JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO PARSA JUNGLE 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

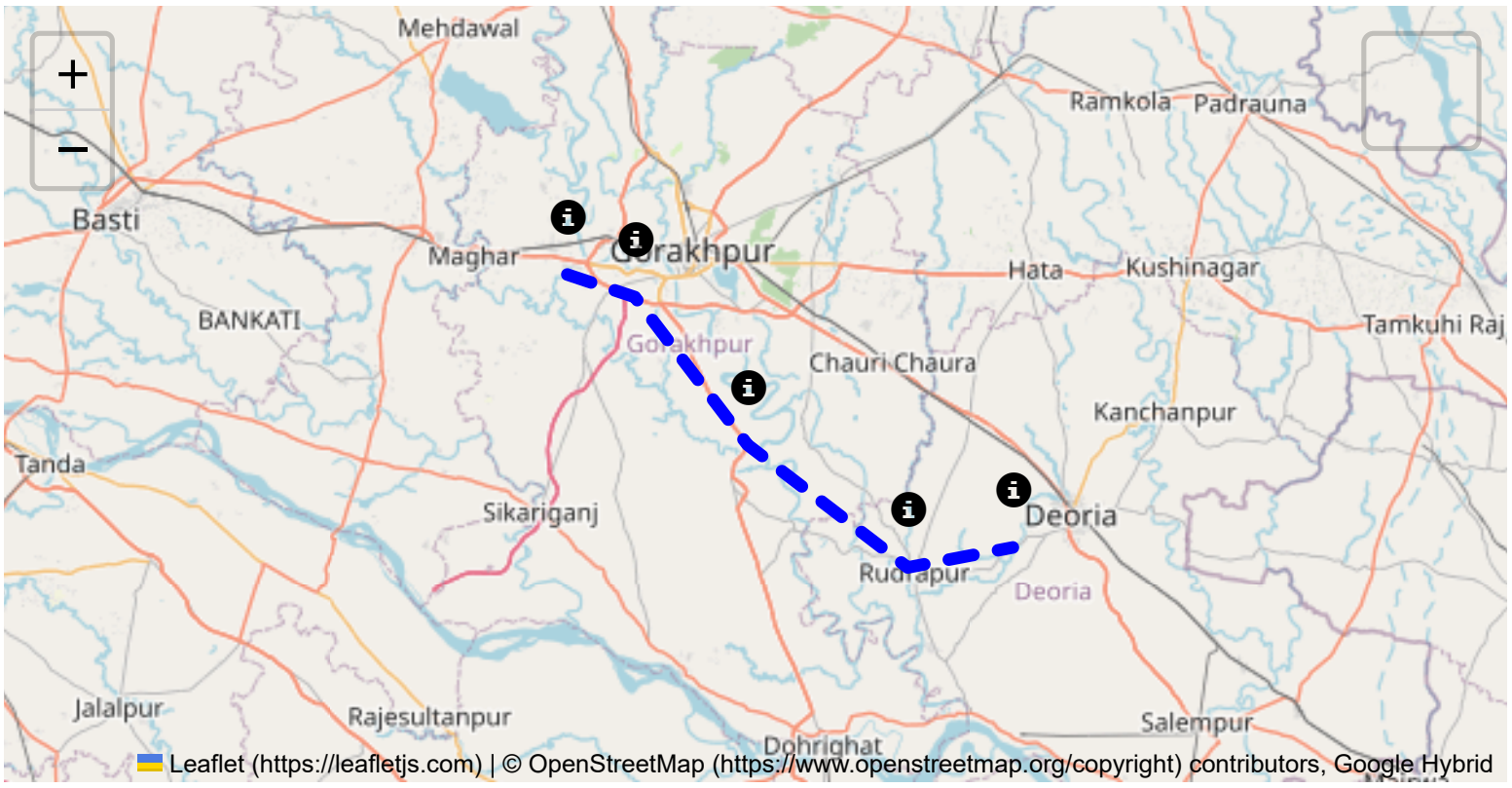
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental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

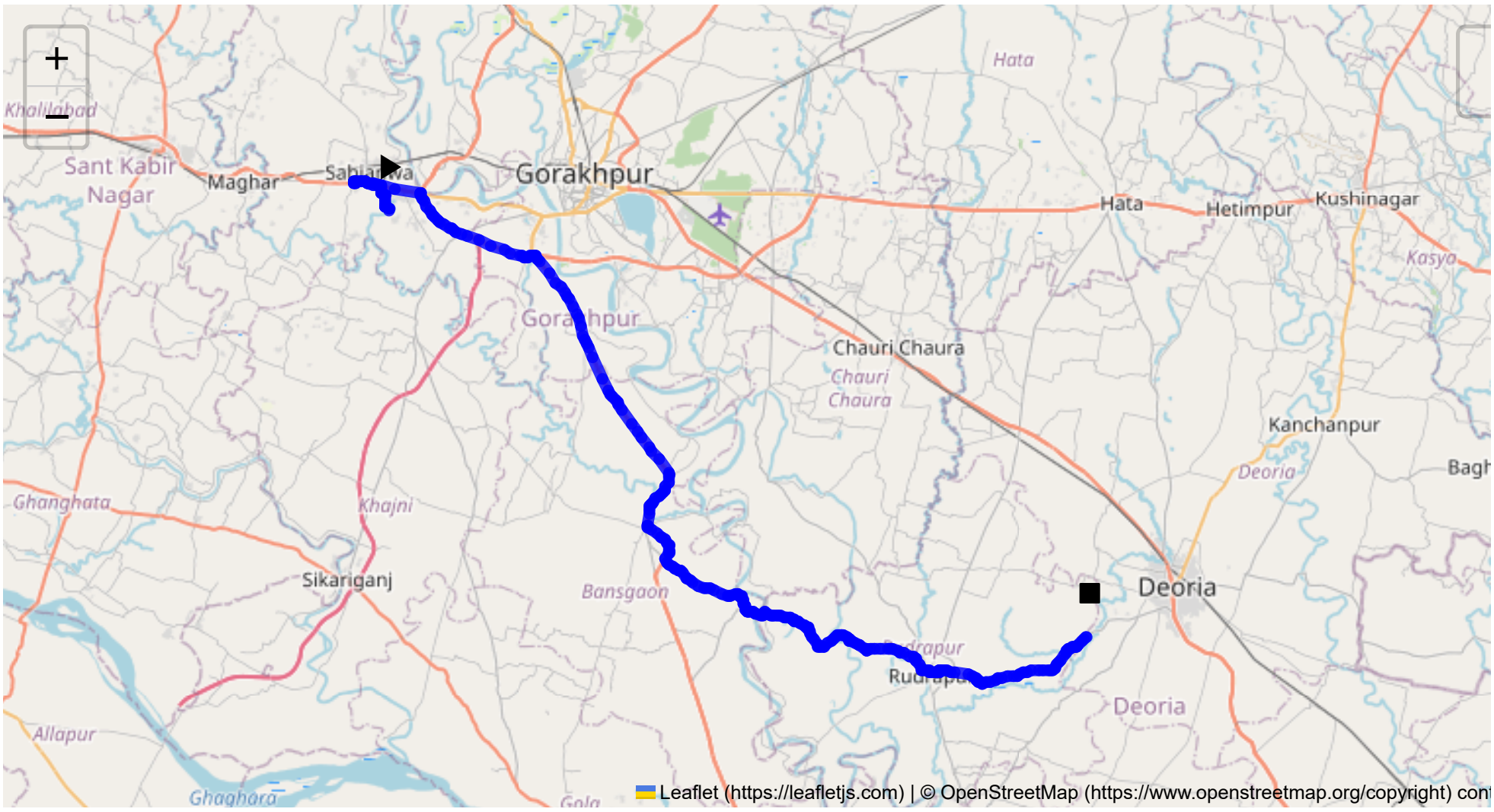
Journey Risk Mitigation

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: 79.22 km

Estimated Duration: 1.9 hours

Adjusted Duration (Heavy Vehicle): 2.3 hours

Start: (26.735959, 83.229398)

End: (26.468505, 83.719353)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map The route begins at GIDA Industrial Area Phase 1 in Sahjanwa and follows NH 27 through Ahirauli Ptakhroli before diverting onto Varanasi - Gorakhpur Highway and through local roads near Mahal Jalwar. The route further connects via Pidara Road and passes through key points such as Adarsh Chauraha and Rudrapur, eventually arriving at Parsa Jungle. The total distance is about 79.22 kilometers and involves transitioning from national highways to state and local roads.

2. Typical Weather Conditions and Potential Weather-related Hazards Uttar Pradesh experiences a subtropical climate with:

- Summers (April to June) being very hot and dry.
- Monsoons (July to September) bringing heavy rains, potentially leading to waterlogging and reduced visibility on roads.
- Winters (December to February) are cooler but can have fog, reducing visibility. The monsoon season is particularly hazardous due to potential flooding and slippery roads.

3. Analysis of Traffic Patterns

- **NH 27 and Varanasi - Gorakhpur Hwy**: These highways experience moderate to heavy traffic, with peak congestion during morning (8-10 AM) and evening (5-7 PM) rush hours.
- **Local roads near Mahal Jalwar and Pidara Road**: Generally have less traffic but can become congested during village market days or religious festivals.
- Congestion-prone areas include intersections and towns, especially around Rudrapur and Adarsh Chauraha.

4. Assessment of Road Quality and Infrastructure

- **NH 27**: Generally in good condition, well-maintained with clear markings. However, sudden changes in road conditions can occur during monsoons.
- **Local roads**: Might have varying quality; potholes, unmarked speed breakers, and poor lighting can be common, especially on village roads and near marketplaces.

5. Suggestions for Alternative Routes for Emergencies

- For bypassing congested areas or roadblocks on NH 27, consider using the parallel local roads. However, this is situational depending on real-time conditions.
- For emergencies around local roads, consider heading back toward major highways for faster assistance.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- Hazardous materials must adhere to state safety norms, including appropriate labeling, securing loads adequately, and having necessary permits.
- Transport restrictions might apply during large public gatherings or times of heightened security.

7. Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials

- Past incidents predominantly involve overturned trucks due to poor road conditions or driver error.
- Monsoon floods have caused temporary shutdowns and slowdowns in the region, affecting transport infrastructure.

8. Environmental Considerations and Sensitive Areas

- The route passes through agricultural areas, so caution is advised to avoid spillage or contamination.
- Respect for local flora and fauna is essential, especially when passing through less developed or forested areas.

9. Analysis of Communication Coverage

- Major highways like NH 27 have good communication coverage, including mobile and internet services.
- Rural areas, especially near Jungle Domardila, might have weaker signals, creating potential dead zones.

10. Estimated Emergency Response Times for Different Route Segments

- **NH 27 and Varanasi - Gorakhpur Hwy**: Emergency response is quicker due to proximity to major towns, approximately 30-45 minutes.
- **Local roads and rural areas**: Response can range from 45 minutes to over an hour, given the distance and road conditions.

12. Overall Summary of Risk Assessment The route has moderate to high risk primarily from weather conditions, road quality variation, and traffic congestion. Increased caution is advised during the monsoon season and in rural stretches with less reliable communication coverage. Truck drivers must be well-trained in local road navigation and regulations regarding hazardous materials for safe transit. Maintaining consistent communication with dispatchers is recommended, alongside pre-emptive planning for emergency scenarios.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
2	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
4	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
6	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
7	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.13 km
8	Turn	Medium	26.70795, 83.33164	30 KM/Hr	18.51 km
9	Turn	Medium	26.70789, 83.33181	30 KM/Hr	18.61 km
10	Turn	High	26.51679, 83.42326	15 KM/Hr	43.71 km
11	Turn	Medium	26.49533, 83.47376	30 KM/Hr	49.76 km
12	Turn	Medium	26.49451, 83.47509	30 KM/Hr	49.96 km
13	Turn	High	26.49401, 83.47522	15 KM/Hr	50.03 km
14	Turn	Medium	26.49300, 83.47739	30 KM/Hr	50.24 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
15	Turn	Medium	26.48447, 83.48064	30 KM/Hr	51.22 km
16	Turn	Medium	26.48411, 83.48134	30 KM/Hr	51.36 km
17	Turn	Medium	26.48426, 83.48168	30 KM/Hr	51.39 km
18	Turn	Medium	26.48205, 83.49068	30 KM/Hr	52.16 km
19	Turn	Medium	26.48218, 83.49131	30 KM/Hr	52.38 km
20	Turn	High	26.48401, 83.49308	15 KM/Hr	52.64 km
21	Turn	Medium	26.47869, 83.51319	30 KM/Hr	54.77 km
22	Turn	Medium	26.47455, 83.52286	30 KM/Hr	55.80 km
23	Turn	Medium	26.47417, 83.52319	30 KM/Hr	55.91 km
24	Turn	Medium	26.46700, 83.55260	30 KM/Hr	59.89 km
25	Turn	Medium	26.46555, 83.55290	30 KM/Hr	60.08 km
26	Turn	Medium	26.46528, 83.55318	30 KM/Hr	60.15 km
27	Turn	Medium	26.46037, 83.56317	30 KM/Hr	61.08 km
28	Turn	Medium	26.45543, 83.59834	30 KM/Hr	64.73 km
29	Turn	Medium	26.44774, 83.60333	30 KM/Hr	65.90 km
30	Turn	High	26.44634, 83.61300	15 KM/Hr	66.89 km
31	Turn	High	26.44655, 83.61310	15 KM/Hr	66.92 km
32	Turn	Medium	26.44609, 83.61506	30 KM/Hr	67.11 km
33	Turn	Medium	26.44623, 83.61527	30 KM/Hr	67.15 km
34	Turn	High	26.44756, 83.61584	15 KM/Hr	67.31 km
35	Turn	Medium	26.44002, 83.64293	30 KM/Hr	70.22 km
36	Turn	Medium	26.46001, 83.70525	30 KM/Hr	77.27 km
37	Turn	Medium	26.46166, 83.70998	30 KM/Hr	77.84 km
38	Turn	Medium	26.46152, 83.71045	30 KM/Hr	77.91 km

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.16 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: 4.27 km

Coordinates: 26.75377, 83.20465

Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.13 km

Coordinates: 26.74681, 83.25111

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 18.51 km

Coordinates: 26.70795, 83.33164

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 18.61 km

Coordinates: 26.70789, 83.33181

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 43.71 km

Coordinates: 26.51679, 83.42326

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 49.76 km

Coordinates: 26.49533, 83.47376

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 49.96 km

Coordinates: 26.49451, 83.47509

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 50.03 km

Coordinates: 26.49401, 83.47522

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.24 km

Coordinates: 26.49300, 83.47739

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 51.22 km

Coordinates: 26.48447, 83.48064

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.16 km

Coordinates: 26.48205, 83.49068

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 52.38 km

Coordinates: 26.48218, 83.49131

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 52.64 km

Coordinates: 26.48401, 83.49308

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.77 km

Coordinates: 26.47869, 83.51319

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 55.80 km

Coordinates: 26.47455, 83.52286

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 55.91 km

Coordinates: 26.47417, 83.52319

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 59.89 km

Coordinates: 26.46700, 83.55260

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 60.08 km

Coordinates: 26.46555, 83.55290

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 60.15 km

Coordinates: 26.46528, 83.55318

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.08 km

Coordinates: 26.46037, 83.56317

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 64.73 km

Coordinates: 26.45543, 83.59834

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 65.90 km

Coordinates: 26.44774, 83.60333

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 66.89 km

Coordinates: 26.44634, 83.61300

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 66.92 km

Coordinates: 26.44655, 83.61310

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.11 km

Coordinates: 26.44609, 83.61506

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.15 km

Coordinates: 26.44623, 83.61527

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 67.31 km

Coordinates: 26.44756, 83.61584

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 70.22 km

Coordinates: 26.44002, 83.64293

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 77.27 km

Coordinates: 26.46001, 83.70525

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 77.84 km

Coordinates: 26.46166, 83.70998

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 77.91 km

Coordinates: 26.46152, 83.71045

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