JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO CHAMPA DEVI INDANE G

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

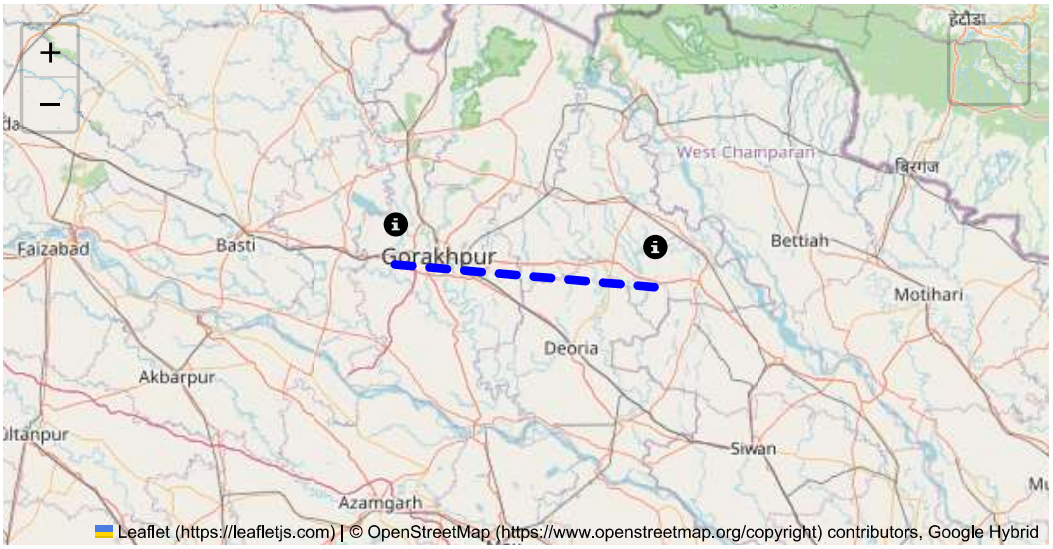
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

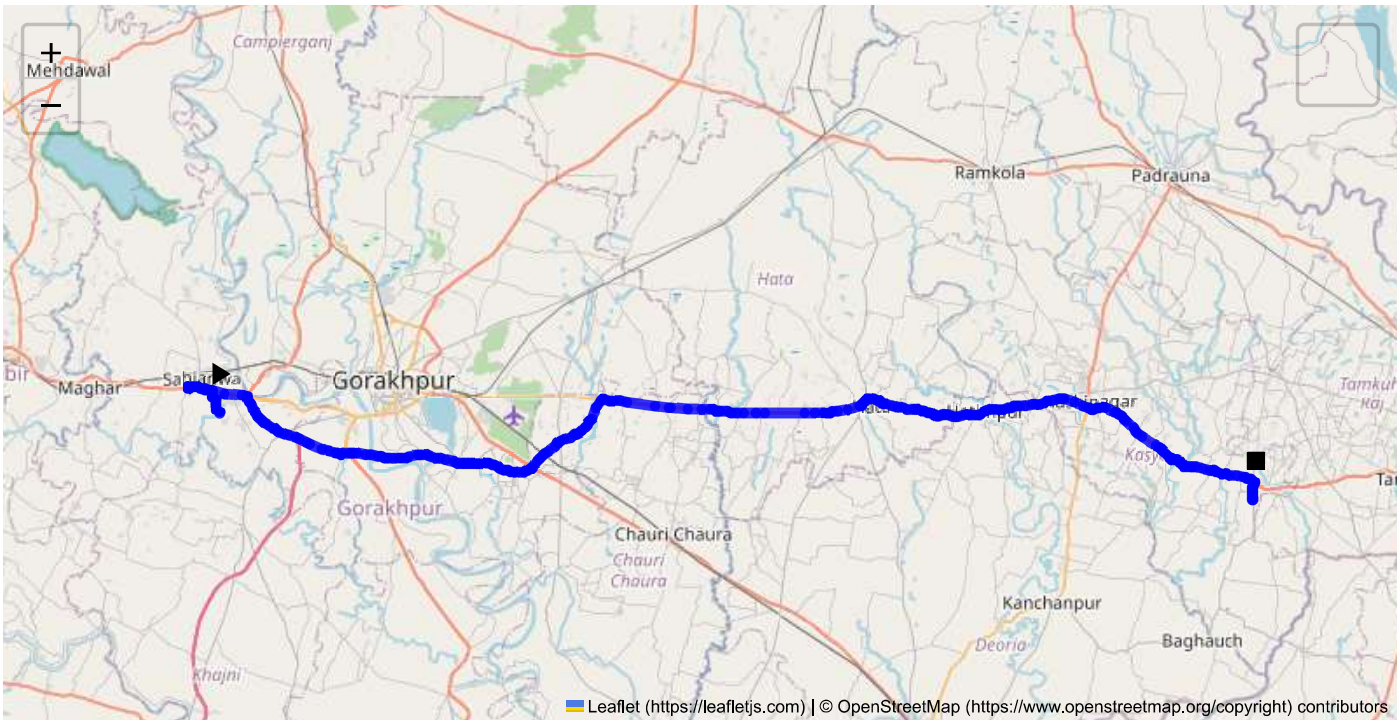
Journey Risk Mitigation

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: 96.40 km
Estimated Duration: 1.9 hours
Adjusted Duration (Heavy Vehicle): 2.4 hours
Start: (26.735959, 83.229398)
End: (26.674102, 84.044903)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa to M2FV+JX Sathiaon covers approximately 96.40 kilometers. The typical route involves major highways and some regional roads,

likely including NH27 and other local roads, which facilitate connectivity between these locations. The route is fairly straightforward but requires careful navigation, especially in rural sections.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Weather in Uttar Pradesh can vary significantly:

- **Summer (March to June):** Hot and dry, with temperatures sometimes exceeding 40°C, which may lead to overheating vehicles.
- **Monsoon (July to September):** Heavy rains can lead to waterlogging and flooding, particularly affecting lower-lying areas along the route.
- **Winter (November to February):** Fog can significantly reduce visibility, particularly during early mornings and late evenings.

Weather-related hazards include reduced visibility during fog and slippery roads due to rain.

3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic tends to be busier in the mornings (8-10 AM) and evenings (6-8 PM).
- **Congestion-Prone Areas:** Towns and cities along the route, particularly at junctions and near marketplaces, can experience significant congestion. Intersections near Gorakhpur and Azamgarh are potential bottlenecks.

4. Assessment of Road Quality and Infrastructure

- **National Highways:** Generally well-maintained but can have sporadic potholes and uneven surfaces.
- **Regional Roads:** Vary in quality; some may be narrow and less maintained, which poses risks for heavy vehicles.

5. Suggestions for Alternative Routes

In case of emergencies, alternative routes may involve:

- Detours using state highways parallel to NH27.
- Local roads bypassing congested towns, though these might not support heavy vehicles well.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- Specific timings might be imposed for transporting hazardous materials, avoiding peak traffic.
- Designated routes could be mandated for transporting such materials.
- Compliance with safety protocols, including display of warning signs on vehicles, is required.

7. Overview of Historical Incidents

- No specific large-scale incidents are publicly documented for this exact route. However, sporadic reports of accidents involving heavy vehicles due to poor road conditions and fog have been recorded in the region.

8. Environmental Considerations and Sensitive Areas

- **Agricultural Zones:** Numerous along the route, requiring caution to avoid contamination.
- **Near Water Bodies:** Care should be taken to prevent spills that could enter water systems.

9. Analysis of Communication Coverage

- **Strong Coverage:** Likely around towns and cities where cellular networks are well-established.
- **Potential Dead Zones:** Rural segments and particularly isolated stretches may experience signal dropouts.

10. Estimated Emergency Response Times

- **Urban Areas:** Approximately 20-30 minutes due to proximity to emergency services.
- **Rural Areas:** Could take 45-60 minutes, depending on the exact location and road conditions.

11. An Overall Summary of Risk Assessment

The route offers reasonable conditions for the transit of hazardous materials, yet requires caution due to:

- Potential weather disruptions, particularly during monsoon and winter.
- Road and traffic conditions, necessitating careful planning around peak times and known congestion points.
- Emergency response limitations in rural stretches.

Drivers should be well-informed and trained to handle unexpected conditions, including communication challenges and alternative routing. Regular coordination with local traffic authorities and adherence to regulations is critical for a safe journey.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
2	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
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
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.79 km
8	Turn	Medium	26.74656, 83.25154	30 KM/Hr	9.04 km
9	Turn	Medium	26.74648, 83.25152	30 KM/Hr	9.05 km
10	Turn	Medium	26.74526, 83.53161	30 KM/Hr	41.16 km
11	Turn	High	26.68652, 84.04558	15 KM/Hr	94.89 km

Emergency Locations

Found: 2 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Star Hospital, Kushinagar	26.6831917, 84.0478785	30 km/h	Medium	95.18 km
1	hospital	Pawanagar Mahavir Hospital and Research Center	26.6832018, 84.0485296	30 km/h	Medium	95.18 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: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.79 km

Coordinates: 26.74681, 83.25111

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.04 km

Coordinates: 26.74656, 83.25154

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.05 km

Coordinates: 26.74648, 83.25152

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 41.16 km

Coordinates: 26.74526, 83.53161

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 94.89 km

Coordinates: 26.68652, 84.04558

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