JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to MAHARAJGANJ 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

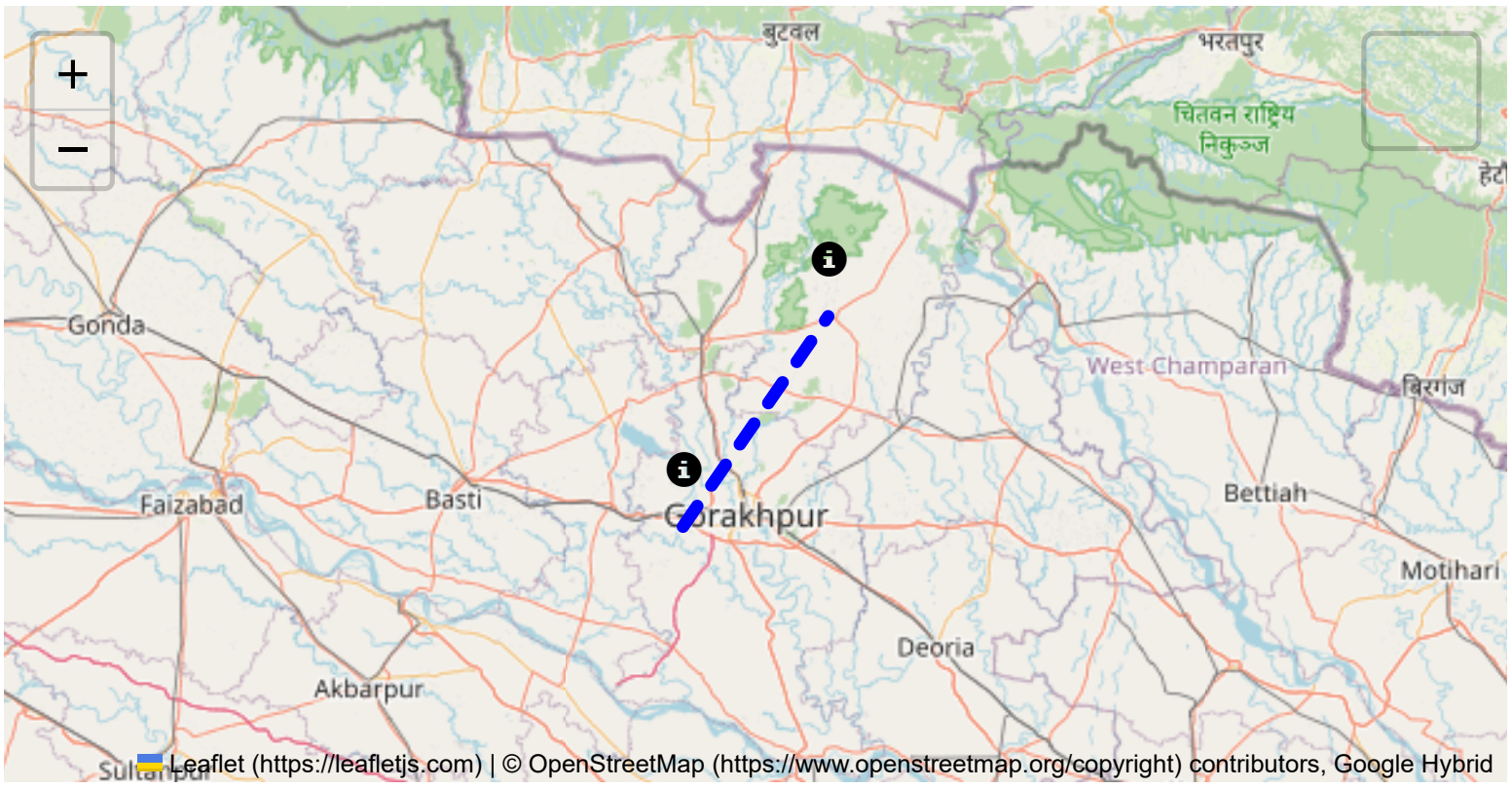
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

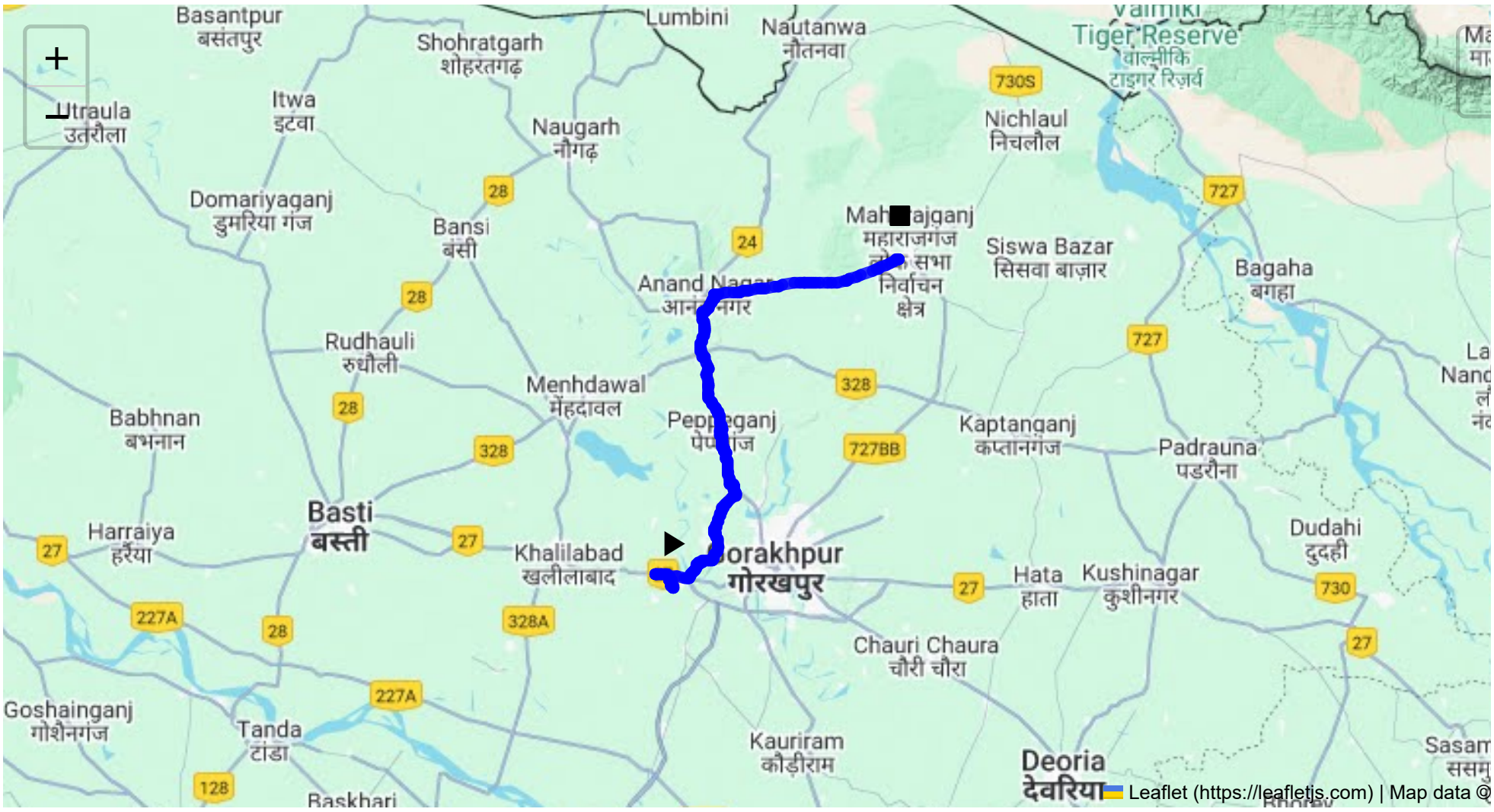
Journey Risk Mitigation

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: 79.93 km
Estimated Duration: 1.8 hours
Adjusted Duration (Heavy Vehicle): 2.3 hours
Start: (26.735959, 83.229398)
End: (27.14766, 83.545192)

Welcome to the Journey Risk Management Study

Route Safety Analysis Report

1. Overview of the Route Map

- The route stretches approximately 79.93 kilometers, typically following NH 730. Starting from the GIDA Industrial Area Phase 1 in Sahjanwa, it traverses through urban centers and rural areas until reaching Shastri Nagar in Maharajganj. The drive is predominantly straightforward, involving national highways with some intersections where traffic and road conditions vary.

2. Weather Conditions and Potential Hazards

- **Typical Conditions:** Uttar Pradesh experiences extreme weather, with hot summers, a monsoon season, and cool winters. Rainfall during the monsoon (July to September) can cause reduced visibility and slippery roads.
- **Potential Hazards:** Flooding during monsoon and fog in winter months can significantly impact driving conditions.

3. Traffic Patterns

- **Peak Hours:** Morning (7:00 AM - 9:00 AM) and evening (5:00 PM - 8:00 PM) see increased congestion, particularly around urban centers like Gorakhpur that may be on or near the route.
- **Congestion-Prone Areas:** City entries and exits, especially in Gorakhpur, where traffic from local businesses contributes to slowdowns.

4. Road Quality and Infrastructure

- **Assessment:** The road quality varies; NH 730 is generally in good condition but side roads or detours may have potholes and uneven surfaces.
- **Infrastructure:** Limited rest stops and service stations; drivers should plan refueling and rest breaks accordingly.

5. Alternative Routes for Emergencies

- A parallel and less congested route could involve bypassing major urban centers entirely. However, this often involves secondary roads that may be in poorer condition.

6. Local Regulations on Hazardous Material Transport

- **Regulations:** Transport of hazardous materials is governed by stringent licensing, labeling, and equipment specifications. Local ordinances may necessitate adherence to particular timings and speeds.
- **Checkpoints:** Be aware of any localized weight limits and special instructions through scrutiny by checkpoints.

7. Historical Incidents

- **Overview:** While complete records may not be available, there are known instances of accidents involving heavy vehicles due to braking failures and driver fatigue. Periodic reports of spills or leaks are tied to less secure loads or poorly maintained vehicles.

8. Environmental Considerations

- **Sensitive Areas:** There may be protected zones near river crossings or forested regions. Strict penalties are imposed for environmental damage, requiring cautious transportation of hazardous materials.

9. Communication Coverage

- **Analysis:** Urban areas generally have good network coverage. Rural stretches may experience weak signals or dead zones; drivers should maintain backups like satellite phones for emergency communication.

10. Emergency Response Times

- **Estimates:** In urban areas, response times could be as short as 15-30 minutes. In rural stretches, expect significantly longer times, potentially up to 1-2 hours.

11. Overall Summary of Risk Assessment

- **Summary:** The route is generally safe but requires caution during adverse weather and peak traffic times. Proper vehicle maintenance, route familiarization, and emergency preparedness are critical. The greatest risks come from environmental conditions, whereas infrastructure remains adequately supportive for heavy vehicles carrying hazardous materials.

Navigating this route involves balancing the need for timely deliveries with the safety considerations inherent in transporting hazardous materials, particularly in regions with variable road and environmental conditions. Regular training and updates for drivers and safety personnel are recommended to maintain high standards of safety and compliance.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73690, 83.22947	15 KM/Hr	0.05 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	1.16 km
6	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.31 km
7	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
8	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
9	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
10	Turn	High	26.75377, 83.20465	15 KM/Hr	4.28 km
11	Turn	Medium	26.74700, 83.25085	30 KM/Hr	8.91 km
12	Turn	Medium	26.74715, 83.25109	30 KM/Hr	8.97 km
0	Roundabout	High	26.86209, 83.31517	15 KM/Hr	24.85 km
13	Turn	Medium	27.08010, 83.27115	30 KM/Hr	50.41 km
14	Turn	Medium	27.08028, 83.27122	30 KM/Hr	50.50 km
15	Turn	High	27.09850, 83.28671	15 KM/Hr	53.05 km
16	Turn	High	27.09855, 83.28670	15 KM/Hr	53.10 km
17	Blind Spot	Blind Spot	27.10269, 83.28820	10 KM/Hr	53.58 km
18	Turn	High	27.14614, 83.54460	15 KM/Hr	79.70 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	District Combind Hospital Maharajganj	27.1436733, 83.5395965	30 km/h	Medium	78.99 km

Crowded Spots

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.17 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: 4.28 km

Coordinates: 26.75377, 83.20465

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.91 km

Coordinates: 26.74700, 83.25085

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.97 km

Coordinates: 26.74715, 83.25109

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 24.85 km

Coordinates: 26.86209, 83.31517

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.41 km

Coordinates: 27.08010, 83.27115

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.50 km

Coordinates: 27.08028, 83.27122

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.05 km

Coordinates: 27.09850, 83.28671

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.10 km

Coordinates: 27.09855, 83.28670

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 53.58 km

Coordinates: 27.10269, 83.28820

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 79.70 km

Coordinates: 27.14614, 83.54460

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