



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Salem Terminal TO RAYNA PETROLEUM

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

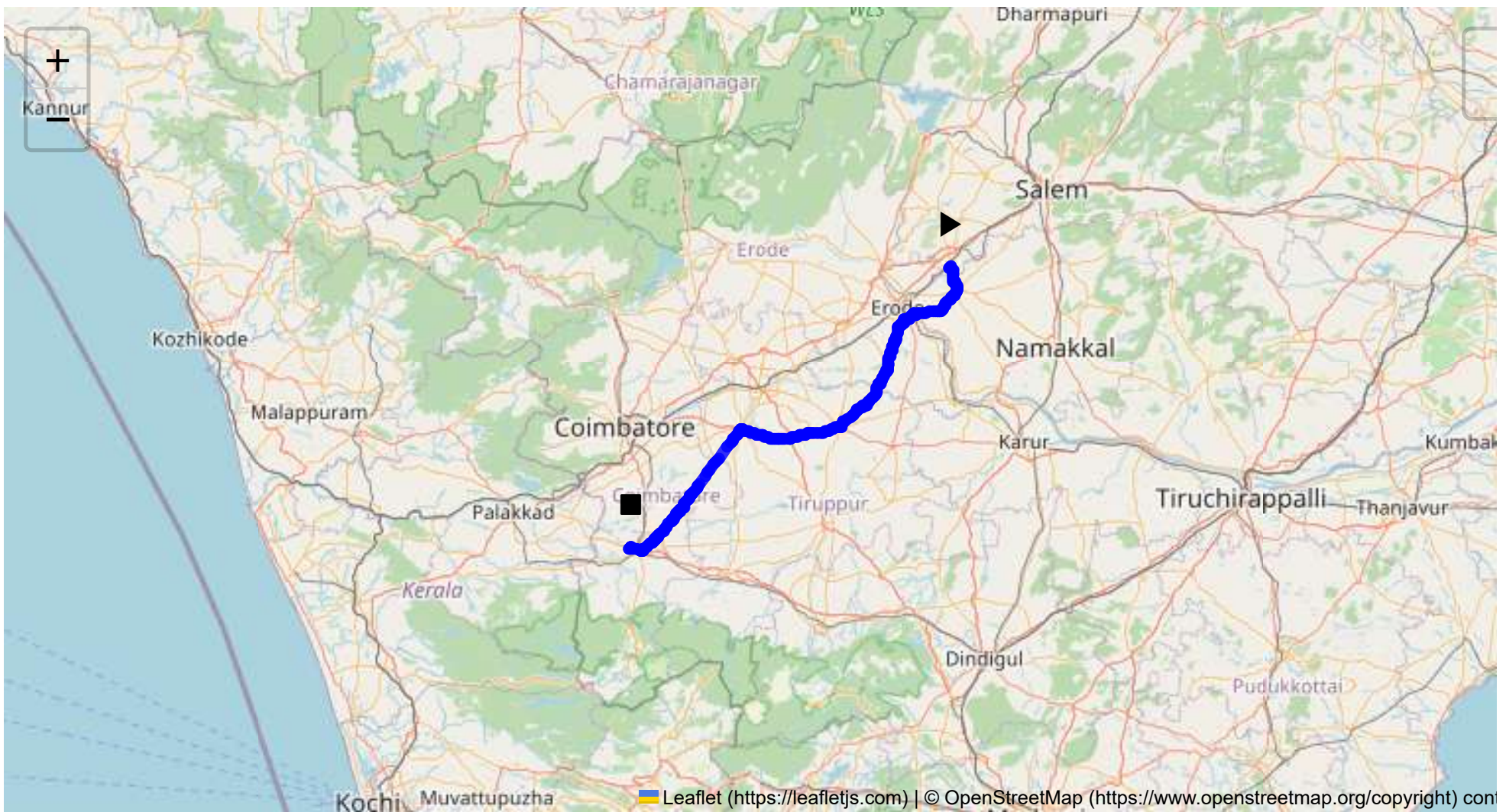
The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety 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: 154.97 km
Estimated Duration: 3.5 hours
Adjusted Duration (Heavy Vehicle): 4.3 hours
Start: (11.4381, 77.8734)
End: (10.663837, 76.977463)



Risk Spots

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
2	Turn	11.43961, 77.87341	15 KM/Hr	0.08 km
3	Turn	11.44029, 77.87544	15 KM/Hr	0.28 km
4	Turn	11.43111, 77.88170	15 KM/Hr	1.51 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
5	Turn	11.39983, 77.88377	15 KM/Hr	5.04 km
6	Turn	11.39706, 77.88825	15 KM/Hr	5.62 km
0	Roundabout	11.38395, 77.89480	15 KM/Hr	7.41 km
7	Turn	11.37868, 77.89498	15 KM/Hr	7.77 km
8	Turn	11.36602, 77.88875	15 KM/Hr	9.44 km
9	Turn	11.33882, 77.86218	15 KM/Hr	13.35 km
10	Turn	11.33713, 77.86222	15 KM/Hr	13.91 km
11	Turn	11.31747, 77.84240	15 KM/Hr	17.10 km
12	Turn	11.30951, 77.77608	15 KM/Hr	24.34 km
13	Turn	11.31096, 77.77049	15 KM/Hr	24.99 km
14	Turn	11.30938, 77.76674	15 KM/Hr	25.36 km
15	Turn	11.29473, 77.74685	15 KM/Hr	28.33 km
16	Turn	11.29133, 77.74660	15 KM/Hr	28.69 km
17	Turn	11.28890, 77.74349	15 KM/Hr	29.04 km
18	Turn	11.28558, 77.74271	15 KM/Hr	29.52 km
19	Turn	11.27314, 77.72962	15 KM/Hr	31.53 km
20	Blind Spot	11.27330, 77.72711	10 KM/Hr	31.81 km
21	Turn	11.23090, 77.71808	15 KM/Hr	36.64 km
22	Turn	11.15943, 77.70068	15 KM/Hr	44.89 km
23	Turn	11.11943, 77.67799	15 KM/Hr	50.06 km
24	Turn	11.11783, 77.67283	15 KM/Hr	50.63 km
25	Turn	11.11680, 77.67167	15 KM/Hr	50.87 km
26	Turn	11.10471, 77.67058	15 KM/Hr	52.21 km
27	Turn	11.08722, 77.66431	15 KM/Hr	54.23 km
28	Turn	11.08274, 77.65832	15 KM/Hr	54.97 km
29	Turn	11.06242, 77.63999	15 KM/Hr	58.11 km
30	Turn	11.06173, 77.63591	15 KM/Hr	58.59 km
31	Turn	11.00845, 77.56979	15 KM/Hr	67.89 km
32	Blind Spot	11.00090, 77.56888	10 KM/Hr	68.96 km
33	Turn	11.00171, 77.56267	15 KM/Hr	69.49 km
34	Turn	10.97029, 77.42728	15 KM/Hr	84.92 km
35	Turn	10.96805, 77.42718	15 KM/Hr	85.22 km
36	Turn	10.99497, 77.29079	15 KM/Hr	100.71 km
37	Turn	10.99424, 77.28932	15 KM/Hr	100.85 km

	RiskSpotType	Coordinates	Speed Limit	Distance from Start
38	Turn	10.83693, 77.16717	15 KM/Hr	122.83 km
39	Turn	10.81683, 77.15309	15 KM/Hr	125.32 km
40	Turn	10.81226, 77.14705	15 KM/Hr	126.38 km
41	Turn	10.81089, 77.14710	15 KM/Hr	126.64 km
42	Turn	10.79203, 77.13175	15 KM/Hr	129.11 km
43	Turn	10.76885, 77.11731	15 KM/Hr	132.56 km
44	Turn	10.70292, 77.05615	15 KM/Hr	142.57 km
45	Turn	10.70075, 77.05536	15 KM/Hr	142.80 km
46	Turn	10.69533, 77.05063	15 KM/Hr	143.66 km
47	Turn	10.69492, 77.04939	15 KM/Hr	143.80 km
48	Turn	10.66188, 77.01446	15 KM/Hr	149.29 km
1	Roundabout	10.66179, 77.00820	15 KM/Hr	150.00 km
49	Turn	10.66966, 76.97969	15 KM/Hr	153.16 km

Emergency Services

	type	name	coordinates	side_of_road
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	Opposite Side
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	Opposite Side
2	clinic	Kongu Nursing Home	11.3783065, 77.8961134	Driver's Side
3	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	Driver's Side
4	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	Opposite Side
5	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	Opposite Side
7	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	Opposite Side
8	hospital	Government Hospital	11.2343326, 77.719226	Driver's Side
10	police	Kangeyam Police Station	11.0011411, 77.562688	Driver's Side
11	hospital	J K Hospital	11.0042298, 77.5603345	Opposite Side
25	hospital	Ponni Hospital, Coimbatore	10.9955604, 77.2887151	Opposite Side
28	clinic	Syndhiya Ortho Clinic	10.6663252, 77.0158674	Opposite Side
29	hospital	Shanthi Hospital, Pollachi	10.6631858, 77.0149942	Opposite Side
30	clinic	J M Polyclinic	10.6621816, 77.012638	Driver's Side
31	hospital	Ar Ortho Hospital	10.6622765, 77.0125401	Driver's Side
32	hospital	Arun Hospital, Pollachi	10.6625657, 77.0129734	Driver's Side
33	clinic	Surya Polyclinic	10.6626982, 77.0122866	Opposite Side

	type	name	coordinates	side_of_road
34	hospital	Surya Hospital, Pollachi	10.6627371, 77.0122918	Opposite Side
35	hospital	Siva Meds Multispeciality Hospital	10.6633006, 77.0100774	Opposite Side
36	clinic	Sindhia Ortho Clinic	10.6634521, 77.0105284	Opposite Side
37	clinic	Prabhu Poly Clinic	10.6627285, 77.0096353	Opposite Side
38	hospital	Prabhu Hospital, Pc Pollachi	10.66269, 77.009684	Opposite Side
39	hospital	Kowsalya Medical Centre, Pollachi	10.66299, 77.010025	Opposite Side
40	hospital	Sakthi Hospital, Pollachi	10.6629552, 77.0106019	Opposite Side
41	hospital	Pills Hospital	10.66419, 77.010376	Opposite Side
42	clinic	Ram Poly Clinic	10.6627299, 77.0090626	Opposite Side
43	hospital	Vasan Eye Care Hospital, Pollachi	10.6643938, 77.0057119	Opposite Side
44	clinic	Rc Poly Clinic, Pollachi	10.66442, 77.005669	Opposite Side
45	hospital	JP Hospital, Pollachi	10.66024, 77.0049	Driver's Side
46	hospital	Mcv Memorial Ent Trust Hospital	10.6627918, 76.9995756	Driver's Side

Rest Stops

	type	name	coordinates	side_of_road
6	restaurant	Lijo	11.3805115, 77.8946385	Opposite Side
9	fuel	Hindustan Petroleum	11.001711, 77.565054	Opposite Side
12	restaurant	Hotel Surya Pure Veg	11.0016663, 77.5638487	Driver's Side
13	fuel	Bharat Petroleum	11.0017719, 77.5629134	Driver's Side
14	fuel	Indian Oil	11.0003188, 77.5533435	Opposite Side
15	fuel	KR LPG Gas Station	11.0007749, 77.5544964	Opposite Side
16	fuel	Bharat Petroleum	10.9728735, 77.4381025	Opposite Side
17	fuel	HP	10.9695895, 77.4268761	Opposite Side
18	fuel	Indian Oil	10.9706934, 77.3841453	Opposite Side
19	hotel	Sri Vishnu foods	10.9742564, 77.3608649	Driver's Side
20	fuel	Bharat Petroleum	10.9755245, 77.3539473	Driver's Side
21	fuel	Indian Oil	10.9798498, 77.3334937	Driver's Side
22	fuel	Indian Oil	10.9943017, 77.292197	Driver's Side
23	fuel	HP	10.9946041, 77.2913779	Driver's Side
24	fuel	Bharat Petroleum	10.9952091, 77.2912614	Opposite Side

	type	name	coordinates	side_of_road
26	cafe	Tea Shop and Bakery	10.7040183, 77.0566891	Opposite Side
27	cafe	Tea Shop and Bakery	10.6807167, 77.0392106	Opposite Side
47	car_repair	National Motor Works	10.6679871, 76.9832922	Driver's Side

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route from Sangagiri to Zamin Uthukuli via the specified waypoints covers approximately 155 kilometers across multiple districts in Tamil Nadu. This path encompasses urban, semi-urban, and rural regions, moving through towns like Tiruchengode, Erode, Kangeyam, Palladam, and Pollachi, before reaching its destination in Zamin Uthukuli. The road primarily includes state highways and local roads, with varying traffic conditions.

2. Weather Conditions and Potential Hazards

Tamil Nadu generally experiences a tropical climate. The route can face:

- Monsoons (June to September, October to December):** Heavy rainfall can lead to waterlogging and slippery roads, especially in low-lying areas.
- Summer (March to May):** High temperatures can cause road surfaces to become brittle.
- Cyclones (occasionally):** May bring torrential rains and strong winds, impacting road safety and visibility.

3. Traffic Patterns

- Peak Hours:** Usually, peak traffic hours are from 8 AM to 10 AM and 5 PM to 8 PM. The major towns like Erode, Palladam, and Pollachi experience considerable congestion during these times.
- Congestion Areas:** Town centers, especially near market areas and around major junctions and schools, tend to be more congested.

4. Assessment of Road Quality and Infrastructure

- Road Quality:** Varies significantly; national highways and state highways are generally well-maintained, but some local roads can have potholes and uneven surfaces.
- Infrastructure:** Urban areas have better infrastructure, with adequate signage and lighting. Rural stretches may lack these facilities, increasing the risk of accidents.

5. Suggestions for Alternative Routes

In case of emergencies, detours via NH79 or NH44 can be considered for bypassing congested areas, especially during adverse weather conditions. Utilizing GPS-based navigation can assist in identifying real-time alternative routes.

6. Local Regulations Affecting Hazardous Material Transport

- **Permits:** Required for transporting hazardous materials; carry necessary documentation.
- **Timing Restrictions:** Some areas may restrict heavy vehicles during daylight or high-traffic hours; check local guidelines.
- **Safety Protocols:** Ensure containment procedures and emergency equipment are in place as per state regulations.

7. Historical Incidents

While Tamil Nadu roads are heavily used by commercial vehicles, documented incidents involving heavy vehicles include overturns due to high speed, and collisions, particularly in congested or poorly lit areas. Awareness and adherence to road safety norms are critical.

8. Environmental Considerations

- **Sensitive Areas:** The route passes close to agricultural areas where spills could be detrimental. Avoidance of ecologically sensitive zones is necessary.
- **Pollution:** Monitoring emissions closely, especially near urban areas to minimize impact.

9. Communication Coverage

Most of the route offers reliable mobile coverage except in remote rural areas and forested sections where signal drop-offs may occur. Utilizing multiple carrier SIM cards can mitigate this issue.

10. Emergency Response Times

- **Urban Areas:** Approximately 15-30 minutes due to proximity to hospitals and fire stations.
- **Rural Stretches:** May extend to 30-60 minutes; preemptive identification of local emergency contacts is advisable.

11. Overall Summary of Risk Assessment

The journey from Sangagiri to Zamin Uthukuli involves navigating through diverse terrains and traffic conditions. Risks include weather-induced road hazards, variable road quality, and urban congestion. Effective planning, adherence to regulations, and real-time navigation aid in mitigating hazards. Enhanced caution is recommended in regions prone to weather disturbances and during peak traffic hours. The assessment emphasizes preparation for emergency responses, ensuring communication reliability, and compliance with environmental safety standards to minimize risks effectively.

Route Photos of Risky Spots



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 0.28 km

Coordinates: 11.44029, 77.87544



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 1.51 km

Coordinates: 11.43111, 77.88170



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 5.04 km
Coordinates: 11.39983, 77.88377



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 5.62 km
Coordinates: 11.39706, 77.88825



Risk Type: Roundabout
Speed Limit: 15 KM/Hr
Distance from Start: 7.41 km
Coordinates: 11.38395, 77.89480



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 7.77 km

Coordinates: 11.37868, 77.89498



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 9.44 km

Coordinates: 11.36602, 77.88875



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 13.35 km

Coordinates: 11.33882, 77.86218



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 13.91 km

Coordinates: 11.33713, 77.86222



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 17.10 km

Coordinates: 11.31747, 77.84240



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 24.34 km

Coordinates: 11.30951, 77.77608



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 24.99 km

Coordinates: 11.31096, 77.77049



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 25.36 km

Coordinates: 11.30938, 77.76674



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 28.33 km

Coordinates: 11.29473, 77.74685



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 28.69 km

Coordinates: 11.29133, 77.74660



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 29.04 km

Coordinates: 11.28890, 77.74349



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 29.52 km

Coordinates: 11.28558, 77.74271



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 31.53 km

Coordinates: 11.27314, 77.72962



Risk Type: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 31.81 km

Coordinates: 11.27330, 77.72711



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 36.64 km

Coordinates: 11.23090, 77.71808



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 44.89 km

Coordinates: 11.15943, 77.70068



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.06 km

Coordinates: 11.11943, 77.67799



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.63 km

Coordinates: 11.11783, 77.67283



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 50.87 km

Coordinates: 11.11680, 77.67167



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 52.21 km

Coordinates: 11.10471, 77.67058



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 54.23 km

Coordinates: 11.08722, 77.66431



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 54.97 km

Coordinates: 11.08274, 77.65832



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 58.11 km

Coordinates: 11.06242, 77.63999



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 58.59 km

Coordinates: 11.06173, 77.63591



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 67.89 km

Coordinates: 11.00845, 77.56979



Risk Type: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 68.96 km
Coordinates: 11.00090, 77.56888



Risk Type: Turn
Speed Limit: 15 KM/Hr
Distance from Start: 69.49 km
Coordinates: 11.00171, 77.56267



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 84.92 km

Coordinates: 10.97029, 77.42728



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 85.22 km

Coordinates: 10.96805, 77.42718



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 100.71 km

Coordinates: 10.99497, 77.29079



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 100.85 km

Coordinates: 10.99424, 77.28932

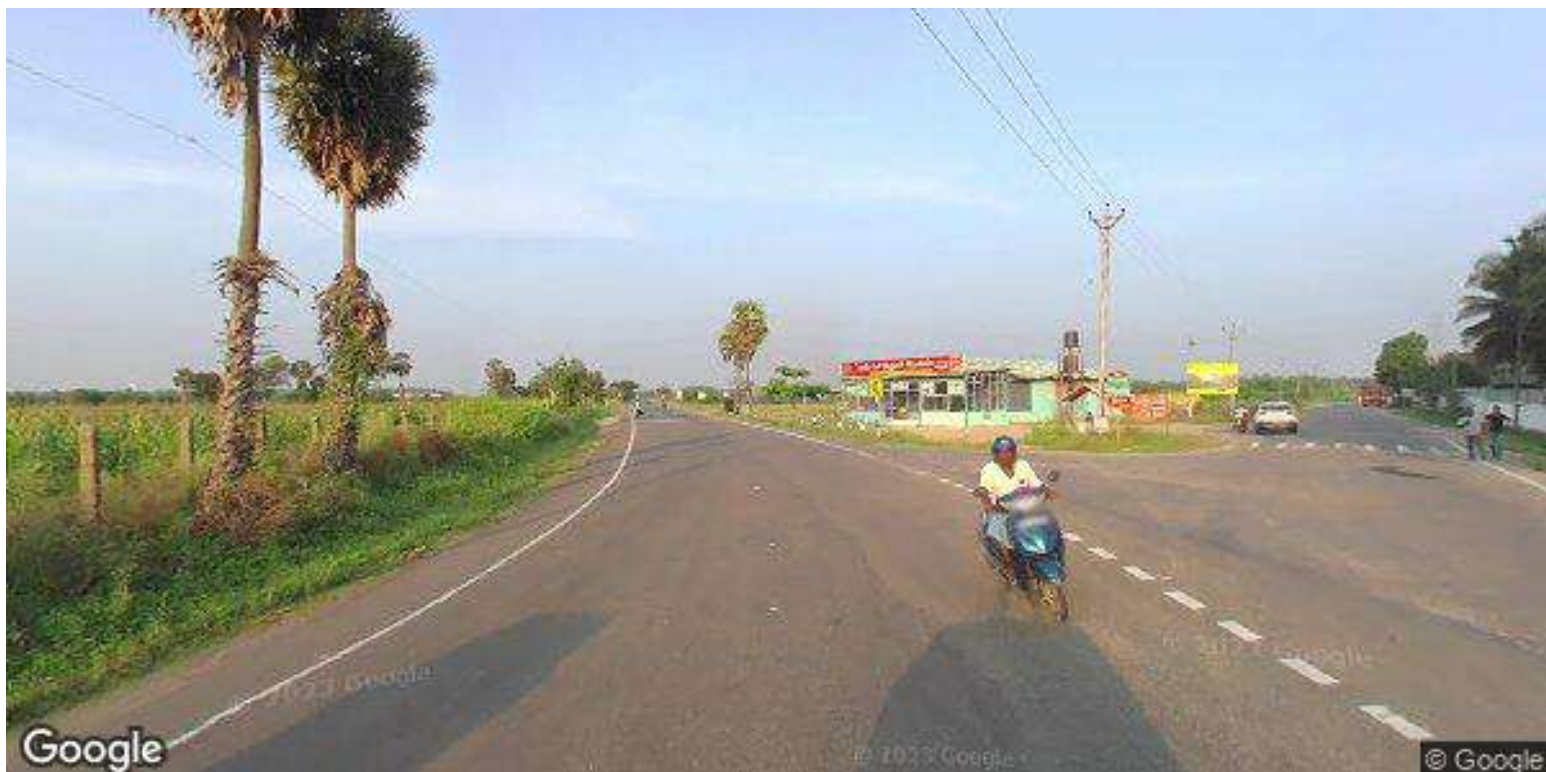


Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 122.83 km

Coordinates: 10.83693, 77.16717



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 125.32 km

Coordinates: 10.81683, 77.15309



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 126.38 km

Coordinates: 10.81226, 77.14705



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 126.64 km

Coordinates: 10.81089, 77.14710



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 129.11 km

Coordinates: 10.79203, 77.13175



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 132.56 km

Coordinates: 10.76885, 77.11731



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 142.57 km

Coordinates: 10.70292, 77.05615



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 142.80 km

Coordinates: 10.70075, 77.05536



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 143.66 km

Coordinates: 10.69533, 77.05063



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 143.80 km

Coordinates: 10.69492, 77.04939



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 149.29 km

Coordinates: 10.66188, 77.01446



Risk Type: Roundabout

Speed Limit: 15 KM/Hr

Distance from Start: 150.00 km

Coordinates: 10.66179, 77.00820



Risk Type: Turn

Speed Limit: 15 KM/Hr

Distance from Start: 153.16 km

Coordinates: 10.66966, 76.97969

[Download Interactive Map](#)