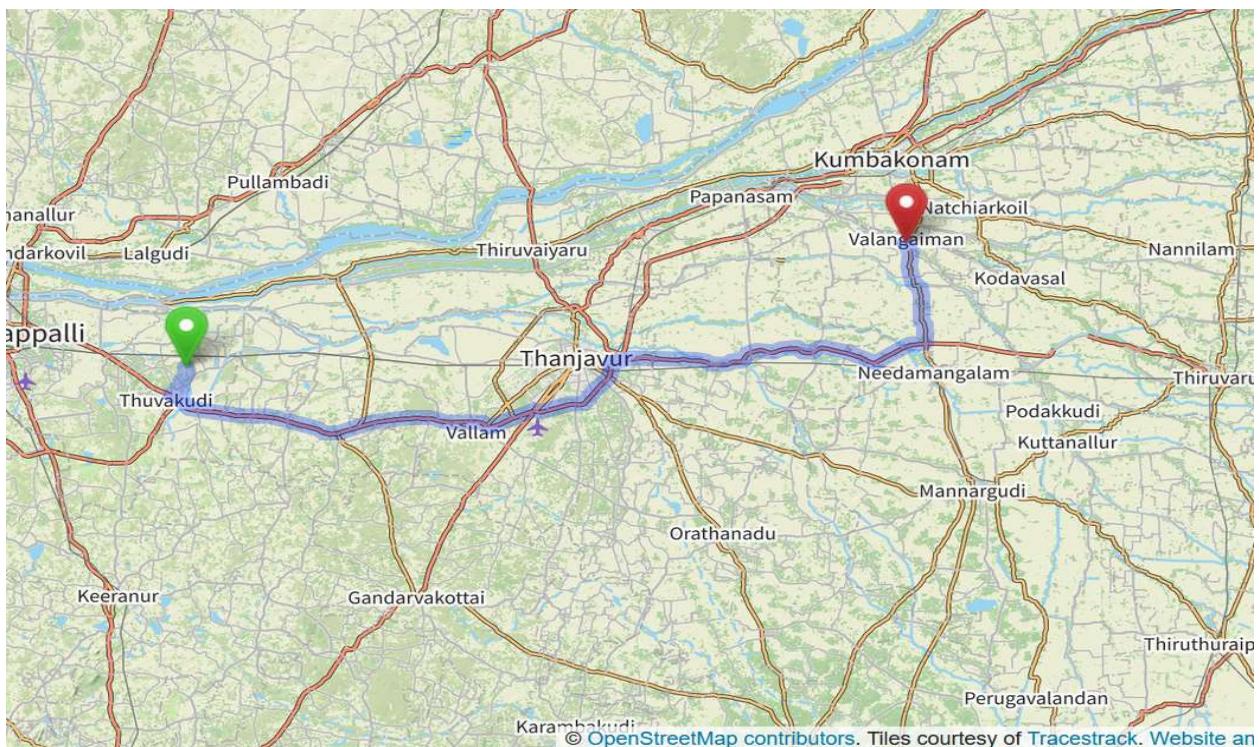
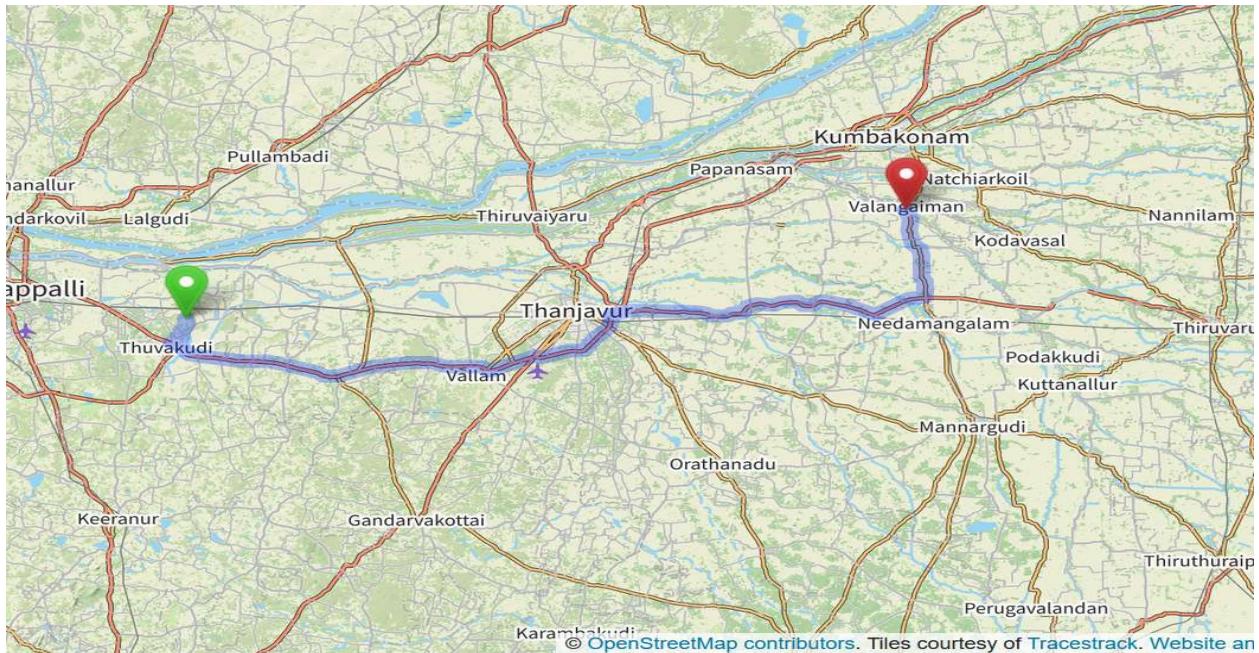




IndianOil

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

IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO MANIAM JAGATHAMBAL ENTERPRISES (10.884844 , 79.392532), TOTAL DISTANCE – 84 KM



Welcome to the Journey Risk Management Study for MANIAM JAGATHAMBAL ENTERPRISES,

**Total distance:84km; Start with: ([10.7753, 78.8368](#)), End with: ([10.884844 ,
79.392532](#))**

❖ Route Safety Analysis Report Overview of the Route Map

The route from Trichy Terminal (T.N) to MANIAM JAGATHAMBAL ENTERPRISES, . The route passes through several key points including SIDCO Industrial Estate Valavanthankottai, Logesh Fancy & Stationery Stores, Thuvakudi toSIDCO& Indian oil Storage, Markandan Agency onto NH 83 Toll road Manthai - Karuppur Main Rd/Thanjavur - Kumbakonam Main Rd/Thanjavur Main Rd, Trichy-Tanjore Rd, Thanjavur Ring Rd, Vennar bypass Bridge, Thanjavur Kumbakonam Main Rd, ValVnthonNKOTTI Toll Plaza Rd, Coimbatore-Nagapattinam Hwy, Maravapattu-villur-Kallikkudi Rd, NH83, Magapattinam-coimbatore-Gundlupet Hwy, Kumbakonam - Mannargudi - Adirampattinam Rd.

Typical Weather Conditions and Potential Weather-Related Hazards

Weather Conditions: Trichy Terminal (T.N) to MANIAM JAGATHAMBAL ENTERPRISES, 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.

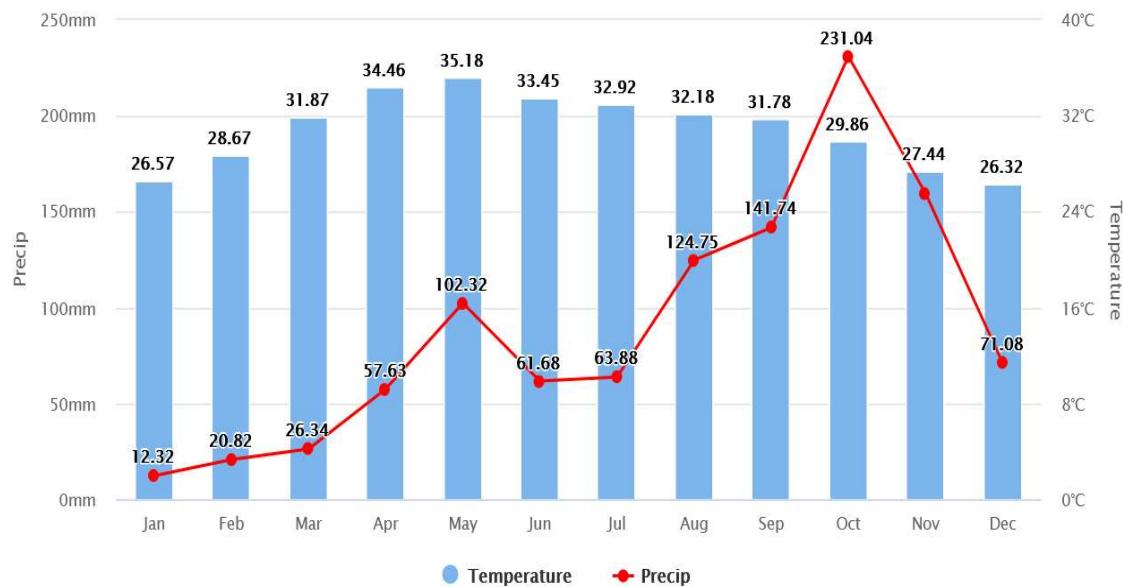
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	33.0 (91.4)	38.0 (100.4)	41.0 (105.8)	43.0 (109.4)	43.0 (109.4)	42.0 (107.6)	40.0 (104.0)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	34.0 (93.2)	33.0 (91.4)	43.0 (109.4)
Average high °C (°F)	30.27 (86.49)	32.88 (91.18)	36.0 (96.8)	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 MANIAM JAGATHAMBAL ENTERPRISES, 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 MANIAM JAGATHAMBAL ENTERPRISES 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 MANIAM JAGATHAMBAL ENTERPRISES, 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:

- Ganesh Wine
- Bridgestone Select - Shakthi Tyres
- Diamond Diesel Pump Service
- yengar bakery
- Sai Indian Cafe
- Mr Chandra Balan K Sabari Cooldrinks
- Mary St,
- Kumarpillai st
- James vulcanising shop
-

❖ **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: Thuvakudi to SIDCO& Indian oil Storage, Trichy-Tanjore Rd, Tanjore to Nagapattinam two way bye pass Rd, NH83, Swamimalai Rd, Kottucherry Rd, Vedamattam Main Rd, Maravappatti-villur-kalikkudi Road, NH 136B

Alternative Route 2: NH-99A, Kulithalai -Manapparai Rd, Vadakkada – Alangudi Rd, Rannathpuram Rd, NH83/service Road, Trichy – Tanjore Road, East Cost Rg, Nedungadura, SH147, SH 150.

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:** Shakthi Traders Painting Dealers, Tile Shop in Pandanallur Wholesale & Retail, Sri Cavery Rangan Vaara Santhai, GOWTHAM MAHAL, A K R Community Hall, Kilmandur Resturant,

R.G.N Purified water & Cool drinks supply, Bharat Petroleum Petrol Pump , DURKASREE PETROLEUM.

- **Educational institutions:** KSK Engineering College, Anai College of Arts & sci, Arasu Engineering College, MASS college of Arts & sci
- **Hospital:** - R. R. Clinic, Govt. Hospital.
- **Gas Station:** - In there are several of fuel/Gas station some of them are G Parthasarathi Fuel Agencies , S N Ravi Kumar Agencies, Siva Fuels , Bhavani Agencies , BPCL petrol pump, ESSAR petroleum pudukudi Thanjavur, NAYARA Energy-Sri Kandhar AGencct truchy-thanjavur Hyw , rakkku sakti, Sri BPCL petrol pump, Sri Ganesh Fuels and others.
- **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.

❖ **Estimated Emergency Response Times**

Shakthi Traders Painting Dealers, Tile Shop in Pandanallur Wholesale & Retail, Sri Cavery Rangan Vaara Santhai, GOWTHAM MAHAL, A K R Community Hall, Kilmandur Resturant, R.G.N Purified water & Cool drinks supply, Bharat

Petroleum Petrol Pump , DURKASREE PETROLEUM. areas like have quicker 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

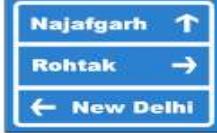
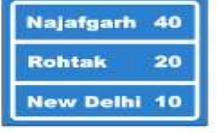
 Stop	 Give way	 No entry	 Straight prohibited
 One way	 One way	 Vehicles prohibited in both directions	 Horn prohibited
 Pedestrians prohibited	 Cycles prohibited	 Right turn prohibited	 Left turn prohibited
 U-turn prohibited	 Overtaking prohibited	 Trucks prohibited	 Tonga prohibited

			
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 ends

Cautionary signs

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

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 MANIAM JAGATHAMBAL ENTERPRISES, Nallathur Road, Nedungadu Commune, Kurumbagaram, Thiruvarur State-TN is generally manageable but poses several risks, 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**

Risk Type	Risk Level	Coordination	Distance From Start	Recommendation Speed
Sharp turn	Medium	10.75826984715787, 78.83326651420096	2.0 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.756715887788083, 78.83021887801165	2.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.751274985268047, 78.82506273704801	3.2 KM	10km/hr TO 20 Km/Hr
Sharp turn	High	10.750277996315637, 78.82811314184613	3.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.74905481445307, 78.83068971790057	3.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.742539235146788, 78.82757393278459	4.7 KM	10km/hr TO 20 Km/Hr
Sharp turn	Medium	10.73973556832621, 78.82562793774534	5.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.736484815792069, 78.85813014056163	7.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.733050470391417, 78.8746349991134	9.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.730663132384781, 78.90738977207171	12.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.720936860053959, 78.93786864972361	16.4 KM	10km/hr TO 20 Km/Hr
Sharp turn	Medium	10.716784800273348, 78.84879910899883	17.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.717112506157974, 78.95405518217704	18.3 KM	10km/hr TO 20 Km/Hr
Sharp turn	Medium	10.718198043777434, 78.95632755659891	18.6 KM	10 km/hr TO 20 Km/Hr
Sharp turn	Medium	10.727836105197037, 78.98919201018026	22.3 KM	10km/hr TO 20 Km/Hr

Sharp turn	Medium	10.730010448569553, 79.02014232711053	25.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.730501471265203, 79.02539066327884	26.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.727870992231665, 79.03455375437825	27.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.726525301425479, 79.06523269913562	30.7 KM	10km/hr TO 20 Km/Hr
Sharp turn	Medium	10.723304275092744, 79.070122041854	31.4 KM	10km/hr TO 20 Km/Hr
Sharp turn	Medium	10.736812862715691, 79.10514222177422	35.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.736278082465493, 79.10913778936195	36.0 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.742805118803558, 79.133536481624	38.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.742836859117847, 79.14258975483597	39.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.767847703887826, 79.16397297132343	43.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.77753224636447, 79.16600595039135	44.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Sharp	10.78007103193597, 79.16766386799806	44.9 KM	10km/hr TO 20 Km/Hr
Sharp turn	Medium	10.78375465759608, 79.18957206554205	47.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.78264040599092, 79.1982844873892	48.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.78213288457938, 79.21656743971377	50.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.780416257312543, 79.2378448355477	52.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.777589957207995, 79.25308715211956	54.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.780076298248042, 79.25832468636311	55.0 KM	20km/hr TO 30 Km/Hr

Sharp turn	Medium	10.780657027108555, 79.26571210362718	55.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.79014847910355, 79.2777616852846	57.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.78849870678751, 79.28802397538799	58.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.78928893256831, 79.29222748850187	59.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.792471624884661, 79.30835300951281	61.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.78927091909504, 79.31276225966334	61.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.891752616999176, 79.26777043661582	63.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.930628871140721, 79.30873084440696	70.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.840820493397819, 79.34489500707708	74.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.954268298213764, 79.34795595905413	76.1 km	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.966284743706227, 79.35226514714013	77.5KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.982267525456553, 79.38847428720712	82.0 KM	20km/hr TO 30 Km/Hr

❖ Risk Assessment – Key Location:

Sr No	Location	Lat, lon.
1	Hall/Hotel	10.757627679523425, 78.83287045929539
2	OLD Burma Colony	10.75810448259808, 78.83342845889828
3	School/College	10.751840259658717, 78.824855152166
4	School/College	10.751244043843656, 78.82964545444308
5	Bank	10.749935829138195, 78.8268757083185
6	Toll Plaza	10.744657137862134, 78.83396676954393
	Residency/Hotel	10.74244590807412, 78.83739600508359
7	Jagdish Filling station IOCL RO	10.730096699158965, 78.86385149738328
8	Bus Stand	10.737757663845956, 78.84463219368527
9	School/College	10.743654738281231, 78.85235497712233
10	Shri Rakku Sakti IOCL retail outlet	10.736854782210685, 78.85825905782572
11	School/College	10.727678358770339, 78.97828938482074
12	BPCL RO	10.725879040209913, 78.98063626596378
13	Institution/School	10.731872102837507, 79.06810085715502
14	IOCL RO	10.75776868440378, 79.15525484344298
15	Temple	10.767030601668454, 79.16429139341496
15	School	10.781831297810923, 79.16843912019556
16	Govt. Hospital	10.77789099048449, 79.24667046268328
17	Agriculture office	10.782036793388496, 79.17820507025655
18	Manakkudu Mariamman Temple	10.89765159272063, 79.28018997515974
19	KSK Engineering Colledge	10.84654785466069, 79.34581988441573
20	Krishna Hotel	10.960307622586908, 79.35092227840386
21	Anai College of Arts & sci	11.031971722817746, 79.41271133840648

22	Arasu Engineering College	11.014257489641972, 79.40804081174477
23	MASS college of Arts & sci.	11.01861514580773, 79.41145102807148
24	Varsikaran Water Service	11.112698729907107, 79.45579165847933
25	IOCL RO	11.11454992771662, 79.47084629711991
26	JK Dairy	11.114882870992563, 79.47265602777811
27	Temple	11.118827492919285, 79.48890612883585
28	Sakti Honda Centre	11.131456540905063, 79.5110737703748
29	BPCL RO	11.13197568739517, 79.51485057895776
30	RNG water Services	11.131500059810481, 79.51765742772085
31	S B Hall/Hotel	11.131104875863649, 79.51875228055619
32	Sakti Trades	11.130266029232097, 79.51986485257528

IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO MANIAM JAGATHAMBAL ENTERPRISES, (0.884844 , 79.392532), TOTAL DISTANCE - 84 KM



Google

10.758262863684411, 78.83351425048



10.755557510143007, 78.82964043768688



idli to siddhu
Google

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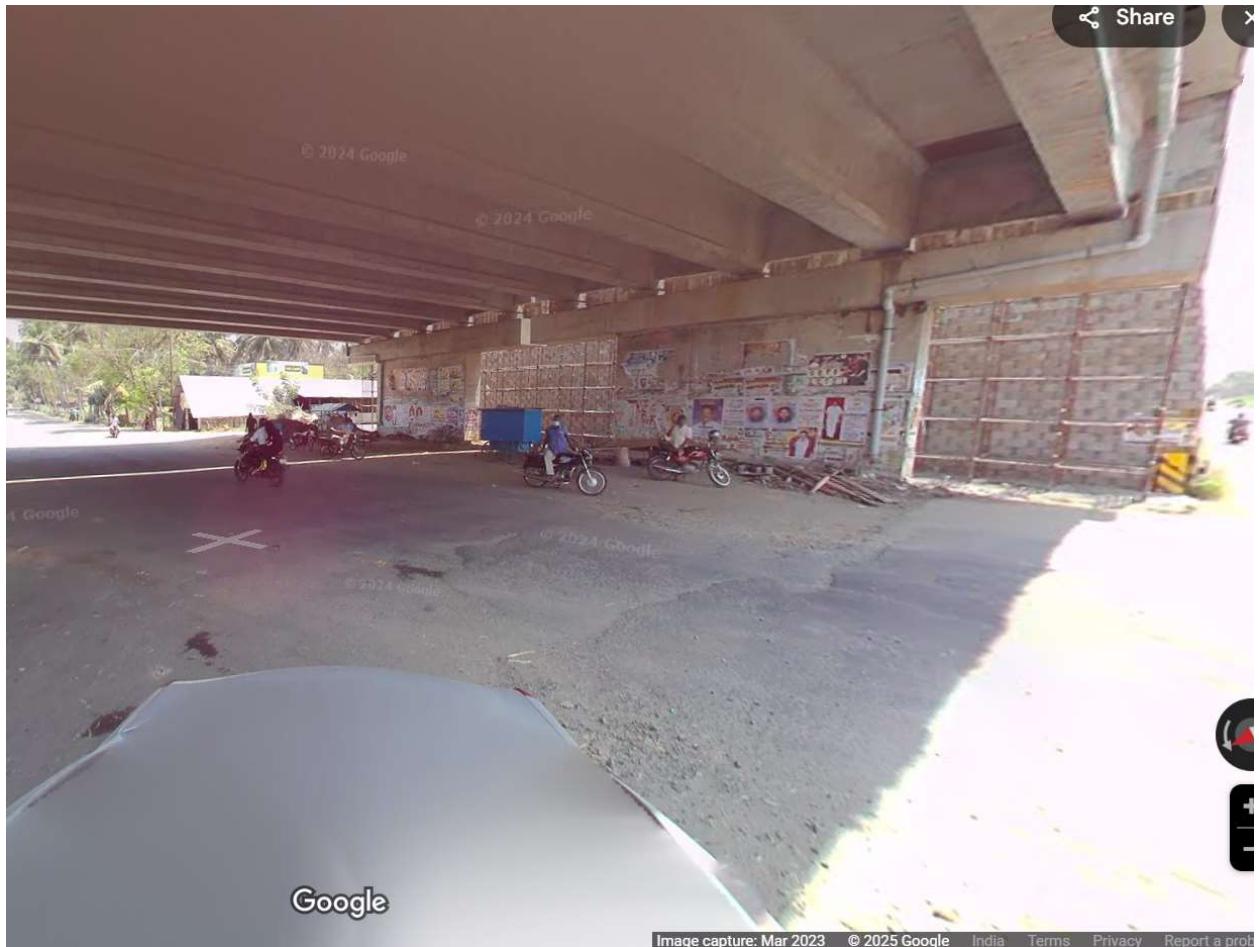
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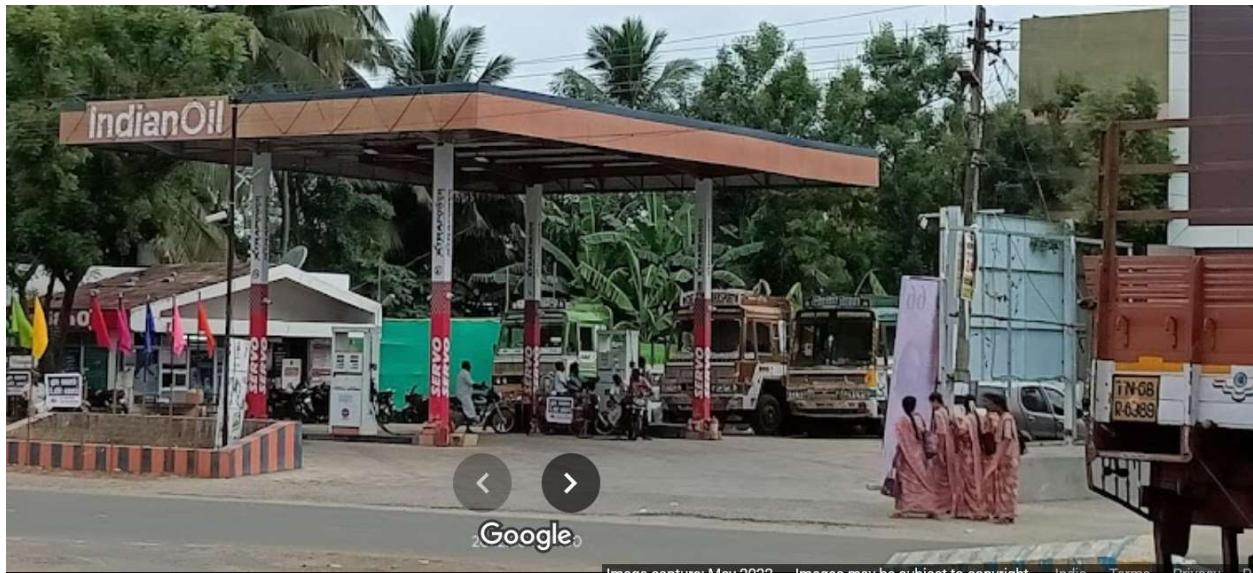
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