



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO JAI MAA MAHAKALI IND

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

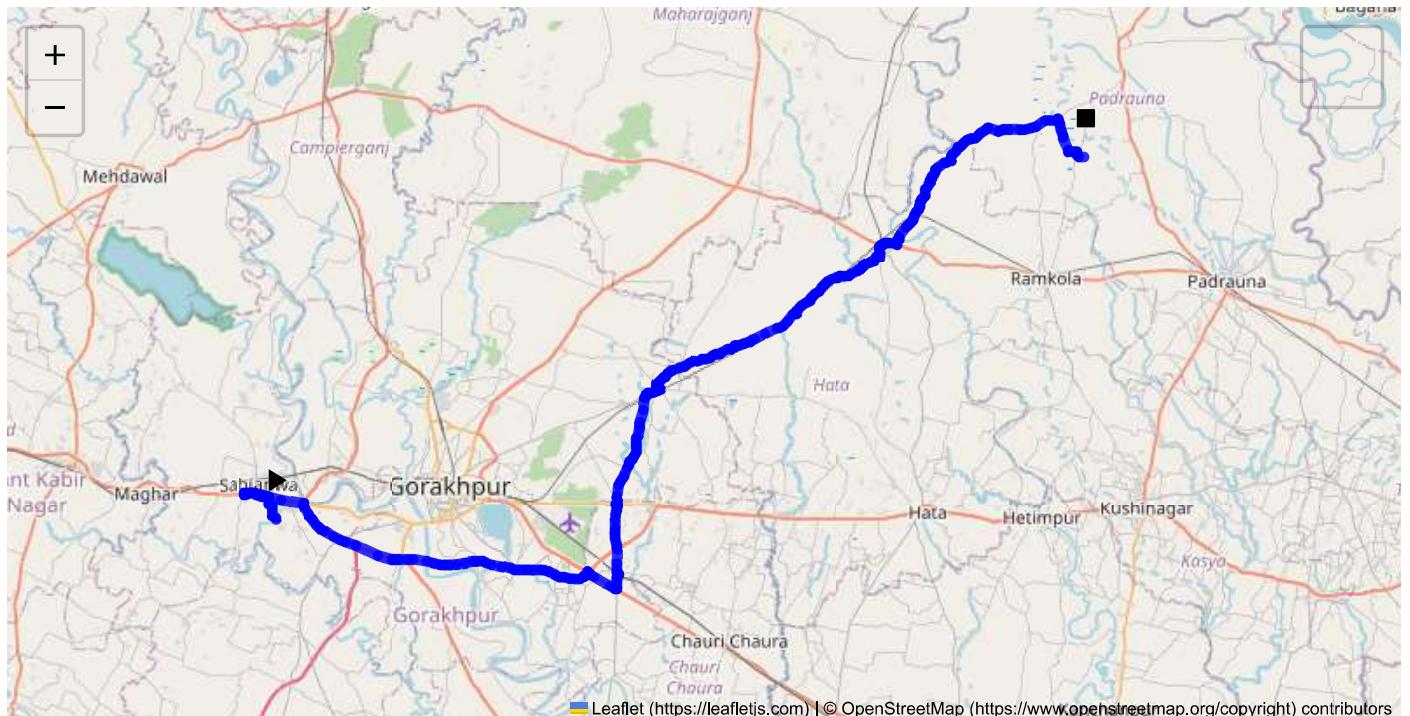
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 99.22 km
Estimated Duration: 2.5 hours
Adjusted Duration (Heavy Vehicle): 3.1 hours
Start: (26.735959, 83.229398)
End: (26.990534, 83.867249)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa to XVR8+6V Sigha via Motiram Adda and Pipraich Kushmahi Road covers approximately 99.22 kilometers. This journey traverses mainly rural roads

and some urban areas, which are important to consider for traffic and potential delays.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Uttar Pradesh experiences varied weather conditions:

- **Summer (April to June):** High temperatures can cause road material to soften, leading to potential road deterioration.
- **Monsoon (July to September):** Heavy rains can lead to waterlogging and flooding, especially in low-lying areas.
- **Winter (December to February):** Fog can significantly reduce visibility, particularly in the early mornings and late evenings. Ensure to monitor weather forecasts and alerts as they can significantly impact driving conditions.

3. Traffic Patterns

- **Peak Hours:** Congestion is common during morning (8-10 AM) and evening (5-7 PM) rush hours, particularly around urban centers like Sahjanwa.
- **Congestion-prone Areas:** The area near Motiram Adda and Pipraich can see increased traffic due to local markets and schools. It's advisable to plan for potential delays during these times.

4. Assessment of Road Quality and Infrastructure

- **Urban Sections:** Generally good road quality but can be prone to congestion.
- **Rural Sections:** Varying conditions; some stretches may have potholes or unpaved sections. Regular maintenance may be lacking, especially in more remote areas.

5. Suggestions for Alternative Routes for Emergencies

- It is vital to have alternative routes mapped out, particularly those that bypass flood-prone areas. One potential alternative is to use larger highways where possible, even if it increases the distance slightly.
- Using NH-27 can be a reliable backup, depending on the specific segments of the route affected by any hazards.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials requires adherence to specific state and national regulations. Key among these are specific marking and placarding requirements, proper documentation, and potentially restricted travel times especially through populated areas. Verify current regulations for hazardous material transport in Uttar Pradesh before travel.

7. Overview of Historical Incidents

This route has seen incidents mostly due to adverse weather conditions and human error. Areas near industrial regions have been more prone to incidents involving heavy vehicles, often related to poor road conditions and overloading.

8. Environmental Considerations and Sensitive Areas

Sensitive areas include agricultural zones and small communities that border the route. It's vital to prevent spills or leaks of hazardous materials to minimize environmental impact. Proper emergency spill response plans should be in place.

9. Analysis of Communication Coverage

Communication networks are generally reliable in urban areas but may have dead zones in rural sections, especially in valleys or heavily wooded areas. Equip vehicles with multiple communication means, such as mobile, satellite, and radio.

10. Estimated Emergency Response Times

- **Urban Areas:** Typically 20-30 minutes on average, depending on traffic.
- **Rural Areas:** Can extend to 45 minutes to over an hour. Delays can occur due to both road access issues and communication challenges.

12. Overall Summary of Risk Assessment

This route presents a moderate risk for transporting hazardous materials, primarily due to varying road conditions and weather-related hazards. Preparation is key:

- Monitor weather and traffic updates.
- Be aware of potential congestion and road condition challenges, especially in rural areas.
- Ensure full compliance with hazardous materials regulations.
- Prepare for communication challenges and have emergency protocols established.

Proactive planning and real-time adjustments are crucial for maintaining safety and minimizing risk when traversing this route with heavy vehicles or hazardous materials.

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
5	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
6	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km
7	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km
8	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km
9	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
10	Turn	Medium	26.69652, 83.47508	30 KM/Hr	33.11 km
11	Turn	High	26.69741, 83.47552	15 KM/Hr	33.20 km
12	Blind Spot	Blind Spot	26.69857, 83.47481	10 KM/Hr	33.39 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.39 km
13	Blind Spot	Blind Spot	26.68622, 83.49880	10 KM/Hr	36.07 km
14	Turn	Medium	26.69511, 83.49893	30 KM/Hr	37.03 km
15	Turn	High	26.69722, 83.50035	15 KM/Hr	37.37 km
16	Turn	Medium	26.69913, 83.49898	30 KM/Hr	37.64 km
17	Blind Spot	Blind Spot	26.74662, 83.49914	10 KM/Hr	42.92 km
18	Blind Spot	Blind Spot	26.74659, 83.49782	10 KM/Hr	43.04 km
19	Turn	Medium	26.78331, 83.51396	30 KM/Hr	47.38 km
20	Turn	High	26.82411, 83.52193	15 KM/Hr	52.11 km
21	Turn	Medium	26.82505, 83.52428	30 KM/Hr	52.40 km
22	Turn	Medium	26.82476, 83.52706	30 KM/Hr	52.65 km
23	Turn	Medium	26.82663, 83.53034	30 KM/Hr	52.89 km
24	Blind Spot	Blind Spot	26.82741, 83.53262	10 KM/Hr	53.31 km
25	Turn	High	26.82760, 83.53150	15 KM/Hr	53.42 km
26	Turn	High	26.83139, 83.52997	15 KM/Hr	53.87 km
27	Turn	Medium	26.88048, 83.63813	30 KM/Hr	65.85 km
28	Turn	Medium	26.88064, 83.63915	30 KM/Hr	66.24 km
29	Turn	Medium	26.90709, 83.67596	30 KM/Hr	71.07 km
30	Turn	Medium	26.90784, 83.67807	30 KM/Hr	71.21 km
31	Turn	Medium	26.91252, 83.69137	30 KM/Hr	72.75 km
32	Turn	Medium	26.91435, 83.69301	30 KM/Hr	73.04 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
33	Turn	High	26.92140, 83.70568	15 KM/Hr	74.46 km
34	Blind Spot	Blind Spot	26.92872, 83.70591	10 KM/Hr	75.35 km
35	Turn	High	26.92977, 83.71938	15 KM/Hr	76.65 km
36	Turn	Medium	26.97851, 83.74935	30 KM/Hr	82.97 km
37	Turn	Medium	26.98333, 83.75128	30 KM/Hr	83.55 km
38	Turn	Medium	26.98806, 83.76186	30 KM/Hr	84.79 km
39	Turn	Medium	27.00253, 83.77491	30 KM/Hr	86.89 km
40	Turn	Medium	27.00402, 83.78183	30 KM/Hr	87.64 km
41	Turn	High	27.01725, 83.84625	15 KM/Hr	94.62 km
42	Turn	High	26.99435, 83.85544	15 KM/Hr	97.33 km
43	Blind Spot	Blind Spot	26.99395, 83.86193	10 KM/Hr	97.94 km
44	Blind Spot	Blind Spot	26.99128, 83.86075	10 KM/Hr	98.22 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Prakash Hospital	26.6957341, 83.4807387	30 km/h	Medium	33.95 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: 33.11 km

Coordinates: 26.69652, 83.47508



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.20 km

Coordinates: 26.69741, 83.47552



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 33.39 km**Coordinates:** 26.69857, 83.47481

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Risk Type: U-Turn**Risk Level:** High**Speed Limit:** 10 KM/Hr**Distance from Start:** 33.39 km**Coordinates:** 26.698439, 83.4747268



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 36.07 km

Coordinates: 26.68622, 83.49880



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 37.03 km

Coordinates: 26.69511, 83.49893



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 37.37 km

Coordinates: 26.69722, 83.50035



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 37.64 km

Coordinates: 26.69913, 83.49898



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 42.92 km

Coordinates: 26.74662, 83.49914



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 43.04 km

Coordinates: 26.74659, 83.49782



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 47.38 km**Coordinates:** 26.78331, 83.51396

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 52.11 km**Coordinates:** 26.82411, 83.52193



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.40 km

Coordinates: 26.82505, 83.52428



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.65 km

Coordinates: 26.82476, 83.52706



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.89 km

Coordinates: 26.82663, 83.53034



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 53.31 km

Coordinates: 26.82741, 83.53262



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.42 km

Coordinates: 26.82760, 83.53150



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.87 km

Coordinates: 26.83139, 83.52997



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.07 km

Coordinates: 26.90709, 83.67596



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.21 km

Coordinates: 26.90784, 83.67807



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 72.75 km

Coordinates: 26.91252, 83.69137



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 73.04 km

Coordinates: 26.91435, 83.69301



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 74.46 km

Coordinates: 26.92140, 83.70568



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 75.35 km

Coordinates: 26.92872, 83.70591



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 84.79 km

Coordinates: 26.98806, 83.76186



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 87.64 km

Coordinates: 27.00402, 83.78183



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 94.62 km**Coordinates:** 27.01725, 83.84625

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 97.33 km**Coordinates:** 26.99435, 83.85544



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 97.94 km

Coordinates: 26.99395, 83.86193



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 98.22 km

Coordinates: 26.99128, 83.86075

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