



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO KAPTANGANJ INDANE GA

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

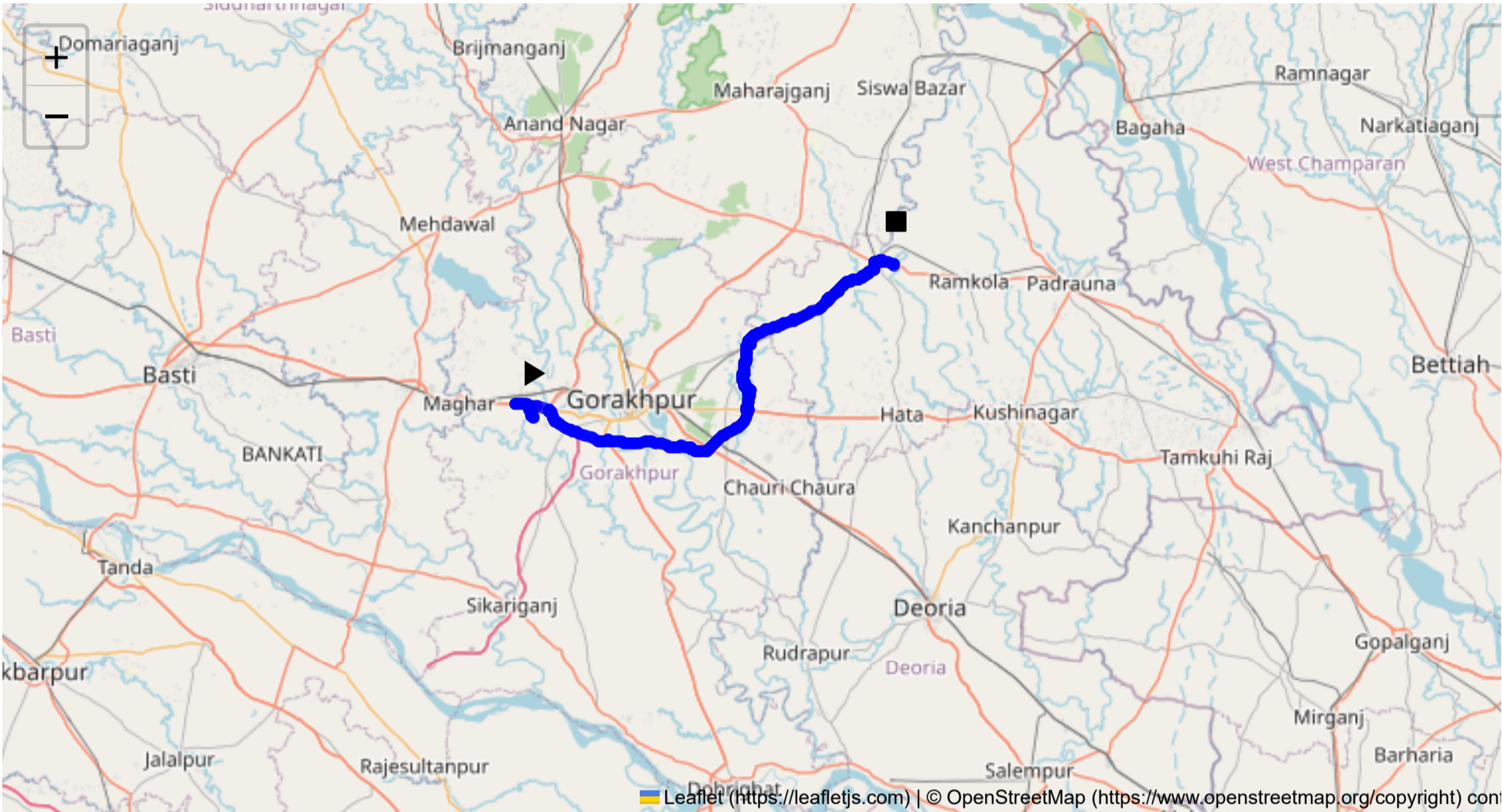
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 77.13 km
Estimated Duration: 1.9 hours
Adjusted Duration (Heavy Vehicle): 2.4 hours
Start: (26.735959, 83.229398)
End: (26.924934, 83.732041)

Welcome to the Journey Risk Management Study

Route Safety Analysis Report

1. Overview of the Route Map:

The route spans approximately 77.13 kilometers, beginning at GIDA Industrial Area in Sahjanwa, Uttar Pradesh, and concluding in Basahiya Urf Kaptan Ganj, Uttar Pradesh. The journey encompasses traversing

through Zero Point, Kaalesar, Khorabar, and along the Pipracih - Captangunj Road. The path primarily follows major roads and state highways, providing a thoroughfare through a mix of industrial, urban, and rural landscapes.

2. Typical Weather Conditions and Potential Weather-Related Hazards:

The region experiences a humid subtropical climate, with extreme heat in summers (up to 40°C), and cold winters (down to 5°C). The monsoon season, from June to September, can lead to heavy rainfalls causing waterlogging and reduced visibility. During winters, fog can be a significant hazard, especially in early mornings and late evenings, affecting visibility and increasing the risk of accidents.

3. Analysis of Traffic Patterns:

- **Peak Hours:** Morning commutes (8 AM - 10 AM) and evening commutes (5 PM - 7 PM) see the highest traffic, particularly near Gorakhpur due to urban congestion.
- **Congestion-Prone Areas:** Industrial areas in Sahjanwa and the approach to Gorakhpur are prone to bottlenecks with mixed vehicular traffic.

4. Assessment of Road Quality and Infrastructure:

- **Road Quality:** Generally, roads are in fair condition, but sections, especially in rural stretches, might have potholes and uneven surfaces.
- **Infrastructure:** Signage is present but might not always be clear, especially in rural sections. Lighting is adequate in urban areas but sparse elsewhere.

5. Suggestions for Alternative Routes for Emergencies:

In case of emergencies, alternate routes include:

- Using NH27 via Gorakhpur for a more direct but potentially busier route.
- State Highway 81 offers a parallel path with less congestion but longer travel time.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

- Transport of hazardous materials is restricted during peak hours through Gorakhpur.
- Secure permits and ensure compliance with local hazardous material handling rules are mandatory.

7. Overview of Historical Incidents:

While specific data might be lacking, the Gorakhpur area's proximity to several industrial zones suggests a history of minor spills and vehicle breakdowns primarily due to human error or poor road conditions.

8. Environmental Considerations and Sensitive Areas:

- The route crosses near ecologically sensitive zones such as the Rapti River. Spillage of hazardous material could have significant environmental impacts.
- Awareness of biodiversity, especially in rural segments, is crucial.

9. Analysis of Communication Coverage:

- Urban areas like Gorakhpur have robust communication networks.
- Rural sections may experience dead zones where mobile signals are weak or absent, affecting communication with base stations.

10. Estimated Emergency Response Times:

- **Urban Areas:** Response times are approximately 20-30 minutes.
- **Rural Sections:** Response times can extend to 45-60 minutes or longer, depending on terrain and weather conditions.

11. Overall Summary of Risk Assessment:

The route presents moderate risks, mainly due to weather (monsoon and fog), and traffic congestion around Gorakhpur. Road quality is variable, impacting heavy vehicle handling. Adequate preparation, including route familiarity, awareness of local regulations, and alternative routes, are essential. Emergency service access can be delayed in rural areas, necessitating a well-considered contingency plan. Transporters should ensure thorough training for drivers, focusing on handling inclement weather and understanding potential communication blind spots.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
2	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
4	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
6	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
7	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.13 km
8	Turn	Medium	26.74452, 83.52999	30 KM/Hr	40.87 km
9	Turn	Medium	26.74485, 83.52997	30 KM/Hr	41.00 km
10	Turn	Medium	26.74514, 83.52976	30 KM/Hr	41.04 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
11	Blind Spot	Blind Spot	26.74567, 83.52624	10 KM/Hr	41.40 km
12	Turn	High	26.75481, 83.52876	15 KM/Hr	42.37 km
13	Turn	High	26.75508, 83.52821	15 KM/Hr	42.50 km
14	Turn	High	26.76481, 83.53093	15 KM/Hr	43.59 km
15	Turn	Medium	26.76525, 83.53035	30 KM/Hr	43.69 km
16	Turn	High	26.76553, 83.52877	15 KM/Hr	43.87 km
17	Turn	Medium	26.76581, 83.52862	30 KM/Hr	43.90 km
18	Turn	Medium	26.76795, 83.52892	30 KM/Hr	44.09 km
19	Turn	Medium	26.76978, 83.53073	30 KM/Hr	44.34 km
20	Turn	Medium	26.77056, 83.53099	30 KM/Hr	44.48 km
21	Turn	High	26.77082, 83.53095	15 KM/Hr	44.54 km
22	Turn	Medium	26.77183, 83.52945	30 KM/Hr	44.71 km
23	Turn	Medium	26.77252, 83.52694	30 KM/Hr	44.93 km
24	Turn	Medium	26.77642, 83.52258	30 KM/Hr	45.58 km
25	Turn	High	26.77998, 83.52259	15 KM/Hr	45.99 km
26	Turn	Medium	26.78363, 83.51969	30 KM/Hr	46.48 km
27	Turn	Medium	26.80818, 83.52560	30 KM/Hr	49.33 km
28	Turn	High	26.81722, 83.52601	15 KM/Hr	50.36 km
29	Turn	Medium	26.81728, 83.52621	30 KM/Hr	50.39 km
30	Turn	Medium	26.81720, 83.52667	30 KM/Hr	50.42 km
31	Turn	High	26.81728, 83.52687	15 KM/Hr	50.45 km
32	Turn	Medium	26.82065, 83.52744	30 KM/Hr	50.77 km
33	Turn	High	26.82475, 83.52603	15 KM/Hr	51.32 km
34	Blind Spot	Blind Spot	26.82741, 83.53262	10 KM/Hr	51.99 km
35	Turn	High	26.82760, 83.53150	15 KM/Hr	52.14 km
36	Turn	High	26.83147, 83.53004	15 KM/Hr	52.63 km
37	Turn	Medium	26.85810, 83.59303	30 KM/Hr	59.68 km
38	Turn	Medium	26.88053, 83.63827	30 KM/Hr	64.91 km
39	Turn	Medium	26.88071, 83.63931	30 KM/Hr	65.00 km
40	Turn	Medium	26.90718, 83.67550	30 KM/Hr	69.77 km
41	Turn	High	26.90703, 83.67575	15 KM/Hr	69.81 km
42	Turn	Medium	26.91435, 83.69301	30 KM/Hr	71.80 km
43	Turn	High	26.92140, 83.70568	15 KM/Hr	73.22 km
44	Blind Spot	Blind Spot	26.92872, 83.70591	10 KM/Hr	74.11 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
45	Turn	High	26.92583, 83.73233	15 KM/Hr	76.73 km

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: 8.13 km
Coordinates: 26.74681, 83.25111



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 40.87 km

Coordinates: 26.74452, 83.52999



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 41.00 km

Coordinates: 26.74485, 83.52997



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 41.04 km
Coordinates: 26.74514, 83.52976



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 41.40 km
Coordinates: 26.74567, 83.52624



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 42.37 km
Coordinates: 26.75481, 83.52876



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 42.50 km
Coordinates: 26.75508, 83.52821



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 43.59 km

Coordinates: 26.76481, 83.53093



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 43.69 km

Coordinates: 26.76525, 83.53035



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 43.87 km

Coordinates: 26.76553, 83.52877



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 43.90 km

Coordinates: 26.76581, 83.52862



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 44.09 km
Coordinates: 26.76795, 83.52892



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 44.48 km
Coordinates: 26.77056, 83.53099



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 44.54 km
Coordinates: 26.77082, 83.53095



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 44.71 km
Coordinates: 26.77183, 83.52945



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 44.93 km
Coordinates: 26.77252, 83.52694



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 45.58 km
Coordinates: 26.77642, 83.52258



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 45.99 km
Coordinates: 26.77998, 83.52259



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 46.48 km
Coordinates: 26.78363, 83.51969



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.33 km
Coordinates: 26.80818, 83.52560



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 50.36 km
Coordinates: 26.81722, 83.52601



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 50.39 km
Coordinates: 26.81728, 83.52621



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 50.42 km
Coordinates: 26.81720, 83.52667



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 50.45 km

Coordinates: 26.81728, 83.52687



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.77 km

Coordinates: 26.82065, 83.52744



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 51.32 km
Coordinates: 26.82475, 83.52603



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 51.99 km
Coordinates: 26.82741, 83.53262



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 52.14 km

Coordinates: 26.82760, 83.53150



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 52.63 km

Coordinates: 26.83147, 83.53004



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 69.77 km
Coordinates: 26.90718, 83.67550



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 69.81 km
Coordinates: 26.90703, 83.67575



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.80 km

Coordinates: 26.91435, 83.69301



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 73.22 km

Coordinates: 26.92140, 83.70568



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 74.11 km

Coordinates: 26.92872, 83.70591

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