



JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SOHGI BARWA INDANE G

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

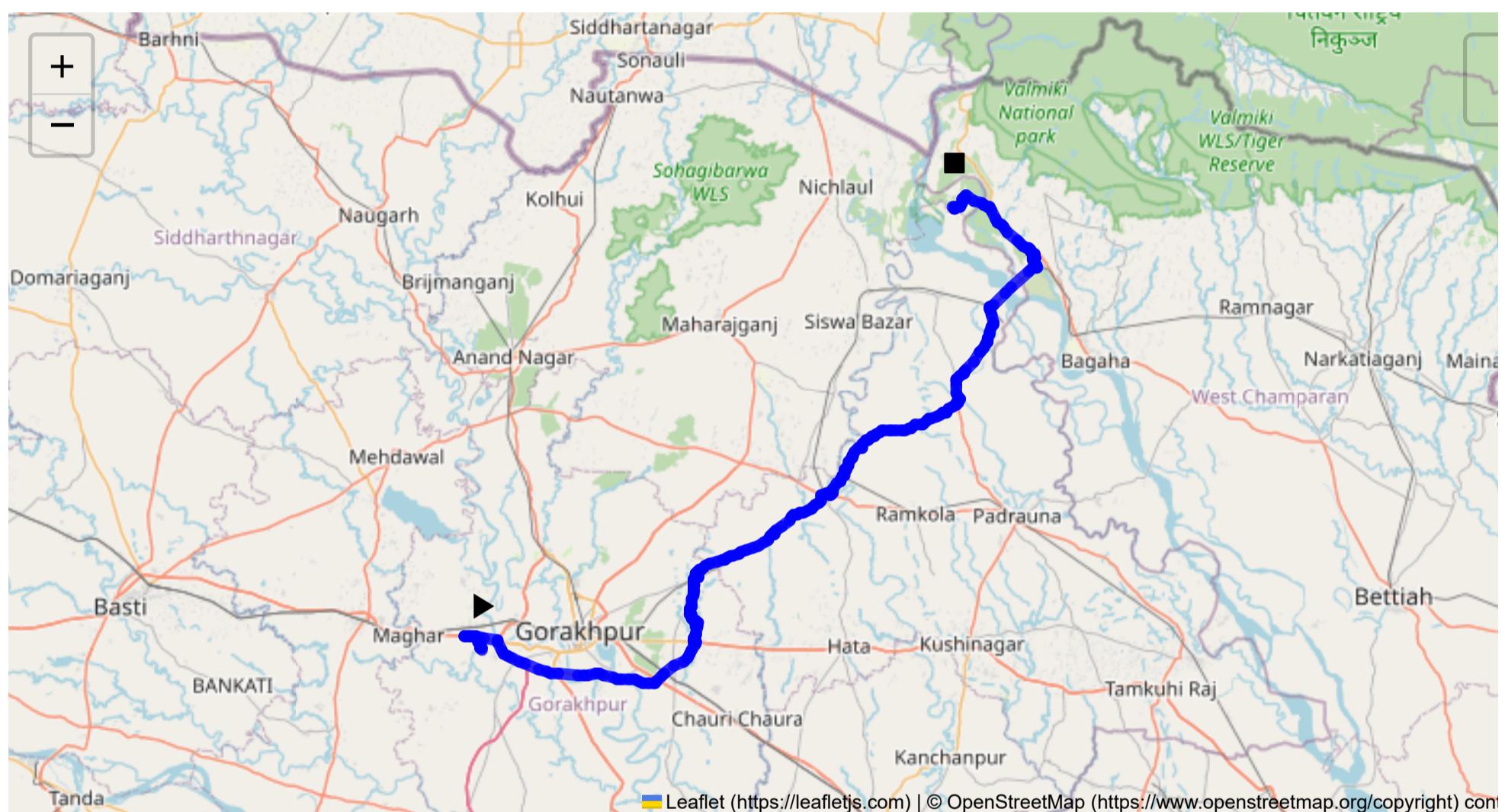
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 141.94 km
Estimated Duration: 3.8 hours
Adjusted Duration (Heavy Vehicle): 4.8 hours
Start: (26.735959, 83.229398)
End: (27.2883, 83.88843)

Welcome to the Journey Risk Management Study

Below is an analysis of the route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa, Uttar Pradesh, India, to 7VQQ+8C5, Sohgi Barwa, Hariharpur, Uttar Pradesh 273304, India, passing through several terrains and notable checkpoints. This report outlines potential hazards and other essential factors affecting travel safety.

1. Overview of the Route Map

The route stretches roughly 142 kilometers, primarily passing through several regional roads and national highways, including local roads in Sahjanwa, Pipraich, Gorakhpur, Kaptanganj, and the NH 727 corridor in Bihar. The terrain is generally flat, typical of the northern plains, with a mixture of urban, semi-urban, and rural landscapes.

2. Typical Weather Conditions and Hazards

- Weather:** The region experiences a subtropical climate with high temperatures, especially from March to June. Monsoon season (July to September) can result in heavy rainfall, leading to waterlogging.
- Hazards:** During monsoons, roads may be slippery or flooded, increasing the risk of accidents. Fog is common in winter (December to February), reducing visibility.

3. Analysis of Traffic Patterns

- Peak Hours:** Traffic is heavier in the morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 7:00 PM), more so around urban centers like Gorakhpur.
- Congestion-prone Areas:** Urban stretches, especially in Gorakhpur, and intersections on NH 727 can be congested.

4. Assessment of Road Quality and Infrastructure

- Road Quality:** Varies significantly. Urban and national highway sections are generally well-maintained; however, rural roads can be narrower with potholes.
- Infrastructure:** Signage might be sparse on local roads. Ensure vehicles are equipped with updated GPS.

5. Suggestions for Alternative Routes

- Emergency Alternatives:** In case of blockages, consider using SH 1 to detour around congestion points. Update local maps beforehand to identify bypasses in smaller towns.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- Regulations:** Vehicles carrying hazardous materials must adhere to speed limits (generally lower than ordinary traffic), and obtain necessary permits. Transport near schools and densely populated areas might be restricted.

7. Overview of Historical Incidents

Local news and reports suggest periodic incidents involving heavy vehicles, mostly due to poor road conditions or driver error in rural areas. Safety measures focusing on driver training are critical.

8. Environmental Considerations and Sensitive Areas

- Areas of Concern:** Gorakhpur has protected zones due to its proximity to wildlife areas. Ensure minimal noise and pollution contributions.
- Natural Reserves:** Avoid deviations into sensitive or restricted areas.

9. Communication Coverage

- Coverage:** Major towns have good network coverage. However, stretches in rural areas may experience limited cellular reception, creating potential dead zones.
- Recommendation:** Equip vehicles with satellite communication devices for reliability.

10. Estimated Emergency Response Times

- Urban Areas:** Emergency services in urban areas like Gorakhpur are relatively prompt, with typical response times of 15-30 minutes.
- Rural and Roadside:** Response times can extend beyond an hour, necessitating self-reliance until assistance arrives.

12. Overall Summary of Risk Assessment

The route poses moderate risk due to weather conditions, road quality variations, and potential for congestion. While communication and emergency response are reliable in urban settings, improvement is necessary for rural sections. Caution is advised during monsoon and winter months when visibility and road conditions can be challenging.

Recommendations:

- Enhance driver training focusing on emergency protocols.
- Schedule journeys during non-peak hours to avoid congestion.
- Regularly inspect vehicle maintenance, especially braking and navigation systems.
- Keep the vehicle equipped with first-aid kits, emergency contacts, and alternative communication equipment.

This analysis aims to enhance the safety and efficiency of transporting hazardous materials, ensuring compliance with local regulations and optimal preparation for potential challenges 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	0.08 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73812, 83.22630	15 KM/Hr	0.32 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.13 km
4	Turn	High	26.74679, 83.22391	15 KM/Hr	1.48 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.12 km
6	Blind Spot	Blind Spot	26.75377, 83.20465	10 KM/Hr	4.14 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	7.88 km
7	Turn	Medium	26.74648, 83.25152	30 KM/Hr	8.91 km
8	Turn	High	26.74492, 83.52994	15 KM/Hr	40.87 km
9	Turn	High	26.74563, 83.52663	15 KM/Hr	41.12 km
10	Turn	Medium	26.74626, 83.52644	30 KM/Hr	41.28 km
11	Turn	High	26.75477, 83.52879	15 KM/Hr	42.17 km
12	Turn	High	26.75531, 83.52815	15 KM/Hr	42.34 km
13	Turn	High	26.76484, 83.53092	15 KM/Hr	42.93 km
14	Turn	High	26.76555, 83.52874	15 KM/Hr	43.59 km
15	Turn	Medium	26.76806, 83.52899	30 KM/Hr	43.85 km
16	Turn	High	26.77025, 83.53092	15 KM/Hr	44.14 km
17	Turn	Medium	26.77092, 83.53079	30 KM/Hr	44.34 km
18	Turn	Medium	26.77674, 83.52259	30 KM/Hr	45.34 km
19	Turn	Medium	26.77956, 83.52253	30 KM/Hr	45.61 km
20	Turn	High	26.78380, 83.51967	15 KM/Hr	46.25 km
21	Turn	Medium	26.78955, 83.52223	30 KM/Hr	46.84 km
22	Turn	High	26.81725, 83.52605	15 KM/Hr	50.04 km
23	Turn	High	26.81719, 83.52675	15 KM/Hr	50.17 km
24	Turn	Medium	26.82026, 83.52742	30 KM/Hr	50.38 km
25	Turn	High	26.82475, 83.52603	15 KM/Hr	51.05 km
26	Blind Spot	Blind Spot	26.82741, 83.53262	10 KM/Hr	51.79 km
27	Turn	Medium	26.82752, 83.53199	30 KM/Hr	51.85 km
28	Turn	High	26.83177, 83.53029	15 KM/Hr	52.34 km
29	Turn	Medium	26.85262, 83.57765	30 KM/Hr	57.53 km
30	Turn	Medium	26.85654, 83.59077	30 KM/Hr	59.04 km
31	Turn	Medium	26.88113, 83.63970	30 KM/Hr	64.72 km
32	Turn	Medium	26.90734, 83.68072	30 KM/Hr	69.86 km
33	Turn	Medium	26.91282, 83.69179	30 KM/Hr	71.13 km
34	Turn	Medium	26.91446, 83.69312	30 KM/Hr	71.35 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
35	Turn	High	26.92133, 83.70549	15 KM/Hr	72.74 km
36	Turn	High	26.92858, 83.70590	15 KM/Hr	73.32 km
37	Turn	Medium	26.93113, 83.71422	30 KM/Hr	74.51 km
38	Turn	High	26.92985, 83.71941	15 KM/Hr	74.98 km
39	Turn	Medium	26.95449, 83.73692	30 KM/Hr	78.30 km
40	Turn	Medium	26.98312, 83.75108	30 KM/Hr	81.71 km
41	Turn	High	26.98785, 83.76164	15 KM/Hr	82.92 km
42	Turn	Medium	26.99824, 83.76815	30 KM/Hr	84.38 km
43	Turn	Medium	27.00446, 83.78254	30 KM/Hr	85.96 km
44	Turn	Medium	27.01093, 83.79044	30 KM/Hr	86.90 km
45	Turn	Medium	27.00903, 83.79984	30 KM/Hr	87.75 km
46	Turn	Medium	27.01651, 83.83791	30 KM/Hr	91.67 km
47	Turn	Medium	27.03301, 83.87631	30 KM/Hr	96.39 km
48	Turn	Medium	27.03277, 83.88002	30 KM/Hr	96.69 km
49	Turn	Medium	27.04359, 83.89550	30 KM/Hr	98.67 km
50	Turn	High	27.04344, 83.89802	15 KM/Hr	98.92 km
51	Turn	Medium	27.04911, 83.89859	30 KM/Hr	99.51 km
52	Turn	Medium	27.07390, 83.89483	30 KM/Hr	102.37 km
53	Turn	High	27.08128, 83.90545	15 KM/Hr	103.54 km
54	Turn	Medium	27.10696, 83.92800	30 KM/Hr	106.74 km
55	Turn	Medium	27.10829, 83.92832	30 KM/Hr	107.58 km
56	Turn	Medium	27.14282, 83.94579	30 KM/Hr	111.80 km
57	Turn	High	27.16327, 83.94024	15 KM/Hr	114.25 km
58	Blind Spot	Blind Spot	27.21417, 84.00678	10 KM/Hr	123.01 km
59	Turn	Medium	27.21490, 84.00667	30 KM/Hr	123.07 km
60	Turn	Medium	27.21590, 84.00554	30 KM/Hr	123.19 km
61	Blind Spot	Blind Spot	27.22454, 84.00174	10 KM/Hr	124.23 km
62	Turn	Medium	27.22476, 84.00315	30 KM/Hr	124.43 km
63	Turn	Medium	27.22596, 84.00416	30 KM/Hr	124.53 km
64	Turn	High	27.22955, 84.00425	15 KM/Hr	124.92 km
65	Turn	Medium	27.23061, 84.00055	30 KM/Hr	125.34 km
66	Turn	Medium	27.28889, 83.93882	30 KM/Hr	134.38 km
67	Turn	High	27.30228, 83.90695	15 KM/Hr	137.28 km
68	Turn	High	27.29812, 83.90434	15 KM/Hr	138.42 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
69	Turn	High	27.29825, 83.90368	15 KM/Hr	138.51 km
70	Turn	High	27.28945, 83.89946	15 KM/Hr	139.30 km
71	Turn	High	27.28965, 83.89303	15 KM/Hr	140.14 km
72	Turn	High	27.28685, 83.89210	15 KM/Hr	140.51 km
73	Turn	Medium	27.28697, 83.89034	30 KM/Hr	140.66 km

Route Photos of Risky Spots



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.12 km

Coordinates: 26.75126, 83.22476



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.14 km

Coordinates: 26.75377, 83.20465



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 7.88 km

Coordinates: 26.74681, 83.25111



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 8.91 km

Coordinates: 26.74648, 83.25152



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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 40.87 km****Coordinates: 26.74492, 83.52994**

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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 41.12 km****Coordinates: 26.74563, 83.52663**



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 41.28 km**Coordinates:** 26.74626, 83.52644

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 42.17 km**Coordinates:** 26.75477, 83.52879



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 42.34 km

Coordinates: 26.75531, 83.52815



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 42.93 km

Coordinates: 26.76484, 83.53092



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 43.85 km
Coordinates: 26.76806, 83.52899



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 44.14 km
Coordinates: 26.77025, 83.53092



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 44.34 km

Coordinates: 26.77092, 83.53079



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 45.34 km

Coordinates: 26.77674, 83.52259



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 45.61 km**Coordinates:** 26.77956, 83.52253

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 46.25 km**Coordinates:** 26.78380, 83.51967



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 46.84 km**Coordinates:** 26.78955, 83.52223

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 50.04 km**Coordinates:** 26.81725, 83.52605



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 50.17 km

Coordinates: 26.81719, 83.52675



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.38 km

Coordinates: 26.82026, 83.52742



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 51.05 km

Coordinates: 26.82475, 83.52603



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 51.79 km

Coordinates: 26.82741, 83.53262



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 51.85 km**Coordinates:** 26.82752, 83.53199

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 52.34 km**Coordinates:** 26.83177, 83.53029



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 69.86 km

Coordinates: 26.90734, 83.68072



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.13 km

Coordinates: 26.91282, 83.69179



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 71.35 km**Coordinates:** 26.91446, 83.69312

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 72.74 km**Coordinates:** 26.92133, 83.70549



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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 73.32 km****Coordinates: 26.92858, 83.70590**

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Risk Type: Turn**Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 78.30 km****Coordinates: 26.95449, 83.73692**



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 82.92 km

Coordinates: 26.98785, 83.76164



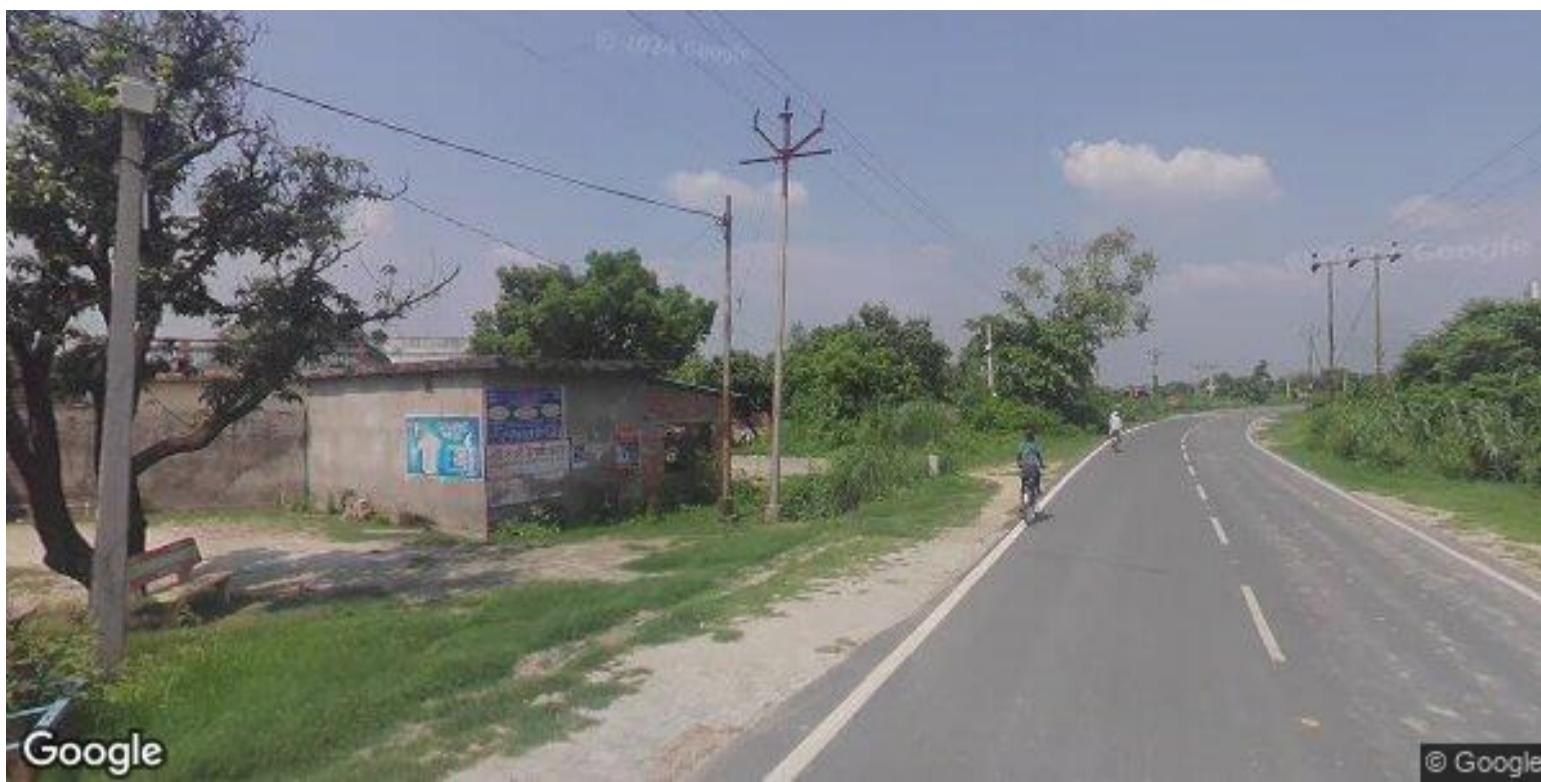
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 85.96 km

Coordinates: 27.00446, 83.78254



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 86.90 km**Coordinates:** 27.01093, 83.79044

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 87.75 km**Coordinates:** 27.00903, 83.79984



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 91.67 km

Coordinates: 27.01651, 83.83791



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 106.74 km

Coordinates: 27.10696, 83.92800



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 107.58 km

Coordinates: 27.10829, 83.92832



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 125.34 km

Coordinates: 27.23061, 84.00055



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 134.38 km

Coordinates: 27.28889, 83.93882

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