JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO YAMUNA INDANE

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

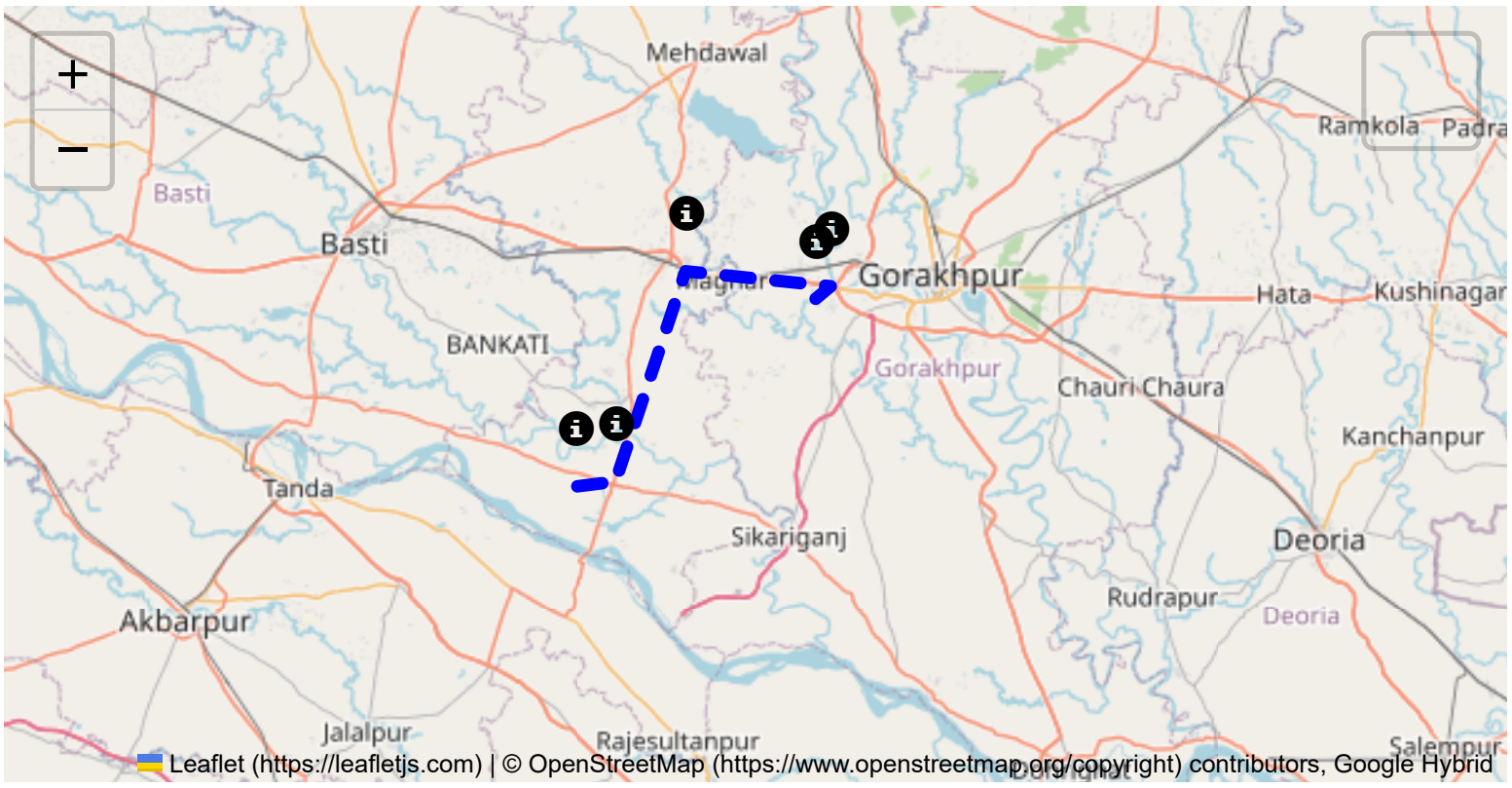
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

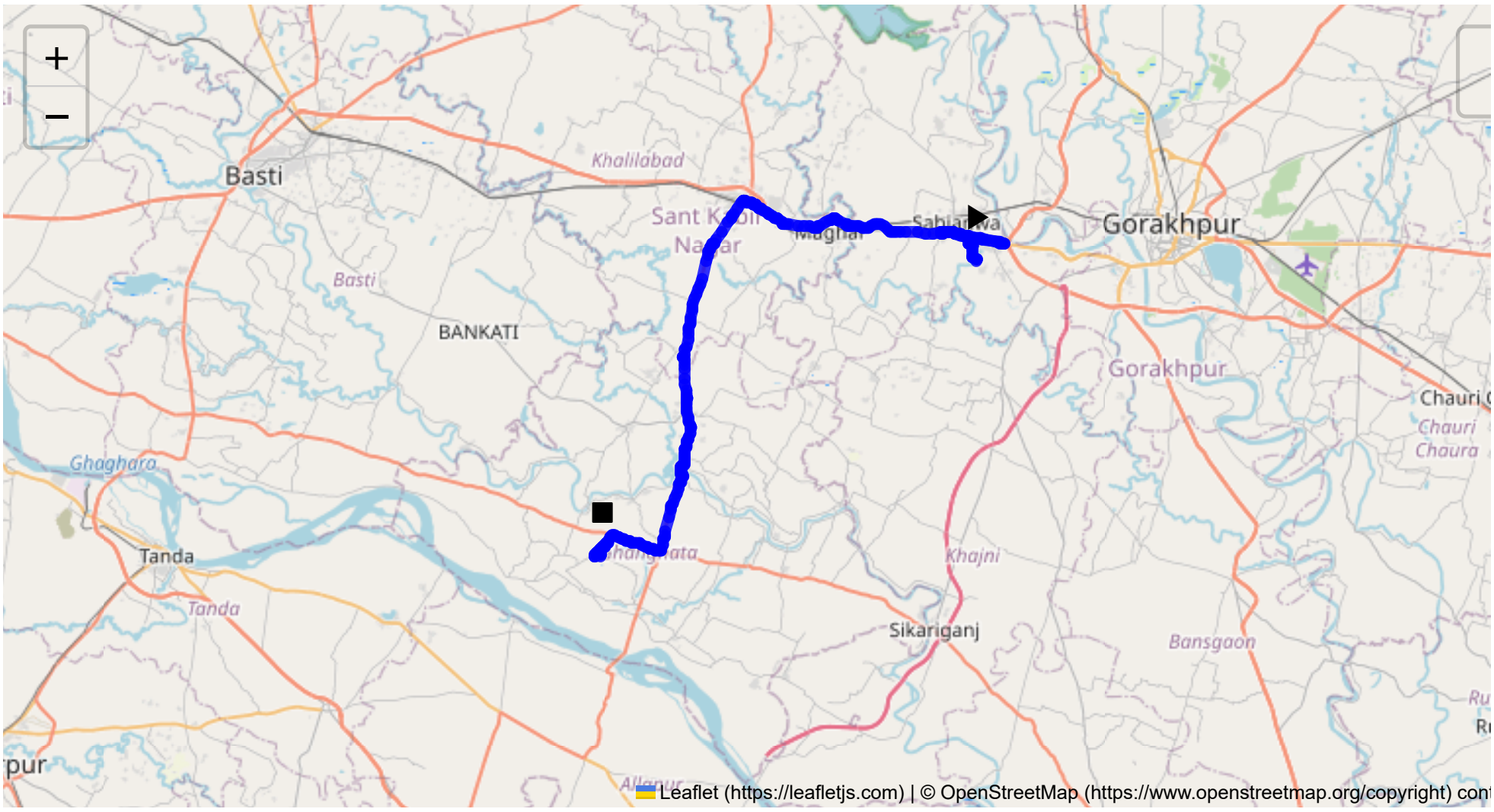
Journey Risk Mitigation

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: 60.02 km
Estimated Duration: 1.6 hours
Adjusted Duration (Heavy Vehicle): 2.0 hours
Start: (26.735959, 83.229398)
End: (26.550958, 82.966241)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from GIDA Industrial Area Phase 1, Sahjanwa to Gaurapar Gosai Sinhpur is approximately 60 kilometers long, with key waypoints including Zero Point, Kaalesar, Khalilabad, and Gagar Garh. This route traverses mainly regional roads, with both rural and semi-urban areas.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Uttar Pradesh generally experiences a tropical climate with distinct seasons:

- **Summer (April to June):** High temperatures (up to 45°C) can affect engine performance and driver comfort.
- **Monsoon (July to September):** Heavy rainfall can lead to waterlogging and slippery roads, increasing the risk of accidents.
- **Winter (November to February):** Fog is prevalent, especially in the early morning, which can severely reduce visibility.

3. Analysis of Traffic Patterns

- **Peak Hours:** Morning (8-10 AM) and evening (5-8 PM) when school and office traffic is significant.
- **Congestion-Prone Areas:** Khalilabad sees frequent congestion due to narrow roads and market traffic. Zero Point, Kaalesar, might also be prone to slow movement due to cross traffic from enterprising zones.

4. Assessment of Road Quality and Infrastructure

- **Road Quality:** Mixed. Some sections are well-paved, while others may have potholes or uneven surfaces, particularly after the monsoon.
- **Infrastructure:** Limited in rural sections. Expect occasional single-lane roads that require careful navigation for larger vehicles.

5. Suggestions for Alternative Routes for Emergencies

- **Alternate Route:** From Khalilabad, consider taking NH28 for better road conditions, bypassing congested narrow roads.
- **Note:** Check real-time traffic updates for road closures or diversions especially during peak seasons.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Transport Regulations:** Strict adherence to hazardous material transport guidelines is mandatory.
- **Time Restrictions:** Heavy vehicles often restricted during peak hours in urban areas.

7. Overview of Historical Incidents

- **Incidence Reports:** There are sporadic records of accidents involving heavy vehicles, particularly in foggy conditions. No major hazmat incidents noted, but caution is advised during monsoons.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas:** Proximity to agricultural land means careful management of transport to prevent contamination.
- **Environmental Impact:** Minimize idling time to reduce emissions in populated or ecologically sensitive areas.

9. Analysis of Communication Coverage

- **Coverage:** Generally good in urban and semi-urban areas but expect weak signals or dead zones in more remote areas like Gagar Garh.

10. Estimated Emergency Response Times

- **Urban Areas:** Approximately 20-30 minutes.
- **Rural Areas:** Response time can extend to 45 minutes-1 hour due to road conditions and distance from major centers.

11. Overall Summary of Risk Assessment

The route poses moderate risk due to weather conditions, road quality, and traffic congestion. Excellent preparation, including checking weather forecasts, ensuring vehicle reliability, and understanding local conditions, is vital for transporting hazardous materials safely. Emergency plans should be in place, with routes and contacts readily available to manage any incidents. Stay alert to changing conditions, ensuring compliance with local transport regulations to mitigate risks effectively.

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	1.28 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
9	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.23 km
10	Turn	High	26.75377, 83.20465	15 KM/Hr	4.28 km
0	U-Turn	High	26.7471208, 83.2490873	10 KM/Hr	8.76 km
11	Blind Spot	Blind Spot	26.74712, 83.24909	10 KM/Hr	8.76 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
12	Turn	High	26.74703, 83.24907	15 KM/Hr	8.79 km
13	Turn	Medium	26.76249, 83.08902	30 KM/Hr	25.30 km
14	Turn	High	26.77296, 83.06947	15 KM/Hr	27.59 km
15	Turn	High	26.77304, 83.06947	15 KM/Hr	27.63 km
16	Turn	Medium	26.77384, 83.06614	30 KM/Hr	27.97 km
17	Turn	High	26.55406, 83.00798	15 KM/Hr	53.76 km
18	Turn	High	26.56397, 82.97385	15 KM/Hr	57.36 km
19	Turn	High	26.55850, 82.97112	15 KM/Hr	58.02 km
20	Turn	High	26.55866, 82.96975	15 KM/Hr	58.24 km
21	Turn	Medium	26.55646, 82.96847	30 KM/Hr	58.51 km
22	Turn	Medium	26.55479, 82.96615	30 KM/Hr	58.83 km
23	Turn	High	26.55401, 82.96615	15 KM/Hr	58.91 km
24	Blind Spot	Blind Spot	26.55097, 82.96197	10 KM/Hr	59.47 km
25	Blind Spot	Blind Spot	26.55141, 82.96642	10 KM/Hr	59.92 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: 4.28 km

Coordinates: 26.75377, 83.20465

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 8.76 km

Coordinates: 26.7471208, 83.2490873

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 8.76 km

Coordinates: 26.74712, 83.24909

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.79 km

Coordinates: 26.74703, 83.24907

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 25.30 km

Coordinates: 26.76249, 83.08902

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 27.59 km

Coordinates: 26.77296, 83.06947

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 27.63 km

Coordinates: 26.77304, 83.06947

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 27.97 km

Coordinates: 26.77384, 83.06614

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.76 km

Coordinates: 26.55406, 83.00798

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 57.36 km

Coordinates: 26.56397, 82.97385

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