



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO MAA JAGDAMBA 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

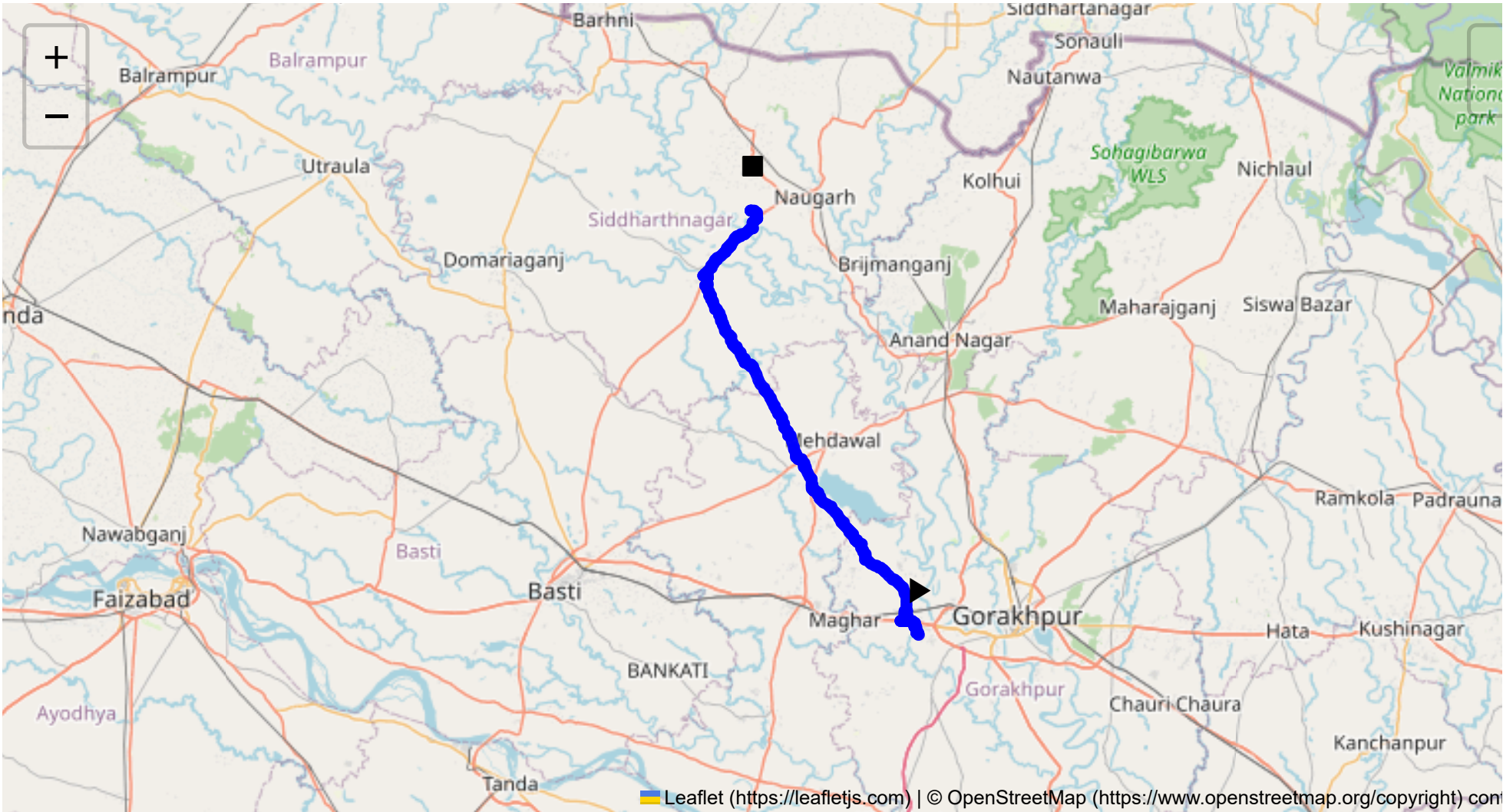
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 76.67 km
Estimated Duration: 2.1 hours
Adjusted Duration (Heavy Vehicle): 2.6 hours
Start: (26.735959, 83.229398)
End: (27.262421, 82.996374)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map:

The route from GIDA Industrial Area Phase 1, Sahjanwa to Bhojpur via Sahjanwa, Nandaur, and Bansi in Uttar Pradesh covers approximately 76.67 kilometers. It primarily spans local and state highways, passing through semi-urban and rural areas. Key stops along the way include the town of Sahjanwa, Nandaur, and Bansi, where urban and rural landscapes intersect.

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

Uttar Pradesh experiences a distinct seasonal cycle. In summer (March to June), temperatures can exceed 40°C, potentially leading to vehicle overheating. During monsoon (July to September), heavy rains may result in waterlogged roads and poor visibility. Winter (December to February) can bring fog, particularly during early mornings and late evenings, affecting visibility.

3. Analysis of Traffic Patterns:

Traffic is generally heavier during morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 7:00 PM) rush hours, especially near urban areas like Sahjanwa. Congestion is likely around marketplaces and local schools. Weekends may see increased traffic towards recreational spots, potentially affecting road movement.

4. Assessment of Road Quality and Infrastructure:

The road quality varies, with better-maintained sections near urban centers like Sahjanwa but may deteriorate in rural areas. Potholes and poorly marked lanes could be problematic, especially during adverse weather. Infrastructure may be lacking in rural stretches, with limited lighting and signage. Bridges and culverts should be approached cautiously, especially post-monsoon, due to potential structural weaknesses.

5. Suggestions for Alternative Routes for Emergencies:

In case of emergencies, alternate routes via NH27 serving toward Gorakhpur can be considered but may be longer. Local roads parallel to the main route through adjacent villages might be viable but could lack necessary infrastructure.

6. Summary of Local Regulations Affecting Hazardous Material Transport:

Transporting hazardous materials requires compliance with The Motor Vehicles Rules, 1989, necessitating adequate labeling, emergency response plans, and appropriate vehicle permits. Ensuring prior route approval and providing relevant safety training to drivers is critical.

7. Overview of Historical Incidents:

Reported incidents in the region include collisions and rollovers involving heavy vehicles due to excessive speed or poor visibility. Specific data may be sparse, but typically issues arise around poorly lit or congested segments.

8. Environmental Considerations and Sensitive Areas:

Protected areas are minimal, with agriculture dominating the landscape. Avoid contamination of nearby water bodies, which primarily serve local communities for agriculture and drinking water.

9. Analysis of Communication Coverage:

Mobile network coverage is reasonably good near urban centers but can become spotty in rural stretches, particularly in low-lying or isolated areas, leading to potential communication dead zones.

10. Estimated Emergency Response Times:

Response times vary by location, generally faster near Sahjanwa with an estimated 20-30 minutes. Rural areas like Bansi and Nandaur may experience longer response times, up to 45-60 minutes due to distance and available infrastructure.

12. Overall Summary of Risk Assessment:

The route presents typical risks associated with transporting hazardous materials in rural and semi-urban India, influenced by weather, road conditions, and infrastructure limitations. Adequate preparation, adherence to regulations, and real-time monitoring of weather and traffic can mitigate risks effectively. Proactively briefing drivers on route specifics, potential hazards, and emergency procedures will further enhance safety.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
1	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.47 km
2	Turn	High	26.74524, 83.22746	15 KM/Hr	1.16 km
3	Turn	High	26.74654, 83.22390	15 KM/Hr	1.65 km
4	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.16 km
5	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.22 km
6	Turn	High	26.75377, 83.20465	15 KM/Hr	4.27 km
7	Turn	Medium	26.75378, 83.21338	30 KM/Hr	5.13 km
8	Turn	High	26.75386, 83.21352	15 KM/Hr	5.16 km
9	Turn	Medium	26.75640, 83.21275	30 KM/Hr	5.43 km
10	Blind Spot	Blind Spot	26.76132, 83.21435	10 KM/Hr	5.94 km
11	Turn	Medium	26.76119, 83.21159	30 KM/Hr	6.29 km
12	Turn	High	26.76131, 83.21143	15 KM/Hr	6.33 km
13	Turn	Medium	26.76403, 83.21129	30 KM/Hr	6.63 km
14	Turn	Medium	26.76555, 83.21385	30 KM/Hr	6.87 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
15	Turn	Medium	26.76593, 83.21408	30 KM/Hr	6.97 km
16	Turn	Medium	26.83008, 83.15664	30 KM/Hr	16.71 km
17	Turn	High	26.91597, 83.08449	15 KM/Hr	29.03 km
18	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	29.21 km
19	Turn	Medium	26.91843, 83.08101	30 KM/Hr	29.62 km
20	Turn	Medium	26.92258, 83.08191	30 KM/Hr	30.21 km
21	Turn	Medium	26.94829, 83.07156	30 KM/Hr	33.25 km
22	Turn	Medium	26.98317, 83.05063	30 KM/Hr	37.52 km
23	Turn	Medium	27.07125, 82.99577	30 KM/Hr	49.07 km
24	Turn	Medium	27.07137, 82.99515	30 KM/Hr	49.21 km
25	Turn	High	27.07059, 82.99365	15 KM/Hr	49.39 km
26	Turn	High	27.16975, 82.93429	15 KM/Hr	62.12 km
27	Turn	High	27.17966, 82.93498	15 KM/Hr	63.23 km
28	Turn	Medium	27.17992, 82.93461	30 KM/Hr	63.29 km
29	Turn	High	27.18005, 82.93461	15 KM/Hr	63.31 km
30	Turn	High	27.18194, 82.93124	15 KM/Hr	63.68 km
31	Turn	Medium	27.18212, 82.93129	30 KM/Hr	63.72 km
32	Turn	Medium	27.18395, 82.93294	30 KM/Hr	63.95 km
33	Blind Spot	Blind Spot	27.25199, 83.00436	10 KM/Hr	74.80 km
34	Turn	Medium	27.25751, 83.00412	30 KM/Hr	75.37 km
35	Turn	Medium	27.25960, 83.00324	30 KM/Hr	75.66 km
36	Turn	High	27.26274, 82.99698	15 KM/Hr	76.35 km
37	Turn	High	27.26207, 82.99657	15 KM/Hr	76.49 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: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.13 km

Coordinates: 26.75378, 83.21338



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.16 km

Coordinates: 26.75386, 83.21352



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.43 km

Coordinates: 26.75640, 83.21275



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.94 km

Coordinates: 26.76132, 83.21435



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.29 km

Coordinates: 26.76119, 83.21159



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 6.33 km
Coordinates: 26.76131, 83.21143



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 6.63 km
Coordinates: 26.76403, 83.21129



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.87 km

Coordinates: 26.76555, 83.21385



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.97 km

Coordinates: 26.76593, 83.21408



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 16.71 km
Coordinates: 26.83008, 83.15664



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 29.03 km
Coordinates: 26.91597, 83.08449



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 29.21 km
Coordinates: 26.91433, 83.08351



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 29.62 km
Coordinates: 26.91843, 83.08101



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 30.21 km
Coordinates: 26.92258, 83.08191



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 33.25 km
Coordinates: 26.94829, 83.07156



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 37.52 km
Coordinates: 26.98317, 83.05063



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.07 km
Coordinates: 27.07125, 82.99577



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.21 km
Coordinates: 27.07137, 82.99515



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 49.39 km
Coordinates: 27.07059, 82.99365



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 62.12 km

Coordinates: 27.16975, 82.93429



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.23 km

Coordinates: 27.17966, 82.93498



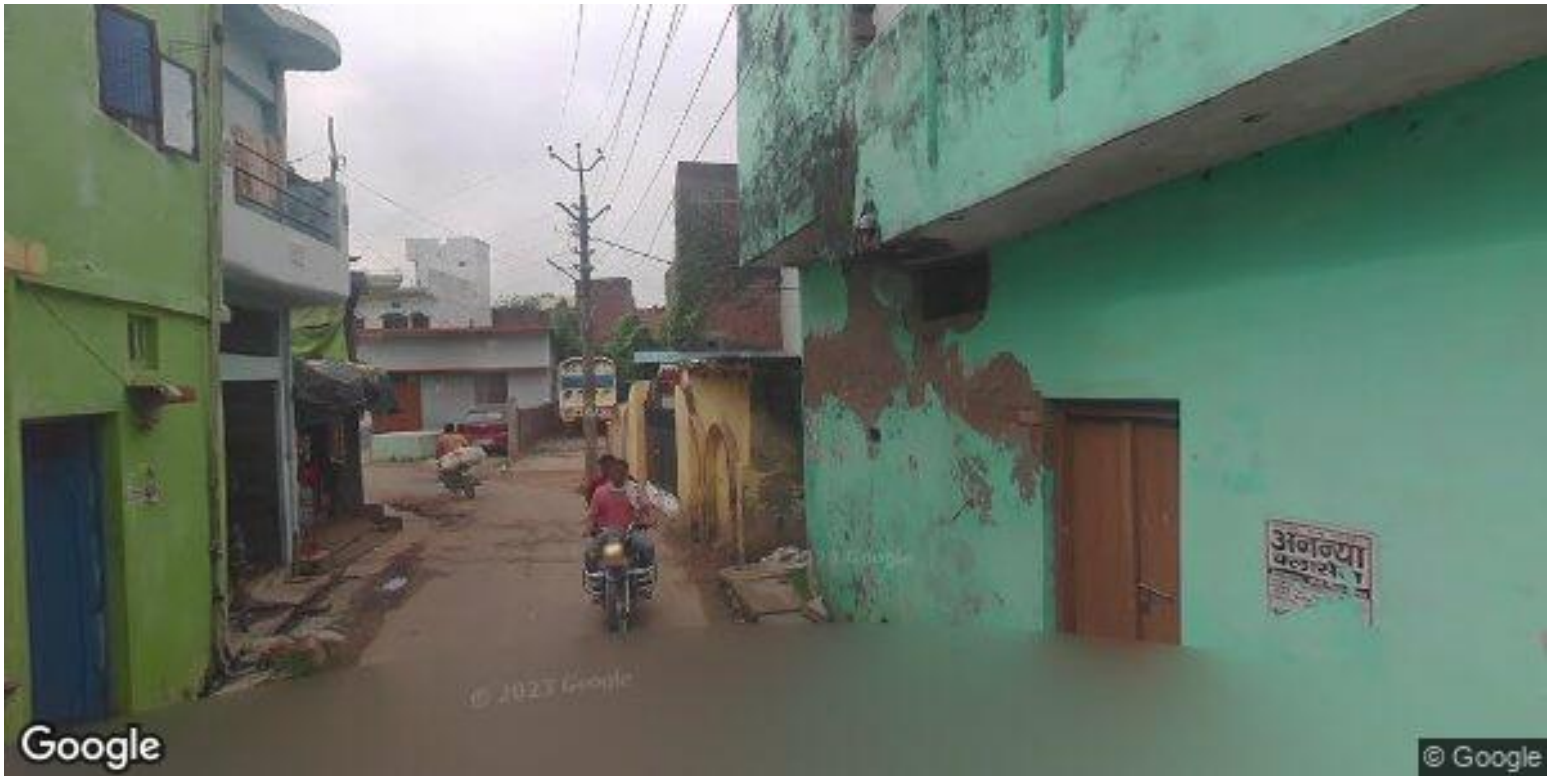
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.29 km

Coordinates: 27.17992, 82.93461



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.31 km

Coordinates: 27.18005, 82.93461



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 63.68 km
Coordinates: 27.18194, 82.93124



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 63.95 km
Coordinates: 27.18395, 82.93294



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 74.80 km
Coordinates: 27.25199, 83.00436



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 75.37 km
Coordinates: 27.25751, 83.00412



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 75.66 km
Coordinates: 27.25960, 83.00324



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 76.35 km
Coordinates: 27.26274, 82.99698

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