GAZIANTEP UNIVERSITY

FACULTY OF ARCHITECTURE

DEPARTMENT OF URBAN AND REGIONAL PLANNING

SPATIAL STRATEGY PLAN

Planning Studio-IV

Lecturers

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1. INTRODUCTION

Gaziantep stands out as one of Turkey's most prominent cities, with a deep-rooted historical background, a strong industrial base, and a strategic geographic location that connects Southeastern Anatolia to the Mediterranean. The city has become a regional hub for manufacturing, agriculture, logistics, and cultural tourism. However, rapid population growth, uncontrolled urban sprawl, increasing pressure on natural resources, and heightened disaster risks pose significant challenges to the city's long-term sustainability. In this context, a comprehensive and integrated spatial development strategy is needed—one that is grounded in the analysis of current physical and socioeconomic conditions and informed by long-term vision and planning principles.

This report aims to guide the sustainable development of Gaziantep by evaluating existing urban dynamics and proposing spatial strategies focused on managing urban growth, preserving ecological balance, enhancing transport and infrastructure systems, strengthening disaster resilience, and improving access to social services. The development of scenarios, objectives, and strategic actions presented in the report is based on data-driven analyses and shaped by a participatory and environmentally conscious planning approach. Through this framework, the city seeks to advance toward 2030 as a more resilient, inclusive, and livable urban center.

2. CURRENT CONDITIONS OF GAZIANTEP

2.1 Location and Boundaries

Gaziantep lies at a key junction between the Mediterranean and Southeastern Anatolia. Surrounded by valleys, plains, and mountains, it covers 6,222 km² and had a population of over 2.19 million in 2024. The city has grown rapidly since 1980, with most people living in Şahinbey and Şehitkamil districts. It also hosts a large Syrian refugee population.

Map 1:Gaziantep Location

Despite lacking a coastline, Gaziantep is well connected via highways, railways, and air travel. It experiences a continental climate and has been a metropolitan municipality since 1987. Key historical landmarks include Gaziantep Castle and Rumkale.

2.2 Urban Development and Planning History

Gaziantep's urban growth, rooted in its Silk Road heritage, accelerated after joining the Ottoman Empire in 1516 and gaining "Gazi" status in 1921. Key planning milestones include:

- 1938 (Jansen Plan): First comprehensive plan, focused on structured growth and green spaces.
- 1955 Plan: Continued Jansen's vision; suburban expansion began.
- 1973 Plan: Supported industrial growth; city expanded westward.
- 1990 Plan: Anticipated 1.8 million residents; introduced ring roads and trade centers.

Environmental plans in 2011 and 2023 added zoning updates and new university area proposals.

Gaziantep is one of the oldest inhabited cities in Anatolia and holds a strategic position on the historic Silk Road. It is a major center for gastronomy and was recognized by UNESCO in 2015 for its rich culinary culture.

Cultural attractions include:

- Zeugma Mosaic Museum, one of the largest of its kind.
- Gaziantep Castle, dating back to Roman times.
- Historical sites like Rumkale and Dülük, and the Mithras Temple.
- Unique architecture such as kastels (ancient water systems).
- A thriving zoo and botanical garden.

Religious, nature, and congress tourism are also significant sectors. Despite a drop in visitors during the COVID-19 pandemic, Gaziantep remains a popular domestic and international destination.

Tourism in Gaziantep (Shortened):
In 2019, Gaziantep welcomed nearly 900,000 visitors, though numbers dropped by over 40% in 2020 due to the pandemic. Domestic tourism remains strong, with international visitors mainly from Iraq, Germany, Iran, the U.S., and Italy. Around 430,000 guests stayed in licensed facilities in 2020, averaging 1.5 days.

Key Attractions:

- Historic Sites & Museums: Zeugma Mosaic Museum, Yesemek, Dülük, Carchemish, and Rumkale.
- UNESCO Sites: Zeugma, Yesemek Quarry, and Livas/Kastels on the tentative list.
- Zeugma Museum: Home to the iconic Gypsy Girl mosaic.
- Gaziantep Castle: Roman-origin, expanded in Byzantine era.
- Kastels & Dülük: Unique ancient water systems and Mithras Temple.
- Rumkale: Scenic fortress at Euphrates-Merzimen confluence.
- Nature: Botanical Garden (30,000+ species), Türkiye's largest zoo.
- Congress Tourism: Strong infrastructure for fairs and conferences.
- Handicrafts: Famous for mother-of-pearl, copper, and silver artisanship.

2.3 Climate and Environmental Conditions

Gaziantep experiences a mixed Mediterranean-continental climate, with hot, dry summers and cold, rainy winters. The average annual temperature is 15.2°C, with extremes ranging from -17.5°C in winter to 44°C in summer.

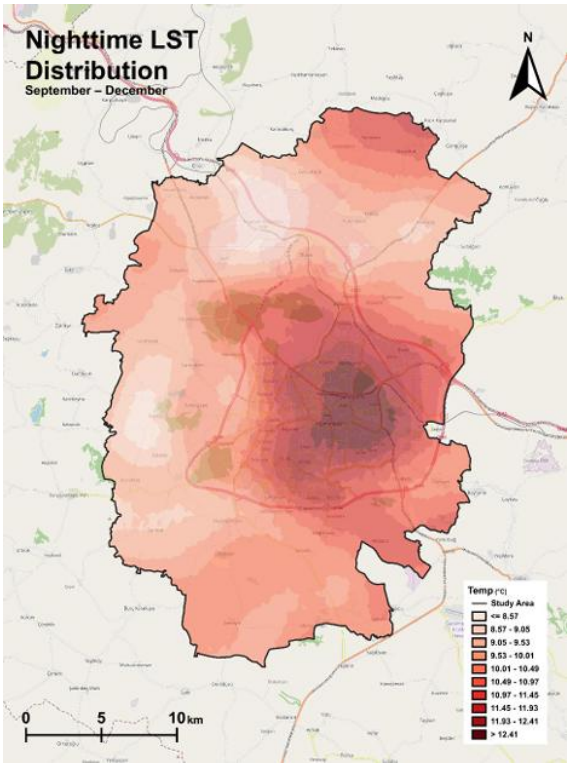
Effects of Climate Change:

Over the past 50 years, temperatures have risen by 2°C, while rainfall has decreased from 480 mm to 390 mm annually. This has led to increased drought and pressure on water resources. In recent years, sudden rainstorms have caused urban flooding due to inadequate drainage systems.

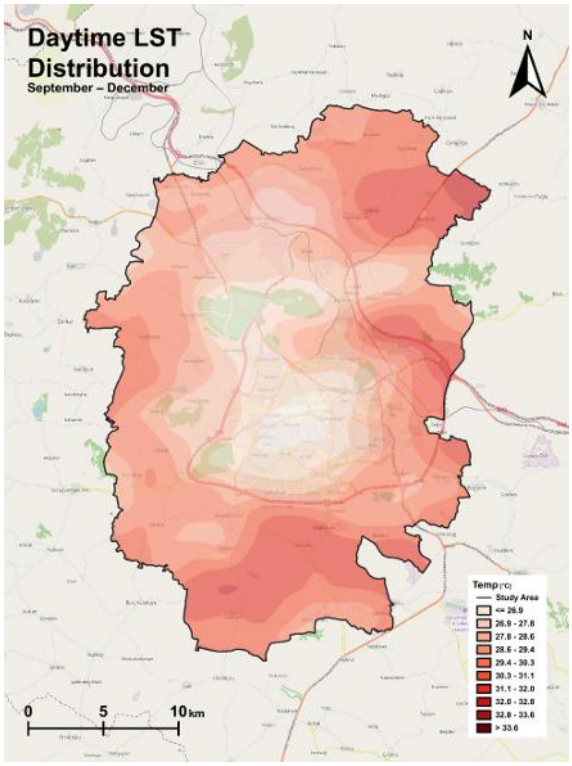
District Variations:

- İslahiye receives the most rainfall (821 mm/year), while Nizip receives the least (around 380 mm/year).

- Central districts like Şahinbey and Şehitkamil suffer from the urban heat island effect, caused by dense construction and limited green spaces.



Map2 :Nightime Land Surface Temperature Distribution



Map3 :Daytime Land Surface Temperature Distribution

Temperature Distribution:

- Daytime: City center surfaces can exceed 24°C, while rural areas stay below 19°C.
- Nighttime: Urban areas remain warmer due to heat-retaining materials like asphalt.

  Daytime Land Surface Temperature Distribution (Period, September-December)

2.4 Urban Transformation

Urban transformation in Gaziantep has gained momentum since the 2000s as a response to outdated, risky, or unplanned urban areas. With support from national laws (like Law No. 6306 on disaster-prone zones), the municipality has been active in renewal and rehabilitation efforts.

Key Focus Areas:

1. Revitalizing Obsolete Industrial Zones
   – For example, converting old production areas in Ünaldı into modern housing and commercial zones.
2. Replacing Unsafe and Substandard Housing
   – Targeting neighborhoods such as Çıksorut, Türktepe, İpekyolu, and Barak for transformation. These projects vary in size, from 8 to over 500 hectares.
3. Managing Urban Growth
   – Directing development in areas facing growth pressure, such as Bağlarbaşı, Sarıgüllük, Halep Boulevard, and Kilis Road, to avoid unplanned sprawl.

These initiatives are part of a broader vision to modernize the city while improving safety and living standards.

2.5 Industry and Trade

Located near the Syrian border and connected to Mersin Port, Gaziantep has naturally evolved into a key industrial and trade center for southeastern Turkey. It serves as a vital bridge between eastern and western parts of the country.

Industrial Development:

- Gaziantep ranks first in development among Southeastern Anatolian provinces.
- Its industrial roots trace back to the Ottoman era. While no major public investments were made in early Republican years, private enterprise flourished, especially after the 1930s Industrial Encouragement Law.
- As of the 1927 industrial census, it was already Turkey's 7th largest industrial city.

Today, Gaziantep is among Türkiye's industrial giants, particularly in:

- Textile and Carpet Manufacturing
- Food Processing (notably lentils, bulgur, pistachios)
- Plastics, Metal, and Machinery
- Leather Goods and Footwear

Organized Industrial Zones (OIZs):

- There are 5 OIZs in the city.
- The main OIZ is the largest in Turkey, covering over 43 million m^2, employing around 240,000 people in more than 1,100 companies.
- Monthly energy use is significant, highlighting the city's massive industrial scale.

Exports and Economic Role:

- Gaziantep exports to over 175 countries, with trade exceeding 8 billion dollars annually.

- It plays a leading role in Turkey's carpet exports and contributes heavily to national manufacturing.

Trade Sector

Gaziantep is one of Türkiye's top exporting cities. In 2022, its exports exceeded $10.5 billion, a figure larger than the GDP of many countries. Known as the country's carpet production hub, it exports to more than 190 countries, with the Middle East accounting for nearly $1.9 billion of that total. The carpet sector alone contributed $2.75 billion in exports.

Gaziantep has maintained a steady export-oriented economy in recent years. Its major export goods include textiles, carpets, grains, pulses, chemicals, and wood products. Imports, on the other hand, consist largely of machinery, electronics, chemicals, and raw materials needed for its industrial base.

Agriculture and Livestock

Thanks to its favorable soil and climate, Gaziantep is a leader in agricultural production. It provides:

- Around 90% of Türkiye's pistachios
- 85% of lentil processing and exports
- 70% of national bulgur production
- Over 75% of fresh garlic and mint

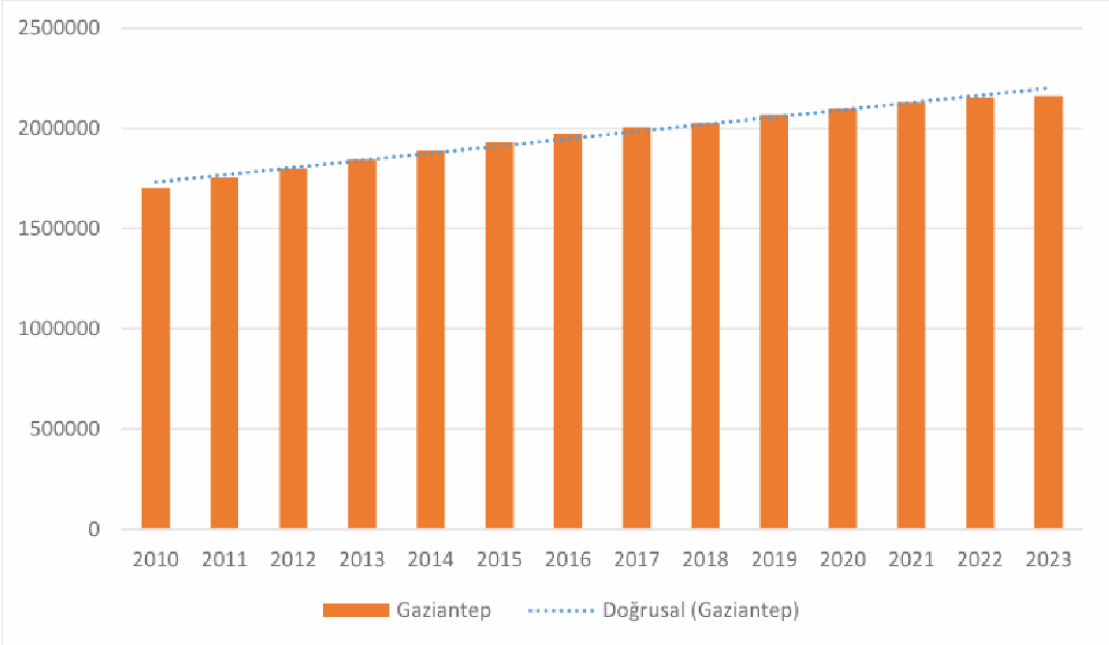
The region is also strong in grain farming, including wheat, barley, lentils, and chickpeas, which make up most of its cultivated land.

The livestock sector has seen steady growth. By 2024, the number of small cattle reached 849,000, reflecting a recovery after the COVID-19 period and a general upward trend since 2016.

2.6 Social Structure

Population and Demographics

As of 2023, Gaziantep's population was 2.21 million, with more than 85% living in urban areas—mainly in Şahinbey and Şehitkamil districts. The city ranks sixth nationally by population and has seen 72% growth since 2000, driven by internal migration and economic opportunity.



Graphic 1: Population Growth of Gaziantep by Years

The city is home to over 400,000 Syrian refugees, making up about 14% of the total population. Projections show Gaziantep may reach 2.6 million residents by 2050, increasing pressure on housing, infrastructure, and public services.

Gaziantep has a young population, especially in the 0–14 age group. Older age groups, especially women over 70, are more prominent in central areas, while working-age men are more concentrated in industrial zones and outskirts.

Migration Trends

Gaziantep has long been a city of migration. Between 2010–2017, it saw high inward migration, but since 2018, outward migration has increased. In 2023, about 75,000 people left, the highest number on record. Contributing factors include:

- Job opportunities in the west of Türkiye
- Post-earthquake displacements in 2023
- Ongoing pressure from refugee inflows

Cities like Istanbul, Ankara, Adana, and Izmir are the top destinations for people leaving Gaziantep.

Economy and Labor Market

Gaziantep has an active workforce. As of 2023:

- Labor force participation: 49.7%
- Employment rate: 44.4%
- Unemployment rate: 10.7%

Male participation and employment are significantly higher than female rates, reflecting broader national patterns.

Income and Living Standards

Gaziantep's per capita income was 232,100 TL in 2023, which is below the national average of 311,000 TL. Income levels closely correlate with educational attainment.

Healthcare Access

Gaziantep has expanded its healthcare infrastructure, including new public and private hospitals. Bed capacity grew from 4,000 in 2009 to nearly 10,000 in 2022. Despite this, challenges like long wait times, staff shortages, and a relatively high infant mortality rate (17 per 1,000) persist.

Household and Transport Trends

The average household in Gaziantep has 3.7 people, above the national average, due to traditional family structures and high birth rates.

In terms of transport, the number of registered vehicles has increased rapidly. By 2023, there were 305,000 cars and 154,000 motorcycles, reflecting a growing preference for private transport.

2.7 Natural Environment

Gaziantep is a mix of plateaus, valleys, and mountains. The Sof Mountains and Euphrates Valley are key landforms. Fertile plains in areas like İslahiye and Barak support agriculture.

The region's geology includes sedimentary and volcanic layers. Soils are mostly clay-based and alkaline, with low organic content, which can affect long-term fertility.

Forests cover only about 15% of the land, mostly concentrated in the northern and western districts. Afforestation efforts, such as "honey forests," aim to expand this coverage.

2.8 Hydrology

2.8.1 Water Resources:

Gaziantep primarily relies on groundwater to meet its drinking and agricultural needs. This water is extracted from aquifers located in the surrounding valleys and plains. The productivity of these aquifers depends on the geological formations, with output ranging between **2 to 10 liters per second**. However, in certain areas, **moderate to** high salinity levels are present, which limits groundwater use for irrigation unless it undergoes treatment.

In addition to groundwater, Gaziantep is supported by surface water sources, including rivers and natural springs.

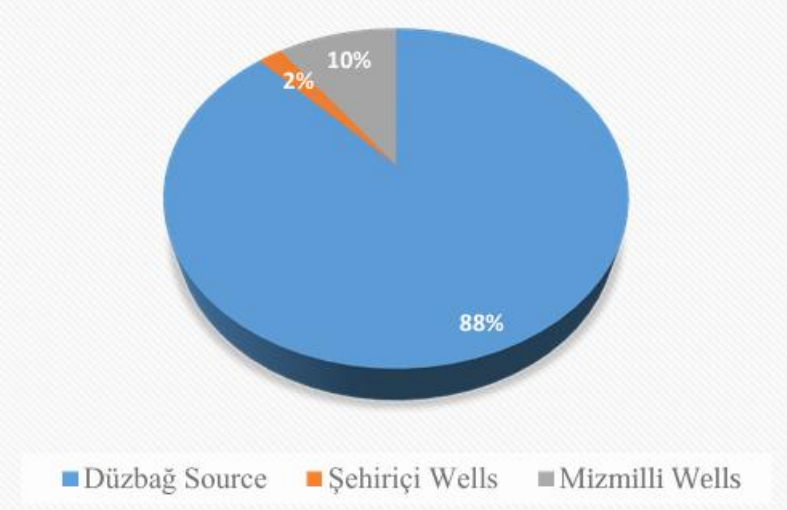
2.8.2 Rivers:

- **Tüzelsuyu** originates from the southwest of the region and flows into **Kayacık Dam**, after joining the Bahre stream.
- **Sacırsuyu** begins west of Gaziantep's city center and flows south into Syrian **territory**, with an average flow rate of 2.421 m^3/s.

The region also has several important **springs**:

- **Kırkgöz Spring**: Used for both drinking and irrigation; has a high flow rate of 304,501 liters/second.
- **Aynafar Spring**: Feeds Kayacık Dam and is also used for drinking and irrigation.
- **Karpuzatan Spring**: Mainly used for irrigating agricultural lands.
- **Akpınar (Cağdın) Spring**: Supports both drinking and irrigation needs.
- **Enehacı Spring**: A seasonal spring that often dries up during droughts; used for irrigation.
- **Çapalı Spring**: Provides **43 liters/second** and is used for irrigation.

Water Resource Distribution in Gaziantep:



Graphic2 :Distribution of Water Supplied to Gaziantep

2.9 Pollution

Gaziantep faces several types of environmental pollution:

Air Pollution

Air quality deteriorates especially in winter and around industrial zones. Major contributors include:

- Industry (35%)
- Transport (28%)
- Residential heating

PM2.5 levels in Şahinbey are considered unhealthy, and in industrial zones, they reach "poor" levels. Areas with more greenery show improved air quality.

Water Pollution

Industrial and domestic waste are the main sources. The city has 15 treatment plants, including advanced biological systems. Treated water is discharged into streams like Samözü.

Soil Pollution

Excessive fertilizer use and past industrial incidents have degraded soil quality and polluted groundwater in some areas.

Waste Management

Roughly 2,000 tons of solid waste are produced daily. Main storage is at Mazmahor Uzundere, but collection issues in districts like Şahinbey and Şehitkamil result in odor problems. Recycling remains limited, and existing landfill capacity is nearing its limit.

Noise Pollution

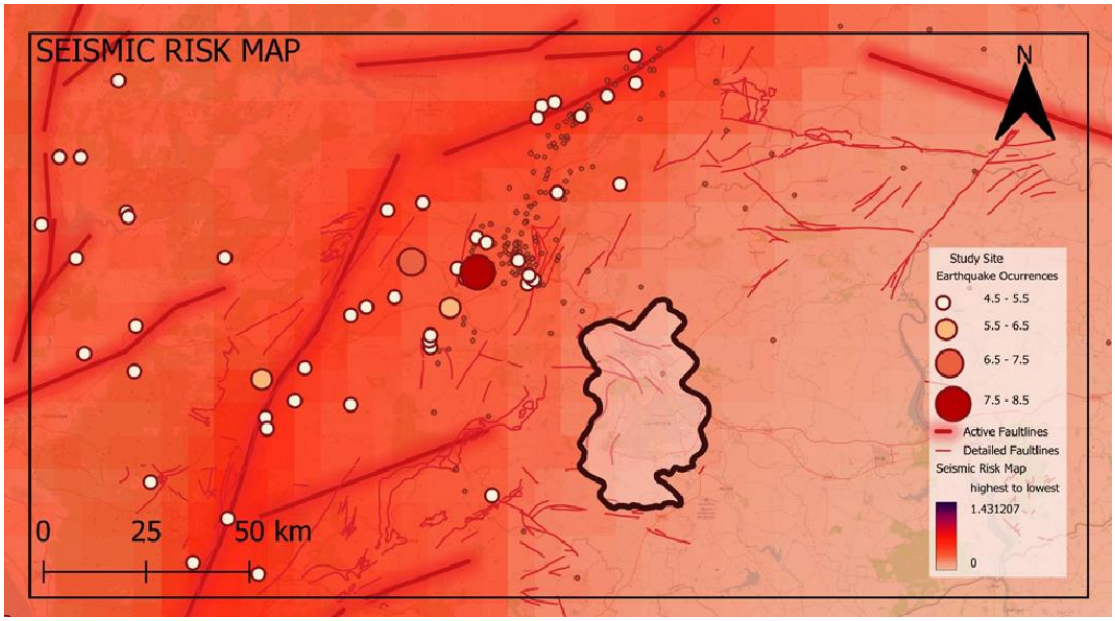
In Gaziantep, noise mainly comes from traffic, industry, and construction. Districts such as Şehitkamil, Şahinbey, and Nizip experience road noise reaching 75–85 decibels, while in organized industrial areas, industrial noise can go as high as 95 decibels.

2.10 Disaster Risk

Gaziantep is located in a region with high earthquake risk, while risks from floods and landslides are relatively low.

Earthquakes

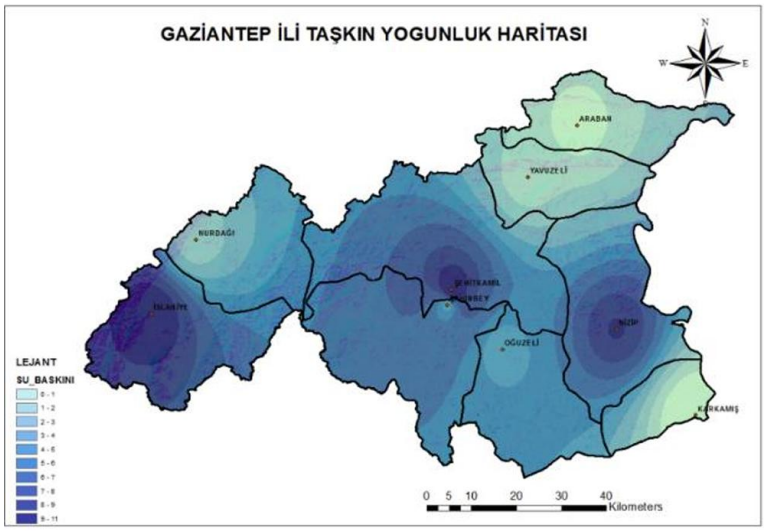
The city lies near a major fault line between the Arabian and Anatolian tectonic plates. The devastating earthquakes on February 6, 2023, caused widespread damage and thousands of deaths. Many buildings in the city are old or structurally weak, increasing vulnerability in future earthquakes.



Map 4:Seismic Risk

Floods

Flooding is uncommon and usually mild. Risk areas include İslahiye, Şehitkamil, and Nizip. Recent infrastructure upgrades—especially around Alleben Stream—have reduced risks in the city center.



Map 5:Flood risk in Gaziantep

Landslides

Rare and mostly outside the city. Some incidents have occurred in İslahiye and Nizip, typically after heavy rains or earthquakes.

Drought

Gaziantep faces serious drought risk due to dry summers, rising temperatures, and poor water use in agriculture. Water availability is becoming a growing concern.

Suggestion: Invest in smart irrigation and educate farmers on better water usage.

Climate Change

Rising heat and falling rainfall threaten the region's water balance and farming. Gaziantep is shifting toward a hotter, drier climate, increasing the frequency of extreme weather.

What's needed: Stricter environmental regulations, support for green projects, and public awareness campaigns.

2.11 Transportation and Infrastructure

Transportation

Roads

Gaziantep sits on important regional routes. Key highways include:

- O-52: Connects to Adana and Şanlıurfa
- O-54 (Ring Road): Eases city traffic
- D-400 & D-850: Connect to Mersin, Malatya, and the Black Sea

Major city boulevards like Abdulkadir Aksu and University Boulevard help connect districts.

Planned Road Projects:

- New 126 km ring road around the city
- Dülük–OSB tunnel to link industrial zone with the center
- Dörtyol–Hassa highway to shorten distance to İskenderun Port

Traffic Issues

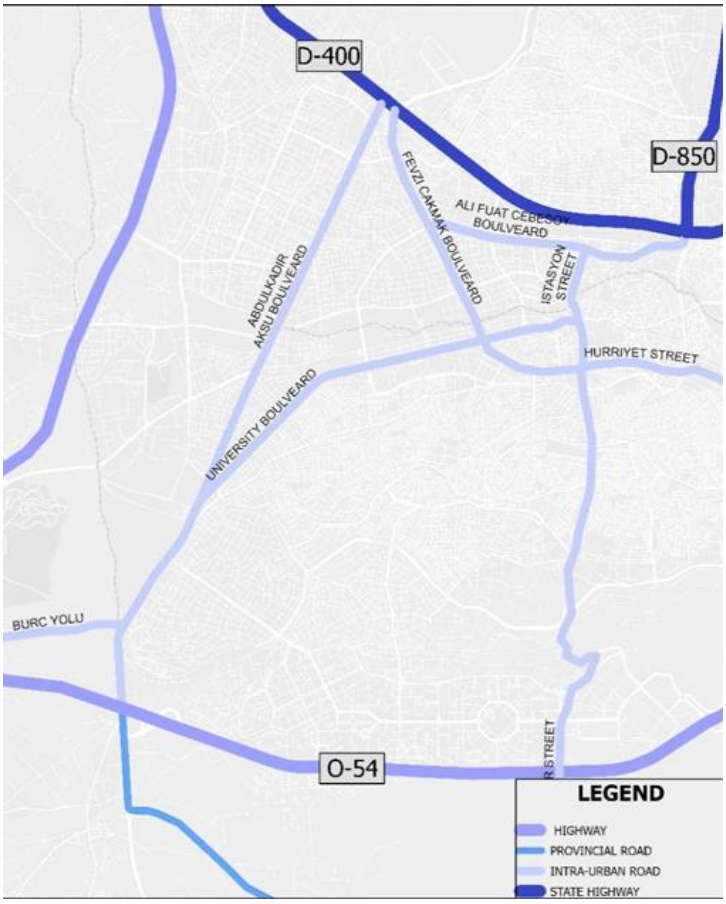
Heavy use of private cars, limited public transit, and construction-related delays have made traffic a major issue. In 2022, Gaziantep ranked among the slowest cities in traffic flow globally.

Rail

Gaziantep joined Türkiye's rail network in 1954. The Gaziray project has expanded local services and modernized stations.

Upcoming Rail Projects:

- High-speed train line to Mersin and Adana
- Driverless metro system between city hospital and central districts



Map 6:GAZİANTEP HİGHWAY MAİN ARTERİES

Sea Transport

Though landlocked, Gaziantep connects to İskenderun and Mersin Ports via road and rail critical for exports and logistics.

Airport

Gaziantep Airport, opened in 1976, now serves 6 million passengers annually following its recent expansion. It connects the city to major domestic and international destinations.

Logistics

Strategically located on trade routes, Gaziantep serves as a major logistics hub. The Logistics Village Project is part of this vision, though relocation was necessary due to military land restrictions.

Infrastructure

Water: Kartalkaya Dam, Mizmilli wells and Düzbağ project are the main sources. The capacity of existing treatment plants is being increased, there is a water shortage in the summer months.

Map7 :Dams Supplying Water to Gaziantep

Waste Water: There is a 2,500 km sewage network and many treatment plants, biogas production is being carried out.

Solid Waste: There are two regular storage areas; recycling is low and capacity is approaching.

Natural Gas: There is distribution throughout the city, access is limited in the countryside; there are pressure drops and air pollution problems in the winter.

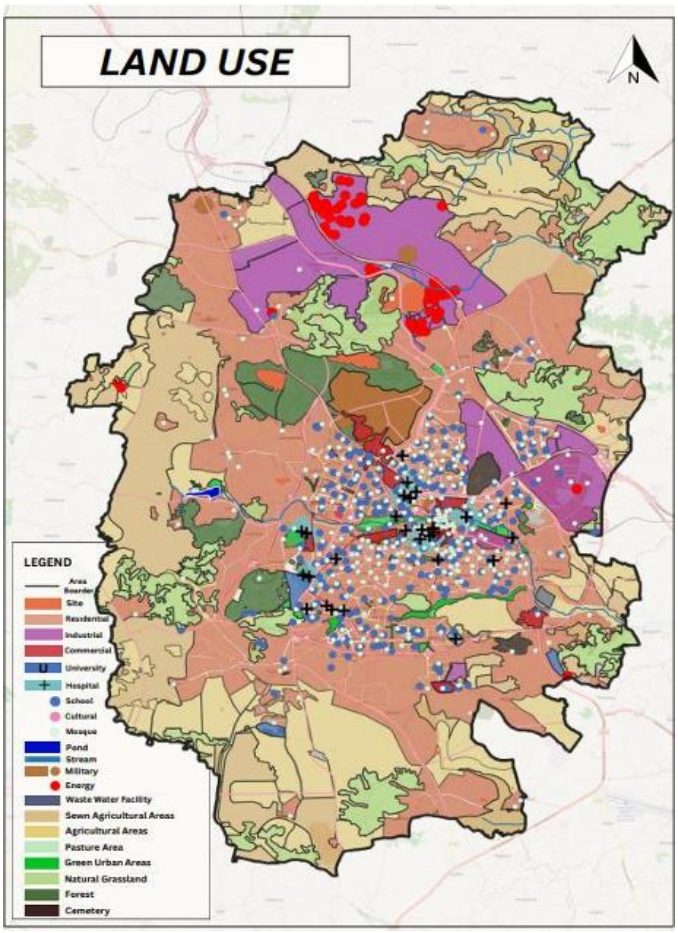
Oil: There is no production, but there are main oil pipelines passing through the region; lack of storage poses a risk.

Electricity: TOROSLAR EDAŞ distributes; local renewable energy capacity is increasing (solar and hydroelectric).

Telecommunications: Fiber infrastructure is good in the city center, weak and old infrastructure in the countryside.

2.12 Land Use

The city's central districts Şahinbey and Şehitkamil are the heart of urban expansion. Land use is rapidly shifting from agriculture to housing and industry.



Map 8:Land Use

Commercial and Industrial Areas

- Shops and services cluster along major roads and in central areas.
- Factories and workshops are mainly in north and east Şehitkamil, near key highways.

Public Services

- Universities and hospitals are located in the southern and central zones.
- Mosques are spread throughout all neighborhoods.
- Schools are concentrated in residential areas.

Gaziantep is experiencing urban sprawl, putting pressure on green and agricultural land. Efforts are needed to balance growth with environmental sustainability.

Military, Energy, and Water Infrastructure

Due to their strategic importance, Şahinbey and Şehitkamil districts host various military installations. In recent years, the municipality has prioritized renewable

energy, launching solar power projects in Seymenli (Şehitkamil) and Deredüzü (Şahinbey).

In parallel, GASKİ continues to improve the city's water and sewage systems to meet the growing demands of a fast-expanding population.

Green Areas

While agricultural and forested land surrounds Gaziantep, urban green spaces in the city center remain limited. More accessible and better-distributed parks and open areas are needed to support livability and environmental balance.

Cultural and Protected Sites

Gaziantep has a rich cultural fabric. Key heritage zones include Gaziantep Castle in Şahinbey and preserved neighborhoods like Beylerbeyi and 15 Temmuz in Şehitkamil. These areas help maintain the city's architectural identity and historical value.

Residential Development

Housing is concentrated in central districts and along major roads. Şahinbey has dense urban development, especially in the south, while Şehitkamil is more spread out toward the north. Unplanned expansion and urban sprawl continue to pose challenges, highlighting the need for more efficient land use and long-term planning.

Conclusion

Gaziantep is one of Türkiye's most prominent cities—strategically located, culturally rich, and economically strong. With its roots in ancient Mesopotamia and links to the Mediterranean, it has become a hub for industry, commerce, and tourism.

Urban development has progressed steadily since the first zoning plans in 1938, and recent decades have seen focused efforts on urban renewal and transformation, especially in older, vulnerable areas. The GAP Project has brought major gains in agriculture, industry, and infrastructure.

At the same time, rapid population growth, increased migration, and shocks like the Syrian crisis and the 2023 earthquake have put major strain on housing, transportation, healthcare, and education systems. Climate pressures—like water scarcity and rising heat—further challenge sustainability.

3. SWOT ANALYSIS AND SYNTHESIS

3.1 SWOT ANALYSIS

Strengths	Weaknesses
Prime crossroads between Mediterranean and Anatolia; historic Silk Road heritage provides foundation for regional trade hub development. Multi-modal connectivity infrastructure (road, rail, air) Metropolitan municipality status (since 1987) enables coordinated governance for comprehensive urban planning. Rapid population growth (from 701,000 in 1980 to ~2.2M by 2024) creates substantial market opportunities and workforce potential. Young, diverse population including 350,000 refugees provides multicultural advantage and entrepreneurial capacity. High population density and diverse workforce supports innovation ecosystems and AI-integrated industrial development. Export volume exceeding $10.5 billion (2021) demonstrates global market competitiveness and economic resilience. Gaziray rail system enhances urban mobility and connectivity. Major international airport supports cultural tourism expansion and economic development strategies. Reliable water supply infrastructure (Düzbağ pipeline) supports sustainable resource management initiatives. UNESCO gastronomy city status and historic sites (Zeugma, Rumkale, Antep Castle) support tourism. Large protected forest areas and Burç Nature Park support ecological integrity and green corridor development.	Urban Heat Island effect impacting livability Inadequate urban green spaces for population density Hot, dry climate increasingly affected by climate change impacts Limited renewable energy infrastructure High earthquake vulnerability with inadequate disaster preparedness infrastructure. Old and risky building stock requires comprehensive resilient housing development planning. Insufficient emergency response capacity and disaster assembly areas in high-risk zones. Building codes need modernization for seismic-resistant design standards implementation. Traffic congestion and limited public transportation options. Insufficient electric vehicle charging infrastructure development. Lack of bicycle infrastructure and cycling networks. Unequal distribution of educational facilities across districts. Healthcare service gaps between urban core and peripheral areas. Social service centers inadequately distributed, limiting community development potential. Limited specialized training and empowerment opportunities for women, refugees, and marginalized groups. Shortage of affordable, resilient housing especially in high-population growth areas. Housing developments often located in geologically unstable areas without proper risk assessment. Limited AI technology integration in industrial zones constrains competitiveness enhancement. Limited regional connectivity infrastructure to major ports and neighboring market
Opportunities	**Threats**
Solar energy potential for large-scale renewable energy development and carbon neutrality goals. Opportunity to establish comprehensive green corridor network connecting all city sectors. Strategic position for becoming regional hub through enhanced rail connectivity to ports and to the Middle East through Syria, Jarablus. High-fertility agricultural areas ideal for modern farming techniques and agricultural technology centers. Cultural tourism potential through integrated smart tourism infrastructure and route development. Large refugee and diverse population presents opportunities for multicultural economic advantages. Potential for comprehensive training and empowerment centers serving women and marginalized groups.	Increasing drought frequency and declining rainfall threaten water security and agricultural sustainability. Rising temperatures and extreme weather events challenge urban livability and infrastructure resilience. Water scarcity risks constrain sustainable development and population growth accommodation. Environmental degradation from industrial activities without proper sustainability measures. Persistent high earthquake risk with potential for catastrophic damage to infrastructure and population. Inadequate disaster preparedness and emergency response systems for large-scale events. Growing socio-spatial inequality between urban core and periphery. Resource competition between growing population and industrial development needs. Dependency on external energy supplies. Uncontrolled urban sprawl threatening agricultural land and natural resources. Infrastructure capacity limitations constraining sustainable development potential.

TABLE1 :Swot Analysis

Strengths

Gaziantep's strategic location at the crossroads of the Mediterranean and Anatolia, with its historic Silk Road legacy, offers a strong foundation for regional trade development. The city benefits from well-developed multi-modal transport infrastructure (road, rail, and air), enabling robust logistics and connectivity. Since

obtaining metropolitan municipality status in 1987, Gaziantep has improved coordinated governance and urban planning.

The city's population growth — from 701,000 in 1980 to approximately 2.2 million by 2024 — has expanded its internal market and labor force. A young and culturally diverse population, including 350,000 refugees, brings both demographic vitality and entrepreneurial capacity. The high population density supports innovation ecosystems and AI-integrated industry development.

Economically, Gaziantep demonstrates strong global market competitiveness with an export volume exceeding $10.5 billion in 2021. Infrastructure such as the Gaziray rail system, the international airport, and the Düzbağ water pipeline ensures mobility, connectivity, and water resource management. Additionally, its recognition as a UNESCO City of Gastronomy, along with key heritage sites like Zeugma and Antep Castle, bolsters tourism. The presence of extensive forest areas and Burç Nature Park supports ecological balance and the future development of green corridors.

Weaknesses

Despite its strengths, Gaziantep faces several structural weaknesses. The Urban Heat Island effect and insufficient green spaces reduce overall livability, especially in a hot, dry climate exacerbated by climate change. Renewable energy infrastructure remains underdeveloped, and the city is highly vulnerable to earthquakes. Many buildings are old and seismically unsafe, while disaster preparedness and emergency assembly areas are lacking.

Gaziantep's transportation system suffers from traffic congestion, limited public transport, and poor EV and bicycle infrastructure. Social services, including education, healthcare, and community centers, are unevenly distributed, especially between urban and peripheral areas. Empowerment and training opportunities for women, refugees, and marginalized groups are inadequate. The city also faces a shortage of affordable and resilient housing, often built in geologically risky areas without proper assessment. AI integration in industrial sectors is still limited, and regional connectivity to seaports and neighboring markets needs improvement.

Opportunities

Gaziantep has significant solar energy potential, which can be leveraged to develop renewable energy projects and meet carbon neutrality goals. There is potential to develop a city-wide green corridor network to enhance ecological health and non-motorized mobility.

Enhanced rail connectivity to Middle Eastern markets (e.g., through Syria via Jarablus) and Turkish ports could transform Gaziantep into a major regional trade hub. The city's fertile land offers prospects for modern agriculture and agritech development. With its rich cultural heritage and infrastructure, Gaziantep can invest in smart tourism to attract international visitors. The diverse, multicultural population provides a basis for inclusive economic development, while the creation of dedicated training and empowerment centers can address socio-economic inequalities.

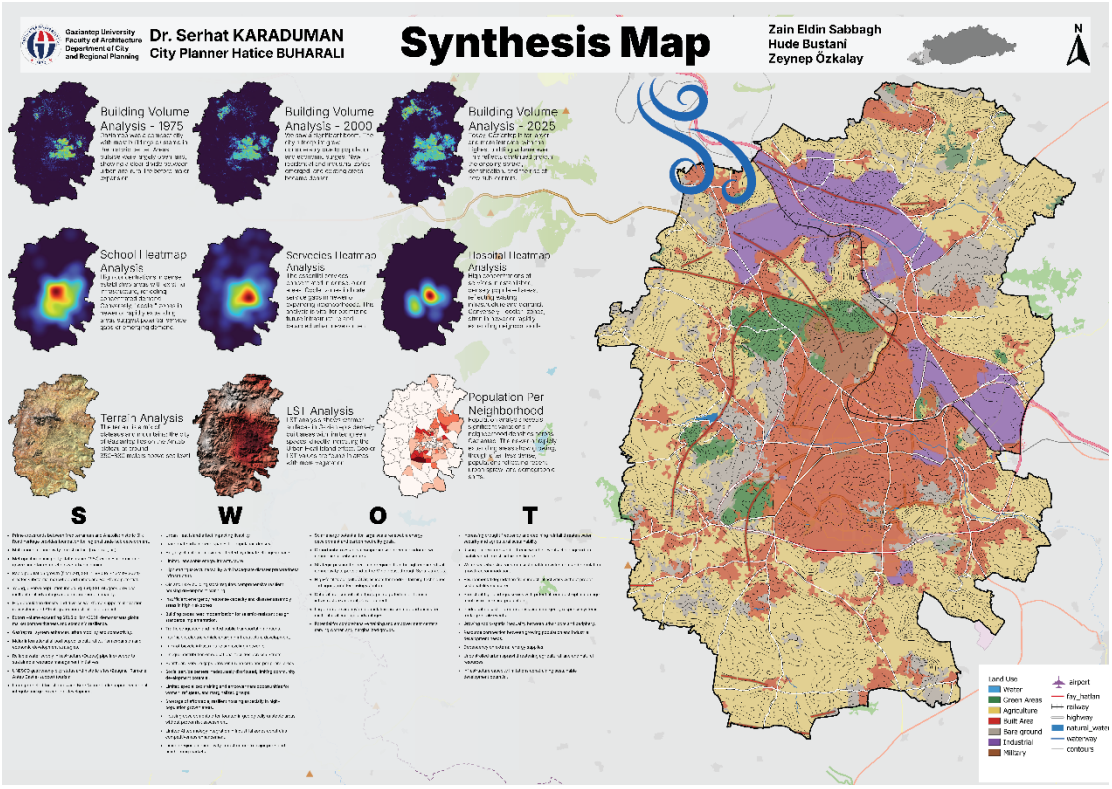
Threats

Gaziantep is increasingly exposed to drought and declining rainfall, threatening water security and agriculture. Extreme weather and rising temperatures pose risks to

infrastructure and public health. Industrial expansion without proper environmental controls risks degradation of natural ecosystems.

The persistent **earthquake risk** poses serious threats to life and infrastructure, especially given the lack of resilient building stock and underdeveloped emergency systems. **Socio-spatial inequality** is deepening between urban centers and outlying areas, while **resource competition** between population growth and industrial needs is intensifying. The city remains **heavily dependent on external energy sources**, and **uncontrolled urban sprawl** threatens agricultural land and natural ecosystems. Existing infrastructure struggles to accommodate sustainable urban development.

3.2 SYNTHESIS:



Map 9: Synthesis Map

The spatial development patterns and thematic maps analyzed in the synthesis provide a comprehensive overview of Gaziantep's current urban dynamics. These findings highlight both long-term structural trends and urgent challenges, offering key insights for strategic urban planning aligned with the city's strengths, weaknesses, opportunities, and threats outlined in the SWOT analysis.

Urban Growth and Building Volume

The Building Volume Analysis shows Gaziantep's transformation from a compact city in 1975, where development was concentrated around the historic core, into a vastly expanded and complex urban form by 2025. In the early 2000s, rapid population growth and economic expansion triggered the spread of new residential neighborhoods and industrial zones. Today, the city's physical footprint has reached its largest scale ever, characterized by significant densification and the emergence of multiple sub-centers.

This urban sprawl brings both opportunities for decentralized development and risks related to uncontrolled land consumption, inefficient infrastructure distribution, and pressure on natural and agricultural areas. These trends directly reflect Threats identified in the SWOT analysis, including the loss of green space, infrastructure strain, and increased exposure to natural hazards.

Topography and Environmental Context

Gaziantep is situated on the Aintab Plateau, with an elevation of approximately 850–880 meters. This topographical setting influences the city's climatic conditions, water management, and vulnerability to seismic activity. The plateau's varied terrain must be considered in the design of transportation corridors, green infrastructure, and emergency response systems. It also highlights the importance of resilient urban design in addressing both environmental and disaster-related risks (SWOT – Weaknesses & Threats).

Heat Island Effect and Climate Stress

The Land Surface Temperature (LST) Analysis reveals significant temperature differences between dense, built-up areas and zones with higher vegetation cover. The central and highly urbanized districts experience elevated surface temperatures, clearly demonstrating the Urban Heat Island effect. This phenomenon reduces livability, increases energy demand, and poses public health risks during heatwaves — all of which are exacerbated by ongoing climate change. These issues are consistent with the Weaknesses and Threats outlined in the SWOT, particularly regarding the limited availability of urban green spaces and the city's exposure to climate-related impacts.

Population Distribution and Urban Density

The Population per Neighborhood map highlights significant variations in population density across Gaziantep. While the central districts remain densely populated, newer

neighborhoods in the city's outer areas show lower but rapidly increasing densities. This pattern reflects recent demographic shifts and signals a need for expanded infrastructure and services in these emerging zones.

Rapid growth in newly developed areas often outpaces public service provision, contributing to spatial inequalities and posing long-term challenges for urban cohesion and accessibility (SWOT – Weaknesses). It also emphasizes the importance of future-ready planning that anticipates demographic pressures and ensures equitable development across all districts.

Access to Services: Education and Healthcare

The School and Hospital Heatmaps, along with the general Essential Services Distribution Analysis, show that educational, healthcare, and social services remain concentrated in the older, established parts of the city. Meanwhile, cooler zones — representing service gaps — are common in peripheral and newly developed neighborhoods. These disparities indicate mismatches between urban growth and service provision, potentially leading to social exclusion, especially among vulnerable populations such as refugees, women, and youth.

4. SPATIAL DEVELOPMENT STRATEGIES

4.1 Scenario

Between 2025 and 2030, Gaziantep embarks on a transformative journey toward becoming a more resilient, sustainable, and inclusive city. Facing challenges such as rapid population growth, increasing climate vulnerability, seismic risks, and uneven access to services, the city responds with forward-looking strategies rooted in environmental responsibility, economic modernization, and social equity.

Green infrastructure becomes a defining element of Gaziantep's urban identity. Large-scale afforestation projects are carried out in areas suffering from high land surface temperatures and low vegetation, especially along wind corridors to mitigate urban heat. A continuous green corridor system links the eastern, southern, and western parts of the city, enhancing ecological connectivity and recreational space. Rooftop greening and the use of high-reflective cooling materials become standard for new developments. Rainwater harvesting infrastructure is installed in key low-lying areas near farmland, while solar and wind energy systems are deployed on low-fertility lands and integrated into industrial zones, shifting the city toward clean energy independence.

The transportation landscape shifts dramatically with the gradual replacement of diesel buses by electric fleets and the expansion of bike lanes along the green

corridor. Affordable public transportation subscription models are introduced, making mobility more inclusive. Charging stations for electric vehicles become widely available across the urban core. A metro system begins construction, connecting the airport to major residential, educational, and industrial zones, creating a seamless and low-carbon transit network.

Economically, Gaziantep leverages its unique cultural assets and agricultural potential. Smart tourism routes are established, linking heritage sites, museums, and gastronomy destinations with interactive stations and dedicated electric transport services. Agricultural zones are preserved and enhanced with modern irrigation, hydroponics, and training centers focused on sustainable practices. Industrial areas are digitized through the adoption of advanced technologies, and universities begin operating within these zones to promote innovation and workforce development. Rail links to Mersin and İskenderun ports are reinforced, and plans progress to extend rail access toward northern Syria, deepening regional integration.

In response to seismic threats, the city enforces new building regulations to ensure all future developments are structurally resilient. Residential areas are planned away from fault lines on stable land, equipped with solar panels and green features. Emergency gathering zones with medical tents and supply infrastructure are embedded within the green corridor, forming a citywide disaster response backbone.

Socially, Gaziantep advances toward equity by ensuring that every neighborhood has access to schools, health clinics, vocational centers, and social facilities. Women's centers offer training in digital skills, sewing, and culinary arts, combined with on-site childcare and community kitchens. Refugees and migrants receive structured language and cultural integration support, enhancing social cohesion and participation.

By 2030, Gaziantep stands as a regional leader in sustainable urban transformation—balancing economic strength with environmental sensitivity and social well-being. Through a blend of innovative planning and inclusive policy, the city prepares not only for growth, but for a future that is greener, safer, and fairer for all its residents.

4.2 Objectives and Targets

As part of Gaziantep's vision for sustainable development, the city aims to build a resilient and inclusive urban environment—ecologically, economically, and socially. A set of strategic objectives has been defined to address current needs while preparing the city for future challenges. The following pillars outline the key directions that will support Gaziantep's transformation into a livable, integrated, and future-ready city.

Ecological Integrity: The goal is to minimize the adverse effects of climate change, protect natural resources, and strengthen green infrastructure systems that ensure environmental balance within the city. Improving air quality, using water resources sustainably, and preserving biodiversity are key components of this objective.

Economic Development: Innovative agricultural techniques and smart tourism practices will be promoted to build a resilient, inclusive, and competitive local economy. Priorities include enhancing urban productivity, branding local products, and diversifying employment opportunities.

Smart Mobility: A low-carbon, integrated, and universally accessible transportation infrastructure will be developed. This includes expanding public transport options, increasing the number of bicycle lanes, promoting pedestrian-friendly areas, and strengthening the infrastructure for electric vehicles.

Resilient Future: The aim is to establish an urban structure that is resistant to natural disasters and adopt urban development models based on energy efficiency and renewable energy. Strengthening industrial zones and residential areas against disasters and enhancing rapid response capacity during emergencies are key priorities.

Social Services: Ensuring equitable and easy access to education, healthcare, social services, and cultural opportunities for all is a fundamental goal. Special focus will be placed on creating inclusive and safe living spaces for women, children, and disadvantaged groups, along with policies that promote social equality and solidarity.

4.3 Strategies

The following strategies have been formulated in alignment with the defined objectives to support Gaziantep's sustainable development vision:

- Mitigate the effects of urban heat islands, improve air quality, and enhance green infrastructure across the city.
- Promote climate-resilient agriculture and sustainable energy solutions through efficient natural resource use.
- Strengthen integrated cultural tourism by developing smart tourism routes and information networks.
- Modernize industrial production processes to increase efficiency and competitiveness.
- Enhance Gaziantep's logistical connectivity with neighboring provinces and cross-border trade routes, particularly with Syria.
- Decrease the city's carbon footprint by expanding electric public transportation, bike lanes, smart lighting systems, and charging station networks.
- Diversify transportation options by extending rail systems, including metro lines.
- Develop industrial zones powered by renewable energy and implement environmentally sensitive designs in residential development.

- Designate assembly areas and establish clear emergency response corridors for use in disaster scenarios.
- Ensure basic education and healthcare services are accessible within every neighborhood.
- Establish dedicated centers that provide production and educational opportunities for women.

4.4 Plan Decisions

Spatial planning decisions in Gaziantep are driven by the city's vision to create a resilient, inclusive, and sustainable urban future. Each initiative has been carefully matched with a location whose physical, environmental, and social characteristics make it suitable for targeted implementation. This section explains the reasoning behind these location choices and highlights how each intervention supports the city's overall development priorities across areas such as ecology, mobility, tourism, agriculture, housing, and social infrastructure.

- The city center, particularly the Şehitkamil district, contains structurally weak old buildings that have been affected by past earthquakes. Demolishing these buildings and replacing them with green spaces will enhance safety and meet the need for open spaces in densely built-up areas.
- Eastern areas such as Beylerbeyi and Kuzeyşehir have low vegetation density. Afforestation in these areas will improve ecological balance and contribute to air quality.
- Neighborhoods such as İncilipınar and Gazimuhtarpaşa are densely populated and lack horizontal green areas. Green roof applications in these areas will provide additional greenery on existing structures.
- Main pedestrian axes such as Zübeyde Hanım Street and the Alleben corridor lack natural shading. Planting trees and installing pergola systems in these areas will enhance thermal comfort and the quality of public use.
- The Geneyik area is located in low topography and is suitable for rainwater harvesting. Implementing such systems here will support urban agriculture and reduce flood risk.
- Karahöyük and Aktoprak neighborhoods consist of low-productivity, vacant lands with high solar exposure. These areas are ideal for solar energy installations without affecting fertile farmland.
- Linking key tourist destinations such as the Zeugma Mosaic Museum, Bakırcılar Bazaar, Gaziantep Castle, and the Panorama Museum will create an integrated route for urban tourism and enhance the visitor experience.

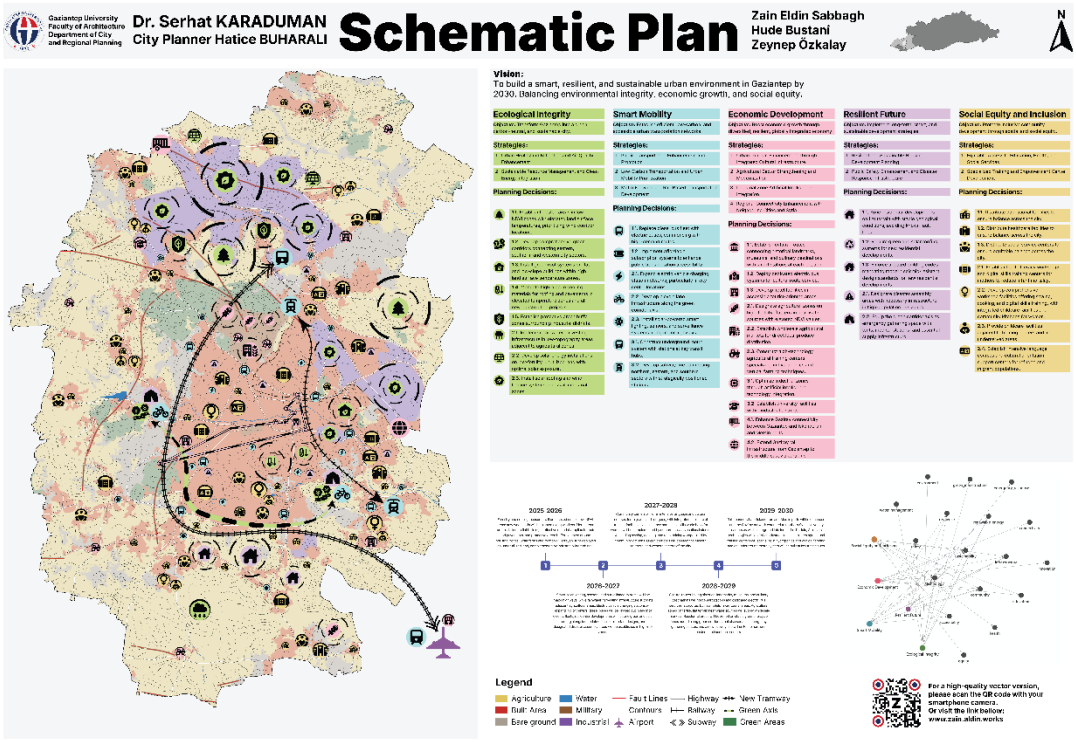
- Tourist density is high in the historical center and at the city gateways. Installing smart stops and information kiosks in these locations will improve access to cultural information.
- Areas such as the Middle East Fair Center, the airport, the university zone, and the surroundings of the Castle experience high accommodation demand. Hotel investments in these regions will support visitor capacity.
- Flat, fertile lands near water sources, such as in Yavuzeli and Oğuzeli, show high NDVI values. These areas hold strategic importance for agricultural production.
- The former military zone in Şehitkamil offers a centrally located and spacious area suitable for agricultural production and the establishment of a wholesale produce market.
- Peripheral neighborhoods like Dülük and Samköy are engaged in traditional agriculture. Applying precision agriculture technologies in these areas will increase productivity.
- Organized Industrial Zones 1, 2, and 3 are critical for industrial modernization. Integrating AI-supported systems in these zones will enhance efficiency.
- The Gaziantep–İskenderun/Mersin railway line is a key corridor for industrial transport. Upgrading this line will significantly reduce costs and travel time.
- Extending the Gaziray line to Jarablus will increase Gaziantep's regional trade capacity and cross-border connectivity.
- The Karataş–GAÜN corridor is a high-demand passenger route. Deploying electric buses here will reduce carbon emissions.
- The Yeşil Vadi–Şahinbey Park–Şelale Park–Erikçe corridor is ideal for a bicycle path route that connects green areas and facilitates access to social spaces.
- Major roads such as D-850, D-400, İpekyolu, and the ring road experience heavy traffic. Equipping these routes with smart lighting and monitoring systems will improve traffic safety.
- Central districts such as Şehitkamil and Şahinbey have high vehicle density but lack sufficient EV charging infrastructure. These regions should be prioritized for charging station deployment.
- Implementing affordable public transportation subscription systems will enhance accessibility and reduce dependence on private vehicles.
- The metro line connecting the airport, Akkent, the university, the city center, the bus terminal, and the Organized Industrial Zone will significantly improve urban mobility.

- The Gar–İbn-i Sina line complements the current metro system and will help integrate underserved eastern and southern districts into the public transportation network.
- Industrial areas such as Başpınar suffer from air pollution. Creating green buffer zones with AI-assisted planning will provide environmental benefits.
- OSB areas have large roof surfaces and high energy demand. These characteristics make them suitable for the integration of solar and wind energy systems.
- Southern neighborhoods such as Kahvelipınar and Karataş are geologically stable and flat, making them ideal for new residential developments.
- These zones offer long sunlight exposure and allow integration of parks and green areas, supporting sustainable housing development.
- Every residential cluster should have easy access to public transportation, reducing the need for private vehicles.
- Large public spaces such as Alleben Pond, Masal Park, Dülükbaba Forest, and Festival Park are suitable for use as emergency assembly areas during disasters.
- Arterial roads like D-400 and Karataş Boulevard are critical for access to hospitals and logistics centers. Planning these as emergency corridors is essential.
- High-density residential areas such as Beykent and Yeditepe require nearby emergency support infrastructure for effective crisis response.
- In neighborhoods such as Barak and Düztepe, educational infrastructure should include a primary school, a middle school, and a vocational training center within a 2 km radius to ensure accessibility.
- Densely populated areas like İbrahimli and Aydınlar require new healthcare infrastructure based on the standard of one facility per 50,000 residents.
- Socially underserved neighborhoods such as Beybahçe need community centers, libraries, sports facilities, and youth centers.
- Neighborhoods like Düztepe and Barak, which have a high female population and lack specialized services, are suitable for multipurpose women’s centers.
- Providing workshops in sewing, cooking, and digital skills alongside childcare and community kitchen services will enable active participation of women.

OBJECTIVES	TARGET	STRATEGIES	PLANNING DECISIONS
Ecological Integrity	Promoting Climate-Resilient and Sustainable Urban Environments	1. Reducing the impact of urban heat islands and improving air quality.	1.1. Demolish old earthquake-affected buildings in the city center and replace them with green areas.
			1.2. Establish a new forested area in east Gaziantep.
			1.3. Install green roofs throughout the city center.
			1.4. Implement shading corridors along main streets, pedestrian paths, and around public facilities using trees and pergolas
		2. Fostering sustainable urban development by optimizing the use of natural resources to withstand climate impacts	2.1. Implement rainwater harvesting systems on low topography to support urban agriculture(Geneyik).
			2.2. Develop solar energy farms on low-fertility, unused land with high sun exposure.(karahüyük,Aktoprak mah.)
Economic	Driving Smart Economic and Tourism Development	1. Enhance urban tourism connectivity through integrated cultural routes and smart infrastructure	1.1.Establish a continuous, signposted tourise linking key attractions—such as the Zeugma Mosaic Museum, Bakırcılar Çarşısı, the Castle, and the Panorama Museum—and operate special tourism shuttle buses along this route.
			1.2. Build smart bus stops and kiosks, as well as information points at major tourist sites, to provide real-time information about Gaziantep's history, attractions, and nearby services
			1.3.To facilitate tourism and address the shortage of hotels, accommodation facilities should be increased in easily accessible areas such as the Ortadoğu Fair, Gaziantep Airport, the university zone, and the historical Kale surroundings
		2. Agricultural activities expansion.	2.1. Allocate new agricultural zones on high-fertility, flat land near water sources with high NDVI values and map flood risks.
			2.2.Convert the former military area into a productive agricultural zone, and allocate a portion of the land for establishing a wholesale agricultural market (Hal Çarşısı) to support direct distribution of local produce.
			2.3.Encourage the adoption of precision agriculture technologies (such as drones and sensors) to monitor crop health and soil conditions.
		3. Integrate artificial intelligence into industrial zones.	3.1.Restructure underperforming industrial areas and apply AI technologies like predictive maintenance and automated quality control to boost efficiency and reduce problems.
			3.2 . Integrate AI technologies for predictive maintenance, automated quality control, and overall operational efficiency improvement.
		4. To strengthen ties between Gaziantep, neighboring cities, and Syria, fostering collaboration to boost trade and transportation.	4.1.Improve the rail link from Gaziantep to İskenderun and Mersin ports to boost industrial transport, cut costs, and strengthen regional trade.
			4.2. Expand the Gaziray rail line from Gaziantep to northern Syria through Jarablus to enhance cross-border trade, improve regional connectivity, and support economic development
Smart Mobility	Enhanced Clean and Connected Mobility	1.Promote low-carbon transportation / enhance public transportation.	1.1. Diesel buses across the city's public transport network will be gradually replaced with electric buses, prioritizing high-demand routes such as Karatas GAUN and peak travel hours.
			1.2. Bicycle paths and green axes will be developed in an integrated manner along the Yeşil Vadi – Şahinbey Park – Şelale Park –Zoo_Erikçe route, ensuring safe and accessible connections to schools, social services, and other key urban facilities.
			1.3. Install solar-powered smart lamps, sensors, and cameras along major highways (D-850, D-400, İpekyolu, Çevreyolu).
			1.4. Increasing the availability of charging stations for electric vehicles especially in city center for promoting the use of them.
			1.5.Affordable monthly and yearly subscription systems will be implemented to increase the use of public transportation for all people.
		2. Develop new rail-based public transport lines.	2.1. In order to provide fast and easy transportation, the metro line will be planned on the route of Airport – Akkent – University – City Center – Bus Terminal – OSB.
			2.2. Construct a subway line connecting Gar Station to ibn-i Sina neighborhood
Resilient Future	Smart and Sustainable Development for Industry and Housing	1.Boost clean energy use in industrial zones for sustainability	1.1. Create a green buffer using AI to identify optimal planting areas and reduce pollution.
			1.2. Invest in clean energy sources such as solar and wind in industrial zones to reduce energy costs and promote environmental sustainability.
		2.Conducting resilient and sustainable planning for future housing needs.	2.1. Zone new residential developments on flat terrain with stable (terrestrial) geology, away from known fault lines. (south)
			2.2. Design housing clusters with solar-panel-equipped roofs and integrated green spaces (parks, tree-lined avenues) between blocks.
			2.3. Build public transportation (bus/tram/subway) to serve these new neighborhoods with at least one dedicated stop per cluster
		3. Enhance public safety and provide designated gathering spaces, especially for earthquake preparedness.	3.1.Alleben Pond, Masal Park, Dülükbaba Forest, and Festival Park will be designated as disaster gathering areas, with necessary infrastructure and guidance arrangements provided
			3.2.Emergency response corridors will be planned and protected to ensure uninterrupted access to fire departments, hospitals, and logistics areas.
			3.3.Designate and equip nearby sites with emergency tents, medical stations, and essential supplies to support affected populations during disasters.
Social Services	Promoting spatial and social equality	1. Equitable Access to Education, Health, and Social Services	1.1. In every neighborhood -most little One primary school, one middle school And One vocational education central will be in the way education infrastructure of planning (2 km reach distance basis).
			1.2. For every 50,000 people One health institution (hospital, health hearth, family health center etc.) will fall in the way equal distribution ensuring.
			1.3. Every 10,000 people for One society center, library, sports facility or youth central like social accessories planning
		2. Create women's training centers in Gaziantep	2.1. Design functional centers that meet women's daily needs and select suitable locations like Düztepe and Barak.
			2.2 Offer diverse workshops in sewing, cooking, and digital skills, with small childcare facilities and a community kitchen to support mothers and encourage participation.

Table2 :Gaziantep Urban Development Strategies

5. SPATIAL DEVELOPMENT DIAGRAM



Map 10:Schematic Plan

The prepared strategic scheme not only presents the thematic headings and planning decisions of Gaziantep's sustainable city vision as text, but also supports them with an effective visual language. This visual approach was designed to increase the understandability of the report and to provide the reader with quick access to information.

First of all, the color codes used in the scheme were carefully selected to reflect the character and priorities of each strategic heading. Green tones emphasize ecological integrity, cyan colors represent smart mobility and modern transportation solutions. Pink tones symbolize the dynamism and productivity of economic development, while purple colors draw attention to resilient future planning and sustainability. Yellow colors highlight the themes of social equity and inclusion. This color separation both provided a clear thematic separation of the report content and made it easier for the reader to find their way in the text.

In addition, strategic decisions under each heading are supported by subject-specific icons. These symbols allow complex content to be presented in a simple and understandable way thanks to the support of technical and detailed information with visual elements. For example; the tree icon represents green areas and nature protection measures, while the

bicycle icon represents bicycle lanes. While factory symbols indicate developments in industry and production areas, health icons emphasize the importance of social services. Energy-related icons represent renewable energy sources and technological innovations, while building icons represent urban transformation and infrastructure improvements.

Using colors and symbols together ensures that the visual flow is holistic and consistent. This holism enables the report to be easily understood by both technical experts and the public, increasing the communication effectiveness of the strategic plan. Visually supported content helps the reader grasp the information faster and make it more permanent in their memory. Thus, an effective and accessible planning document that is not based solely on textual narration emerges.

As a result, this visual design and symbolization strategy contributes to the presentation of Gaziantep's sustainable city vision not only strategically but also in a strong communication way. This visual emphasis in the strategic scheme is an important element that increases the overall success of the report.

6. PERFORMANCE INDICATORS

Goal	Strategy	Planning Decision	Performance Indicator
Ecological Integrity	Urban Heat Island Mitigation	Establish forested areas in low NDVI zones with high surface temperatures	Create 30 hectares of forest area in priority zones by 2026
	Green Corridor Development	Develop green corridors connecting east, west, and south zones	Establish at least 15 km of continuous green corridors
	Green Roof Implementation	Install green roofs on flat/low-slope buildings in hot zones	Install green roofs on 60% of suitable buildings in high LST areas
	High Albedo Surfaces	Mandate cool roofs and pavements in hot areas and all new constructions	100% use in new structures, 50% adoption in existing ones
	Industrial Buffer Zones	Create protective green buffers around industrial areas	Green belts of at least 20 meters width around all industrial districts
Sustainable Resource Management	Rainwater Harvesting	Implement rainwater harvesting in low-lying adjacent to agricultural zones	Establish 15 systems, each with 500 m^3 capacity
	Solar Energy Utilization	Install solar energy systems on non-fertile, unused lands	Install panels across 200,000 m^2 in Karahöyük & Aktoprak
	Renewables in Industry	Install solar roofs and wind turbines in industrial zones	50% of industrial areas equipped with renewable energy systems
Smart Mobility	Public Transport Electrification	Replace diesel buses with electric on high-demand routes	40% of fleet electric by 2027
	Public Transport Accessibility	Implement affordable subscription-based fare systems	Increase monthly subscribers by 25%
	EV Charging Infrastructure	Expand EV charging stations in city centers	Establish 50 new charging points in central zones
	Cycling Infrastructure	Develop bicycle lanes along green axis	Complete 12 km green-axis cycle lanes (Yeşil Vadi–Erikçe)
	Smart Road Technologies	Install solar-powered lights and sensors on major roads	100% smart lighting coverage on D-850, D-400, İpekyolu, and ring roads
Rail-Based Transportation	Primary Metro Line	Build metro line from airport to OSB via major hubs	Complete and operate full route by 2030
	Intersectoral Metro Line	Connect north, east, and south zones via metro	7-station metro line completion across major districts
Tourism and Economy	Cultural Routes	Connect cultural landmarks with smart stops	5 main cultural nodes integrated via smart route (e.g., Zeugma, Castle)
	Tourist-Oriented Transit	Deploy dedicated electric buses for tourist routes	Establish 15 electric buses for 3 cultural routes
	Hospitality Development	Build hotels near fairgrounds, airport, and castle area	Construct 6 new hotel facilities in target zones
Agriculture and Industry	Fertile Land Allocation	Designate fertile flat land near water sources for agriculture	Allocate 1,000 hectares for agriculture
	Local Market Access	Build wholesale markets and farmer hubs	Establish one main market and 5 mobile market sites
	Agricultural Innovation	Create hydroponic and vertical farming training centers	Construct 2 modern agricultural training hubs
	AI in Industry	Integrate AI systems in industrial production	Deploy AI monitoring in 10 industrial facilities
	University–Industry Link	Establish university centers in industrial districts	Open applied training centers in 3 industrial zones
Regional Connectivity	Port Link Enhancement	Improve rail link between Gaziantep and Mersin/Iskenderun	Increase freight capacity by 30% and service frequency
	Cross-Border Rail Link	Extend Gaziray to northern Syria (Jarablus)	Activate 1 cross-border integrated station to Jarablus
Resilient Urban Development	Earthquake-Resistant Housing	Zone residential areas on safe, stable ground	100% of new projects with certified soil suitability
	Green-Solar Roofs	Mandate green and solar roofs in new developments	80% of new residences to include sustainable roof systems
	Modern Construction Codes	Enforce seismic-resistant building codes	100% compliance with seismic codes in new buildings
	Disaster Assembly Points	Designate safe public assembly areas	Establish 10 new high-capacity assembly zones
	Emergency Support in Parks	Equip parks along green axis for emergencies	5 major parks outfitted with tents, supplies, and medical points
Social Services	Education Equity	Distribute schools to balance service coverage	Ensure 1 school per 2,000 people across neighborhoods
	Health Access	Provide 1 healthcare center per 50,000 people	Build 15 new health centers citywide
	Social Center Expansion	Distribute social centers equitably across city	Establish 8 new community centers by 2028
	Women's Empowerment	Develop health literacy and digital training for women	Launch training programs in 6 districts
	Vocational Training Centers	Create sewing, cooking, digital centers with childcare	Open 4 integrated centers in Düztepe and Barak
	Refugee Integration	Establish language and orientation centers	6 refugee centers with language courses and cultural support

Table3 :Performance Indicators

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