JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to MAA LAXMI INDANE GRAMIN VITRAK

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

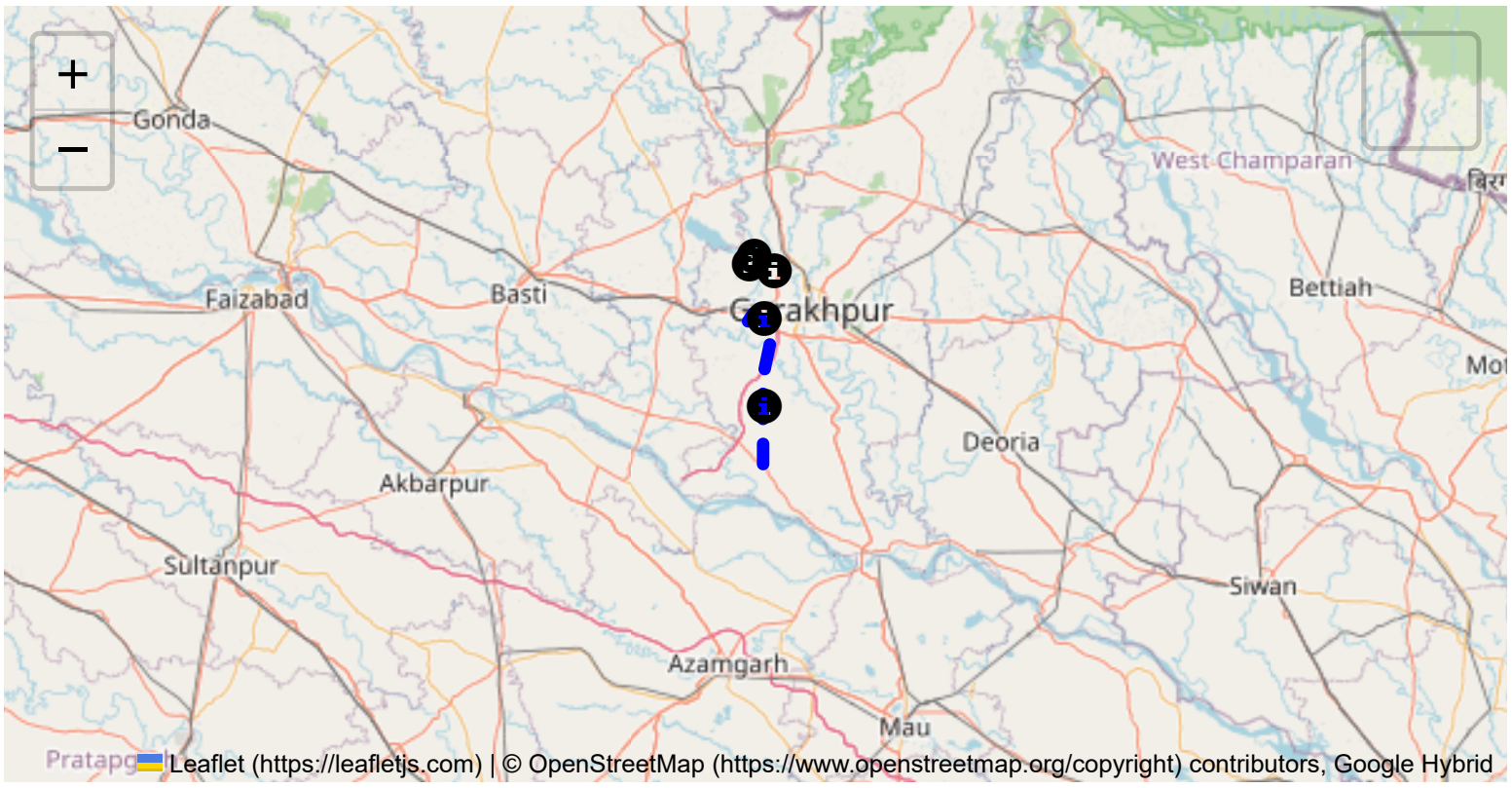
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 45.92 km
Estimated Duration: 1.4 hours
Adjusted Duration (Heavy Vehicle): 1.7 hours
Start: (26.735959, 83.229398)
End: (26.45415, 83.25718)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route begins in the GIDA Industrial Area Phase 1, Sahjanwa, passes through Khanipur and along the Gorakhpur - Malhanpar Road, before reaching Uruwa Bazar, Kata Bujurg. Spanning approximately 45.92 kilometers, this journey takes about 1.35 hours for heavy vehicles, taking into consideration the stops and cautious driving required for transporting hazardous materials.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Uttar Pradesh typically experiences a sub-tropical climate, with hot summers (April to June), monsoon rains (July to September), and cool winters (November to February). During monsoon, heavy rains can cause road flooding and reduced visibility, posing significant hazards. Fog can be a concern during winter months, especially in low-lying areas, affecting driving conditions.

3. Analysis of Traffic Patterns

Traffic tends to be heavier during morning and evening rush hours, particularly near industrial areas and towns along the route. Congestion is common in and around Sahjanwa and also near marketplaces in smaller towns. The route may experience moderate to severe congestion during festive seasons or local events, impacting travel times.

4. Assessment of Road Quality and Infrastructure

The roads along this route vary in quality. While certain sections near industrial areas and major thoroughfares are well-maintained, smaller roads, especially in rural parts, may have potholes, unmarked lanes, and could lack proper signage. Regular maintenance issues could affect the smooth transit of heavy vehicles.

5. Suggestions for Alternative Routes for Emergencies

In case of emergencies, alternative routes parallel to the primary route can include diversions via minor state highways or rural roads. However, such routes might have similar or worse road conditions and should be utilized with caution. An option could be traveling via NH27 for a segment as it is a national highway with better facilities.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials requires adherence to regulations concerning vehicle documentation, carriage permits, and driver certifications specific to hazardous materials. There may be restricted timings for transporting dangerous goods, typically prohibiting transport during night hours to minimize accident risks.

7. Overview of Historical Incidents

There are no widely reported recent major incidents involving hazardous materials in this specific region; however, minor accidents due to road conditions and driver error are not uncommon. Past incidents often highlight the importance of following safety standards and routes prescribed by authorities.

8. Environmental Considerations and Sensitive Areas

The area has agricultural activities and some environmentally sensitive zones due to nearby water bodies. Spillage or accidents involving hazardous materials could impact local agriculture and water resources. Drivers should be aware of these sensitivities and exercise heightened caution near such areas.

9. Analysis of Communication Coverage

Communication networks can vary, with better coverage around urban and semi-urban areas. Rural stretches could have potential dead zones, particularly in more remote areas like those around Gorakhpur - Malhanpar Road.

10. Estimated Emergency Response Times

Emergency response times can vary significantly, ranging from 30 minutes to over an hour, especially in rural segments of the route. Proximity to larger towns or urban centers could reduce these times compared to remote rural areas.

11. Overall Summary of Risk Assessment

Traveling this route with hazardous materials presents moderate risk. Key risks include weather impacts, especially during monsoons, road infrastructure quality, and traffic congestion. Essential strategies for risk mitigation include adherence to local transport and safety regulations, careful route planning for time and weather, and ensuring vehicles are well-equipped for communication in case of emergencies. Drivers must remain vigilant about environmental sensitivities and local community safety.

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	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.90 km
11	Turn	Medium	26.74658, 83.25155	30 KM/Hr	9.04 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
12	Turn	Medium	26.74646, 83.25151	30 KM/Hr	9.06 km
13	Turn	High	26.72312, 83.27632	15 KM/Hr	12.74 km
14	Turn	High	26.72324, 83.27640	15 KM/Hr	12.78 km
15	Blind Spot	Blind Spot	26.72125, 83.28059	10 KM/Hr	13.21 km
16	Turn	Medium	26.66804, 83.24781	30 KM/Hr	20.24 km
17	Turn	Medium	26.66699, 83.24879	30 KM/Hr	20.40 km
18	Turn	Medium	26.66414, 83.24872	30 KM/Hr	20.71 km
19	Turn	Medium	26.66335, 83.24775	30 KM/Hr	20.84 km
20	Turn	Medium	26.64078, 83.25517	30 KM/Hr	23.49 km
21	Turn	Medium	26.54495, 83.28839	30 KM/Hr	34.95 km
22	Turn	Medium	26.54485, 83.28844	30 KM/Hr	34.97 km
23	Turn	High	26.45622, 83.25921	15 KM/Hr	45.25 km
24	Blind Spot	Blind Spot	26.45633, 83.25871	10 KM/Hr	45.36 km
25	Turn	High	26.45560, 83.25859	15 KM/Hr	45.46 km
26	Turn	High	26.45582, 83.25713	15 KM/Hr	45.60 km
27	Turn	High	26.45559, 83.25705	15 KM/Hr	45.64 km
28	Turn	High	26.45560, 83.25684	15 KM/Hr	45.66 km
29	Blind Spot	Blind Spot	26.45425, 83.25639	10 KM/Hr	45.77 km

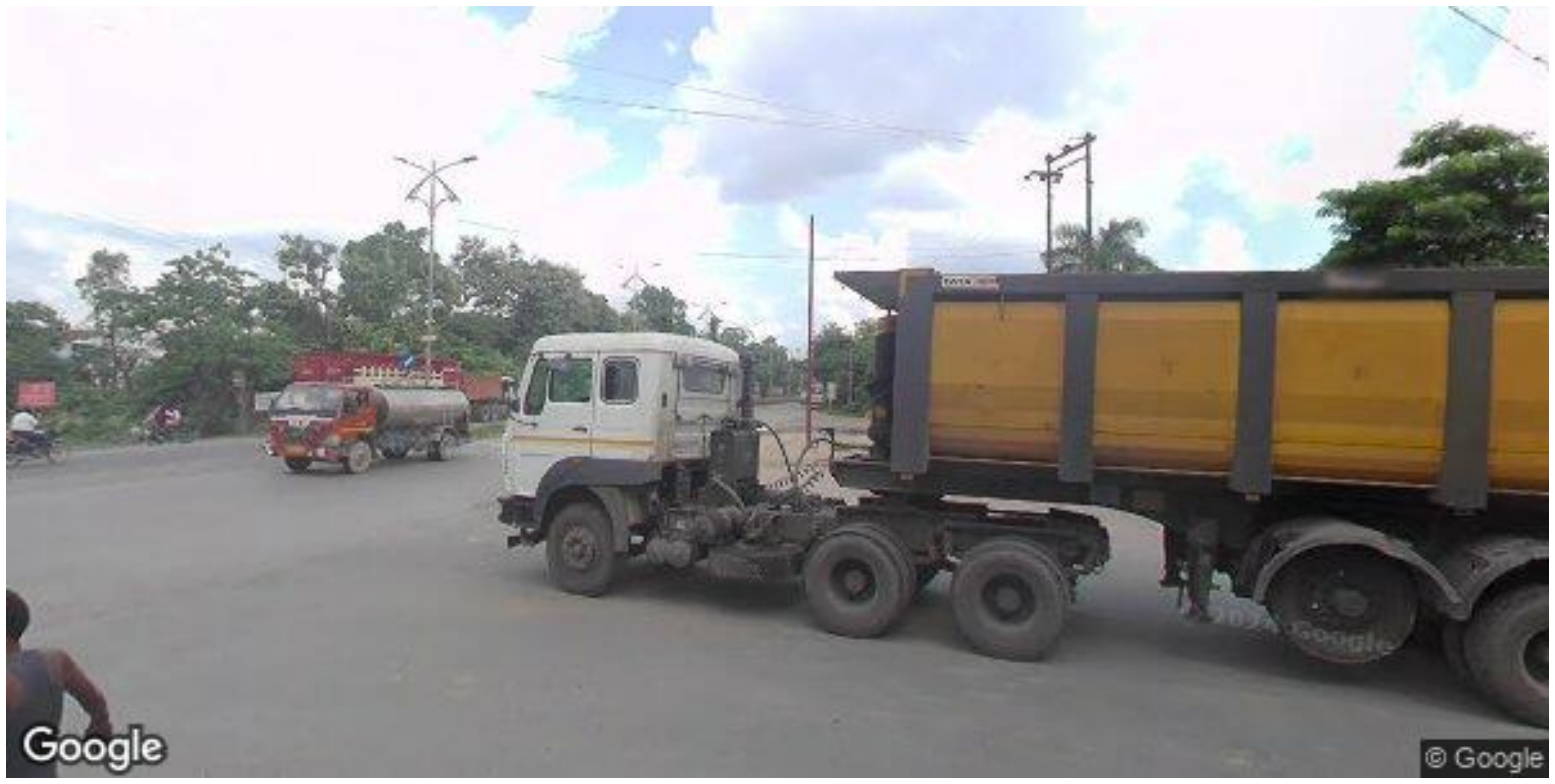
Emergency Locations

Found: 2 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Government. hospital khajni	26.6652993, 83.2497154	30 km/h	Medium	20.52 km
1	hospital	Dr. G.M Ansari Pasu Chikistalay	26.452277, 83.258582	30 km/h	Medium	45.86 km

Crowded Spots

Route Photos of Risky Spots



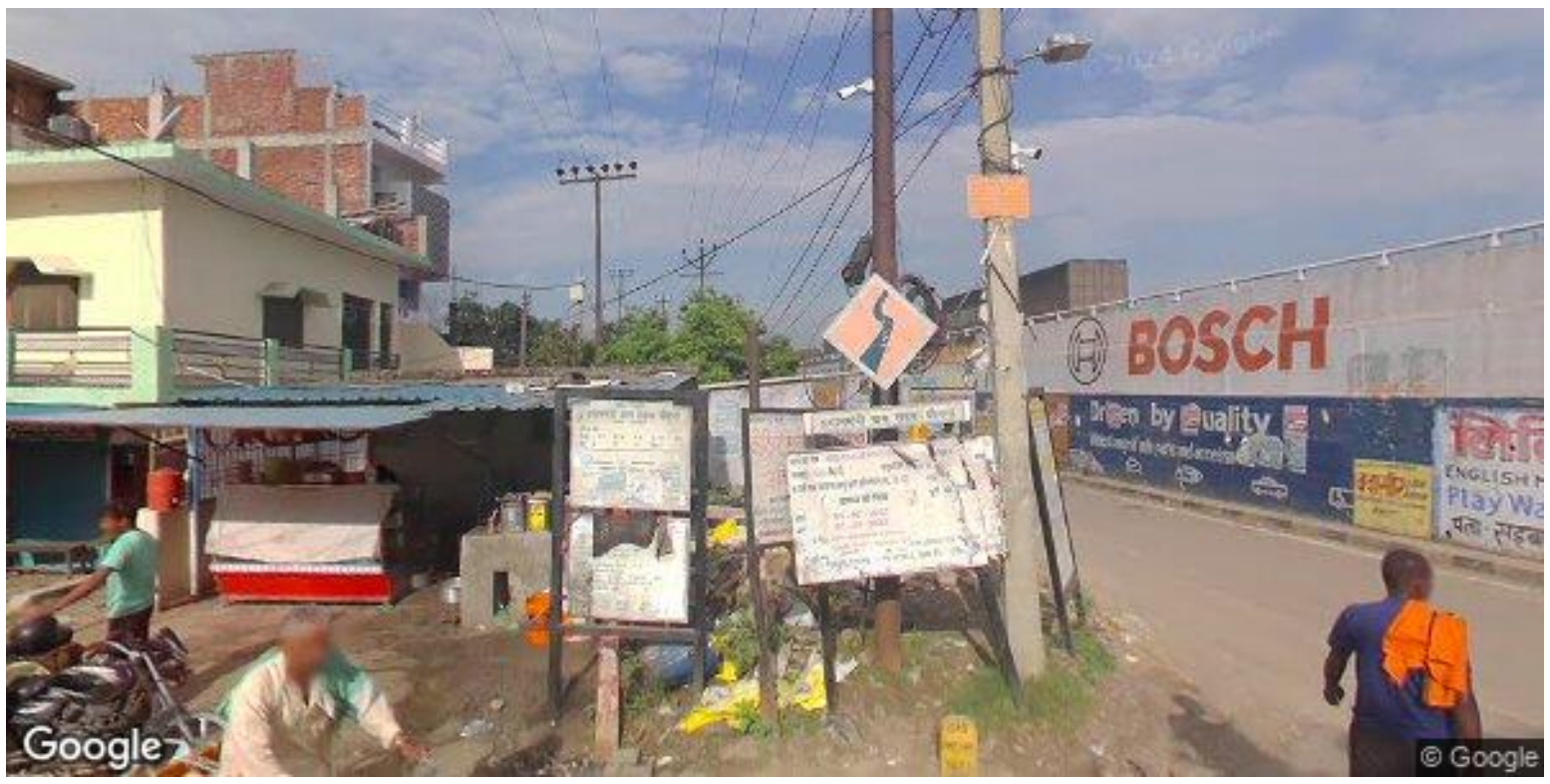
Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.17 km

Coordinates: 26.75126, 83.22476



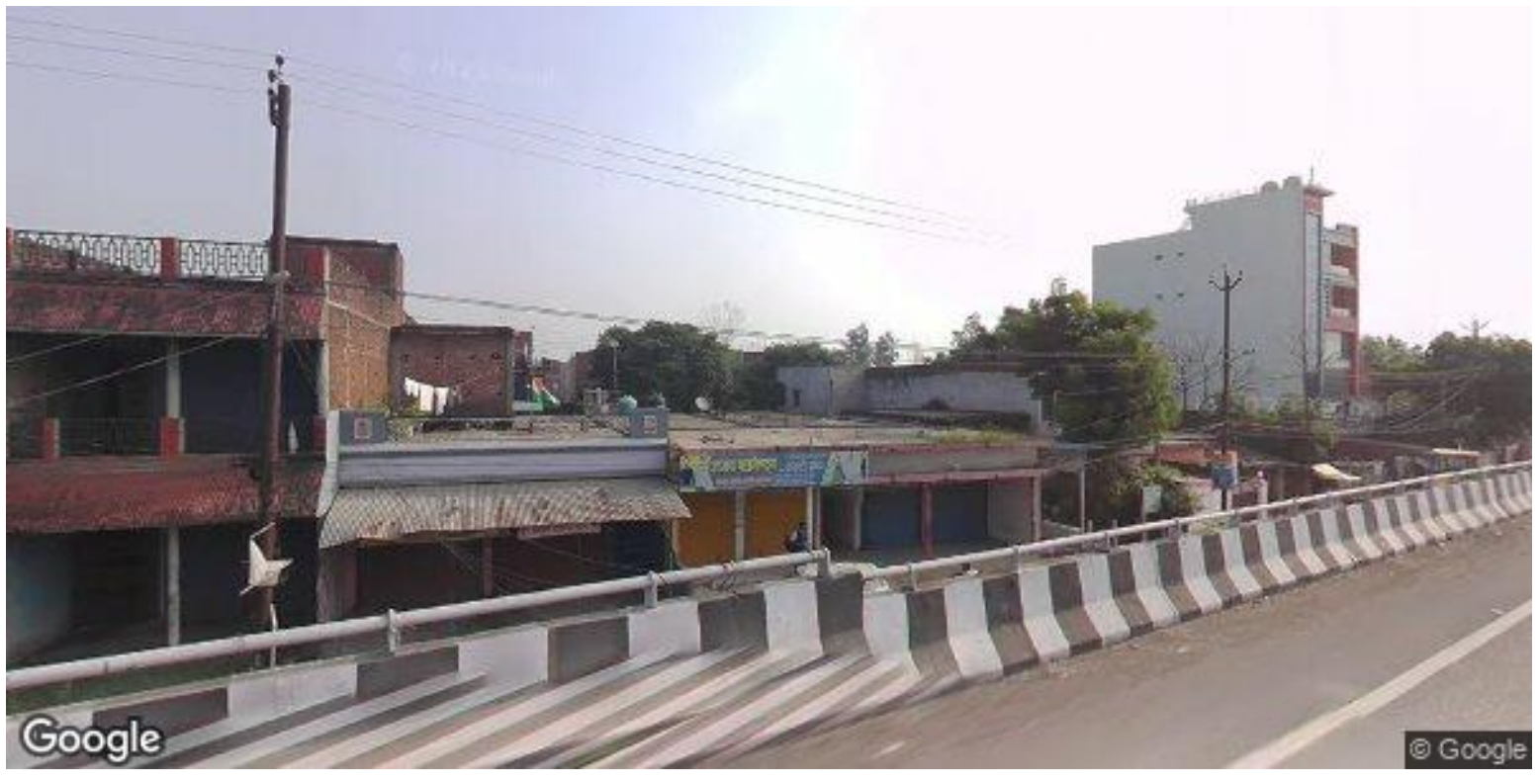
Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.23 km

Coordinates: 26.75353, 83.20457



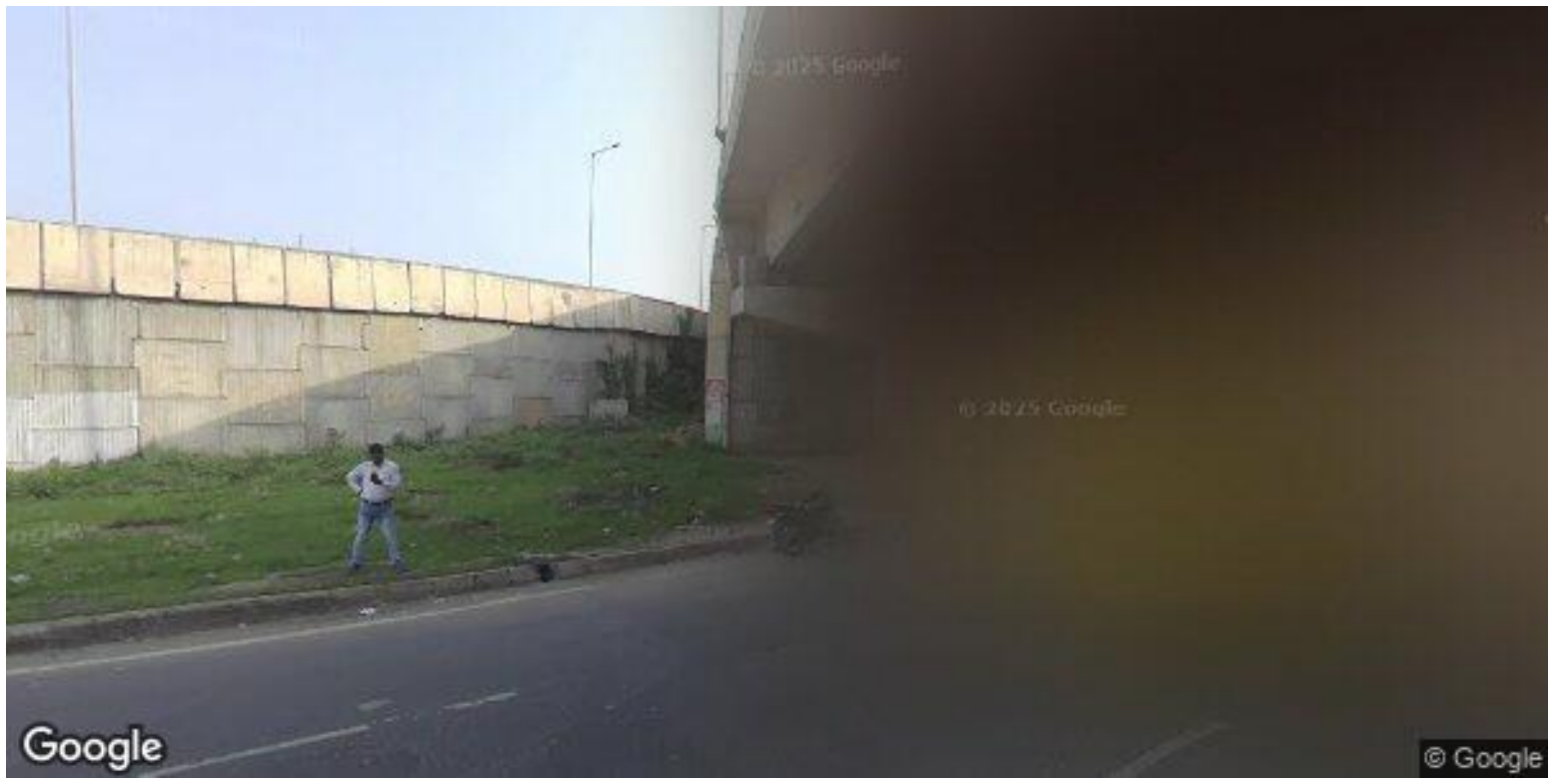
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.28 km

Coordinates: 26.75377, 83.20465



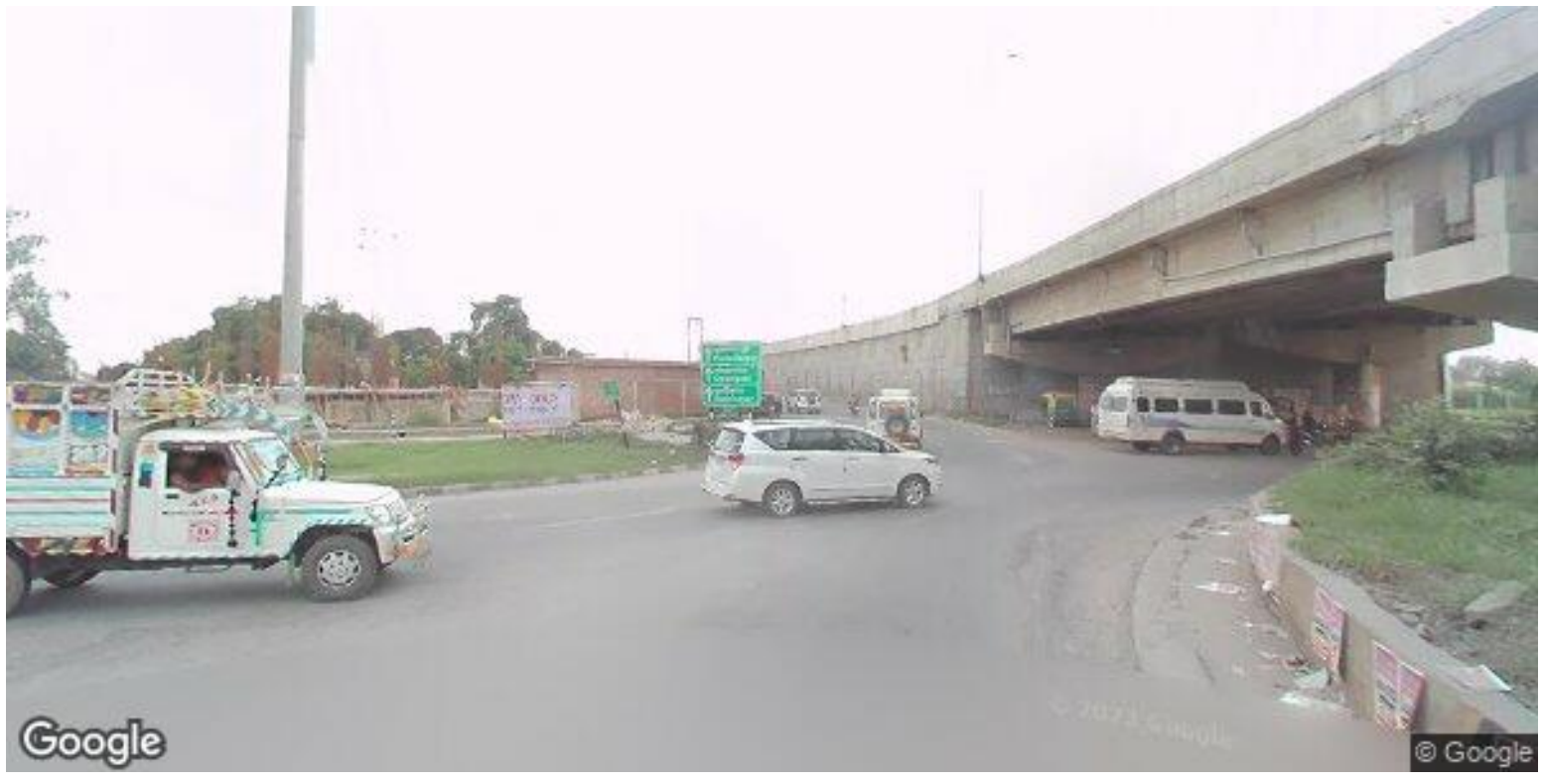
Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.90 km

Coordinates: 26.74681, 83.25111



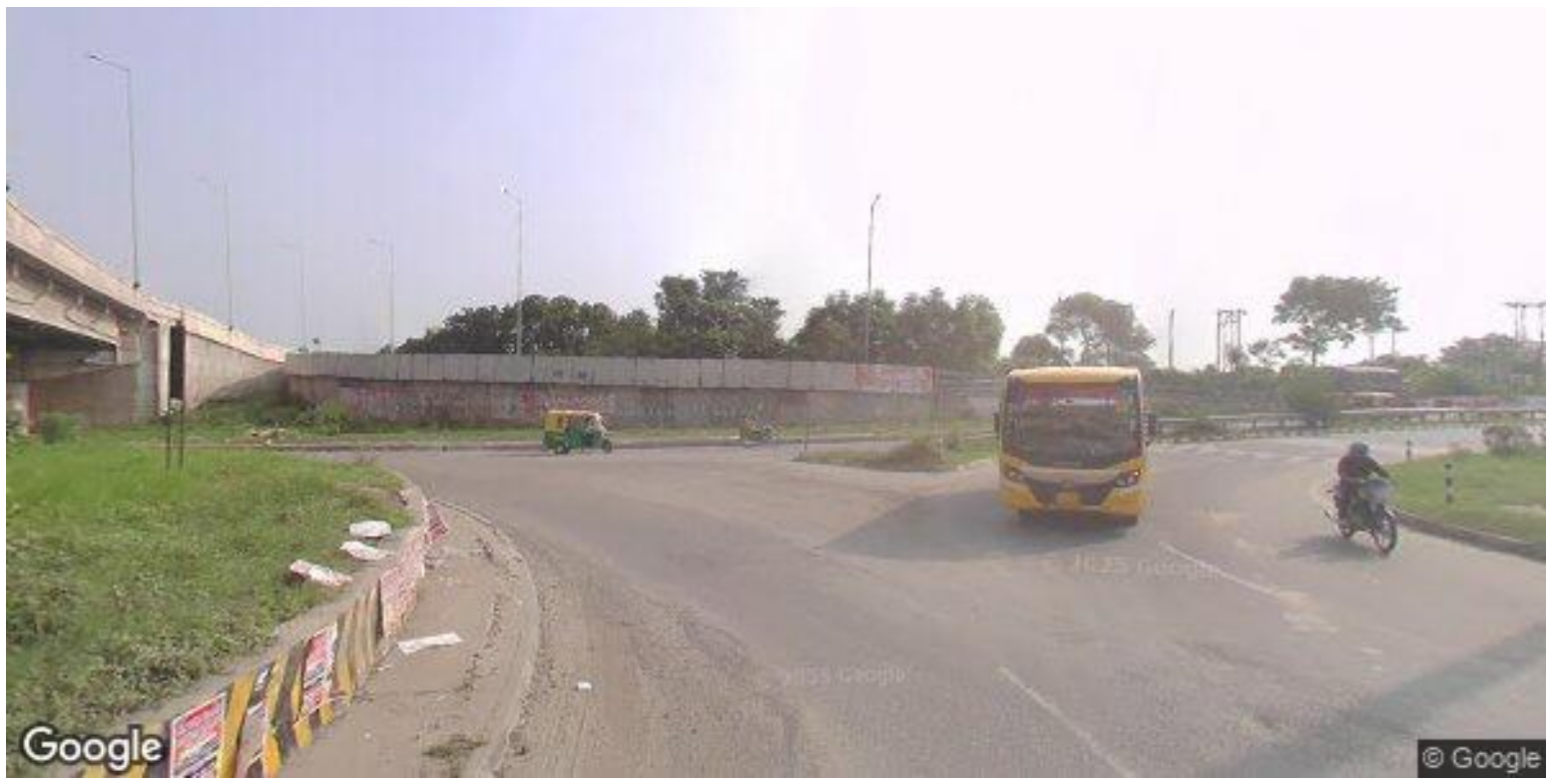
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.04 km

Coordinates: 26.74658, 83.25155



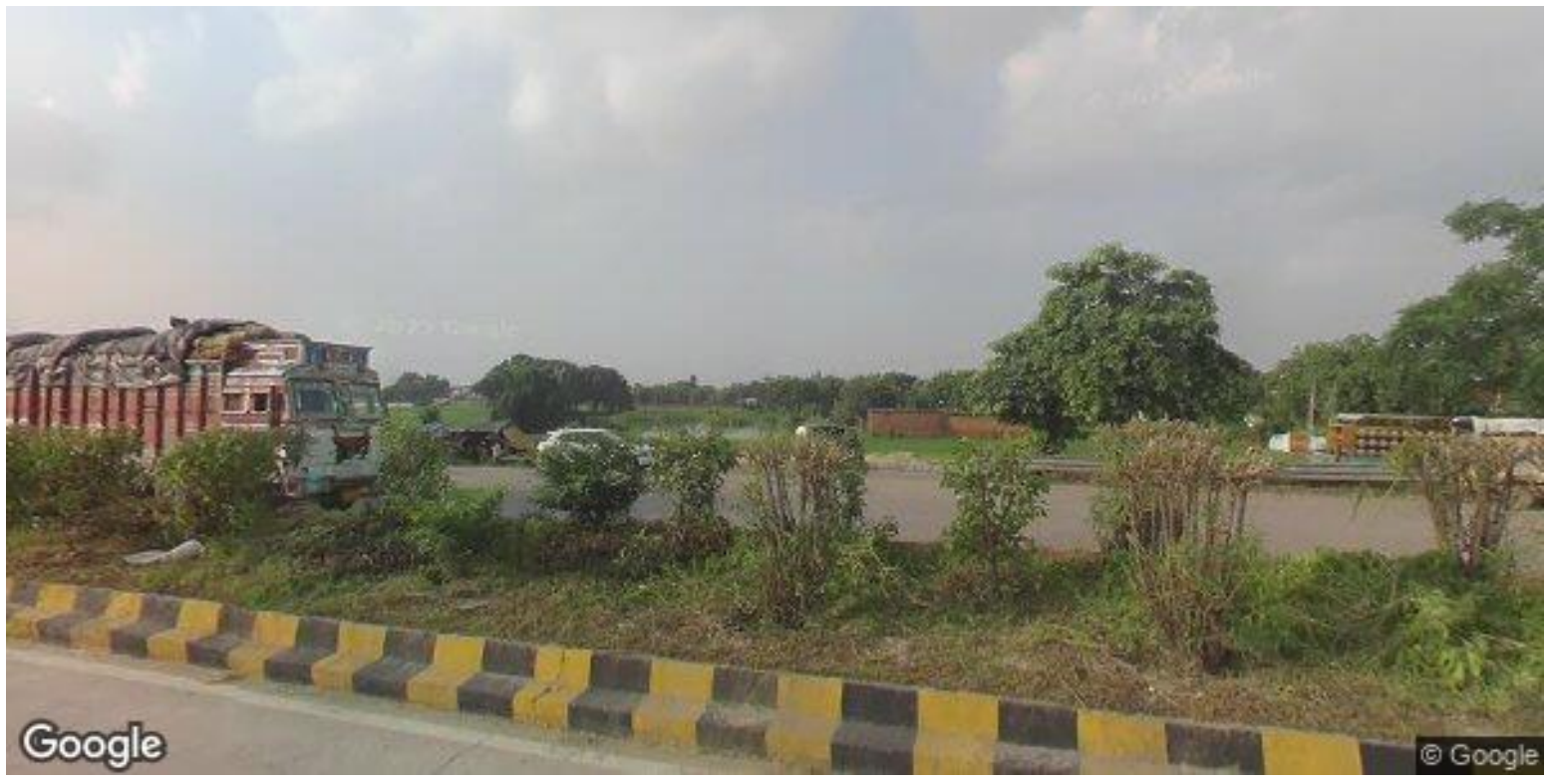
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 9.06 km

Coordinates: 26.74646, 83.25151



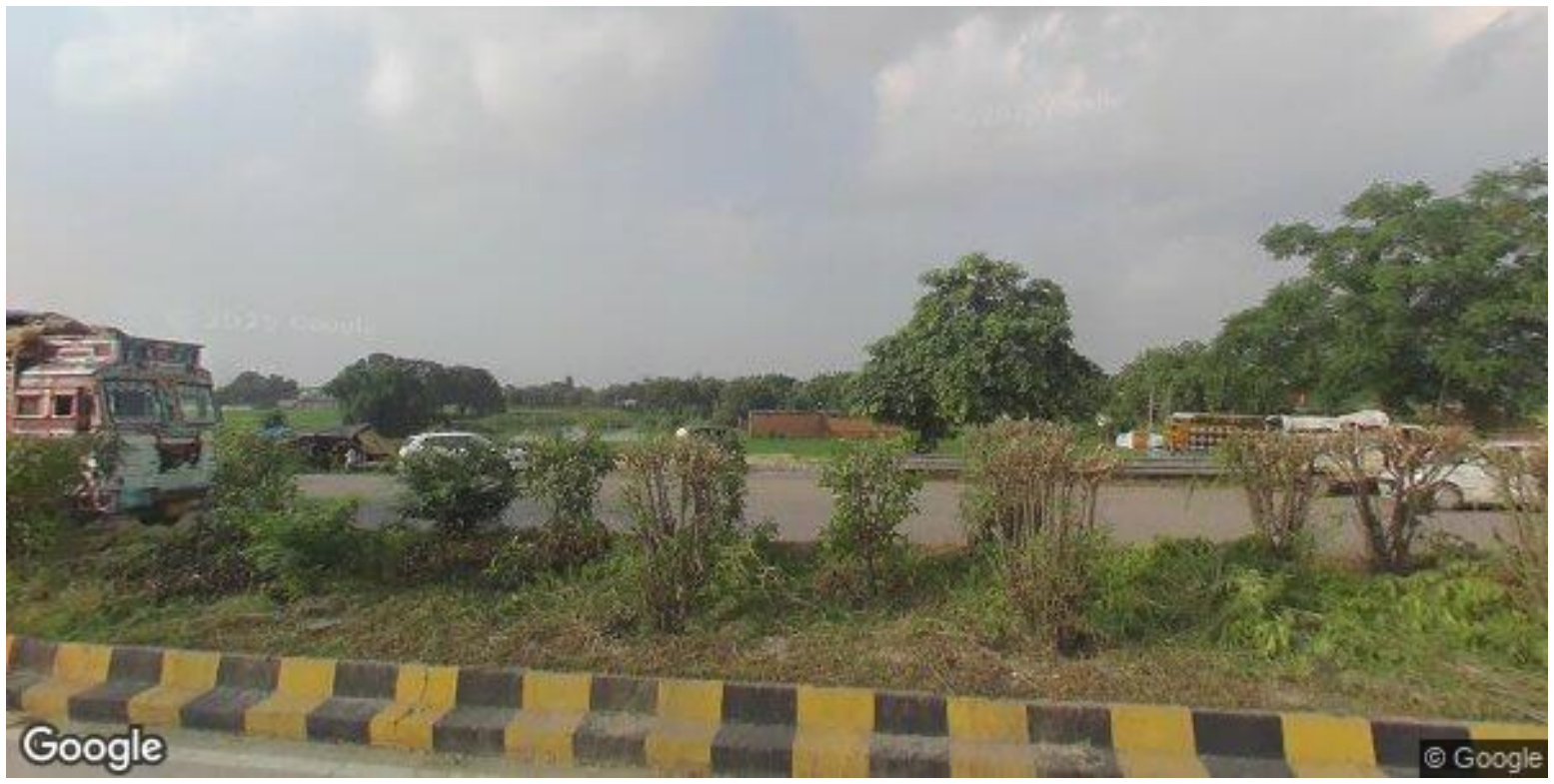
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 12.74 km

Coordinates: 26.72312, 83.27632



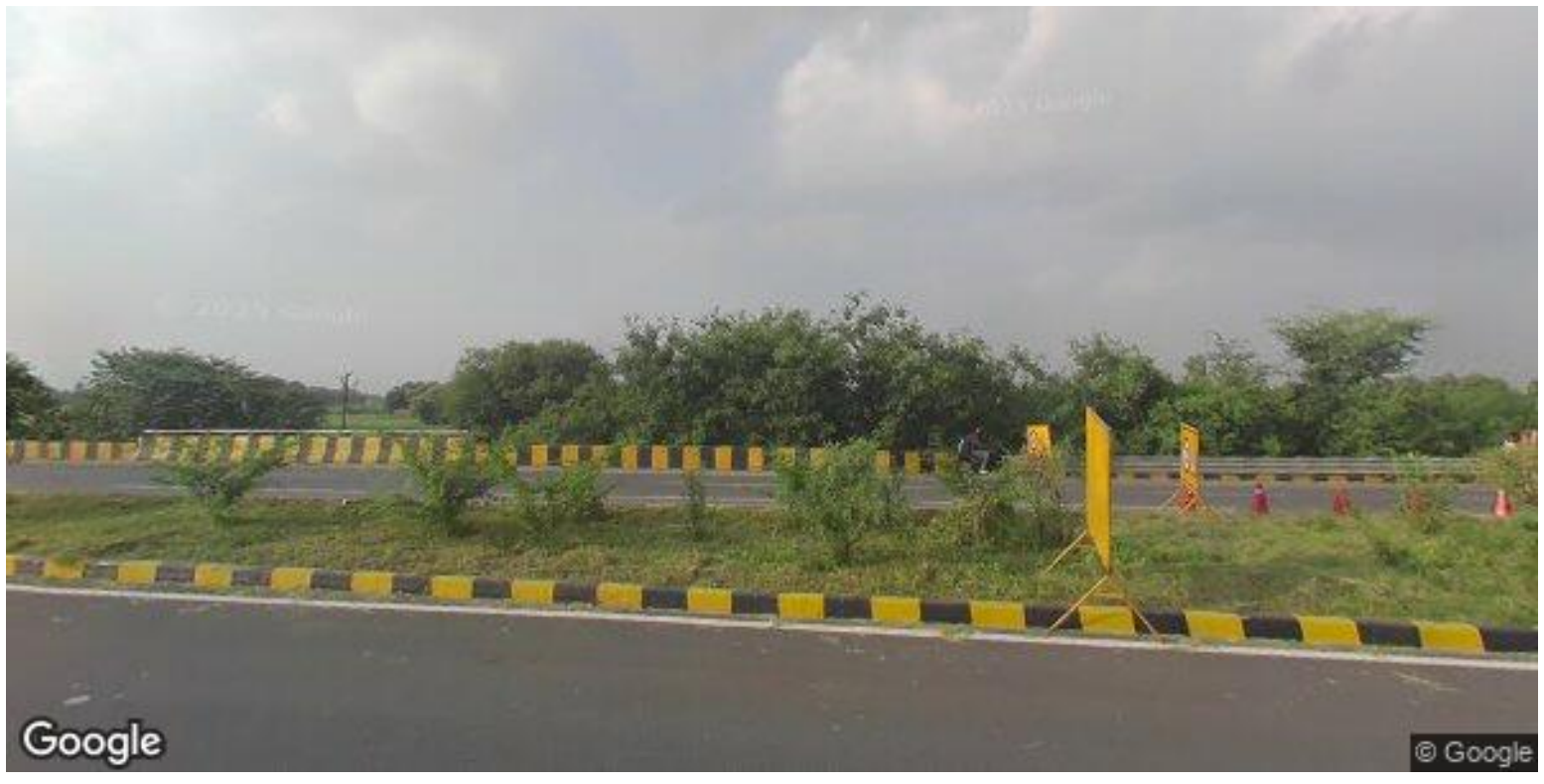
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 12.78 km

Coordinates: 26.72324, 83.27640



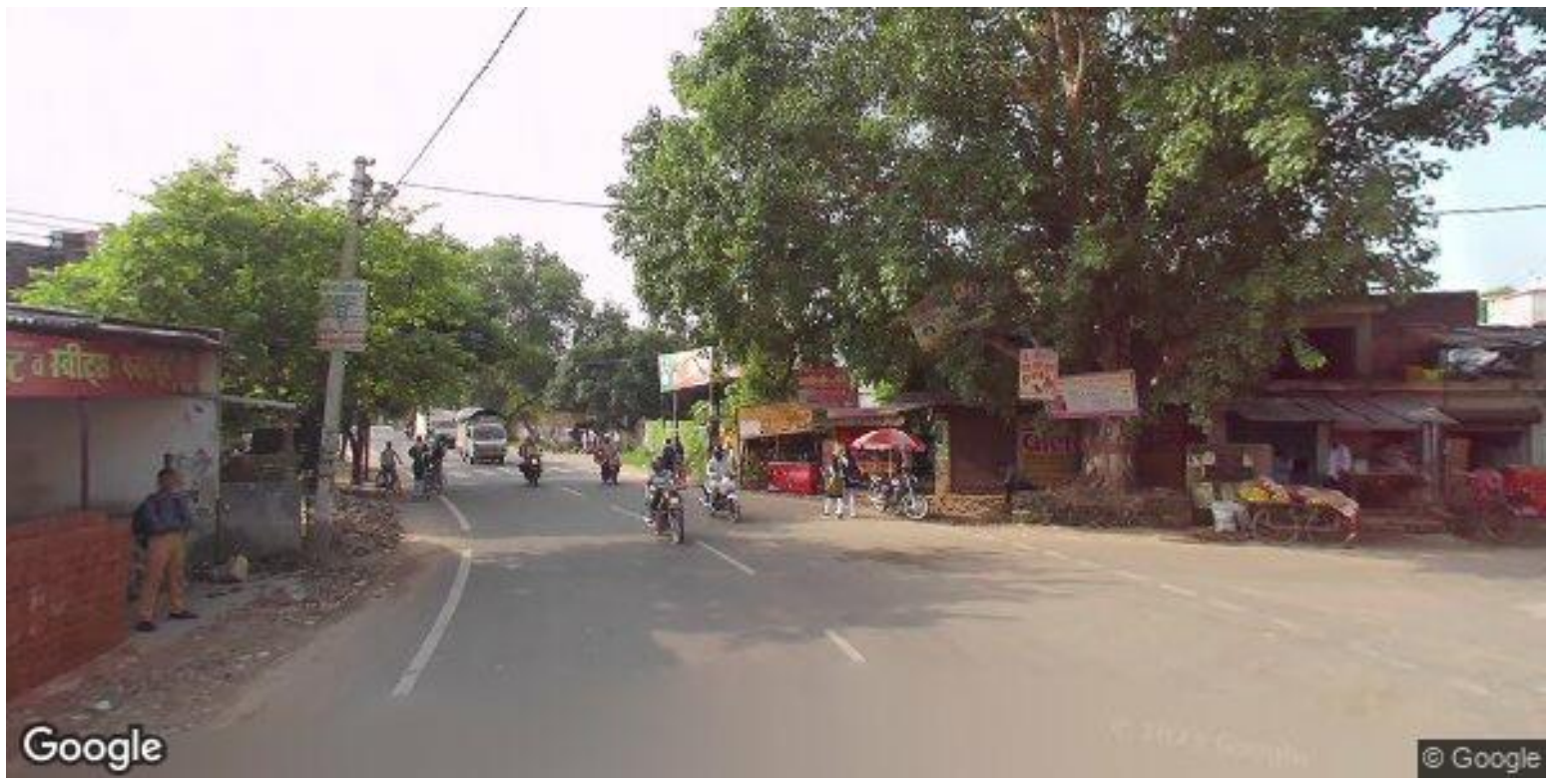
Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 13.21 km

Coordinates: 26.72125, 83.28059



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 20.24 km

Coordinates: 26.66804, 83.24781

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 20.40 km

Coordinates: 26.66699, 83.24879

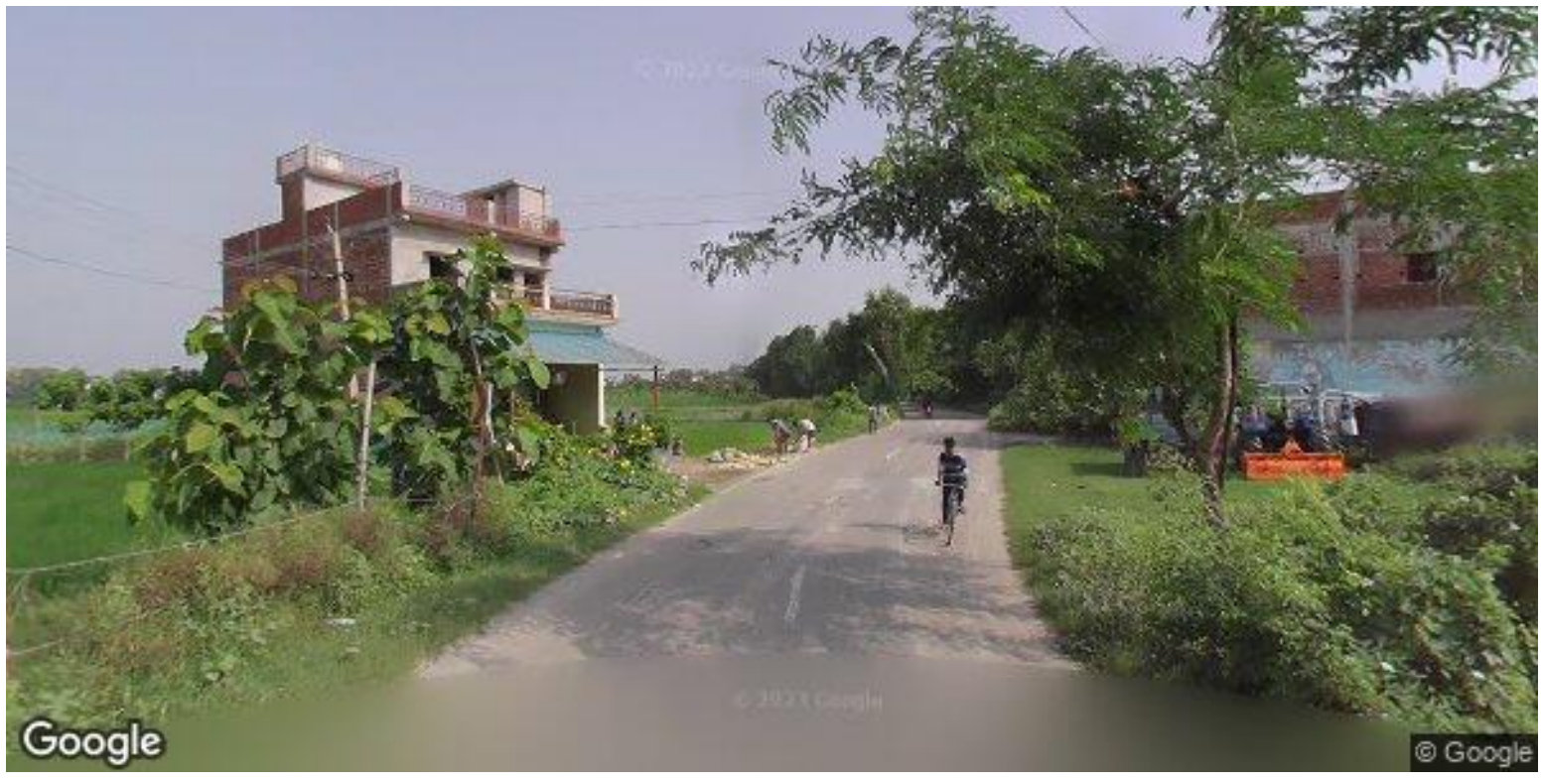
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 20.84 km

Coordinates: 26.66335, 83.24775



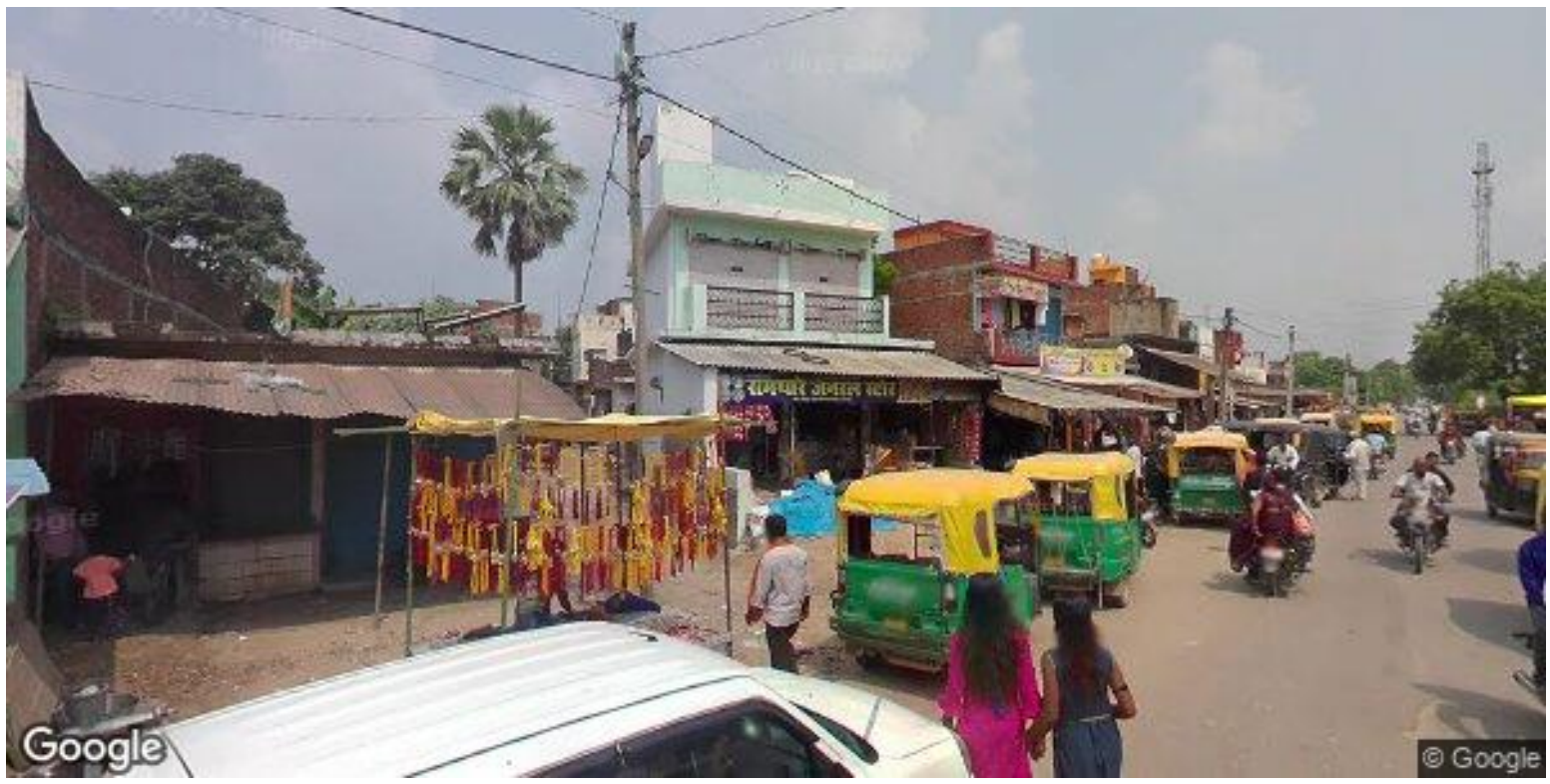
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 23.49 km

Coordinates: 26.64078, 83.25517



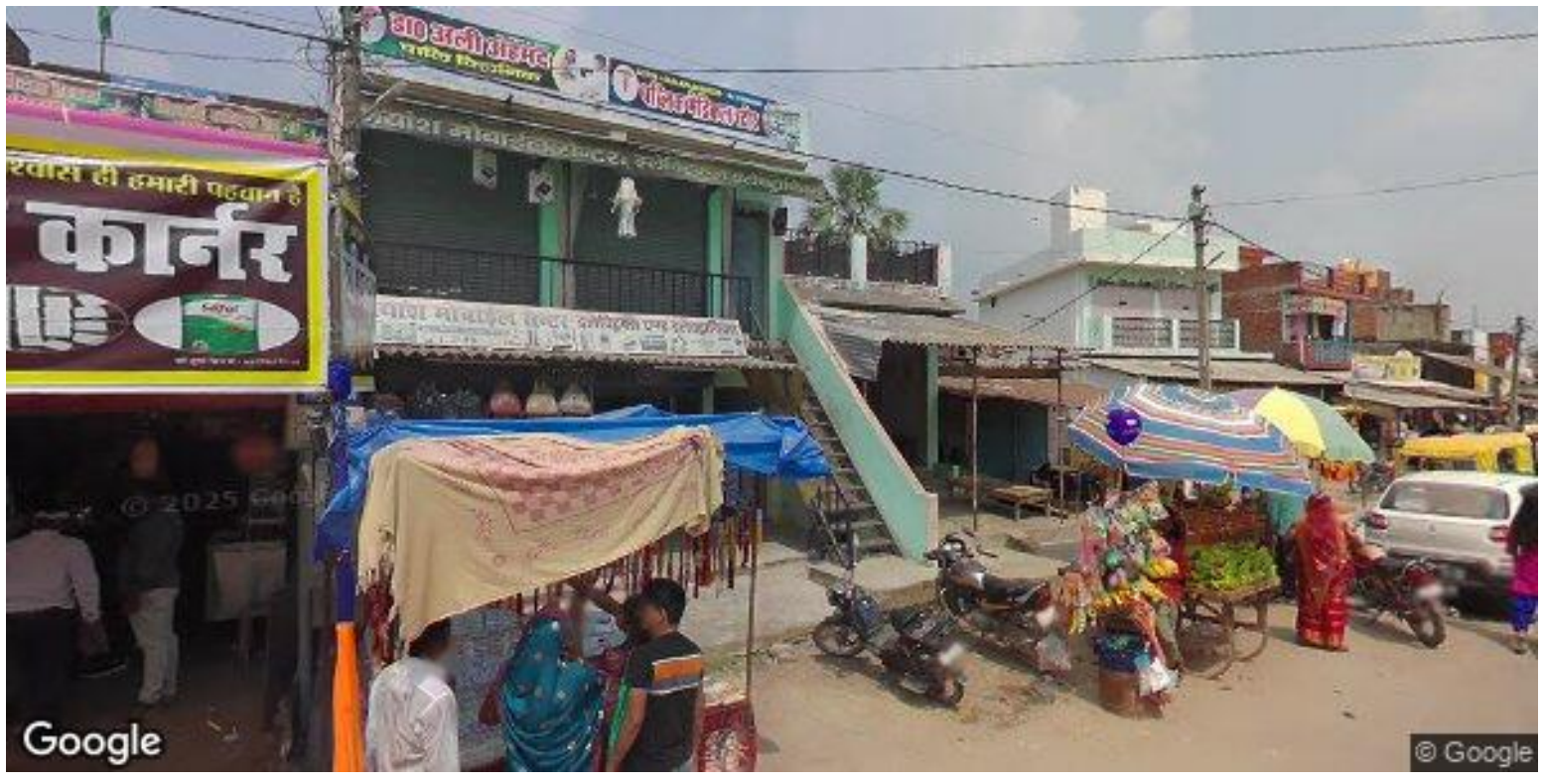
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 34.95 km

Coordinates: 26.54495, 83.28839



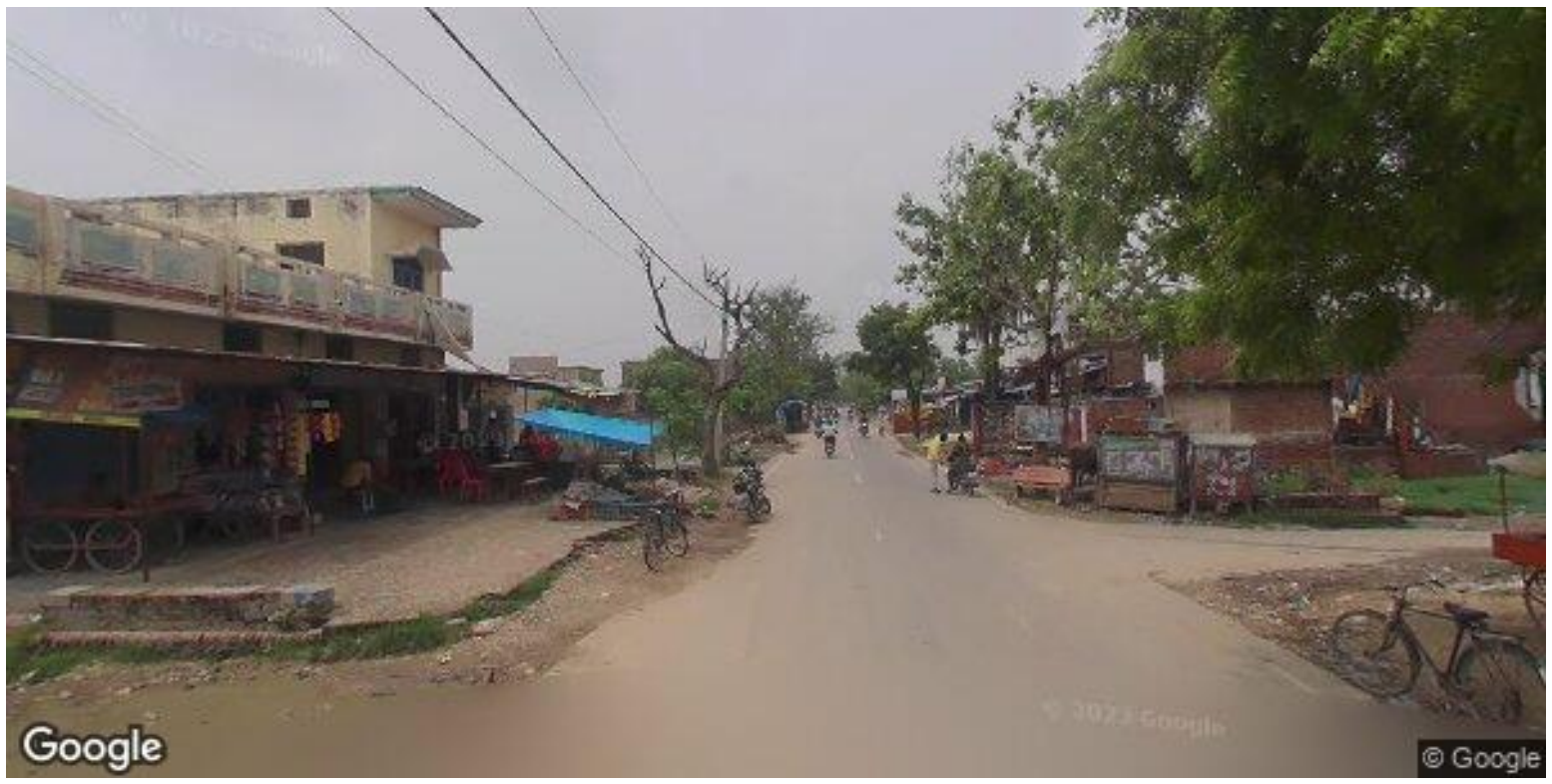
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 34.97 km

Coordinates: 26.54485, 83.28844



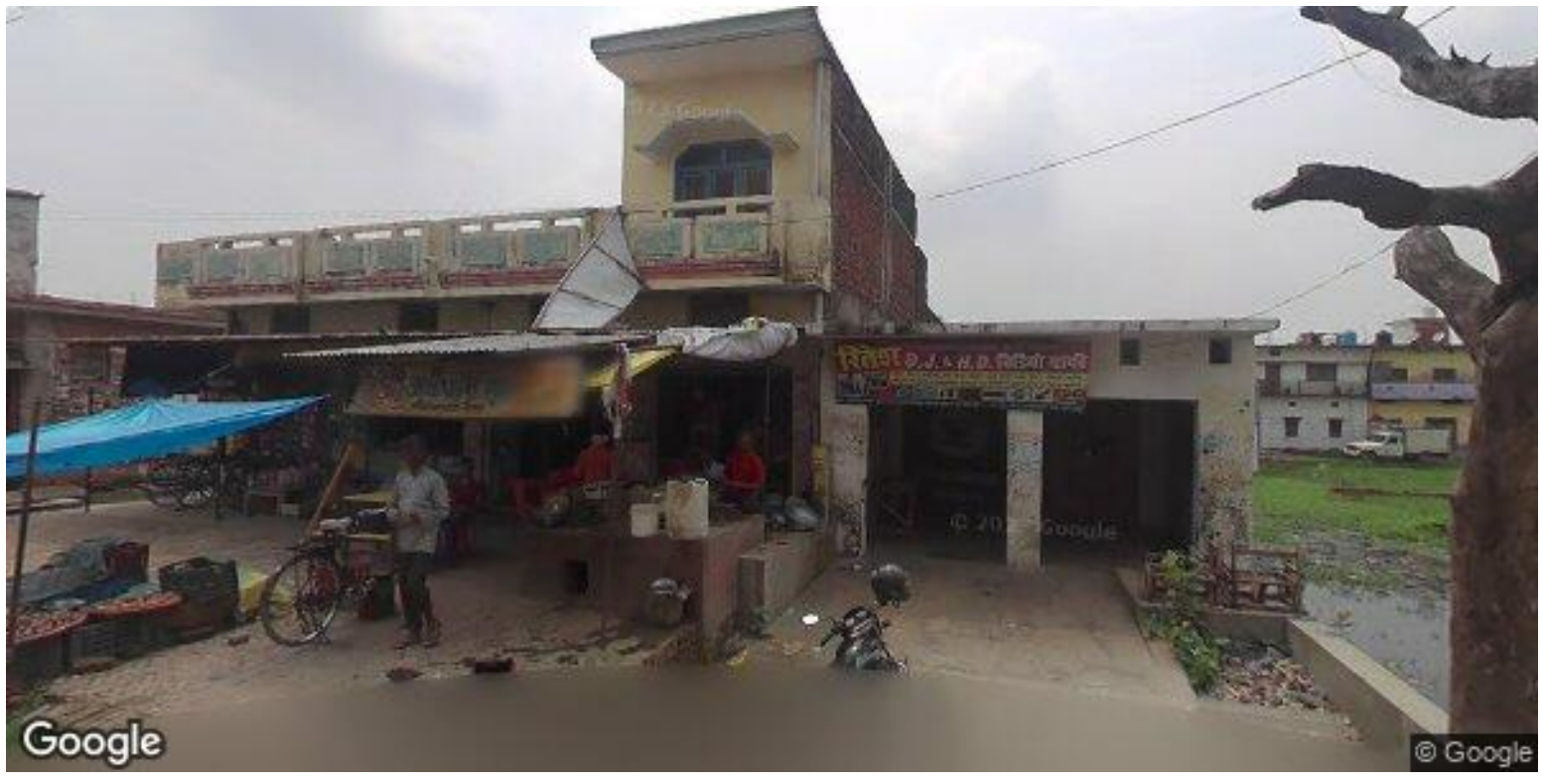
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 45.25 km

Coordinates: 26.45622, 83.25921



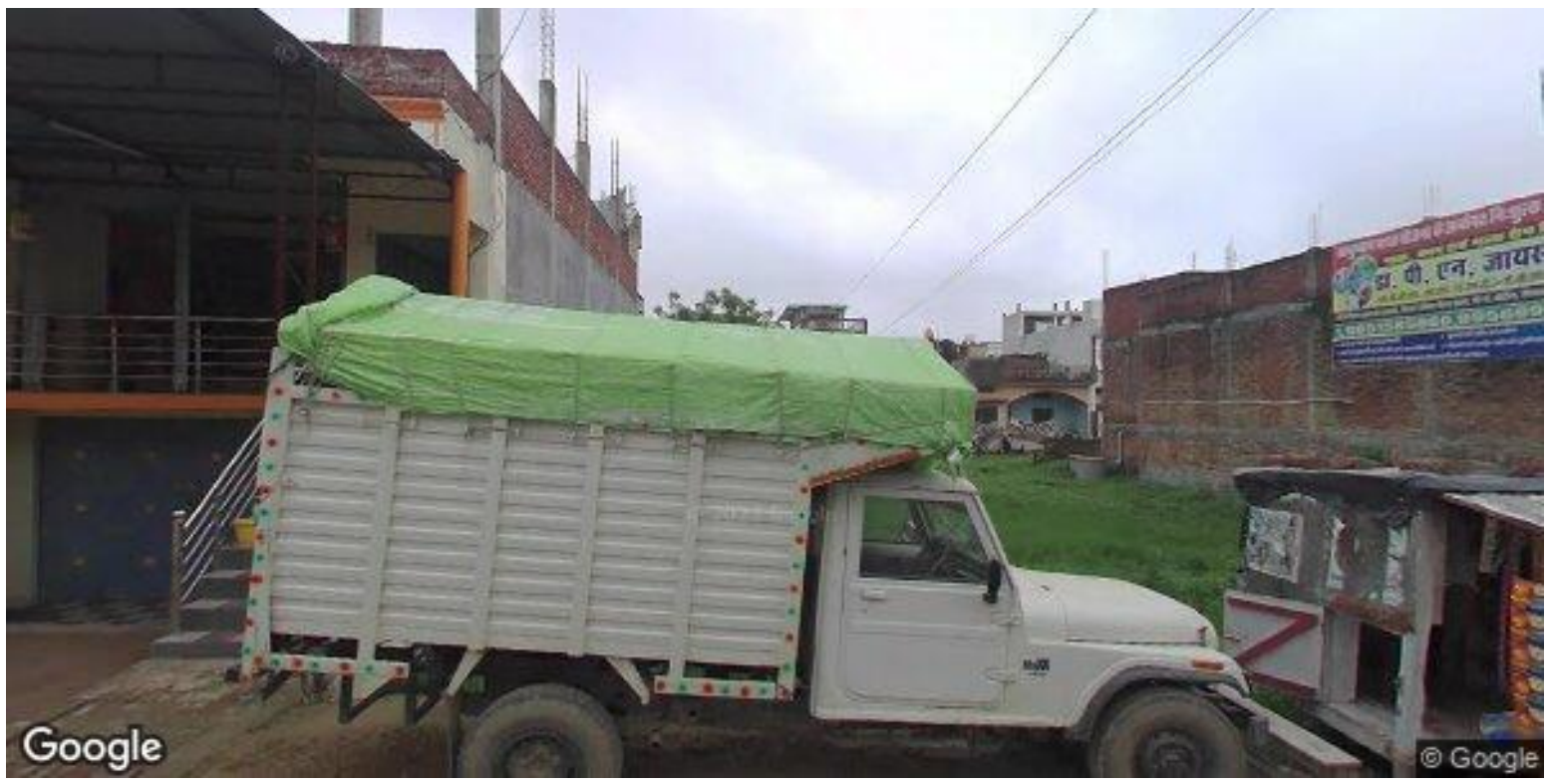
Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 45.36 km

Coordinates: 26.45633, 83.25871



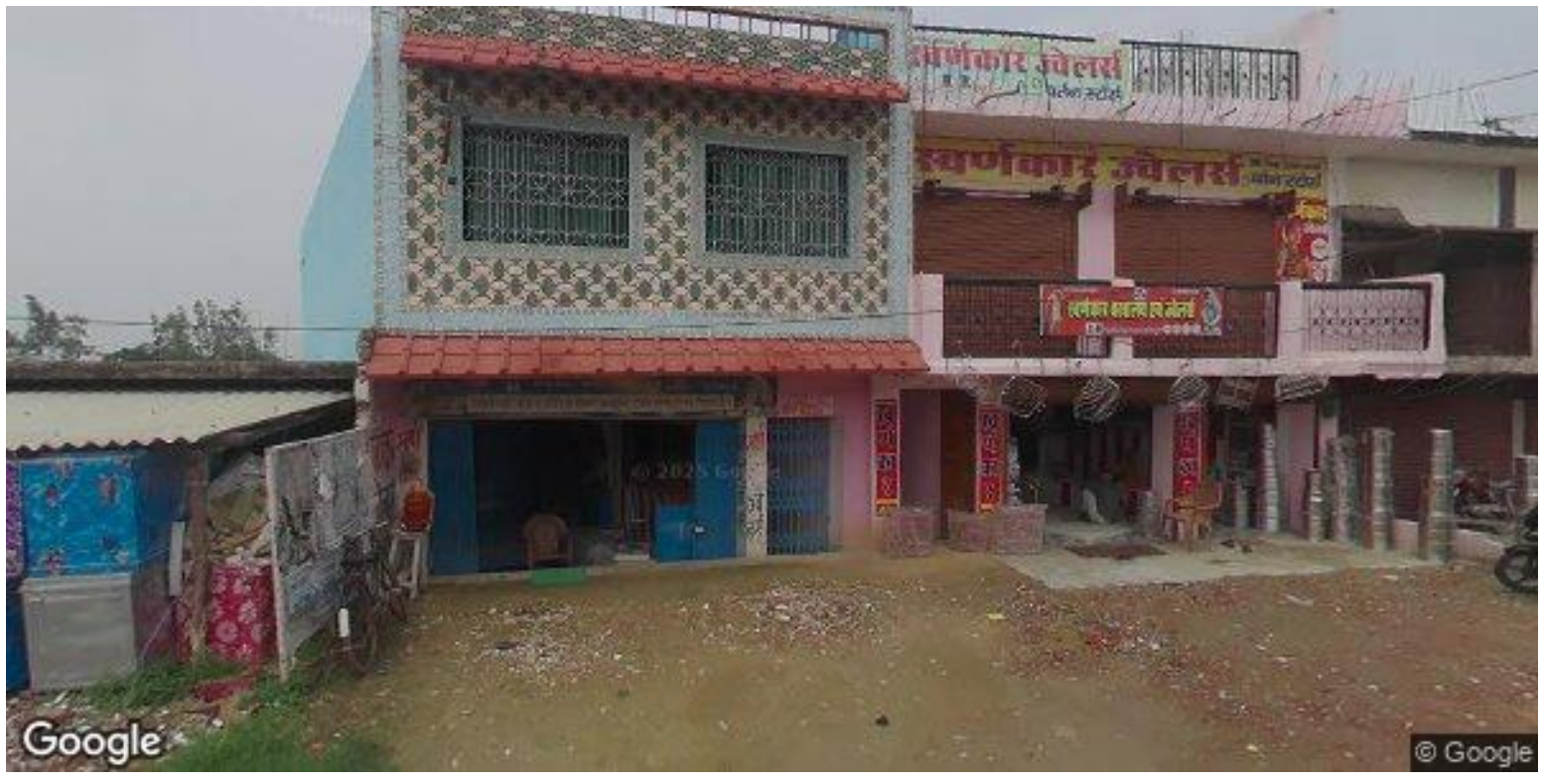
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 45.46 km

Coordinates: 26.45560, 83.25859



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 45.77 km

Coordinates: 26.45425, 83.25639

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