JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO RAVINDRA INDANE SERV

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

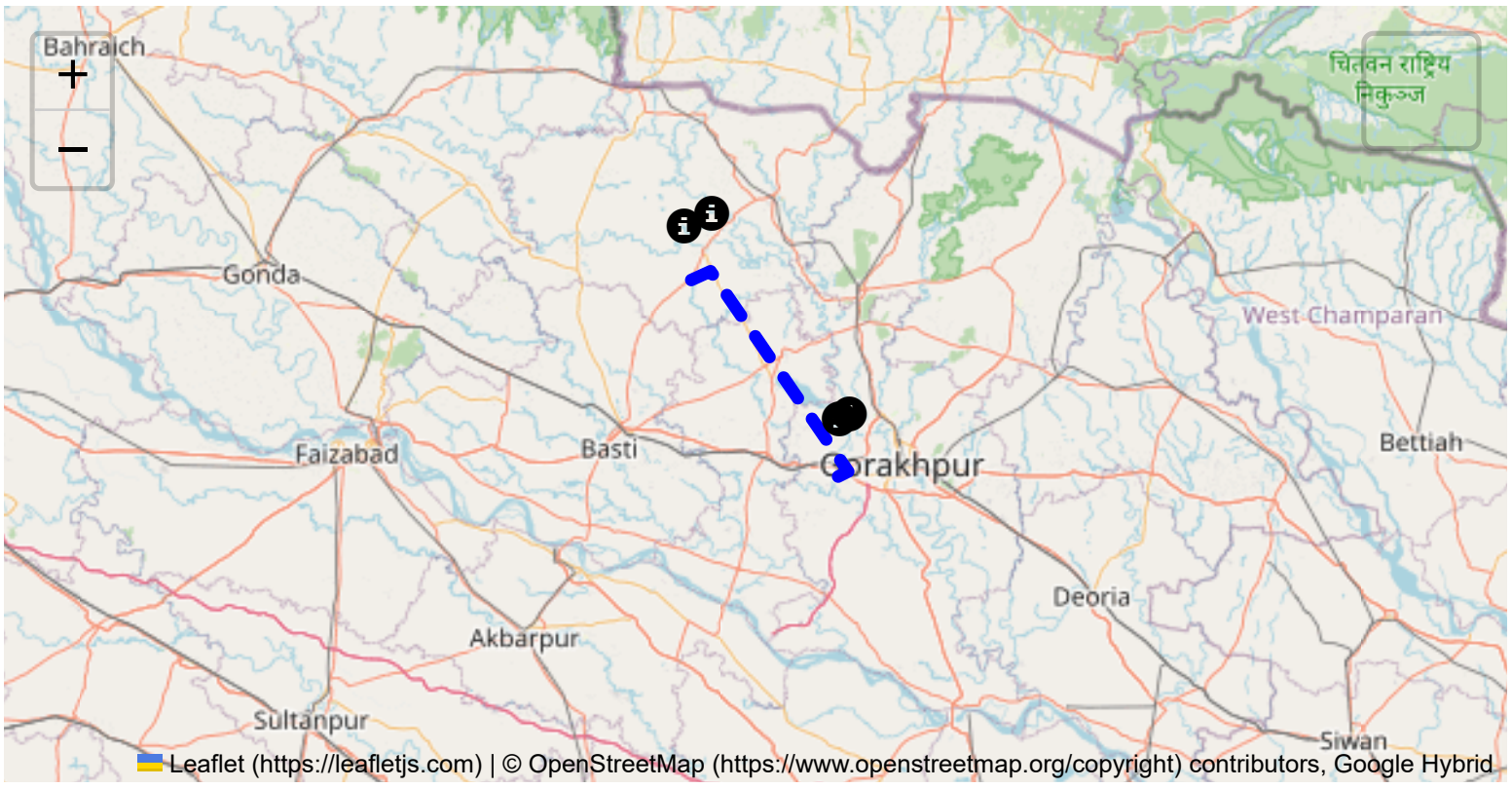
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

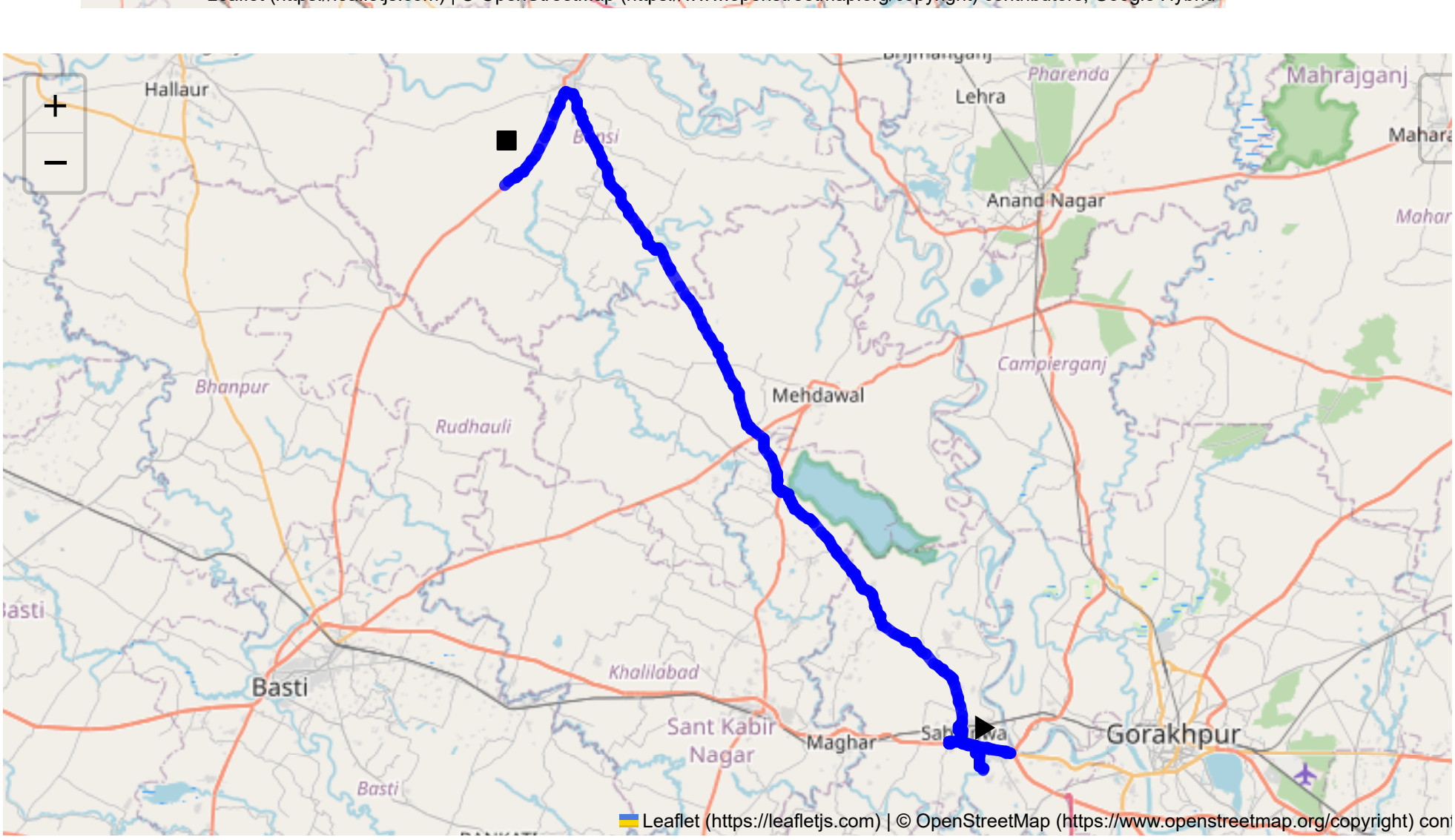
Journey Risk Mitigation

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: 79.97 km
Estimated Duration: 2.1 hours
Adjusted Duration (Heavy Vehicle): 2.6 hours
Start: (26.735959, 83.229398)
End: (27.1123312, 82.8845862)

Welcome to the Journey Risk Management Study

Route Safety Analysis Report

1. Overview of the Route Map: The route spans approximately 79.97 kilometers, starting from GIDA Industrial Area Phase 1 in Sahjanwa, proceeding through Zero Point, Kaalesar, and Bhatpurwa, finally reaching Tillauli. This route traverses several rural and semi-urban areas, with key junctions at Kaalesar

and Bhatpurwa potentially leading to increased complexity in navigation and road sharing with local traffic.

2. Typical Weather Conditions and Potential Weather-Related Hazards: Uttar Pradesh experiences a subtropical climate with three main seasons: summer, monsoon, and winter. Summers (April to June) can be extremely hot, with temperatures rising above 40°C, which may lead to road surface degradation. The monsoon season (July to September) is characterized by heavy rains and can cause flooding and reduced visibility. Winters (December to February) are mild, but fog can significantly reduce visibility, especially in the early mornings.

3. Traffic Patterns, Highlighting Peak Hours and Congestion-Prone Areas:

- Peak traffic typically occurs between 8 AM - 11 AM and 5 PM - 8 PM.
- Areas near Sahjanwa and Zero Point in Kaalesar can experience congestion due to local market activities and commuting traffic.
- Expect slower movement in and around small towns due to narrow roads and local vehicular movement.

4. Road Quality and Infrastructure:

- Roads are primarily two-lane with mixed surface conditions. Expect patches with potholes and uneven surfaces.
- Infrastructure within larger towns and industrial areas is generally better but can vary outside these areas.
- Some rural sections might lack proper signage or roadside barriers.

5. Suggestions for Alternative Routes for Emergencies: If the main route is blocked, consider using the State Highway 1 (SH1) which connects several points across Uttar Pradesh, albeit indirectly. It provides access to major highways that can circumvent local congestion or blockages.

6. Summary of Local Regulations Affecting Hazardous Material Transport: Transport of hazardous materials is strictly regulated. Trucks must adhere to respective state transport rules, and permits are necessary. There are restrictions on transporting such material through densely populated areas or during peak traffic hours.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials:

- The region has recorded incidents related to heavy vehicles, particularly during monsoon due to slippery roads.
- Incidents are infrequent but often involve overturning due to poor road conditions or reduced visibility.

8. Environmental Considerations and Sensitive Areas:

- There are several rural and semi-urban environments that require careful driving to avoid disturbing local flora and fauna.
- Pay attention to designated protected areas close to Kaalesar and some farming regions, which might not be equipped for heavy vehicular traffic.

9. Analysis of Communication Coverage, Noting Potential Dead Zones:

- Communication networks are generally robust in urban and semi-urban areas but expect weaker signals in rural sections or valleys.
- Dead zones are possible in more isolated stretches between towns.

10. Estimated Emergency Response Times for Different Route Segments:

- Urban and semi-urban regions: 30 to 45 minutes.
- Rural or remote areas: up to 1.5 hours due to distance and road conditions.

11. Overall Summary of Risk Assessment: This route involves various risks, including weather-related hazards, road quality issues, and periodic congestion. Drivers should be particularly vigilant during adverse weather conditions and familiar with emergency detour routes. It is crucial to adhere to hazardous material regulations and communicate effectively to mitigate risks associated with dead communication zones. By following all safety protocols, drivers can minimize potential complications on this route.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
2	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
4	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
6	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
9	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
7	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
0	U-Turn	High	26.7471208, 83.2490873	10 KM/Hr	8.75 km
8	Blind Spot	Blind Spot	26.74712, 83.24909	10 KM/Hr	8.75 km
10	Turn	High	26.75381, 83.20466	15 KM/Hr	13.31 km
11	Blind Spot	Blind Spot	26.75377, 83.21355	10 KM/Hr	14.18 km
12	Turn	Medium	26.75640, 83.21275	30 KM/Hr	14.46 km
13	Turn	High	26.76132, 83.21435	15 KM/Hr	14.97 km
14	Turn	Medium	26.76119, 83.21159	30 KM/Hr	15.33 km
15	Turn	High	26.76131, 83.21143	15 KM/Hr	15.36 km
16	Turn	Medium	26.76403, 83.21129	30 KM/Hr	15.67 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
17	Turn	Medium	26.76555, 83.21385	30 KM/Hr	15.91 km
18	Turn	Medium	26.76593, 83.21408	30 KM/Hr	16.01 km
19	Turn	Medium	26.83008, 83.15664	30 KM/Hr	25.75 km
20	Turn	High	26.91597, 83.08449	15 KM/Hr	38.07 km
21	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	38.25 km
22	Turn	Medium	26.91843, 83.08101	30 KM/Hr	38.74 km
23	Turn	Medium	26.92258, 83.08191	30 KM/Hr	39.25 km
24	Turn	Medium	26.94829, 83.07156	30 KM/Hr	42.29 km
25	Turn	Medium	26.98320, 83.05060	30 KM/Hr	46.88 km
26	Turn	Medium	26.98358, 83.04980	30 KM/Hr	47.00 km
27	Turn	Medium	27.07127, 82.99573	30 KM/Hr	58.13 km
28	Turn	Medium	27.07135, 82.99500	30 KM/Hr	58.27 km
29	Turn	Medium	27.07060, 82.99359	30 KM/Hr	58.44 km
30	Turn	Medium	27.17093, 82.93246	30 KM/Hr	71.35 km
31	Turn	High	27.17161, 82.92867	15 KM/Hr	71.75 km
32	Turn	Medium	27.17130, 82.92833	30 KM/Hr	71.82 km

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.16 km

Coordinates: 26.75126, 83.22476

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.22 km

Coordinates: 26.75353, 83.20457

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.22 km

Coordinates: 26.75353, 83.20457

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.27 km

Coordinates: 26.75377, 83.20465

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 8.75 km

Coordinates: 26.7471208, 83.2490873

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 8.75 km

Coordinates: 26.74712, 83.24909

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 13.31 km

Coordinates: 26.75381, 83.20466

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 14.18 km

Coordinates: 26.75377, 83.21355

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 14.46 km

Coordinates: 26.75640, 83.21275

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 14.97 km

Coordinates: 26.76132, 83.21435

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 15.33 km

Coordinates: 26.76119, 83.21159

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 15.36 km

Coordinates: 26.76131, 83.21143

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 15.67 km

Coordinates: 26.76403, 83.21129

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 15.91 km

Coordinates: 26.76555, 83.21385

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 16.01 km

Coordinates: 26.76593, 83.21408

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 25.75 km

Coordinates: 26.83008, 83.15664

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 38.07 km

Coordinates: 26.91597, 83.08449

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 38.25 km

Coordinates: 26.91433, 83.08351

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 38.74 km

Coordinates: 26.91843, 83.08101

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 39.25 km

Coordinates: 26.92258, 83.08191

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 42.29 km

Coordinates: 26.94829, 83.07156

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 46.88 km

Coordinates: 26.98320, 83.05060

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 47.00 km

Coordinates: 26.98358, 83.04980

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 58.13 km

Coordinates: 27.07127, 82.99573

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 58.27 km

Coordinates: 27.07135, 82.99500

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 58.44 km

Coordinates: 27.07060, 82.99359

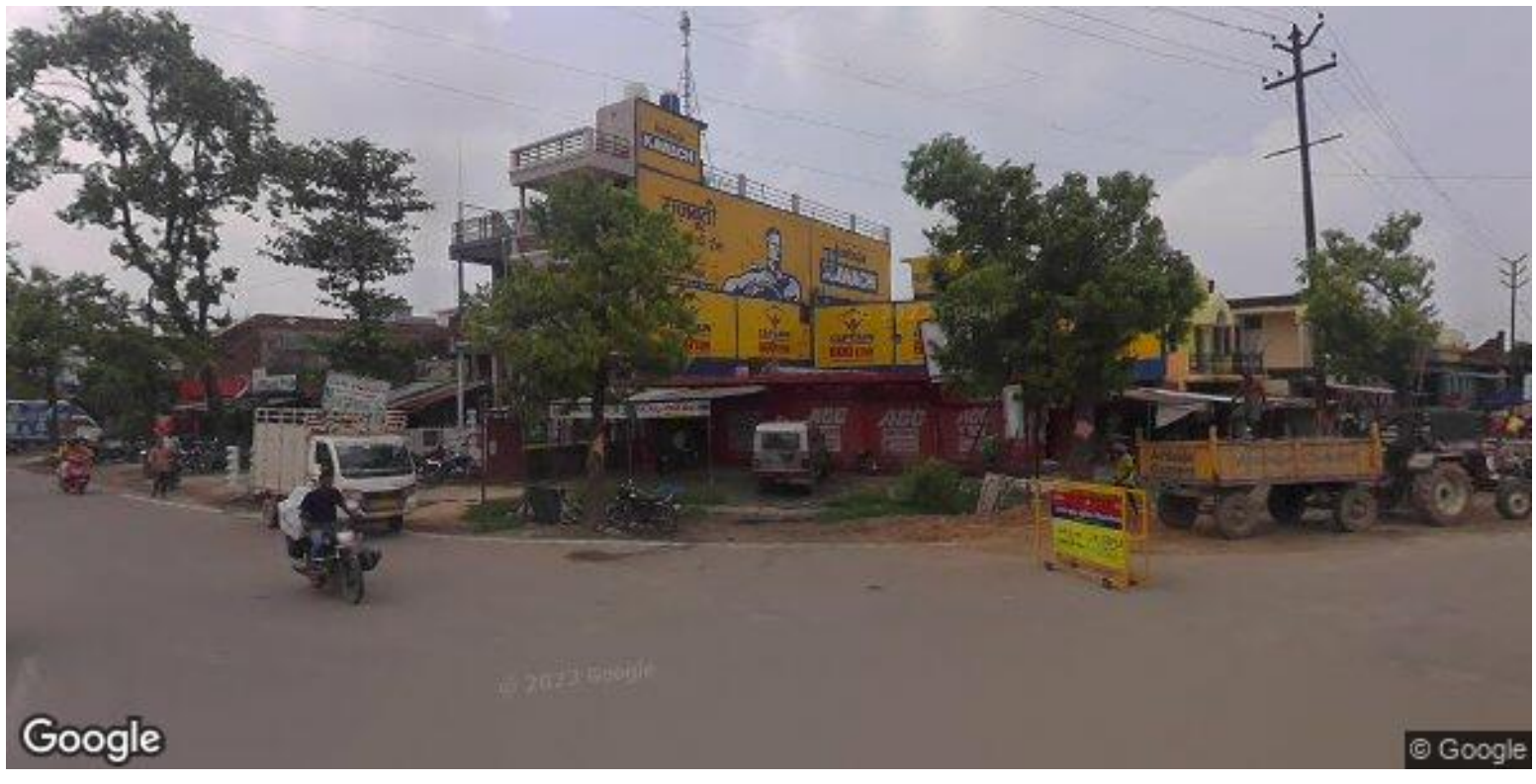
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.35 km

Coordinates: 27.17093, 82.93246



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 71.75 km

Coordinates: 27.17161, 82.92867

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.82 km

Coordinates: 27.17130, 82.92833

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