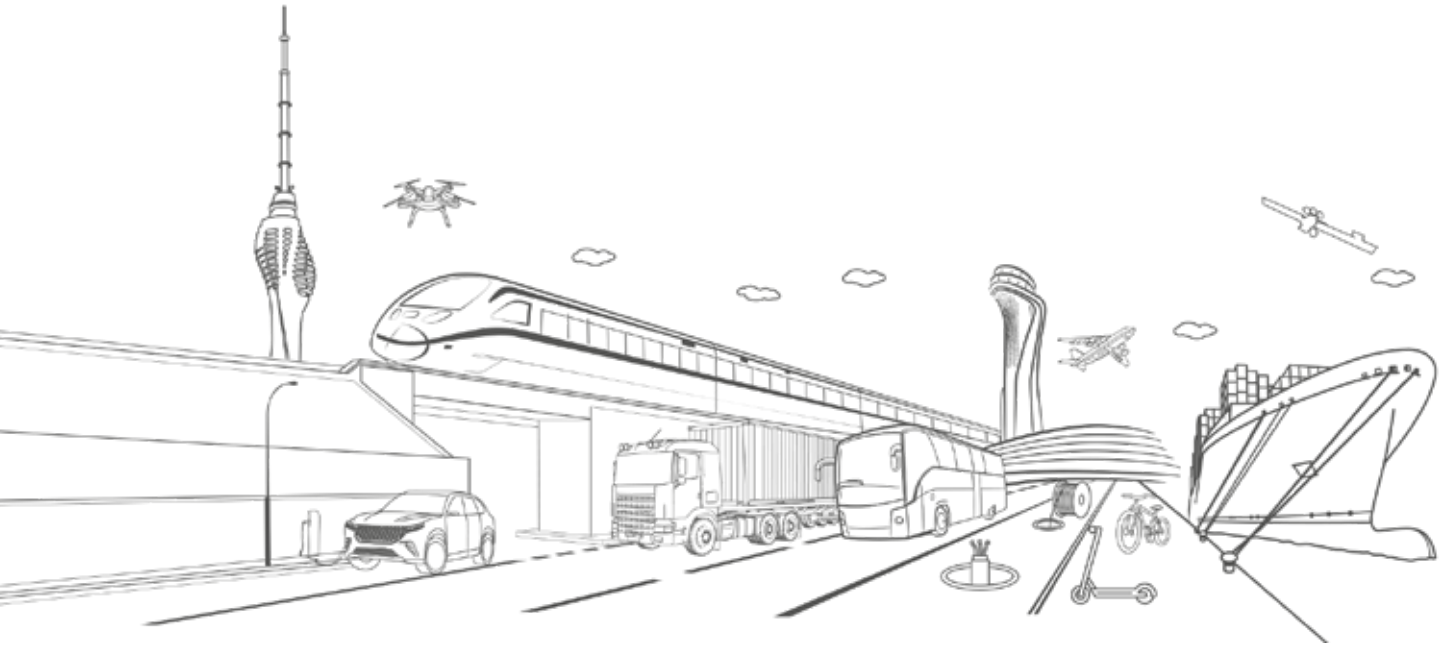
REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT
AND INFRASTRUCTURE

2053

Transport and Logistic Master Plan

REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT AND INFRASTRUCTURE

DEPARTMENT OF STRATEGY DEVELOPMENT



2053
Transport and Logistic Master Plan

Recep Tayyip ERDOĞAN
President

REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT
AND INFRASTRUCTURE

As the Ministry of Transport and Infrastructure, we have put into service world-scale projects in the fields of transportation and communication in every corner of the big and powerful Turkey.

While designing the future today; We continue to work to bring a scientific-based, environmentally friendly, sustainable and historically sensitive transportation infrastructure to our country, with a focus on logistics, mobility and digitalization.

In this context, the 11th Development Plan (2019-2023) and the 2020 Presidential Annual Program, under the heading '2.2.3.8 Logistics and Transport, Policy and Measures', in the 'Measure No. 514.1', it is included that "Türkiye Logistics Master Plan and National Transport Master Plan" will be completed in a coordinated manner.

For this reason, the current Transportation Master Plan, whose preparations were completed in 2017 and whose projection year is 2035, started at 16.10.2020 to revise the target years by including the logistics sector within the framework of new expectations, and to revise it in the light of changing macro indicators with a holistic perspective.

The Transportation and Logistics Master Plan, whose work was completed on 05.04.2022; It is very important to determine the priorities of the investments of the transportation sector by using more rational and mathematical models in the process until 2053, to be a guide document for the institutions and organizations serving in the sector and to be the product of a participatory study.

I would like to thank the valuable lecturers who took part in the preparation of the "Transportation and Logistics Master Plan, which I believe will meet an important need of the transportation and related sectors, the Ministry staff and all those who contributed, and I hope it will be beneficial for our country.

Adil KARAİSMAİLOĞLU
Minister of Transport and Infrastructure

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GOALS AND TARGETS

1 TO CARRY OUT THE NECESSARY LEGISLATIVE ARRANGEMENTS WITH TRANSPORTATION AND LOGISTICS INFRASTRUCTURE INVESTMENTS THAT WILL SUPPORT HIGH VALUE-ADDED PRODUCTION AND EXPORT ORIENTATION

To provide transportation and logistics legal regulations and infrastructure arrangements in a way that can generate high added value for production and economic assets that can be directed to production.

- The country will be raised in the world ranking by realizing the investment and necessary legislative arrangements regarding transportation and logistics infrastructure.
- To stimulate high value-added production and support exports, the main transportation and logistics corridors will be developed and improved, which will facilitate access to new markets.
- Transportation and logistics services and infrastructure in all sectors will be strengthened to provide more competitive services, taking into account the needs of different product groups.
- Incentives for Turkish logistics companies to open up to international markets will be increased.

2 IN ORDER TO BE A PIONEER IN TRANSPORTATION AND LOGISTICS ON A GLOBAL SCALE AND A LEADER IN ITS ZONE, TO ENSURE INTEGRITY IN TRANSPORTATION AND LOGISTICS, FAIR ACCESS TO TRANSPORTATION AND LOGISTICS SERVICES, AND TO INCREASE THE QUALITY OF TRANSPORTATION AND LOGISTICS INFRASTRUCTURE

To increase the logistics performance of the country, to ensure international integration, to be a center of attraction in terms of transportation and logistics activities, to ensure that the plans and investments for the development of the country are evaluated together with the transportation and logistics sectors, and the operation is carried out within the framework of integrity principles during the implementation phase. To continue its integrity under corridor, hinterland, logistics center, port, dry port, etc.

- It is important to provide a balance between transportation modes by giving priority to rail and sea transportation, to produce solutions with alternatives, to create an integrated transportation system that takes advantage of the strengths of different transportation modes and allows users to switch between modes effectively and cost-effectively and at the same time uninterrupted. Integration of production and attraction centers with the transportation and logistics infrastructure network will be ensured at the national level.
- Cooperation with international institutions will be increased and integrity at the international level will be ensured with a global perspective in transportation and logistics.
- Multimodal transport will be developed.
- Governance level will be increased in transportation and logistics sectors.
- The quality of the country's transport and logistics services will be increased.
- Investments will be prioritized, projected and appropriate solutions will be created in their financing.

3 TO ENSURE EFFICIENCY AND PRODUCTIVITY IN TRANSPORTATION AND LOGISTICS, TO REDUCE COSTS

To reduce logistics costs and increase service/response speed in line with sustainable mobility, to carry out efficient logistics activities on a regional basis.

- In cooperation with non-governmental organizations representing the sector, maintenance, and repair services of transportation and logistics infrastructure, vehicles and equipment will be developed to spread the freight traffic over time by using the flexibility in loading and delivery times and to realize optimizations that will benefit from the logistics infrastructure at the highest level.
- Efficiency and productivity will be increased in transportation.
- Efficiency, productivity and service quality will be increased in logistics centers.
- Cooperation will be made with relevant institutions in order to increase efficiency and productivity in customs.
- The quality and competency of transportation and logistics services will be increased and costs will be reduced.

4 TO ENSURE SUSTAINABLE MOBILITY WITH SMART TRANSPORTATION SYSTEMS IN TRANSPORTATION AND LOGISTICS, TO INCREASE HUMAN RESOURCES COMPETENCE

With innovation, competition, Intelligent Transportation Systems, technological development, digitalization, vocational training/merit, to ensure the sustainability of economic competition, to develop human resources competencies in the logistics sector, to reach Industry 4.0 and beyond in sectoral development, scientific, technical, to develop technological services.

- The competence of human resources in the Transport and Logistics sector will be developed and vocational training and merit criteria will be increased.
- Research and development studies in the transportation and logistics sector will be supported.
- By increasing the use of information technologies and digitalization in the transportation and logistics sector, efficient use of infrastructure and effective tracking and monitoring of shipments will be ensured.
- A special fund will be created to support R&D studies in the transportation and logistics sector, and priority will be given to projects that increase the country's added value, reduce environmental problems, and increase safety and security.
- Cooperation will be made with relevant institutions to increase smart and sustainable mobility in urban transportation and logistics.

5 TO ENSURE ENVIRONMENTAL AWARENESS AND INCREASING ENERGY EFFICIENCY IN TRANSPORTATION AND LOGISTICS

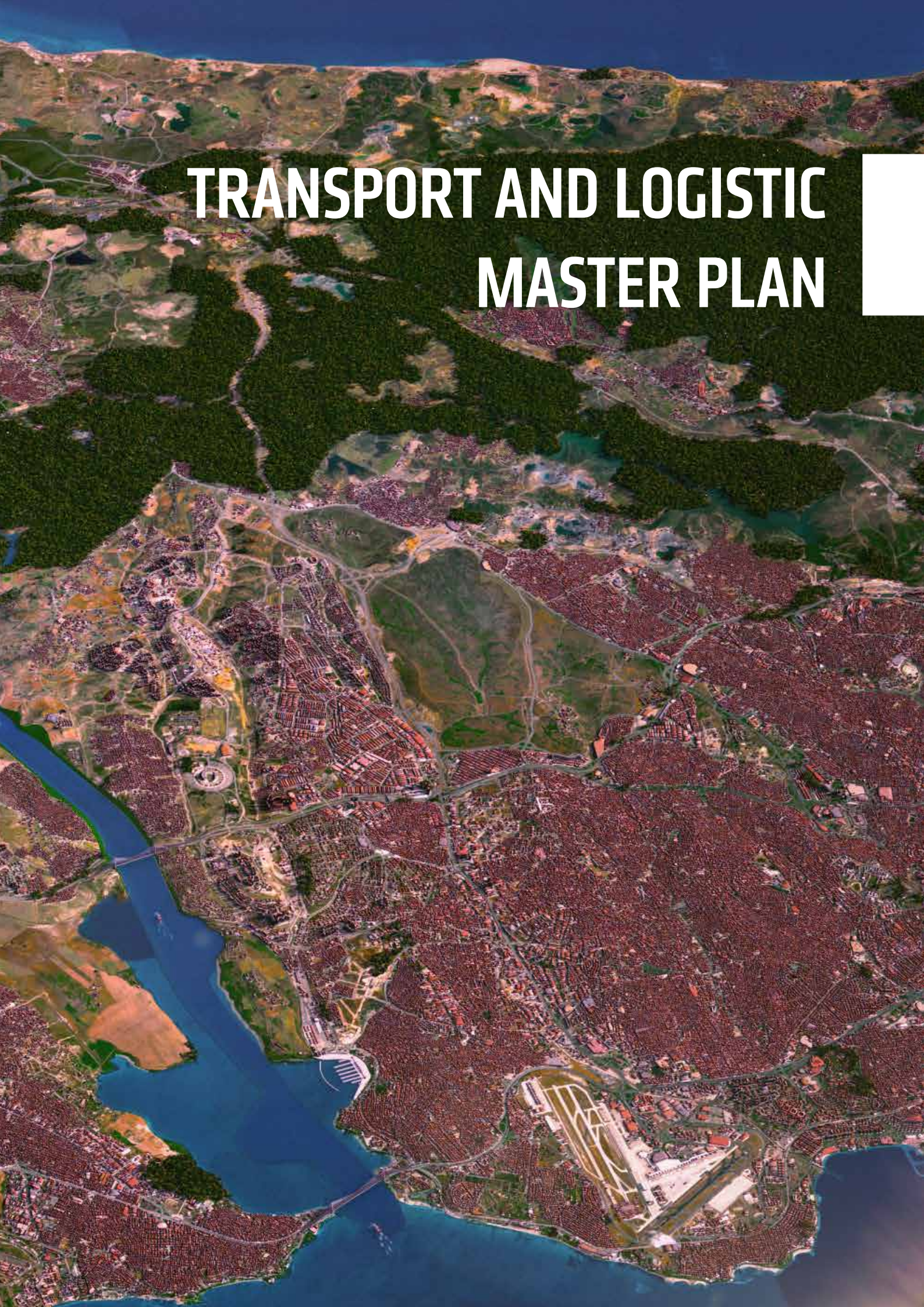
To protect all natural assets, cultural and historical assets and the environment within the scope of transportation and logistics investments and activities; to take measures against climate change, to increase energy efficiency, to act within the framework of international measures taken (EU White Paper, Paris Climate Agreement, European Green Consensus, European Climate Law, etc.); To develop and maintain green transportation and green logistics investments and practices.

- Renewable energy production and use will be encouraged to increase energy efficiency in the transportation and logistics sector.
- By reducing the dependency on oil in transportation, the level of cost-oriented energy efficiency will be increased and the most appropriate balance between modes will be reached in terms of environmental sensitivity.
- The "Polluter Pays" principle will be applied so that the negative effects on the environment are met by those who create this negativity based on fair and transparent criteria.
- In passenger and freight transportation, negative effects on the environment will be reduced by focusing on green terminal/building (airport, sea port, dry port, railway, airline and road terminal) projects and applications and by transforming the existing ones within this scope.
- While developing transportation infrastructure, natural, agricultural, cultural assets and areas will be protected.

6 TO INCREASE SAFETY IN TRANSPORTATION AND LOGISTICS, TO ENSURE COMMUNITY WELFARE

To increase safety, to increase the quality of life, to take and implement measures to increase resilience, including flexibility in transportation and logistics activities, by taking into account public and environmental health in transportation and logistics infrastructure, equipment and services. To regulate the security parameters related to integrated transportation systems within the framework of the European Union harmonization process.

- Losses resulting from traffic accidents will be reduced.
- Life and property safety will be ensured at the highest level in transportation and logistics activities (transportation, storage, etc.).
- Impact analyzes of realized, ongoing and planned transportation and logistics investments will be made.



TRANSPORT AND LOGISTIC MASTER PLAN

PHASE 1: COLLECTION, ANALYSIS AND EVALUATION OF ACTUAL DATA

To determine current Transportation Demand Forecasting Model parameters and analyze future trends, data have been provided.

Socio-Demographic Data
- Population
- Househols Data
- GDP

Number of Students
- Number of MEB Students
- Number of YÖK Students

Tourism Data
- Number of Hotel Beds

Foreign Trade Data
- Export Data
- Import Data

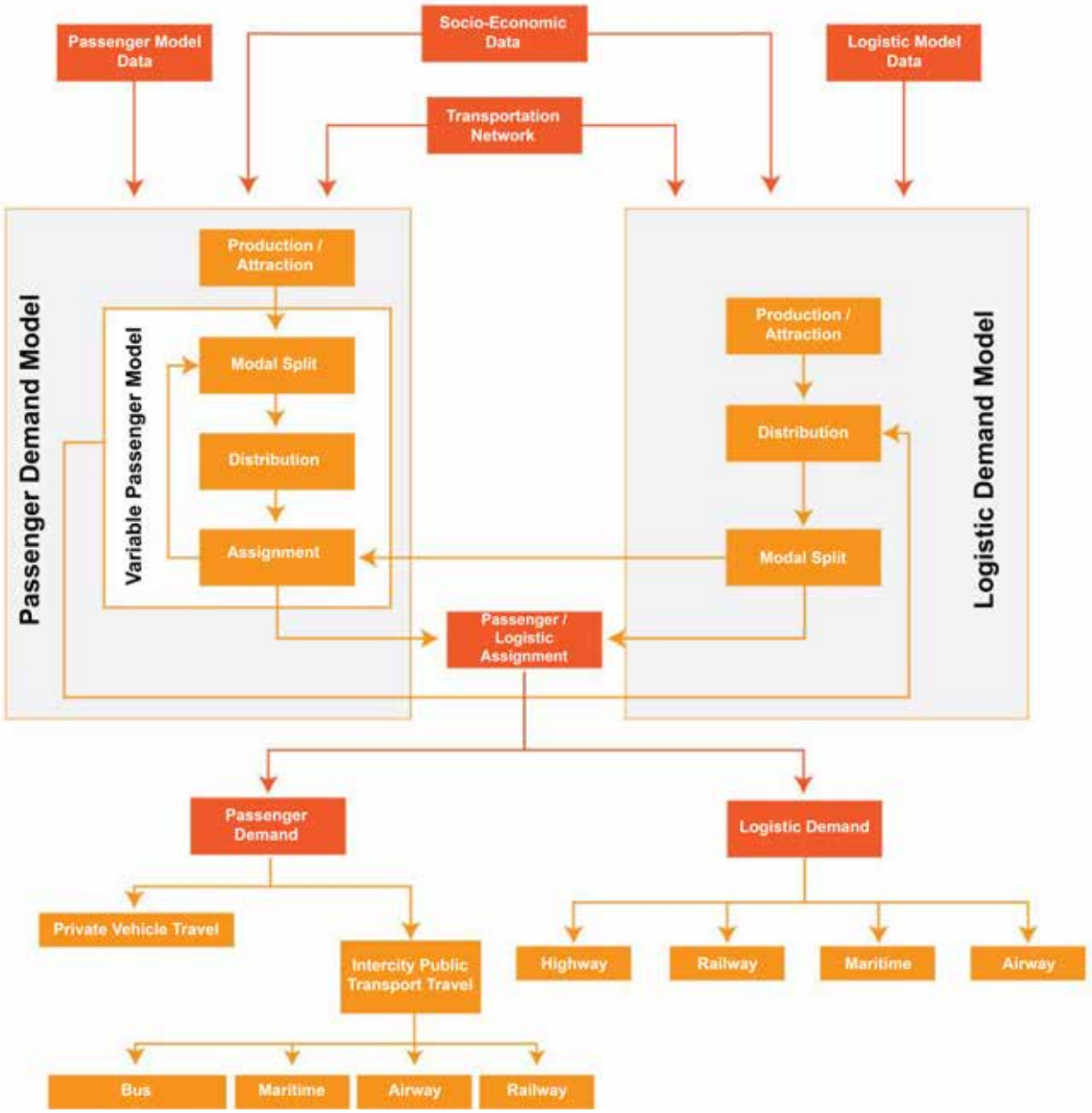
Land Use Data
- Organized Industry Data
- Wholesaler Data
- Free Zones Data
- Logistics Centers Data
- Mine Data

Data of Transportation Systems
- Highway AADT Data
- Domestic - International Passenger, Airplane and Cargo for Airway Data
- Rail Freight Data
- Sea Freight Data
- Number of Vehicles by Types

PHASE 2: MODELLING

Four-stage multimodal model has been developed at national scale. The model includes both passenger and freight transport and all modes are integrated within a single model. The studies carried out in the model structure are as follows:

- Updating model datas
- Combining freight and passenger model
- Updating variable selections of production and attraction models
- Development of production/attraction models
- Updating the passenger and freight demand model
- Calibration and validation of model



PHASE 3: PREPARATION OF THE TRANSPORT AND LOGISTICS MASTER PLAN

Redefining the vision, goals and strategies for the Transport and Logistics Master Plan

The vision, goals and strategies to be taken as a basis for the Transport and Logistics Master Plan have been determined in accordance with the 11th Development Plan and the 2020 Year Presidential Program.

Generating and Evaluating Alternative Scenarios

In order to solve the identified bottlenecks, , eliminate the problems and the inadequacies, All possible different and many solution proposals produced around the adopted vision, goals and strategies were tested in the model one by one and alternative scenarios were produced to cover these suggestions.

Alternative Scenarios

- **Green (Sustainable) Scenario**

In order to reduce emissions, by reducing the share of road in passenger and freight transportation; This is the scenario where the share of rail transport is increased.

- **Digital Scenario**

This is the scenario where ITS applications come forward.

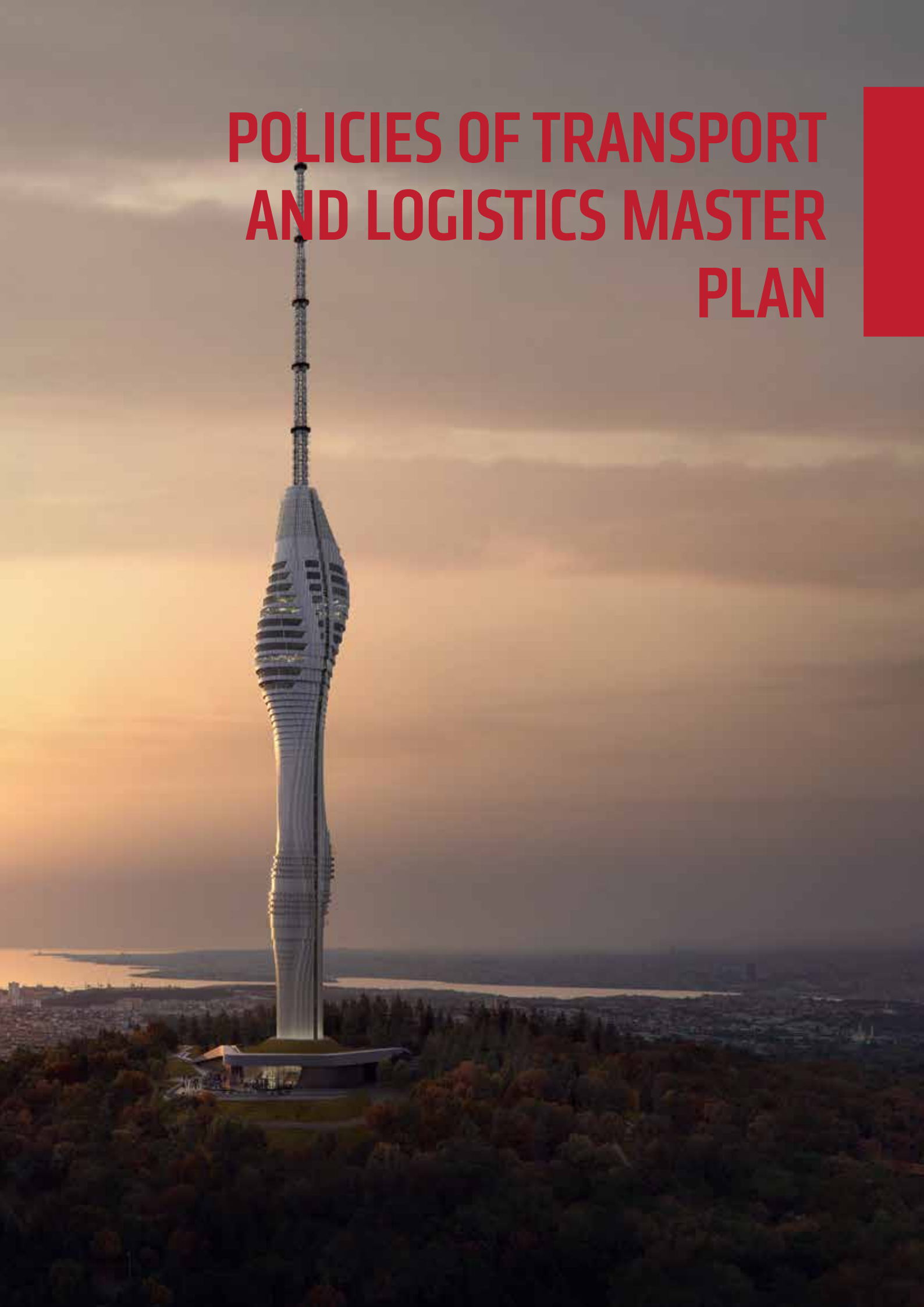
- **Export and Mobility Oriented Scenario**

This is the scenario in which the import and export figures increase over the years and accordingly, the freight transportation is increased and the results are evaluated.

Socio-economic and Preliminary Financial Evaluation of Alternative Scenarios

Economic Analysis Indicators/Scenarios	Digital	Export and Mobility Oriented	Green (Sustainable)
Net Present Value (M£ 2019)	7.550,17	4.862,06	20.926,51
Internal Rate of Return (IRR)	%24	%14	%36
Benefit/Cost Ratio (BCR)	1,82	1,37	3,22

POLICIES OF TRANSPORT AND LOGISTICS MASTER PLAN



General transportation policies aimed at ensuring the sustainable development of the country, expanding the transportation networks throughout the country, structuring a holistic, efficient, economical, accessible, safe transportation system that responds to the needs of the society, supporting economic growth and giving priority to environmental issues are given in detail below.

FINANCIAL MANAGEMENT

Financing incentive models should be created to support domestic and national transportation solutions and ensure the widespread use of electric vehicles. In order to ensure the accessibility of individuals with reduced mobility, financial incentive models should be created to cover the accessibility costs (vehicle, infrastructure and facility transformation, etc.) to ensure the accessibility of transportation systems for everyone.

Within the scope of logistics activities, the "polluter pays" principles paid by the polluting elements should be applied for the costs of adverse effects such as air pollution on the environment to society. New financing instruments should be developed that take into account revenues to support infrastructure investments. The establishment of Logistics Centers, primarily on the main transportation corridors, should be supported in line with regional requirements and by carrying out feasibility studies.

ENERGY EFFICIENCY AND SOCIAL SUSTAINABILITY

Comprehensive environmental, clean energy and alternative fuel policy constitute the main policy framework that provides input to all modes of transport in the evaluation and definition of specific policy measures and recommendations selected in the Transport and Logistics Master Plan. When it is necessary to evaluate the environmental impact in the transportation sector and even when the issue of climate change is considered, energy and transportation emerge as two sectors that cannot be separated from each other. Therefore, the general environmental policy, taking into account the relationship between these two elements to minimize the emissions of pollutants and to optimize the use of basic resources, measures regarding the environment are given below:

- Providing real-time information sharing for users about transportation options, times, environmental impacts and costs for uninterrupted door-to-door movement.
- Developing solutions and establishing new routes for the completion of transit transportation, whose origins and destinations are abroad and which is expected to increase in the coming years, within the borders of our country as soon as possible, with the highest energy efficiency and the least negative environmental impact.
- Clarifying tax reductions, exceptions, and exemption arrangements concerning the sector with sector stakeholders and realizing tax reductions in fuel (petroleum products, electricity, etc.) based on certain criteria (environment, multi-modal transportation, being in logistics centers, etc.).
- Reducing the dependence on oil (traditional fuel use) in transportation due to the decrease in oil resources and the increase in its price and environmental factors, increasing the level of cost-oriented energy efficiency, ensuring a consensus on the principles of mobility and efficiency.
- Determining new arterial routes (green transportation corridors) that are sensitive to ecological conditions, provide efficient energy use, are reliable, do not create traffic density, and have low operating costs.
- Implementing the "Polluter Pays" principle so that the negative impacts on the environment are met by those who create it, based on fair and transparent criteria.
- Using systems such as energy taxation, emission trading, etc. to reduce greenhouse gas emissions and air pollution originating from logistics and to keep greenhouse gas emissions at desired levels
- Reducing solid waste from logistics (tires, packaging waste, scrap vehicles)
- Reducing noise emissions, using less noisy or quiet vehicles and equipment
- Developing a management system to protect the environment from damages (such as destruction of nature, construction pollution and greenhouse gases) in the construction and use of the highway and compensating for the damages caused.
- Supporting reverse, green and recycle logistics (e.g., logistics for reuse of used product parts and materials).
- Supporting the establishment of Research and Development (R&D) and Innovation studies and research centers that will increase the competitiveness of the logistics sector, creation of a special fund to support logistics and transportation R&D studies, increasing the country's added value, reducing environmental and prioritizing projects that increase safety.

- Realizing the separation of local and transit traffic and ensuring an uninterrupted traffic flow with semi-access-controlled ring roads and different-level intersection applications to be built in areas where the existing road network has urban crossings.
- Giving importance to environmental sensitivity and "reverse logistics" activities in logistics center establishment works.
- Encouraging the application of environmentally friendly green warehouse design principles and providing discounts on payments such as paying fees, licenses, taxes, etc. to such system applications.
- Continuing withdrawal of vehicles that have completed their economic and technical life from traffic and if necessary, limiting the number of vehicles registered with the authorization certificate in order to reduce the existing idle capacity in the road transport market and to contribute to the reduction of environmental pollution.
- Making noise maps and taking precautions starting from the priority areas.
- Internalizing external costs (traffic accident, congestion, emissions and noise etc.).
- Ensuring that the noise level is kept within certain limits by carrying out projects to prevent sound and air pollution within the scope of environmentally sensitive road projects and using special mixtures in road pavements, using road construction technology and materials with low noise level and CO2 emission.
- Developing a management system to protect the environment from damages (such as destruction of nature, construction pollution and greenhouse gases) in the construction and use of the highway and compensating for the damages caused.
- Integrating greenhouse gas emission detection and monitoring systems, providing cathodic protection of tunnels and bridges.
- Giving importance to regulations that will prevent companies that do not have an environmental management system from entering into road contracts.
- Disseminating noise-preventing curtains in corridors with heavy traffic and especially through residential areas by isolating the main arteries that pass through urban areas and turn into noise sources higher than the limit dB with noise barriers.
- Reducing the negative effects of the materials excavated during the repair of the deteriorated road pavement, as well as reintroducing them to the economy.
- Recycling of waste oil, rubber, plastic and metallic materials originating from highways and reducing the negative effects on the environment.
- Using technological systems effectively in order to prevent the use of fuel that creates unfair competition, contrary to the long-term benefits of the country and the sector.
- Developing ongoing studies on the recovery of all excavated asphalt mixtures by researching environmentally friendly bituminous mixtures produced with lower energy.

- Increasing energy (use of regenerative energy, etc.) efficiency in railway transportation.
- Reducing the average age of the vehicle and Increasing the number of electric and hybrid vehicles.
- Çevreye duyarlı demiryolu yük terminallerinin oluşturulması.
- Creating environmentally friendly rail freight terminals.
- Providing incentives for the rejuvenation and development of the Turkish maritime merchant fleet.
- Developing the necessary legal regulations regarding the protection of natural resources, since there will be irreversible losses if natural resources are not protected properly while developing our maritime sector.
- Preparing all kinds of measures related to marine pollution within the legal framework.
- Developing measures and intervention plans that can be taken against radioactive pollution that may occur in the seas.
- Providing incentives for green port implementation and reducing the use of environmentally harmful machinery and equipment.
- Taking measures for low emission zone studies in the seas around the country.
- Installing systems to monitor noise and make mapping at airports, determine the dose-effect relationship on airport basis using these maps, and take precautions.
- Creating multi-modal transport terminals from energy-efficient equipment.
- Creating environmentally friendly multi-modal transport terminals.
- Increasing facility and employee safety at multi-modal transport terminals.
- Keeping up-to-date risk analyzes for occupational health and safety and taking necessary precautions against risks.
- Increasing the effectiveness of coordination between hazardous materials and other special cargo transport modes.

Mobility strategies including sustainable, environmentally friendly, efficient, low-emission and non-emission-producing transportation systems (electric vehicles, bicycles, pedestrians, etc.) should be determined and their use should be encouraged at a national,regional and local level. Cities' features open to development should be identified, and they should be encouraged to develop themselves accordingly by defining urban mobility indexes according to the characteristics of cities (such as geographical situation, population, economic situation, season, income level, vehicle ownership, trip distribution according to types, current state of transportation infrastructure, current state of public transportation systems). Applications such as congestion pricing, low emission zone, park and ride, and public transport corridors should be encouraged at the national level, which will reduce the use of individual vehicles and make public transportation widespread.

A consensus should be reached on the principles of reducing the dependence on oil (traditional fuel use) in transportation due to the decrease in oil resources and environmental factors, increasing the level of cost-oriented energy efficiency, mobility and efficiency. By modernizing all logistics vehicles and equipment, the average age and emissions of vehicles should be raised to world standards. Eco-innovation practices should be encouraged to develop products, services, processes and systems that use the least natural resources and generate the least waste in logistics activities.

GOVERNANCE

The development of public-private sector and university cooperation should be supported in order to encourage research and development studies that will enable effective management of human, load and data mobility. Urban transport authority and incorporation models should be developed at the national level, which will regulate the multi-headed dispersed structure of urban passenger and freight transportation. Airports, seaports, railway, metro and bus terminals should be interconnected, and multimodal connecting platforms should be created.

A single point management of the regulation, supervision and development of all logistics services and different tasks managed by different public authorities in the field of logistics in the country should be provided, so that inter-institutional planning, monitoring and reporting should be carried out. Regional Plans, Urban Logistics and Transportation Master Plans should be created in harmony with each other. Provincial environmental plans made within the scope of country, zone and city should be carried out in a way to ensure cooperation/coordination with strategic objectives, national logistics master plan, national transportation master plan, urban transportation plan, urban logistics master plans and city development plans. Cooperation on terminology, education and legal issues should be established with countries on international transport corridors linked to Türkiye.

In order to ensure national cyber security, public institutions and organizations, non-governmental organizations, local governments, universities and the private sector should work in cooperation. Open data platforms should be developed with access to high-quality data to support data-driven technologies, operations and decision making.

HUMAN VALUES AND EDUCATION

In order to train qualified specialist personnel who will serve in the field of transportation, the departments needed for employment should be expanded by cooperating with universities. Standards should be established in transportation and logistics education. National and international accreditations on this subject are supported. The career planning and specialization of the workforce needed in the sector should be supported. The sustainability of training should be ensured in order to increase social awareness for individuals with reduced mobility.

Logistics activities should be carried out by persons within a gradual transition period with professional documents. Occupational standards (job descriptions, employee qualifications, etc.) in the logistics sector should be completed, Professional Competence and Occupational Standards (job descriptions, employee qualifications, etc.) should be regulated by considering the sectoral requirements and the conditions for the graduates of logistics programs to qualify for the professional documents and coordination between the relevant ministries and institutions should be ensured.

The National ITS Strategy Document should be supported by training programs in the aforementioned areas, cooperation should be developed with the relevant ministries 26 national/international organizations, and sector stakeholders, and importance should be given to training, certification, working conditions and career development. It should be ensured that good practices are disseminated and supported to ensure the security of national cyber security, transportation and communication systems, and useful practices are shared.

QUALITY AND EFFICIENCY

Increasing passenger satisfaction should be supported by measuring service quality and making necessary improvements in each type of transportation that provides passenger transportation services. In order to effectively manage human mobility in transportation services, standards that will improve service quality should be established and expanded. Measures should be taken to reduce individual vehicle use (walking and bicycle paths, car sharing, park and drive, smart ticketing, etc.).

Institutionalization and professionalization should be supported in order to increase the environment of trust in the sector. Certification and accreditation of logistics companies should be provided. It should be ensured that the activities are carried out according to the "Logistics System Standards", which include all legal rules and ethical values and service quality parameters for logistics activities, and which aim to increase the sustainability and institutionalization of the companies, and that the logistics activities are carried out by companies with the necessary certification.

SAFETY AND SECURITY

It should be aimed to reduce the accidents caused by people, infrastructure and equipment to zero, and the data should be transparently shared with the public by prioritizing the signaling and electrification works in rail systems. Studies that will increase travel safety should be maintained using technological solutions, autonomous drive, smart roads, flexible, energy-absorbing guardrails etc. Studies should be carried out to develop the national public transport safety master plan.

International cooperation in the fight against terrorism and other criminal activities such as piracy should be increased and continued. Rules for multimodal transport of hazardous material should be continuously improved to ensure interoperability between different modes. Studies should be carried out and necessary precautions should be taken to ensure the confidentiality, integrity and accessibility of all kinds of services, transactions and information provided regarding information technologies and the systems used in their processing, storage and presentation.

TECHNOLOGY, INNOVATION AND DIGITIZATION

In order to ensure sustainable smart mobility, research and development studies should be encouraged and the production of domestic and national mobility solutions should be ensured. Within the scope of integrated and smart mobility, the use of personalized user-friendly applications that will increase efficiency, speed, quality and flexibility should be generalized. In order to analyze passenger mobility at the national level, the necessary digital database should be established and kept up to date. A digital national inspection system infrastructure should be established that will facilitate the inspection of transportation services and ensure effective inspection. Domestic research and innovation partnerships should be established to find common answers to the challenges of transportation management systems interoperability, sustainable low-carbon fuels, safety and security. The inspection mechanism for the implementation of the legislation in passenger transport should be activated. It should be ensured that penal sanctions are applied in a correct, just and deterrent manner.

The establishment of "Logistics Centers of Excellence/Research Centers/Institutes/Logistic Valleys/Parks" and "Training Academies" for the development of logistics activities should be carried out in cooperation with the public and private sectors. Cooperation between research institutions, development agencies, local governments, universities and techno parks should be increased in logistics sector projects and investment studies. Initiatives towards "zero-emission urban logistics" that take into account effective spatial planning, easy access to railways and seaways, logistics operation processes, charging and vehicle technology standards should be supported.

National Transportation Database (NTD) infrastructure should be established to make fast and economic analyzes in planning, monitoring and evaluation processes. Suggestions should be made for making the data to be collected through communication and digitalization useful for other sectors and the use of this data by the stakeholders. E-state applications related to transportation and communication should be expanded.

LEGISLATION

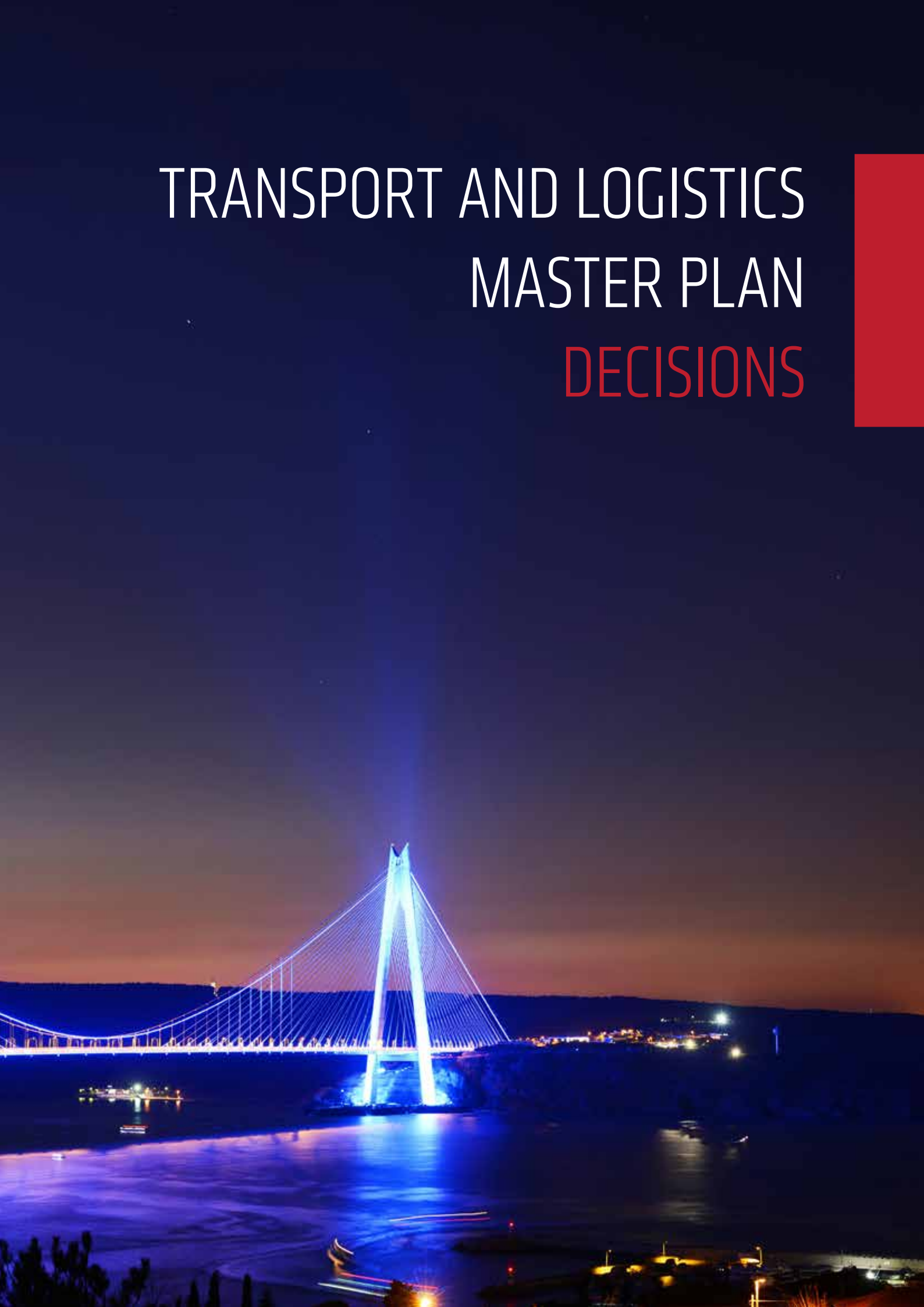
Passenger transport legislation, which is regulated in different legislations and serves the same purpose, should be combined in single transport legislation to ensure uniformity in practice. Harmonization and legislation studies of scooters, electric, autonomous, flying vehicles and other new-generation mobility systems should be carried out and kept up-to-date. A participatory legislative regulation system infrastructure should be established for the regulations to be made by the local administrations in the field of transportation to coordinate with the national regulations.

Compliance with international agreements and rules should be accelerated, and necessary activities should be carried out to ensure full compliance with the International Transport Conventions in domestic transportation and to inspect them. Legislation and regulations regarding the establishment and operation principles of logistics clusters and centers should be handled in a multi-faceted manner and should be carried out in coordination with the relevant Ministries. For the effective and efficient management of urban freight flows, implementation guides should be prepared on urban transfer centers, vehicle size, route and time restrictions and integration with national and international freight flows.

International regulations and standards should be considered in the development of national legislation on cyber security. Arrangements for disseminating high-speed and quality, fixed and mobile broadband communication and satellite infrastructures throughout our country should be reviewed and necessary updates should be made.

TRANSPORT AND LOGISTICS MASTER PLAN

DECISIONS



HIGHWAY

NEW MOTORWAY CONSTRUCTION

The 5.527 km part of the motorway network to be built until 2053 consists of projects that are under construction and are at the tender stage. The projects are listed below:

- Ankara - Kırıkkale - Delice Motorway
- Ankara - Sivrihisar Motorway
- Antalya - Alanya Motorway
- Aydın - Denizli Motorway
- Sapanca - Afyonkarahisar Motorway
- Mersin-Erdemli-Silifke-Taşucu Motorway (Çeşmeli-Kızkalesi Section)
- Dörtyol Hassa Motorway
- Kınalı - Tekirdağ - Çanakkale - Savaştepe Motorway (Malkara-Kınalı Section)
- Kuzey Marmara Motorway Nakkaş - Başakşehir Section
- Samsun- Mersin Motorway
- Trabzon - Habur Motorway
- Afyon-Burdur Motorway
- Alanya-Silifke Motorway
- Delice - Samsun Motorway
- Ankara-İzmir Motorway (Sivrihisar-İzmir Section)
- Bozüyük-Afyonkarahisar Motorway
- Çeşmeli-Erdemli-Silifke-Taşucu Motorway (Kızkalesi-Taşucu Section)
- Denizli-Burdur-Antalya Motorway
- Gerede-Merzifon-Gürbulak Motorway
- Kınalı-Tekirdağ-Çanakkale-Savaştepe Motorway - Çanakkale -Savaştepe Section
- Sivrihisar-Bursa Motorway
- Şanlıurfa-Habur Motorway (with Diyarbakır Connector Roads)

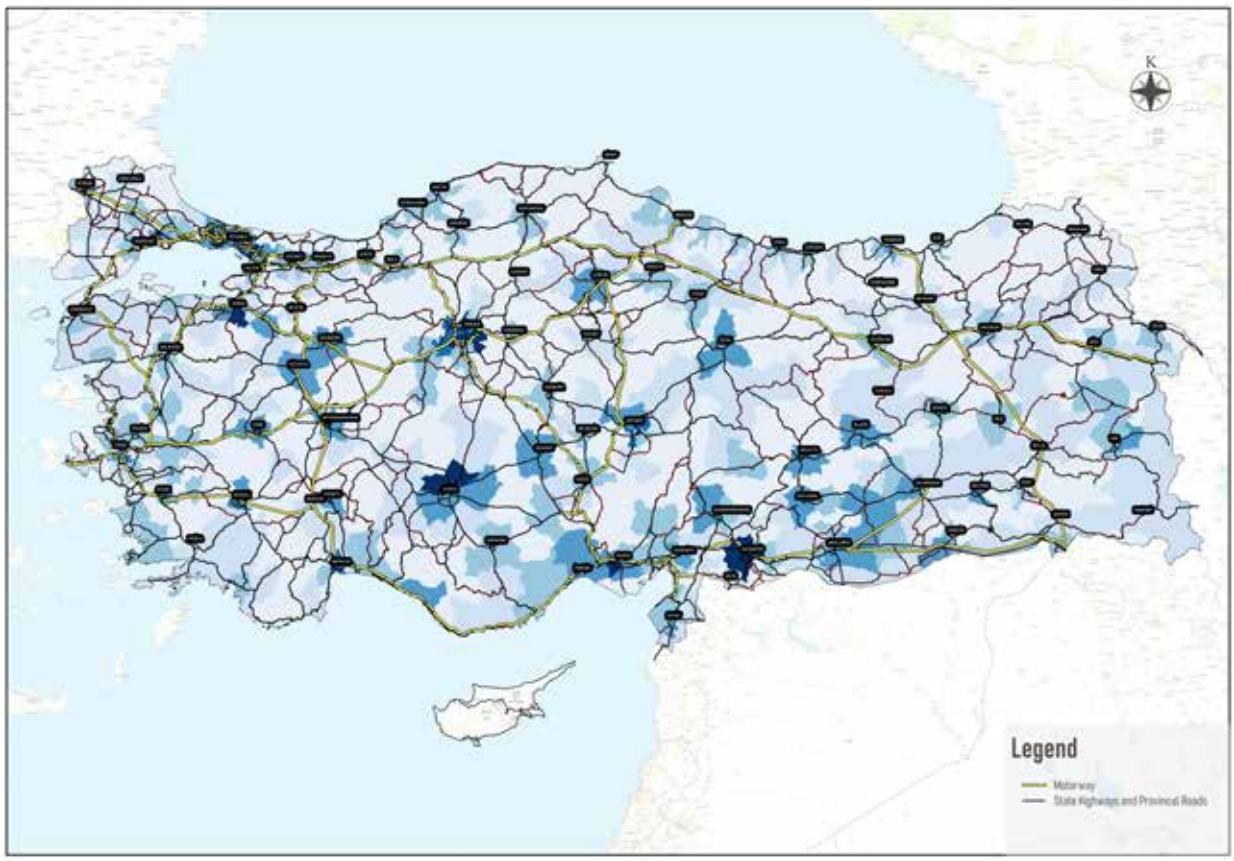
Road Widening Projects:
Some of the road widening works to be carried out until 2053 are still ongoing projects. A total of 13.951 km of road expansion is planned, including 4.640 km by 2023, 8.967 km by 2029, 232 km by 2035 and 112 km by 2053.

New Divided Road Projects
Ring roads constitute a large part of the divided road projects (excluding the motorway) planned to be built until 2053. 180 km of these projects are expected to be completed by 2023, 396 km by 2029, 130 km by 2035 and 90 km by 2053.

Highway Networks by Target Years of Transport and Logistics Master Plan

Highways	2019 - 2023	2023 - 2029	2029 - 2035	2035 - 2053	Total
New Motorways	312	1.760	3.767	-	5.839
Road Widening	4.640	8.967	232	112	13.951
New Divided Roads	180	396	130	90	795

2053 Highway Projects



RAILWAY

According to the Transport and Logistics Master Plan, it is planned to construct a total of 8.554 km of railway lines, including 6.425 km of rapid rail lines, 1.474 km of conventional rail lines, 393 km of high-speed rail lines and 262 km of very high-speed rail lines, until 2053.

In addition, in order to use the railways more effectively in freight transport, the 1.179 km line between Kapıkule - Ankara - Mersin between 2023 - 2029, and the 1.097 km line between Ankara - Zengazur (Azerbaijan) between 2029 - 2035, in order to be suitable for RO - LA transportation is planned.

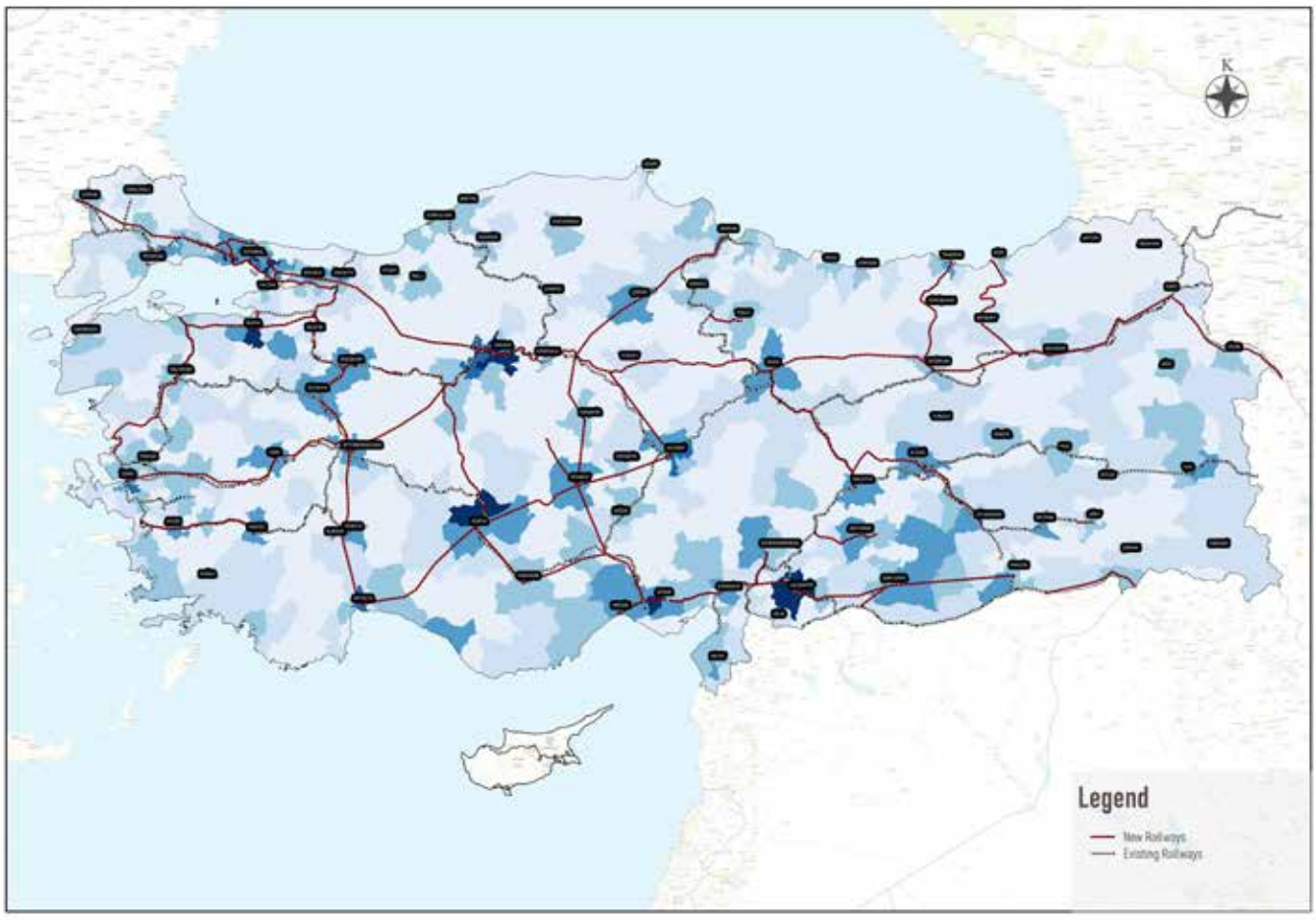
Very High-Speed Rail Line:
The very high-speed rail line, which can reach 400 km per hour between Ankara and Istanbul, is 262 km long between Sincan and Köseköy. The line is planned to be built by 2029.

High Speed Rail Line:
In addition to the existing high-speed train routes, it is planned to construct a 393 km high-speed rail line between Ankara and Sivas.

Rapid Rail Line:
Rapid rail lines, which are one of the steps taken to increase the share of railways in passenger and freight transportation in our country, are planned to become widespread by 2053.

Conventional Rail Lines:
In addition to the existing conventional rail lines of our country, a total of 1.474 km of conventional rail lines are planned to be built until 2053.

2053 Railway Projects



Railway Investment Program (Route Length in Km)

Demiryolları	2019 - 2023	2023 - 2029	2029 - 2035	2035 - 2053	Total
Rapid Lines	592	2.841	2.242	750	6.425
Conventional Lines	120	484	870	0	1.474
High Speed Lines	393	0	0	0	393
Very High Speed Lines	0	262	0	0	262

2019 - 2023 Railway Projects	Route (km)	Line (km)
Ankara- Sivas HSR	393	786
İzmir-Ankara RR (Ankara -Afyon Section)	152	304
Bursa-Osmaneli RR	106	212
Konya-Karaman RR	102	204
Adana-İncirlik-Toprakkale RR	79	158
Halkalı-Kapıkule RR (Kapıkule - Çerkezköy Section)	153	306
Akçagöze-Başpınar Conventional Line	11	22
Köseköy-Gebze Conventional Line	37	74
Diyarbakır-Mazıdağı Conventional Line	54	108
Sincan-Yenikent-Kazan-Soda Conventional Line	18	36

2024 - 2029 Railway Projects	Route (km)	Line (km)
İstanbul - Ankara Very High Speed Rail Line	262	524
İzmir-Ankara RR (İzmir - Afyon Section)	356	712
Halkalı-Kapıkule RR (Çerkezköy Halkalı Section)	76	152
İstanbul Havalimanı-Çatalca RR	25	50
Adapazarı-Gebze-YSS-Halkalı RR	188	376
Karaman-Ulukışla RR	135	270
Toprakkale-Bahçe-Nurdağ-Başpınar RR	131	262
Aksaray-Ulukışla RR	86	172
Ulukışla-Yenice RR	106	212
Bandırma-Bursa RR	74	148
Adana-Mersin RR	67	134
Sivas-Erzincan RR	242	484
Yerköy-Kayseri RR	142	284
Bursa-Gemlik RR	24	48
Mürşitpınar-Şanlıurfa RR	63	126
Aliağa-Çandarlı-Bergama RR	57	114
Ödemiş-Kiraz Conventional Line	30	60
Selçuk-Ortaklar-Aydın RR	39	78
Aydın-Denizli RR	128	256
Çetinkaya-Malatya RR	132	264
Konya-Seydişehir-Antalya RR	251	502
Delice-Çorum RR	100	200
Sivas-Çetinkaya RR	92	184
Aksaray-Konya RR	141	282
Bandırma-Balıkesir RR	88	176
Balıkesir-Bergama RR	98	196
To Mines, OIZs, Factories and Ports, Rail Connections	454	454

2030 - 2035 Railway Projects	Route (km)	Line (km)
Eskişehir-Afyon RR	141	282
Afyon-Burdur RR	121	242
Burdur-Antalya RR	163	326
Kayseri-Aksaray RR	149	298
Çorum-Merzifon RR	91	182
Merzifon-Samsun RR	102	204
Delice-Kırşehir RR	105	210
Kırşehir-Aksaray RR	82	164
Aksaray-Şereflikoçhisar RR	73	146
Nurdağ-Kahramanmaraş RR	50	100
Gaziantep-Şanlıurfa RR	120	240
Şanlıurfa-Mardin RR	181	362
Erzincan-Erzurum RR	173	346
Erzurum-Kars RR	205	410
Malatya-Elazığ RR	127	254
Elazığ-Diyarbakır RR	135	270
Kars-Dilucu RR	224	448
To Mines, OIZs, Factories and Ports, Rail Connections	870	870

2036 - 2053 Railway Projects	Route (km)	Line (km)
Nusaybin-Cizre-Silopi-Habur RR	133	266
Siirt-Kurtalan RR	34	68
Adıyaman-Gölbaşı-Kahta RR	88	176
Erzurum-Rize RR	216	432
Erzincan-Trabzon RR	235	470
Tokat-Turhal RR	44	88

MARITIME

Türkiye has a large and strategically important maritime area for the Black Sea, Western Europe, Middle East and North Africa region, with its 8.333 km coastline providing direct sea connections to various countries belonging to the geographical and geopolitical areas.

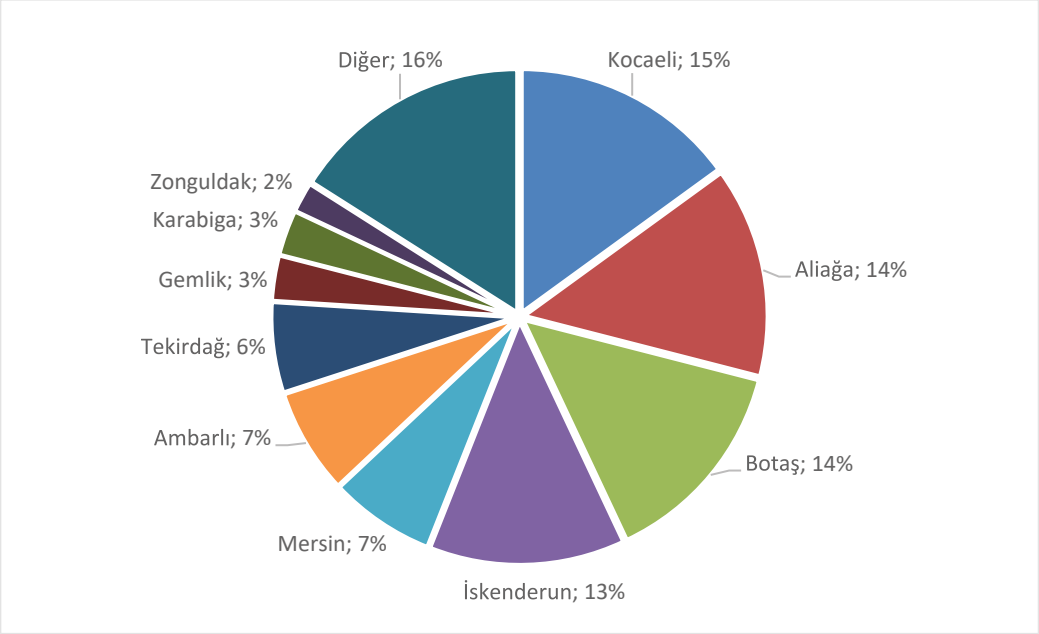
The role of ports in Türkiye is becoming increasingly important in integrating transport modes across the country, as well as connecting regional and international transport corridors from east to west and from north to south.

For this reason, the port sector plays a vital role in the Turkish economy, especially in foreign trade. The amount of cargo handled in our country's ports in 2019 was 484.2 million tons, of which 159.9 million tons includes loading, 249.3 million tons of discharge and 75 million tons of transit cargo. The ratio of imported and exported cargoes within the total handling amount is 73%.

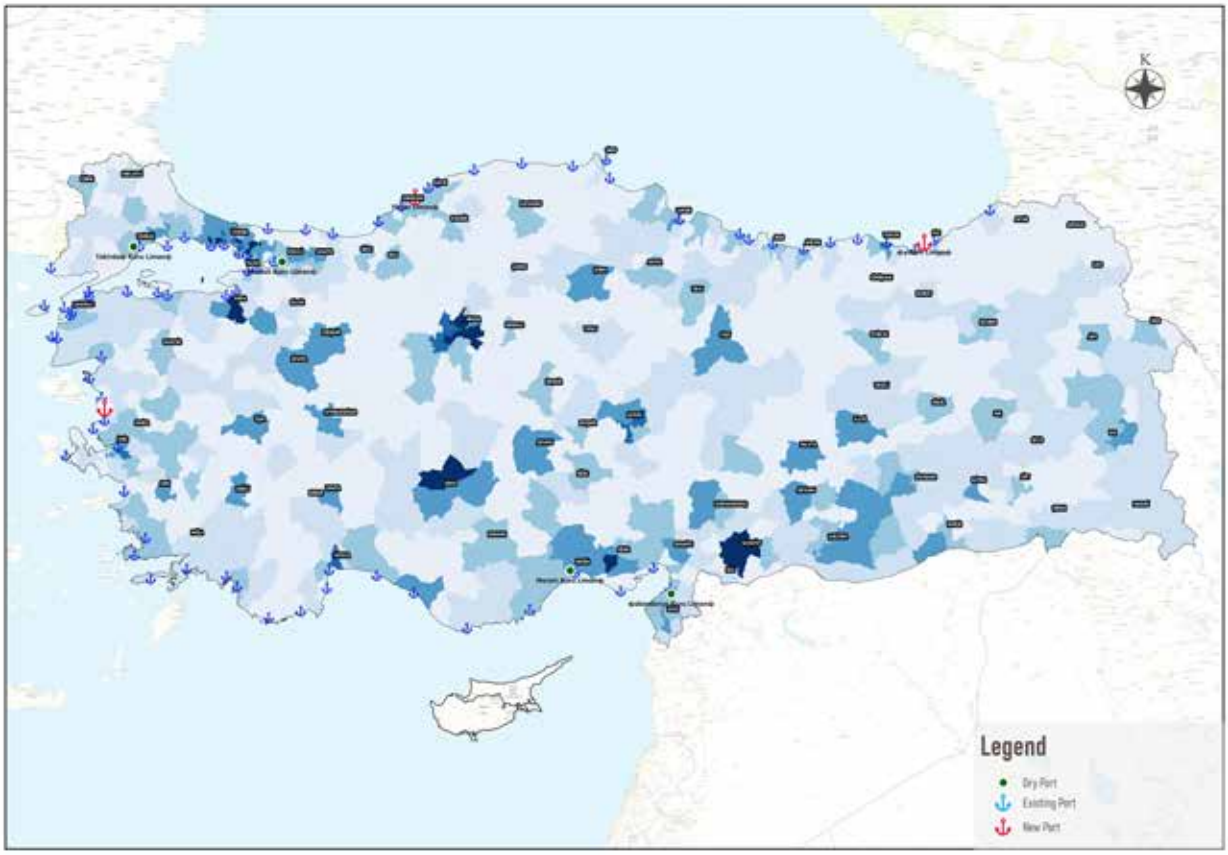
In light of Transport and Logistics Master Plan, 254.342.564 tons of cargo are transported in 2023, whilw this figure is planned to be 420,978,275 tons for 2053. While the number of port facilities is currently 217, it will be increased to 255 in 2053. Also, 4 dry ports will be constructed in Tekirdağ, Mersin, İskenderun and Kocaeli provinces.

With the Canal Project, which is included in the Transportation Planning Model as of 2029, it is aimed to reduce the current ship traffic in the Bosphorus and to increase the power of our country due to its geopolitical position.

Distribution of Handled Freight to Ports



2053 Maritime Projects



AIRWAY

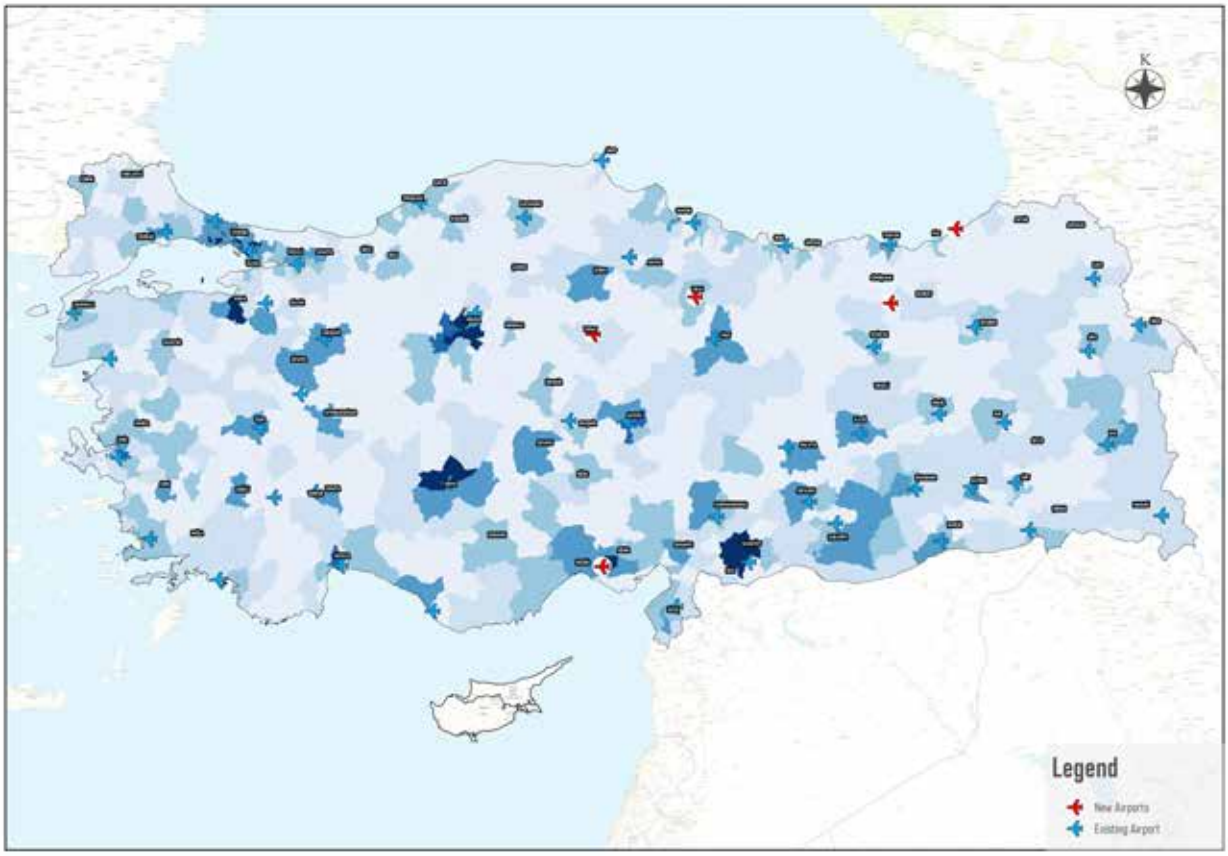
Currently, Turkey has a dense airport network with 56 airports that support the rapidly growing economy and tourism of the country. Turkey is an important air transport hub for Europe, West of Asia and Africa in terms of both passenger and freight traffic.

There are two main policies for improving and regulating air freight and passenger transport. These are airport network development policies and airline passenger and freight services development policies.

Planned Projects for Airport Network Development

PROJECTS NAME	YEAR
Çukurova Bölgesel Airport	2022
Rize-Artvin Airport	2022
Tokat Airport	2022
Gümüşhane Airport	2023
Yozgat Airport	2023
Antalya Airport Extension	2027
Trabzon Airport Extension	2027
Esenboğa Airport Extension	2029
İstanbul Airport Phase 4	2029

2053 Airports Projects



LOGISTIC

Recommendations for the Development of Logistics Activities and Transportation Strategies were created under the following main headings:

- Increasing Mobility
- Balancing Modes of Transport
- Optimum Use of Infrastructure
- Increasing Service Quality and Operational Efficiency
- Increasing Energy Efficiency and Environmental Awareness
- Safety and Security Improvement
- Increasing the Quality and Efficiency of Human Resources
- Increasing the Level of Technology and Digitization
- Improving Investment Opportunities
- Increasing Business Development Activities

To date, 13 logistics centers have been put into operation or their construction has been completed, and the planning and construction processes of 13 logistics centers are continuing.

Existing Logistics Centers:
Gelemen Samsun Logistic Center
Palandöken Erzurum Logistic Center
Türkoğlu Kahramanmaraş Logistic Center
Yenice Mersin Logistic Center
Kayacık Konya Logistic Center
Kaklık Denizli Logistic Center
Uşak Logistic Center
Hasanbey Eskişehir Logistic Center
Gökköy Balıkesir Logistic Center
Halkalı İstanbul Logistic Center
Köseköy İzmit Logistic Center
Kars Logistic Center
Manisa (MOS) Logistic Center

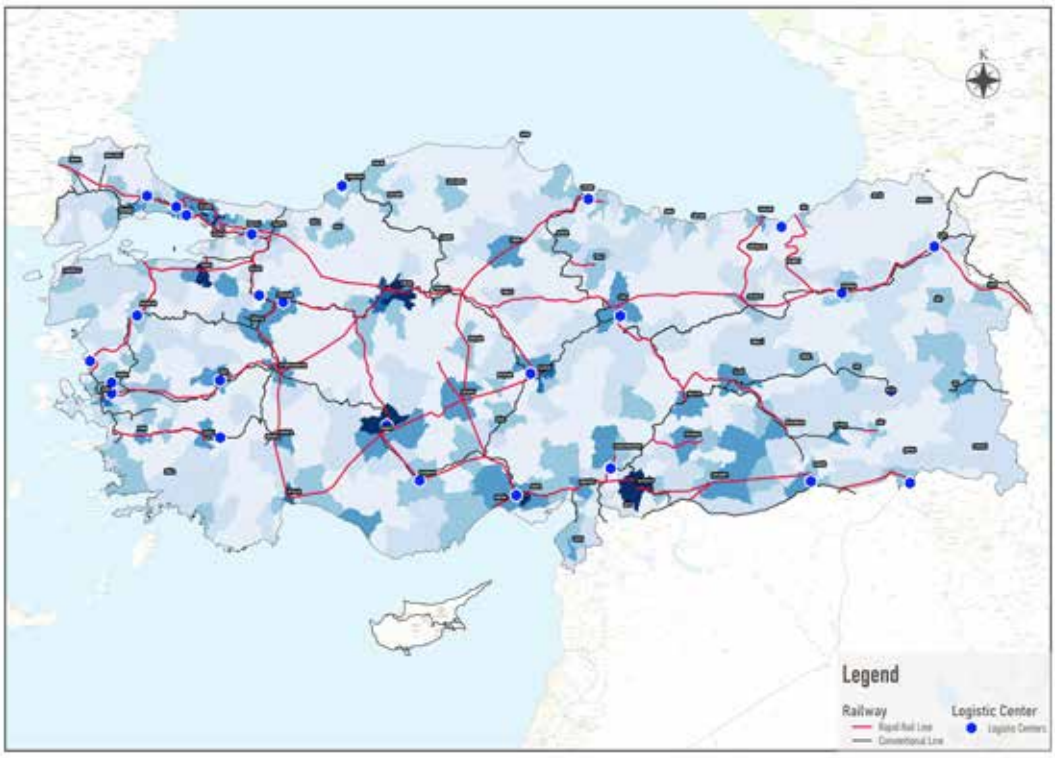
Planned Logistics Centers:
İyidere Rize Logistic Center
Kemalpaşa İzmir Logistic Center
Sivas Logistic Center
Karaman Logistic Center
Tatvan Bitlis Logistic Center
Çerkezköy Tekirdağ Logistic Center
Bozüyük Bilecik Logistic Center
Boğazköprü Kayseri Logistic Center
Yeşilbayır İstanbul Logistic Center
Çandarlı İzmir Logistic Center
Filyos Zonguldak Logistic Center
Mardin Logistic Center
Habur Logistic Center

Within the scope of the Transport and Logistics Master Plan

The recommendations of the Dry Port, which aim to reduce the congestion on the coastline and encourage the integration of modes, and enable logistics activities such as cargo handling and temporary storage area, are as follows:

- Tekirdağ Dry Port
- İskenderun Dry Port
- Mersin Dry Port
- Kocaeli Dry Port

2053 Logistic Centers



INVESTMENT COSTS AND BENEFITS

For Green (Sustainable) Scenario, which was selected. within the scope of the Transport and Logistics Master Plan, socio-economic analysis was made for all infrastructure projects and policies planned until 2053. the plans made for all modes of transport (road, rail, air and sea) have been considered separately. the annual net cash flow in the target years and the net present values of these values were calculated for each mode. estimated operating cash flows over the target years were obtained at the project and scenario level.

As a result, 156.15 billion € benefit will be provided to the welfare of our country at the target year of 2053, with a cost of 125.48 billion €.

Green (Sustainable) Scenario

Freight	2019		2023		2029		2035		2053	
	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Percentage
Railway	32.801.953	3,13 %	54.963.658	5,08 %	146.421.644	11,24 %	306.213.835	20,12 %	448.258.886	21,93 %
Maritime*	260.345.604	24,85 %	254.342.564	23,53 %	275.767.732	21,16 %	314.297.690	20,66 %	420.978.275	20,60 %
Highway	754.368.488	72,01 %	771.622.973	71,39 %	880.754.875	67,60 %	901.090.974	59,22 %	1.174.532.817	57,47 %
Total	**1.047.516.045**	**100,00 %**	**1.080.929.194**	**100,00 %**	**1.302.944.251**	**100,00 %**	**1.521.602.499**	**100,00 %**	**2.043.769.978**	**100,00 %**

Foreign Freight	2019		2023		2029		2035		2053	
	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Percentage
Railway	3.164.701	1,13 %	6.349.654	2,19 %	17.454.223	5,63 %	24.842.537	7,04 %	46.075.285	11,94 %
Maritime*	206.486.712	74,00 %	212.830.772	73.45 %	221.878.762	71,57 %	251.329.898	71,21 %	261.069.858	67,66 %
Highway	69.386.154	24,87 %	70.597.256	24,36 %	70.662.896	22,79 %	76.756.809	21,75 %	78.737.512	20,40 %
Total	**279.037.567**	**100,00 %**	**289.777.682**	**100,00 %**	**309.995.881**	**100,00 %**	**352.929.244**	**100,00 %**	**385.882.655**	**100,00 %**

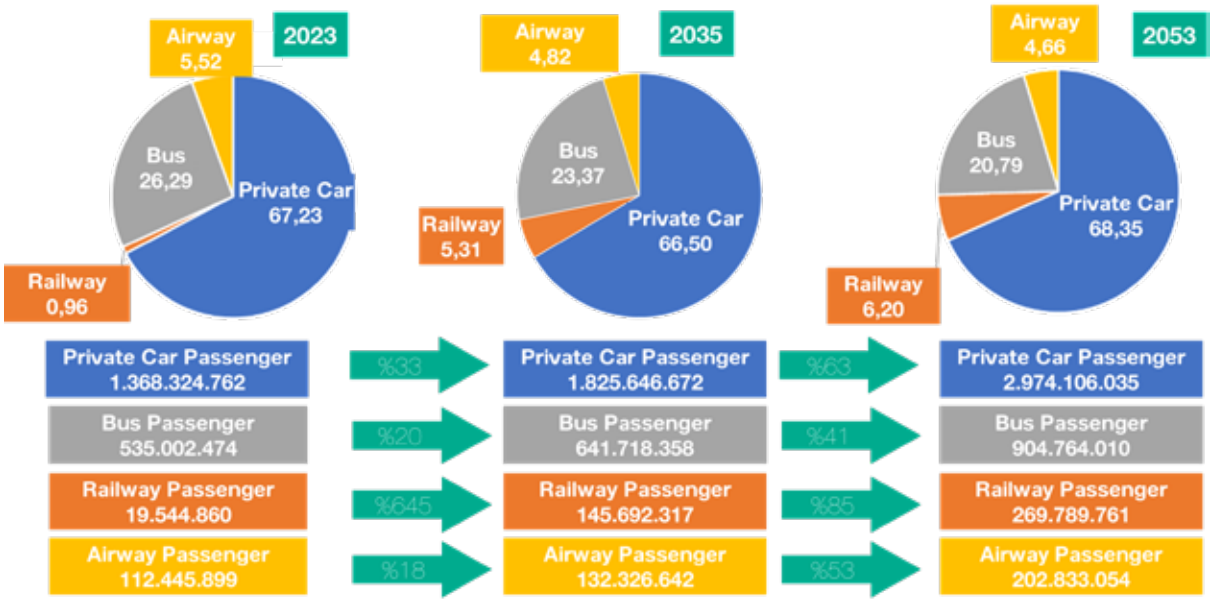
Passenger	2019		2023		2029		2035		2053	
	Passenger	Percentage	Passenger	Percentage	Passenger	Percentage	Passenger	Percentage	Passenger	Percentage
Bus	509.853.464	26,75 %	535.002.474	26,29 %	579.318.248	24,54 %	641.718.358	23,37 %	904.764.010	20,79 %
Rail**	16.914.783	0,89 %	19.544.860	0,96 %	97.915.506	4,15 %	145.692.317	5,31 %	269.789.761	6,20 %
Private Car	1.267.386.520	66,49 %	1.368.324.762	67,23 %	1.555.932.397	65,90 %	1.825.646.672	66,50 %	2.974.106.035	68,35 %
Airway***	111.861.237	5,87 %	112.445.899	5,52 %	128.003.977	5,42 %	132.326.642	4,82 %	202.833.054	4,66 %
Total	**1.906.016.004**	**100,00 %**	**2.035.317.994**	**100,00 %**	**2.361.170.129**	**100,00 %**	**2.745.383.989**	**100,00 %**	**4.351.492.860**	**100,00 %**

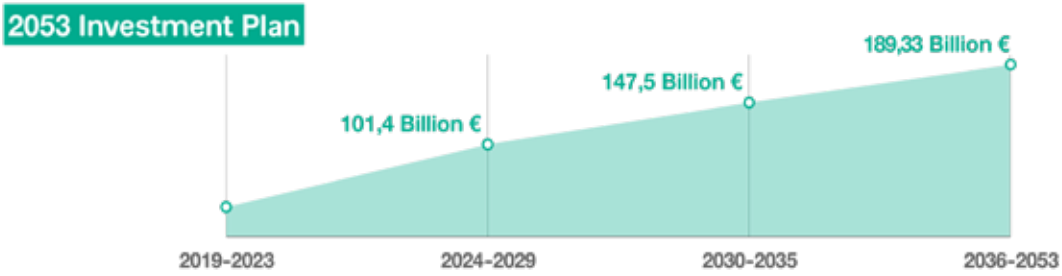
* Liquid bulk freight and transit freight are excluded.
** Values in rail passenger show the number of trips.
*** Values in airway passengers show the number of trips, and this value is predicted as 344.388.341 for the 2053 target year, based on the number of passengers arriving and departing the airport.

Green (Sustainable) Scenario

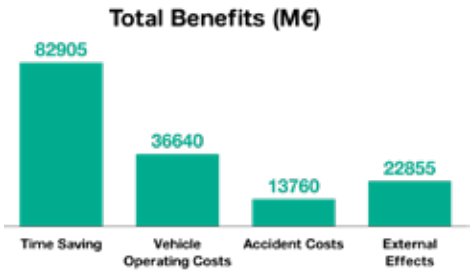
FREIGHT

PASSENGER

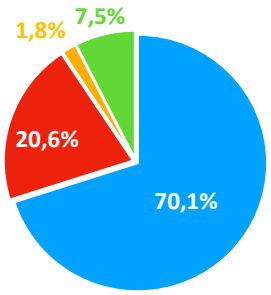


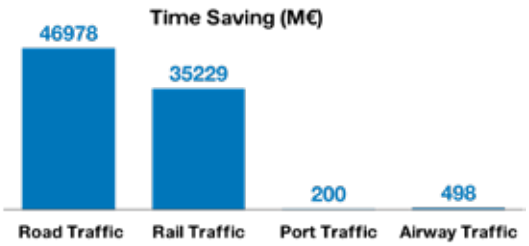


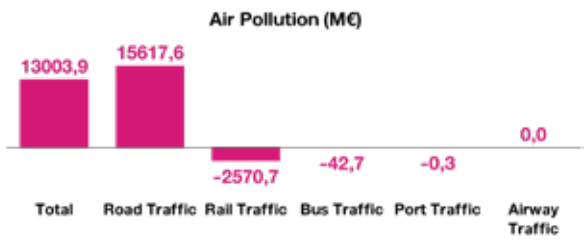
	2019-2023		2024-2029		2030-2035		2036-2053		Total
	Billion €	Percentage	Billion €	Percentage	Billion €	Percentage	Billion €	Percentage	
HIGHWAY	8,33	%26,0	13,87	%20,0	11,05	%24,0	3,00	%7,2	36,25
RAILWAY	9,00	%28,1	27,18	%39,2	21,85	%47,4	5,90	%14,1	63,93
MARITIME	4,80	%15,0	14,32	%20,7	2,13	%4,6	0,13	%0,3	21,39
AIRWAY	0,71	%2,2	3,01	%4,3	0,15	%0,3	0,05	%0,1	3,92
TELECOMMUNICATION	9,21	%28,7	10,93	%15,8	10,93	%23,7	32,78	%78,3	63,84
TOTAL	32,05	%100	69,31	%100	46,11	%100	41,86	%100	189,33



	Benefits	Total Benefits (M€)
	Road Traffic	109.430,99
	Rail Traffic	32.157,83
	Maritime Traffic	2.837,27
	Airway Traffic	11.732,91







MAIN SECTORAL TARGETS

RAILWAY

- Passenger transportation ratio will be increased from 0.96 percent to 6.20 percent, freight transportation ratio will be increased from 5.08 percent to 21.93 percent.
- The number of provinces with High Speed Train and High Speed Train connection will be increased from 8 to 52
- Annual passenger transport will be increased from 19.5 million to 269.8 million
- Annual freight transport will reach 448 million tons from 55 million tons
- A sustainable, liberalized, economically profitable, high-technology railway sector will be developed
- A railway infrastructure will be created in line with the changing mega trends in the sector and based on sector dynamics.
- A safe, fast, efficient and effective railway infrastructure will be available.
- 35% of the total energy need will be met from renewable energy sources

HIGHWAY

- The ratio of private vehicle trips will increase from 67.23 percent to 68.35 percent, and the ratio of bus trips will be reduced from 26.29 percent to 20.79 percent.
- Annual freight transport ratio will be reduced from 71,39 percent to 57,47 percent
- Accident rates will be reduced with fast, safe road infrastructure equipped with smart and autonomous technologies.
- Appropriate infrastructures will be created for electric vehicles
- Electricity and alternative energy use will be increased instead of fossil fuels on highways.

MARITIME

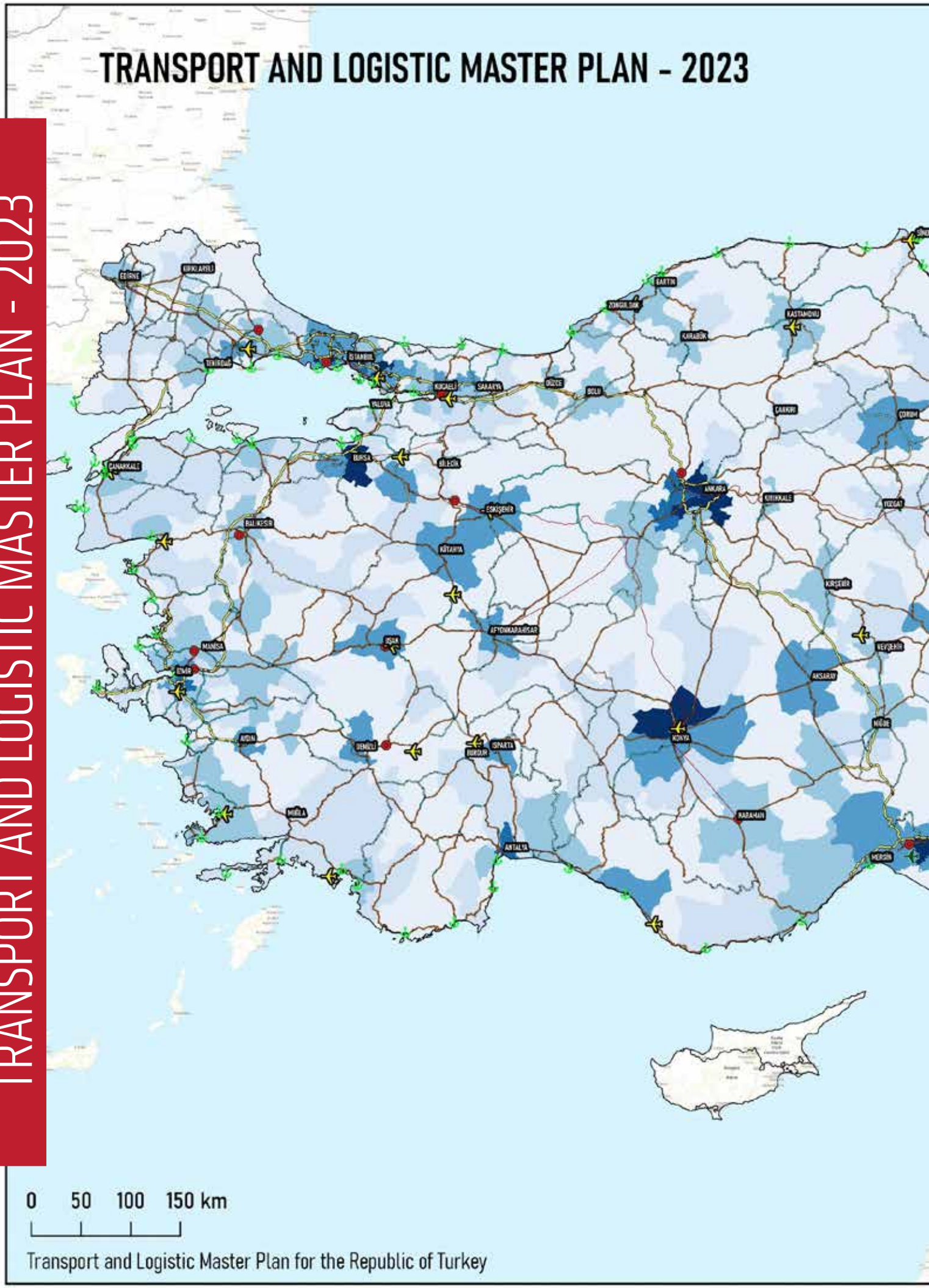
- The number of port facilities will be increased from 217 to 255
- Green Port applications will be expanded
- Highly renewable energy resources will be used in our ports
- Autonomous ship trips will be developed and handling efficiency will be increased with autonomous systems at ports.
- The transit service capacity of the ports will be increased and a multi-modal and short-distance maritime transport infrastructure that can serve the countries of the region will be developed
- With the Canal Istanbul project, navigational safety will be increased in the Bosphorus.

AIRWAY

- The number of airports from 56 will be increased to 61
- The number of arriving and departing passengers, which was 214.9 million in 2023, will be increased to 344.4 million in the target year of 2053.
- Emission monitoring, reporting, verification infrastructure will be established and carbon emissions will be strategically managed.
- Environmentally friendly bio-fuels and/or synthetic fuels will be produced in airline transportation.
- Regional air cargo transportation will be developed

LOGISTIC

- The number of logistics centers will be increased from 13 to 26.
- To be among the top 10 countries in the Logistics Performance Index
- Dry port system will be developed and expanded
- It will become a logistics base in the middle corridor
- The number of logistics centers where effective business management in international standards is adopted will be increased
- Digital transformation will be supported
- Customs control processes will be accelerated and their efficiency will be increased


TRANSPORT AND LOGISTIC MASTER PLAN - 2023
TRANSPORT AND LOGISTIC MASTER PLAN - 2023
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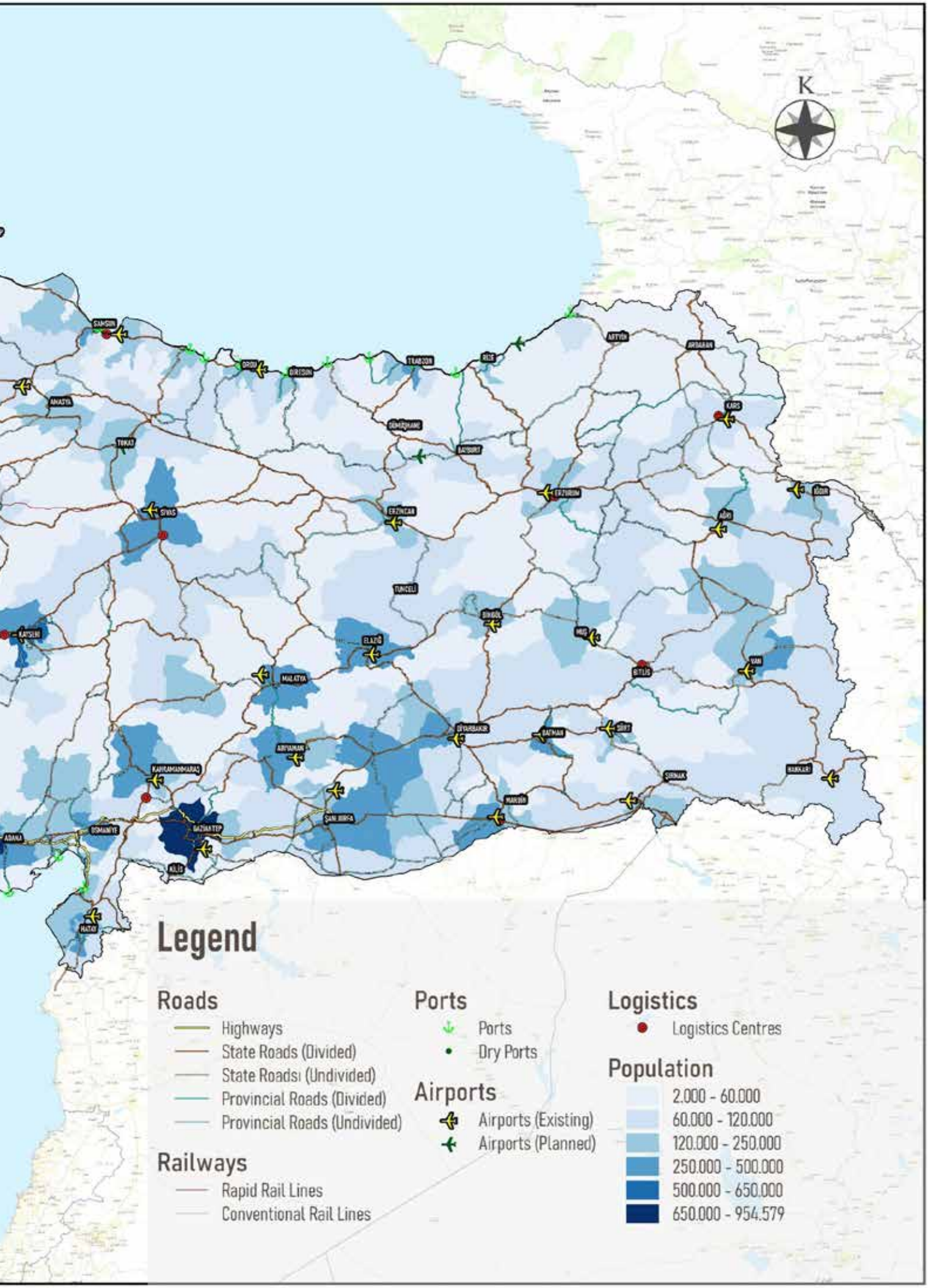
Transport and Logistic Master Plan for the Republic of Turkey



Legend

Roads

- Highways
- State Roads (Divided)
- State Roadsı (Undivided)
- Provincial Roads (Divided)
- Provincial Roads (Undivided)

Railways

- Rapid Rail Lines
- Conventional Rail Lines

Ports

- Ports
- Dry Ports

Airports

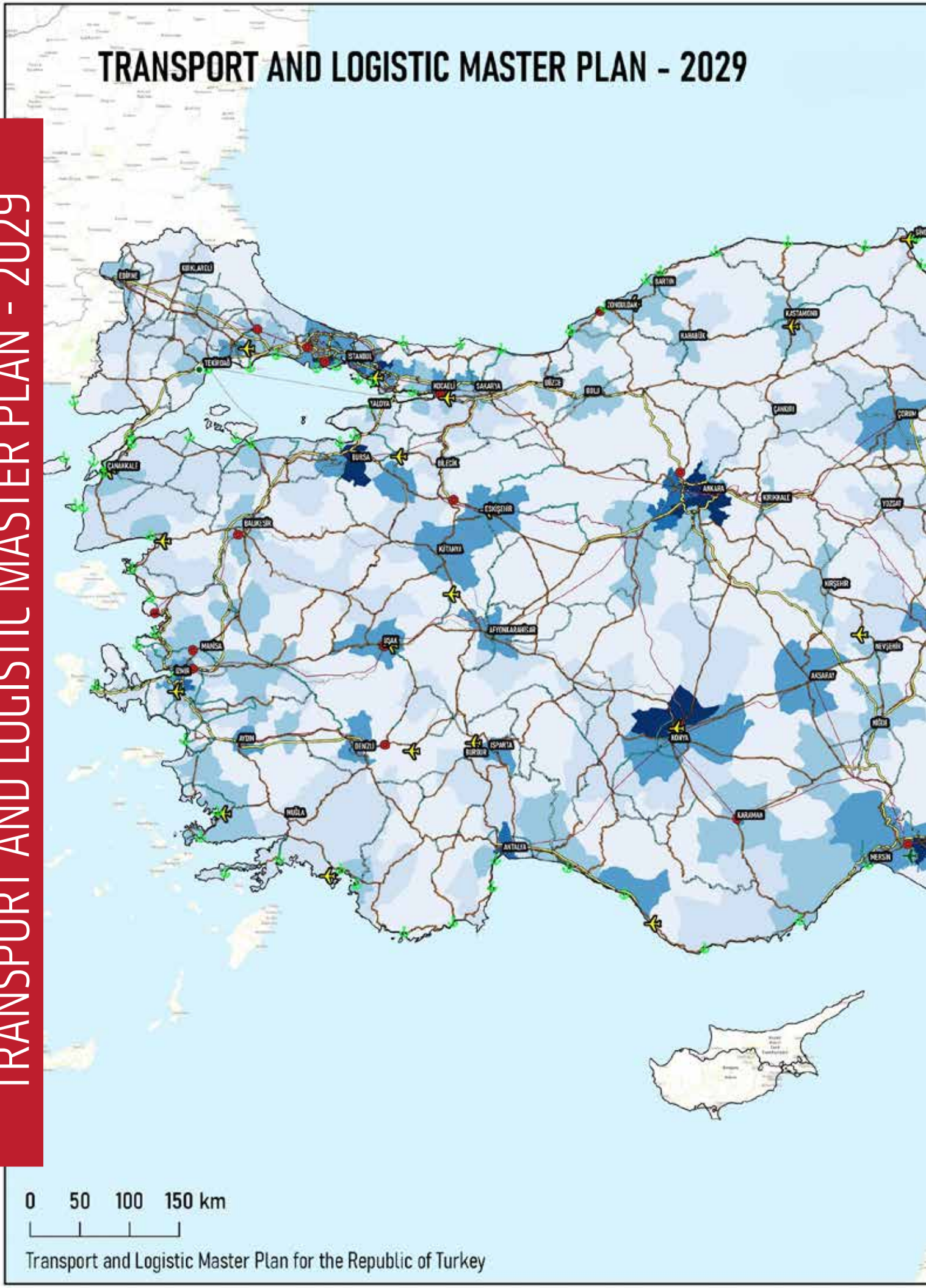
- Airports (Existing)
- Airports (Planned)

Logistics

- Logistics Centres

Population

- 2.000 - 60.000
- 60.000 - 120.000
- 120.000 - 250.000
- 250.000 - 500.000
- 500.000 - 650.000
- 650.000 - 954.579


TRANSPORT AND LOGISTIC MASTER PLAN - 2029
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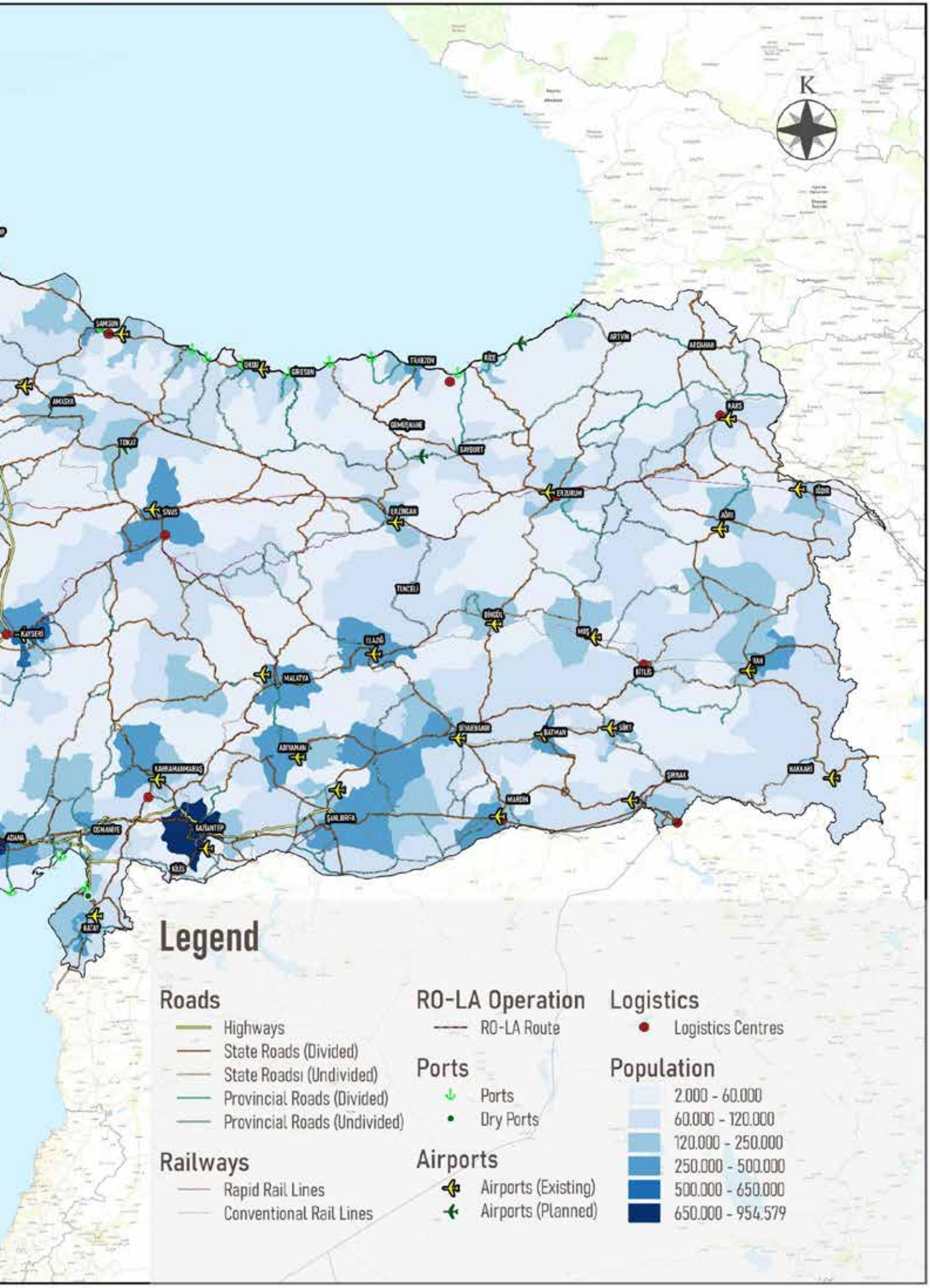
0 50 100 150 km
Transport and Logistic Master Plan for the Republic of Turkey



Legend

Roads
- Highways
- State Roads (Divided)
- State Roadsı (Undivided)
- Provincial Roads (Divided)
- Provincial Roads (Undivided)

Railways
- Rapid Rail Lines
- Conventional Rail Lines

RO-LA Operation
- RO-LA Route

Ports
- Ports
- Dry Ports

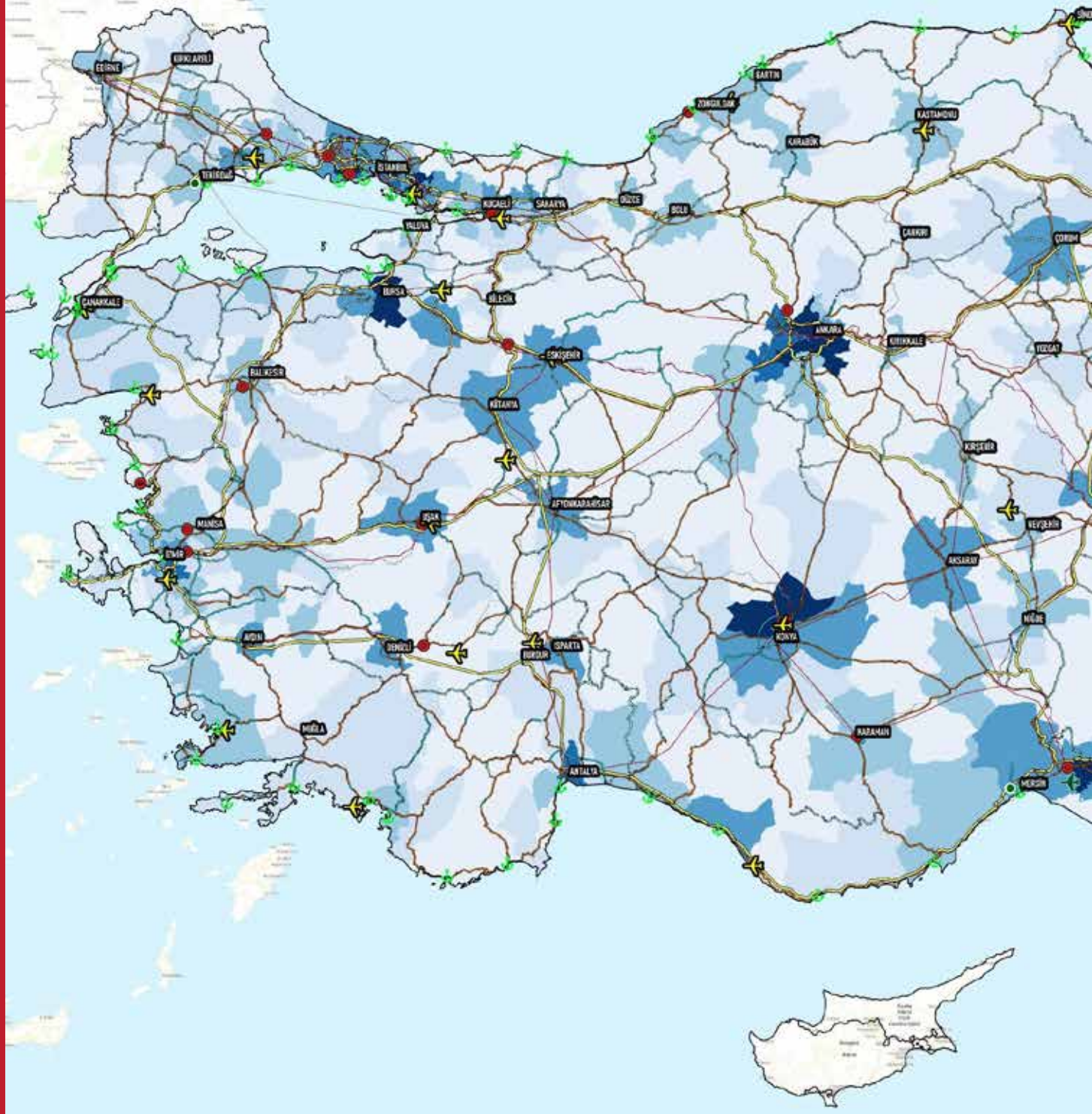
Airports
- Airports (Existing)
- Airports (Planned)

Logistics
- Logistics Centres

Population
- 2.000 - 60.000
- 60.000 - 120.000
- 120.000 - 250.000
- 250.000 - 500.000
- 500.000 - 650.000
- 650.000 - 954.579

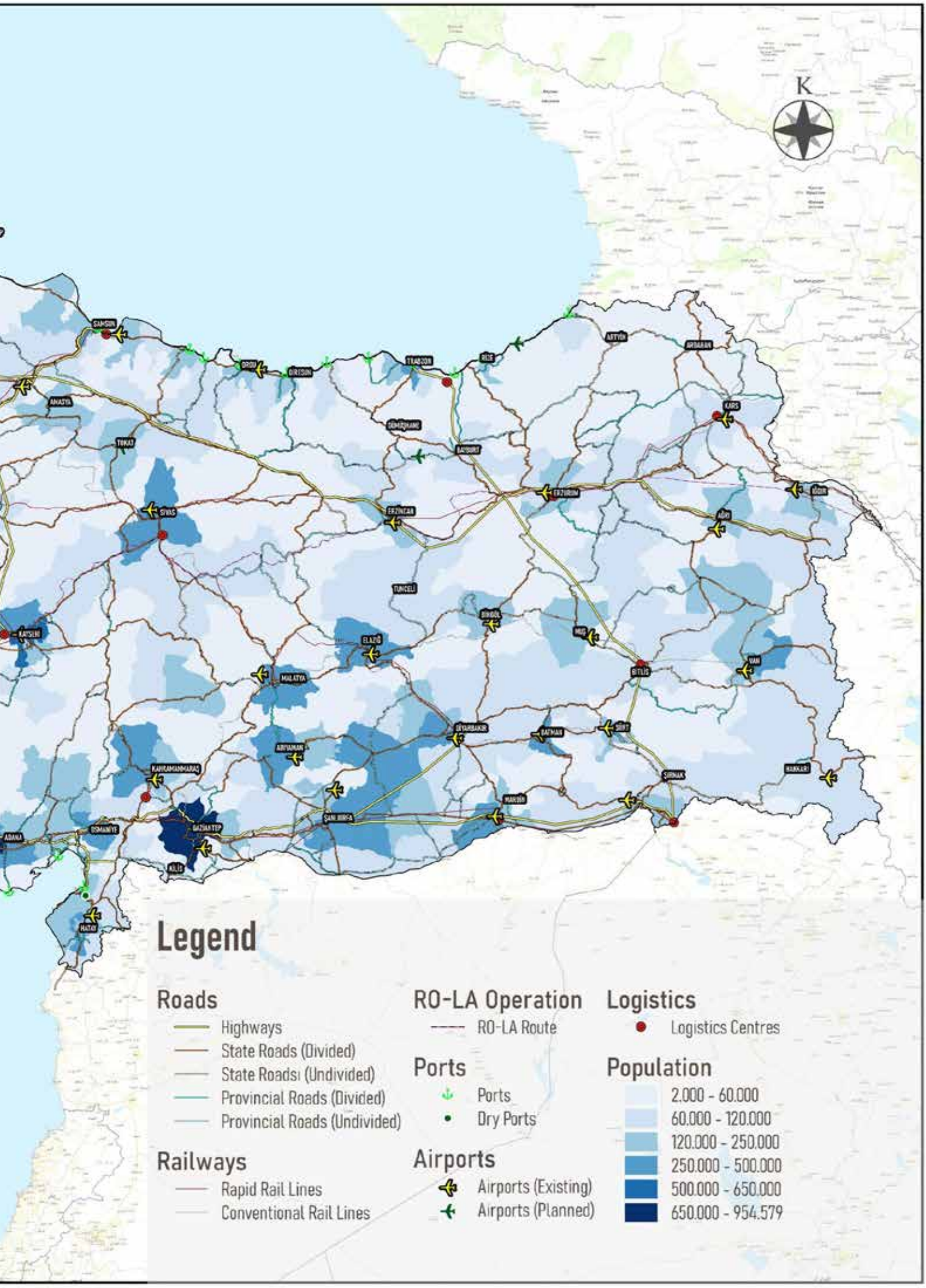
TRANSPORT AND LOGISTIC MASTER PLAN - 2035

TRANSPORT AND LOGISTIC MASTER PLAN - 2035



0 50 100 150 km

Transport and Logistic Master Plan for the Republic of Turkey



Legend

Roads
- Highways
- State Roads (Divided)
- State Roadsı (Undivided)
- Provincial Roads (Divided)
- Provincial Roads (Undivided)

Railways
- Rapid Rail Lines
- Conventional Rail Lines

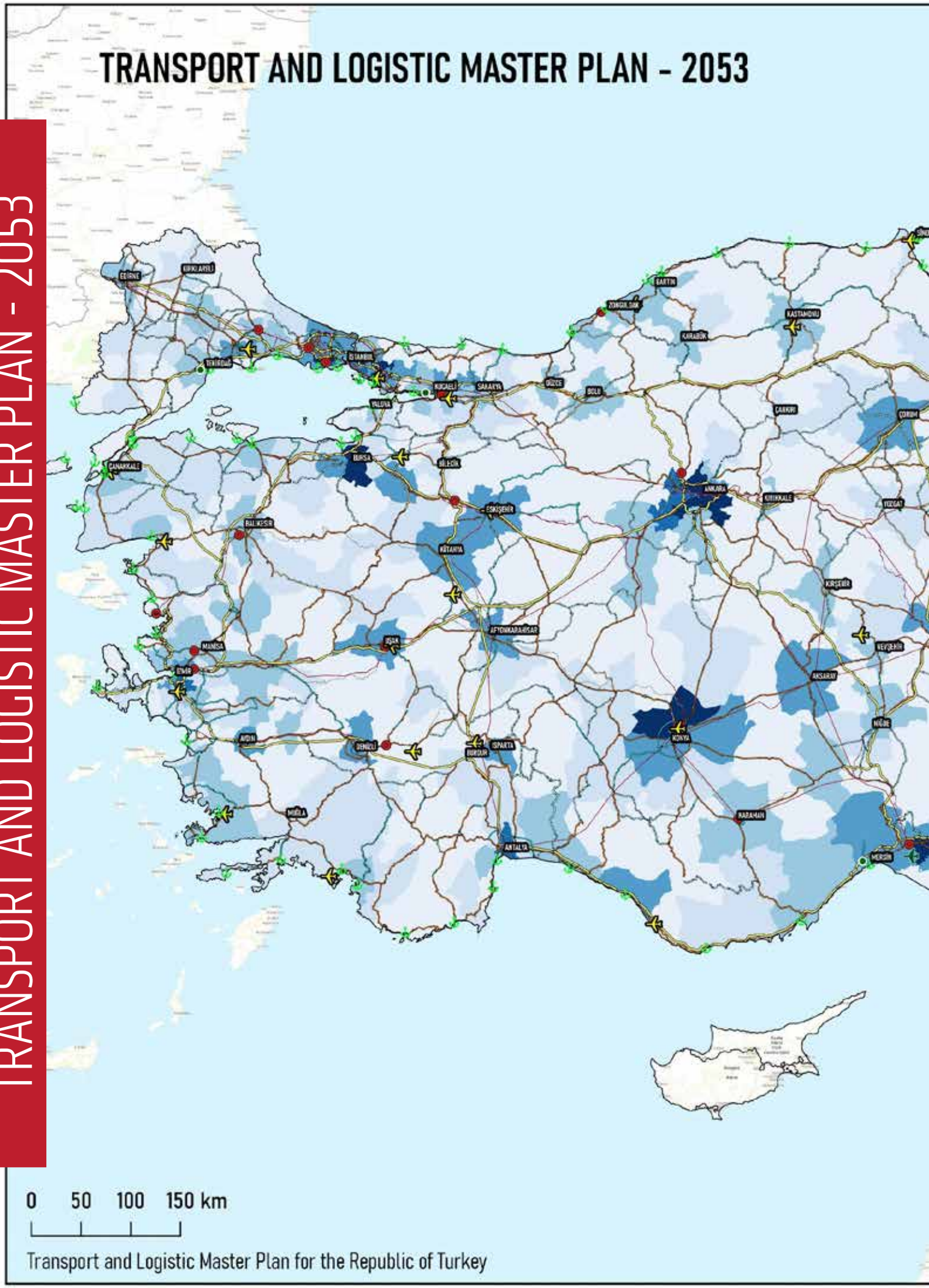
RO-LA Operation
- RO-LA Route

Ports
- Ports
- Dry Ports

Airports
- Airports (Existing)
- Airports (Planned)

Logistics
- Logistics Centres

Population
- 2.000 - 60.000
- 60.000 - 120.000
- 120.000 - 250.000
- 250.000 - 500.000
- 500.000 - 650.000
- 650.000 - 954.579


TRANSPORT AND LOGISTIC MASTER PLAN - 2053
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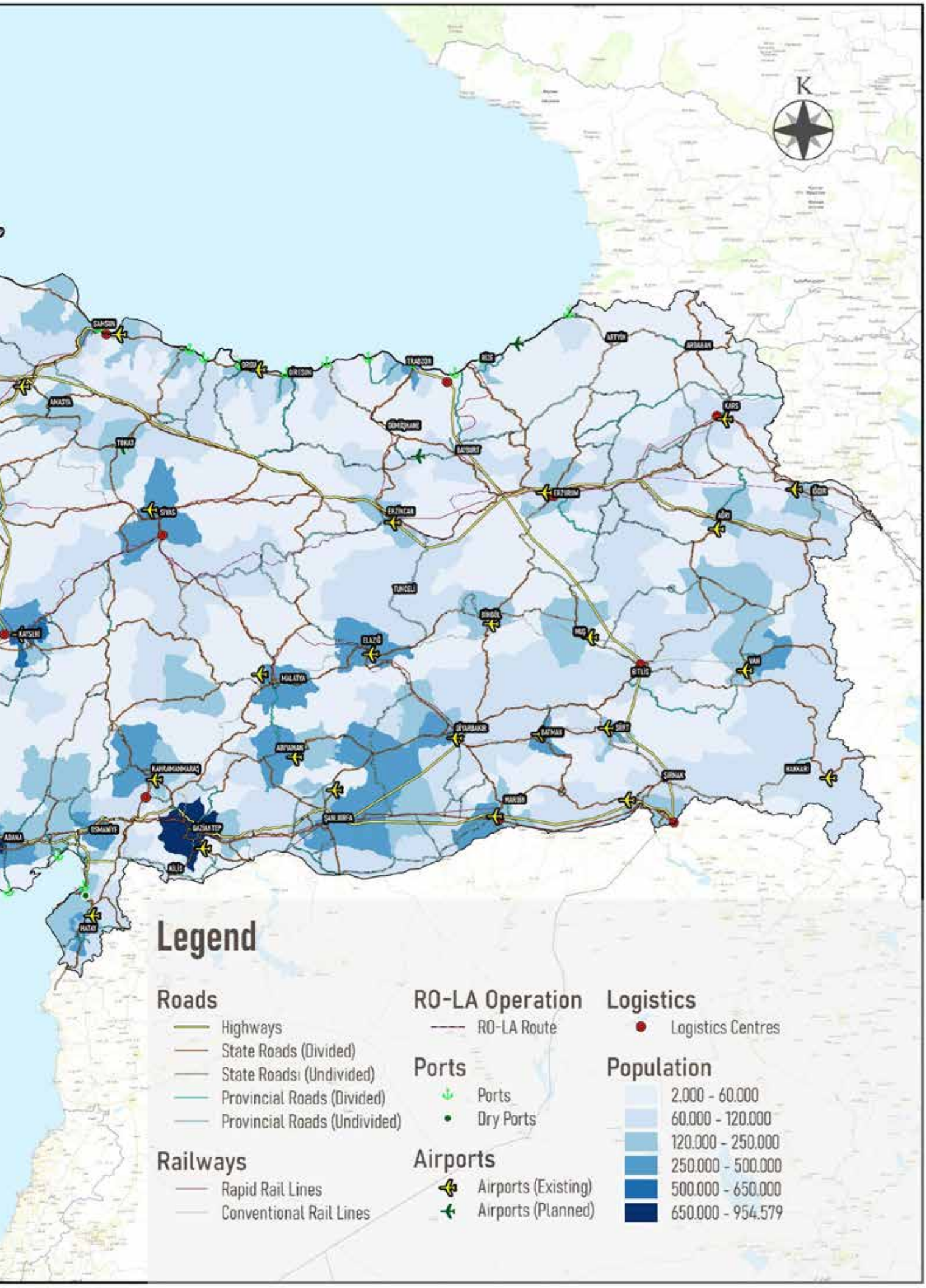
0 50 100 150 km
Transport and Logistic Master Plan for the Republic of Turkey



Legend

Roads
- Highways
- State Roads (Divided)
- State Roadsı (Undivided)
- Provincial Roads (Divided)
- Provincial Roads (Undivided)

Railways
- Rapid Rail Lines
- Conventional Rail Lines

RO-LA Operation
- RO-LA Route

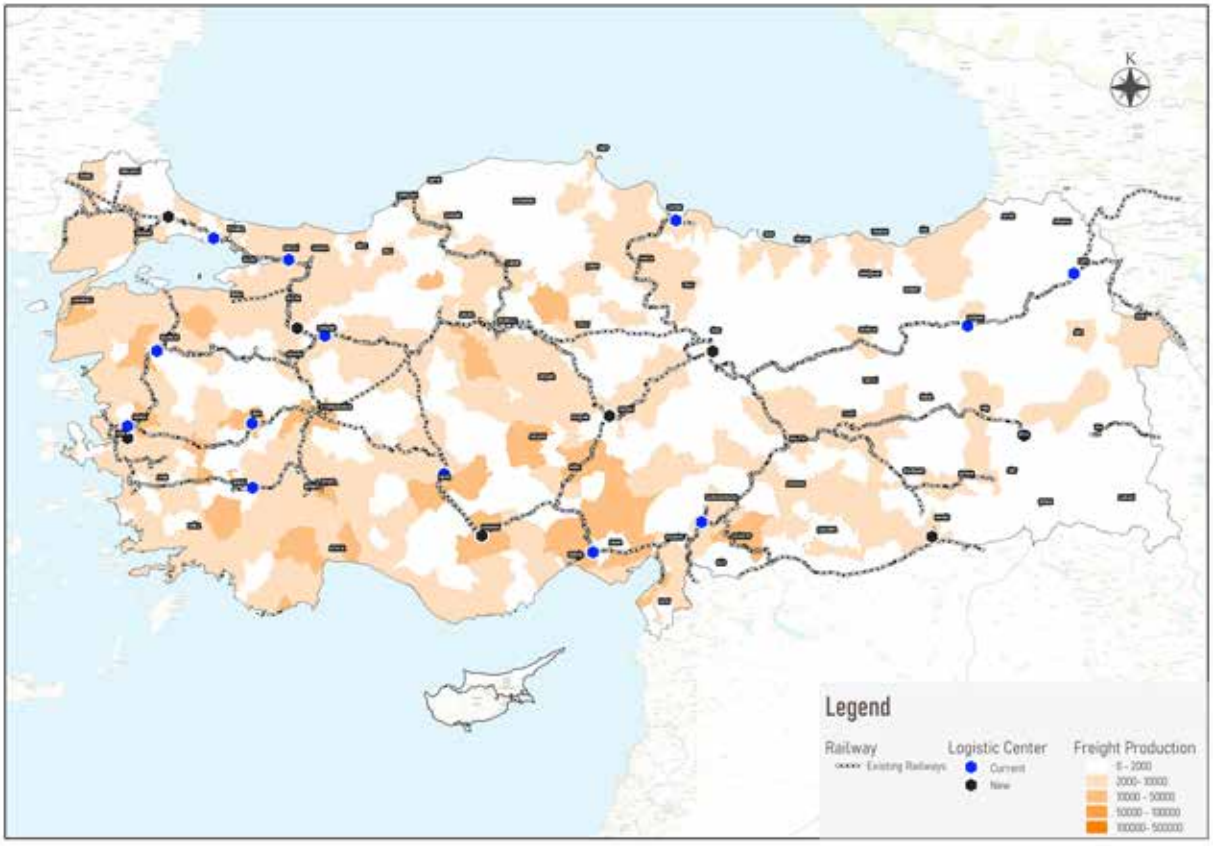
Ports
- Ports
- Dry Ports

Airports
- Airports (Existing)
- Airports (Planned)

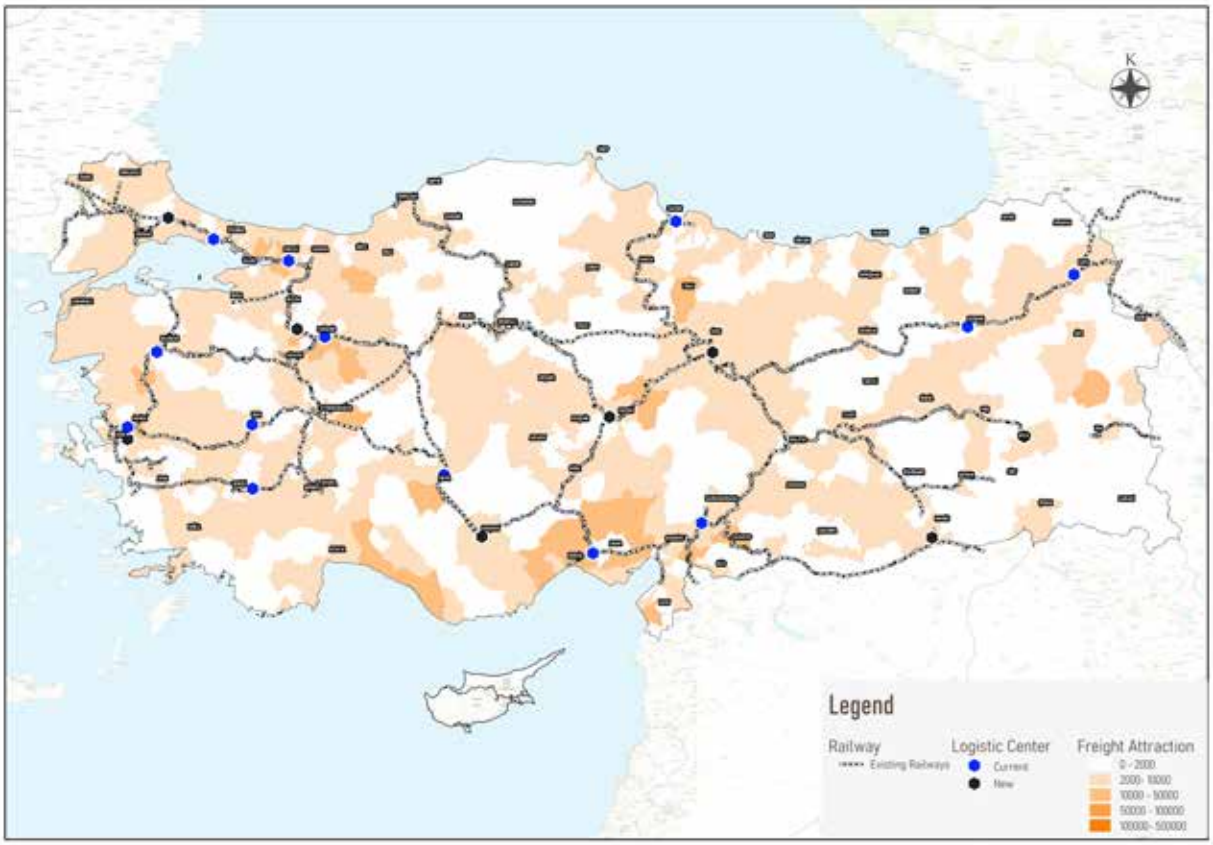
Logistics
- Logistics Centres

Population
- 2.000 - 60.000
- 60.000 - 120.000
- 120.000 - 250.000
- 250.000 - 500.000
- 500.000 - 650.000
- 650.000 - 954.579

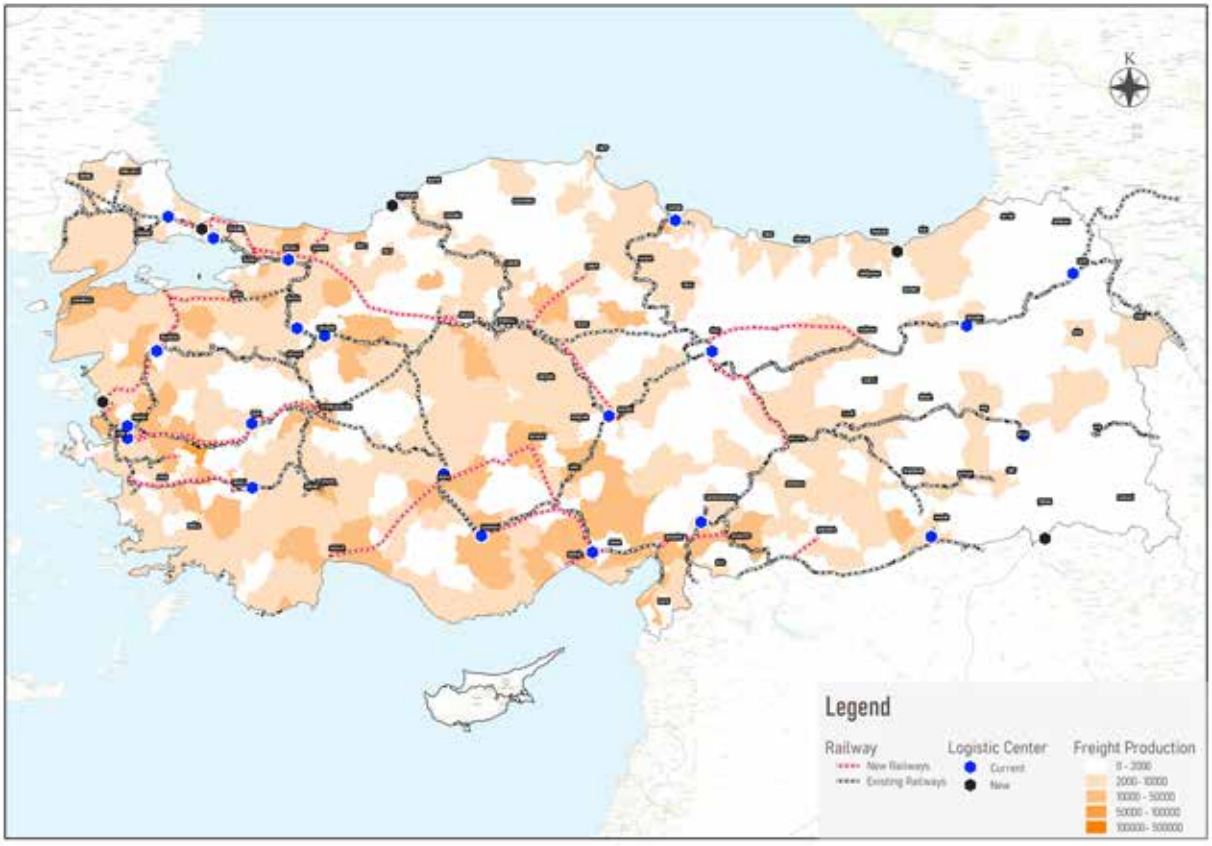
FREIGHT PRODUCTION - 2023



FREIGHT ATTRACTION - 2023



FREIGHT PRODUCTION - 2029



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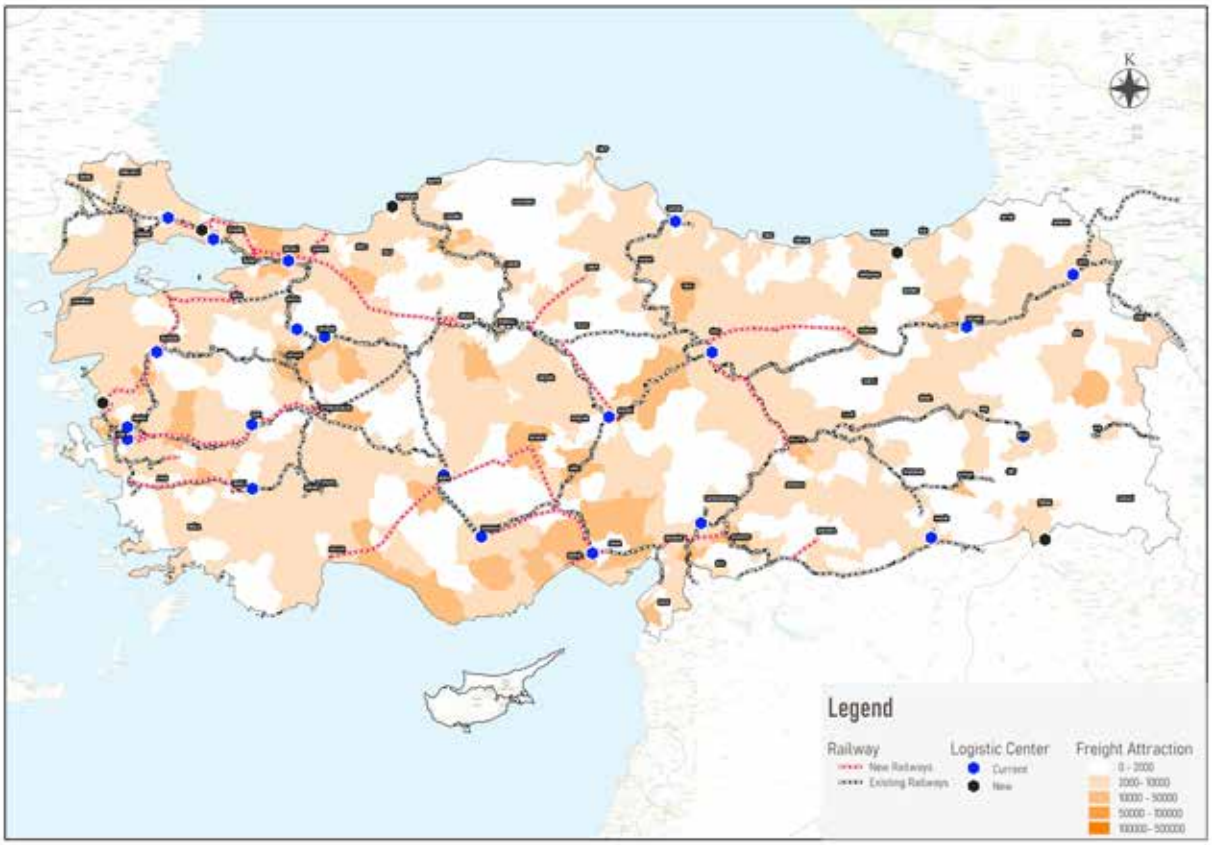
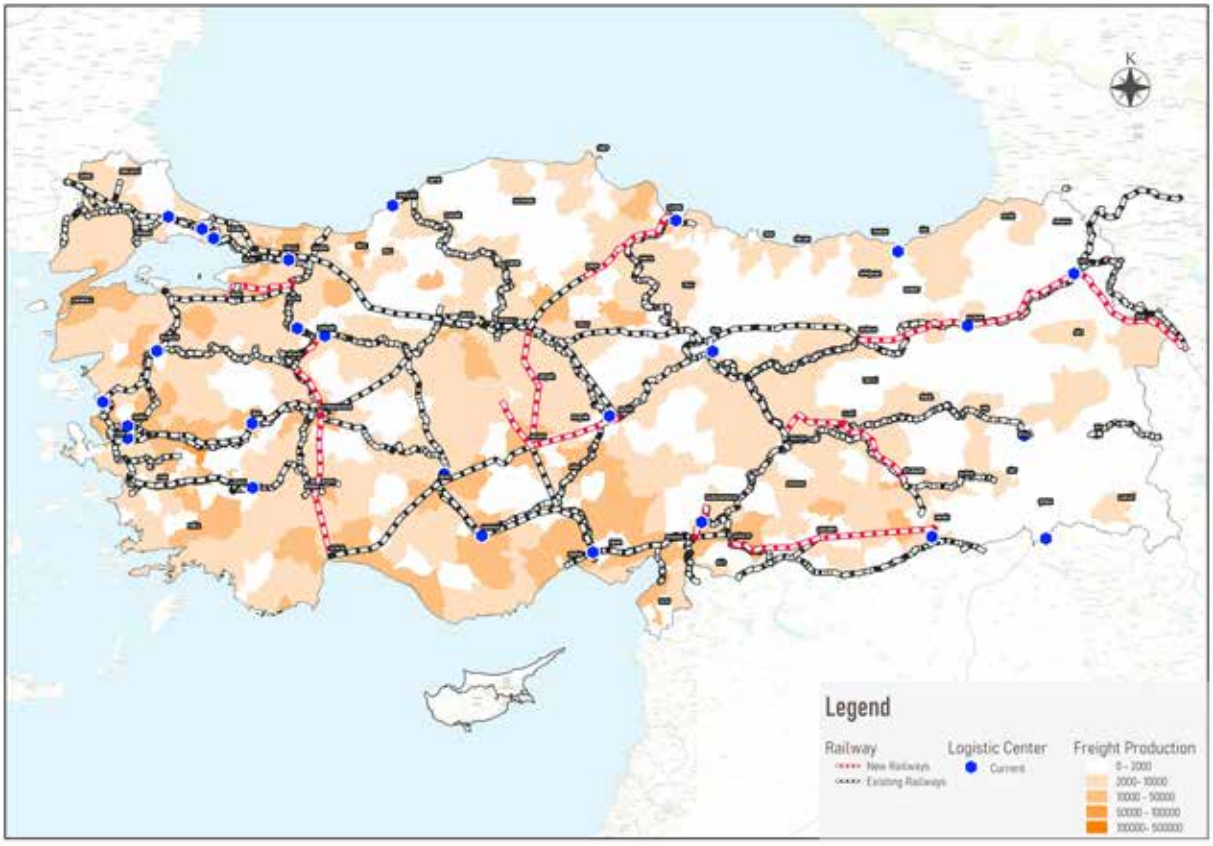
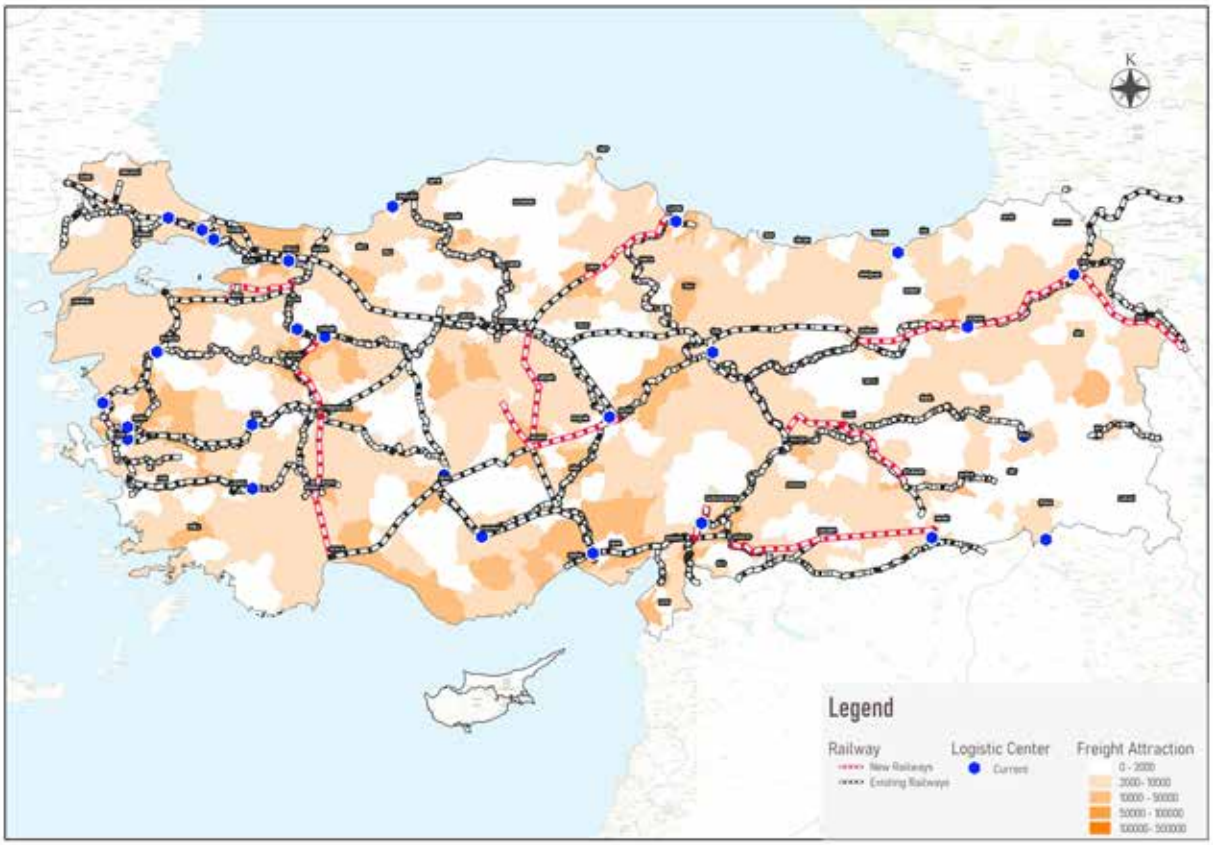


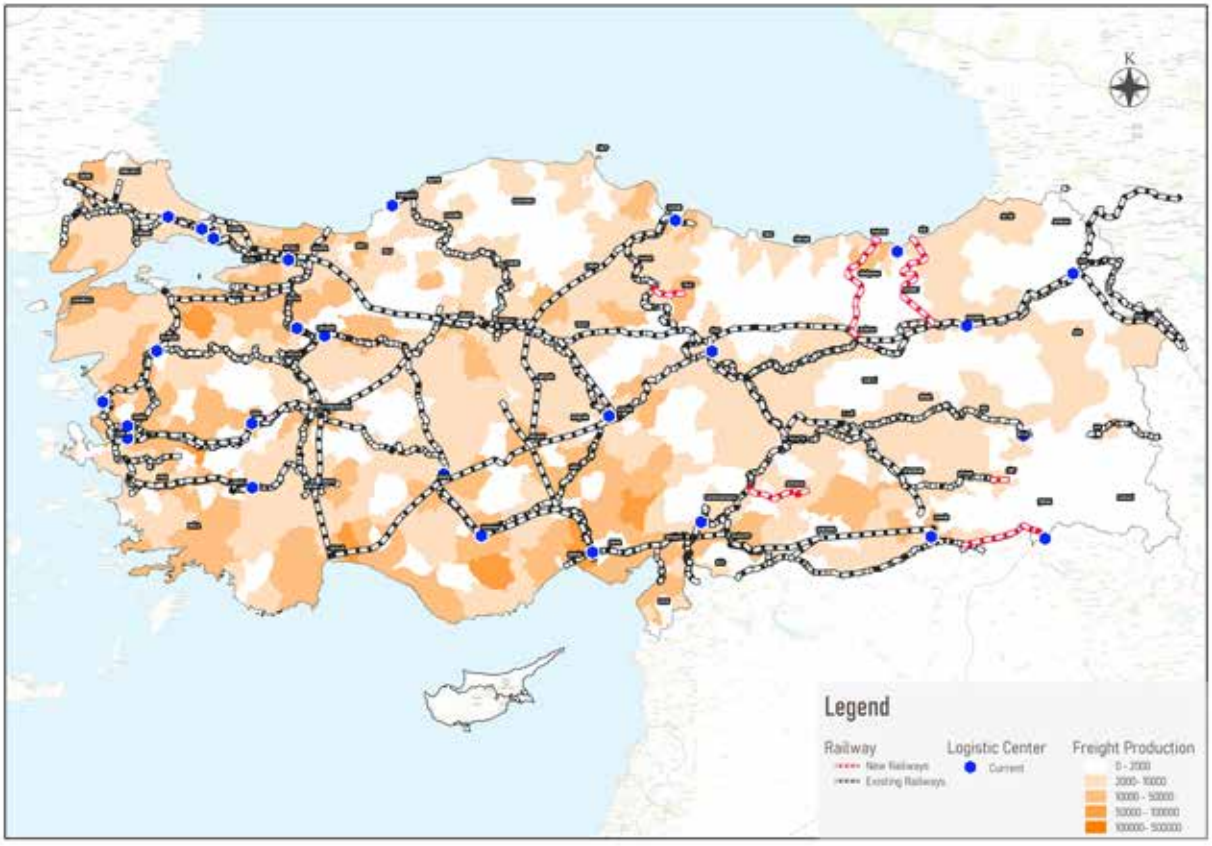
FREIGHT PRODUCTION - 2035



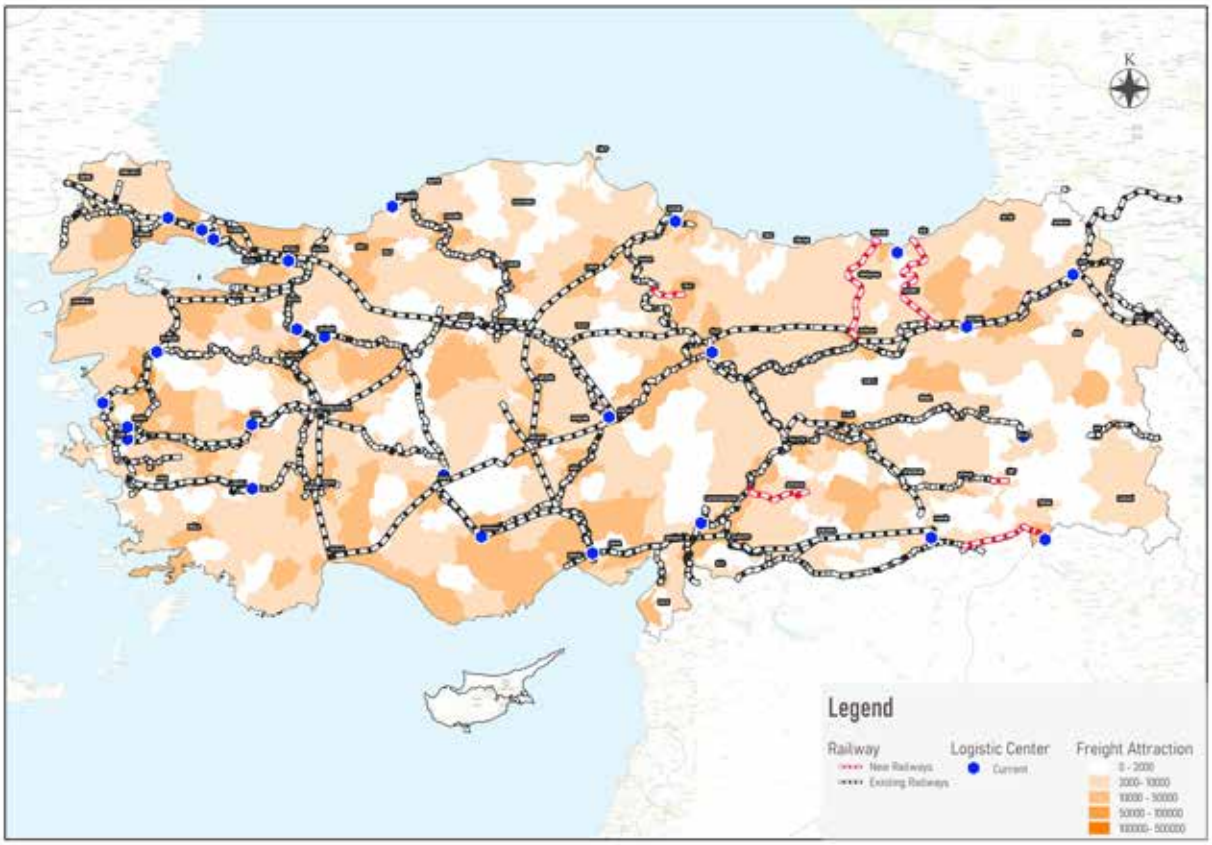
FREIGHT ATTRACTION - 2035



FREIGHT PRODUCTION - 2053

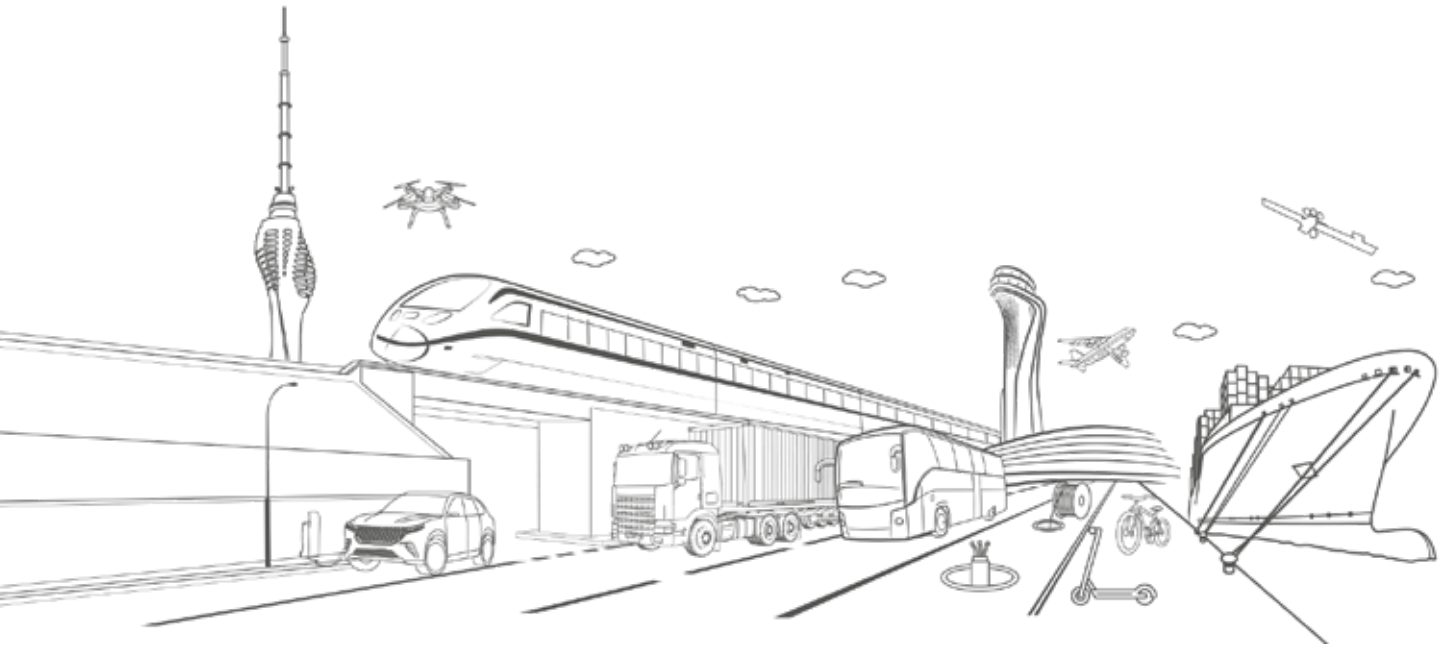


FREIGHT ATTRACTION - 2053



REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT AND INFRASTRUCTURE

DEPARTMENT OF STRATEGY DEVELOPMENT



2053
Transport and Logistic Master Plan

REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT
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