JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO MAA BAMANT INDANE SE

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

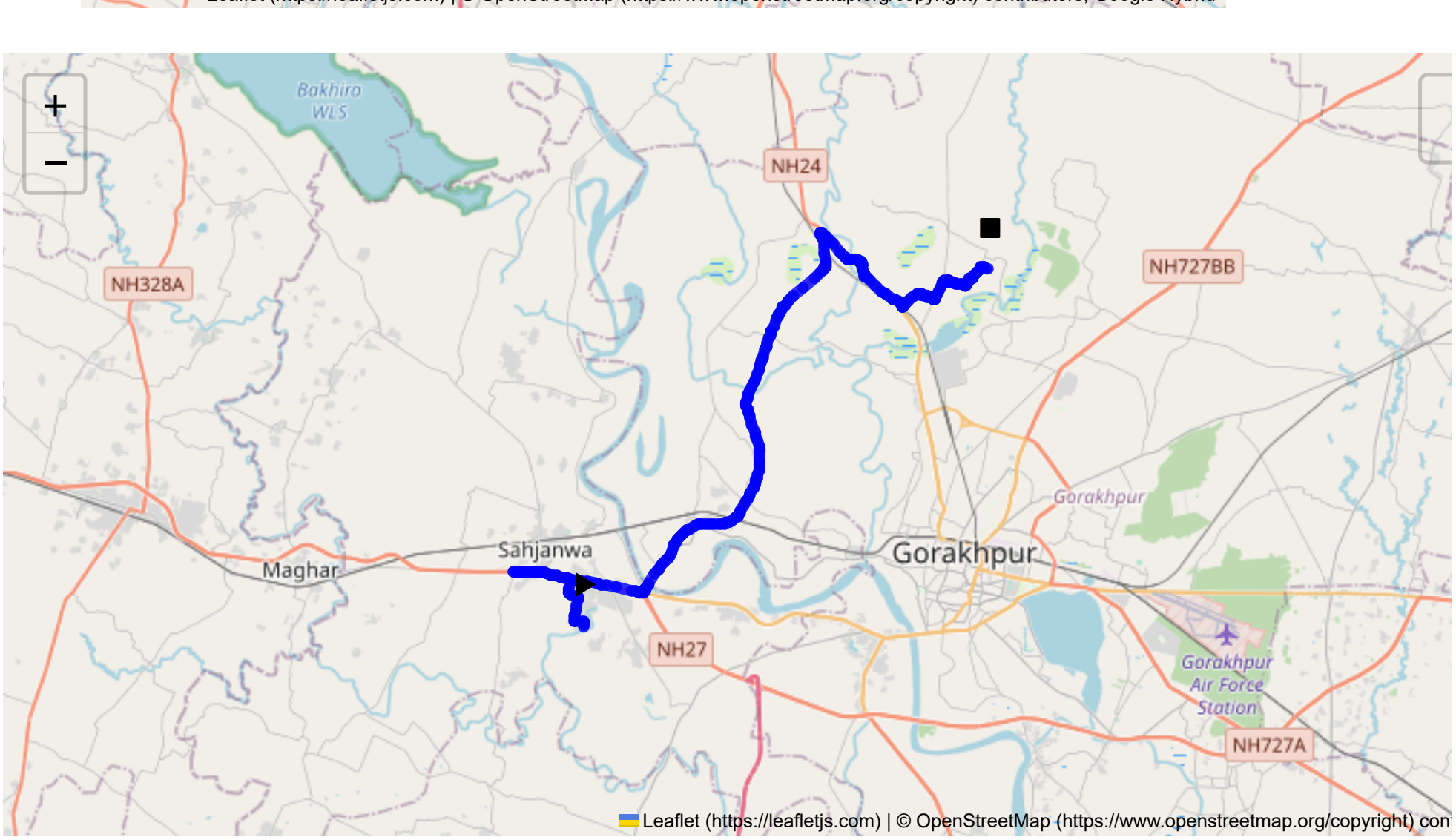
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 33.23 km
Estimated Duration: 0.8 hours
Adjusted Duration (Heavy Vehicle): 1.0 hours
Start: (26.735959, 83.229398)
End: (26.85068, 83.37522)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route starts at the GIDA Industrial Area in Sahjanwa and ends in Baijnathpur, Uttar Pradesh. It incorporates the transit through 01 Zero Point in Kaalesar and follows NH 24. This route spans about 33.23 kilometers and is primarily comprised of highway and well-trafficked roads.

2. Typical Weather Conditions and Potential Hazards:

Uttar Pradesh experiences a subtropical climate with hot summers (April to June), a monsoon season (July to September), and mild winters (November to February). During the monsoon, heavy rainfall could lead to waterlogged roads and reduced visibility, increasing the risk of accidents. In summer, heatwaves may impact vehicle performance and driver fatigue.

3. Analysis of Traffic Patterns:

NH 24 is a major highway that sees significant traffic, especially near the GIDA Industrial Area and Sahjanwa due to industrial activities. Peak congestion tends to occur during weekday mornings and evenings due to commuter traffic, with Friday evenings being particularly heavy. Areas around Kaalesar and urban localities may experience bottlenecks.

4. Assessment of Road Quality and Infrastructure:

The NH 24 is generally well-maintained but may have sporadic patches where construction or maintenance work can affect flow. Some rural segments approaching Baijnathpur might have narrower lanes and less lighting. The quality is better near major industrial zones.

5. Suggestions for Alternative Routes for Emergencies:

In the event of severe traffic or road closures, an alternative route could involve diverting southward through smaller local roads that reconnect further up NH 24 post-congestion points. However, such routes may not support heavy vehicles well and should be used with caution.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

Transport of hazardous materials is regulated by the Motor Vehicles Act, along with state-specific regulations requiring display labels on vehicles, permits, and adherence to particular routes and timings to minimize risks. It’s crucial to ensure compliance to avoid fines and ensure safety.

7. Overview of Historical Incidents:

There have been occasional incidents involving heavy vehicles on NH 24, often attributed to reckless driving or poor weather. However, specific incidents involving hazardous materials are less frequent but require vigilance, especially near industrial clusters.

8. Environmental Considerations and Sensitive Areas:

Travel through agricultural and semi-urban areas might involve proximity to water bodies or conservation zones. Efforts should be made to minimize loud noises and emissions near these zones to protect the local environment.

9. Analysis of Communication Coverage:

Network coverage along NH 24 tends to be reliable, but dead zones may exist in more rural segments or less populated areas. It is advisable to plan for potential communication interruptions and ensure all emergency contacts are pre-saved.

10. Estimated Emergency Response Times:

Near urban centers and industrial areas, emergency response times range between 15-30 minutes. Rural areas might experience slower responses of up to 45 minutes due to underdeveloped infrastructure and longer distances from emergency facilities.

12. Overall Summary of Risk Assessment:

- **Traffic & Congestion:** Moderate risk, with notable congestion during peak hours around industrial and urban areas.
- **Weather Hazards:** Significant risk, especially during the monsoon season with potential for reduced visibility and road safety.
- **Road Quality:** Generally good but variable near rural areas and construction zones.
- **Emergency Preparedness:** Adequate response potential in urban sectors; consider additional precautions for less accessible areas.

Overall, while the route is relatively short and well-integrated into regional infrastructure, it carries risks typical to industrial highways, requiring adherence to safety and transport regulations. Regular updates on road conditions and weather forecasts, alongside strategic planning for alternative routes, will enhance navigational safety for drivers transporting hazardous materials.

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	High	26.74654, 83.22390	15 KM/Hr	1.65 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
12	Turn	High	26.74708, 83.24935	15 KM/Hr	8.77 km
13	Turn	Medium	26.74714, 83.24943	30 KM/Hr	8.82 km
14	Turn	Medium	26.74707, 83.25103	30 KM/Hr	8.98 km
15	Turn	Medium	26.74765, 83.25136	30 KM/Hr	9.05 km
16	Turn	High	26.74769, 83.25146	15 KM/Hr	9.07 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Roundabout	High	26.86209, 83.31517	15 KM/Hr	24.86 km
17	Blind Spot	Blind Spot	26.83878, 83.34433	10 KM/Hr	29.05 km
18	Turn	Medium	26.84329, 83.35012	30 KM/Hr	29.82 km
19	Turn	High	26.84096, 83.35590	15 KM/Hr	30.45 km
20	Turn	High	26.84705, 83.35919	15 KM/Hr	31.20 km
21	Turn	Medium	26.84551, 83.36723	30 KM/Hr	32.05 km
22	Turn	Medium	26.84556, 83.36731	30 KM/Hr	32.06 km
23	Turn	High	26.85166, 83.37270	15 KM/Hr	32.92 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.77 km

Coordinates: 26.74708, 83.24935

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.82 km

Coordinates: 26.74714, 83.24943

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.98 km

Coordinates: 26.74707, 83.25103

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.05 km

Coordinates: 26.74765, 83.25136

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 9.07 km

Coordinates: 26.74769, 83.25146

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 24.86 km

Coordinates: 26.86209, 83.31517

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 29.05 km

Coordinates: 26.83878, 83.34433

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 29.82 km

Coordinates: 26.84329, 83.35012

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 30.45 km

Coordinates: 26.84096, 83.35590

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 31.20 km

Coordinates: 26.84705, 83.35919

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 32.05 km

Coordinates: 26.84551, 83.36723

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 32.06 km

Coordinates: 26.84556, 83.36731

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 32.92 km

Coordinates: 26.85166, 83.37270

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