



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO GAYATRI INDANE GRAMI

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

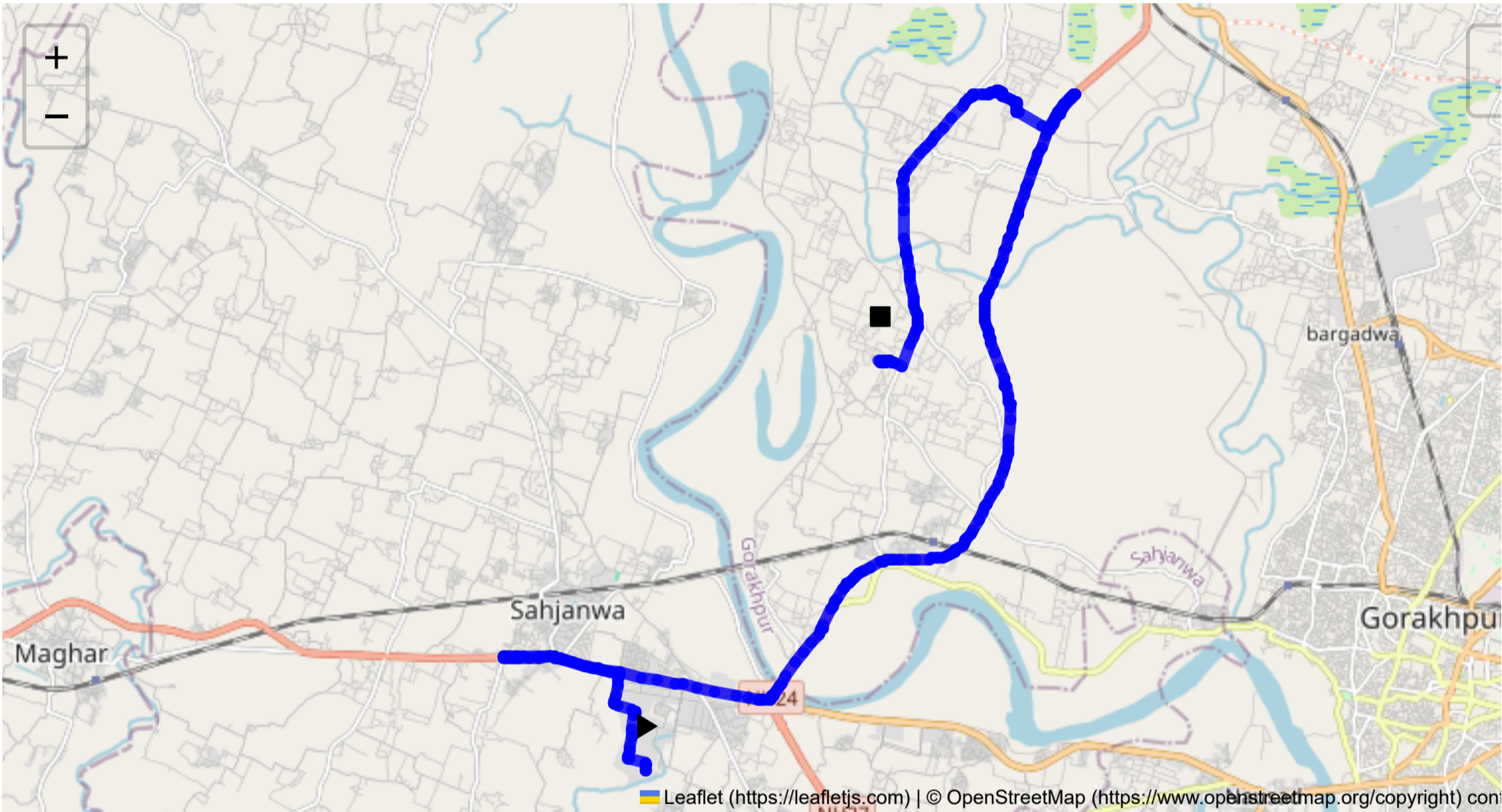
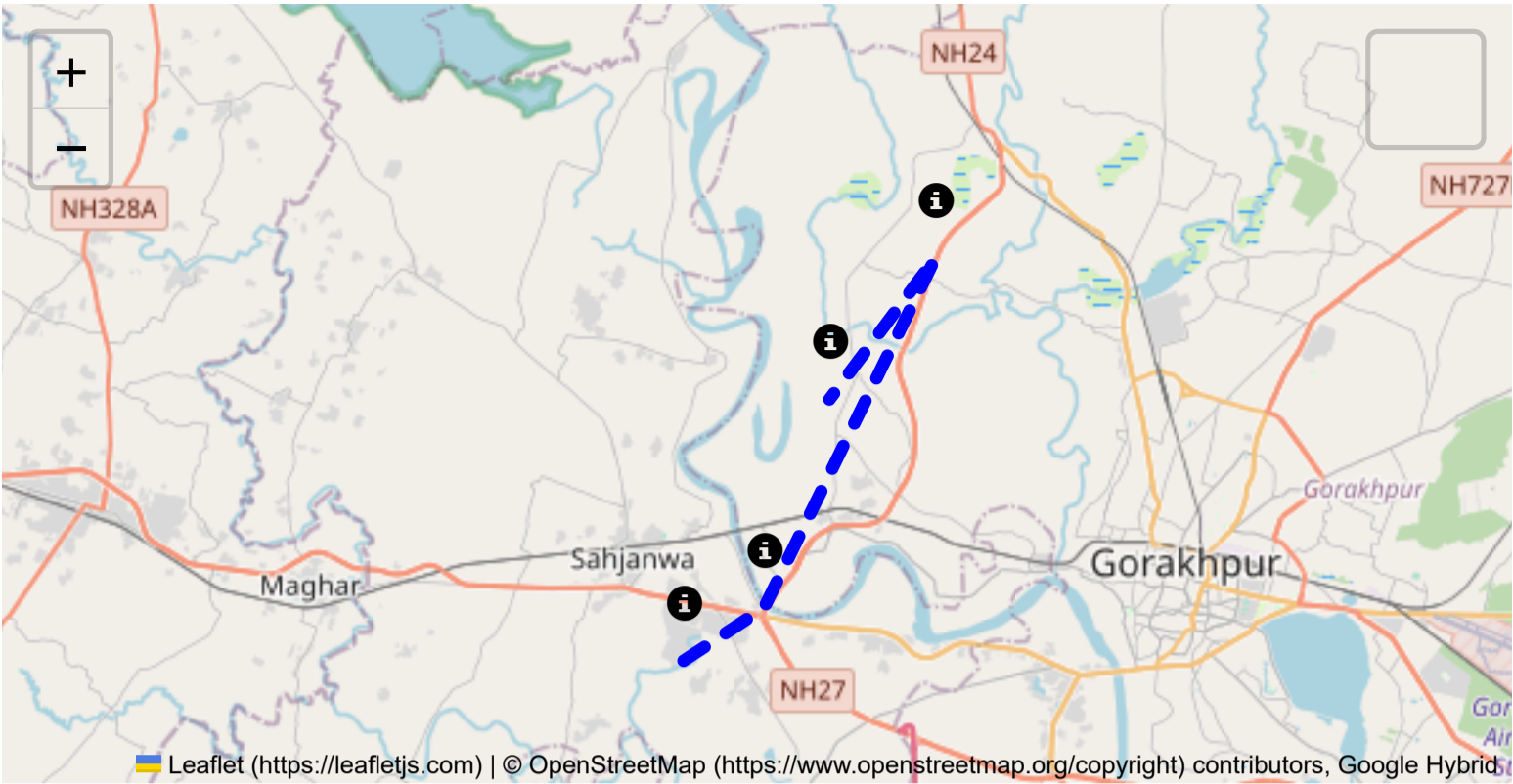
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 30.15 km
Estimated Duration: 0.8 hours
Adjusted Duration (Heavy Vehicle): 1.0 hours
Start: (26.735959, 83.229398)
End: (26.799749, 83.269689)

Welcome to the Journey Risk Management Study

Route Overview

- 1. Route Map Overview:
 - This route spans approximately 30.15 kilometers and predominantly follows NH 24, traveling through Vokta and Deokali before reaching Tarngchak. It's a relatively short journey typically

taking around 0.78 hours for heavy vehicles, including stops and potential delays.

Weather Conditions

2. Typical Weather Conditions and Hazards:

- The region experiences a humid subtropical climate with hot summers (April to June), a monsoon season (July to September), and mild winters (October to March).
- Potential weather-related hazards include heavy monsoon rains leading to flooding or waterlogging on roads, which can cause delays or increased risk of accidents. Fog is common in the winter months, reducing visibility.

Traffic Analysis

3. Traffic Patterns and Peak Hours:

- Peak traffic is typically observed during morning (8:00-10:00 AM) and evening (5:00-7:00 PM) rush hours.
- Congestion-prone areas include market towns and intersections near Vokta and Deokali, where traffic frequently slows due to local commerce and narrow roads.

Road Quality

4. Road Quality and Infrastructure:

- NH 24 is a major highway with generally good road quality, but some sections, especially near rural intersections, may have potholes or uneven surfaces requiring careful navigation.
- Infrastructure such as signage and lighting is adequate in urban areas but less reliable in rural stretches.

Emergency Alternative Routes

5. Alternative Routes for Emergencies:

- In case of an emergency or major congestion on NH 24, diverting local roads through nearby villages such as Bardar could be considered. However, these routes may not be suitable for heavy vehicles due to narrow pathways and infrastructure limitations.

Local Regulations

6. Regulations on Hazardous Materials:

- Uttar Pradesh regulations require that vehicles carrying hazardous materials must display proper signage, have emergency equipment on board, and adhere to designated travel times to reduce risk during peak hours.

Historical Incidents

7. Historical Incidents:

- There have been occasional incidents involving heavy vehicles due to mechanical failure and bad weather. However, significant hazardous material incidents are infrequent, suggesting adherence to regulations is generally effective.

Environmental and Sensitive Areas

8. Environmental Considerations:
- The route passes near agricultural lands which should be considered sensitive areas for spillage or contamination risks. Drivers should be vigilant about preventing spills and respecting local wildlife and habitats.

Communication Coverage

9. Communication Coverage:
- Mobile network coverage along NH 24 is generally strong, but there may be spotty coverage in rural sections, particularly near Vokta, requiring reliance on alternative communication methods or pre-planned contingencies.

Emergency Response

10. Emergency Response Times:
- Urban areas close to Sahjanwa and Deokali have quicker emergency response times, approximately 20-30 minutes. In contrast, more rural stretches could have extended response times exceeding 45 minutes.

Overall Risk Assessment

12. Overall Summary:
- This route offers decent infrastructure for transporting heavy vehicles and hazardous materials. Key risks involve weather-related challenges during monsoon and winter, occasional traffic congestion, and rural road conditions. It's crucial for drivers to be prepared for emergent detours and to remain alert to shifting road and weather conditions. Adhering to local regulations and maintaining communication readiness is essential to mitigate potential risks effectively.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73690, 83.22947	15 KM/Hr	0.07 km
2	Turn	High	26.73697, 83.22939	15 KM/Hr	0.11 km
3	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
4	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.48 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
5	Turn	Medium	26.74524, 83.22746	30 KM/Hr	1.30 km
6	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.32 km
7	Turn	Medium	26.74654, 83.22390	30 KM/Hr	1.69 km
8	Turn	Medium	26.74661, 83.22388	30 KM/Hr	1.70 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	4.23 km
11	Turn	High	26.75381, 83.20466	15 KM/Hr	4.30 km
12	Turn	High	26.74708, 83.24935	15 KM/Hr	8.81 km
13	Turn	Medium	26.74712, 83.24938	30 KM/Hr	8.82 km
14	Turn	Medium	26.74703, 83.25096	30 KM/Hr	8.98 km
15	Turn	Medium	26.74767, 83.25139	30 KM/Hr	9.06 km
16	Turn	High	26.74769, 83.25146	15 KM/Hr	9.07 km
17	Turn	High	26.84130, 83.30397	15 KM/Hr	22.00 km
0	U-Turn	High	26.8413047, 83.30397219999999	10 KM/Hr	22.00 km
18	Blind Spot	Blind Spot	26.84123, 83.30406	10 KM/Hr	22.01 km
19	Turn	High	26.83838, 83.30131	15 KM/Hr	22.41 km
20	Turn	Medium	26.83835, 83.30133	30 KM/Hr	22.44 km
21	Turn	High	26.83564, 83.29971	15 KM/Hr	22.71 km
22	Turn	High	26.83859, 83.29387	15 KM/Hr	23.44 km
23	Turn	Medium	26.83950, 83.29403	30 KM/Hr	23.53 km
24	Turn	High	26.83989, 83.29395	15 KM/Hr	23.59 km
25	Turn	Medium	26.83992, 83.29393	30 KM/Hr	23.60 km
26	Turn	High	26.84110, 83.29130	15 KM/Hr	23.89 km
27	Turn	Medium	26.84115, 83.29129	30 KM/Hr	23.90 km
28	Blind Spot	Blind Spot	26.84155, 83.29144	10 KM/Hr	23.93 km
29	Turn	Medium	26.84179, 83.29075	30 KM/Hr	23.98 km
30	Turn	Medium	26.84144, 83.29015	30 KM/Hr	24.08 km
31	Turn	Medium	26.84136, 83.28897	30 KM/Hr	24.21 km
32	Turn	Medium	26.84117, 83.28876	30 KM/Hr	24.23 km
33	Turn	High	26.84114, 83.28626	15 KM/Hr	24.48 km
34	Turn	High	26.79904, 83.27381	15 KM/Hr	29.51 km
35	Turn	Medium	26.79958, 83.27217	30 KM/Hr	29.87 km
36	Turn	High	26.79994, 83.27121	15 KM/Hr	29.97 km
37	Turn	Medium	26.79990, 83.27117	30 KM/Hr	29.98 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
38	Turn	High	26.79966, 83.27109	15 KM/Hr	30.00 km
39	Turn	Medium	26.79973, 83.27046	30 KM/Hr	30.07 km
40	Turn	Medium	26.79969, 83.27030	30 KM/Hr	30.08 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: 4.23 km
Coordinates: 26.75353, 83.20457



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 4.30 km
Coordinates: 26.75381, 83.20466



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 8.81 km
Coordinates: 26.74708, 83.24935



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 8.82 km
Coordinates: 26.74712, 83.24938



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 8.98 km
Coordinates: 26.74703, 83.25096



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 9.06 km
Coordinates: 26.74767, 83.25139



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 9.07 km
Coordinates: 26.74769, 83.25146



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 23.44 km
Coordinates: 26.83859, 83.29387



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 23.53 km
Coordinates: 26.83950, 83.29403



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 23.59 km
Coordinates: 26.83989, 83.29395



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 23.60 km
Coordinates: 26.83992, 83.29393



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 23.89 km
Coordinates: 26.84110, 83.29130



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 23.90 km
Coordinates: 26.84115, 83.29129



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 23.93 km
Coordinates: 26.84155, 83.29144



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 23.98 km
Coordinates: 26.84179, 83.29075



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.08 km

Coordinates: 26.84144, 83.29015



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 24.21 km

Coordinates: 26.84136, 83.28897



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 24.23 km
Coordinates: 26.84117, 83.28876



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 24.48 km
Coordinates: 26.84114, 83.28626



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 29.51 km
Coordinates: 26.79904, 83.27381



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 29.87 km
Coordinates: 26.79958, 83.27217



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 29.97 km
Coordinates: 26.79994, 83.27121



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 29.98 km
Coordinates: 26.79990, 83.27117



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 30.00 km
Coordinates: 26.79966, 83.27109



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 30.07 km
Coordinates: 26.79973, 83.27046



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.08 km

Coordinates: 26.79969, 83.27030

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