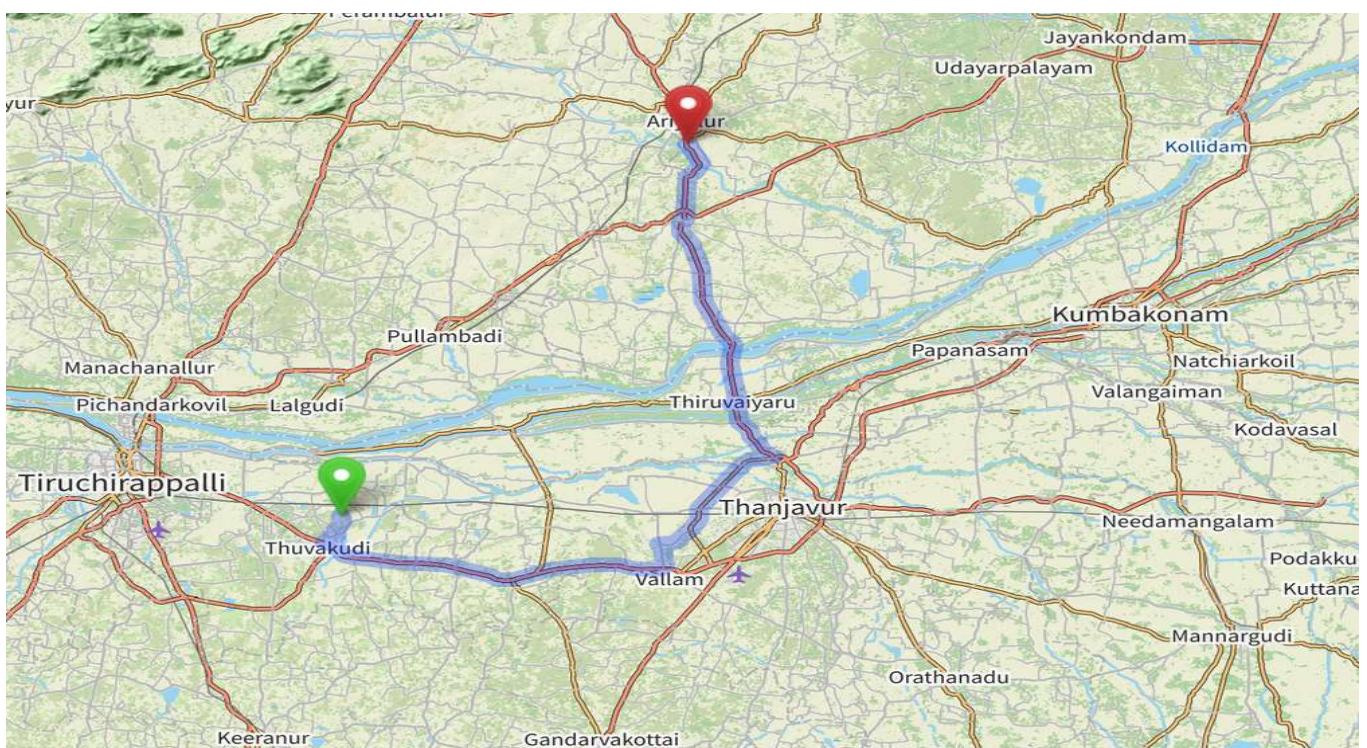
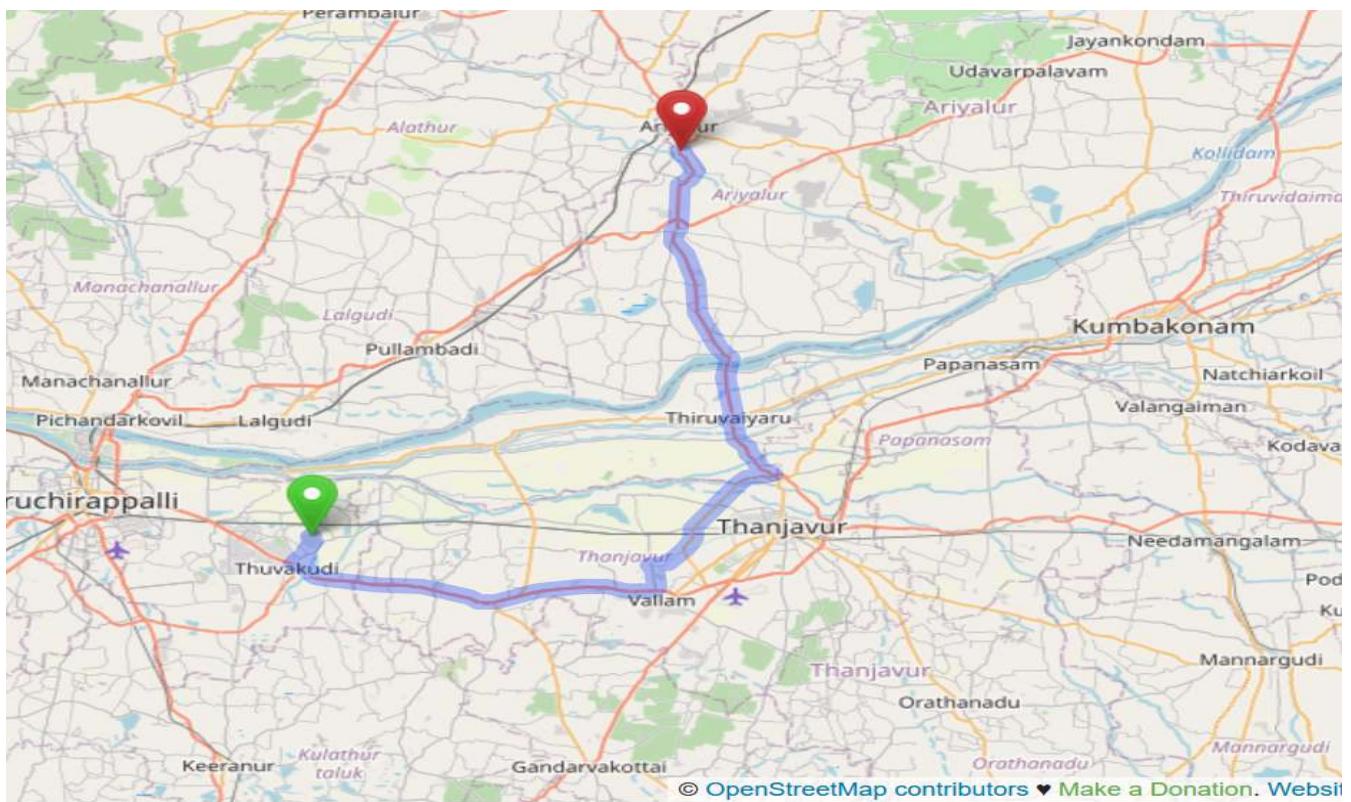




IndianOil

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

**IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO PRAKASH AGENCIES,
(11.113922 , 79.07230), TOTAL DISTANCE -79 KM**



Welcome to the Journey Risk Management Study for PRAKASH AGENCIES,,,

**Total distance: 79 km; Start with: (10.7753, 78.8368), End with: (11.113922 ,
79.07230)**

❖ Route Safety Analysis Report Overview of the Route Map

The route from Trichy Terminal (T.N) to PRAKASH AGENCIES, . The route passes through several key points including SIDCO Industrial Estate Thuvakudi to SIDCO& Indian oil Storage, NH 83, Peacock Rd, NH 136, heavy vehicles carrying hazardous materials.

Typical Weather Conditions and Potential Weather-Related Hazards

Weather Conditions: Trichy Terminal (T.N) to PRAKASH 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.

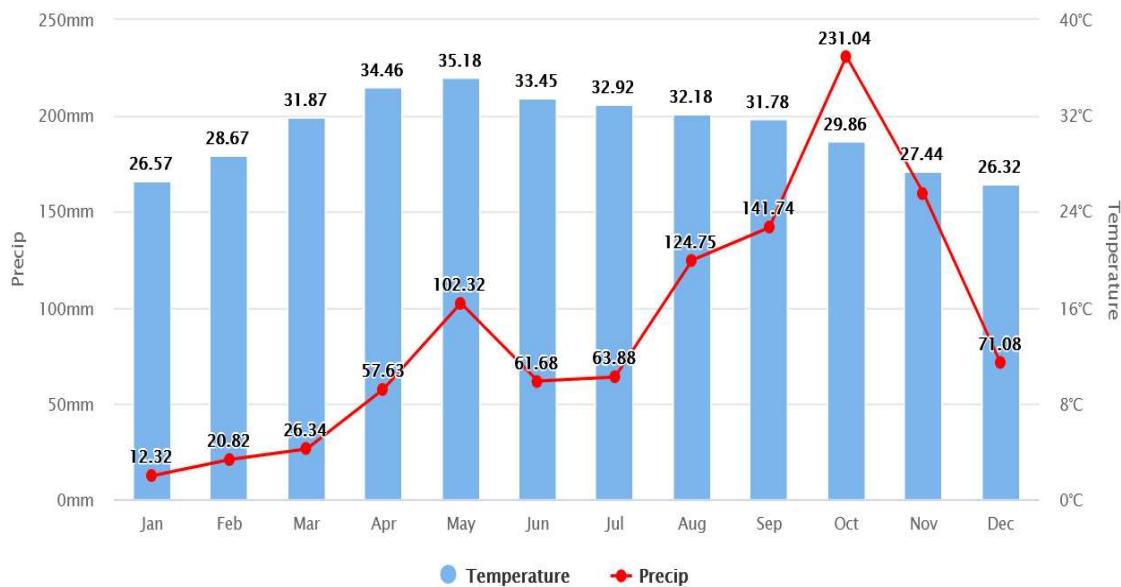
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Dec	Year	
Record high °C (°F)	33.0 (91.4)	38.0 (100.4)	41.0 (105.8)	43.0 (109.4)	43.0 (109.4)	42.0 (107.6)	40.0 (104.0)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	34.0 (93.2)	33.0 (91.4)	43.0 (109.4)
Average high °C (°F)	30.27 (86.49)	32.88 (91.18)	36.0 (96.8)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

- M. J. Agencies
- Jude Digital Studios
- Aishwarya Medical Centre
- Tea Bench & Happy spot
- HAP daily

- Anju Hotel
- Dhanalakshmi veg Hotel
- Sri Amman Saloon

❖ **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: 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:** M. J. Agencie,Jude Digital Studios,Aishwarya Medical Centre,Tea Bench & Happy spot,HAP daily,Anju Hotel,Dhanalakshmi veg Hotel,Sri Amman Saloon
- **Educational institutions:** - TIRUCHY PUBLIC SCHOOL, Government Higher Secondary School, Natham school, Sentamil Matriculation School owner name.
- **Hospital:** - Sugalaya Varmakalai Treatment Center, Dharshana Hospital, Chindoja hospital, PVS.VELAN multi speciality Hospital.
- **Gas Station:** HP Petrol bunk — SRI JAYAM AGENCY&WATER SERVICE PATTUKKOTTAI, Bharat Petroleum, Petrol Pump -Sri Vinayaga Filling Station
- **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**

M. J. Agencie,Jude Digital Studios,Aishwarya Medical Centre,Tea Bench & Happy spot,HAP daily,Anju Hotel,Dhanalakshmi veg Hotel,Sri Amman Saloon 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 PRAKASH AGENCIES,, , 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	10.768979492756785, 78.83733022245077	700 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.765564550522766, 78.83604276220456	1.1KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.76417326664682, 78.83424031791654	1.3KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.758312939678301, 78.8333390955904	2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.755867589771208, 78.82934796895263	2.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.752199527738611, 78.8270734559225	3 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.751271964757734, 78.8251851809541	3.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.749543317048815, 78.83029210643683	3.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.739215915514594, 78.83807763864252	5.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.732444658168607, 78.87590286143897	9.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.721513396015236, 78.93724720969443	16.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.718103563701893, 78.94265694385163	17 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.717389828535552, 78.95466960284915	18.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.729870739714212, 79.01991554725656	25.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.730579866908542, 79.0251843020434	26.3 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.72790059101628, 79.05305655081945	29.6 KM	20km/hr TO 30 Km/Hr

Sharp turn	High	10.721698933433963, 79.06810803194023	32.1 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.696413937867586, 79.0943267409893	36.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.673609840838628, 79.13940127051431	42 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.655716897649173, 79.16756210615961	45.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.650229517669525, 79.18407018222753	47.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.64272486768507, 79.21035786578445	50.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.932172558555841, 78.43424756472015	58.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.949344449041185, 78.33054934996814	65.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.957041359985572, 78.24117431890213	67.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.94363607215265, 78.23247943905706	76.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.943492320788371, 78.2326961328478	78.5 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	10.75810447959808, 78.83342945889798
3	School/College	10.751940259658797, 78.794855152166
4	School/College	10.751244043943656, 78.79964545444308
5	Bank	10.749935799138195, 78.7968757083185
6	Toll Plaza	10.739223590189045, 78.79491390378034
7	Jagdish Filling station IOCL RO	10.730096699158965, 78.86385149738328
8	Bus Stand	10.737619797956392, 78.84469108474981
9	School/College	10.743654737981231, 78.85235497792233
10	Shri Rakku Sakti IOCL retail outlet	10.736854779210685, 78.85795905779579
11	School/College	10.736327928804307, 78.86222089649122
12	Moogambigai Agencies IOC RO	10.790992946251965, 78.94066066619781
13	G Parthasarathi Fuel Agencies IOCL RO	10.731949135570895, 79.01839981851398
14	Auto Parts Mall	10.73479795344798, 78.86383650381019
15	Trichy-Thanjavur Border check post	10.734414736299165, 78.8687554646539
16	Hotel	10.73449559479593, 78.8705379779324
17	Pkd railway station starting point	10.733035467327792, 78.87760665657318
18	Nayara Petrol Pump	10.733201787527669, 78.88075610377959
19	IOCL RO	10.7370281264634, 79.13691139189406
20	Smv Puncture Shop	10.733079879186443, 78.88788151537916
21	Hotel	10.732766784125532, 78.89204005296241
22	IOCL retail outlet	10.732484981220054, 78.89788773851032
23	Bank	10.730614988892885, 78.90808861916952

24	Bus Stop	10.79762381663031, 78.91707309156152
25	Tool Fab Industry	10.794738429697935, 78.92779569309396
26	Hotel	10.799730509674973, 78.96117943846999
27	Vikas Global City	10.794186034036219, 78.97449603279008
28	GOVERNMENT POLYTECHNIC COLLEGE, KEELAPALUR	11.069544211131706, 79.06916487060522
29	Arunachala Matric School	11.038970528148704, 79.05619113680787
30	Golden Gates Matriculation school	11.03980610579728, 79.04004609125693

**IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO PRAKASH AGENCIES,,
(11.113922 , 79.07230), TOTAL DISTANCE -79 KM**



10.738951626471074, 78.83852941101452



10.732983461001181, 78.87516207093638



10.717871937552077, 78.95331849247525



10.728799529005812, 78.99495636008567



10.730083110244518, 79.02544275142884



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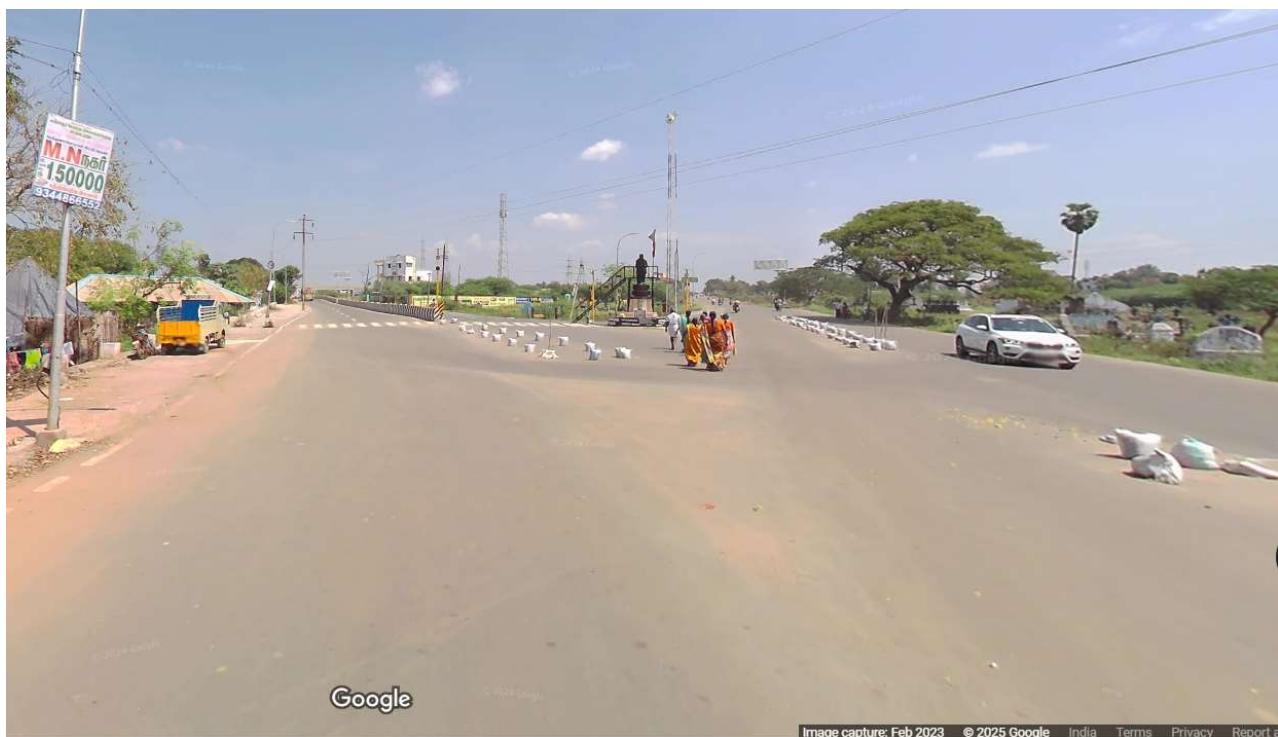
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