



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP TO PRATIMA 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

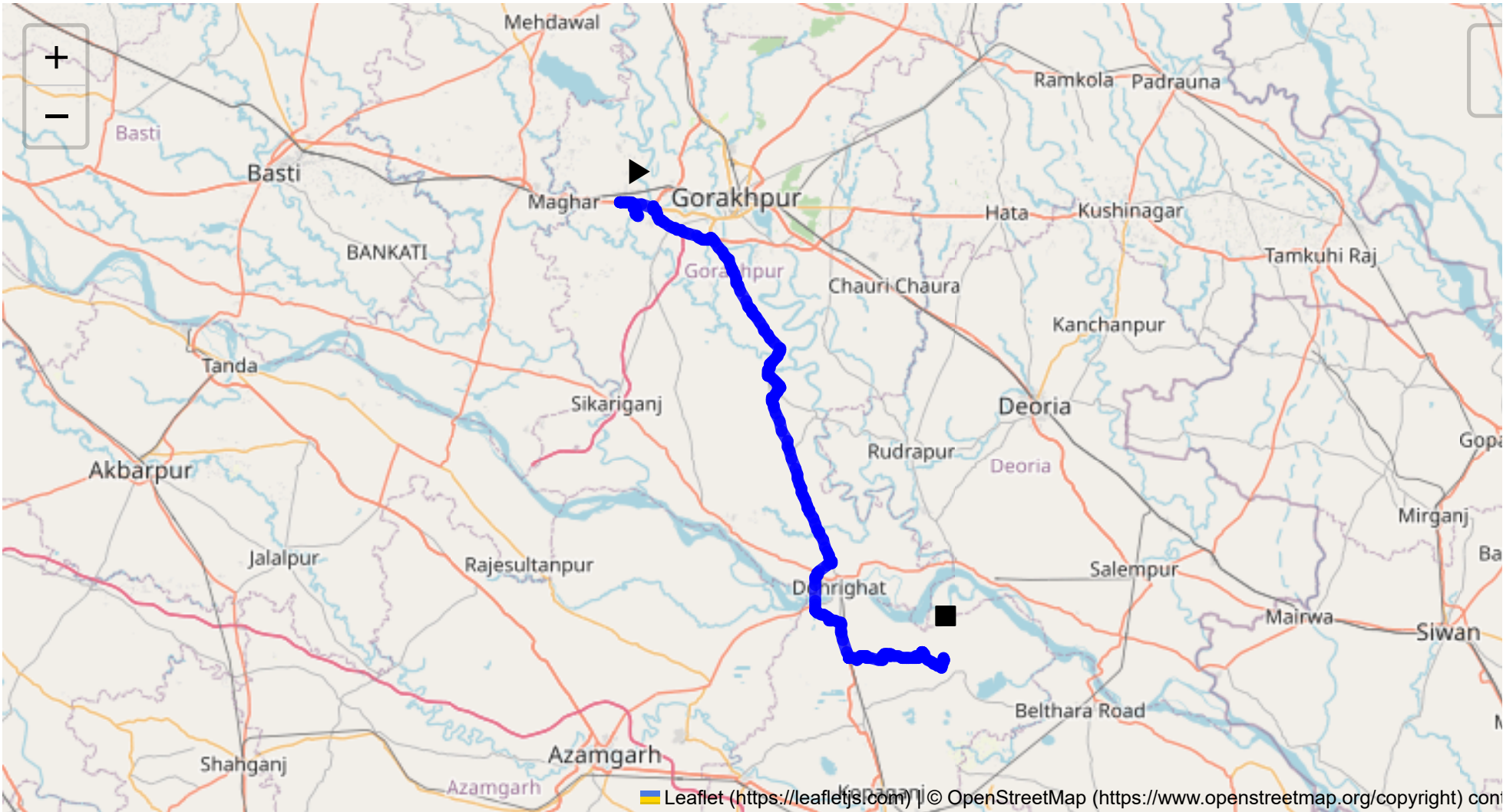
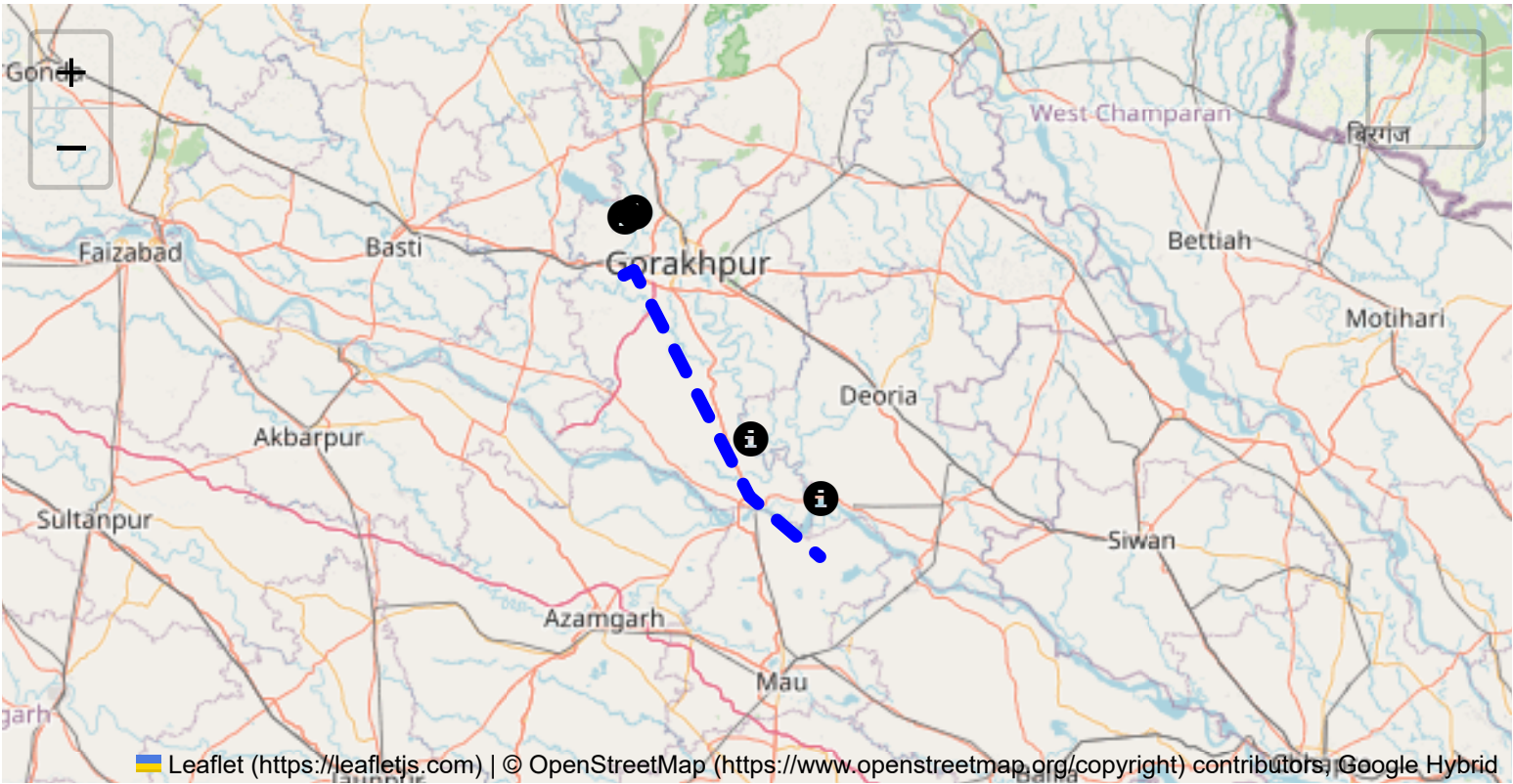
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 103.32 km**  
**Estimated Duration: 2.2 hours**  
**Adjusted Duration (Heavy Vehicle): 2.7 hours**  
**Start: (26.735959, 83.229398)**  
**End: (26.183522, 83.656355)**

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route covers approximately 103.32 kilometers, starting at GIDA Industrial Area Phase 1, Sahjanwa, and ending at Bahrapur, moving through Kaalesar and Usari along the Varanasi-Gorakhpur Highway. The journey involves both urban and rural settings, with varying road conditions.



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

- **Climate:** The region typically experiences a humid subtropical climate, with hot summers, a monsoon season, and cool winters.
- **Monsoon Hazards:** Heavy rainfall during the monsoon (June to September) can lead to waterlogging and flooding, particularly affecting rural roads and low-lying areas.
- **Fog:** In winter (December to February), dense fog is common and can severely reduce visibility, especially during early morning and late evening hours.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic congestion is most likely during morning (7-9 AM) and evening (5-8 PM) rush hours, particularly in and around urban areas such as Gorakhpur.
- **Congestion Zones:** Key congestion-prone areas include major intersections on the Varanasi-Gorakhpur Highway and entry/exit points of Gorakhpur.

## 4. Assessment of Road Quality and Infrastructure

- **Highways:** The Varanasi-Gorakhpur Highway is well-maintained with good signage, but can become busy.
- **Rural Roads:** Roads leading to and from Kaalesar and Parashurampur can be narrow and poorly maintained, contributing to potential driving hazards.

## 5. Suggestions for Alternative Routes in Emergencies

- **Diversion via NH24:** If a segment of the primary route is blocked, consider rerouting via NH24, which runs parallel but farther west.
- **Local Roads:** For minor detours, local rural roads can be considered, though only for short distances due to variable conditions.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits:** Ensure obtaining state permits for transporting hazardous materials.
- **Timing Restrictions:** Some routes may have restrictions on heavy vehicle movement during peak city hours (notably within Gorakhpur).

## 7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

- **Accidents:** Historically, the region has seen accidents due to narrow rural roads and congestion in urban areas.

- **Spillage Incidents:** There have been instances of hazardous material spillage on poorly maintained roads, often exacerbated by weather conditions.

## 8. Environmental Considerations and Sensitive Areas

- **Protected Areas:** The route does not pass through any major wildlife reserves. However, vigilance around small rural forests is advised.
- **Water Bodies:** Be aware of local water bodies that could be contaminated in the event of a spillage.

## 9. Analysis of Communication Coverage

- **Urban Areas:** Good coverage in urban locations such as Gorakhpur.
- **Rural Areas:** Potential dead zones in more isolated rural stretches and between small villages.

## 10. Estimated Emergency Response Times for Different Route Segments

- **Urban Response:** Emergency services in Gorakhpur and other urban centers could respond within 15-30 minutes.
- **Rural Response:** In remote areas, response times may extend to 45-60 minutes due to distance and road conditions.

## 12. Overall Summary of Risk Assessment

The route comprises both urban amenities and rural challenges. Major risks include weather-related hazards like fog and monsoon rains, along with road quality issues in rural areas and traffic congestion in urban centers. Effective planning, including knowledge of local regulations and having alternative routes, can mitigate these risks. Emergency response times vary significantly between urban and rural areas, highlighting the importance of vigilant communication and preparedness. Overall, the route requires careful driving and prior logistical planning to ensure safety.

### 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

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
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	26.70795, 83.33164	30 KM/Hr	18.51 km
9	Turn	Medium	26.70789, 83.33181	30 KM/Hr	18.62 km
10	Blind Spot	Blind Spot	26.30279, 83.49958	10 KM/Hr	69.32 km
11	Blind Spot	Blind Spot	26.30604, 83.49819	10 KM/Hr	69.78 km
12	Turn	High	26.18442, 83.52338	15 KM/Hr	86.48 km
13	Turn	Medium	26.18397, 83.53687	30 KM/Hr	87.79 km
14	Turn	Medium	26.18431, 83.53734	30 KM/Hr	87.89 km
15	Turn	Medium	26.18685, 83.53968	30 KM/Hr	88.22 km
16	Turn	High	26.18194, 83.56914	15 KM/Hr	91.27 km
17	Turn	Medium	26.18991, 83.57312	30 KM/Hr	92.22 km
18	Turn	High	26.19002, 83.57326	15 KM/Hr	92.31 km
19	Turn	Medium	26.18816, 83.58025	30 KM/Hr	93.04 km
20	Turn	Medium	26.18893, 83.58182	30 KM/Hr	93.18 km
21	Turn	High	26.18505, 83.60436	15 KM/Hr	95.54 km
22	Turn	High	26.18623, 83.60510	15 KM/Hr	95.70 km
23	Turn	High	26.18603, 83.61742	15 KM/Hr	96.97 km
24	Turn	High	26.18627, 83.61761	15 KM/Hr	97.01 km
25	Turn	Medium	26.18570, 83.61915	30 KM/Hr	97.11 km
26	Turn	Medium	26.19278, 83.62571	30 KM/Hr	98.25 km
27	Blind Spot	Blind Spot	26.19316, 83.62617	10 KM/Hr	98.32 km
28	Turn	Medium	26.19028, 83.62658	30 KM/Hr	98.58 km
29	Blind Spot	Blind Spot	26.17384, 83.65355	10 KM/Hr	101.86 km
30	Turn	Medium	26.17817, 83.65379	30 KM/Hr	102.33 km
31	Turn	High	26.18379, 83.65562	15 KM/Hr	103.10 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:** 18.51 km

**Coordinates:** 26.70795, 83.33164



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 18.62 km

**Coordinates:** 26.70789, 83.33181



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 69.32 km  
**Coordinates:** 26.30279, 83.49958



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 69.78 km  
**Coordinates:** 26.30604, 83.49819





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 86.48 km

**Coordinates:** 26.18442, 83.52338



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 87.79 km

**Coordinates:** 26.18397, 83.53687





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 87.89 km

**Coordinates:** 26.18431, 83.53734



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 88.22 km

**Coordinates:** 26.18685, 83.53968

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