



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to POLICE LINES SIDDHARTH
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

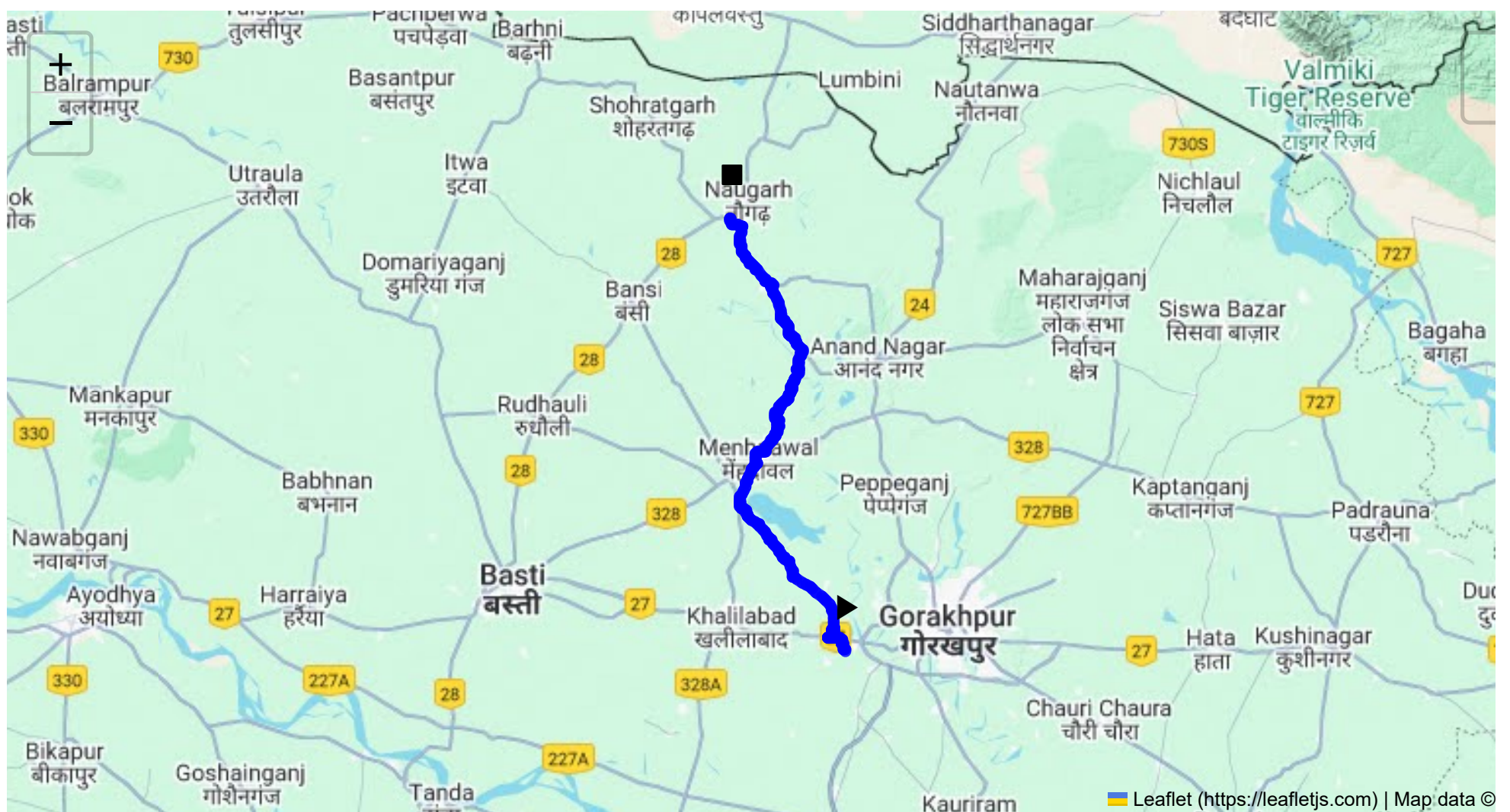
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 78.41 km
Estimated Duration: 2.4 hours
Adjusted Duration (Heavy Vehicle): 3.0 hours
Start: (26.735959, 83.229398)
End: (27.276503, 83.068292)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from GIDA Industrial Area Phase 1 in Sahjanwa to Telephone Exchange Colony in Naugarh spans approximately 78.41 kilometers. Starting in an industrial area, the route passes through several towns and rural areas, which could introduce varying conditions, from well-maintained roads to more challenging rural terrain.

2. Typical Weather Conditions and Potential Weather-Related Hazards

- **Weather Patterns:** The region experiences a subtropical climate with significant rainfall during the monsoon season (June to September). Winters (November to February) can be foggy, while summers (March to June) may reach high temperatures.
- **Weather Hazards:** Monsoon rains can lead to flooding and poor visibility, while fog in the winter can reduce visibility, both increasing the risk of accidents.

3. Analysis of Traffic Patterns

- **Peak Hours and Congestion:** Traffic congestion is more likely during the morning and evening rush hours (8:00-10:00 am and 5:00-7:00 pm). Key congestion-prone areas might include town centers and busy intersections.
- **Traffic Composition:** Expect a mix of local commuter traffic, agricultural vehicles, and heavy trucks, particularly near industrial and market areas.

4. Assessment of Road Quality and Infrastructure

- **Road Quality:** The roads vary significantly, with well-paved highways near industrial and urban centers and potentially rougher roads in rural areas. Maintenance might be inconsistent, with potholes and narrow sections.
- **Infrastructure:** The route passes through a mix of industrial and rural landscapes, with limited service stations in more isolated areas.

5. Suggestions for Alternative Routes for Emergencies

In emergency situations, considering routes parallel to the main highways is advisable, albeit these might involve longer detours through regional or rural roads. Coordination with local transport authorities could provide updated guidance.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- **Permits and Escorts:** Transportation of hazardous materials requires proper permits, and in certain areas, it may require police escorts.
- **Time Restrictions:** Local ordinances may restrict the transit of hazardous materials during heavy traffic hours for safety reasons.

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

There have been occasional reports of accidents involving trucks due to poor road conditions or driver error, particularly in adverse weather. Historical data does not indicate frequent incidents, but details can be widely variable, warranting careful driving practices.

8. Environmental Considerations and Sensitive Areas

- **Sensitive Areas:** Portions of the route may pass through agricultural zones, requiring careful adherence to spill prevention standards.
- **Protected Areas:** There are no major wildlife sanctuaries along the route, but smaller ecological areas could be present, demanding cautious driving.

9. Analysis of Communication Coverage

- **Coverage Strength:** Urban and semi-urban areas generally have good network coverage, but rural areas may experience weak signals or dead zones.
- **Dead Zones:** Expect patchy coverage in more remote sections, particularly the areas stretching between Dharohari and Manorathpur.

10. Estimated Emergency Response Times

- **Response Time:** Proximity to towns such as Sahjanwa and Naugarh likely offers quicker emergency response times (within 30 minutes). Rural stretches may experience delays up to an hour due to distance and road conditions.

11. Overall Summary of Risk Assessment

The route combines a range of conditions from well-maintained highways to less reliable rural paths, affected by seasonal weather and potential congestion. Drivers must be prepared for potential delays, adverse weather conditions, and respect local regulations concerning hazardous materials.

Communication and coordination with local authorities can help in case of an emergency, and alternative routes should remain in consideration for unforeseen circumstances. The risks associated with this route are moderate, underscoring the importance of cautious driving aligned with detailed logistical planning.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Turn	High	26.73746, 83.22938	15 KM/Hr	0.08 km
1	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
2	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
3	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
4	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km
5	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km
6	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
7	Turn	High	26.75377, 83.20465	15 KM/Hr	4.26 km
8	Turn	Medium	26.75378, 83.21338	30 KM/Hr	5.12 km
9	Turn	High	26.75386, 83.21352	15 KM/Hr	5.15 km
10	Turn	Medium	26.75640, 83.21275	30 KM/Hr	5.41 km
11	Blind Spot	Blind Spot	26.76132, 83.21435	10 KM/Hr	5.92 km
12	Turn	High	26.76131, 83.21143	15 KM/Hr	6.29 km
13	Turn	High	26.76382, 83.21122	15 KM/Hr	6.50 km
14	Turn	Medium	26.76555, 83.21385	30 KM/Hr	6.85 km
15	Turn	Medium	26.76593, 83.21408	30 KM/Hr	6.95 km
16	Turn	Medium	26.81740, 83.18022	30 KM/Hr	13.68 km
17	Turn	Medium	26.83008, 83.15664	30 KM/Hr	16.69 km
18	Turn	Medium	26.86197, 83.13749	30 KM/Hr	20.70 km
19	Turn	High	26.91597, 83.08449	15 KM/Hr	29.00 km
20	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	29.18 km
21	Turn	High	26.91843, 83.08101	15 KM/Hr	29.59 km
22	Turn	Medium	26.92258, 83.08191	30 KM/Hr	30.18 km
23	Turn	Medium	26.92506, 83.08135	30 KM/Hr	30.46 km
24	Blind Spot	Blind Spot	26.97088, 83.10494	10 KM/Hr	36.15 km
25	Turn	High	26.97107, 83.10468	15 KM/Hr	36.18 km
26	Blind Spot	Blind Spot	26.97072, 83.10317	10 KM/Hr	36.31 km
27	Turn	Medium	26.97378, 83.10402	30 KM/Hr	36.62 km
28	Turn	Medium	26.98542, 83.10690	30 KM/Hr	38.05 km
29	Turn	Medium	26.98458, 83.11467	30 KM/Hr	38.86 km
30	Turn	Medium	26.98525, 83.11574	30 KM/Hr	39.00 km
31	Turn	Medium	26.98848, 83.11705	30 KM/Hr	39.35 km
32	Turn	Medium	26.98925, 83.11788	30 KM/Hr	39.49 km
33	Blind Spot	Blind Spot	27.01131, 83.13473	10 KM/Hr	42.50 km
34	Turn	High	27.01197, 83.13315	15 KM/Hr	42.68 km
35	Turn	Medium	27.02045, 83.13522	30 KM/Hr	43.59 km
36	Turn	High	27.02120, 83.13463	15 KM/Hr	43.74 km
37	Turn	High	27.02501, 83.13542	15 KM/Hr	44.17 km
38	Turn	Medium	27.02831, 83.13119	30 KM/Hr	44.67 km
39	Turn	Medium	27.02951, 83.13061	30 KM/Hr	44.86 km
40	Turn	Medium	27.03222, 83.13078	30 KM/Hr	45.14 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
41	Turn	Medium	27.03399, 83.13278	30 KM/Hr	45.47 km
42	Turn	High	27.03520, 83.13369	15 KM/Hr	45.60 km
43	Turn	Medium	27.03522, 83.13420	30 KM/Hr	45.70 km
44	Turn	Medium	27.03558, 83.13460	30 KM/Hr	45.76 km
45	Turn	Medium	27.04736, 83.14157	30 KM/Hr	47.27 km
46	Turn	Medium	27.05263, 83.14922	30 KM/Hr	48.19 km
47	Turn	High	27.06073, 83.15344	15 KM/Hr	49.14 km
48	Turn	High	27.06113, 83.15291	15 KM/Hr	49.29 km
49	Turn	Medium	27.06262, 83.15297	30 KM/Hr	49.41 km
50	Turn	Medium	27.06343, 83.15373	30 KM/Hr	49.55 km
51	Turn	Medium	27.06672, 83.15376	30 KM/Hr	49.92 km
52	Turn	Medium	27.08421, 83.16337	30 KM/Hr	52.09 km
53	Turn	Medium	27.08529, 83.16374	30 KM/Hr	52.22 km
54	Turn	Medium	27.08800, 83.16337	30 KM/Hr	52.56 km
55	Turn	High	27.08880, 83.16237	15 KM/Hr	52.68 km
56	Turn	Medium	27.09060, 83.16242	30 KM/Hr	52.86 km
57	Turn	Medium	27.09703, 83.16486	30 KM/Hr	53.63 km
58	Turn	High	27.09836, 83.16398	15 KM/Hr	53.83 km
59	Turn	High	27.10532, 83.16685	15 KM/Hr	54.40 km
60	Turn	High	27.10564, 83.16654	15 KM/Hr	54.71 km
61	Turn	Medium	27.11164, 83.16868	30 KM/Hr	55.40 km
62	Turn	High	27.11346, 83.16893	15 KM/Hr	55.56 km
63	Turn	Medium	27.17226, 83.13699	30 KM/Hr	63.19 km
64	Turn	Medium	27.18486, 83.12729	30 KM/Hr	64.73 km
65	Turn	Medium	27.19471, 83.12671	30 KM/Hr	66.06 km
66	Turn	Medium	27.19557, 83.12607	30 KM/Hr	66.18 km
67	Turn	Medium	27.21813, 83.10075	30 KM/Hr	69.61 km
68	Turn	Medium	27.22060, 83.09596	30 KM/Hr	70.31 km
69	Turn	Medium	27.24886, 83.08185	30 KM/Hr	73.91 km
70	Turn	High	27.26713, 83.08347	15 KM/Hr	75.96 km
71	Turn	High	27.27041, 83.07003	15 KM/Hr	77.16 km
72	Blind Spot	Blind Spot	27.27587, 83.06815	10 KM/Hr	77.95 km
73	Blind Spot	Blind Spot	27.27597, 83.06860	10 KM/Hr	78.03 km

Emergency Locations

Found: 7 hospital(s), 1 clinic(s), 1 police(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	clinic	CHC HOSPITAL, Mehdawal	26.9722141, 83.1048173	30 km/h	Medium	36.49 km
2	hospital	Ayush hospital	27.2648223, 83.083625	30 km/h	Medium	75.35 km
5	hospital	VPL Hospital	27.2648784, 83.0851965	30 km/h	Medium	75.35 km
7	hospital	Buddha Hospital	27.263321, 83.0830409	30 km/h	Medium	75.35 km
8	hospital	JEEVAN JYOTI HOSPITAL	27.2640502, 83.0830063	30 km/h	Medium	75.35 km
3	hospital	Aryan Hospital	27.2651855, 83.0835176	30 km/h	Medium	75.76 km
4	hospital	Apollo Hospital And Maternity Sewa Aashram, State Highway 1A, Mahariya, Naugarh, Uttar Pradesh	27.266001, 83.0834354	30 km/h	Medium	75.76 km
9	hospital	District Combined Hospital Siddharthnagar	27.2740395, 83.0703118	30 km/h	Medium	77.63 km
10	police	Police Office Siddharth Nagar	27.2752892, 83.0675485	30 km/h	Medium	77.95 km

Crowded Spots

Found: 1 school(s), 1 college(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
6	school	Siddharth Public School	27.2651876, 83.0850844	30 km/h	Medium	75.76 km
1	college	Siddharth Nagar Medical College	27.2664725, 83.0825117	30 km/h	Medium	76.02 km

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: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.12 km

Coordinates: 26.75378, 83.21338



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.15 km

Coordinates: 26.75386, 83.21352



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.41 km

Coordinates: 26.75640, 83.21275



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.92 km

Coordinates: 26.76132, 83.21435



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 6.29 km

Coordinates: 26.76131, 83.21143



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 6.50 km

Coordinates: 26.76382, 83.21122



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.85 km

Coordinates: 26.76555, 83.21385



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.95 km

Coordinates: 26.76593, 83.21408



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 13.68 km

Coordinates: 26.81740, 83.18022



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 16.69 km

Coordinates: 26.83008, 83.15664



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 20.70 km

Coordinates: 26.86197, 83.13749



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.00 km

Coordinates: 26.91597, 83.08449



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 29.18 km

Coordinates: 26.91433, 83.08351



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.59 km

Coordinates: 26.91843, 83.08101



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.18 km

Coordinates: 26.92258, 83.08191



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 30.46 km

Coordinates: 26.92506, 83.08135



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 36.15 km

Coordinates: 26.97088, 83.10494



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 36.18 km

Coordinates: 26.97107, 83.10468



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 36.31 km

Coordinates: 26.97072, 83.10317



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 36.62 km

Coordinates: 26.97378, 83.10402



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 38.05 km

Coordinates: 26.98542, 83.10690



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 38.86 km

Coordinates: 26.98458, 83.11467



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 39.00 km

Coordinates: 26.98525, 83.11574



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 39.35 km

Coordinates: 26.98848, 83.11705



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 39.49 km

Coordinates: 26.98925, 83.11788



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 42.50 km

Coordinates: 27.01131, 83.13473



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 42.68 km

Coordinates: 27.01197, 83.13315



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 43.59 km

Coordinates: 27.02045, 83.13522



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 43.74 km

Coordinates: 27.02120, 83.13463



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 44.17 km

Coordinates: 27.02501, 83.13542



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 44.67 km

Coordinates: 27.02831, 83.13119



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 44.86 km

Coordinates: 27.02951, 83.13061



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 55.40 km

Coordinates: 27.11164, 83.16868



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 55.56 km

Coordinates: 27.11346, 83.16893



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 75.96 km

Coordinates: 27.26713, 83.08347

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