



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to AIR FORCE GAS 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

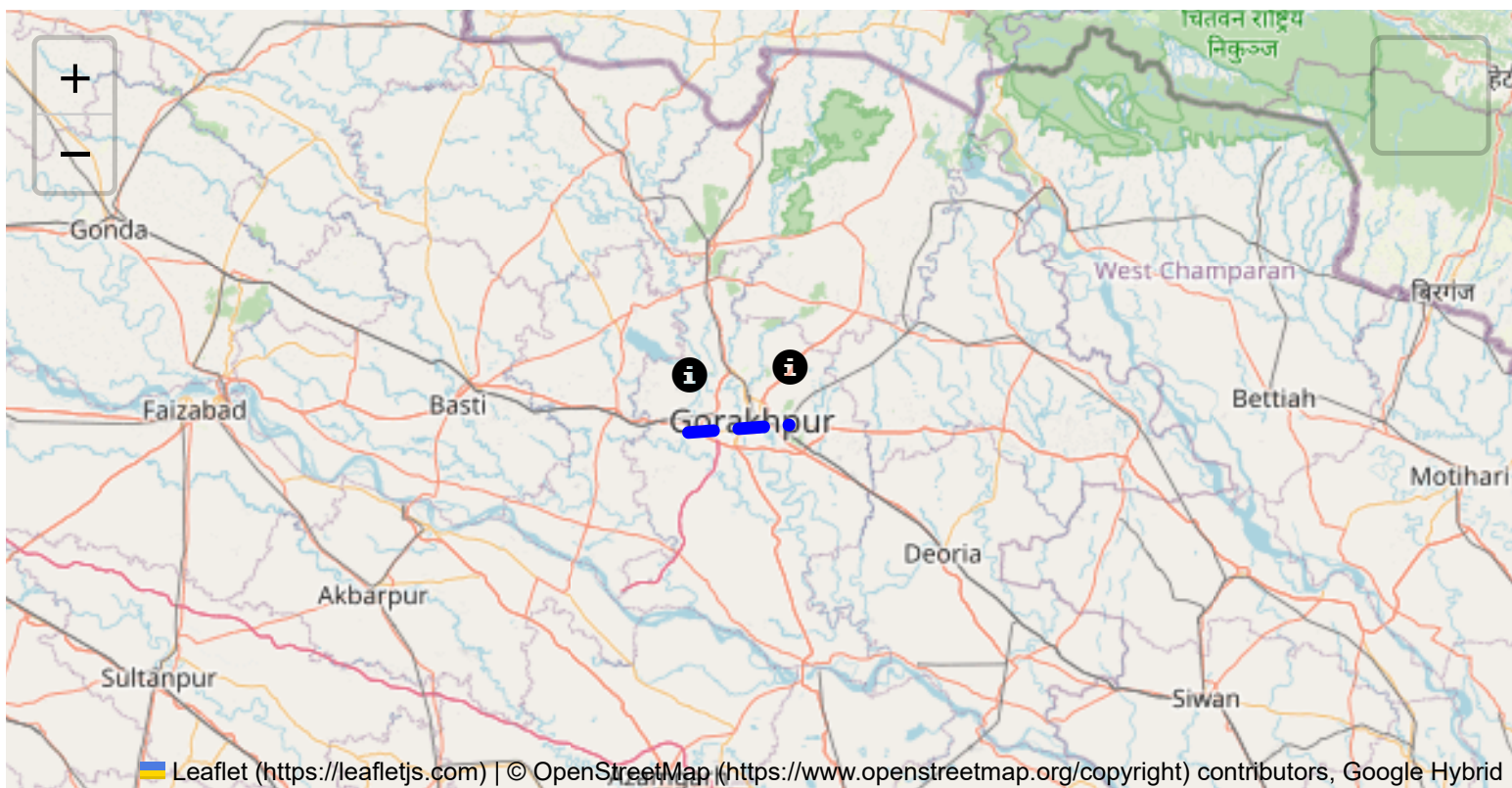
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 29.51 km
Estimated Duration: 0.9 hours
Adjusted Duration (Heavy Vehicle): 1.1 hours
Start: (26.735959, 83.229398)
End: (26.74990259, 83.44459534)

Welcome to the Journey Risk Management Study

Route Overview

The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa to QC2W+28H Airport Area, Gorakhpur covers approximately 29.51 kilometers and generally takes around 0.89 hours for trucks carrying hazardous materials. The journey typically involves traversing through National Highway 24B and various local roads leading into urban and semi-rural areas.

Weather Conditions

Typical Weather: The region experiences a monsoonal climate with hot summers (April to June) and a rainy season (July to September). Winters, from November to February, are generally mild.

Potential Weather-Related Hazards:

- **Monsoon Rains:** Heavy rainfall may lead to road flooding and reduced visibility.
- **Fog:** Common during winter mornings, potentially reducing visibility significantly.
- **Heat:** In summers, heat can cause road surfaces to become slick with tar.

Traffic Patterns

Peak Hours:

- Morning (8:00 AM - 10:00 AM)
- Evening (5:00 PM - 7:00 PM)

Congestion-Prone Areas:

- Industrial exit points at Sahjanwa.
- Main intersections entering Gorakhpur.
- Near educational institutions and marketplaces in urban settings.

Road Quality and Infrastructure

- **Highways:** Generally well-maintained but subject to wear during monsoon due to heavy rain.
- **Local Roads:** Varied quality, with some having potholes and uneven surfaces, particularly in rural segments.
- **Bridges:** Check for weight restrictions, especially on older bridges.

Alternative Routes for Emergencies

- **Via NH 28 and NH 24B:** Another possible route that offers better-maintained infrastructure and faster access to emergency services.
- **Local Roads:** Utilize smaller local roads as diversions but be aware of lower speed limits and varied road conditions.

Local Regulations on Hazardous Material Transport

- Restrictions on hazardous materials in densely populated areas during peak hours.
- Necessary permits are required for transporting certain types of hazardous materials.
- Strict adherence to speed limits and hazardous material labeling regulations.

Historical Incidents

- Accidents predominantly due to road flooding and poor visibility during the monsoon.

- Past incidents of overturned trucks on sharp turns and narrow roads.
- Few reported spills due to improper hazardous material containment.

Environmental Considerations and Sensitive Areas

- Proximity to water bodies: Special care near rivers to prevent contamination.
- Agricultural lands: Minimizing disruptions and spill risks that might harm crops.
- Urban areas: Avoiding residential zones where public safety risk is heightened.

Communication Coverage

- Generally good coverage in urban and highway areas.
- Potential dead zones in rural sections need consideration for communication plans.
- Alternative communication methods, like satellite phones, may be necessary in emergencies.

Estimated Emergency Response Times

- **Urban Areas:** 20-30 minutes.
- **Highways:** 30-45 minutes, depending on traffic during peak hours.
- **Rural Routes:** 45-60 minutes, due to distance from main emergency facilities.

Overall Summary of Risk Assessment

The route poses moderate risks primarily associated with weather conditions, varying road quality, and congestion in urban areas. The key recommendations include adhering to local regulations, staying updated with weather forecasts, maintaining vehicle condition for varied terrains, and planning for communication alternatives. The use of well-maintained highways and avoiding peak hours can mitigate significant risks. Sustainable transport practices will help protect sensitive environments along the way.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73690, 83.22947	15 KM/Hr	0.07 km
3	Turn	High	26.73697, 83.22939	15 KM/Hr	0.11 km
4	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
5	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.48 km
6	Turn	Medium	26.74524, 83.22746	30 KM/Hr	1.30 km
7	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.32 km
8	Turn	Medium	26.74654, 83.22390	30 KM/Hr	1.69 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
9	Turn	Medium	26.74661, 83.22388	30 KM/Hr	1.70 km
10	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km
11	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.23 km
12	Turn	High	26.75381, 83.20466	15 KM/Hr	4.30 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.97 km
1	Roundabout	High	26.74441, 83.38540	15 KM/Hr	23.19 km
13	Turn	High	26.74981, 83.39758	15 KM/Hr	24.56 km
14	Turn	Medium	26.74741, 83.42775	30 KM/Hr	27.58 km
15	Turn	Medium	26.74745, 83.42781	30 KM/Hr	27.59 km
16	Turn	High	26.74719, 83.44394	15 KM/Hr	29.12 km

Emergency Locations

Found: 10 hospital(s), 5 clinic(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
3	hospital	Amrawati Hospital	26.7372636, 83.3626921	30 km/h	Medium	20.54 km
2	hospital	Sangam Eye Hospital	26.7343271, 83.3640482	30 km/h	Medium	20.73 km
0	hospital	Sanjay Fracture Clinic and Maternity Centre	26.7342168, 83.3665873	30 km/h	Medium	20.98 km
1	hospital	The Pride Hospital	26.734908, 83.3669987	30 km/h	Medium	20.98 km
8	hospital	Excel Ortho Care, Shri Hari Pathology	26.7310723, 83.3688339	30 km/h	Medium	21.10 km
5	hospital	Medispring Hospital & Research Centre	26.7327713, 83.3700866	30 km/h	Medium	21.21 km
7	hospital	Spectra Eye Centre	26.7366834, 83.3682564	30 km/h	Medium	21.21 km
4	hospital	Jagdish Hospital	26.7348828, 83.3712637	30 km/h	Medium	21.30 km
6	clinic	Apollo Clinic	26.738647, 83.367827	30 km/h	Medium	21.30 km

	type	name	coordinates	speed_limit	risk_level	Distance from Start
9	hospital	Aryan Hospital	26.7386077, 83.3733599	30 km/h	Medium	21.64 km
10	clinic	Ehsaas De-Addiction Cum Rehabilitation Centre	26.7398014, 83.3749512	30 km/h	Medium	21.89 km
11	clinic	Dularee Nursing Home	26.7416989, 83.3760304	30 km/h	Medium	22.02 km
12	clinic	Sardar Patel Clinic	26.7454607, 83.3793117	30 km/h	Medium	22.60 km
13	hospital	Raj Eye Hospital	26.7448169, 83.3789191	30 km/h	Medium	22.60 km
14	clinic	Pragati Maternity Home and Surgical Clinic	26.7477134, 83.4132269	30 km/h	Medium	26.12 km

Crowded Spots

Route Photos of Risky Spots



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.17 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: 8.97 km

Coordinates: 26.74681, 83.25111



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 23.19 km

Coordinates: 26.74441, 83.38540



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 24.56 km

Coordinates: 26.74981, 83.39758



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 27.58 km

Coordinates: 26.74741, 83.42775



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 27.59 km

Coordinates: 26.74745, 83.42781



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.12 km

Coordinates: 26.74719, 83.44394

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