JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO ATUL INDANE 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

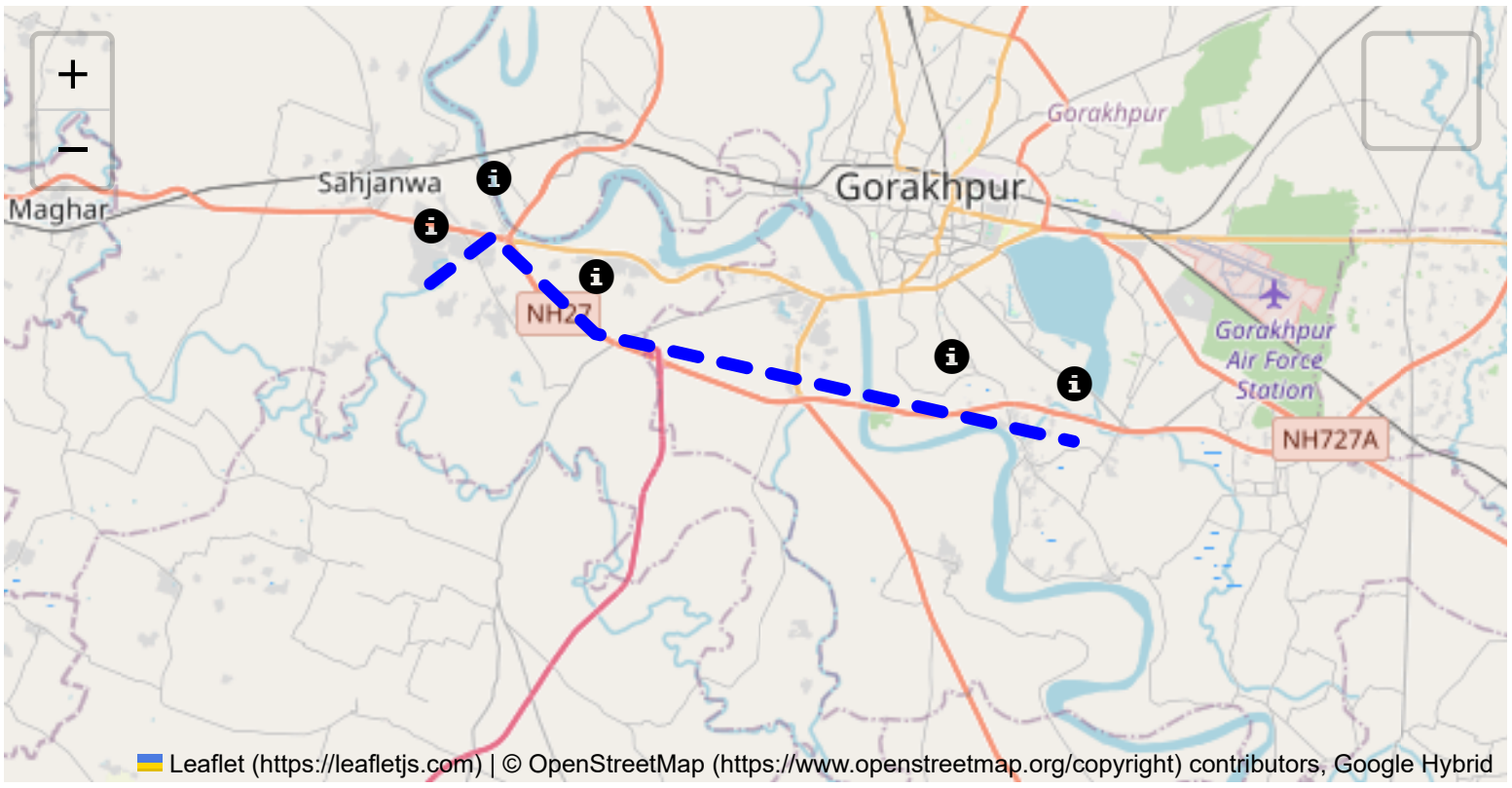
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 42.15 km
Estimated Duration: 1.0 hours
Adjusted Duration (Heavy Vehicle): 1.2 hours
Start: (26.735959, 83.229398)
End: (26.69689, 83.40602)

Welcome to the Journey Risk Management Study

Here's a detailed analysis of the route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa, Uttar Pradesh, India, to MCW4+QC Hakkabad, Gorakhpur, Uttar Pradesh, India, considering all the specified requirements:

1. **Overview of the Route Map:**

- The route spans approximately 42.15 kilometers and includes highway driving primarily via NH 27, with key points being 01 Zero Point, Kaalesar, Mujaila, and Rajiv Nagar Colony as checkpoints.
- The journey traverses both industrial and semi-urban areas, reflecting a mix of potential traffic and infrastructure challenges.

2. **Typical Weather Conditions and Hazards:**
   - The region experiences monsoons from June to September, which can cause heavy rain, leading to potential flooding and road slipperiness.
   - During summers, temperatures can soar, which might cause roadways to soften, potentially affecting driving conditions for heavy vehicles.
3. **Traffic Patterns and Congestion:**
   - Major congestion can occur during peak business hours, typically from 8 AM to 10 AM and 5 PM to 8 PM.
   - NH 27, being a significant highway, may experience bottlenecks, particularly at intersections and toll plazas.
   - The areas around Rajiv Nagar Colony might have increased traffic due to local commuting and market activity.
4. **Assessment of Road Quality and Infrastructure:**
   - NH 27 is generally well-maintained, but local roads, particularly near market areas and residential zones, may have potholes and be narrower, posing challenges for large vehicles.
   - Road signage is typically clear on the highway but may be lacking in local parts of the route.
5. **Suggestions for Alternative Routes for Emergencies:**
   - In case of severe congestion or an emergency, consider using SH1 or local bypass roads near Gorakhpur, keeping in mind that these may not support heavy vehicles as well as NH 27.
   - Routes via rural roads could offer alternatives, but these might be slower and less suitable for hazardous materials due to infrastructure limitations.
6. **Local Regulations Affecting Hazardous Material Transport:**
   - Regulations in Uttar Pradesh require that transportation of hazardous materials adhere to safe driving practices, restricted times (avoiding peak commuter times), and mandatory equipment for spill prevention.
   - It's essential to carry updated documentation and ensure compliance with any permits required for specific materials.
7. **Historical Incidents:**
   - Local news archives have reported incidents involving vessel overturns primarily due to heavy monsoon rains or driver error.
   - NH 27 has seen incidents due to traffic congestion, highlighting the need for alertness, especially during peak hours.
8. **Environmental Considerations and Sensitive Areas:**
   - Areas near rivers and canals (common in the stretch near Kaalesar) require careful driving during and after heavy rains due to flooding risks.

- Sensitive zones near residential sectors necessitate cautious driving to reduce noise and air pollution impacts.

9. **Communication Coverage:**
    - Generally good mobile network coverage along NH 27, though some rural sections might have occasional weak signals.
    - Communication tools like GPS and mobile phones are reliable, but having a backup navigation system is recommended.
10. **Estimated Emergency Response Times:**
    - Response times may vary; however, urban areas near Gorakhpur generally experience quicker emergency services, averaging around 15-30 minutes.
    - Rural areas might have delayed responses extending to 45 minutes or more due to distance from service centers.
11. **Overall Summary of Risk Assessment:**
    - The route, while mostly on a major highway and relatively short, poses challenges due to weather, congestion, and local infrastructure variability.
    - Key risks involve weather induced delays, potential congestion at busy intersections, and the ongoing need to navigate mixed infrastructure quality.
    - With careful planning, using real-time traffic updates, and adhering to safety regulations, the transport of hazardous materials can be managed effectively.

This analysis should aid in preparing a truck driver for navigating this route while minimizing risks, particularly those posed by external factors like weather and traffic.

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

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
11	Turn	High	26.75381, 83.20466	15 KM/Hr	4.30 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.99 km
12	Turn	Medium	26.74644, 83.25150	30 KM/Hr	9.07 km
13	Turn	Medium	26.74310, 83.25343	30 KM/Hr	9.49 km
14	Turn	Medium	26.74298, 83.25343	30 KM/Hr	9.51 km
15	Turn	High	26.69632, 83.47492	15 KM/Hr	33.16 km
16	Turn	High	26.69640, 83.47492	15 KM/Hr	33.17 km
17	Turn	Medium	26.69835, 83.47489	30 KM/Hr	33.41 km
18	Turn	High	26.71257, 83.44780	15 KM/Hr	36.47 km
19	Blind Spot	Blind Spot	26.70186, 83.41900	10 KM/Hr	39.92 km
20	Turn	Medium	26.69264, 83.41444	30 KM/Hr	41.08 km
21	Turn	High	26.69245, 83.41410	15 KM/Hr	41.13 km
22	Turn	High	26.69552, 83.40808	15 KM/Hr	41.87 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: 8.99 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: 26.74310, 83.25343

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.51 km

Coordinates: 26.74298, 83.25343

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.16 km

Coordinates: 26.69632, 83.47492

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.17 km

Coordinates: 26.69640, 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: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 36.47 km

Coordinates: 26.71257, 83.44780

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 39.92 km

Coordinates: 26.70186, 83.41900

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 41.08 km

Coordinates: 26.69264, 83.41444

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 41.13 km

Coordinates: 26.69245, 83.41410

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 41.87 km

Coordinates: 26.69552, 83.40808

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