



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Gorakhpur LPG BP to UTTAMA 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.





- Proceeding via Mehdawal Rd, Dhodhaya (W3GJ+RR4)
- Ending at Pokhar Bhitawa

The journey weaves through industrial areas, rural landscapes, and small towns, primarily on rural roads that might intersect with local traffic routes.

## 2. Typical Weather Conditions and Potential Weather-Related Hazards

- **Seasonal Variability:** The region experiences extreme temperatures, with hot summers (up to 45°C) and cool winters (down to 5°C).
- **Monsoon Season:** Heavy rainfall from June to September can lead to localized flooding and slippery road conditions.
- **Fog:** During winter months, dense fog can reduce visibility significantly, affecting travel times and road safety.

## 3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic congestion is typically highest during morning (8-10 AM) and evening (5-7 PM) due to local commuting.
- **Congestion-Prone Areas:** Sahjanwa and neighboring town centers can experience bottlenecks due to narrow roads and mixed traffic (including pedestrians and bicycles).

## 4. Assessment of Road Quality and Infrastructure

- **Road Quality:** Varies along the route. Urban areas might have better-maintained roads, while rural segments may have potholes and narrow lanes.
- **Infrastructure:** Limited facilities for truck stops, rest areas, and emergency services, especially in rural stretches.

## 5. Suggestions for Alternative Routes for Emergencies

- An alternative route may involve taking a bypass or larger state highways if accessible, though these should be assessed for distance and road quality.
- Keeping updated maps and a GPS device is advisable to make quick detours if necessary.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits and Regulations:** Ensure compliance with local laws, which might include specific permits for transporting hazardous materials.
- **Restrictions:** Some areas might have restrictions on the timing of heavy vehicle movement; night times are often restricted.

## 7. Overview of Historical Incidents

- Accidents:** Historical data suggests occasional incidents related to vehicle breakdowns and rollovers due to narrow roads and sharp turns.
- Hazardous Materials:** Limited information available on recent incidents involving hazardous materials; prevention is key.

## 8. Environmental Considerations and Sensitive Areas

- Environmental Impact:** The route passes through agricultural zones, which require minimizing contamination risks during transport.
- Wildlife Areas:** Be aware of any wildlife crossings, especially in rural sections to avoid accidents.

## 9. Analysis of Communication Coverage

- Mobile Network:** Generally stable in urban areas but can face disruptions or weak signals in remote rural parts.
- Potential Dead Zones:** Be prepared for limited connectivity, especially on forested or open highway stretches.

## 10. Estimated Emergency Response Times

- Urban Areas:** Response time can be within 30 minutes to an hour due to proximity to hospitals and emergency services.
- Rural Areas:** May extend beyond an hour depending on the terrain and road accessibility.

## 11. Overall Summary of Risk Assessment

- Primary Risks:** Weather-related hazards, road quality variance, and limited emergency services on rural stretches.
- Mitigation Tips:** Plan travel times to avoid peak congestion, monitor weather forecasts, ensure vehicle maintenance, and adhere strictly to all regulations for transporting hazardous materials.

Overall, while the route presents moderate risks, careful planning and preparation can mitigate the dangers associated with transporting hazardous materials. Constant vigilance and adherence to local guidelines are imperative for the safety of the transport and surrounding environments.

### Risk Assessment - Turns

|   | Risk Type | Risk Level | Coordinates        | Speed Limit | Distance from Start |
|---|-----------|------------|--------------------|-------------|---------------------|
| 0 | Turn      | High       | 26.73746, 83.22938 | 15 KM/Hr    | 0.08 km             |

|    | Risk Type  | Risk Level | Coordinates        | Speed Limit | Distance from Start |
|----|------------|------------|--------------------|-------------|---------------------|
| 1  | Turn       | High       | 26.73788, 83.22642 | 15 KM/Hr    | 0.32 km             |
| 2  | Turn       | Medium     | 26.73812, 83.22630 | 30 KM/Hr    | 0.48 km             |
| 3  | Turn       | High       | 26.74524, 83.22746 | 15 KM/Hr    | 1.14 km             |
| 4  | Turn       | High       | 26.74654, 83.22390 | 15 KM/Hr    | 1.63 km             |
| 5  | Blind Spot | Blind Spot | 26.75126, 83.22476 | 10 KM/Hr    | 2.15 km             |
| 6  | Blind Spot | Blind Spot | 26.75353, 83.20457 | 10 KM/Hr    | 4.21 km             |
| 7  | Turn       | High       | 26.75377, 83.20465 | 15 KM/Hr    | 4.26 km             |
| 8  | Turn       | Medium     | 26.75378, 83.21338 | 30 KM/Hr    | 5.12 km             |
| 9  | Turn       | High       | 26.75386, 83.21352 | 15 KM/Hr    | 5.15 km             |
| 10 | Turn       | Medium     | 26.75640, 83.21275 | 30 KM/Hr    | 5.41 km             |
| 11 | Blind Spot | Blind Spot | 26.76132, 83.21435 | 10 KM/Hr    | 5.92 km             |
| 12 | Turn       | High       | 26.76131, 83.21143 | 15 KM/Hr    | 6.29 km             |
| 13 | Turn       | Medium     | 26.76403, 83.21129 | 30 KM/Hr    | 6.61 km             |
| 14 | Turn       | Medium     | 26.76555, 83.21385 | 30 KM/Hr    | 6.86 km             |
| 15 | Turn       | Medium     | 26.76593, 83.21408 | 30 KM/Hr    | 6.96 km             |
| 16 | Turn       | Medium     | 26.81740, 83.18022 | 30 KM/Hr    | 13.84 km            |
| 17 | Turn       | Medium     | 26.83008, 83.15664 | 30 KM/Hr    | 16.69 km            |
| 18 | Turn       | Medium     | 26.86197, 83.13749 | 30 KM/Hr    | 20.70 km            |
| 19 | Turn       | High       | 26.91597, 83.08449 | 15 KM/Hr    | 29.01 km            |
| 20 | Blind Spot | Blind Spot | 26.91433, 83.08351 | 10 KM/Hr    | 29.19 km            |
| 21 | Turn       | High       | 26.91843, 83.08101 | 15 KM/Hr    | 29.60 km            |
| 22 | Turn       | Medium     | 26.92258, 83.08191 | 30 KM/Hr    | 30.18 km            |
| 23 | Turn       | Medium     | 26.92506, 83.08135 | 30 KM/Hr    | 30.46 km            |
| 24 | Blind Spot | Blind Spot | 26.97088, 83.10494 | 10 KM/Hr    | 36.15 km            |
| 25 | Turn       | High       | 26.97107, 83.10468 | 15 KM/Hr    | 36.19 km            |
| 26 | Blind Spot | Blind Spot | 26.97072, 83.10317 | 10 KM/Hr    | 36.32 km            |
| 27 | Turn       | Medium     | 26.98542, 83.10690 | 30 KM/Hr    | 38.06 km            |
| 28 | Turn       | Medium     | 26.98458, 83.11467 | 30 KM/Hr    | 38.87 km            |
| 29 | Turn       | Medium     | 26.98527, 83.11575 | 30 KM/Hr    | 39.01 km            |
| 30 | Turn       | Medium     | 26.98855, 83.11710 | 30 KM/Hr    | 39.37 km            |
| 31 | Turn       | Medium     | 26.98873, 83.11748 | 30 KM/Hr    | 39.47 km            |
| 32 | Turn       | Medium     | 26.99036, 83.11818 | 30 KM/Hr    | 39.63 km            |
| 33 | Blind Spot | Blind Spot | 27.01133, 83.13472 | 10 KM/Hr    | 42.51 km            |
| 34 | Turn       | High       | 27.01200, 83.13313 | 15 KM/Hr    | 42.72 km            |

|    | Risk Type  | Risk Level | Coordinates        | Speed Limit | Distance from Start |
|----|------------|------------|--------------------|-------------|---------------------|
| 35 | Turn       | Medium     | 27.02052, 83.13520 | 30 KM/Hr    | 43.62 km            |
| 36 | Turn       | High       | 27.02127, 83.13464 | 15 KM/Hr    | 43.76 km            |
| 37 | Turn       | High       | 27.02508, 83.13542 | 15 KM/Hr    | 44.19 km            |
| 38 | Turn       | Medium     | 27.02956, 83.13058 | 30 KM/Hr    | 44.89 km            |
| 39 | Turn       | Medium     | 27.03226, 83.13079 | 30 KM/Hr    | 45.16 km            |
| 40 | Turn       | High       | 27.03521, 83.13374 | 15 KM/Hr    | 45.62 km            |
| 41 | Turn       | Medium     | 27.03525, 83.13427 | 30 KM/Hr    | 45.72 km            |
| 42 | Turn       | Medium     | 27.04739, 83.14161 | 30 KM/Hr    | 47.28 km            |
| 43 | Turn       | Medium     | 27.05263, 83.14922 | 30 KM/Hr    | 48.23 km            |
| 44 | Turn       | High       | 27.06083, 83.15347 | 15 KM/Hr    | 49.19 km            |
| 45 | Turn       | High       | 27.06114, 83.15291 | 15 KM/Hr    | 49.31 km            |
| 46 | Turn       | Medium     | 27.06266, 83.15298 | 30 KM/Hr    | 49.42 km            |
| 47 | Turn       | Medium     | 27.06344, 83.15374 | 30 KM/Hr    | 49.57 km            |
| 48 | Turn       | Medium     | 27.06534, 83.15419 | 30 KM/Hr    | 49.73 km            |
| 49 | Turn       | Medium     | 27.06677, 83.15376 | 30 KM/Hr    | 49.92 km            |
| 50 | Turn       | Medium     | 27.08430, 83.16344 | 30 KM/Hr    | 52.11 km            |
| 51 | Turn       | Medium     | 27.08553, 83.16377 | 30 KM/Hr    | 52.25 km            |
| 52 | Turn       | Medium     | 27.08786, 83.16341 | 30 KM/Hr    | 52.53 km            |
| 53 | Turn       | High       | 27.08885, 83.16236 | 15 KM/Hr    | 52.71 km            |
| 54 | Turn       | High       | 27.09732, 83.16481 | 15 KM/Hr    | 53.65 km            |
| 55 | Turn       | High       | 27.09838, 83.16398 | 15 KM/Hr    | 53.86 km            |
| 56 | Turn       | High       | 27.10534, 83.16686 | 15 KM/Hr    | 54.42 km            |
| 57 | Turn       | High       | 27.10571, 83.16655 | 15 KM/Hr    | 54.72 km            |
| 58 | Turn       | Medium     | 27.11140, 83.16853 | 30 KM/Hr    | 55.37 km            |
| 59 | Turn       | High       | 27.11353, 83.16881 | 15 KM/Hr    | 55.62 km            |
| 60 | Turn       | Medium     | 27.14436, 83.14840 | 30 KM/Hr    | 59.79 km            |
| 61 | Turn       | Medium     | 27.18519, 83.12717 | 30 KM/Hr    | 64.98 km            |
| 62 | Turn       | Medium     | 27.19483, 83.12666 | 30 KM/Hr    | 66.08 km            |
| 63 | Turn       | Medium     | 27.19571, 83.12588 | 30 KM/Hr    | 66.20 km            |
| 64 | Blind Spot | Blind Spot | 27.25635, 83.08275 | 10 KM/Hr    | 74.71 km            |
| 65 | Turn       | High       | 27.25581, 83.08616 | 15 KM/Hr    | 75.06 km            |
| 66 | Blind Spot | Blind Spot | 27.25663, 83.08635 | 10 KM/Hr    | 75.18 km            |

# Emergency Locations

Found: 1 clinic(s)

|   | type   | name                   | coordinates            | speed_limit | risk_level | Distance from Start |
|---|--------|------------------------|------------------------|-------------|------------|---------------------|
| 0 | clinic | CHC HOSPITAL, Mehdawal | 26.9722141, 83.1048173 | 30 km/h     | Medium     | 36.49 km            |

## Crowded Spots

## Route Photos of Risky Spots



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Distance from Start:** 2.15 km  
**Coordinates:** 26.75126, 83.22476





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 4.21 km

**Coordinates:** 26.75353, 83.20457



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 4.26 km

**Coordinates:** 26.75377, 83.20465





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 5.12 km

**Coordinates:** 26.75378, 83.21338



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 5.15 km

**Coordinates:** 26.75386, 83.21352





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 5.41 km

**Coordinates:** 26.75640, 83.21275



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 5.92 km

**Coordinates:** 26.76132, 83.21435





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 6.29 km

**Coordinates:** 26.76131, 83.21143



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 6.61 km

**Coordinates:** 26.76403, 83.21129





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 6.86 km

**Coordinates:** 26.76555, 83.21385



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 6.96 km

**Coordinates:** 26.76593, 83.21408





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 13.84 km

**Coordinates:** 26.81740, 83.18022



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 16.69 km

**Coordinates:** 26.83008, 83.15664





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 20.70 km

**Coordinates:** 26.86197, 83.13749



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 29.01 km

**Coordinates:** 26.91597, 83.08449





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 29.19 km

**Coordinates:** 26.91433, 83.08351



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 29.60 km

**Coordinates:** 26.91843, 83.08101





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 30.18 km

**Coordinates:** 26.92258, 83.08191



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 30.46 km

**Coordinates:** 26.92506, 83.08135





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 36.15 km

**Coordinates:** 26.97088, 83.10494



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 36.19 km

**Coordinates:** 26.97107, 83.10468





**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 36.32 km

**Coordinates:** 26.97072, 83.10317



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 38.06 km

**Coordinates:** 26.98542, 83.10690





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 38.87 km

**Coordinates:** 26.98458, 83.11467



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.01 km

**Coordinates:** 26.98527, 83.11575





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.37 km

**Coordinates:** 26.98855, 83.11710



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.47 km

**Coordinates:** 26.98873, 83.11748





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 39.63 km

**Coordinates:** 26.99036, 83.11818



**Risk Type:** Blind Spot

**Risk Level:** Blind Spot

**Speed Limit:** 10 KM/Hr

**Distance from Start:** 42.51 km

**Coordinates:** 27.01133, 83.13472





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 42.72 km

**Coordinates:** 27.01200, 83.13313



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 43.62 km

**Coordinates:** 27.02052, 83.13520





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 43.76 km

**Coordinates:** 27.02127, 83.13464



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 44.19 km

**Coordinates:** 27.02508, 83.13542





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 44.89 km

**Coordinates:** 27.02956, 83.13058



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 55.37 km

**Coordinates:** 27.11140, 83.16853





**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Distance from Start:** 55.62 km

**Coordinates:** 27.11353, 83.16881



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Distance from Start:** 59.79 km

**Coordinates:** 27.14436, 83.14840



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