JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO MODEL INDANE GAS SER

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

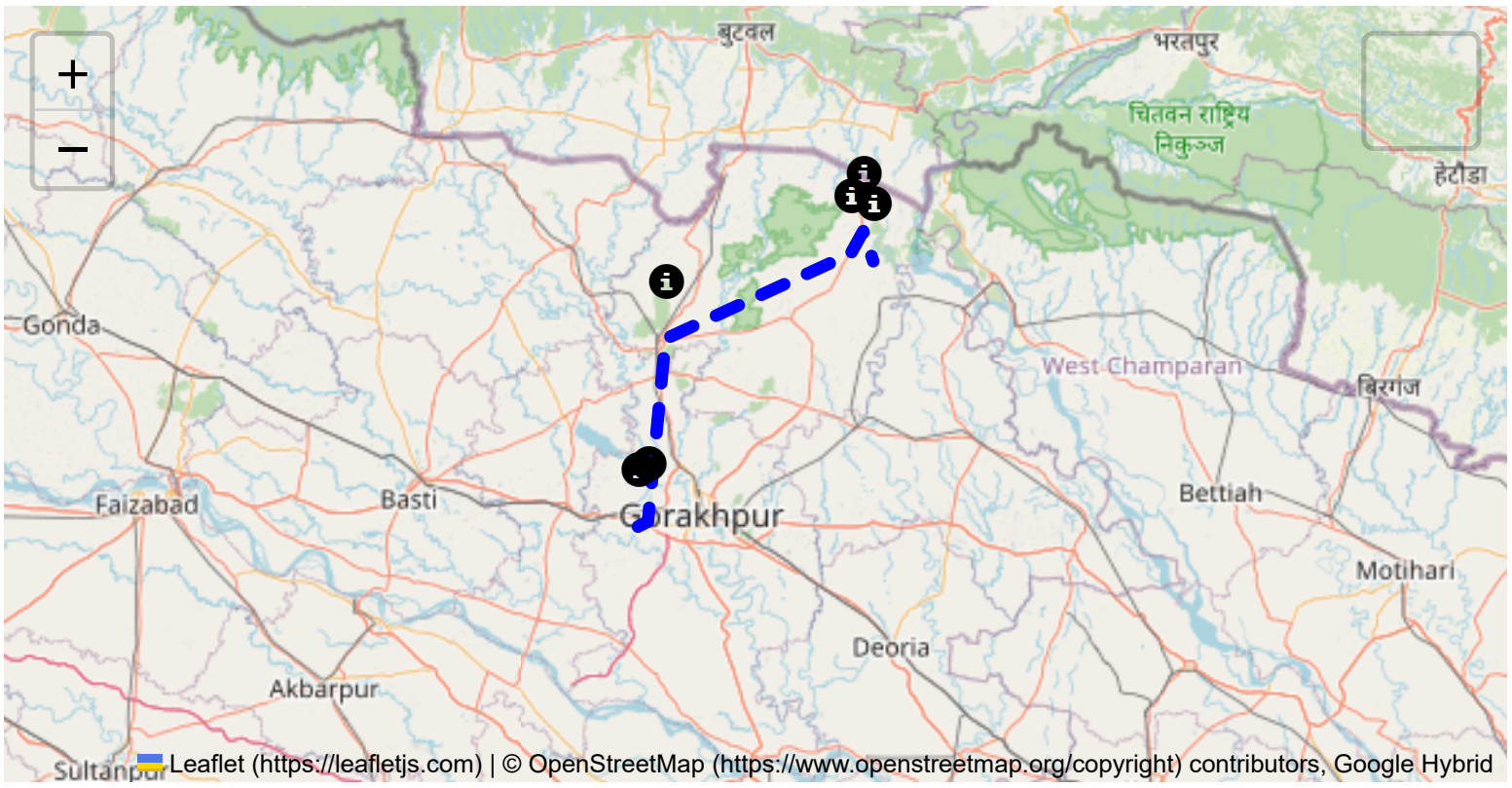
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

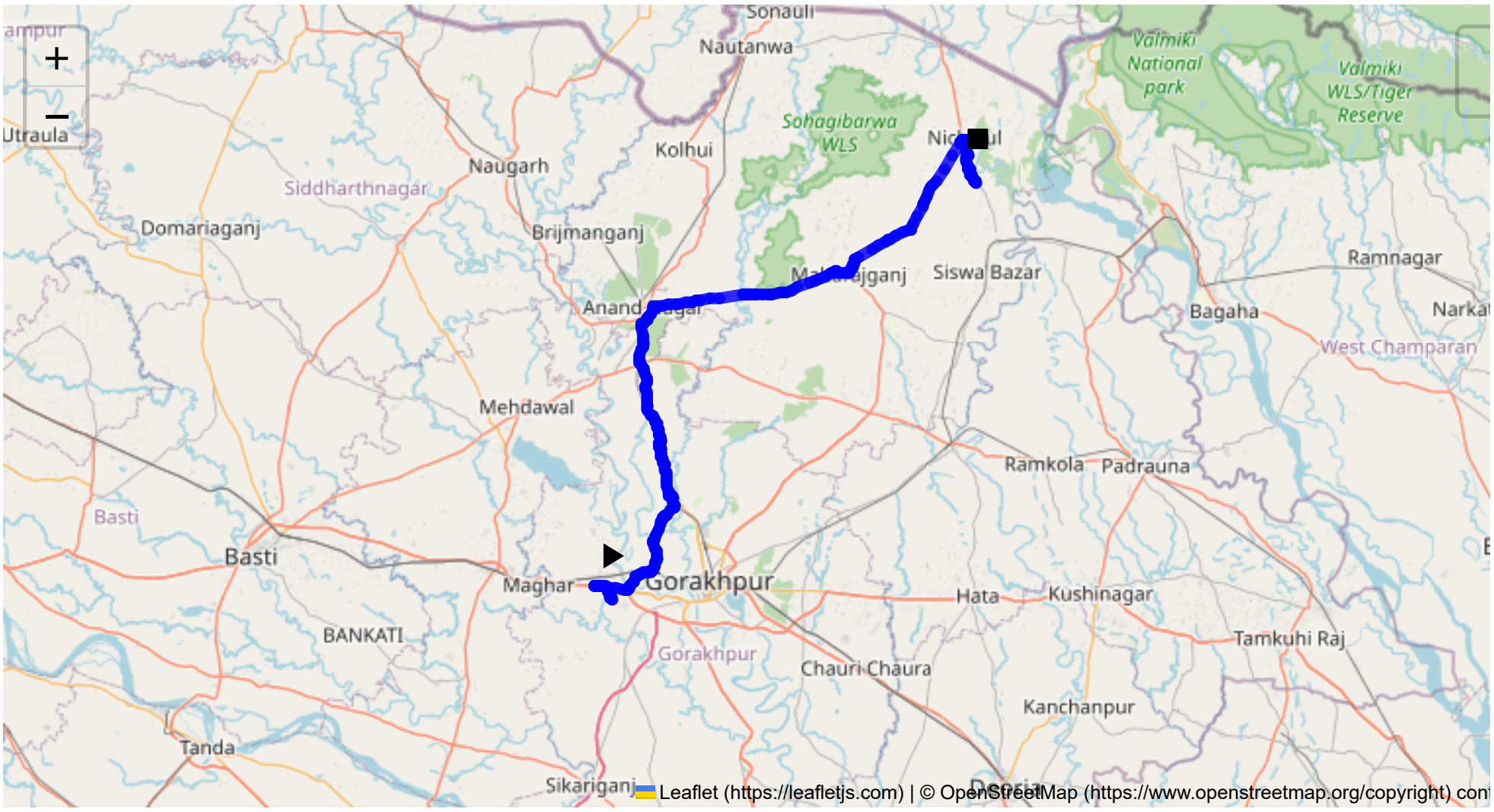
Journey Risk Mitigation

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: 113.90 km

Estimated Duration: 2.8 hours

Adjusted Duration (Heavy Vehicle): 3.5 hours

Start: (26.735959, 83.229398)

End: (27.25686, 83.74188)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map: The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa, Uttar Pradesh, to Bhitauli, Maharajganj spans roughly 113.90 kilometers. It passes through various locations such as Zero Point, Kaalesar, Pharenda - Maharajganj Road, and Nichlaul. The journey involves national highways and local roads that vary in quality and traffic conditions.

2. Typical Weather Conditions and Potential Weather-Related Hazards: The region typically experiences a humid subtropical climate with hot summers, a monsoon season from June to September, and cool winters. Monsoons can cause heavy rainfall, potentially leading to waterlogging and difficult road conditions. Fog is a common hazard during winter, reducing visibility and increasing the risk of accidents.

3. Analysis of Traffic Patterns: Traffic congestion is likely near urban centers like Gorakhpur, especially during morning and evening peak hours (8-10 AM and 5-8 PM). Zero Point and major intersections on the NH 730S can also experience heavy traffic. Weekends may see increased traffic due to local markets and events.

4. Assessment of Road Quality and Infrastructure: The NH 730S is generally a well-maintained highway, though local roads leading to and from the main highway may have varying conditions, including potholes and narrower lanes. The infrastructure in rural areas might not be as developed, with fewer facilities and truck stops.

5. Suggestions for Alternative Routes for Emergencies: In the event of a blockage or emergency, consider the following alternatives:

- Diverting through SH 1/1A with the assistance of local maps.
- Using local roads that are parallel to NH 730S which may offer alternate paths, albeit slower.

6. Summary of Local Regulations Affecting Hazardous Material Transport: Transporting hazardous materials on this route is subject to state regulations. Vehicles must meet safety standards and obtain necessary permits. Driving during peak traffic hours with hazardous materials may be restricted in certain urban areas.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials: There have been instances of tanker rollovers and spills, particularly during extreme weather conditions or due to driver fatigue on long stretches like the NH 730S. Most incidents often involve inadequate safety measures or poor road conditions.

8. Environmental Considerations and Sensitive Areas: The route passes through environmental sensitive zones like agricultural lands and small water bodies. Spills or emissions from hazardous material can impact these areas adversely, and thus drivers should be cautious near such zones.

9. Analysis of Communication Coverage, Noting Potential Dead Zones: While major highways like NH 730S have good mobile and communication coverage, some rural stretches or forested areas might have spotty service. It is important for drivers to note these potential dead zones and plan communication needs accordingly.

10. Estimated Emergency Response Times for Different Route Segments: Emergency response times are quicker in urban and suburban areas, averaging 15-30 minutes. In rural segments, response may take longer, up to an hour or more due to limited infrastructure and accessibility.

12. Overall Summary of Risk Assessment: The route poses several challenges including adverse weather conditions, heavy traffic in urban centers, variable road quality, and communication gaps. While the NH 730S provides a sturdy backbone for travel, adjunct rural paths may need cautious navigation. Drivers transporting hazardous materials should take additional precautions during extreme weather and peak

traffic periods. Preparing for emergency scenarios with knowledge of alternative routes and maintaining clear communication plans are essential to mitigate risks.

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
8	Turn	High	26.74707, 83.25103	15 KM/Hr	8.96 km
0	Roundabout	High	26.86209, 83.31517	15 KM/Hr	24.80 km
9	Turn	Medium	26.92527, 83.29842	30 KM/Hr	32.25 km
10	Turn	Medium	27.01029, 83.27850	30 KM/Hr	42.29 km
11	Turn	Medium	27.08029, 83.27113	30 KM/Hr	50.39 km
12	Turn	Medium	27.08069, 83.27132	30 KM/Hr	50.51 km
13	Turn	High	27.10269, 83.28820	15 KM/Hr	53.53 km
14	Turn	Medium	27.14452, 83.56228	30 KM/Hr	81.43 km
15	Turn	Medium	27.16019, 83.57006	30 KM/Hr	83.28 km
16	Turn	Medium	27.19946, 83.64853	30 KM/Hr	92.29 km
17	Turn	High	27.31141, 83.72146	15 KM/Hr	106.67 km
18	Turn	Medium	27.31002, 83.72696	30 KM/Hr	107.29 km
19	Turn	Medium	27.30947, 83.72736	30 KM/Hr	107.34 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	78.48 km

Crowded Spots

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.16 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.96 km

Coordinates: 26.74707, 83.25103

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 24.80 km

Coordinates: 26.86209, 83.31517

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 32.25 km

Coordinates: 26.92527, 83.29842

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.39 km

Coordinates: 27.08029, 83.27113

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.51 km

Coordinates: 27.08069, 83.27132

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.53 km

Coordinates: 27.10269, 83.28820

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 81.43 km

Coordinates: 27.14452, 83.56228

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 83.28 km

Coordinates: 27.16019, 83.57006

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 92.29 km

Coordinates: 27.19946, 83.64853

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 106.67 km

Coordinates: 27.31141, 83.72146

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 107.29 km

Coordinates: 27.31002, 83.72696

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 107.34 km

Coordinates: 27.30947, 83.72736

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