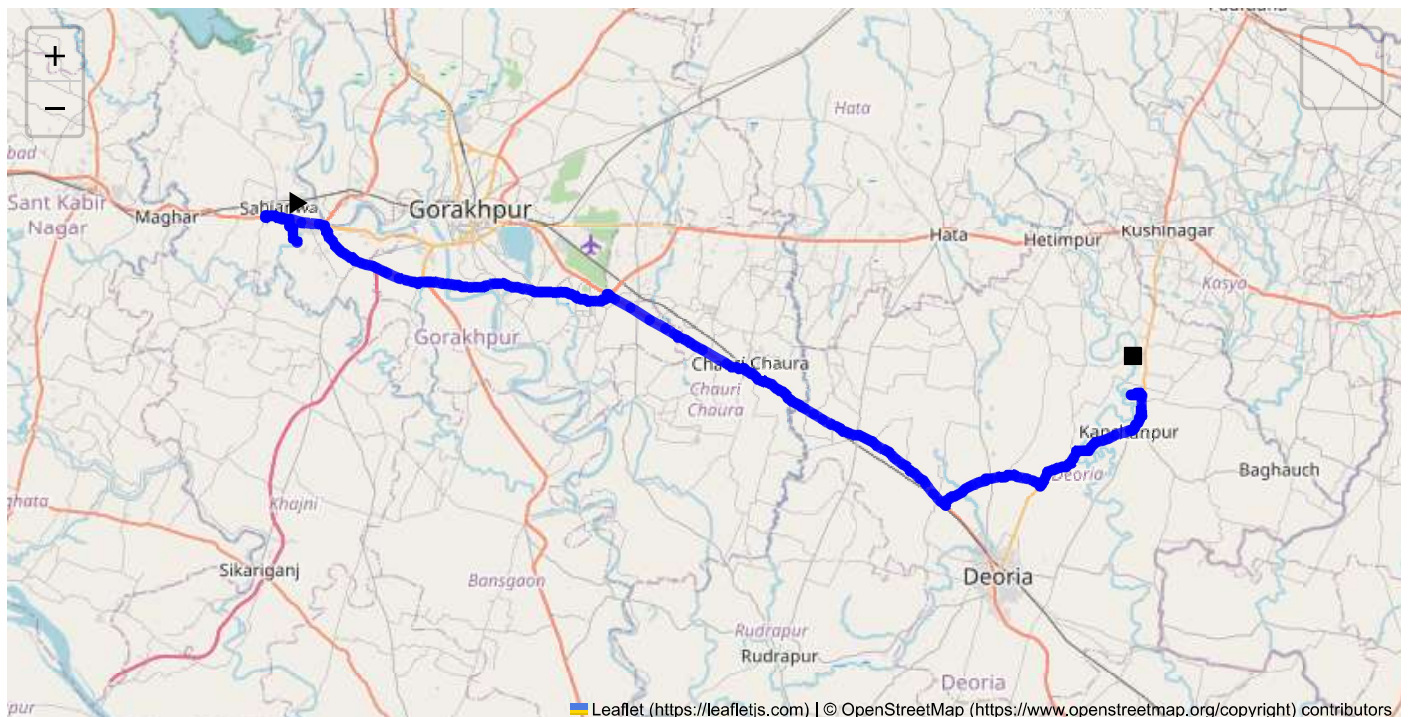
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 86.51 km

Estimated Duration: 2.0 hours

Adjusted Duration (Heavy Vehicle): 2.4 hours

Start: (26.735959, 83.229398)

End: (26.627934, 83.887377)

## Welcome to the Journey Risk Management Study

### Route Safety Analysis: Sahjanwa to Tarkulwa via Dumari - Baitalpur Rd

1. **Overview of the Route Map:** The route spans approximately 86.51 kilometers from GIDA Industrial Area Phase 1 in Sahjanwa to Tarkulwa, passing through Dumari - Baitalpur Rd and Rampur. The

journey typically takes about 1.95 hours for heavy vehicles carrying hazardous materials, traversing local highways and connecting roads in Uttar Pradesh.

2. **Typical Weather Conditions and Potential Weather-Related Hazards:** Uttar Pradesh experiences extreme weather conditions, with hot summers, monsoon rains, and cold winters. The monsoon season (June to September) can lead to heavy rainfall, causing flooded roads and reduced visibility. In winter, dense fog, particularly from December to January, can impact driving safety.
3. **Traffic Patterns and Congestion:** Traffic congestion is notable in urban areas and towns along the route, especially during peak hours (8-10 AM and 5-7 PM). Bottlenecks are likely near market areas, school zones, and intersections in towns like Rampur, where local traffic mixes with highway traffic.
4. **Assessment of Road Quality and Infrastructure:** The road quality varies, with major highways generally in good condition, but secondary roads may have potholes, uneven surfaces, and insufficient lighting. Construction or maintenance work can also occasionally obstruct parts of the route, causing delays.
5. **Suggestions for Alternative Routes for Emergencies:** An alternative route could involve taking NH 24 from Sahjanwa towards Maharajganj and then connecting to local roads leading to Tarkulwa. This detour may offer better road conditions and bypass congestion but could add additional travel time.
6. **Summary of Local Regulations Affecting Hazardous Material Transport:** Transporting hazardous materials in Uttar Pradesh requires compliance with the Motor Vehicles Act and Central Motor Vehicles Rules, including proper labeling, adequate safety measures, and adherence to speed limits. Restricted transport during peak urban traffic hours may also apply.
7. **Historical Incidents Involving Heavy Vehicles or Hazardous Materials:** Incidents involving heavy vehicles in the region often occur due to brake failures, driver fatigue, and road surface conditions. There have been reports of accidents, particularly during foggy conditions and at poorly marked intersections.
8. **Environmental Considerations and Sensitive Areas:** The route passes through agricultural zones and areas with dense population settlements. Care should be taken to prevent accidental spills or emissions, which could contaminate local ecosystems and farmland.
9. **Communication Coverage and Potential Dead Zones:** Mobile network coverage is generally reliable along the main stretch of the route, but rural sections, especially in less developed areas, may experience weak signals or temporary dead zones.
10. **Estimated Emergency Response Times:** Response times can vary; in urban areas like Sahjanwa and Rampur, emergency services can arrive within 15-30 minutes. However, in rural sections, it may take up to an hour due to road conditions and distance from major towns.
11. **Overall Summary of Risk Assessment:**
  - **Weather Risks:** Seasonal conditions like fog and rain can significantly impact visibility and road safety.
  - **Traffic and Congestion:** High during peak hours and around urban centers.

- **Road Quality:** Varies, with potential hazards from poor surface conditions.
- **Emergency Response:** Varies by location; slower in rural areas.
- The transport of hazardous materials requires strict adherence to safety protocols and operational regulations, especially in densely populated or environmentally sensitive areas.

This analysis highlights the importance of preparedness for adverse weather, congestion management, and awareness of regulatory compliance. Consider equipping vehicles with real-time navigation aids and communication technology to manage potential risks effectively.

## Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
3	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
5	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
7	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
8	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.79 km
9	Turn	Medium	26.74656, 83.25154	30 KM/Hr	9.04 km
10	Turn	Medium	26.74648, 83.25152	30 KM/Hr	9.05 km
11	Turn	Medium	26.69741, 83.47552	30 KM/Hr	33.25 km
12	Blind Spot	Blind Spot	26.69844, 83.47473	10 KM/Hr	33.41 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.41 km
13	Turn	High	26.69857, 83.47481	15 KM/Hr	33.43 km
14	Turn	Medium	26.63752, 83.59723	30 KM/Hr	47.40 km
15	Blind Spot	Blind Spot	26.55003, 83.74185	10 KM/Hr	64.88 km
16	Turn	High	26.55390, 83.74297	15 KM/Hr	65.30 km
17	Turn	Medium	26.57061, 83.78830	30 KM/Hr	70.28 km
18	Turn	Medium	26.57181, 83.78936	30 KM/Hr	70.47 km
19	Turn	Medium	26.57193, 83.78965	30 KM/Hr	70.57 km
20	Turn	Medium	26.56590, 83.81507	30 KM/Hr	73.15 km
21	Blind Spot	Blind Spot	26.56413, 83.81619	10 KM/Hr	73.43 km



	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
22	Turn	Medium	26.58805, 83.84508	30 KM/Hr	77.58 km
23	Turn	Medium	26.58819, 83.84529	30 KM/Hr	77.61 km
24	Turn	Medium	26.58803, 83.85312	30 KM/Hr	78.32 km
25	Turn	High	26.62730, 83.89639	15 KM/Hr	85.26 km
26	Turn	High	26.62741, 83.89557	15 KM/Hr	85.34 km
27	Turn	High	26.62765, 83.89557	15 KM/Hr	85.40 km
28	Turn	High	26.62798, 83.89365	15 KM/Hr	85.54 km
29	Turn	High	26.62910, 83.89372	15 KM/Hr	85.72 km
30	Turn	High	26.62906, 83.89343	15 KM/Hr	85.75 km
31	Turn	High	26.62876, 83.89341	15 KM/Hr	85.78 km
32	Turn	Medium	26.62868, 83.89324	30 KM/Hr	85.80 km
33	Turn	Medium	26.62821, 83.89107	30 KM/Hr	85.99 km
34	Turn	High	26.62803, 83.89098	15 KM/Hr	86.05 km
35	Turn	High	26.62821, 83.88931	15 KM/Hr	86.17 km
36	Turn	High	26.62793, 83.88917	15 KM/Hr	86.25 km
37	Turn	High	26.62818, 83.88749	15 KM/Hr	86.37 km

## Emergency Locations

Found: 2 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Prakash Hospital	26.6957341, 83.4807387	30 km/h	Medium	33.99 km
1	hospital	Goverment hospital,Tarkulwa	26.6290746, 83.8904697	30 km/h	Medium	86.09 km

## Crowded Spots

### Route Photos of Risky Spots



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 2.16 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:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 8.79 km

**Coordinates:** 26.74681, 83.25111





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Distance from Start: 9.04 km**

**Coordinates: 26.74656, 83.25154**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Distance from Start: 9.05 km**

**Coordinates: 26.74648, 83.25152**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Distance from Start: 33.25 km**

**Coordinates: 26.69741, 83.47552**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Distance from Start: 33.41 km**

**Coordinates: 26.69844, 83.47473**



**Risk Type:** U-Turn

**Risk Level:** High

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 33.41 km

**Coordinates:** 26.698439, 83.4747268



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.43 km

**Coordinates:** 26.69857, 83.47481





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 47.40 km

**Coordinates:** 26.63752, 83.59723



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 64.88 km

**Coordinates:** 26.55003, 83.74185





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 65.30 km

**Coordinates:** 26.55390, 83.74297



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 70.28 km

**Coordinates:** 26.57061, 83.78830



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 70.47 km

**Coordinates:** 26.57181, 83.78936



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 70.57 km

**Coordinates:** 26.57193, 83.78965





**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Distance from Start: 73.15 km**

**Coordinates: 26.56590, 83.81507**



**Risk Type: Blind Spot**


**Risk Level: Blind Spot**


**Speed Limit: 10 KM/Hr**

**Distance from Start: 73.43 km**

**Coordinates: 26.56413, 83.81619**

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