



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO RAJENDRA INDANE GRAM

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

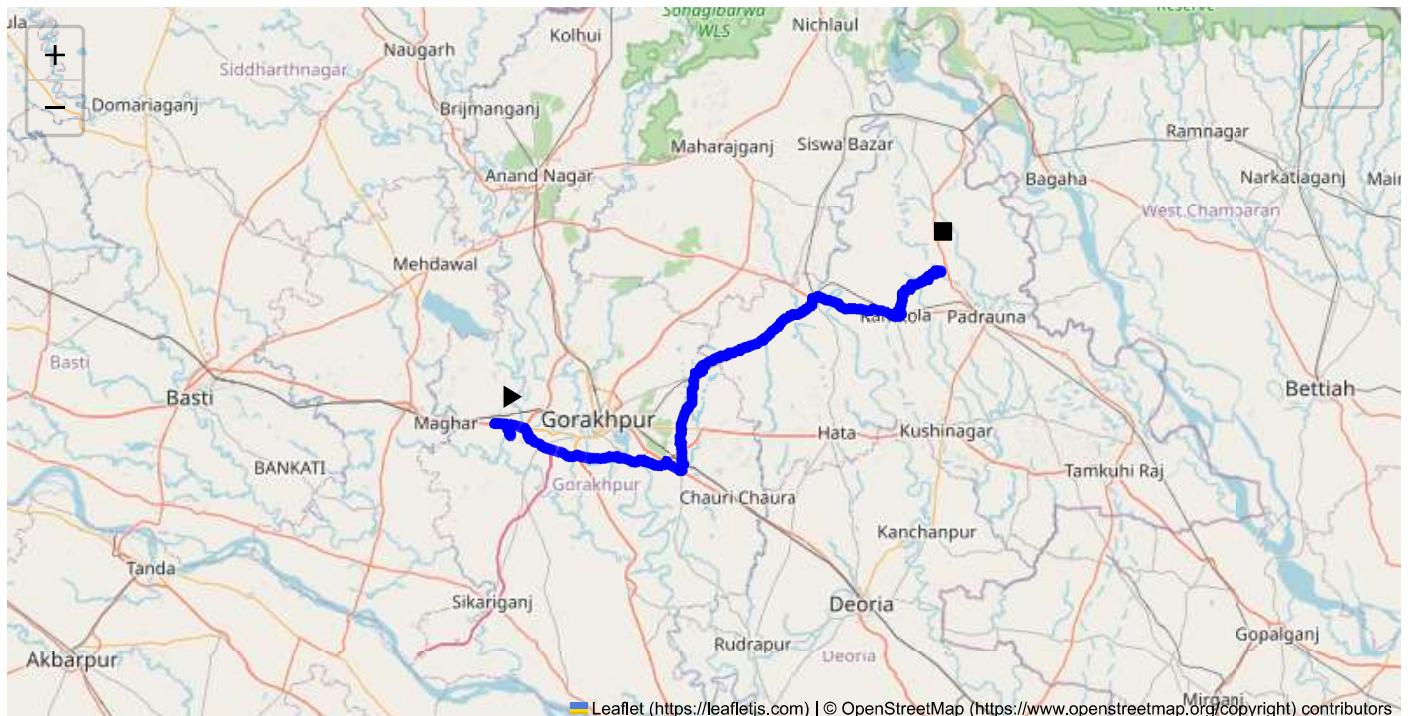
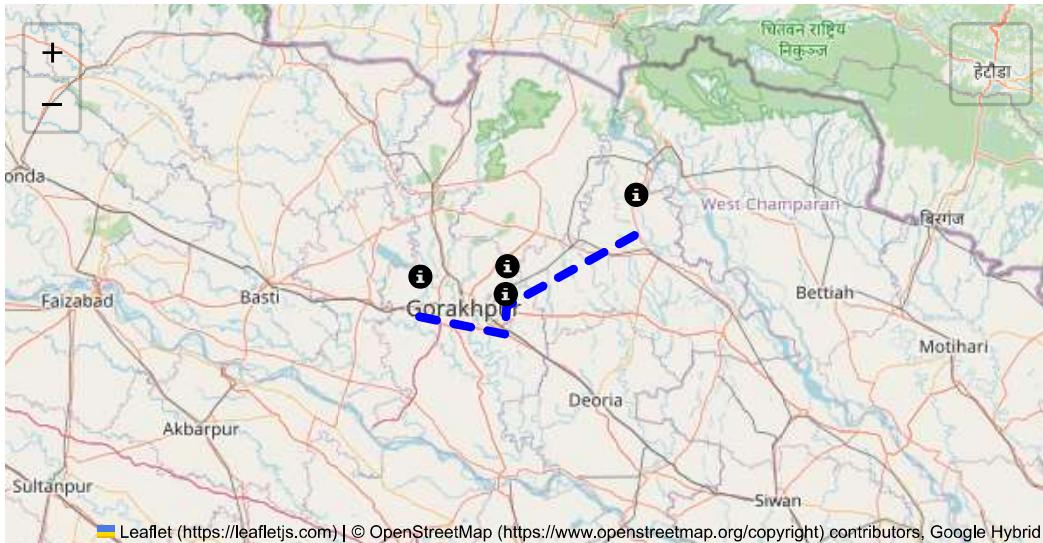
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 102.25 km
Estimated Duration: 2.6 hours
Adjusted Duration (Heavy Vehicle): 3.3 hours
Start: (26.735959, 83.229398)
End: (26.967614, 83.907145)

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 XW94+2V Semra covers approximately 102.25 kilometers through diverse terrains, including urban, semi-urban, and rural areas in the state of

Uttar Pradesh. It primarily follows the Gorakhpur - Deoria Highway before diverging onto smaller roads like Pipraich Kushmahi Road. The journey integrates major industrial and less developed sectors, likely varying in road conditions and traffic density.

2. Typical Weather Conditions and Potential Weather-Related Hazards

Uttar Pradesh experiences extreme weather conditions ranging from hot summers (up to 45°C) to cold winters (as low as 3°C). The monsoon season (June to September) may pose risks with heavy rainfall causing waterlogging and reduced visibility. Fog is common in winters (December to January), significantly reducing visibility and thus raising the risk of accidents, particularly in early mornings and late evenings.

3. Analysis of Traffic Patterns

Traffic congestion is likely at urban centers like Gorakhpur, especially during peak hours (8-10 AM and 5-7 PM). Rural sections could have less congestion but watch for agricultural machinery and livestock. The Gorakhpur - Deoria Highway can get busy due to commercial traffic. Pipraich Kushmahi Road might witness fewer vehicles but could still present risks due to narrower lanes and local traffic.

4. Assessment of Road Quality and Infrastructure

The road quality on major highways such as Gorakhpur - Deoria is generally good, but some sections might have potholes or uneven surfaces. Rural and smaller roads like Pipraich Kushmahi may have more wear and tear, narrower lanes, and fewer traffic signs or lighting. Bridges and culverts should be approached cautiously in rural areas due to potential infrastructural weaknesses.

5. Suggestions for Alternative Routes for Emergencies

In case of severe congestion or roadblocks, consider routes passing through larger towns with better infrastructure like Gorakhpur bypass routes. Alternative smaller roads could offer detours, but assess them for suitability based on current conditions (e.g., weather or temporary closures).

6. Summary of Local Regulations Affecting Hazardous Material Transport

Transport of hazardous materials requires adherence to stringent national and state regulations. These include having proper documentation, mandatory signage on vehicles, and restrictions on travel times in urban areas. Coordination with local authorities during transit is advisable.

7. Overview of Historical Incidents

There have been incidents involving heavy vehicles along major highways in Uttar Pradesh, often attributed to overloading, brake failure, or poor visibility. Accidents involving hazardous materials were

less frequently reported but had severe consequences when they occurred, highlighting the need for cautious handling.

8. Environmental Considerations and Sensitive Areas

The route passes through areas that may have agricultural fields, small settlements, and natural features sensitive to environmental disturbances. Respecting speed limits and reducing noise in these zones is critical to minimizing impact. Some stretches might also cross near water bodies, necessitating careful handling of materials to prevent contamination.

9. Analysis of Communication Coverage

Communication coverage is generally strong in urban and semi-urban areas, but potential dead zones may exist in rural regions or underdeveloped areas. Using multiple network providers and having alternative communication tools like satellite phones or two-way radios could be beneficial.

10. Estimated Emergency Response Times

Urban areas like Gorakhpur might have quicker emergency response times (around 20-30 minutes). Rural and remote areas could experience delays exceeding 45 minutes to an hour, due in part to limited infrastructure and resources.

12. Overall Summary of Risk Assessment

This route presents moderate risk, primarily due to weather conditions, variable road quality, and potential traffic congestion. Proper planning, real-time monitoring of weather and traffic conditions, and adherence to safety protocols can mitigate risks. Emergency readiness, coupled with a solid understanding of alternative routes, will bolster safe travels for vehicles carrying hazardous materials. Regular communication with local authorities for updates and emergency information is also recommended to ensure safety and compliance.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
2	Turn	High	26.73746, 83.22938	15 KM/Hr	0.08 km
3	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
4	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
5	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
6	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
7	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km
8	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km
9	Turn	High	26.75377, 83.20465	15 KM/Hr	4.26 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.12 km
10	Turn	Medium	26.69652, 83.47508	30 KM/Hr	33.10 km
11	Turn	High	26.69741, 83.47552	15 KM/Hr	33.19 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.38 km
12	Blind Spot	Blind Spot	26.69857, 83.47481	10 KM/Hr	33.38 km
13	Blind Spot	Blind Spot	26.68620, 83.49880	10 KM/Hr	36.06 km
14	Turn	Medium	26.69511, 83.49893	30 KM/Hr	37.03 km
15	Turn	High	26.69722, 83.50035	15 KM/Hr	37.36 km
16	Turn	Medium	26.69873, 83.49920	30 KM/Hr	37.51 km
17	Blind Spot	Blind Spot	26.74662, 83.49914	10 KM/Hr	42.92 km
18	Blind Spot	Blind Spot	26.74659, 83.49782	10 KM/Hr	43.04 km
19	Turn	Medium	26.78331, 83.51396	30 KM/Hr	47.23 km
20	Turn	High	26.82411, 83.52193	15 KM/Hr	52.10 km
21	Turn	Medium	26.82476, 83.52706	30 KM/Hr	52.55 km
22	Blind Spot	Blind Spot	26.82741, 83.53262	10 KM/Hr	53.29 km
23	Turn	High	26.82760, 83.53150	15 KM/Hr	53.41 km
24	Turn	High	26.83139, 83.52997	15 KM/Hr	53.86 km
25	Turn	Medium	26.88048, 83.63813	30 KM/Hr	65.83 km
26	Turn	Medium	26.88064, 83.63915	30 KM/Hr	66.23 km
27	Turn	Medium	26.90784, 83.67807	30 KM/Hr	71.19 km
28	Turn	Medium	26.91252, 83.69137	30 KM/Hr	72.72 km
29	Turn	High	26.92140, 83.70568	15 KM/Hr	74.43 km
30	Turn	Medium	26.92843, 83.70590	30 KM/Hr	75.26 km
31	Turn	Medium	26.92870, 83.70611	30 KM/Hr	75.33 km
32	Turn	High	26.90616, 83.84446	15 KM/Hr	89.70 km
33	Turn	High	26.90641, 83.84458	15 KM/Hr	89.74 km
34	Turn	Medium	26.90712, 83.84407	30 KM/Hr	89.83 km
35	Turn	High	26.90790, 83.84384	15 KM/Hr	89.90 km
36	Blind Spot	Blind Spot	26.90808, 83.84419	10 KM/Hr	89.96 km
37	Turn	High	26.90818, 83.84392	15 KM/Hr	90.00 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
38	Turn	High	26.90911, 83.84357	15 KM/Hr	90.07 km
39	Blind Spot	Blind Spot	26.90938, 83.83994	10 KM/Hr	90.46 km
40	Turn	Medium	26.93272, 83.84793	30 KM/Hr	92.91 km
41	Turn	Medium	26.93643, 83.84694	30 KM/Hr	93.50 km
42	Turn	High	26.93752, 83.84734	15 KM/Hr	93.74 km
43	Turn	Medium	26.93737, 83.85050	30 KM/Hr	94.04 km
44	Turn	Medium	26.93794, 83.85134	30 KM/Hr	94.12 km
45	Turn	Medium	26.94080, 83.85282	30 KM/Hr	94.50 km
46	Turn	Medium	26.94076, 83.85850	30 KM/Hr	95.06 km
47	Turn	Medium	26.94119, 83.85903	30 KM/Hr	95.13 km
48	Turn	High	26.94846, 83.86078	15 KM/Hr	95.95 km
49	Turn	Medium	26.94907, 83.86629	30 KM/Hr	96.52 km
50	Turn	Medium	26.94949, 83.87021	30 KM/Hr	96.77 km
51	Turn	Medium	26.95569, 83.88414	30 KM/Hr	98.29 km
52	Turn	Medium	26.95770, 83.88731	30 KM/Hr	98.81 km
53	Blind Spot	Blind Spot	26.95726, 83.88857	10 KM/Hr	99.05 km
54	Turn	Medium	26.95838, 83.88876	30 KM/Hr	99.13 km
55	Turn	Medium	26.95931, 83.88836	30 KM/Hr	99.24 km
56	Turn	High	26.96000, 83.88852	15 KM/Hr	99.34 km
57	Turn	High	26.96243, 83.89284	15 KM/Hr	99.87 km
58	Turn	High	26.96387, 83.89391	15 KM/Hr	100.04 km
59	Turn	Medium	26.96340, 83.89771	30 KM/Hr	100.35 km
60	Turn	Medium	26.96838, 83.90104	30 KM/Hr	101.07 km
61	Turn	High	26.96855, 83.90142	15 KM/Hr	101.15 km
62	Turn	High	26.96643, 83.90628	15 KM/Hr	101.55 km
63	Turn	Medium	26.96735, 83.90690	30 KM/Hr	101.77 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Prakash Hospital	26.6957341, 83.4807387	30 km/h	Medium	33.95 km

Crowded Spots

Route Photos of Risky Spots



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.15 km

Coordinates: 26.75126, 83.22476



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.21 km

Coordinates: 26.75353, 83.20457



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.26 km

Coordinates: 26.75377, 83.20465



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.12 km

Coordinates: 26.74681, 83.25111



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 33.10 km

Coordinates: 26.69652, 83.47508



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 33.19 km

Coordinates: 26.69741, 83.47552



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 33.38 km

Coordinates: 26.698439, 83.4747268



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 33.38 km**Coordinates:** 26.69857, 83.47481

Google

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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 36.06 km**Coordinates:** 26.68620, 83.49880



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 37.03 km

Coordinates: 26.69511, 83.49893



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 37.36 km

Coordinates: 26.69722, 83.50035



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 37.51 km

Coordinates: 26.69873, 83.49920



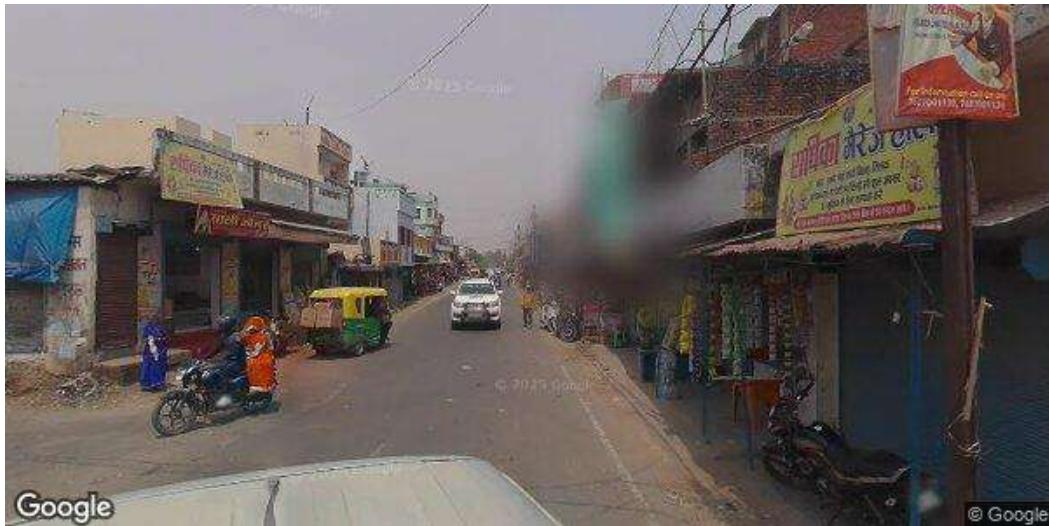
Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 42.92 km

Coordinates: 26.74662, 83.49914



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 43.04 km**Coordinates:** 26.74659, 83.49782

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 47.23 km**Coordinates:** 26.78331, 83.51396



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 52.10 km

Coordinates: 26.82411, 83.52193



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.55 km

Coordinates: 26.82476, 83.52706



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 53.29 km

Coordinates: 26.82741, 83.53262



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.41 km

Coordinates: 26.82760, 83.53150



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 53.86 km

Coordinates: 26.83139, 83.52997



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 71.19 km

Coordinates: 26.90784, 83.67807



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Risk Type: Turn**Risk Level: Medium****Speed Limit: 30 KM/Hr****Distance from Start: 72.72 km****Coordinates: 26.91252, 83.69137**

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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 74.43 km****Coordinates: 26.92140, 83.70568**



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 75.26 km**Coordinates:** 26.92843, 83.70590

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 75.33 km**Coordinates:** 26.92870, 83.70611



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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 89.70 km****Coordinates: 26.90616, 83.84446**

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Risk Type: Turn**Risk Level: High****Speed Limit: 15 KM/Hr****Distance from Start: 89.74 km****Coordinates: 26.90641, 83.84458**



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 89.83 km

Coordinates: 26.90712, 83.84407



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 89.90 km

Coordinates: 26.90790, 83.84384



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 89.96 km**Coordinates:** 26.90808, 83.84419

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 90.00 km**Coordinates:** 26.90818, 83.84392



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 90.07 km

Coordinates: 26.90911, 83.84357



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 90.46 km

Coordinates: 26.90938, 83.83994



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 92.91 km

Coordinates: 26.93272, 83.84793



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 93.50 km

Coordinates: 26.93643, 83.84694



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 93.74 km

Coordinates: 26.93752, 83.84734



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 94.04 km

Coordinates: 26.93737, 83.85050



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 94.12 km

Coordinates: 26.93794, 83.85134



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 94.50 km

Coordinates: 26.94080, 83.85282



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 95.06 km

Coordinates: 26.94076, 83.85850



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 95.13 km

Coordinates: 26.94119, 83.85903



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 95.95 km**Coordinates:** 26.94846, 83.86078

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 96.52 km**Coordinates:** 26.94907, 83.86629



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 96.77 km

Coordinates: 26.94949, 83.87021



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 98.29 km

Coordinates: 26.95569, 83.88414



Google

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 98.81 km**Coordinates:** 26.95770, 83.88731

Google

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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 99.05 km**Coordinates:** 26.95726, 83.88857



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 99.13 km

Coordinates: 26.95838, 83.88876



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 99.24 km

Coordinates: 26.95931, 83.88836



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 99.34 km

Coordinates: 26.96000, 83.88852



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 99.87 km

Coordinates: 26.96243, 83.89284



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 100.04 km

Coordinates: 26.96387, 83.89391



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 100.35 km

Coordinates: 26.96340, 83.89771



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 101.07 km

Coordinates: 26.96838, 83.90104



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 101.15 km

Coordinates: 26.96855, 83.90142



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 101.55 km

Coordinates: 26.96643, 83.90628



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 101.77 km

Coordinates: 26.96735, 83.90690

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