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JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SISWA INDANE GRAMIN

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

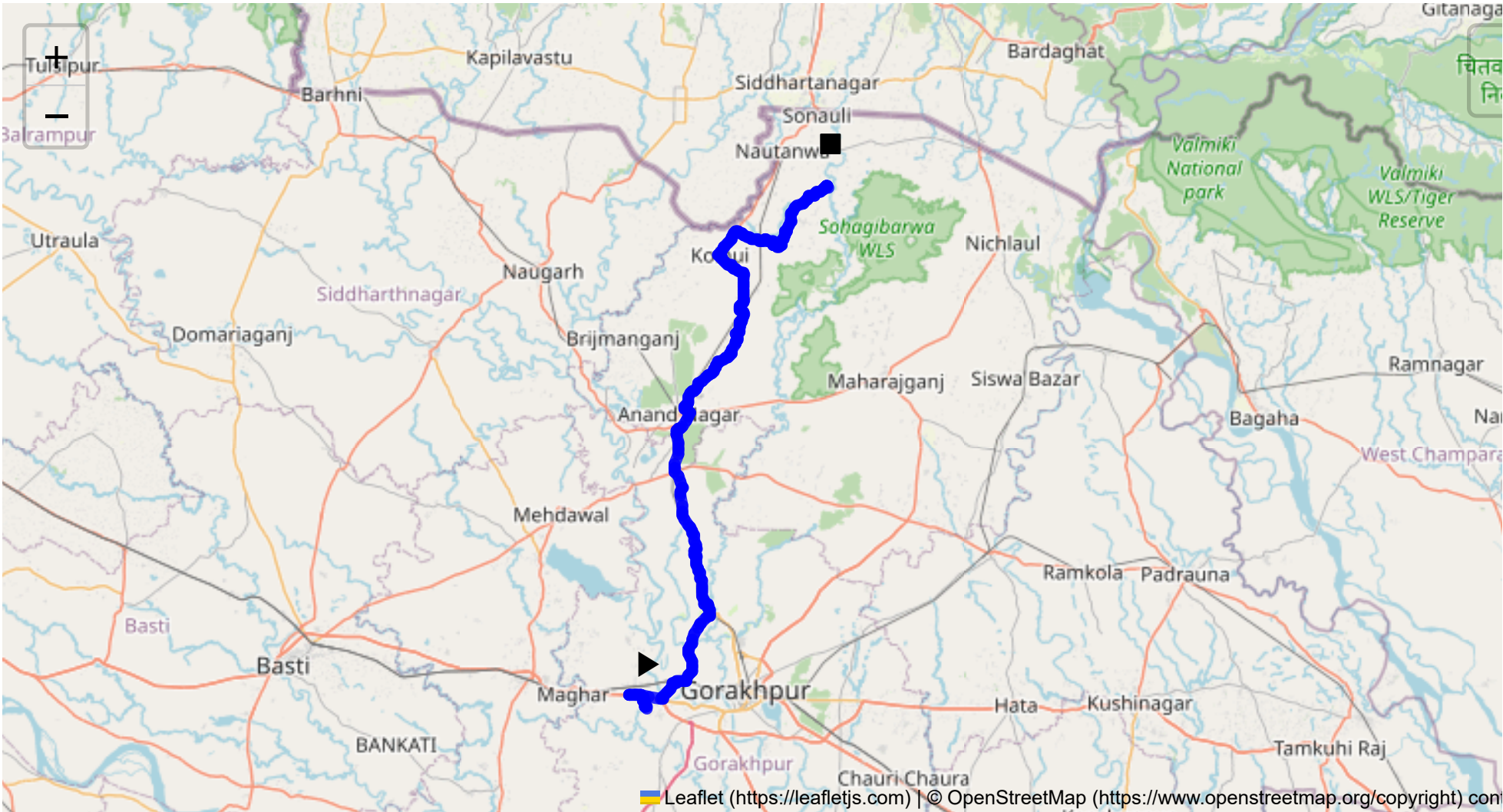
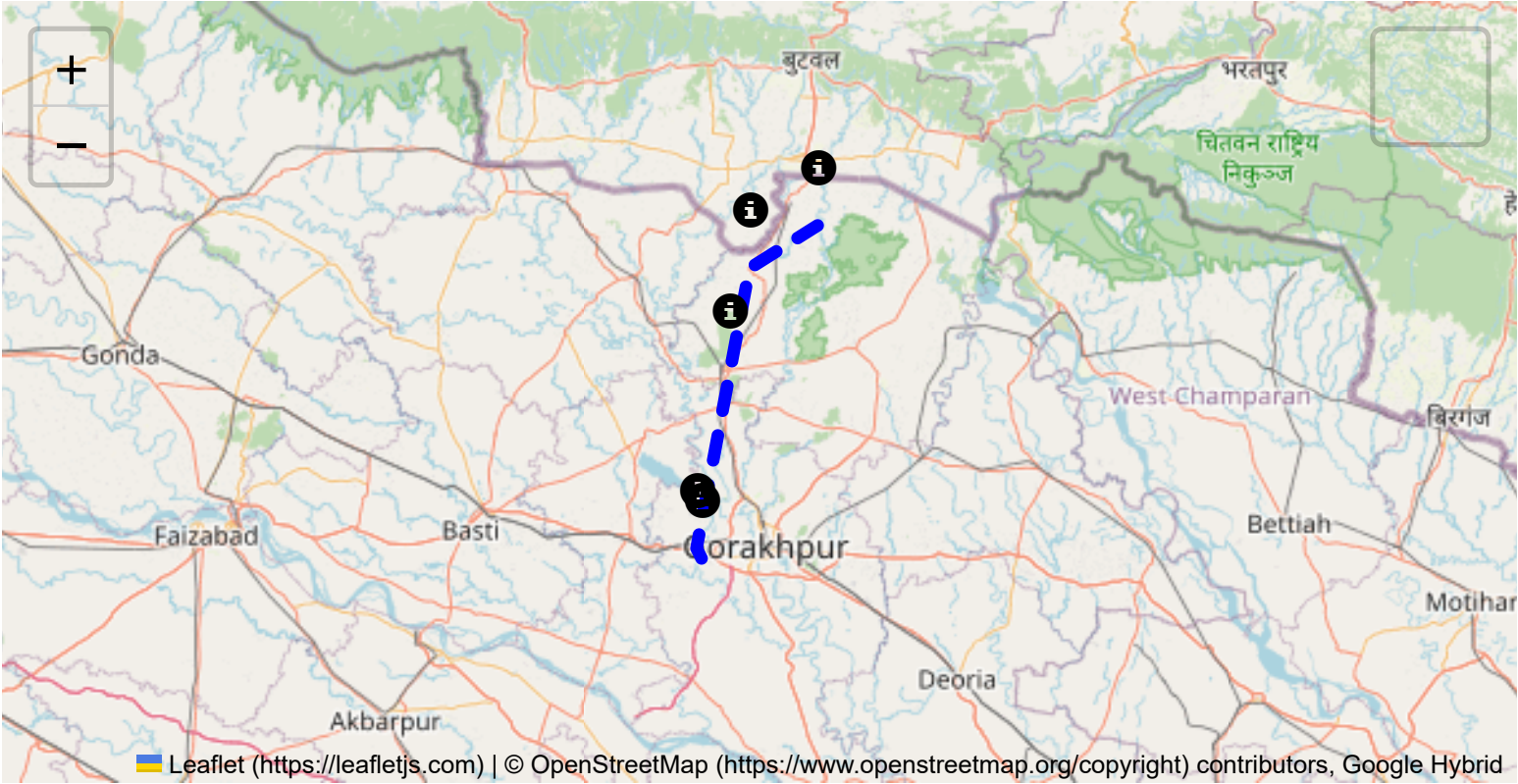
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 104.74 km
Estimated Duration: 2.7 hours
Adjusted Duration (Heavy Vehicle): 3.3 hours
Start: (26.735959, 83.229398)
End: (27.382188, 83.481224)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The designated route from GIDA Industrial Area Phase 1, Sahjanwa to Siswa Urf Khoriya, covers approximately 104.74 km. The path navigates through regional roads, primarily using Pharenda-Maharajganj Road, a major thoroughfare, passing through rural and semi-urban areas.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Weather Conditions:

- **Summer (March to June):** Hot and dry, with temperatures reaching up to 45°C.
- **Monsoon (July to September):** Heavy rainfall, with potential for flooding.
- **Winter (December to February):** Cool and foggy conditions, reducing visibility.

Potential Hazards:

- Heavy monsoon rains can lead to waterlogged roads and low visibility conditions.
- Fog during winter months can impede visibility, requiring caution.

3. Analysis of Traffic Patterns

Traffic Patterns:

- **Peak Hours:** Typically between 8:00 AM to 10:00 AM and from 5:00 PM to 8:00 PM.
- **Congestion-Prone Areas:** Key junctions such as Sahjanwa and Maharajganj experience higher traffic volumes, especially during peak hours.

4. Assessment of Road Quality and Infrastructure

- **Road Quality:** The quality varies, with main roads generally well-maintained but secondary roads may have potholes and uneven surfaces.
- **Infrastructure:** Limited signage and street lighting in rural stretches, which can pose visibility challenges at night.

5. Suggestions for Alternative Routes for Emergencies

Possible alternative routes include local roads connecting back to NH 28 near Gorakhpur, although these may add to travel time and may not be as well-maintained.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- Movement of vehicles carrying hazardous materials may be restricted to certain hours, typically avoiding late-night and early-morning times.
- Specific permits are required for the transportation of hazardous materials, ensuring adherence to safety standards.

7. Overview of Historical Incidents

There have been occasional incidents involving heavy vehicles mainly due to poor weather and road conditions, though major hazardous material incidents are rare and not frequently documented in this region.

8. Environmental Considerations and Sensitive Areas

Sensitive areas include agricultural lands and small water bodies. Care should be taken to prevent spillage or contamination, particularly near water sources.

9. Analysis of Communication Coverage

Overall, communication coverage is decent but signal strength can be weak in rural and wooded areas, leading to potential dead zones.

10. Estimated Emergency Response Times

- Urban Areas (e.g., Sahjanwa):** Approximately 15-20 minutes.
- Semi-Urban Areas:** 30-45 minutes.
- Rural Segments:** 45 minutes to over an hour, depending on proximity to nearest emergency services.

12. Overall Summary of Risk Assessment

This route presents moderate-to-high risks primarily due to weather conditions and variable road quality. The main considerations should include planning for weather disruptions, careful adherence to traffic regulations for hazardous materials, and ensuring reliable communication methods. Emergency preparedness, including knowledge of alternative routes and local emergency contacts, is crucial for safe navigation.

The identified possibility of congestion near urban centers and limited infrastructure in rural segments imply that driver caution and road awareness are critical for mitigating risks. Regular monitoring of weather forecasts and road conditions will aid in safety and efficiency.

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
2	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
3	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
5	Turn	High	26.74679, 83.22391	15 KM/Hr	1.64 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.13 km
7	Blind Spot	Blind Spot	26.75377, 83.20465	10 KM/Hr	4.19 km
8	Turn	High	26.74700, 83.25085	15 KM/Hr	8.83 km
9	Turn	Medium	26.85120, 83.31623	30 KM/Hr	23.47 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Roundabout	High	26.86209, 83.31517	15 KM/Hr	24.78 km
10	Turn	Medium	26.86464, 83.31361	30 KM/Hr	25.04 km
11	Turn	Medium	26.86641, 83.31020	30 KM/Hr	25.41 km
12	Turn	Medium	26.92500, 83.29848	30 KM/Hr	32.12 km
13	Turn	Medium	26.92818, 83.29627	30 KM/Hr	32.47 km
14	Turn	Medium	26.93184, 83.29589	30 KM/Hr	32.83 km
15	Turn	Medium	26.93544, 83.29787	30 KM/Hr	33.41 km
16	Turn	Medium	27.00993, 83.27853	30 KM/Hr	42.03 km
17	Turn	Medium	27.03406, 83.26759	30 KM/Hr	44.94 km
18	Turn	High	27.08052, 83.27125	15 KM/Hr	50.24 km
19	Turn	Medium	27.10236, 83.28824	30 KM/Hr	53.41 km
20	Turn	Medium	27.10271, 83.28856	30 KM/Hr	53.46 km
22	Turn	Medium	27.10271, 83.28856	30 KM/Hr	53.46 km
21	Blind Spot	Blind Spot	27.10277, 83.28936	10 KM/Hr	53.53 km
23	Turn	High	27.10288, 83.28818	15 KM/Hr	53.67 km
24	Turn	Medium	27.10925, 83.28298	30 KM/Hr	54.42 km
25	Turn	Medium	27.11070, 83.28282	30 KM/Hr	54.66 km
26	Turn	Medium	27.17222, 83.34241	30 KM/Hr	63.99 km
27	Turn	Medium	27.17766, 83.34689	30 KM/Hr	64.87 km
28	Turn	Medium	27.17811, 83.34782	30 KM/Hr	64.99 km
29	Turn	Medium	27.19292, 83.35509	30 KM/Hr	66.76 km
30	Turn	High	27.20070, 83.35416	15 KM/Hr	67.48 km
31	Turn	Medium	27.20391, 83.35772	30 KM/Hr	68.08 km
32	Turn	Medium	27.22623, 83.36428	30 KM/Hr	70.74 km
33	Turn	Medium	27.22753, 83.36364	30 KM/Hr	70.93 km
34	Turn	Medium	27.23089, 83.35900	30 KM/Hr	71.47 km
35	Turn	Medium	27.23284, 83.35817	30 KM/Hr	71.72 km
36	Turn	Medium	27.23503, 83.35884	30 KM/Hr	71.96 km
37	Turn	Medium	27.27394, 83.36411	30 KM/Hr	76.64 km
38	Turn	Medium	27.28667, 83.34120	30 KM/Hr	79.16 km
39	Turn	Medium	27.29740, 83.33068	30 KM/Hr	80.93 km
40	Turn	Medium	27.29876, 83.32998	30 KM/Hr	81.13 km
41	Blind Spot	Blind Spot	27.29895, 83.32973	10 KM/Hr	81.23 km
42	Turn	High	27.29885, 83.32998	15 KM/Hr	81.26 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
43	Turn	High	27.32777, 83.35385	15 KM/Hr	85.25 km
44	Turn	Medium	27.31747, 83.39541	30 KM/Hr	89.62 km
45	Turn	Medium	27.31599, 83.39819	30 KM/Hr	89.85 km
46	Turn	High	27.31332, 83.40695	15 KM/Hr	90.92 km
47	Turn	Medium	27.31111, 83.40579	30 KM/Hr	91.16 km
48	Turn	High	27.31012, 83.40593	15 KM/Hr	91.27 km
49	Turn	High	27.30969, 83.40990	15 KM/Hr	91.69 km
50	Turn	High	27.30881, 83.40996	15 KM/Hr	91.77 km
51	Turn	Medium	27.30833, 83.41324	30 KM/Hr	91.99 km
52	Turn	Medium	27.31093, 83.41727	30 KM/Hr	92.55 km
53	Turn	Medium	27.31196, 83.41756	30 KM/Hr	92.70 km
54	Turn	High	27.31587, 83.41622	15 KM/Hr	92.99 km
55	Turn	Medium	27.31897, 83.41983	30 KM/Hr	93.65 km
56	Turn	Medium	27.33638, 83.42650	30 KM/Hr	95.49 km
57	Turn	Medium	27.35029, 83.43077	30 KM/Hr	97.30 km
58	Turn	Medium	27.35599, 83.43450	30 KM/Hr	98.02 km
59	Turn	Medium	27.37905, 83.47486	30 KM/Hr	103.03 km
60	Turn	Medium	27.38302, 83.47831	30 KM/Hr	103.62 km
61	Turn	Medium	27.38323, 83.48034	30 KM/Hr	103.87 km
62	Turn	High	27.38283, 83.48073	15 KM/Hr	103.92 km
63	Blind Spot	Blind Spot	27.38212, 83.48057	10 KM/Hr	103.99 km

Emergency Locations

Crowded Spots

Found: 1 school(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	school	Nav Jeevan Mission School	27.1125489, 83.2814738	30 km/h	Medium	54.80 km

Route Photos of Risky Spots



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 2.13 km
Coordinates: 26.75126, 83.22476



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 4.19 km
Coordinates: 26.75377, 83.20465



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 8.83 km
Coordinates: 26.74700, 83.25085



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 23.47 km
Coordinates: 26.85120, 83.31623



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 24.78 km

Coordinates: 26.86209, 83.31517



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 25.04 km

Coordinates: 26.86464, 83.31361



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 25.41 km
Coordinates: 26.86641, 83.31020



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 32.12 km
Coordinates: 26.92500, 83.29848



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 32.47 km

Coordinates: 26.92818, 83.29627



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 32.83 km

Coordinates: 26.93184, 83.29589



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 33.41 km
Coordinates: 26.93544, 83.29787



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 50.24 km
Coordinates: 27.08052, 83.27125



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 53.41 km
Coordinates: 27.10236, 83.28824



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 53.46 km
Coordinates: 27.10271, 83.28856



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 53.46 km
Coordinates: 27.10271, 83.28856



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 53.53 km
Coordinates: 27.10277, 83.28936



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.67 km

Coordinates: 27.10288, 83.28818



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.42 km

Coordinates: 27.10925, 83.28298



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 54.66 km
Coordinates: 27.11070, 83.28282



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 63.99 km
Coordinates: 27.17222, 83.34241



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 64.87 km
Coordinates: 27.17766, 83.34689



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 64.99 km
Coordinates: 27.17811, 83.34782



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 66.76 km
Coordinates: 27.19292, 83.35509



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 67.48 km
Coordinates: 27.20070, 83.35416



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 68.08 km
Coordinates: 27.20391, 83.35772



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 70.74 km
Coordinates: 27.22623, 83.36428



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 70.93 km
Coordinates: 27.22753, 83.36364



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 71.47 km
Coordinates: 27.23089, 83.35900



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 71.72 km
Coordinates: 27.23284, 83.35817



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 76.64 km
Coordinates: 27.27394, 83.36411



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 79.16 km
Coordinates: 27.28667, 83.34120



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 80.93 km
Coordinates: 27.29740, 83.33068



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 81.13 km

Coordinates: 27.29876, 83.32998



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 81.23 km

Coordinates: 27.29895, 83.32973



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 81.26 km

Coordinates: 27.29885, 83.32998



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 89.85 km

Coordinates: 27.31599, 83.39819



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 91.99 km
Coordinates: 27.30833, 83.41324



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 92.55 km
Coordinates: 27.31093, 83.41727



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 92.70 km
Coordinates: 27.31196, 83.41756



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 92.99 km
Coordinates: 27.31587, 83.41622



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 93.65 km
Coordinates: 27.31897, 83.41983



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 95.49 km
Coordinates: 27.33638, 83.42650



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 97.30 km
Coordinates: 27.35029, 83.43077



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 98.02 km
Coordinates: 27.35599, 83.43450



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 103.03 km

Coordinates: 27.37905, 83.47486



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 103.62 km

Coordinates: 27.38302, 83.47831

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