



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO BHAGWATI 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

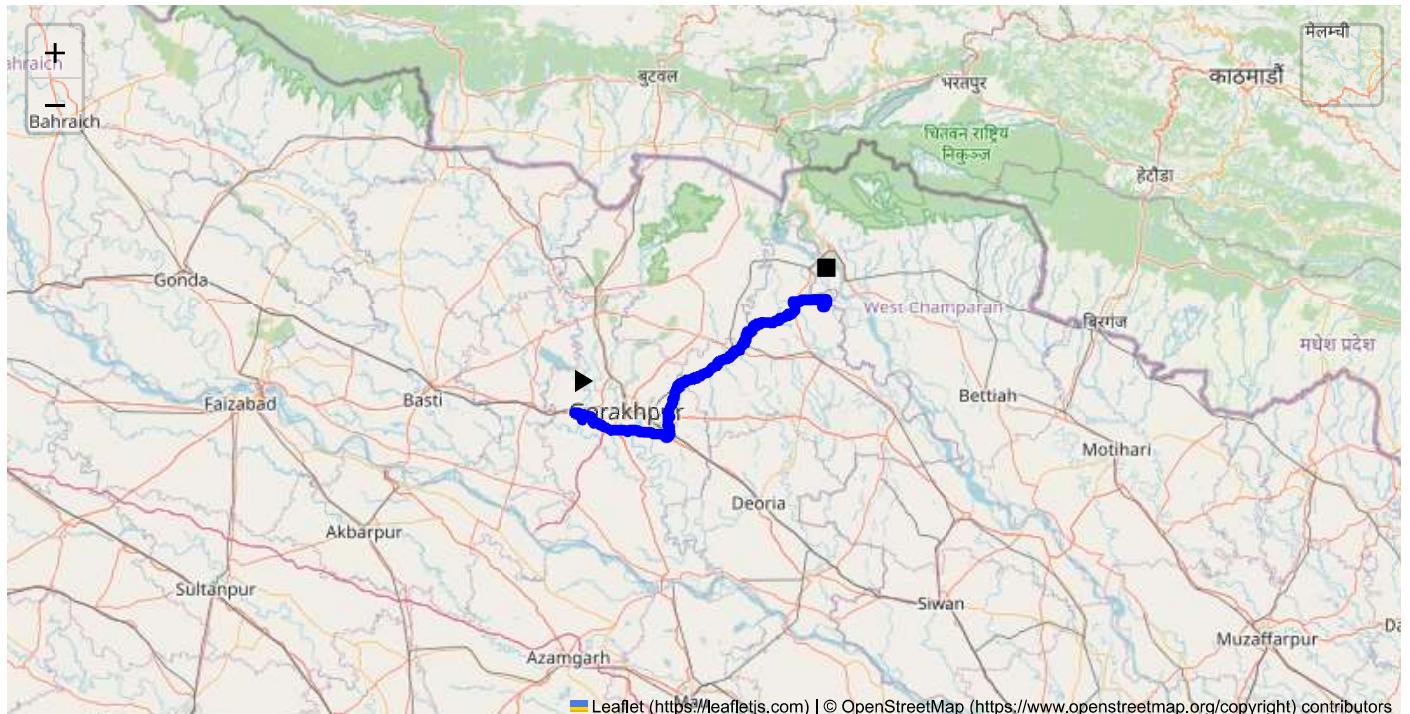
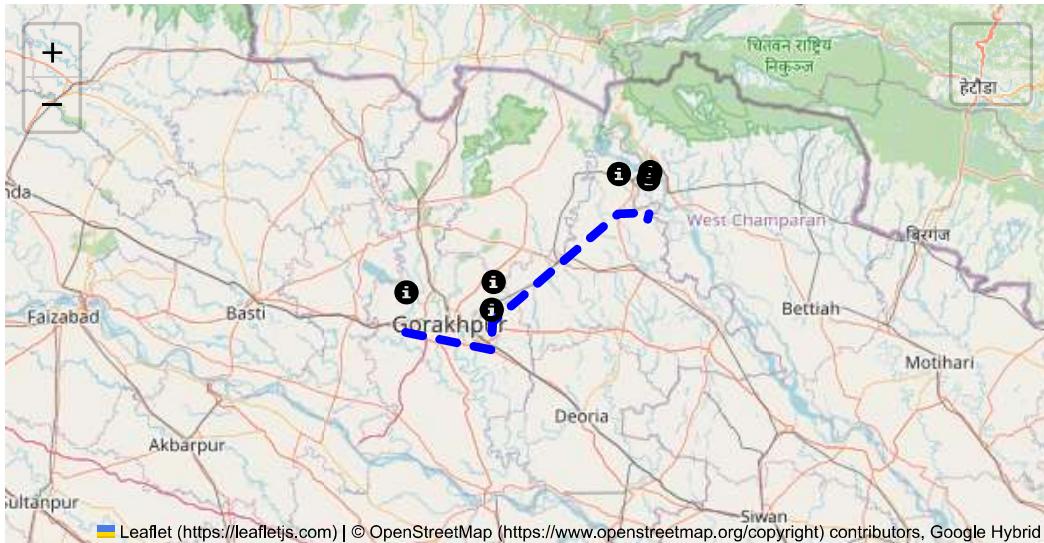
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 116.38 km
Estimated Duration: 3.1 hours
Adjusted Duration (Heavy Vehicle): 3.8 hours
Start: (26.735959, 83.229398)
End: (27.05554, 83.988028)

Welcome to the Journey Risk Management Study

Route Overview

The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa to 3X4Q+6QV, Ekwanihi Khurd spans approximately 116.38 kilometers. It passes through significant junctions such as the Gorakhpur - Deoria

Highway, Pipraich Kushmahi Road, and Nebua Raiganj - Ekwanihi Road. This route is typically used for transporting heavy and possibly hazardous materials, which necessitates a thorough analysis for safety.

Typical Weather Conditions

- **Monsoon Season (June to September):** High rainfall can result in waterlogged roads and reduced visibility.
- **Summer (March to June):** High temperatures can cause increased tire wear and potential equipment failure.
- **Winter (December to February):** Fog is common, leading to reduced visibility and increased accident risks, especially in early mornings and late evenings.

Traffic Patterns

- **Peak Traffic Hours:** Late morning (8:00 AM to 10:00 AM) and late afternoon (4:00 PM to 6:00 PM) see significant congestion, especially around Gorakhpur city and towns along the highway.
- **Congestion-Prone Areas:** Gorakhpur city is a major congestion point, particularly near major junctions and markets.

Road Quality and Infrastructure

- **Urban Areas:** Roads in urban stretches near Gorakhpur are generally well-maintained but can be crowded.
- **Rural Areas:** Some sections, especially along Nebua Raiganj roads, may have patchy surfaces and narrower lanes. Maintenance issues could lead to potholes and uneven pavements.

Alternative Routes

- **Emergencies:** Consider using the NH27 as an alternative, although it might add distance, it generally provides better infrastructure for heavy vehicles.

Local Regulations for Hazardous Material Transport

- **Permits:** Valid permits are essential for transporting hazardous materials.
- **Time Restrictions:** Restrictions may apply during peak traffic hours for safety purposes to avoid urban areas.

Historical Incidents

- Limited data on specific incidents along this route, but common issues include vehicle breakdowns and minor road accidents, emphasizing cautious driving.

Environmental Considerations

- Sensitive Areas:** The route crosses near agricultural lands which require careful handling of materials to prevent contamination.
- Noise and Air Pollution:** Particularly significant in densely populated areas, drivers should follow guidelines to minimize emissions.

Communication Coverage

- Potential Dead Zones:** Some rural areas may have poor cellular signal, especially on Nebua Raiganj - Ekwanhi Road.
- Recommendations:** Ensure satellite communication systems are functional if operating in weak signal areas.

Estimated Emergency Response Times

- Urban Sections:** Approximately 15-30 minutes due to proximity to facilities.
- Rural Sections:** Response may take up to 60 minutes, emphasizing the need for contingency measures on the driver's part.

Overall Risk Assessment Summary

The route involves moderate to high risk primarily due to variable road conditions, limited emergency response in rural areas, and potential for weather-related disruptions. Key recommendations include:

- Driver Preparedness:** Ensure drivers are well-trained for emergency situations and familiar with detours.
- Vehicle Maintenance:** Strict checks to prevent breakdowns, especially in remote areas.
- Weather Awareness:** Stay updated on weather forecasts to anticipate delays or hazards.
- Regulatory Compliance:** Ensure all permits are in order and drivers are aware of route-specific regulations.

Overall, while manageable, the route requires vigilance and preparation to mitigate 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	0.08 km
3	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
4	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
5	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
6	Turn	High	26.74679, 83.22391	15 KM/Hr	1.64 km
7	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.13 km
8	Blind Spot	Blind Spot	26.75377, 83.20465	10 KM/Hr	4.19 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.07 km
9	Turn	Medium	26.69652, 83.47508	30 KM/Hr	33.05 km
10	Turn	High	26.69741, 83.47552	15 KM/Hr	33.14 km
11	Blind Spot	Blind Spot	26.69857, 83.47481	10 KM/Hr	33.33 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.33 km
12	Blind Spot	Blind Spot	26.68620, 83.49880	10 KM/Hr	35.79 km
13	Turn	Medium	26.69511, 83.49893	30 KM/Hr	36.97 km
14	Turn	High	26.69722, 83.50035	15 KM/Hr	37.31 km
15	Turn	Medium	26.69873, 83.49920	30 KM/Hr	37.46 km
16	Blind Spot	Blind Spot	26.74662, 83.49914	10 KM/Hr	42.87 km
17	Blind Spot	Blind Spot	26.74659, 83.49782	10 KM/Hr	42.98 km
18	Turn	Medium	26.78331, 83.51396	30 KM/Hr	46.98 km
19	Turn	High	26.82411, 83.52193	15 KM/Hr	52.05 km
20	Turn	Medium	26.82476, 83.52706	30 KM/Hr	52.49 km
21	Blind Spot	Blind Spot	26.82741, 83.53262	10 KM/Hr	53.24 km
22	Turn	High	26.82760, 83.53150	15 KM/Hr	53.35 km
23	Turn	High	26.83139, 83.52997	15 KM/Hr	53.80 km
24	Turn	Medium	26.88048, 83.63813	30 KM/Hr	65.77 km
25	Turn	Medium	26.88064, 83.63915	30 KM/Hr	66.16 km
26	Turn	Medium	26.90784, 83.67807	30 KM/Hr	71.12 km
27	Turn	Medium	26.91252, 83.69137	30 KM/Hr	72.65 km
28	Turn	High	26.92140, 83.70568	15 KM/Hr	74.36 km
29	Turn	Medium	26.92843, 83.70590	30 KM/Hr	75.19 km
30	Turn	Medium	26.92870, 83.70611	30 KM/Hr	75.26 km
31	Turn	High	26.92977, 83.71938	15 KM/Hr	76.54 km
32	Turn	Medium	26.98333, 83.75128	30 KM/Hr	83.43 km
33	Turn	Medium	26.98806, 83.76186	30 KM/Hr	84.68 km
34	Turn	Medium	27.00402, 83.78183	30 KM/Hr	87.52 km
35	Turn	Medium	27.01112, 83.79199	30 KM/Hr	88.80 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
36	Turn	Medium	27.03263, 83.87969	30 KM/Hr	98.22 km
37	Turn	High	27.04355, 83.89521	15 KM/Hr	100.13 km
38	Turn	High	27.04344, 83.89802	15 KM/Hr	100.48 km
39	Turn	Medium	27.04958, 83.89848	30 KM/Hr	101.20 km
40	Turn	High	27.06715, 83.89414	15 KM/Hr	103.27 km
41	Blind Spot	Blind Spot	27.07470, 83.99513	10 KM/Hr	113.40 km
42	Turn	High	27.06436, 83.99353	15 KM/Hr	114.58 km
43	Turn	Medium	27.06414, 83.99295	30 KM/Hr	114.65 km
44	Blind Spot	Blind Spot	27.05612, 83.98688	10 KM/Hr	115.72 km
45	Blind Spot	Blind Spot	27.05579, 83.98839	10 KM/Hr	115.85 km

Route Photos of Risky Spots



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.13 km

Coordinates: 26.75126, 83.22476



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 4.19 km
Coordinates: 26.75377, 83.20465



Risk Type: Roundabout
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 8.07 km
Coordinates: 26.74681, 83.25111



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 33.05 km

Coordinates: 26.69652, 83.47508



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.14 km

Coordinates: 26.69741, 83.47552



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 33.33 km
Coordinates: 26.69857, 83.47481



Risk Type: U-Turn
Risk Level: High
Speed Limit: 10 KM/Hr
Distance from Start: 33.33 km
Coordinates: 26.698439, 83.4747268



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 35.79 km**Coordinates:** 26.68620, 83.49880

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 36.97 km**Coordinates:** 26.69511, 83.49893



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 37.31 km**Coordinates:** 26.69722, 83.50035

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 37.46 km**Coordinates:** 26.69873, 83.49920



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 42.87 km**Coordinates:** 26.74662, 83.49914

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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 42.98 km**Coordinates:** 26.74659, 83.49782



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 46.98 km**Coordinates:** 26.78331, 83.51396

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 52.05 km**Coordinates:** 26.82411, 83.52193



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.49 km

Coordinates: 26.82476, 83.52706



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 53.24 km

Coordinates: 26.82741, 83.53262



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.35 km

Coordinates: 26.82760, 83.53150



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.80 km

Coordinates: 26.83139, 83.52997



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 71.12 km**Coordinates:** 26.90784, 83.67807

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 72.65 km**Coordinates:** 26.91252, 83.69137



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 74.36 km

Coordinates: 26.92140, 83.70568



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 75.19 km

Coordinates: 26.92843, 83.70590



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 75.26 km

Coordinates: 26.92870, 83.70611



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 84.68 km

Coordinates: 26.98806, 83.76186



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 87.52 km

Coordinates: 27.00402, 83.78183



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 88.80 km

Coordinates: 27.01112, 83.79199



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 114.58 km**Coordinates:** 27.06436, 83.99353**Risk Type:** Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 114.65 km**Coordinates:** 27.06414, 83.99295

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