JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to SATYAWATI INDANE GRAMIN VITRAK

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

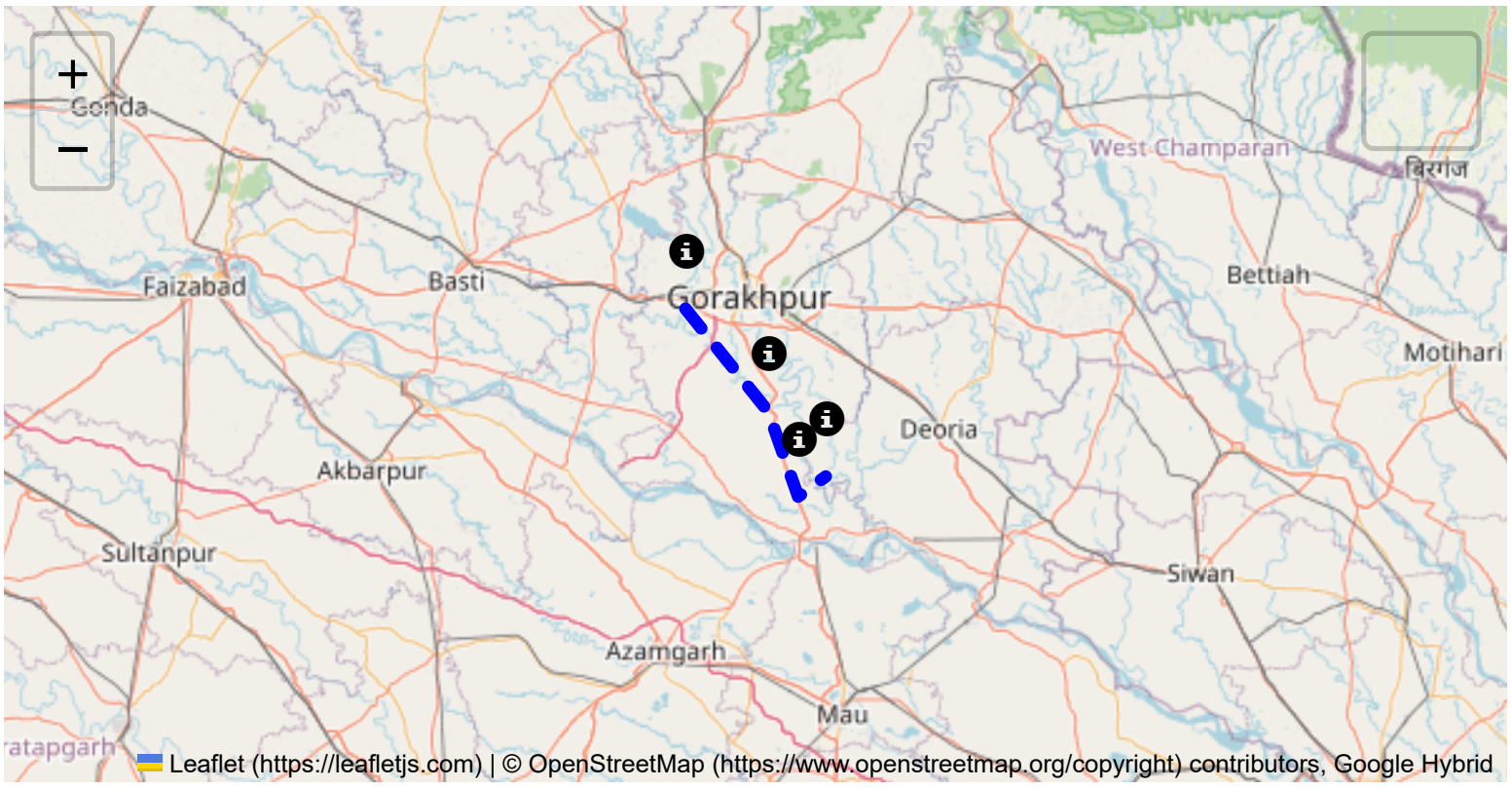
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 73.58 km
Estimated Duration: 1.7 hours
Adjusted Duration (Heavy Vehicle): 2.1 hours
Start: (26.735959, 83.229398)
End: (26.404611, 83.535383)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route begins at GIDA Industrial Area Phase 1 in Sahjanwa, Uttar Pradesh, and travels to Bahara Dalpatpur via Kauriram and Hata. The total travel distance is approximately 73.58 kilometers, cutting through a mix of urban and rural areas with significant stretches on regional highways.

2. Typical Weather Conditions and Potential Weather-related Hazards

- **Weather Conditions:** The region generally experiences a subtropical climate with hot summers, a monsoon season, and cool winters.
- **Potential Hazards:** The monsoon season (June to September) can lead to heavy rainfall causing flooding or waterlogged roads. Fog is common in winters (December to February), reducing visibility.

3. Analysis of Traffic Patterns

- **Peak Hours:** Typically, peak hours are during the morning (7:30 AM - 9:30 AM) and evening rush (6 PM - 8 PM).
- **Congestion-prone Areas:** Major centers like Gorakhpur can experience traffic congestion during peak hours, especially at intersections and marketplaces.

4. Assessment of Road Quality and Infrastructure

- **Road Quality:** Varies significantly. Urban sections generally have better road conditions, while rural areas might have uneven surfaces or potholes.
- **Infrastructure:** Basic facilities are available, but regular maintenance can be an issue in rural stretches.

5. Suggestions for Alternative Routes for Emergencies

- In case of emergencies, such as roadblocks or severe weather, consider using the Gorakhpur-Dohrighat Road as an alternative, despite a potential increase in distance.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- Special permits are required for transporting hazardous materials. Restrictions may apply to times of day when such transport can occur, typically avoiding peak hours and densely populated areas.

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

- Historically, incidents often relate to overturning due to road conditions or reduced visibility in fog. Traffic accidents increase during monsoons due to slippery roads.

8. Environmental Considerations and Sensitive Areas

- The route passes near agricultural zones where chemical spills could impact local water supplies. Care is needed to prevent contamination.

9. Analysis of Communication Coverage

- Urban areas generally have good network coverage. However, rural stretches and certain isolated areas, especially between Badauli and Hata, might have weak or no signal ("dead zones").

10. Estimated Emergency Response Times

- In urban areas, response times can be as low as 20-30 minutes. In rural areas, this might extend to 45-60 minutes, potentially longer during adverse weather conditions.

11. Overall Summary of Risk Assessment

- **Overall Risk:** Moderate
- **Primary Concerns:** Weather impacts (rain and fog), road quality, and traffic congestion.
- **Recommendations:** Access real-time weather updates, use GPS for congestion updates, adhere strictly to local regulations regarding hazardous material transport, and have an emergency communication plan considering coverage limitations.

Preparing for weather challenges, understanding the nuances of traffic patterns, and being vigilant in hazardous material regulations will ensure the safety and efficiency of the transportation process on this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73690, 83.22947	15 KM/Hr	0.05 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	1.16 km
7	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.31 km
8	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 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	4.22 km
11	Turn	High	26.75377, 83.20465	15 KM/Hr	4.28 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.79 km
12	Turn	Medium	26.74656, 83.25154	30 KM/Hr	9.04 km
13	Turn	Medium	26.74648, 83.25152	30 KM/Hr	9.06 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
14	Turn	High	26.70798, 83.33175	15 KM/Hr	18.60 km
1	U-Turn	High	26.5324639, 83.4183761	10 KM/Hr	41.80 km
15	Blind Spot	Blind Spot	26.53246, 83.41838	10 KM/Hr	41.80 km
16	Turn	High	26.53237, 83.41832	15 KM/Hr	41.81 km
17	Blind Spot	Blind Spot	26.53850, 83.41062	10 KM/Hr	42.85 km
18	Turn	Medium	26.53830, 83.41034	30 KM/Hr	42.88 km
19	Turn	Medium	26.50798, 83.41663	30 KM/Hr	46.23 km
20	Turn	Medium	26.50762, 83.41699	30 KM/Hr	46.38 km
21	Turn	High	26.50758, 83.41711	15 KM/Hr	46.41 km
22	Turn	High	26.36468, 83.47071	15 KM/Hr	63.12 km
23	Turn	Medium	26.36473, 83.47142	30 KM/Hr	63.27 km
24	Turn	Medium	26.36518, 83.47192	30 KM/Hr	63.34 km
25	Turn	Medium	26.36541, 83.47255	30 KM/Hr	63.43 km
26	Turn	Medium	26.36635, 83.47282	30 KM/Hr	63.53 km
27	Turn	Medium	26.36646, 83.47292	30 KM/Hr	63.56 km
28	Turn	Medium	26.36677, 83.47399	30 KM/Hr	63.67 km
29	Turn	High	26.36908, 83.47450	15 KM/Hr	63.92 km
30	Turn	High	26.36730, 83.48689	15 KM/Hr	65.17 km
31	Turn	High	26.36817, 83.48699	15 KM/Hr	65.26 km
32	Turn	High	26.36728, 83.50794	15 KM/Hr	67.24 km
33	Blind Spot	Blind Spot	26.38173, 83.51146	10 KM/Hr	68.97 km
34	Turn	High	26.38056, 83.51703	15 KM/Hr	69.62 km
35	Turn	High	26.38091, 83.51720	15 KM/Hr	69.65 km
36	Turn	Medium	26.38182, 83.52089	30 KM/Hr	70.05 km
37	Blind Spot	Blind Spot	26.38127, 83.52232	10 KM/Hr	70.21 km
38	Turn	Medium	26.39156, 83.52373	30 KM/Hr	71.31 km
39	Turn	Medium	26.39428, 83.52776	30 KM/Hr	71.85 km
40	Turn	Medium	26.39827, 83.52976	30 KM/Hr	72.42 km
41	Turn	High	26.39863, 83.52951	15 KM/Hr	72.48 km
42	Turn	High	26.40537, 83.53434	15 KM/Hr	73.39 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: 4.22 km

Coordinates: 26.75353, 83.20457

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.28 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: 9.06 km

Coordinates: 26.74648, 83.25152

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 18.60 km

Coordinates: 26.70798, 83.33175

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 41.80 km

Coordinates: 26.5324639, 83.4183761

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 41.80 km

Coordinates: 26.53246, 83.41838

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 41.81 km

Coordinates: 26.53237, 83.41832

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 42.85 km

Coordinates: 26.53850, 83.41062

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 42.88 km

Coordinates: 26.53830, 83.41034

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 46.23 km

Coordinates: 26.50798, 83.41663

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 46.38 km

Coordinates: 26.50762, 83.41699

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 46.41 km

Coordinates: 26.50758, 83.41711

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.12 km

Coordinates: 26.36468, 83.47071

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.27 km

Coordinates: 26.36473, 83.47142

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.34 km

Coordinates: 26.36518, 83.47192

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.43 km

Coordinates: 26.36541, 83.47255

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.53 km

Coordinates: 26.36635, 83.47282

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.56 km

Coordinates: 26.36646, 83.47292

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.67 km

Coordinates: 26.36677, 83.47399

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.92 km

Coordinates: 26.36908, 83.47450

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 65.17 km

Coordinates: 26.36730, 83.48689

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 65.26 km

Coordinates: 26.36817, 83.48699

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 67.24 km

Coordinates: 26.36728, 83.50794

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 68.97 km

Coordinates: 26.38173, 83.51146

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 69.62 km

Coordinates: 26.38056, 83.51703

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 69.65 km

Coordinates: 26.38091, 83.51720

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 70.05 km

Coordinates: 26.38182, 83.52089

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 70.21 km

Coordinates: 26.38127, 83.52232

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.31 km

Coordinates: 26.39156, 83.52373

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.85 km

Coordinates: 26.39428, 83.52776

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 72.42 km

Coordinates: 26.39827, 83.52976

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 72.48 km

Coordinates: 26.39863, 83.52951

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 73.39 km

Coordinates: 26.40537, 83.53434

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