



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO MAHLA INDANE GRAMIN

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

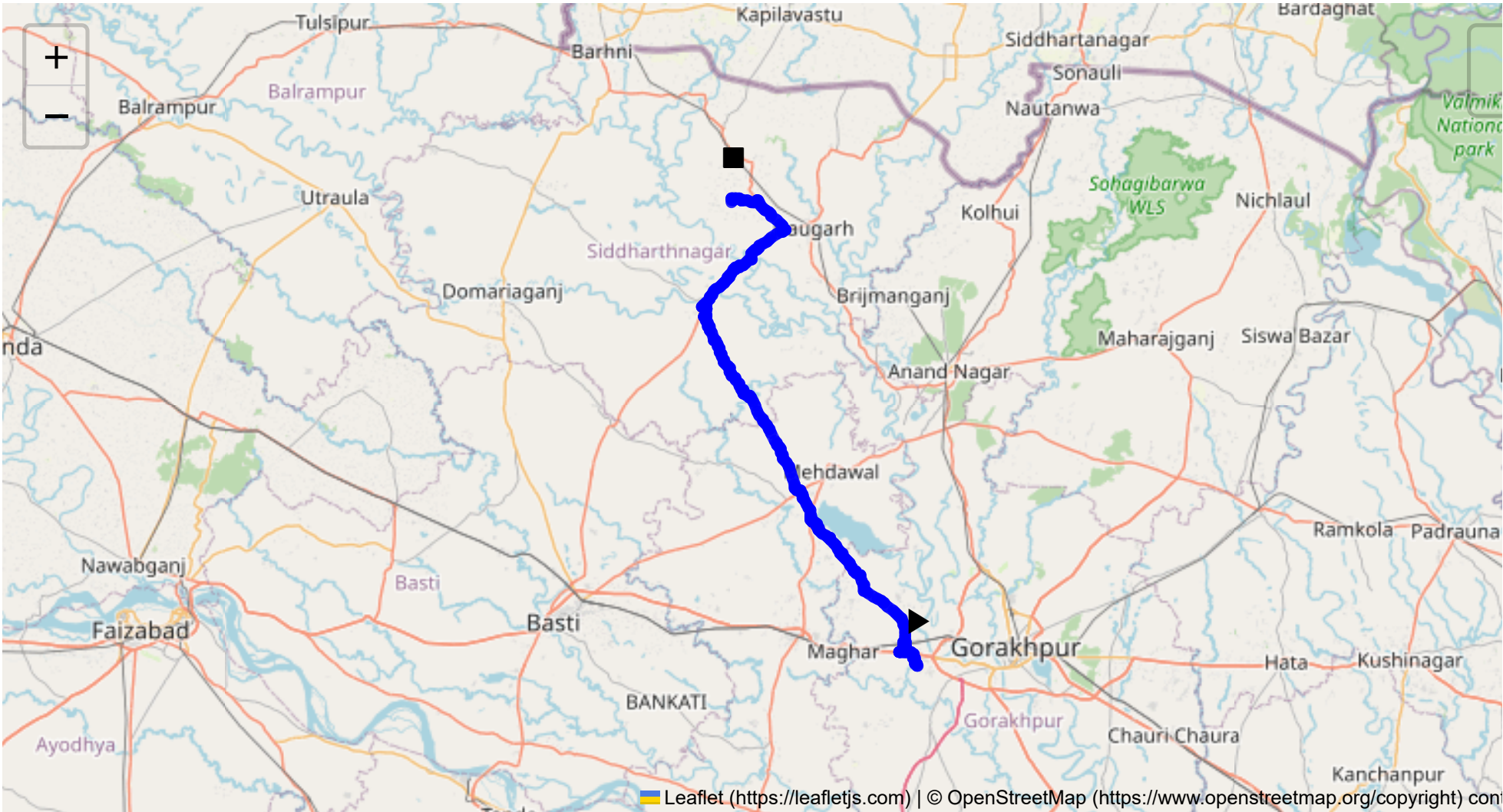
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 90.31 km
Estimated Duration: 2.5 hours
Adjusted Duration (Heavy Vehicle): 3.1 hours
Start: (26.735959, 83.229398)
End: (27.311835, 82.970728)

Welcome to the Journey Risk Management Study

Route Map Overview: The route from the GIDA Industrial Area in Sahjanwa to Lakhanpara via several key points is primarily made up of state highways and district roads. It traverses through semi-urban and rural areas with varied traffic densities, taking approximately 90.31 kilometers.

Typical Weather Conditions and Hazards: Uttar Pradesh experiences a subtropical climate. Summer (March to June) can be intensely hot, with temperatures exceeding 40°C, which may cause road

deformation. Monsoon season (July to September) brings heavy rains, posing flood risks and waterlogging, particularly in rural intersections. Winter season (December to February) can cause fog, reducing visibility significantly.

Traffic Patterns: In urban areas around Sahjanwa, congestion is common during mornings and evenings, typically between 8-10 AM and 5-7 PM, due to local commuting. Bansi town also experiences similar congestion during market hours. Rural sections generally witness lighter traffic but may still have occasional delays due to slow-moving vehicles like tractors.

Road Quality and Infrastructure Assessment: The road infrastructure is generally mixed. Main state highways are maintained better with consistent signage and road markings. However, district roads can have potholes and uneven surfaces, especially post-monsoon. Bridges and culverts might be narrow, requiring careful navigation for heavy vehicles.

Alternative Routes for Emergencies: Given the rural setting, alternate routes are limited. However, local roads connecting through secondary towns can act as temporary detours. In emergencies, coordination with local traffic management is advised for guidance on feasible alternate paths.

Local Regulations on Hazardous Material Transport: In Uttar Pradesh, transit of hazardous materials requires adherence to specific timings, usually avoiding night travel in sensitive areas. Proper documentation and clear marking of vehicles are mandatory. Local checkpoints may conduct inspections.

Historical Incidents Involving Heavy Vehicles: Records indicate sporadic incidents, often linked to monsoon-related road damage or fog in winter leading to reduced visibility accidents. Fire safety standards are highlighted due to past incidents involving flammable transport.

Environmental Considerations and Sensitive Areas: The route does not directly pass through major ecological reserves but crosses agricultural land where spills or contamination from hazardous materials could affect local crops. Proximity to water bodies necessitates caution to prevent contamination.

Communication Coverage Analysis: The route generally enjoys robust communication infrastructure near urban and semi-urban areas. However, rural stretches may encounter dead zones, especially between Nandaur and Bansi, where signal coverage can be intermittent.

Estimated Emergency Response Times: Response times may vary significantly. Urban sectors near Sahjanwa and Bansi might see emergency services respond within 30 minutes. Rural stretches, however, could experience delays of up to 1-2 hours depending on proximity to the nearest town with emergency facilities.

Overall Summary of Risk Assessment: The route requires careful navigation, especially during adverse weather and peak traffic periods. Understanding local traffic patterns, maintaining speed and distance due to mixed road quality, and adhering strictly to hazardous material transport regulations are crucial. Preparation for communication challenges and potential emergency scenarios is advised for a safer journey.

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	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
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	5.42 km
11	Blind Spot	Blind Spot	26.76132, 83.21435	10 KM/Hr	5.93 km
12	Turn	High	26.76131, 83.21143	15 KM/Hr	6.29 km
13	Turn	Medium	26.76403, 83.21129	30 KM/Hr	6.62 km
14	Turn	Medium	26.76555, 83.21385	30 KM/Hr	6.86 km
15	Turn	Medium	26.76593, 83.21408	30 KM/Hr	6.96 km
16	Turn	Medium	26.81740, 83.18022	30 KM/Hr	13.84 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	29.01 km
20	Blind Spot	Blind Spot	26.91433, 83.08351	10 KM/Hr	29.19 km
21	Turn	Medium	26.91843, 83.08101	30 KM/Hr	29.60 km
22	Turn	Medium	26.92258, 83.08191	30 KM/Hr	30.19 km
23	Turn	High	26.94829, 83.07156	15 KM/Hr	33.23 km
24	Turn	Medium	26.98317, 83.05063	30 KM/Hr	37.50 km
25	Turn	Medium	26.98353, 83.04986	30 KM/Hr	37.91 km
26	Turn	Medium	27.07125, 82.99577	30 KM/Hr	49.05 km
27	Turn	Medium	27.07137, 82.99515	30 KM/Hr	49.19 km
28	Turn	High	27.07059, 82.99365	15 KM/Hr	49.36 km
29	Turn	Medium	27.07376, 82.98855	30 KM/Hr	49.96 km
30	Turn	High	27.16975, 82.93429	15 KM/Hr	62.09 km
31	Turn	High	27.17966, 82.93498	15 KM/Hr	63.19 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
32	Turn	Medium	27.17992, 82.93461	30 KM/Hr	63.26 km
33	Turn	High	27.18005, 82.93461	15 KM/Hr	63.28 km
34	Turn	High	27.18194, 82.93124	15 KM/Hr	63.65 km
35	Turn	Medium	27.18212, 82.93129	30 KM/Hr	63.69 km
36	Turn	Medium	27.18395, 82.93294	30 KM/Hr	63.92 km
37	Turn	Medium	27.18426, 82.93547	30 KM/Hr	64.18 km
38	Turn	High	27.27589, 83.04691	15 KM/Hr	79.75 km
39	Turn	High	27.27614, 83.04693	15 KM/Hr	79.80 km
40	Turn	High	27.31386, 83.00689	15 KM/Hr	85.41 km
41	Turn	High	27.31389, 83.00662	15 KM/Hr	85.66 km
42	Turn	High	27.31108, 83.00538	15 KM/Hr	85.99 km
43	Turn	Medium	27.31108, 83.00482	30 KM/Hr	86.04 km
44	Turn	Medium	27.30961, 83.00240	30 KM/Hr	86.21 km
45	Turn	Medium	27.31432, 82.98629	30 KM/Hr	87.95 km
46	Turn	High	27.31427, 82.98608	15 KM/Hr	88.05 km
47	Blind Spot	Blind Spot	27.31350, 82.98591	10 KM/Hr	88.13 km
48	Turn	High	27.31642, 82.97594	15 KM/Hr	89.11 km
49	Turn	High	27.31438, 82.97515	15 KM/Hr	89.30 km
50	Turn	Medium	27.31514, 82.97245	30 KM/Hr	89.67 km
51	Turn	Medium	27.31489, 82.97200	30 KM/Hr	89.73 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: 5.42 km

Coordinates: 26.75640, 83.21275



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 5.93 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: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.62 km

Coordinates: 26.76403, 83.21129



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.86 km

Coordinates: 26.76555, 83.21385



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.96 km

Coordinates: 26.76593, 83.21408



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 13.84 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: 29.01 km
Coordinates: 26.91597, 83.08449



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 29.19 km
Coordinates: 26.91433, 83.08351



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 29.60 km
Coordinates: 26.91843, 83.08101



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 30.19 km
Coordinates: 26.92258, 83.08191



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 33.23 km
Coordinates: 26.94829, 83.07156



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 37.50 km
Coordinates: 26.98317, 83.05063



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 37.91 km
Coordinates: 26.98353, 83.04986



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.05 km
Coordinates: 27.07125, 82.99577



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.19 km
Coordinates: 27.07137, 82.99515



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 49.36 km
Coordinates: 27.07059, 82.99365



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.96 km
Coordinates: 27.07376, 82.98855



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 62.09 km

Coordinates: 27.16975, 82.93429



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.19 km

Coordinates: 27.17966, 82.93498



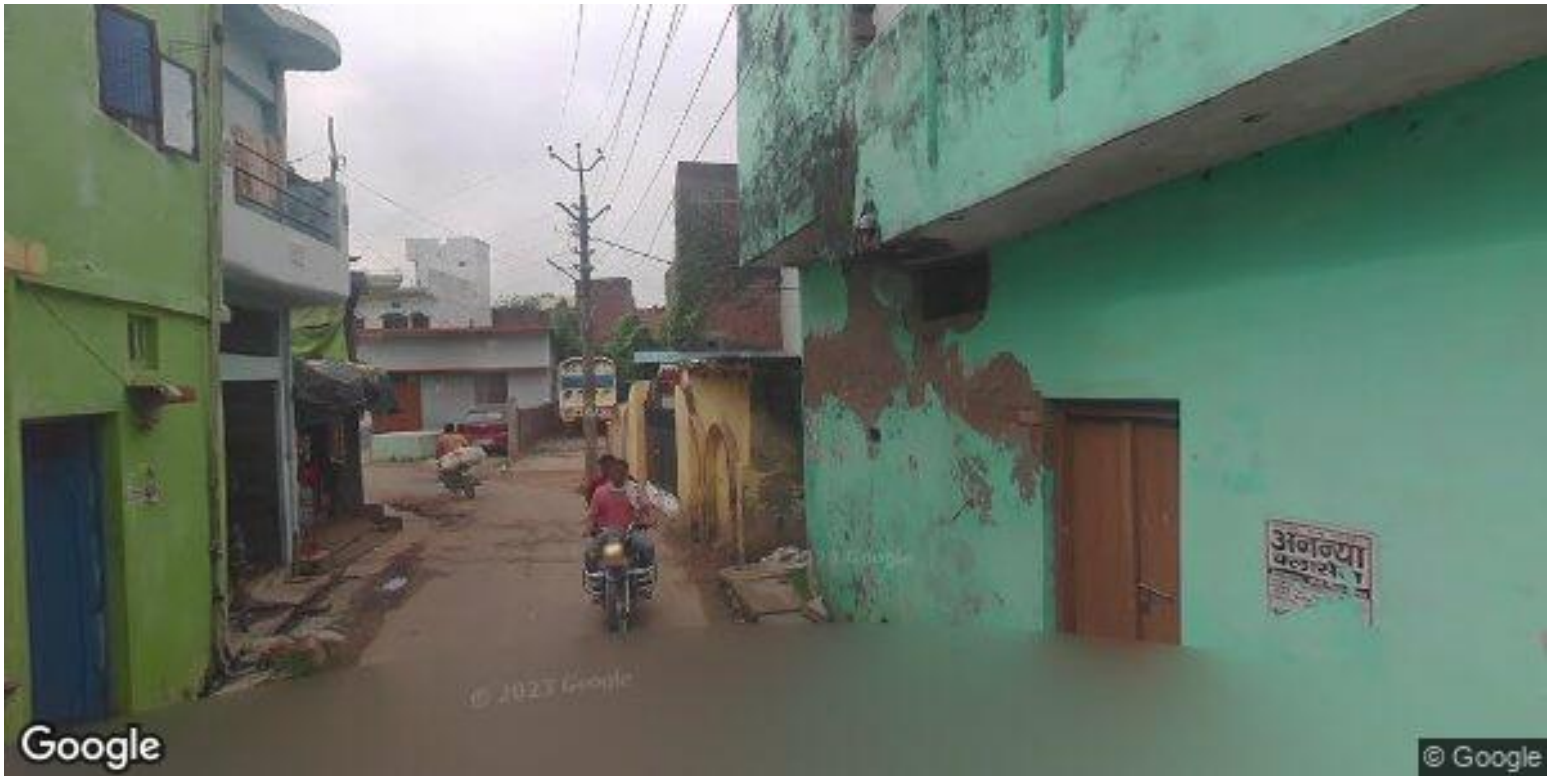
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.26 km

Coordinates: 27.17992, 82.93461



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.28 km

Coordinates: 27.18005, 82.93461



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 63.65 km
Coordinates: 27.18194, 82.93124



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 63.92 km
Coordinates: 27.18395, 82.93294



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 64.18 km
Coordinates: 27.18426, 82.93547



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 79.75 km
Coordinates: 27.27589, 83.04691



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 79.80 km

Coordinates: 27.27614, 83.04693



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 85.41 km

Coordinates: 27.31386, 83.00689



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 85.66 km

Coordinates: 27.31389, 83.00662

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