JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO KARHI 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

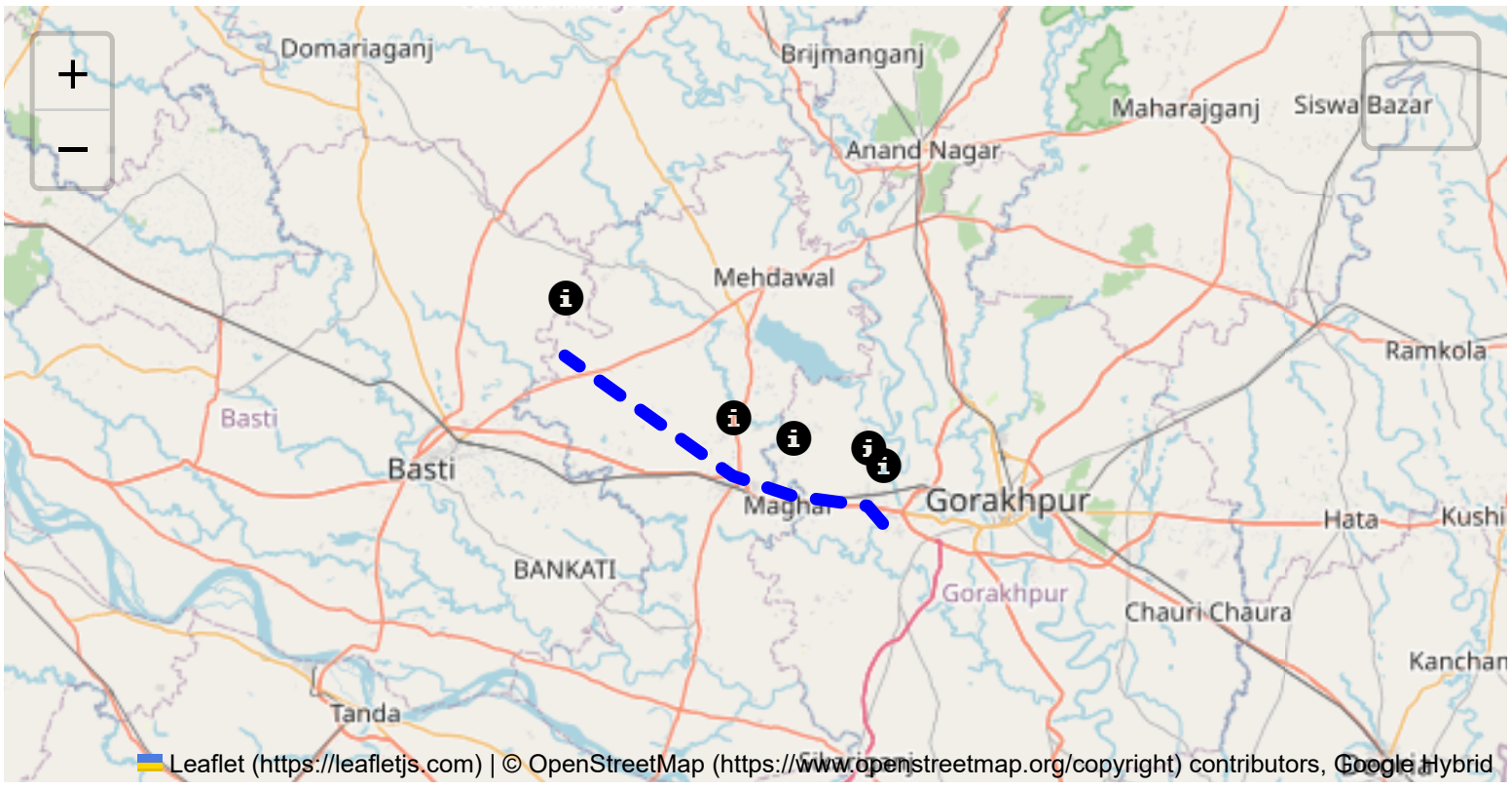
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

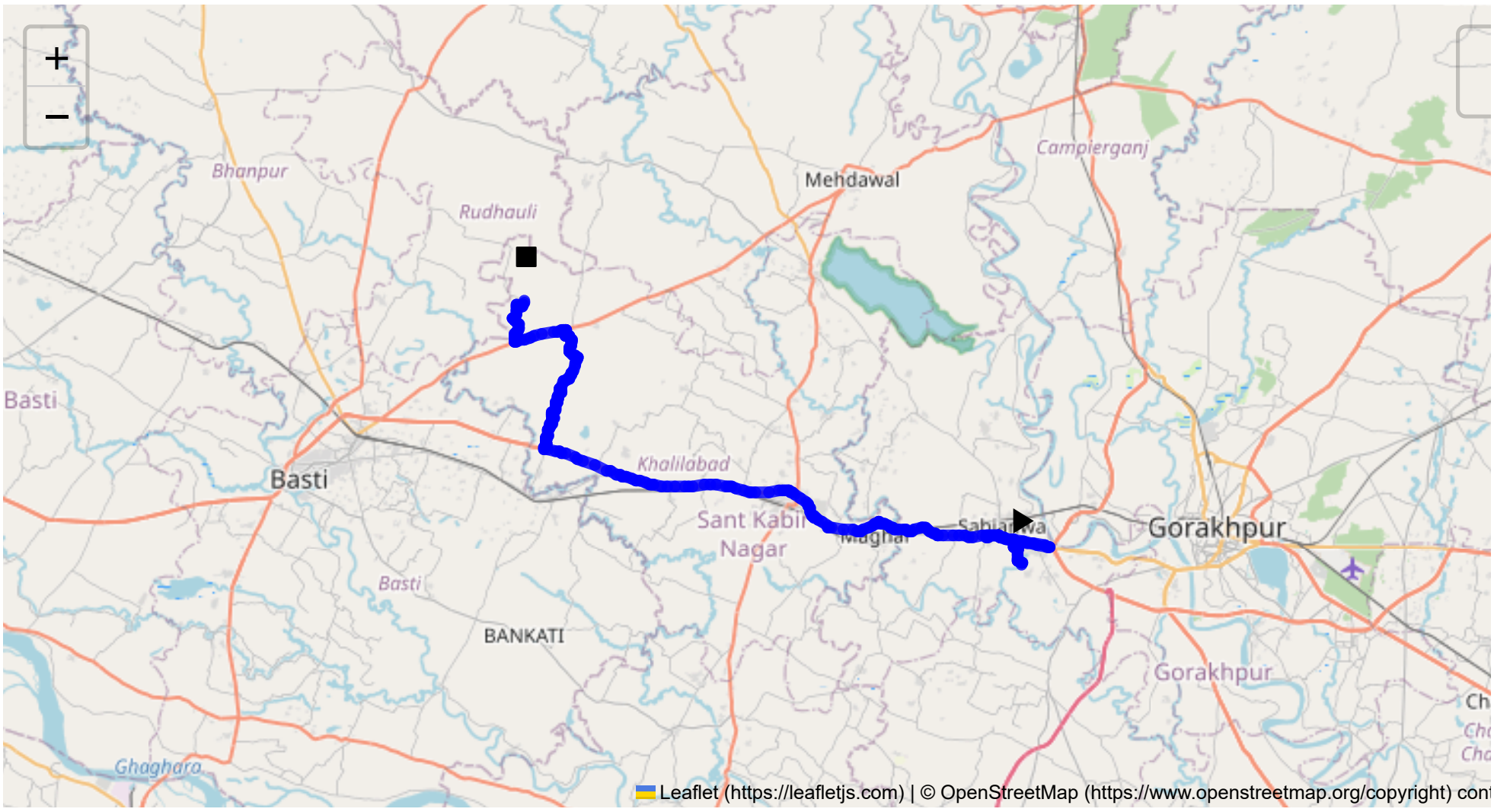
Journey Risk Mitigation

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: 63.04 km
Estimated Duration: 1.5 hours
Adjusted Duration (Heavy Vehicle): 1.9 hours
Start: (26.735959, 83.229398)
End: (26.90065, 82.88046)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa to WV2J+75 Meerpur spans approximately 63.04 kilometers, covering various small towns and rural areas in Uttar Pradesh. The significant waypoints include Sahjanwa, Maghar, Khalilabad, and Meerpur. The route primarily uses local and regional roads that connect these points.

2. Typical Weather Conditions and Potential Weather-related Hazards

Uttar Pradesh typically experiences extreme weather conditions. In summer, temperatures can reach above 40°C (104°F), potentially affecting vehicle performance and causing road surface issues. Monsoon season, from June to September, can lead to heavy rainfall resulting in waterlogged roads, especially given the region's inadequate drainage systems. Winters can occasionally see fog, reducing visibility.

3. Analysis of Traffic Patterns

- **Peak Hours**: Traffic congestion is likely during morning (8–10 AM) and evening (6–8 PM) rush hours, especially near urban sections such as Sahjanwa and Khalilabad.
- **Congestion-prone areas**: Town centers, school zones, marketplaces, and railway crossings in Sahjanwa and Khalilabad.

4. Assessment of Road Quality and Infrastructure

The roads can be a mix of well-maintained stretches and poorly maintained ones, particularly in rural areas. Potholes and narrow roadways are common, posing significant challenges to heavy vehicles. Some sections lack lighting, and signage may be outdated or missing, especially outside major towns.

5. Suggestions for Alternative Routes for Emergencies

- An alternate route can be accessed via NH27 for a portion of the journey, although this may slightly increase the distance traveled.
- Local bypasses around heavily congested areas might be viable, though dependent on local conditions and should be assessed in consultation with local authorities.

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transporting hazardous materials is regulated, requiring specific permits. Certain roads or times of day may have restrictions for heavy or hazardous loads, especially during festivals or local events where public safety is prioritized.

7. Overview of Historical Incidents

There have been occasional incidents reported involving heavy vehicles due to the poor road conditions and fog, but detailed data on hazardous material incidents might be limited. Increased caution is advised near crossings and narrow bridges.

8. Environmental Considerations and Sensitive Areas

Key sensitive areas include agricultural zones, and occasional forested regions with potential wildlife crossings. Villages and water bodies along the route should be given special consideration to prevent contamination in case of spills.

9. Analysis of Communication Coverage

Mobile network coverage can be inconsistent, particularly in rural stretches. Urban areas are likely to have better coverage, whereas dead zones might be prevalent in more remote sections. It is advisable to carry communication equipment such as a satellite phone for emergencies.

10. Estimated Emergency Response Times

Emergency response times can vary, with urban areas receiving quicker assistance (approximately 15-30 minutes). Rural sections may experience delays, taking up to an hour or more due to infrastructure challenges.

11. Overall Summary of Risk Assessment

This route poses moderate risk levels for transporting hazardous materials. The major issues arise from weather conditions, road quality, and congestion. Adequate planning, adherence to regulations, and real-time monitoring can mitigate most risks. Recommended actions include pre-planning alternate routes, ensuring communication readiness, and briefing drivers on seasonal weather challenges. Regular updates from local traffic and weather services should be used to adjust plans dynamically.

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	1.16 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	4.22 km
10	Turn	High	26.75377, 83.20465	15 KM/Hr	4.28 km
11	Blind Spot	Blind Spot	26.75377, 83.21355	10 KM/Hr	5.17 km
13	Turn	High	26.75377, 83.21355	15 KM/Hr	5.17 km
12	Blind Spot	Blind Spot	26.75407, 83.21347	10 KM/Hr	5.20 km
14	Blind Spot	Blind Spot	26.74712, 83.24909	10 KM/Hr	8.85 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	U-Turn	High	26.7471208, 83.2490873	10 KM/Hr	8.85 km
15	Turn	High	26.74703, 83.24907	15 KM/Hr	8.86 km
16	Blind Spot	Blind Spot	26.80855, 82.89492	10 KM/Hr	46.07 km
17	Turn	Medium	26.81095, 82.89587	30 KM/Hr	46.48 km
18	Turn	High	26.81131, 82.89563	15 KM/Hr	46.52 km
19	Turn	Medium	26.81412, 82.89660	30 KM/Hr	46.84 km
20	Turn	Medium	26.81979, 82.89797	30 KM/Hr	47.48 km
21	Turn	Medium	26.82095, 82.89770	30 KM/Hr	47.64 km
22	Turn	Medium	26.82278, 82.89893	30 KM/Hr	47.89 km
23	Turn	Medium	26.84010, 82.90453	30 KM/Hr	49.93 km
24	Turn	Medium	26.84388, 82.90632	30 KM/Hr	50.41 km
25	Turn	High	26.84556, 82.90584	15 KM/Hr	50.60 km
26	Turn	Medium	26.86567, 82.91776	30 KM/Hr	53.13 km
27	Turn	Medium	26.86609, 82.91765	30 KM/Hr	53.23 km
28	Turn	Medium	26.87554, 82.91437	30 KM/Hr	54.60 km
29	Turn	Medium	26.87952, 82.91028	30 KM/Hr	55.27 km
30	Turn	Medium	26.87975, 82.91021	30 KM/Hr	55.30 km
31	Turn	High	26.88034, 82.91033	15 KM/Hr	55.34 km
32	Turn	Medium	26.88172, 82.90945	30 KM/Hr	55.55 km
33	Blind Spot	Blind Spot	26.88343, 82.90977	10 KM/Hr	55.74 km
34	Blind Spot	Blind Spot	26.87510, 82.87347	10 KM/Hr	59.46 km
35	Turn	Medium	26.88458, 82.87709	30 KM/Hr	60.58 km
36	Turn	Medium	26.88483, 82.87710	30 KM/Hr	60.61 km
37	Turn	Medium	26.88648, 82.87609	30 KM/Hr	60.73 km
38	Turn	High	26.88688, 82.87613	15 KM/Hr	60.85 km
39	Turn	Medium	26.88972, 82.87324	30 KM/Hr	61.29 km
40	Turn	Medium	26.88993, 82.87320	30 KM/Hr	61.32 km
41	Blind Spot	Blind Spot	26.89839, 82.87584	10 KM/Hr	62.27 km
42	Turn	High	26.89791, 82.87923	15 KM/Hr	62.49 km
43	Turn	Medium	26.89830, 82.87940	30 KM/Hr	62.68 km
44	Turn	Medium	26.89848, 82.87963	30 KM/Hr	62.72 km
45	Turn	High	26.90062, 82.88035	15 KM/Hr	62.90 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Patel Hospital, Sant Kabir Nagar	26.7882737, 82.9600798	30 km/h	Medium	39.33 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: 4.22 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: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.17 km

Coordinates: 26.75377, 83.21355

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.17 km

Coordinates: 26.75377, 83.21355

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.20 km

Coordinates: 26.75407, 83.21347

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 8.85 km

Coordinates: 26.74712, 83.24909

Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 8.85 km

Coordinates: 26.7471208, 83.2490873

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.86 km

Coordinates: 26.74703, 83.24907

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 46.07 km

Coordinates: 26.80855, 82.89492

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 46.48 km

Coordinates: 26.81095, 82.89587

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 46.52 km

Coordinates: 26.81131, 82.89563

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 46.84 km

Coordinates: 26.81412, 82.89660

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 47.48 km

Coordinates: 26.81979, 82.89797

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 47.64 km

Coordinates: 26.82095, 82.89770

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 47.89 km

Coordinates: 26.82278, 82.89893

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 49.93 km

Coordinates: 26.84010, 82.90453

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.41 km

Coordinates: 26.84388, 82.90632

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 50.60 km

Coordinates: 26.84556, 82.90584

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 53.13 km

Coordinates: 26.86567, 82.91776

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 53.23 km

Coordinates: 26.86609, 82.91765

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.60 km

Coordinates: 26.87554, 82.91437

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 55.27 km

Coordinates: 26.87952, 82.91028

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 55.30 km

Coordinates: 26.87975, 82.91021

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 55.34 km

Coordinates: 26.88034, 82.91033

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 55.55 km

Coordinates: 26.88172, 82.90945

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 55.74 km

Coordinates: 26.88343, 82.90977

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 59.46 km

Coordinates: 26.87510, 82.87347

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.29 km

Coordinates: 26.88972, 82.87324

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.32 km

Coordinates: 26.88993, 82.87320

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 62.27 km

Coordinates: 26.89839, 82.87584

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