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JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO KRISHNA BALRAM INDANE

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

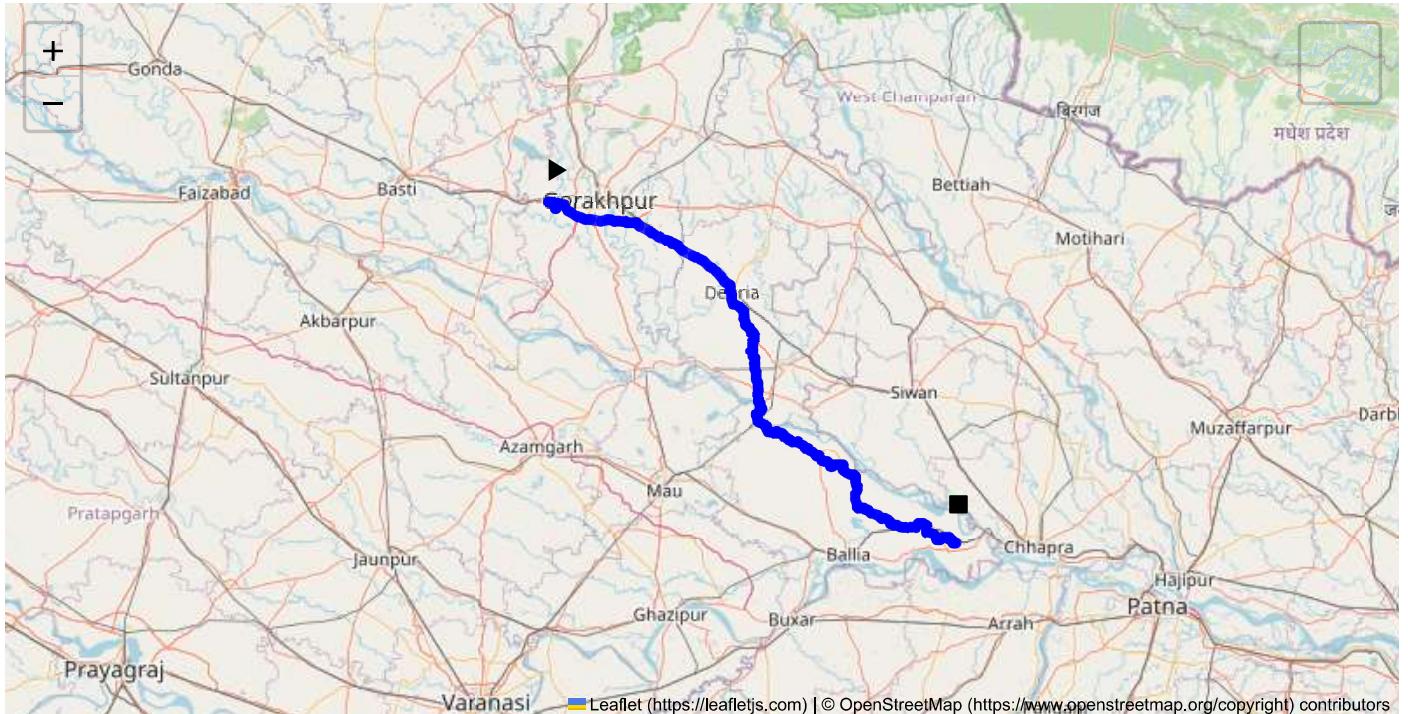
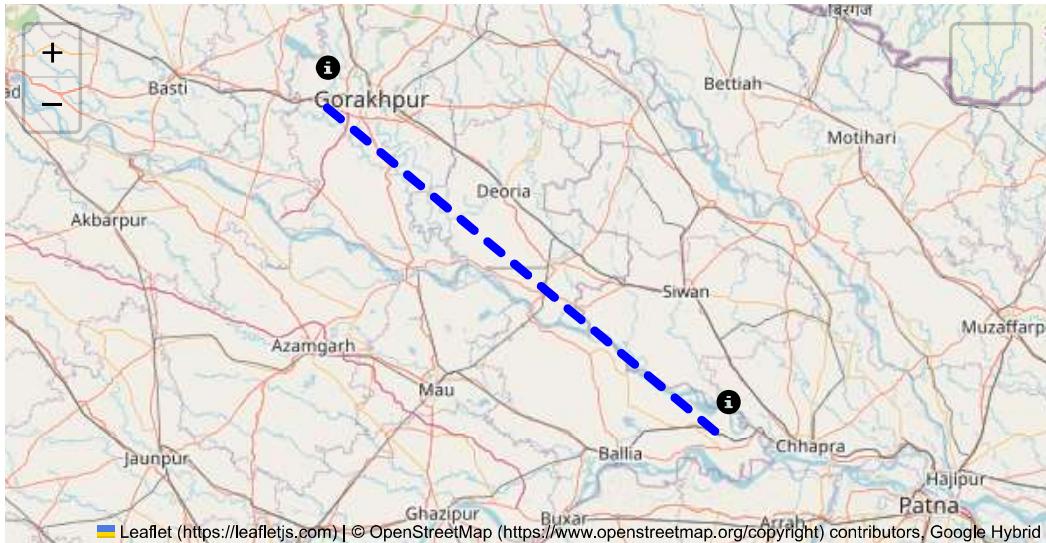
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 203.76 km
Estimated Duration: 5.0 hours
Adjusted Duration (Heavy Vehicle): 6.3 hours
Start: (26.735959, 83.229398)
End: (25.7881, 84.48793)

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 QFQQ+64P, Kotwa is approximately 204 kilometers long. Given the description, the likely path involves major highways such as NH27 and

NH31. The route passes through varied terrains, including urban and rural areas, and crosses various townships and smaller settlements.

2. Typical Weather Conditions and Potential Weather-Related Hazards:

Uttar Pradesh typically experiences a humid subtropical climate. Summers (March to June) can be very hot with temperatures reaching up to 40°C. The monsoon season (July to September) brings heavy rainfall which can cause flooding and waterlogging, potentially degrading road conditions. Winters (December to February) are cooler and can be accompanied by fog, reducing visibility.

3. Analysis of Traffic Patterns:

Traffic tends to be heavier during the early morning and late afternoon as people commute to and from work. The route may experience congestion near urban centers, especially around Gorakhpur and areas approaching Varanasi due to mixed traffic conditions including bicycles, motorcycles, and animal-drawn carts.

4. Assessment of Road Quality and Infrastructure:

The roads condition varies with well-paved national highways but potential degradation in rural or less-maintained sections. Regular maintenance issues include potholes, uneven surfaces, and lane markings that may not be clear, particularly in rural sections.

5. Suggestions for Alternative Routes for Emergencies:

In emergencies, diversions via NH19 can be considered, especially near Varanasi, which offers better connectivity and safety. Local knowledge and real-time traffic updates should be consulted for immediate rerouting.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

Transporting hazardous materials requires adherence to strict guidelines, including proper labeling, adherence to speed limits, and compliance with hazardous material-specific lanes where applicable. Vehicles should have required permits and enter restricted areas only as designated for their transport type.

7. Overview of Historical Incidents:

Historical incident data indicates sporadic occurrences of accidents due to overloading, speeding, and inadequate vehicular maintenance. Although precise historical data may not be readily available, hazardous material spills and vehicular collisions are noted concerns.

8. Environmental Considerations and Sensitive Areas:

Drivers should be aware of ecologically sensitive areas such as near the Ghaghra and Ganges rivers. Great caution is recommended to avoid spillages that can affect water bodies.

9. Analysis of Communication Coverage:

Most of the route should have adequate mobile coverage given its proximity to urban centers, but patchy signals can be expected in rural and sparsely populated areas. Utilizing a dual-SIM setup from different providers can mitigate these dead zones.

10. Estimated Emergency Response Times:

Emergency response can vary significantly, typically faster near urban areas and slower in remote areas. In urban centers and close to highways, response times might be within 30 minutes, whereas in rural sections, it could extend beyond an hour due to limited accessibility.

11. Overall Summary of Risk Assessment:

The main risks involve weather-related challenges (especially during the monsoon), traffic congestion, and road quality variations. Careful planning, real-time monitoring of weather and traffic, and proactive vehicle maintenance are crucial. Adherence to local regulations and updated communication tools will enhance safety. This route is viable for transporting hazardous materials with appropriate precautions and awareness.

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	26.73812, 83.22630	15 KM/Hr	0.32 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.13 km
5	Turn	High	26.74679, 83.22391	15 KM/Hr	1.48 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.12 km
7	Blind Spot	Blind Spot	26.75377, 83.20465	10 KM/Hr	4.14 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.05 km
8	Turn	Medium	26.69652, 83.47508	30 KM/Hr	32.80 km
9	Turn	High	26.69741, 83.47552	15 KM/Hr	33.06 km
1	U-Turn	High	26.698439, 83.4747268	10 KM/Hr	33.20 km
10	Blind Spot	Blind Spot	26.69835, 83.47489	10 KM/Hr	33.20 km
11	Turn	Medium	26.40046, 83.83580	30 KM/Hr	84.83 km
12	Turn	Medium	26.37097, 83.85253	30 KM/Hr	88.46 km
13	Turn	Medium	26.35968, 83.84679	30 KM/Hr	90.01 km
14	Turn	High	26.33324, 83.84423	15 KM/Hr	92.88 km
15	Turn	High	26.31106, 83.85577	15 KM/Hr	95.87 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
16	Turn	Medium	26.19486, 83.86485	30 KM/Hr	108.92 km
17	Turn	Medium	26.17954, 83.87157	30 KM/Hr	110.68 km
18	Turn	High	26.17612, 83.87049	15 KM/Hr	111.07 km
19	Turn	High	26.16909, 83.87651	15 KM/Hr	112.14 km
20	Turn	High	26.16620, 83.87557	15 KM/Hr	112.43 km
21	Turn	Medium	26.15634, 83.85688	30 KM/Hr	114.48 km
22	Turn	Medium	26.15486, 83.85637	30 KM/Hr	114.85 km
23	Turn	High	26.13148, 83.86717	15 KM/Hr	117.59 km
24	Turn	Medium	26.12295, 83.89151	30 KM/Hr	120.01 km
25	Turn	Medium	26.10548, 83.90235	30 KM/Hr	122.49 km
26	Turn	Medium	26.10492, 83.92367	30 KM/Hr	124.55 km
27	Turn	Medium	26.09663, 83.94491	30 KM/Hr	126.83 km
28	Turn	Medium	26.04427, 84.04669	30 KM/Hr	138.82 km
29	Turn	Medium	26.03840, 84.04947	30 KM/Hr	139.44 km
30	Turn	Medium	26.03525, 84.05905	30 KM/Hr	140.65 km
31	Turn	Medium	26.02173, 84.07272	30 KM/Hr	142.70 km
32	Turn	Medium	26.01939, 84.08983	30 KM/Hr	144.30 km
33	Turn	High	26.00900, 84.09642	15 KM/Hr	145.90 km
34	Turn	Medium	26.01106, 84.10643	30 KM/Hr	146.70 km
35	Turn	High	26.01014, 84.13080	15 KM/Hr	149.37 km
36	Turn	Medium	25.98300, 84.16236	30 KM/Hr	154.00 km
37	Turn	Medium	25.98001, 84.16513	30 KM/Hr	154.60 km
38	Turn	Medium	25.97740, 84.17022	30 KM/Hr	155.11 km
39	Turn	High	25.89191, 84.17784	15 KM/Hr	164.58 km
40	Turn	Medium	25.87708, 84.21622	30 KM/Hr	168.86 km
41	Turn	High	25.85127, 84.27983	15 KM/Hr	176.21 km
42	Turn	High	25.84771, 84.27976	15 KM/Hr	176.62 km
43	Turn	Medium	25.83955, 84.30567	30 KM/Hr	178.90 km
44	Turn	Medium	25.83451, 84.31266	30 KM/Hr	179.93 km
45	Turn	Medium	25.84566, 84.37828	30 KM/Hr	187.24 km
46	Turn	Medium	25.83588, 84.39605	30 KM/Hr	189.40 km
47	Turn	Medium	25.82252, 84.39622	30 KM/Hr	190.42 km
48	Turn	High	25.82031, 84.39746	15 KM/Hr	191.14 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
49	Turn	Medium	25.80024, 84.43301	30 KM/Hr	195.48 km
50	Turn	Medium	25.80024, 84.44174	30 KM/Hr	196.33 km
51	Blind Spot	Blind Spot	25.80515, 84.46907	10 KM/Hr	199.18 km
52	Turn	Medium	25.80323, 84.46861	30 KM/Hr	199.49 km
53	Turn	Medium	25.80124, 84.46923	30 KM/Hr	199.71 km
54	Turn	Medium	25.79400, 84.47956	30 KM/Hr	201.06 km
55	Turn	High	25.79183, 84.48058	15 KM/Hr	201.28 km
56	Turn	Medium	25.79112, 84.48356	30 KM/Hr	201.66 km
57	Turn	Medium	25.79040, 84.48397	30 KM/Hr	201.76 km
58	Turn	Medium	25.78830, 84.48725	30 KM/Hr	202.01 km

Emergency Locations

Found: 4 hospital(s), 1 police(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Prakash Hospital	26.6957341, 83.4807387	30 km/h	Medium	33.77 km
1	hospital	Sanjeevani Hospital, Deoria	26.4796329, 83.780432	30 km/h	Medium	72.82 km
2	hospital	K D Hospital, Deoria	26.4826171, 83.7821031	30 km/h	Medium	72.82 km
3	hospital	Government Hospital,Khukhundoo	26.3985008, 83.8418815	30 km/h	Medium	85.45 km
4	police	Ubhaon Police Station	26.132733, 83.8669181	30 km/h	Medium	117.59 km

Crowded Spots

Route Photos of Risky Spots



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Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.12 km

Coordinates: 26.75126, 83.22476



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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: 8.05 km

Coordinates: 26.74681, 83.25111



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 32.80 km

Coordinates: 26.69652, 83.47508



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 33.06 km**Coordinates:** 26.69741, 83.47552

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Risk Type: U-Turn**Risk Level:** High**Speed Limit:** 10 KM/Hr**Distance from Start:** 33.20 km**Coordinates:** 26.698439, 83.4747268



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 33.20 km

Coordinates: 26.69835, 83.47489



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 84.83 km

Coordinates: 26.40046, 83.83580



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 92.88 km**Coordinates:** 26.33324, 83.84423

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 95.87 km**Coordinates:** 26.31106, 83.85577



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 108.92 km

Coordinates: 26.19486, 83.86485



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 110.68 km

Coordinates: 26.17954, 83.87157



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 111.07 km

Coordinates: 26.17612, 83.87049



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 112.14 km

Coordinates: 26.16909, 83.87651



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 112.43 km

Coordinates: 26.16620, 83.87557



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 114.48 km

Coordinates: 26.15634, 83.85688



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 114.85 km

Coordinates: 26.15486, 83.85637



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 117.59 km

Coordinates: 26.13148, 83.86717



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 120.01 km

Coordinates: 26.12295, 83.89151



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 122.49 km

Coordinates: 26.10548, 83.90235



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 124.55 km

Coordinates: 26.10492, 83.92367



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 126.83 km

Coordinates: 26.09663, 83.94491



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 138.82 km**Coordinates:** 26.04427, 84.04669

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 139.44 km**Coordinates:** 26.03840, 84.04947



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 140.65 km

Coordinates: 26.03525, 84.05905



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 142.70 km

Coordinates: 26.02173, 84.07272



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 144.30 km

Coordinates: 26.01939, 84.08983



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 145.90 km

Coordinates: 26.00900, 84.09642



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 146.70 km

Coordinates: 26.01106, 84.10643



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 154.60 km

Coordinates: 25.98001, 84.16513



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 155.11 km

Coordinates: 25.97740, 84.17022



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 164.58 km

Coordinates: 25.89191, 84.17784



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 168.86 km

Coordinates: 25.87708, 84.21622



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 176.21 km

Coordinates: 25.85127, 84.27983



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 176.62 km

Coordinates: 25.84771, 84.27976



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 178.90 km

Coordinates: 25.83955, 84.30567



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 179.93 km
Coordinates: 25.83451, 84.31266



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 187.24 km
Coordinates: 25.84566, 84.37828



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 189.40 km

Coordinates: 25.83588, 84.39605



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 190.42 km

Coordinates: 25.82252, 84.39622



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 191.14 km

Coordinates: 25.82031, 84.39746



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 195.48 km

Coordinates: 25.80024, 84.43301



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 199.18 km

Coordinates: 25.80515, 84.46907



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 199.49 km

Coordinates: 25.80323, 84.46861



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 199.71 km

Coordinates: 25.80124, 84.46923



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 201.06 km

Coordinates: 25.79400, 84.47956



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 201.28 km

Coordinates: 25.79183, 84.48058



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 201.66 km

Coordinates: 25.79112, 84.48356



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 201.76 km

Coordinates: 25.79040, 84.48397



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 202.01 km

Coordinates: 25.78830, 84.48725

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