

Paper -IV

INFRASTRUCTURE DEVELOPMENT IN AP : TRANSPORT

ANDHRA PRADESH - ROADS

Mains Notes | Socio Economic Survey 2024-25

1. ROAD NETWORK OVERVIEW

Key Statistics

Parameter	Figure
Total Road Network (excluding NH)	45,379 km
National Highways	8,744 km
State Highways	12,653 km
Major District Roads (MDR)	26,486 km
Other District Roads (ODR)	6,240 km
Panchayat Raj Roads	80,635 km

Surface-wise Classification

- Bituminous (BT) Roads: 40,898 km (90.1%)
- Cement Concrete (CC) Roads: 3,031 km (6.7%)
- Metalled Roads: 259 km (0.6%)
- Un-metalled Roads: 1,191 km (2.6%)

Road Network as per State economic Survey 2024-25

Type	Length of Road (km)
National Highways	8,744
State Highways	12,653
Major Districts & Rural Roads	26,486
Other District roads	6,240

Lane-wise Classification

- Four Lane: 660 km
- Two Lane + Paved Shoulder: 244 km
- Two Lane: 11,650 km

- Single Lane: 30,433 km

National Highways Density Comparison

Metric	Andhra Pradesh	All India Average
Per lakh population	17.64 km	12.09 km
Per 1,000 sq km	53.65 km	44.46 km

2. INSTITUTIONAL FRAMEWORK

Andhra Pradesh Road Development Corporation (APRDC)

- Established: 1998
- Mandate: Develop and maintain roads plus allied activities

Recent Achievements:

- Upgraded 225.7 km State Highways from single lane to 2/4 lane
- 26 packages covering 4,301 km maintenance for 5 years at ₹891 crore
- Operational Road Management System and MIS established

Proposed Reforms:

1. Organizational Restructuring
2. Amendment to APRDC Act, 1998
3. Creation of Dedicated Road Fund

Administrative Control of National Highways

- NHAI: 4,406 km
- MoRT&H (Project Implementation Unit): 600 km
- State PWD: 3,738 km

3. ONGOING DEVELOPMENT WORKS

Rural Roads Development

Achievements:

- **9,346 km rural roads upgraded to bituminous surface**
- RIDF II to XXVIII: 1,931 works (roads and bridges) in 28 tranches

RCPLWE Scheme (Left Wing Extremism Affected Areas):

- 46 works sanctioned (30 roads + 16 bridges)
- Coverage: **Srikakulam, Vizianagaram, Visakhapatnam, East Godavari**
- Completed: 27 roads + 14 bridges (397 km) at ₹391 crore

Rural Roads Plan (2016-17):

- Sanctioned: 304 works (1,119 km) at ₹898 crore
- Completed: 199 works (678 km) at ₹495 crore
- In Progress: 5 works (23.44 km) at ₹31 crore

4. FUNDING MECHANISMS

External Aided Projects (EAP) - New Development Bank

Total Assistance: ₹6,400 crore (70:30 cost sharing between NDB and State)

Two Projects:

1. ***AP Roads and Bridges Reconstruction Project (APRBRP)***
2. ***AP Mandal Connectivity and Rural Connectivity Improvement Project (APMCRCIP)***

Phase-I: ₹3,014 crore for 1,243 km roads (in progress)

Phase-II Proposed:

- APRBRP: 539.45 km State Highways at ₹1,398.54 crore
- APMCRCIP: 728.59 km MDR/ODR at ₹1,987.60 crore

Centrally Sponsored Schemes

Central Road Infrastructure Fund (CRIF):

- ***Funded via petrol and High-Speed Diesel cess***
- **State bears initial cost;** Government of India reimburses fully

Setu Bandhan (Sub-scheme of CRIF):

- **9 Railway Over Bridges (ROBs) at ₹580 crore sanctioned**

- In Progress: 5 ROBs at ₹351 crore
- Pending Administrative Sanction: 4 ROBs at ₹244 crore

NABARD-Assisted Schemes

NIDA Scheme:

- Loan: ₹1,158.53 crore from NABARD
- Coverage: 99 State Highways + 134 MDR/ODR works
- Completed: 99 SH + 133 MDR/ODR works

Renewal Works:

- 1,168 works for 8,268 km to improve riding surfaces of SH and MDR

5. ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION (APSRTC)

(Source: SOCIO-ECONOMIC SURVEY 2024-25)

Organizational Profile

- Established: 1958 | Initial Fleet: 609 buses across 16 depots

Current Status (December 2024):

- Depots: 129 across 4 Zones and 26 Districts
- Fleet Strength: 11,226 buses (8,475 RTC + 2,751 Hired)
- Employees: 46,612

Fleet Composition:

- AC Buses: 467 (348 RTC + 119 Hire)
- Non-AC Buses: 10,759 (8,127 RTC + 2,632 Hire)

Financial Performance (FY 2024-25, upto December)

Revenue Realisation:

- Traffic Revenue: ₹4,261 crore (vs ₹4,360 crore in 2023-24)
- Occupancy Ratio: **69% (maintained)**
- Commercial Revenue: ₹348.48 crore (vs ₹299.66 crore last year)

Loss Reduction:

- **FY 2023-24: ₹999 crore → FY 2024-25: ₹773 crore**

Employee Welfare

Healthcare:

- Employee Health Scheme (EHS) extended to all APPTD employees
- 50-bed RTC Central Hospital (Vijayawada) and 20-bed Area Hospital (Kadapa)
- 19 Dispensaries at district headquarters plus 1 at Hyderabad for retirees

Insurance and Benefits:

- Compassionate Appointments: 1,524 (713 APSRTC + 811 APPTD)
- EPS-95 Coverage: Benefits ranging ₹35,000 to ₹7,00,000 for dependents of deceased employees
- Corporate Salary Package with SBI:
 - Group Personal Accidental Insurance: ₹85 lakhs
 - Additional Accidental Death Cover: ₹10 lakhs for Platinum card holders
 - Group Term Life Insurance: ₹5 lakhs at ₹200/month per employee

Skill Development:

- 25 Heavy Vehicle Driver Training Schools (1 per parliamentary constituency)
- 5,313 outside candidates trained in Heavy Motor Vehicle driving

Infrastructure and Sustainability

Solar Energy Initiatives:

- Installed: Rooftop solar plants (100 KW each) at 4 bus stations (Kakinada, Chittoor, Madanapalle, Nandyal)
- Savings: ₹2.2 crore since inception till December 2024

New Commissioning (November 2024 - RESCO Model):

- PNBS Vijayawada: 499 KW
- Central Hospital, Vijayawada: 64 KW
- Savings (upto December): ₹1,60,757

Proposed: 19 more locations under RESCO model

Mechanical Achievements:

- Acquired: 1,032 new buses in 2024-25

- Deployed: BS-VI buses through Tata Motors and Ashok Leyland
- Janatha Garage Works: ₹196.12 lakhs additional revenue from tyre retreading, overhauling, and repairs

6. ROAD SAFETY FRAMEWORK

Current Status

Accident Data (January-November 2024):

- Total Accidents: 16,898
- Deaths: 7,477
- National Ranking: **8th in accident deaths**

Road Safety Policy 2015:

- Target: **15% annual reduction in fatalities**
- District Road Safety Committees: Constituted in all districts (Chairperson: District Collector)
- Lead Agency on Road Safety: Multi-departmental body (Transport, Police, R&B, Health)

Road Safety Fund:

- Source: **Percentage share of enforcement revenue collected**
- Purpose: Fund road safety initiatives across the state

Key Initiatives

e-DAR App (Electronic Detailed Accident Report):

- Web portal by MoRTH for accident data collection, analysis and policy formulation
- AP Registration (upto December 2024): 18,124 accidents
- Stakeholders: Police, Transport, Health, NHAI, R&B, Municipal Administration, Panchayat Raj, 108 services
- Live Modules: Transport, Police, Medical, Road Engineering departments

Good Samaritan Awards Scheme:

- Objective: Motivate public to help accident victims during the Golden Hour
- Rewards:
 - Certificate of appreciation plus ₹5,000 cash per Samaritan per accident

- National Awards: ₹1 lakh each for 10 most worthy Samaritans annually
- Duration: 15 October 2021 to 31 March 2026
- AP Beneficiaries: 23 Good Samaritans recognized and awarded

Road Safety Audits:

- Target: 20,000 km of National and State Highways
- Method: Engage Road Safety Audit Consultant
- Current: 1,000 km audit ongoing as per Supreme Court Committee directions
- ARMENEG audited 1,365 km; rectification measures prioritized for vulnerable segments based on e-DAR data

7. KEY CHALLENGES AND WAY FORWARD

Challenges

Infrastructure Gaps:

- **High proportion of single-lane roads** (30,433 km) requiring upgradation
- Un-metalled roads in rural areas (1,191 km) affecting all-weather connectivity
- Disaster vulnerability (cyclones, floods) necessitating frequent repairs and maintenance

Safety Concerns:

- **8th rank nationally in road accident deaths**
- Need for behavioral change among road users alongside infrastructure improvement
- Gap between audit recommendations and implementation on ground

Institutional Challenges:

- APRDC requires strengthening for financial and operational self-sustainability
- Coordination challenges across multiple agencies (NHAI, PWD, APRDC, Panchayat Raj)
- Timely fund flow and project execution delays

QUICK REVISION POINTS

- Andhra Pradesh has 54,123 km total road length including National Highways
- NH density: 17.64 km per lakh population versus All India average of 12.09 km
- APRDC established in 1998; proposed reforms include organizational restructuring and dedicated Road Fund
- APSRTC fleet: 11,226 buses; Revenue FY 2024-25: ₹4,261 crore; Loss reduced by ₹226 crore
- Road Safety Policy 2015 targets 15% annual reduction in accident fatalities
- e-DAR App: 18,124 accidents registered from Andhra Pradesh (upto December 2024)
- Good Samaritan Scheme: ₹5,000 reward per Samaritan plus National awards of ₹1 lakh
- NDB assistance: ₹6,400 crore for APRBRP and APMCRCIP with 70:30 cost sharing
- CRIF Scheme: State incurs initial cost; Government of India reimburses fully (funded via petrol and HSD cess)
- 9,346 km rural roads upgraded to bituminous surface since 1996-97
- APSRTC digital integration includes UTS, UPI payments, ONDC, WhatsApp booking, and live tracking
- Panchayat Raj Engineering Department maintains 80,635 km rural roads as of April 2024
- Under PMGSY, 99.09% of targeted habitations connected by all-weather roads

ROAD NETWORK AS A CATALYST FOR DEVELOPMENT:

A. As per Socio-Economic Survey 2024-25

The document explicitly identifies the following developmental roles of roads:

Development Parameter	How Roads Contribute	Evidence from AP Data
Modal Dominance	Cater to more than 80% of Goods and Passenger traffic	Roads are the primary mode of transport in the state
Connectivity	Provide connectivity to Rural and Urban facilities	99.09% habitations connected by all-weather roads under PMGSY
Trade Enablement	Enable trade by linking production areas to markets	CRIF scheme funds roads to transport agricultural produce to market yards
Social Integrity	Ensure social integrity by connecting communities	Rural roads (80,635 Km) linking remote areas; RCPLWE scheme for LWE-affected districts
Productivity & Efficiency	Directly linked with availability and quality of road network	Renewal works (1,168 works, 8,268 Km) to improve riding surfaces

B. Sectoral Contributions to Development

1. Agricultural Development & Market Integration

- **Mechanism:** All-weather roads enable farmers to transport perishable produce quickly to markets, reducing post-harvest losses.
- **AP Evidence:**
 - CRIF scheme specifically sanctions works for "transport of agricultural produce to nearby market yards."
 - PMGSY achieved 99.09% habitation connectivity.
 - Rural Roads Plan converted 678 Km of non-BT roads to BT roads.

2. Industrial & Economic Growth

- **Mechanism:** Industrial corridors and economic centers require high-quality roads for raw material inflow and finished goods outflow.

E. Mains Question Framework

Question: "Roads are not just infrastructure but instruments of inclusive development." Discuss with reference to the road network in Andhra Pradesh.

Answer Structure:

1. Introduction – Modal share (>80%) and network statistics
2. Economic development – Trade, industry, agriculture, PPP
3. Social development – Education, health, elderly, women, LWE areas
4. Environmental aspects – Solar depots, e-buses, disaster resilience
5. Institutional mechanisms – APRDC, Road Safety Policy, Road Fund
6. Conclusion – Virtuous cycle & way forward

Current affairs

- For FY26, as per the budget estimate, the State Government has allocated Rs. 1,968 crore (US\$ 230.4 million) allocated towards capital outlay on roads and bridges.
- On October 27, 2025, the Government of India sanctioned Rs. 35,882 crore (US\$ 4.05 billion) for rural road and bridge infrastructure in Andhra Pradesh under the Pradhan Mantri JanaMAN initiative. This funding aims to accelerate connectivity and support regional development across rural areas.
- The Government has initiated two projects with funding from the New Development Bank on cost sharing model of 70:30 - Andhra Pradesh Road and Bridges Reconstruction Project (APRBRP) and Andhra Pradesh Mandal Connectivity and Rural Connectivity Improvement Project (APMCRCIP). A cumulative road length of 3,104 kms and 479 bridges will be covered under these projects.
- On August 3, 2025, Union Minister of Road Transport & Highways, Mr. Nitin Gadkari declared that Andhra Pradesh's road connectivity will surpass that of the United States (US) within two years, while announcing 27 new road projects worth Rs. 5,233 crore (US\$ 590 million) and in principle approval for several schemes' worth around Rs. 1,00,000 crore (US\$ 11.28 billion).

ANDHRA PRADESH - AIRPORTS AND CIVIL AVIATION

Socio Economic Survey 2024-25

1. INTRODUCTION AND ECONOMIC SIGNIFICANCE

Role of Airports in State Economy

- Airports connect Andhra Pradesh with national and global networks, enabling swift passenger travel and cargo movement
- Civil aviation sector generates direct and indirect employment and supports hospitality, tourism, industries, and road transportation
- International Civil Aviation Organization (ICAO) estimates:
 - Every US\$ 100 expenditure in air transport produces US\$ 325 benefits for local economy
 - Every 100 jobs in aviation sector generates 610 new jobs in local economy

Current Status

- Andhra Pradesh handles 1.6% of total passenger traffic in India
- Six operational airports: 3 Domestic (Rajahmundry, Kadapa, Orvakallu-Kurnool) and 3 International (Visakhapatnam, Vijayawada, Tirupati)

2. ANDHRA PRADESH CIVIL AVIATION POLICY

Andhra Pradesh Civil Aviation Policy 2015

Key Objectives:

- Encourage private participation in airport development
- Promote regional and national airline operations
- Develop aviation infrastructure through PPP models
- Provide fiscal incentives and Viability Gap Funding (VGF) on case-to-case basis
- Develop new Greenfield Airports and upgrade existing airstrips

Andhra Pradesh Civil Aviation Policy 2025 (Under Preparation)

- New policy being drafted for next 10 years to address emerging aviation needs and enhance connectivity

Institutional Framework: APADCL

Andhra Pradesh Airports Development Corporation Limited (APADCL):

- Established as Special Purpose Vehicle (SPV) with 100% Government of Andhra Pradesh ownership
- Formerly known as Bhogapuram International Airport Corporation Limited (BIACL)
- Nodal agency for facilitation and improvement of aviation infrastructure in the state

3. GREENFIELD AIRPORT PROJECTS

Proposed Greenfield Airports in Andhra Pradesh

APADCL has proposed development of Greenfield Airports at the following locations:

1. Bhogapuram (Vizianagaram District) - International Airport
2. Dagadarthi (Nellore District) - No-frills Airport
3. Orvakallu (Kurnool District) - No-frills Airport (Operational)
4. Srikakulam (Srikakulam District)
5. Tuni-Annavaram (Kakinada)
6. Nagarjunasagar (Palnadu District)
7. Tadepalligudem (West Godavari District)
8. Kuppam (Chittoor District)
9. Ongole (Prakasam District)

Bhogapuram International Airport (Vizianagaram District)

Project Overview:

- Development Mode: Public-Private Partnership (PPP)
- Concessionaire: GMR Visakhapatnam International Airport Limited (GVIAL)
- Land Acquisition: 2,703.26 acres acquired by APADCL; 2,203.26 acres handed over to concessionaire
- Construction Period: 3 years from appointed date

Financial Details:

- Land procurement and R&R activities: ₹795 crore invested
- Government payment to land holders (since 2015-16): ₹120 crore
- Phase-I Estimated Cost: ₹2,302.51 crore

Capacity Planning:

- Phase-I: 6 Million Passengers Per Annum (Mppa)
- Phase-II: 12 Mppa
- Phase-III: 18 Mppa

Connectivity Infrastructure:

- Proposed 6/8 lane expressway from Visakhapatnam city to Bheemili beach for airport connectivity

Coordination with Existing Airport:

- MOU with Airports Authority of India (AAI) for use of Civil Enclave at Vizag Naval Airfield (INS Dega)
- No Objection Certificate granted for closure of commercial operations at existing Visakhapatnam Airport for 30 years upon commencement of Bhogapuram operations

Dagadarthi Airport (Nellore District)

Project Overview:

- Development Mode: PPP
- Type: No-frills Greenfield Airport
- Overall Land Requirement: 1,380 acres
- Land Acquisition Status: 635 acres acquired; 481.142 acres pending from Forest Department



Financial Details:

- Land acquisition and pre-development expenditure: ₹116.88 crore
- Total Project Cost: ₹1,499.17 crore
- Cost Sharing: Land Acquisition, R&R and connectivity costs borne by GoAP; capital expenditure for project development by developer

Current Status:

- Revision of Traffic Economic Feasibility Report (TEFR) and preparation of Request for Proposal (RFP) for developer selection under process

Additional Development:

- Cargo Hub envisaged alongside airport to boost international trade for nearby districts

Orvakallu Airport (Kurnool District) - Operational

Key Features:

- First airport in South India entirely developed by a State Government
- Renamed as Uyyalawada Narasimha Reddy Airport
- Operational since: 25 March 2021

Connectivity:

- Airlines operating routes: Chennai, Bengaluru, Visakhapatnam
- Proposed new routes: Kurnool to Tirupati and Vijayawada
- DGCA commercial operations renewal: Valid till January 2028

Development Status:

- City side land development: 1,008 acres under process on EPC mode with 100% GoAP funding and loan guarantee to APADCL
- Expenditure so far: ₹180 crore
- Airport City development: 541.22 acres under progress
- Transaction Advisory for City Side land: Entrusted to AP Urban Infrastructure Asset Management Limited (APUIAML)
- Flying Training Organization: Allotted to Orient Flying Training Organization School, Chennai

4. WATER AERODROME DEVELOPMENT

RCS-UDAN Scheme Initiative

- Airports Authority of India (AAI) proposed development of Sea Plane Services at strategic locations with large water bodies under RCS-UDAN Scheme
- APADCL identified 10 locations for seaplane operations in Andhra Pradesh

Identified Locations for Water Aerodromes

1. Prakasam Barrage, Vijayawada
2. Rushikonda, Visakhapatnam
3. Lambasingi
4. Araku Valley

5. Kakinada
6. Konaseema
7. Narsapur
8. Gandikota
9. Tirupati
10. Srisaillam

Financial Assistance Requested

- Infrastructure Development: ₹200 crore requested from Gol (₹20 crore per location) under RCS-UDAN Scheme
- Project Preparation Support: ₹50 crore requested under India Infrastructure Project Development Fund (IIPDF) Scheme (₹5 crore per project) for:
 - Detailed Project Report preparation
 - Environmental Impact Assessment studies
 - Project Management Consultancy including statutory clearances
 - Operations and Maintenance consultancy

Prakasam Barrage Water Aerodrome Project (Vijayawada)

Project Details:

- Estimated Cost: ₹20 crore by Airports Authority of India (AAI)
- Selection: Prakasam Barrage selected under RCS UDAN 3.1
- Route: Bids received for Hyderabad - Prakasam Barrage - Hyderabad sector

Recent Developments:

- Seaplane demonstration successfully conducted at Prakasam Barrage on 9 November 2024
- MoCA/AAI/DGCA team conducted site visit to ascertain project feasibility

Key Considerations:

- Shifting of certain obstructions and next steps for Water Aerodrome development
- AAI envisaged reimbursement of estimated project cost of ₹20 crore, with additional costs to be borne by GoAP
- GoAP requested and received approval from Gol for extension of Scheme validity till August 2025

5. EXISTING AIRPORTS AND UPGRADATION WORKS

Vijayawada International Airport (Gannavaram)

MOU with AAI (2017-2022):

- AAI agreed expenditure: ₹1,000 crore
- Land provided by GoAP: 837.69 acres

AAI Expenditure Breakdown (Total: ₹400 crore):

- New Internal Terminal Building: ₹170 crore
- Runway Extension: ₹160 crore
- New Parking Bays: ₹40 crore
- Other Works (compound wall, new DVOR): ₹30 crore

Digital Initiatives:

- DIGI YATRA Project implemented at ₹25 crore cost
- Enables passenger access without physical identity verification using facial recognition through DIGI YATRA App

Ongoing Works (as of January 2025):

- Construction of New Integrated Terminal Building and Associated Works: 61% physical progress; Expected completion: 30 June 2025

Tirupati International Airport

Status and Development:

- Granted International Airport status: October 2015 by Ministry of Civil Aviation
- Expansion undertaken as per Andhra Pradesh Reorganization Act, 2014

Infrastructure Enhancements:

- Additional land provided by State Government: 732 acres at cost of approximately ₹200 crore
- 4 new parking bays commissioned
- Runway extension to 3,810 meters completed to handle Code 4E aircraft (Airbus A330, Boeing B787)
- Additional 3 bays constructed for Code 4E aircraft accommodation
- New taxi track connecting new Apron completed

- New ATC Tower installation planned within AAI land
- New DOR building for navigational requirements: Tender process in progress; Expected operational within 3-4 months

Progress Status:

- Runway extension work: 90% completed
- ATC cum Technical Block construction: 92% progress; Expected completion: 28 February 2025

International Operations:

- Support functions for international operations in place; International flights yet to commence

Rajahmundry Airport

Overview:

- Owned and operated by AAI under Ministry of Civil Aviation
- Licensed under Category 4C; Capable of handling A-320 type aircraft

Development Works Completed (Commissioned April 2019):

- Land handed over by State Government: 852.42 acres (2016)
- Runway extension: 1,750 M to 3,165 M
- Strengthening of existing runway
- Construction of Isolation Bay, Blast pad, Basic strip development, and RESA
- Total cost: ₹110.89 crore

Additional Enhancements:

- Widening of Turn pads for Runway and Taxiway to accommodate VVIP aircraft (B-777-300 ER): Completed at ₹9.5 crore
- Apron capacity: Currently handles 6 aircraft; Reconfiguration planned to accommodate 11 aircraft with power-in power-out configuration

Sustainability Initiative:

- 1 MW Solar Power Plant commissioned: 20 December 2020 at cost of ₹4.65 crore
- Annual savings achieved: Approximately ₹85 lakhs

Future Plans:

Current Operations:

- Airline: IndiGo operating ATR 72 aircraft
- Routes: Hyderabad, Chennai, Vijayawada
- Daily movements: 2 arrivals and 2 departures
- Average daily passenger movement: Approximately 100 passengers

Ongoing Works (as of January 2025):

- Construction of New Domestic Terminal Building and Miscellaneous Works: 19% physical progress; Expected completion: 26 January 2026

Orvakallu Airport (Kurnool) - Operational Status

- Operational since: 25 March 2021
- First airport in South India entirely developed by State Government
- Renamed: Uyyalawada Narasimha Reddy Airport
- Current routes: Chennai, Bengaluru, Visakhapatnam
- Proposed routes: Tirupati, Vijayawada
- DGCA commercial operations validity: Till January 2028

6. KEY STATISTICS AND QUICK REVISION POINTS

- Andhra Pradesh handles 1.6% of India's total passenger air traffic
- Six operational airports: 3 Domestic (Rajahmundry, Kadapa, Orvakallu-Kurnool) and 3 International (Visakhapatnam, Vijayawada, Tirupati)
- APADCL is the nodal agency for aviation infrastructure development with 100% GoAP ownership
- Nine Greenfield airports proposed across the state; Orvakallu (Kurnool) is operational since March 2021
- Bhogapuram International Airport (PPP with GMR): Phase-I capacity 6 Mppa; Total Phase-I cost ₹2,302.51 crore
- Dagadarthi Airport (Nellore): Total project cost ₹1,499.17 crore; 635 of 1,380 acres acquired
- Water Aerodrome development: 10 locations identified; ₹200 crore requested under RCS-UDAN; Prakasam Barrage demonstration successful (November 2024)

- DIGI YATRA implemented at Vijayawada Airport at ₹25 crore enabling facial recognition-based passenger processing
- Rajahmundry Airport: 1 MW solar plant commissioned (December 2020) saving approximately ₹85 lakhs annually
- Tirupati Airport: Runway extended to 3,810 meters to handle Code 4E aircraft (A330, B787)
- Kadapa Airport: FY 2023-24 traffic - 2,111 aircraft movements, 65,544 passengers; IndiGo operates ATR 72 to Hyderabad, Chennai, Vijayawada
- ICAO multiplier effect: Every US\$ 100 aviation expenditure generates US\$ 325 local economic benefit; every 100 aviation jobs create 610 local jobs
- New Andhra Pradesh Civil Aviation Policy 2025 under preparation for next decade of aviation growth

Mains Answer Writing Framework

When addressing questions on aviation infrastructure in Andhra Pradesh:

1. Begin with economic significance using ICAO multiplier data to establish relevance
2. Highlight institutional mechanism (APADCL) and policy framework (Civil Aviation Policy 2015, upcoming 2025 policy)
3. Use specific project examples with cost, capacity, and timeline data for substantiation
4. Link airport development to regional connectivity, tourism promotion, and employment generation
5. Emphasize multi-modal integration (expressways to airports, cargo hubs, water aerodromes)
6. Conclude with challenges (land acquisition, environmental clearances, financial viability) and way forward (PPP models, RCS-UDAN, green aviation initiatives)

Connect to SDGs: Goal 9 (Industry, Innovation and Infrastructure), Goal 11 (Sustainable Cities and Communities), and Goal 8 (Decent Work and Economic Growth) for holistic answer framing.

- Andhra Pradesh has six operational airports/air strips which connect major cities.
- The upcoming international airport Bhogapuram will be developed by the state Government, under the PPP model, in 2621.63 acres with an estimated cost of US\$ 276.8 million.
- The Tirupati Airport in Andhra Pradesh recorded a 50% plus YoY surge in domestic passenger traffic in May 2025 as the state unveiled a Rs. 600 crore (US\$ 67.7 million) tourism and hospitality development project to reinforce its travel and hospitality infrastructure.
- On July 2, 2025, the Union Minister of Civil Aviation, Mr. Kinjarapu Ram Mohan Naidu announced that Andhra Pradesh will soon become a national logistics hub, aided by new air routes and airport expansions, including services inaugurated between Kurnool and Vijayawada and plans for new airports at Bhogapuram, Nellore, Anantapur and Kuppam.

Current Affairs

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Andhra Pradesh Airport Statistics

Parameter	2025-26*	2024-25	2023-24	2022-23
Passenger traffic-Vijayawada airport (No.)	5,71,022	13,88,943	10,62,506	9,66,383
Passenger traffic-Visakhapatnam airport (No.)	12,32,451	29,55,089	27,88,665	25,00,654
Aircraft movement-Vijayawada airport (No.)	7,309	18,558	15,214	14,593
Aircraft movement-Visakhapatnam airport (No.)	9,245	22,210	20,071	20,961
Freight-Vijayawada airport (MT)	541.6	1,413.3	810	1275
Freight-Visakhapatnam airport (MT)	2,249.9	4,398.7	4,032	4,434

Note: *- Until August 2025

Source: Airports Authority of India

ANDHRA PRADESH - SEAPORTS

Socio-Economic Survey 2024-25 |

INTRODUCTION

Andhra Pradesh possesses a coastline of 1,053.07 km, making it a critical asset for India's maritime trade and Blue Economy vision. The state's port infrastructure comprises one Major Port at Visakhapatnam under the Government of India and 16 notified Non-Major Ports under the administrative control of the Government of Andhra Pradesh through the Andhra Pradesh Maritime Board (APMB). These ports contribute significantly to cargo handling, revenue generation, employment, and port-led industrialization.

ADMINISTRATIVE FRAMEWORK

- Major Port: Visakhapatnam Port (under Ministry of Ports, Shipping & Waterways, GoI)
- Non-Major Ports: 16 notified ports under Andhra Pradesh Maritime Board (APMB), Government of Andhra Pradesh
- Development Models: PPP (BOOT, BOST, OMST, DBFOT), Landlord Model, EPC, and State-owned operations



OPERATIONAL PORTS – KEY DETAILS AND PERFORMANCE (FY 2024-25, up to November 2024)

Kakinada Port

The port functions through two distinct units:

1. **Kakinada Anchorage Port**

- **Operated and managed directly by the State Government**
- Annual cargo handling capacity: 4 Million Metric Tonnes (MMT)
- Cargo handled during FY 2024-25 (up to Nov): 2.326 MMT
- Revenue realized: Rs 46.08 crores

2. **Kakinada Deep Water Port**

- Developed by M/s Kakinada Seaports Limited **under PPP-OMST model**
- Initial investment: Rs 293 crores for 3 berths; now expanded to 7 berths, 6 OSV berths, and one North return wall berth of 635 meters

- Land leased: 558.47 acres
- Revenue sharing: Concessionaire pays 22% of gross income to GoAP
- Cargo handled: 11.15 MMT; Total revenue: Rs 461 crores; Government share: Rs 101.42 crores

Gangavaram Port

- Location: **Near Visakhapatnam; Greenfield Deep Water Port**
- Developer: M/s Gangavaram Port Limited under PPP-BOOT model
- Concession Agreement: Signed on 07 August 2003; concession fee is 2.10% of gross revenue
- Port capacity: **64 MMT**
- Commercial operations commenced: 17 April 2009
- Total investment: Rs 2,995 crores (Phase-1: Rs 1,675 cr; Phase-2: Rs 1,320 cr)
- Performance FY 2024-25: Cargo handled 16.201 MMT; Revenue Rs 702.436 crores; Government share Rs 14.751 crores

Krishnapatnam Port

- Developer: M/s Krishnapatnam Port Company Limited under PPP-BOST model
- Concession Agreement: Signed on 17 September 2004; concession fee 2.6% of gross income for 30 years
- Commercial operations commenced: 20 March 2009
- Operational berths: 11; Phase-II under construction at estimated cost of Rs 6,000 crores
- Land: 4,834.15 acres given against 6,800 acres approved
- Performance FY 2024-25: Cargo handled 37.786 MMT **(highest in AP)**; Revenue Rs 2,211.205 crores; Government share Rs 57.49 crores

Rawa Port

- Location: Near Surasenayanam, East Godavari District
- Purpose: Facilitates crude oil transport from S. Yanam to Chennai/Visakhapatnam/Haldia via sea
- Infrastructure: Single Buoy Mooring (SBM) system installed by M/s Cairn India Pvt. Ltd.
- Performance: Cargo handled 0.443 Million tonnes (FY 2024-25 up to Nov); Revenue Rs 2.310 crores

PORTS UNDER DEVELOPMENT – GREENFIELD PROJECTS

Kakinada SEZ/Gateway Port

- Developer: GMR Kakinada Gateway Port Limited (SPV) **under PPP-DBFOT model**
- Agreement signed: 2018; Total project cost: Rs 2,123 crores
- Land area: 1,944 acres; Berths under construction: 3 (1 coal, 2 general cargo)
- Components: Dredging, breakwater, berths, port buildings, road, railway, port craft berth
- Status: Environmental Clearance and financial closure achieved; works commenced in 2022
- Expected capacity post-completion: 16 MTPA; Physical progress as of Nov 2024: 22.57%

Machilipatnam Port

- Development Model: **Landlord Model under EPC basis**
- Phase-1 project cost: Rs 5,155.73 crores; Core land: 1,688.84 acres (with APMB)
- Berths: 4 (3 general, 1 coal); Total capacity: 35 MTPA
- Contractor: M/s Megha Engineering and Infrastructures Ltd; Contract value: Rs 3,668.83 crores; Timeline: 36 months
- Environmental Clearance: Received from MoEF&CC on 28 February 2023
- Works commenced: 21 April 2023; Overall physical progress (Nov 2024): 28.09%

Mulapeta Port (formerly Bhavanapadu)

- Development Model: **Landlord Model under EPC basis**
- Project cost: Rs 4,361.91 crores; Core land: 826.72 acres
- Berths: 4 (3 general, 1 coal); Capacity: 23.5 MTPA in Phase-1
- Contractor: M/s Vishwa Samudra Ports (JV); Contract value: Rs 2,949.70 crores; Timeline: 30 months
- Environmental Clearance: Received from MoEF&CC on 31 May 2023
- Land acquisition: In progress; Overall physical progress (Nov 2024): 30.09%

Ramayapatnam Port

- Location: Ramayapatnam Village, SPSR Nellore District; 93 km north of Krishnapatnam Port
- Connectivity: Adjacent to NH-16 and South Central Railway; Nearest station: Thettu (6 km)
- SPV: Ramayapatnam Port Development Corporation Limited (RPDCL); Permission granted: February 2020

- Phase-1 cost: Rs 4,922.62 crores; Core land: 850.79 acres
- Berths: 4 (2 general, 1 coal, 1 multipurpose/container); Capacity: 34.04 MTPA
- Contract signed: 30 July 2021; Value: Rs 2,634.65 crores
- Environmental Clearance and Financial Closure: Obtained for Phase-1
- Physical progress (Nov 2024): Breakwaters 82.18%; Overall 30.09%

FISHING HARBOURS AND LANDING CENTRES

Fishing Harbours – Phase I (4 Harbours)

- Locations: **Juvvaladinne (Nellore), Nizampatnam (Bapatla), Machilipatnam (Krishna), Uppada (Kakinada)**
- Total cost: Rs 1,204.56 crores; Contractor: M/s MRKR Constructions; Agreement: March 2021
- Progress (Nov 2024): Juvvaladinne 86.35%; Nizampatnam 62.84%; Machilipatnam 60.60%; Uppada 64.99%

Fishing Harbours – Phase II (5 Harbours)

- Locations: **Biyyaputhippa (W. Godavari), Kothapatnam (Prakasam), Pudimadaka (Anakapalle), Budagatlapalem & Vodarevu (Srikakulam/Bapatla)**
- Sanctioned amount: Rs 1,977.77 crores; Contract signed with M/s VishwaSamudra Holdings for Rs 1,495.35 crores
- Timeline: 18 months; Preparatory works commenced at Budagatlapalem and Pudimadaka

Fish Landing Centres (6 FLCs)

- Locations: **Chintapalli (Vizianagaram), Bheemili (Visakhapatnam), Rajayyapeta, Dondawaka (Anakapalli), Uppalanka (Kakinada), Rayadaruvu (Tirupathi)**
- Estimated cost: Rs 126.91 crores; Administrative sanction accorded by State Government

FUTURE PROJECTIONS AND BLUE ECONOMY VISION

- Blue Economy Target: US\$20 billion by 2035
- Investment in 4 Greenfield Ports (Ramayapatnam, Machilipatnam, Mulapeta, Kakinada Gateway): Approximately Rs 16,000 crores
- Additional Capacity by 2030: 145 MTPA; Employment generation: 75,000+ jobs (direct and indirect)

- Phase-II Development by 2047: Proposed investment of Rs 18,000 crores for additional capacity of 300 MTPA and 1,00,000+ jobs
- Fishing Infrastructure: 11 fishing harbours at estimated cost of Rs 3,500 crores

STRATEGIC SIGNIFICANCE AND CHALLENGES

Strengths

- Deep, tranquil waters suitable for large vessels
- Strong connectivity via NH-16, East Coast Railway, and proposed industrial corridors
- Proximity to major international shipping routes
- Supportive policy framework through APMB and PPP incentives

Challenges

- Delays in land acquisition and environmental clearances
- Ports like Nizampatnam and Vodarevu on hold due to CBI investigation
- Need for sustained investment in dredging, breakwaters, and onshore infrastructure
- Coordination between multiple stakeholders: GoI, GoAP, private concessionaires, and local communities

CONCLUSION (For Answer Closing)

Andhra Pradesh's port sector represents a critical pillar of the state's economic infrastructure and its contribution to India's maritime ambitions. With a mix of operational efficiency in ports like Krishnapatnam and Gangavaram, and ambitious greenfield projects under various PPP models, the state is well-positioned to harness its coastal potential. Strategic focus on timely execution, regulatory clarity, and integration with industrial and logistics corridors will be essential to realize the vision of a US\$20 billion Blue Economy by 2035 and ensure sustainable, inclusive growth along the coastline.

KEY POINTS FOR QUICK REVISION

- Coastline: 1,053.07 km; Major Port: Visakhapatnam (GoI); Non-Major Ports: 16 (GoAP)
- Highest cargo handler: Krishnapatnam (37.786 MMT); Highest revenue: Krishnapatnam (Rs 2,211 Cr)

- Highest government revenue share: Kakinada Deep Water Port (Rs 101.42 Cr at 22% share)
- PPP Models: BOOT (Gangavaram), BOST (Krishnapatnam), OMST (Kakinada DW), DBFOT (Kakinada SEZ)
- Regulatory body for Environmental Clearance: MoEF&CC, Government of India
- Nodal agency for state ports: Andhra Pradesh Maritime Board (APMB)
- Blue Economy target: US\$20 billion by 2035; Additional capacity by 2030: 145 MTPA

PPP Models Used in AP Ports

Model	Full Form	Ports Using It
BOOT	Build, Own, Operate, Transfer	Gangavaram
BOST	Build, Operate, Share, Transfer	Krishnapatnam
OMST	Operate, Maintain, Share, Transfer	Kakinada Deep Water
DBFOT	Design, Build, Finance, Operate, Transfer	Kakinada SEZ/Gateway
EPC	Engineering, Procurement, Construction	Machilipatnam, Mulapeta

Port	Cargo (MMT)	Revenue (₹ Cr)	Govt. Share (₹ Cr)	PPP Model	Key Feature
Krishnapatnam	37.786 	2,211.205 	57.49	BOST	Highest cargo & revenue
Gangavaram	16.201	702.436	14.751	BOOT	Deepest draft; near Vizag
Kakinada Deep Water	11.15	461.00	101.42 	OMST (22% share)	Highest govt. revenue share
Kakinada Anchorage	2.326	46.08	46.08	State Operated	Fully state-managed
Rawa	0.443	2.310	–	SBM by Cairn	Crude oil specialized

Current Affairs

- Andhra Pradesh aims to build a Rs. 1,77,360 crore (US\$ 20 billion) Blue Economy by 2035, leveraging its deep-water coastline and strong rail and highway connectivity. The Andhra Pradesh Maritime Board is developing three greenfield gateway ports at Ramayapatnam, Machilipatnam and Mulapeta under the PPP (DBFOT) and Landlord models, with total investments of about Rs. 17,027 crore (US\$ 1.92 billion). These ports will add 145 MTPA capacity by 2030 and generate over 75,000 jobs. The state also plans to build 11 fishing harbours at a cost of Rs. 3,500 crore (US\$ 395 million) to strengthen marine infrastructure and coastal livelihoods.
- Traffic handled by the Visakhapatnam port reached 43.08 million tonnes in FY26*.
- On September 3, 2025, Andhra Pradesh Chief Minister N. Chandrababu Naidu announced plans to develop the state as a global logistics hub under the “Swarnandhra-2047” vision. The strategy includes constructing a port every 50 km along the 1,053-km coastline, leveraging six operational ports and four more under construction, and expanding multimodal connectivity across sea, rail, road and air.

ANDHRA PRADESH - RAILWAYS

Socio-Economic Survey 2024-25 |

INTRODUCTION

Andhra Pradesh is strategically positioned on the Indian Railways map, with Visakhapatnam serving as the largest city and a major rail hub. The state's rail network connects nine out of thirteen district headquarters directly to Visakhapatnam and provides critical linkages to neighbouring states like Odisha and Chhattisgarh. With increased budgetary support and focused infrastructure projects, the rail sector is emerging as a key driver of regional development, industrial growth, and multimodal connectivity in the state.

Rail network across the state



Source: Maps of India

KEY RAIL INFRASTRUCTURE PROJECTS

Nadikudi-Srikalahasti New Railway Line

- Length: 308 kilometres
- Purpose: Develop backward areas of Guntur, Prakasam, Nellore, and Chittoor districts
- Strategic benefits:

- Improve intra-state and inter-state connectivity
- Facilitate export of raw materials for cement and granite industries
- Reduce logistics costs and boost industrial investment in southern Andhra Pradesh
- Status: Under construction by State Government

Vizag Metro Rail Project

- Implementing structure: Joint Venture between Government of India, Government of Andhra Pradesh, and IL&FS Engineering and Construction Limited
- Consultant: Urban Mass Transit Company (UMTC) responsible for design and Detailed Project Report (DPR)
- Significance:
 - First metro rail project in Andhra Pradesh
 - Aims to decongest Visakhapatnam, support urban mobility, and enhance port-city connectivity
 - Expected to catalyze transit-oriented development and attract investment
- Current status: DPR prepared; awaiting final approvals and financial closure

Sullurupeta Railway Station Redevelopment

- Inaugurated: 22 May 2025 by Prime Minister Narendra Modi
- Scheme: Amrit Bharat Station Scheme
- Cost: Rs 14.5 crore (approximately US\$ 1.6 million)
- Location advantage: Proximity to Sriharikota (ISRO's Satish Dhawan Space Centre)
- Broader context: Part of state-wide rail modernization efforts including new lines, doubling, and electrification

RAIL INFRASTRUCTURE ACHIEVEMENTS (Last 11 Years)

- New lines added: 414 kilometres
- Track doubling completed: 1,217 kilometres
- Electrification achieved: 3,748 kilometres
- Impact:
 - Enhanced capacity, speed, and safety of rail operations

- Reduced dependence on diesel, supporting environmental sustainability
- Improved freight movement efficiency for ports and industries

BUDGETARY SUPPORT AND FINANCIAL ALLOCATION

- Rail budget allocation for Andhra Pradesh in FY26: Rs 9,417 crore (approximately US\$ 1.06 billion)
- Growth trend: More than ten times higher than allocation a decade ago
- Implication:
 - Reflects prioritization of rail infrastructure in state and national development agendas
 - Enables accelerated execution of pending projects and initiation of new connectivity schemes

STRATEGIC SIGNIFICANCE OF RAIL DEVELOPMENT IN ANDHRA PRADESH

Economic Integration

- Connects mineral-rich interiors with coastal ports (Visakhapatnam, Krishnapatnam, Gangavaram)
- Supports export-oriented industries: cement, granite, agriculture, manufacturing
- Reduces logistics cost, improving competitiveness of state's products in domestic and global markets

Regional Balance and Inclusive Growth

- Nadikudi-Srikalahasti line targets historically underdeveloped districts
- Improves access to education, healthcare, and employment for rural populations
- Encourages decentralization of economic activity beyond Visakhapatnam and Vijayawada

Multimodal Connectivity

- Rail links complement port infrastructure, enabling efficient cargo evacuation
- Integration with NH-16, industrial corridors, and proposed logistics parks enhances supply chain efficiency
- Vizag Metro will bridge last-mile connectivity gaps in the port-city ecosystem

Sustainability and Modernization

- Electrification reduces carbon footprint and operational costs
- Station redevelopment under Amrit Bharat Scheme improves passenger experience and urban aesthetics
- Adoption of modern signaling and traffic management systems enhances safety and punctuality

CHALLENGES AND WAY FORWARD

Key Challenges

- Land acquisition delays affecting project timelines
- Coordination complexities between Indian Railways, State Government, and private partners
- Financial viability of urban transit projects like Vizag Metro requiring innovative funding models
- Ensuring equitable development so that rail benefits reach remote and tribal areas

Recommended Measures

- Strengthen institutional mechanisms for faster clearances and stakeholder consultation
- Explore viability gap funding and value capture financing for metro and suburban rail projects
- Integrate rail planning with industrial policy, port development, and skill development initiatives
- Leverage digital technologies for real-time monitoring, predictive maintenance, and passenger services

CONCLUSION

Railway infrastructure is a cornerstone of Andhra Pradesh's economic transformation strategy. With significant progress in network expansion, electrification, and station modernization, coupled with a tenfold increase in budgetary allocation, the state is laying the foundation for a high-capacity, sustainable, and inclusive rail system. Projects like the Nadikudi-Srikalahasti line and Vizag Metro, if implemented effectively, will not only enhance connectivity but also catalyze industrial growth, regional balance, and urban livability. Aligning rail development with port-led industrialization and the Blue Economy vision will position Andhra Pradesh as a logistics hub on India's eastern seaboard.

QUICK REVISION POINTS

- Visakhapatnam connects nine of thirteen district headquarters; key hub for Odisha and Chhattisgarh linkages
- Nadikudi-Srikalahasti line: 308 km; aims to develop backward districts and support cement/granite exports
- Vizag Metro: JV of GoI, GoAP, IL&FS; DPR by UMTC; first metro project in the state
- Sullurupeta station redeveloped under Amrit Bharat Scheme (May 2025); cost Rs 14.5 crore; near Sriharikota
- 11-year achievements: 414 km new lines, 1,217 km doubling, 3,748 km electrification
- FY26 rail budget for AP: Rs 9,417 crore – over ten times higher than a decade ago
- Strategic focus: Port-rail integration, regional balance, sustainability, and multimodal logistics

