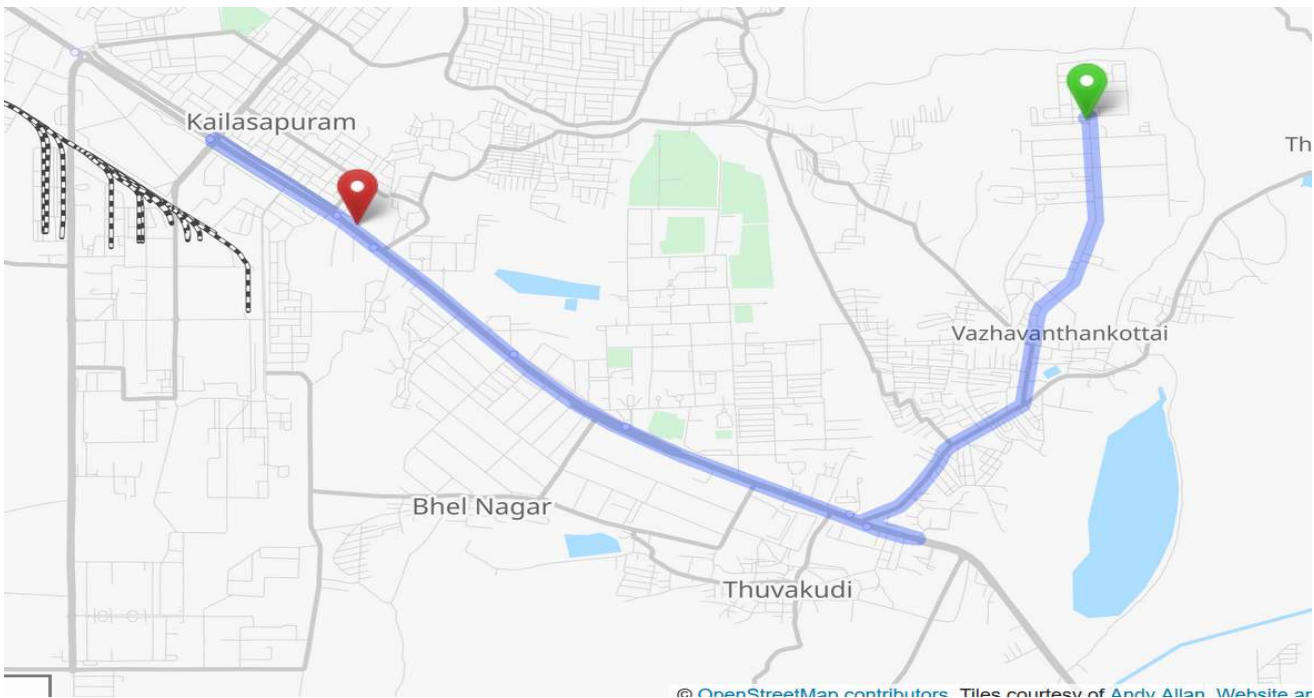
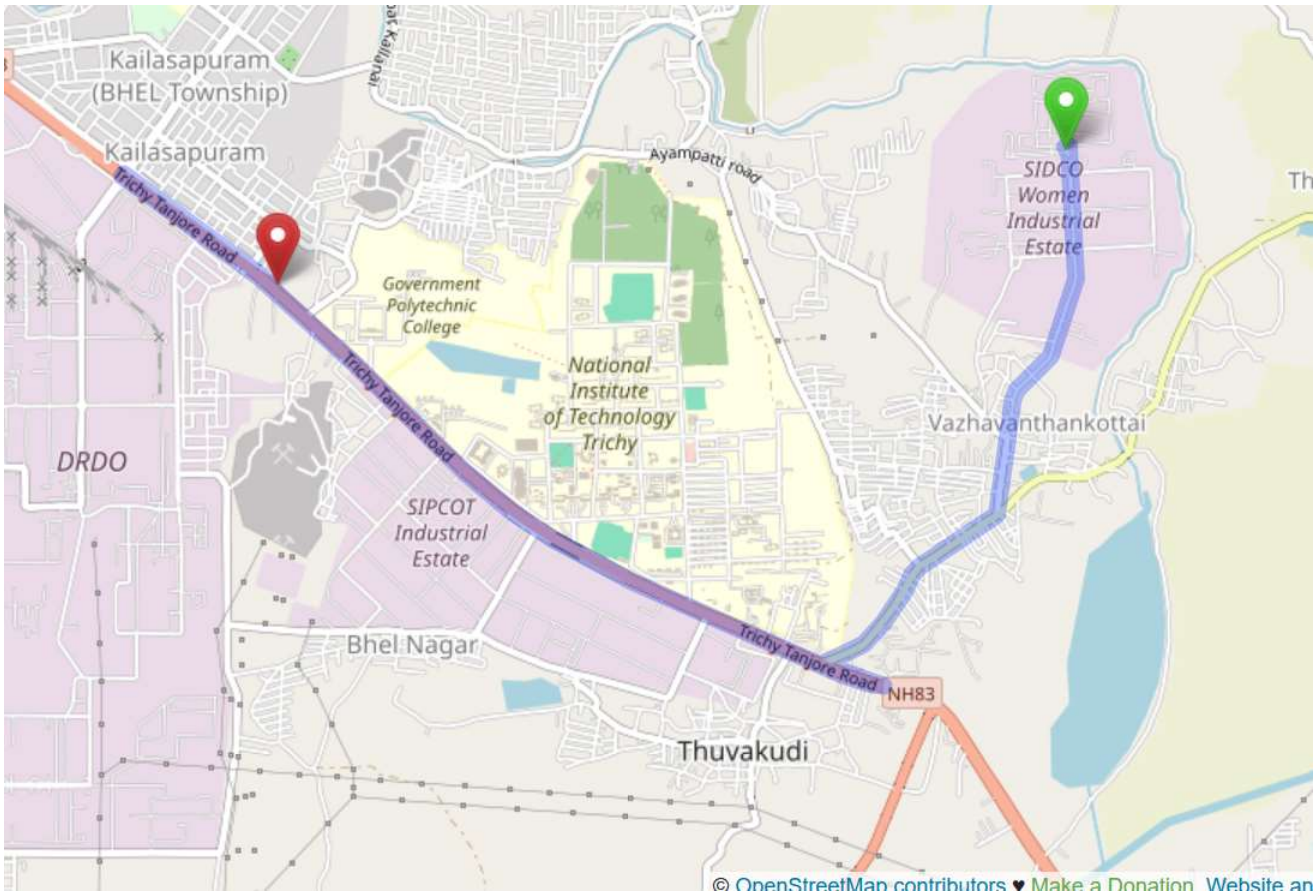




**IndianOil**

**WELCOME TO JOURNEY RISK  
MANAGEMENT (JRM) STUDY  
USING ARTIFICIAL  
INTELLIGENCE (AI)  
FOR IOCL TRICHY TERMINAL**

**IOCL TIRCHY TERMINAL (10.7753, 78.9.868) TO VIGNESH AGENCIES , (10.402063 ,  
79.502371), TOTAL DISTANCE -9.8 KM**



**Welcome to the Journey Risk Management Study for VIGNESH AGENCIES ,**

**Total distance: 9.8 km; Start with: (10.7753, 78.9.868), End with: (10.402063 , 79.502371)**

## ❖ **Route Safety Analysis Report**

### **Overview of the Route Map**

The route from Trichy Terminal (T.N) to VIGNESH AGENCIES. The route passes through several key points including SIDCO Industrial Estate Valavanthankottai, Logesh Fancy & Stationery Stores, Thuvakudi to SIDCO& Indian oil Storage, Markandan Agency onto NH 9.8 Toll road, U-turn at TNSTC TRICHY RE CONDITIONING UNIT(RC), Trichy-Tanjore Rd, Thanjavur Ring Rd, Vennar bypass Bridge, Thanjavur Kumbakonam Main Rd, ValVnthNKOTTI Toll Plaza Rd, Coimbatore-Nagapattinam Hwy, Maravapattu-villur-Kallikkudi Rd, SH 66, Rd for heavy vehicles carrying hazardous materials.

### **Typical Weather Conditions and Potential Weather-Related Hazards**

**Weather Conditions:** Trichy Terminal (T.N) to VIGNESH AGENCIES , experiences a tropical climate with heavy monsoon rains from June to September, high humidity, and moderate temperatures throughout the year ,The summers are short and sweltering; the winters are short, cool, and dry; and it is mostly clear year-round. Over the course of the year, the temperature typically varies from 60.8°F to 110°F and is rarely below 60.8°F to 110°F.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	33.0 (91.4)	38.0 (100.4)	41.0 (105.8)	43.0 (109.4)	43.0 (109.4)	42.0 (107.6)	40.0 (104.0)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	34.0 (93.2)	33.0 (91.4)	43.0 (109.4)
Average high °C (°F)	30.27 (86.49)	32.88 (91.18)	36.0 (96.8)	38.27 (100.89)	38.79 (101.82)	36.78 (98.2)	36.17 (97.11)	35.4 (95.72)	35.03 (95.05)	32.9 (91.22)	30.38 (86.68)	29.34 (84.81)	34.35 (93.83)
Daily mean °C (°F)	26.57 (79.83)	28.67 (83.61)	31.87 (89.37)	34.46 (94.03)	35.18 (95.32)	33.45 (92.21)	32.92 (91.26)	32.18 (89.92)	31.78 (89.2)	29.86 (85.75)	27.44 (81.39)	26.32 (79.38)	30.89 (87.6)
Average low °C (°F)	19.88 (67.78)	20.93 (69.67)	24.04 (75.27)	27.62 (81.72)	28.89 (84.0)	27.59 (81.66)	27.04 (80.67)	26.45 (79.61)	25.95 (78.71)	24.64 (76.35)	22.43 (72.37)	20.93 (69.67)	24.7 (76.46)
Record low °C (°F)	16.0 (60.8)	17.0 (62.6)	19.0 (66.2)	22.0 (71.6)	25.0 (77.0)	25.0 (77.0)	24.0 (75.2)	23.0 (73.4)	22.0 (71.6)	21.0 (69.8)	18.0 (64.4)	17.0 (62.6)	16.0 (60.8)
Average precipitation mm (inches)	12.32 (0.49)	20.82 (0.82)	26.34 (1.04)	57.63 (2.27)	102.32 (4.03)	61.68 (2.43)	63.88 (2.51)	124.75 (4.91)	141.74 (5.58)	231.04 (9.1)	159.62 (6.28)	71.08 (2.8)	89.44 (3.52)
Average precipitation days (≥ 1.0 mm)	3.09	3.27	5.36	7.36	16.73	12.36	13.55	18.91	19.64	22.73	17.55	9.73	12.52
Average relative humidity (%)	72.01	65.19	58.27	53.97	51.56	50.59	51.14	56.11	60.33	70.18	77.39	76.61	61.95
Mean monthly sunshine hours	11.19	11.34	11.34	11.63	12.65	12.68	11.83	11.24	11.05	9.11	7.68	8.29	10.84

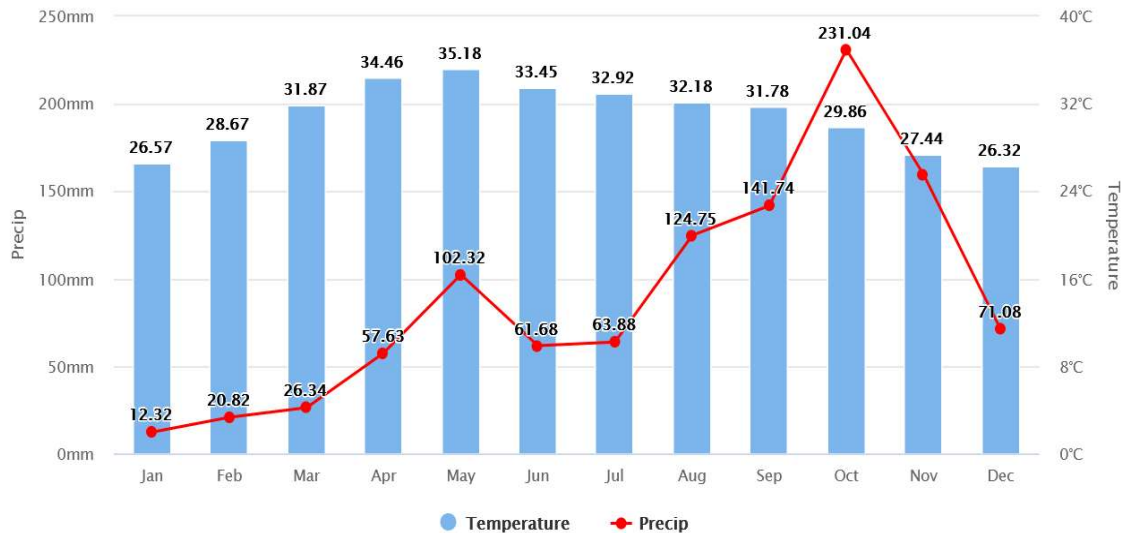
**Weather-Related Hazards:** Trichy Terminal (T.N) To VIGNESH AGENCIES , Providing a local hourly weather forecast of rain, sun, wind, humidity and temperature.

The Long-range 12 day forecast also includes detail for weather today. Live weather reports from Trichy Terminal (T.N) To VIGNESH AGENCIES , weather stations and weather warnings that include risk of thunder, high UV index and forecast gales.



# Climate Graph

The chart below shows the mean monthly temperature and precipitation of Tiruchirappalli in recent years.



## Analysis of Traffic Patterns

### Peak Hours:

Typically, Trichy Terminal (T.N) to VIGNESH AGENCIES , peak traffic hours are from 8:00 AM to 11:00 AM and 4:00 PM to 9:00 PM on weekdays.

### Congestion-Prone Areas:

- GOPI VELKANAISINC SHOP
- Bismi Briyani
- Sri Muthumari Amman Thirukovil
- Ajs Maligai
- Sengipatti
- Aishwarya Medical Centre
- Taj Auto Diesel Works
- Sengipatti Bus Stop
- Pandian's Organic Farm
- Parvatham Dental Clinic
- Vinayakar temple

## ❖ Assessment of Road Quality and Infrastructure

**Road Quality:** Generally, the roads are well-maintained but can suffer from potholes and waterlogging on State Highway during the monsoon season.

**Infrastructure:** Adequate signage, street lighting, and traffic signals are present, but some areas may lack proper drainage systems, leading to waterlogging.

### ❖ **Suggestions for Alternative Routes for Emergencies**

**Alternative Route1:** SIDCO Industrial Estate Valavanthankottai, NH 83

**Alternative Route 2:** NIL

### **Summary of Local Regulations Affecting Hazardous Material Transport**

**Regulations:** Transport of hazardous materials is regulated by the Petroleum and Explosives Safety Organization (PESO) and the Motor Vehicles Act. Specific routes and timings may be restricted for hazardous material transport.

**Permits:** Ensure all necessary permits and documentation are in place.

### ❖ **Overview of Historical Incidents**

**Historical Incidents:** There have been occasional incidents involving heavy vehicles, particularly during the monsoon season due to waterlogging and poor visibility. No major incidents involving hazardous materials have been reported recently.

### ❖ **Environmental Considerations and Sensitive Areas**

- **Sensitive Areas:** Green and Clean Technology solution, NIT Trichy.
- **Educational institutions:** - Many colleges, universities and school in between Trichy Terminal (T.N) To DJP Fuels I.E Trichy High School, Girls Senior Secondary School .  
**Hospital:** - Government Hospital Alangudi, Noble Hospital,
- **Gas Station:** - NIL
- **Environmental Impact:** Minimize noise and air pollution, especially in residential and sensitive areas.

**Air pollution:** Volatile chemicals evaporate during the filling and discharge process, or from leaks.

- **Loss of habitats:** Oil and gas operations can degrade animal habitats and disrupt migratory pathways.
- **Oil spills:** Oil spills can be devastating for animals and humans.
- **Greenhouse gas emissions:** Oil and gas operations can emit greenhouse gases like methane.

### ❖ **Analysis of Communication Coverage**

**Communication Coverage:** Generally good throughout the route, but potential dead zones may exist densely built-up areas or underpasses.

**Dead Zones:** Monitor for any communication blackouts, especially in underpasses or near large buildings.

- | <b>Estimated</b>  | <b>Emergency</b> | <b>Response</b> | <b>Times</b> |
|---|------------------|-----------------|--------------|
| Green and Clean Technology solution, Bismi Briyani, NIT Tichy response times (15- 20 minutes) |                  |                 |              |
| ❖ Congested areas may experience delays (up to 30-40 minutes).                                |                  |                 |              |

❖ **Overall Summary of Risk Assessment**

- **Risk Level:** Moderate to High, especially during monsoon season.
- **Key Risks:** Waterlogging, traffic congestion, and potential communication dead zones.
- **Mitigation Measures:** Plan travel during non-peak hours, ensure proper vehicle maintenance, and have alternative routes and emergency contacts ready and control on the speed limit of the vehicle.

❖ **Road Signage for TT/PT Driver**

## Road Traffic Signs in India

### Mandatory/Regulatory Signs

 Stop	 Give way	 No entry	 Straight prohibited
 One way	 One way	 Vehicles prohibited in both directions	 Horn prohibited
 Pedestrians prohibited	 Cycles prohibited	 Right turn prohibited	 Left turn prohibited
 U-turn prohibited	 Overtaking prohibited	 Trucks prohibited	 Tonga prohibited



All motor vehicles prohibited



Hand cart prohibited



Bullock cart prohibited



Bullock and hand carts prohibited



No parking



No parking or stopping



Speed limit



Axle load limit



Width limit



Weight limit



Length limit



















Load limit



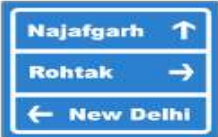

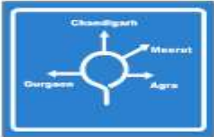
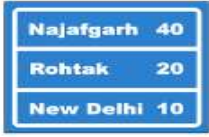
















Restriction and



## Cautionary signs

 <p>Right hand curve</p>	 <p>Left hand curve</p>	 <p>Right hand pin bend</p>	 <p>Left hand pin bend</p>
 <p>Right reverse bend</p>	 <p>Narrow bridge</p>	 <p>Gap in median</p>	 <p>Cycle crossing</p>
 <p>Pedestrian crossing</p>	 <p>School</p>	 <p>Men at work</p>	 <p>Roundabout</p>
 <p>Narrow road</p>	 <p>Road widens</p>	 <p>Side road left</p>	 <p>Side road right</p>

## Information signs

			
Advance direction	Map type advance direction	Rotary intersection	Reassurance
			
Direction	Direction	Place identification	Truck lay bay
			
Toll booth ahead	Parking this side	Parking both sides	Cycle stand
			
Scooter and motor cycle stand	Taxi stand	Auto-rickshaw stand	Cycle-rickshaw stand
			
Public telephone	Filling station	Hospital	First aid post

## Conclusion

The route for Trichy Terminal (T.N) to VIGNESH AGENCIES , particularly during the monsoon season and Winter (Fog Weather) Proper planning, adherence to regulations, and awareness of potential hazards can significantly mitigate these risks.

### ❖ Risk Assessment - Sharp Turns

<b>Risk Type</b>	<b>Risk Level</b>	<b>Coordination</b>	<b>Distance From Start</b>	<b>Recommendation Speed</b>
Sharp turn	Medium	10.769008535749057, 78.83723765484662	300 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.765497799294907, 78.83604620042777	700 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.764009578128617, 78.83419636244746	950 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.758028485487644, 78.8334001457567	1.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.756122556562806, 78.83055889901199	2.0 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.751420920596344, 78.82521649200099	2.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.739011461069182, 78.83858885050212	4.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.771452950739656, 78.79557417065378	7.9 km	20km/hr TO 30 Km/Hr

### ❖ KEY LOCATION

<b>Sr No</b>	<b>Location</b>	<b>Lat, lon.</b>
1	Hall/Hotel	10.757627679523425, 78.83287045929539
2	OLD Burma Colony	10.75810448259808, 78.83342945889828
3	School/College	10.751940259658717, 78.824855152166
4	School/College	10.751244043943656, 78.82964545444308
5	Bank	10.749935829138195, 78.8268757083185
6	Toll Plaza	10.739223590189045, 78.82491390378034
7	Hotel/Restaurant	10.701444574062581, 78.73129207330703

# JOURNEY RISK MANAGEMENT STUDY REPORT

## SHARP TURN IMAGE START FROM TRICY TERMINAL



## JOURNEY RISK MANAGEMENT STUDY REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI. 10.765497799294907, 78.83604620042777**



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI. 10.756122556562806, 78.83055889901199**



## JOURNEY RISK MANAGEMENT STUDY REPORT

## JOURNEY RISK MANAGEMENT STUDY REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI. 10.739011461069182,  
78.83858885050212**



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI. 10.720753025938777,  
78.96377618938521**

## JOURNEY RISK MANAGEMENT STUDY REPORT



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI