



# IndianOil

## JOURNEY RISK MANAGEMENT (JRM) STUDY

### Salem Terminal TO HALLMARK AGENCY

#### 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.

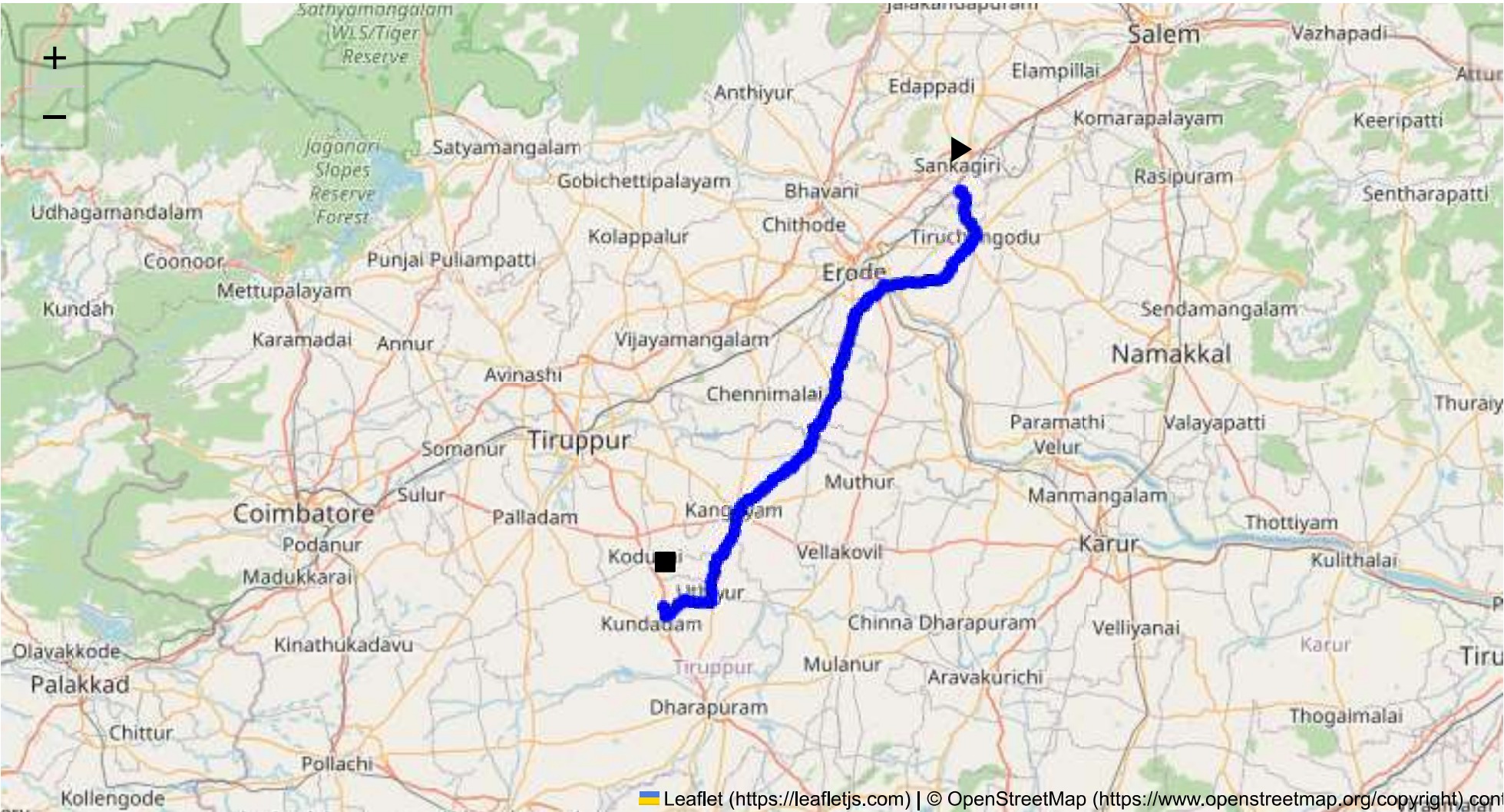
## Compliance with Government Directives

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: 95.00 km**  
**Estimated Duration: 2.2 hours**  
**Adjusted Duration (Heavy Vehicle): 2.8 hours**  
**Start: (11.4381, 77.8734)**  
**End: (10.874806, 77.461571)**



Welcome to the Journey Risk Management Study

To conduct a comprehensive route safety analysis from CVQF+23W, Sangagiri, Tamil Nadu 637301, India to VFF6+WJ Vengipalayam, Tamil Nadu, I will address each of the specified points based on available information and typical conditions for the region and similar routes.

- 1. **Overview of the Route Map:** The route connects Sangagiri to Vengipalayam via State Highways and local roads. It traverses through rural and semi-urban areas, with a fair mix of straight roads and curvy



sections. The key towns along the route may include Pallipalayam and Tiruchengode.

2. **Typical Weather Conditions and Potential Weather-Related Hazards:** Tamil Nadu experiences three major seasons: summer (March to June), monsoon (June to September), and winter (October to February). Monsoon may result in heavy rainfall leading to waterlogging and slippery roads. Fog is rare but possible in winter months, affecting visibility.
3. **Analysis of Traffic Patterns:** Traffic can be moderate in towns along the route with peak hours typically in the morning (8-10 AM) and evening (4-6 PM). Roads around market areas and schools can experience congestion, particularly in towns like Tiruchengode.
4. **Assessment of Road Quality and Infrastructure:** The main state highways generally maintain good quality with adequate signage and regular maintenance. However, connecting roads might have potholes or uneven surfaces. Highways have ample width for truck movement, but local roads may be narrow.
5. **Suggestions for Alternative Routes for Emergencies:** In case of emergencies, diversions through nearby SH-86 and SH-84 could offer alternative paths bypassing congestion in towns. Local knowledge and real-time navigation apps should be considered for updated detours.
6. **Summary of Local Regulations Affecting Hazardous Material Transport:** Regulations in Tamil Nadu require special permits for transporting hazardous materials. Trucks are often required to follow specific timings, avoiding urban centers during peak hours. Compliance with Indian Road Congress (IRC) specifications is crucial.
7. **Overview of Historical Incidents Involving Heavy Vehicles or Hazardous Materials:** While specific historical incidents are not readily available, roads in Tamil Nadu have experienced occasional accidents due to overload and mechanical failures. Such routes should be navigated with caution, especially at known accident-prone junctions and curves.
8. **Environmental Considerations and Sensitive Areas:** The route traverses through agricultural zones, so care must be taken to prevent chemical spillage. Drivers should be aware of proximity to water bodies and adhere to environmental safety protocols.
9. **Analysis of Communication Coverage:** Major sections of the route have reliable mobile coverage; however, rural stretches may have intermittent connectivity. Use of communication-ready navigation systems is advisable to assist with potential dead zones.
10. **Estimated Emergency Response Times for Different Route Segments:** Response times could vary from 30 minutes to over an hour, depending on proximity to urban centers that house emergency services, like hospitals in larger towns.
11. **Overall Summary of Risk Assessment:** The route from CVQF+23W to VFF6+WJ generally offers acceptable conditions for heavy vehicle travel with existing infrastructure support. Key risks include weather-related road conditions, peak hour congestion, and regulatory compliance for hazardous material. Increased vigilance in towns and adherence to transport guidelines will mitigate potential risks. Regular check-ins and planned contingencies for emergencies are recommended to enhance travel safety.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Roundabout	High	11.38395, 77.89480	15 KM/Hr
1	Roundabout	High	11.00172, 77.56268	15 KM/Hr
2	Turn	High	11.43968, 77.87345	15 KM/Hr
3	Turn	High	11.44022, 77.87546	15 KM/Hr
4	Turn	Medium	11.39976, 77.88382	30 KM/Hr
5	Turn	Medium	11.39690, 77.88852	30 KM/Hr
6	Turn	High	11.37868, 77.89498	15 KM/Hr
7	Turn	Medium	11.37857, 77.89473	30 KM/Hr
8	Turn	High	11.36616, 77.88885	15 KM/Hr
9	Turn	Medium	11.34067, 77.86347	30 KM/Hr
10	Turn	Medium	11.33854, 77.86216	30 KM/Hr
11	Turn	Medium	11.33778, 77.86236	30 KM/Hr
12	Turn	Medium	11.30952, 77.77587	30 KM/Hr
13	Turn	Medium	11.30973, 77.76712	30 KM/Hr
14	Turn	High	11.29490, 77.74685	15 KM/Hr
15	Turn	High	11.29125, 77.74646	15 KM/Hr
16	Turn	Medium	11.28844, 77.74319	30 KM/Hr
17	Turn	Medium	11.28573, 77.74281	30 KM/Hr
18	Turn	High	11.27319, 77.72981	15 KM/Hr
19	Blind Spot	Blind Spot	11.27330, 77.72715	10 KM/Hr
20	Turn	Medium	11.23054, 77.71796	30 KM/Hr
21	Turn	Medium	11.20776, 77.70916	30 KM/Hr
22	Turn	Medium	11.15942, 77.70068	30 KM/Hr
23	Turn	Medium	11.12102, 77.67919	30 KM/Hr
24	Turn	Medium	11.11932, 77.67786	30 KM/Hr
25	Turn	Medium	11.11710, 77.67175	30 KM/Hr
26	Turn	Medium	11.09491, 77.66603	30 KM/Hr
27	Turn	Medium	11.08296, 77.65857	30 KM/Hr
28	Turn	Medium	11.06183, 77.63924	30 KM/Hr
29	Turn	High	11.00826, 77.56962	15 KM/Hr

	Risk Type	Risk Level	Coordinates	Speed Limit
30	Blind Spot	Blind Spot	11.00058, 77.56882	10 KM/Hr
31	Turn	Medium	10.94722, 77.54709	30 KM/Hr
32	Turn	Medium	10.93895, 77.53976	30 KM/Hr
33	Turn	Medium	10.93054, 77.53265	30 KM/Hr
34	Turn	Medium	10.89213, 77.52646	30 KM/Hr
35	Turn	High	10.87916, 77.52773	15 KM/Hr
36	Turn	Medium	10.88260, 77.48881	30 KM/Hr
37	Turn	High	10.88221, 77.48831	15 KM/Hr
38	Turn	High	10.87783, 77.48740	15 KM/Hr
39	Blind Spot	Blind Spot	10.86065, 77.46480	10 KM/Hr

## Emergency Locations

	type	name	coordinates	speed_limit	risk_level
0	hospital	Tiruchengode, Goverment Hospital	11.3903328, 77.8920627	30 km/h	Medium
1	hospital	SPM Medical Centre,Tiruchengode	11.3881331, 77.8931963	30 km/h	Medium
5	clinic	Kongu Nursing Home	11.3783065, 77.8961134	30 km/h	Medium
6	hospital	T.C.A Hospital Tiruchengode	11.3791885, 77.8965774	30 km/h	Medium
7	hospital	Soorya Multispecialty Hospital	11.3786429, 77.8931912	30 km/h	Medium
8	hospital	Tiruchengode Government Hospital	11.37645, 77.89426	30 km/h	Medium
9	hospital	Tirukumaran Hospitals	11.3782118, 77.8914933	30 km/h	Medium
10	hospital	Krishna Hospital, Namakkal	11.3754811, 77.8931817	30 km/h	Medium
13	hospital	Government Hospital	11.2343326, 77.719226	30 km/h	Medium
16	police	Kangeyam Police Station	11.0011411, 77.562688	30 km/h	Medium
17	hospital	J K Hospital	11.0042298, 77.5603345	30 km/h	Medium

	type	name	coordinates	speed_limit	risk_level
19	hospital	Government Hospital, Thayampalayam	10.88012, 77.487323	30 km/h	Medium

Crowded Spots

	type	name	coordinates	speed_limit	risk_level
2	school	அரசு ஆண்கள் மேல்நிலைப் பள்ளி	11.3850439, 77.8948279	30 km/h	Medium
3	school	அரசு பெண்கள் மேல்நிலைப் பள்ளி	11.3844247, 77.8949053	30 km/h	Medium
4	marketplace	திருச்செங்கோடு தினசரி காய்கறி சந்தை	11.3833608, 77.8970145	30 km/h	Medium
11	school	KSR Educational institution	11.3772013, 77.8908807	30 km/h	Medium
12	school	MDV School	11.3719843, 77.8915244	30 km/h	Medium
14	college	Government Arts and Science College, Kangeyam	11.0626738, 77.636227	30 km/h	Medium
15	school	Carmel Girls Higher Secondary School	11.0009019, 77.5710182	30 km/h	Medium
18	school	Global Matriculation Higher Secondary School	10.965994, 77.5591898	30 km/h	Medium

Route Photos of Risky Spots





Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.38395, 77.89480



Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.00172, 77.56268



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Coordinates: 11.44022, 77.87546





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.39976, 77.88382



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.39690, 77.88852





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.37868, 77.89498



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.37857, 77.89473



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.36616, 77.88885





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.34067, 77.86347



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.33854, 77.86216





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.33778, 77.86236



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.30952, 77.77587



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.30973, 77.76712





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.29490, 77.74685



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.29125, 77.74646





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.28844, 77.74319



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.28573, 77.74281



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.27319, 77.72981





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.27330, 77.72715



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.23054, 77.71796





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.20776, 77.70916



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.15942, 77.70068



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.12102, 77.67919





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.11932, 77.67786



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.11710, 77.67175





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.09491, 77.66603



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.08296, 77.65857



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.06183, 77.63924





**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.00826, 77.56962



**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 11.00058, 77.56882





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.94722, 77.54709



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.93895, 77.53976



**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.93054, 77.53265





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.89213, 77.52646



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.87916, 77.52773





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 10.88260, 77.48881



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.88221, 77.48831



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 10.87783, 77.48740





**Risk Type:** Blind Spot  
**Risk Level:** Blind Spot  
**Speed Limit:** 10 KM/Hr  
**Coordinates:** 10.86065, 77.46480

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