



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO ARVIND 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

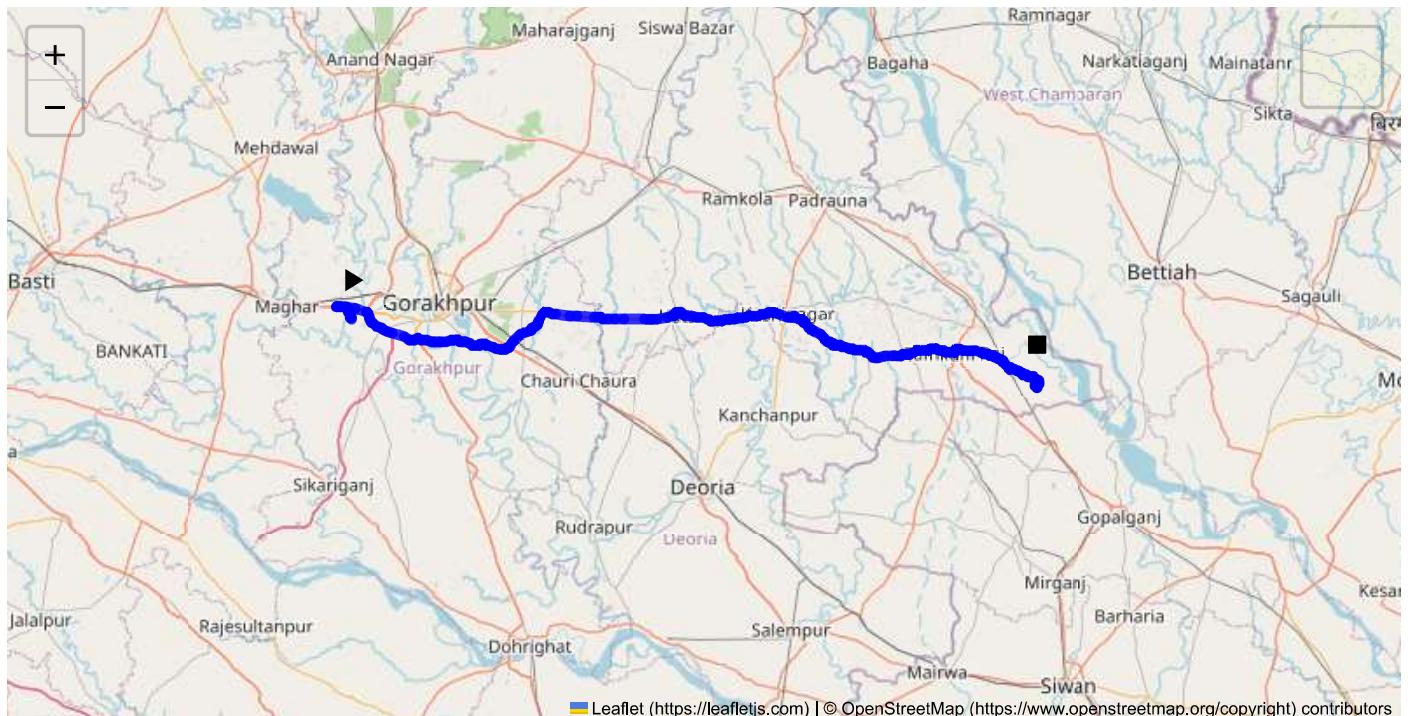
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 125.59 km
Estimated Duration: 2.6 hours
Adjusted Duration (Heavy Vehicle): 3.2 hours
Start: (26.735959, 83.229398)
End: (26.644263, 84.305871)

Welcome to the Journey Risk Management Study

Route Overview

The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa, Uttar Pradesh, to J8V4+P8 Daniari, Uttar Pradesh, spans approximately 125.59 kilometers. It primarily follows regional highways and local roads.

The journey traverses rural and semi-urban areas, with a mix of agricultural land and small towns.

Weather Conditions and Potential Hazards

1. **Typical Weather:** The region experiences a humid subtropical climate with hot summers, a monsoon season, and mild winters.
2. **Weather-Related Hazards:**
 - o **Monsoon (July to September):** Heavy rains can cause flooding and slippery roads.
 - o **Summer Heat (April to June):** High temperatures can lead to road surface damage and heat-related vehicle issues.
 - o **Fog (December to January):** Reduced visibility is common during winter mornings.

Traffic Patterns

1. **Peak Hours:** Morning (7-9 AM) and early evening (5-7 PM) are peak traffic times, primarily in and around urban centers.
2. **Congestion-Prone Areas:** The stretches near industrial areas and town intersections tend to have higher congestion, especially during peak hours.

Road Quality and Infrastructure

1. **General Condition:** The regional highways are typically well-maintained, while smaller roads may have potholes and uneven surfaces.
2. **Infrastructure:** Adequate signage but limited street lighting in rural areas. Some bridges may require caution due to narrow widths.

Alternative Routes for Emergencies

Consider bypassing major towns during peak hours or using lesser-known parallel routes, especially in cases of roadblocks or major accidents. Highways often have small side roads that can serve as detours.

Local Regulations on Hazardous Material Transport

1. **Permits:** Vehicles carrying hazardous materials require specific permits.
2. **Time Restrictions:** Transportation of hazardous materials may be restricted during certain hours in urban areas.
3. **Safety Protocols:** Compliance with national safety standards for hazardous materials is mandatory.

Historical Incidents

1. **Past Accidents:** A few incidents involving heavy vehicles in recent years have been reported, often related to mechanical failures and road conditions.

2. **Response Improvements:** Increasing emphasis on driver education and vehicle checks has been noted.

Environmental Considerations

1. **Sensitive Areas:** Routes near water bodies and agricultural fields require caution to prevent contamination risks.
2. **Protected Areas:** Avoidance of environmentally protected zones is crucial due to strict regulations.

Communication Coverage

1. **Network Availability:** Generally good in urban and semi-urban areas but potential dead zones in remote rural stretches.
2. **Communication Tips:** Equip vehicles with satellite communication devices for continuous connectivity.

Emergency Response Times

1. **Urban Segments:** Response time ranges from 20 to 30 minutes.
2. **Rural Segments:** Could extend to 40-60 minutes, depending on location and complexity of the incident.

Overall Risk Assessment

1. **Primary Risks:** Weather-induced hazards, road conditions, and congestion are the main concerns.
2. **Mitigation Strategies:** Regular monitoring of weather forecasts, maintaining vehicles in optimal condition, and staying informed about local traffic regulations are crucial.
3. **Preparedness:** Drivers should be trained on emergency protocols and equipped with necessary safety equipment.

This route poses moderate risk primarily influenced by variable weather conditions and traffic congestion. Effective planning and adherence to regulations can significantly mitigate these risks, ensuring a safer passage for trucks carrying hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.08 km
2	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
3	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
5	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km
7	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km
8	Turn	High	26.75377, 83.20465	15 KM/Hr	4.26 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.12 km
9	Turn	Medium	26.74420, 83.52988	30 KM/Hr	40.59 km
10	Turn	Medium	26.74514, 83.53132	30 KM/Hr	41.01 km
11	Turn	Medium	26.74205, 83.75226	30 KM/Hr	63.35 km
12	Turn	Medium	26.73382, 83.79538	30 KM/Hr	67.75 km
13	Turn	High	26.68889, 84.17995	15 KM/Hr	108.41 km
14	Turn	High	26.69479, 84.18353	15 KM/Hr	109.43 km
15	Turn	High	26.68526, 84.23506	15 KM/Hr	114.68 km
16	Turn	High	26.68477, 84.23517	15 KM/Hr	114.76 km
17	Turn	Medium	26.68374, 84.23691	30 KM/Hr	114.89 km
18	Turn	Medium	26.67795, 84.25493	30 KM/Hr	116.88 km
19	Turn	Medium	26.67496, 84.25666	30 KM/Hr	117.26 km
20	Turn	High	26.67186, 84.25979	15 KM/Hr	117.68 km
21	Turn	Medium	26.67180, 84.26065	30 KM/Hr	117.81 km
22	Turn	Medium	26.66951, 84.26313	30 KM/Hr	118.03 km
23	Turn	Medium	26.66871, 84.26344	30 KM/Hr	118.26 km
24	Turn	Medium	26.66735, 84.26618	30 KM/Hr	118.55 km
25	Blind Spot	Blind Spot	26.64939, 84.31122	10 KM/Hr	123.46 km
26	Turn	High	26.64827, 84.31080	15 KM/Hr	123.67 km
27	Turn	High	26.64775, 84.31207	15 KM/Hr	123.81 km
28	Turn	Medium	26.64764, 84.31211	30 KM/Hr	123.88 km
29	Turn	High	26.64499, 84.31100	15 KM/Hr	124.19 km
30	Turn	High	26.64507, 84.31001	15 KM/Hr	124.28 km
31	Turn	High	26.64430, 84.30947	15 KM/Hr	124.38 km
32	Turn	High	26.64425, 84.30863	15 KM/Hr	124.47 km
33	Turn	Medium	26.64392, 84.30843	30 KM/Hr	124.51 km
34	Blind Spot	Blind Spot	26.64129, 84.30837	10 KM/Hr	124.78 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
35	Turn	High	26.64131, 84.30817	15 KM/Hr	124.83 km
36	Turn	High	26.64281, 84.30756	15 KM/Hr	124.98 km
37	Blind Spot	Blind Spot	26.64332, 84.30550	10 KM/Hr	125.18 km

Emergency Locations

Found: 2 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Star Hospital, Kushinagar	26.6831917, 84.0478785	30 km/h	Medium	95.12 km
1	hospital	Pawanagar Mahavir Hospital and Research Center	26.6832018, 84.0485296	30 km/h	Medium	95.12 km

Crowded Spots

Route Photos of Risky Spots



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.15 km

Coordinates: 26.75126, 83.22476



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.21 km

Coordinates: 26.75353, 83.20457



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 4.26 km**Coordinates:** 26.75377, 83.20465

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Risk Type: Roundabout**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 8.12 km**Coordinates:** 26.74681, 83.25111



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 40.59 km

Coordinates: 26.74420, 83.52988



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 41.01 km

Coordinates: 26.74514, 83.53132



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Risk Type: Turn**Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 63.35 km****Coordinates: 26.74205, 83.75226**

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Risk Type: Turn**Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 67.75 km****Coordinates: 26.73382, 83.79538**



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 108.41 km

Coordinates: 26.68889, 84.17995



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 109.43 km

Coordinates: 26.69479, 84.18353



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 114.68 km**Coordinates:** 26.68526, 84.23506

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 114.76 km**Coordinates:** 26.68477, 84.23517



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 114.89 km

Coordinates: 26.68374, 84.23691



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 116.88 km

Coordinates: 26.67795, 84.25493



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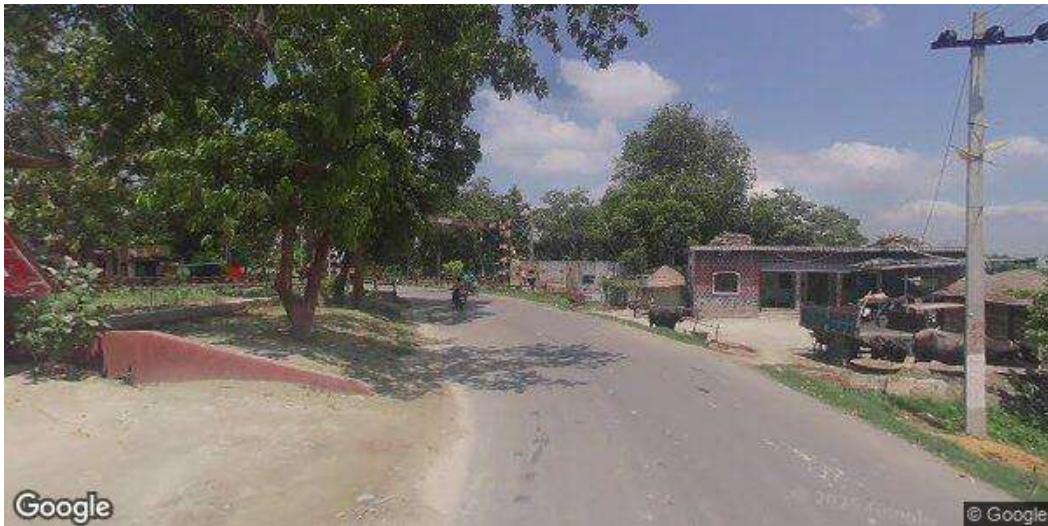
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Risk Type: Turn**Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 117.26 km****Coordinates: 26.67496, 84.25666**

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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 117.68 km****Coordinates: 26.67186, 84.25979**



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 117.81 km

Coordinates: 26.67180, 84.26065



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 118.03 km

Coordinates: 26.66951, 84.26313



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 118.26 km**Coordinates:** 26.66871, 84.26344

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 118.55 km**Coordinates:** 26.66735, 84.26618



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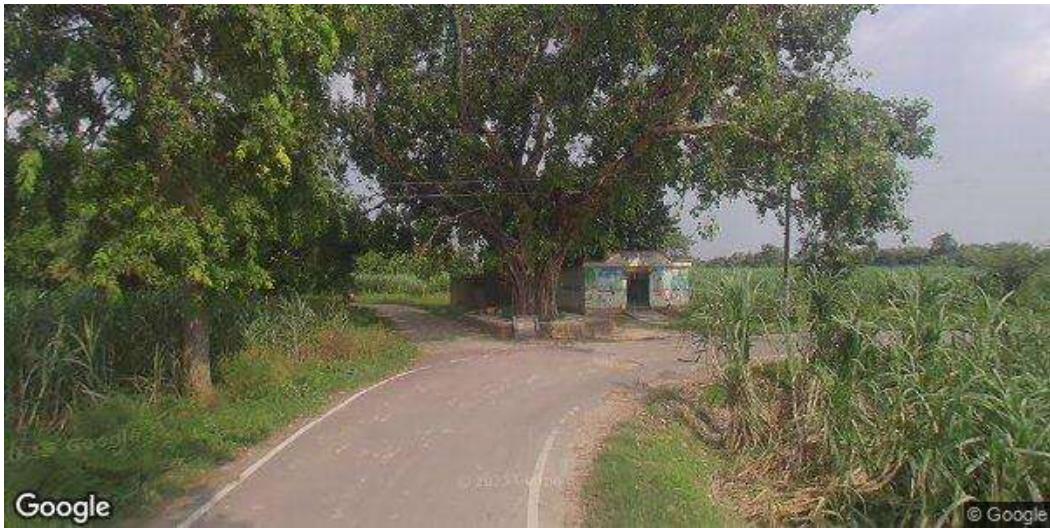
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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 123.46 km**Coordinates:** 26.64939, 84.31122

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 123.67 km**Coordinates:** 26.64827, 84.31080



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 123.81 km

Coordinates: 26.64775, 84.31207



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 123.88 km

Coordinates: 26.64764, 84.31211



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 124.19 km**Coordinates:** 26.64499, 84.31100

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