# JOURNEY RISK MANAGEMENT (JRM) STUDY

## Gorakhpur LPG BP to KALINDI INDANE GAS SERVICE

## 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

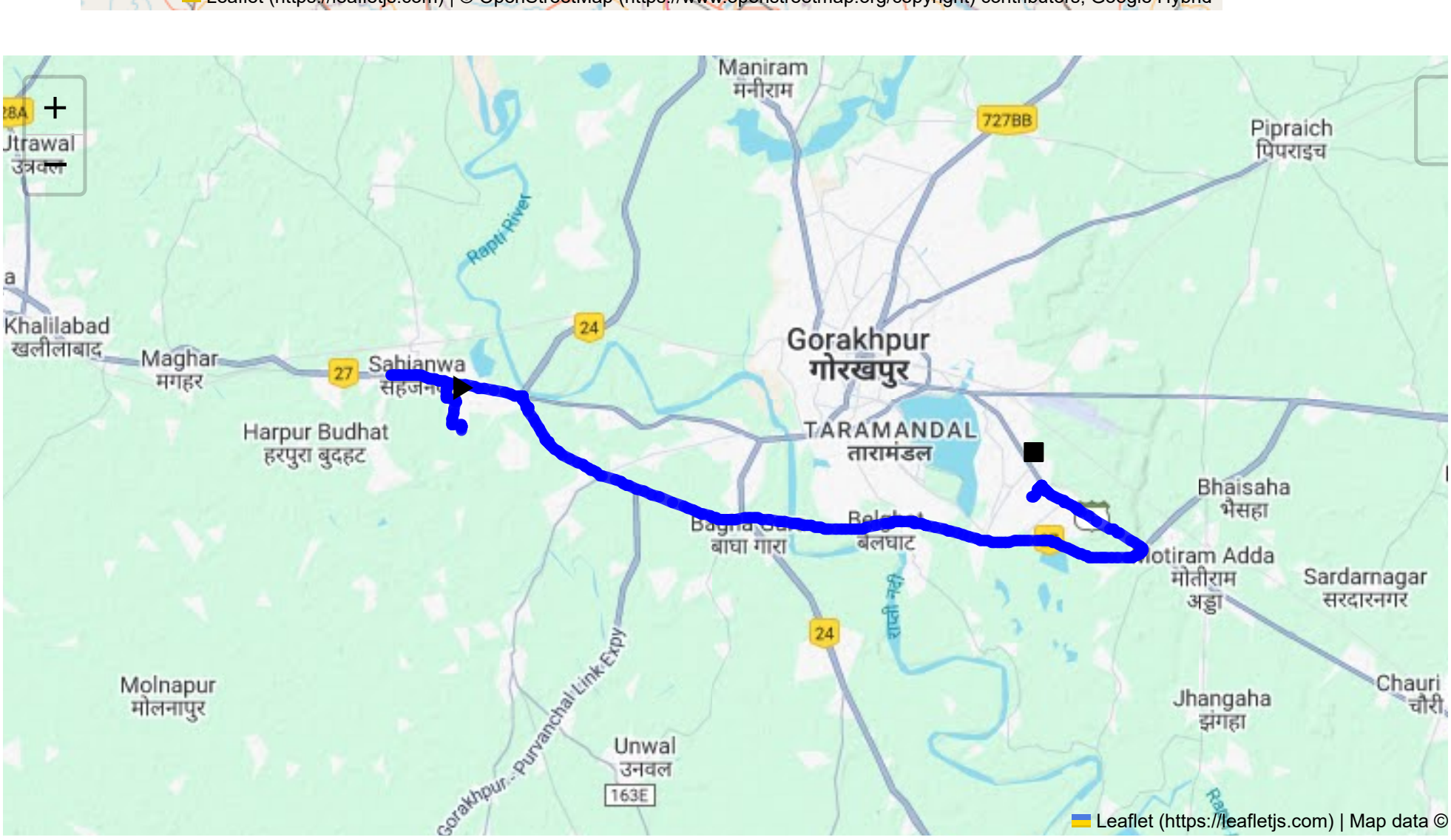
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 38.25 km**
**Estimated Duration: 0.9 hours**
**Adjusted Duration (Heavy Vehicle): 1.1 hours**
**Start: (26.735959, 83.229398)**
**End: (26.71472, 83.43551)**

## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from GIDA Industrial Area Phase 1, Sahjanwa to the Kalindi Gas Godown in Khorabar, Gorakhpur spans approximately 38.25 kilometers. The journey typically involves traveling through a mix of industrial zones, semi-urban areas, and a mix of state highways and local roads. Key waypoints may include intersections with National Highway 27 and important local arteries leading into Gorakhpur.

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

- **Weather Conditions**: The region typically experiences hot summers and mild winters, with the monsoon season occurring from June to September.
- **Weather-Related Hazards**: During the monsoon, heavy rains can lead to flooding, especially in low-lying areas and underpasses. This can cause road blockages or slippery conditions. Monsoons may also lead to reduced visibility.

## 3. Analysis of Traffic Patterns

- **Peak Hours**: Traffic tends to peak in the morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 7:00 PM) when commuters are traveling to and from work.
- **Congestion-Prone Areas**: Typical congestion points include busy intersections with NH27 and within the city limits of Gorakhpur, especially near market areas and schools.

## 4. Assessment of Road Quality and Infrastructure

- **Road Quality**: The highways are generally well-paved but may have occasional potholes, especially post-monsoon. Local roads can be narrower with varying maintenance quality.
- **Infrastructure**: Checkpoints and toll booths might cause delays. Navigation through small towns might involve narrow roads unsuitable for heavy vehicles.

## 5. Suggestions for Alternative Routes for Emergencies

- In case of major blockages, consider taking rural roads connecting smaller towns that run parallel to NH27. However, verify the road conditions as they may not be ideal for heavy loads.

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

- Transporting hazardous materials may require special permits and adherence to guidelines issued by the local transport authorities. Restrictions may apply during certain festivals or market days.

## 7. Overview of Historical Incidents

- Historical data for the area indicates occasional accidents due to overloading and mechanical failures. These incidents predominantly occur at intersections or during adverse weather conditions.

## 8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas**: Proximity to schools and crowded market areas near Gorakhpur necessitates cautious driving. Care should also be taken when driving near agricultural zones to prevent spillage.
- **Environmental Regulations**: Ensure compliance with emission standards and waste management regulations during transport.

## 9. Analysis of Communication Coverage

- **Communication Coverage**: Major highways and urban areas typically have good mobile network coverage. However, rural and remote areas along the route may experience signal drop-offs.

## 10. Estimated Emergency Response Times

- **Urban Segments**: In urban areas like Gorakhpur and Sahjanwa, response times could be between 15-30 minutes depending on the time of day.
- **Rural Segments**: In less accessible areas, response times may extend to 45 minutes or more.

## 11. An Overall Summary of Risk Assessment

The route poses moderate risk primarily due to potential congestion in urban areas, variable road quality, and environmental hazards during monsoons. Awareness of regulations and contingency plans for emergency rerouting are essential. Caution is advised at major intersections and crossing sensitive zones. Maintaining consistent communication and keeping emergency contacts readily accessible can mitigate these 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 |
| 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 |
| 0 | Roundabout | High | 26.74681, 83.25111 | 15 KM/Hr | 8.97 km |
| 12 | Turn | Medium | 26.74644, 83.25150 | 30 KM/Hr | 9.07 km |
| 13 | Turn | Medium | 26.74306, 83.25344 | 30 KM/Hr | 9.49 km |
| 14 | Turn | Medium | 26.74300, 83.25343 | 30 KM/Hr | 9.50 km |

| | Risk Type | Risk Level | Coordinates | Speed Limit | Distance from Start |
|---|---|---|---|---|---|
| 15 | Turn | High | 26.69632, 83.47492 | 15 KM/Hr | 33.14 km |
| 16 | Turn | High | 26.69639, 83.47492 | 15 KM/Hr | 33.17 km |
| 17 | Turn | Medium | 26.69835, 83.47489 | 30 KM/Hr | 33.41 km |
| 18 | Blind Spot | Blind Spot | 26.71813, 83.43923 | 10 KM/Hr | 37.61 km |
| 19 | Turn | High | 26.71420, 83.43626 | 15 KM/Hr | 38.09 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:** Roundabout

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 8.97 km

**Coordinates:** 26.74681, 83.25111


**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 9.07 km

**Coordinates:** 26.74644, 83.25150


**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 9.49 km

**Coordinates:** 26.74306, 83.25344


**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 9.50 km

**Coordinates:** 26.74300, 83.25343


**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.14 km

**Coordinates:** 26.69632, 83.47492


**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 33.17 km

**Coordinates:** 26.69639, 83.47492


**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 33.41 km

**Coordinates:** 26.69835, 83.47489


**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 37.61 km

**Coordinates:** 26.71813, 83.43923


**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 38.09 km

**Coordinates:** 26.71420, 83.43626

# Download Reports

Download Excel Report

Download Interactive Map