Estatalyze.com

Sample Report COMPREHENSIVE

Index

SUMMARY

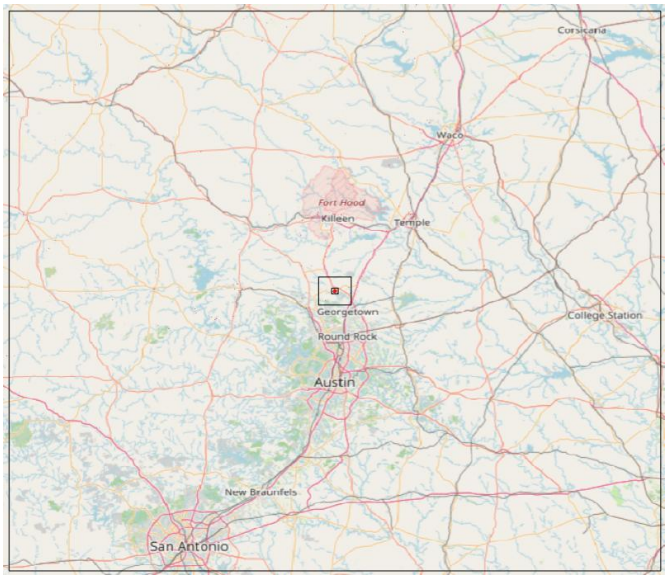
Category	Risk Level	Key Takeaway
Geology/Soils	**High**	Poor load-bearing capacity; requires deep/raft foundations
Subsidence	**Moderate**	Localized sinking detected (0–6 mm/yr); avoid high-risk zones
Flood/Rainfall	**Low**	No increasing trend in extreme precipitation events
Air Quality	**Low**	All pollutants within EPA acceptable thresholds; stable
Micro-Climate	**Low**	No urban heat island effect; seasonal variation only
Urban Development	**Positive**	Steady above-average growth; stable community character
Demographics	**Stable**	High education, high income, older/retiree skew; low diversity

AREA OF INTEREST

Latitude:	30.74475
Longitude:	-97.7403
Hectares	≈ 11.06 ha
Acres	≈ 27.33 acres

City: Austin | ZIP Code: 78633 | County: Travis County | State: Texas |Township: Sun City

Optical satellite image, 5m res, 2026/05/28; AOI marked red

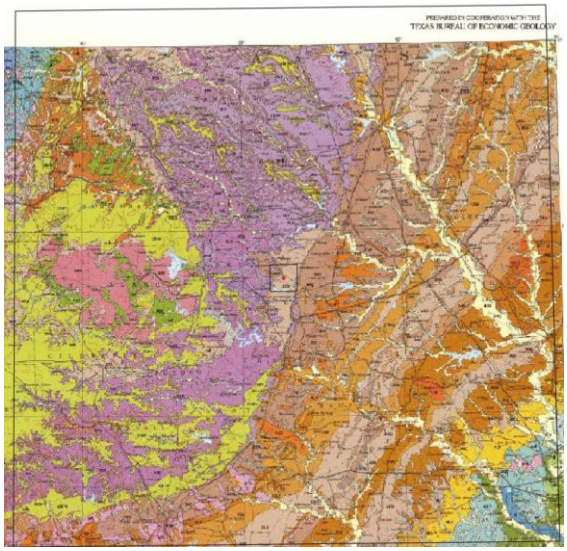


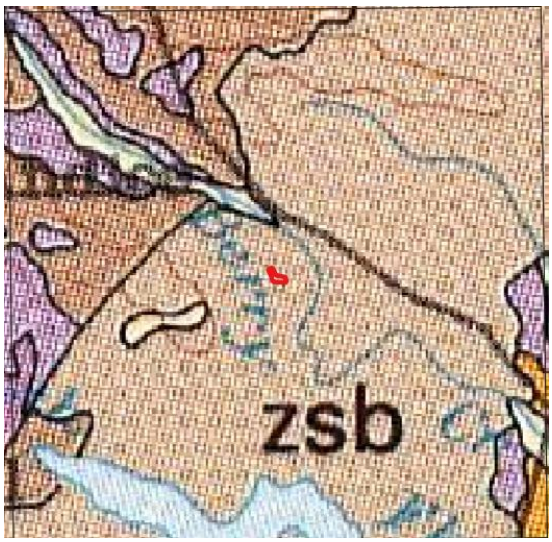
Corresponding map view; 4 sqm and 20sqm perimeter

Corresponding optical satellite image (2026/05/28), 4 and 20 sqm perimeter with AOI marked red

GENERAL GEOLOGY

Source: USGS/AASG National Geologic Map Database; (Moore et al., Quaternary Geologic Map of the Austin 4° x 6° Quadrangle, United States)





Zsb: QUARTZ SAND DECOMPOSITION RESIDUUM[1]—Pale-gray to reddish-brown and reddish-yellow, coarse to medium or fine quartz sand, locally pebbly, clayey, or silty, and muscovite rich. Contains irregular, hard, limonite-cemented masses, limonite nodules, and veins. Forms resistant escarpments and rolling uplands. On the dissected plateau west of Austin, includes local limestone outcrops. Grades down to friable to locally cemented sandstone, and very locally into pebble conglomerate or claystone. Pebbles are composed of limestone, gneiss, and schist in the Llano area. Mapped areas include broad, low dunes of Holocene age, and locally, calcium carbonate-cemented sandy clay residuum, too small to map; they also include some colluvium and bedrock outcrops. Thickness 1-3 m.

Poor load-bearing capacity –
The loose quartz sand requires deep or raft foundations to prevent settlement and structural failure.

Differential settlement risk –
Heterogeneous layers (pebbles, clay, sand) can cause uneven settling, leading to cracks in walls and floors.

Expansive clay layers –
Clay content may swell when wet and shrink when dry, damaging foundations without moisture barriers.

Excavation challenges –
Limonite-cemented masses and limestone outcrops increase digging costs and may require controlled blasting.

Erosion and slope instability –
Rolling uplands and escarpments need terracing or retaining walls to prevent landslides.

Water infiltration risks –
Limonite and calcium carbonate can rust or dissolve, weakening soil stability over time.

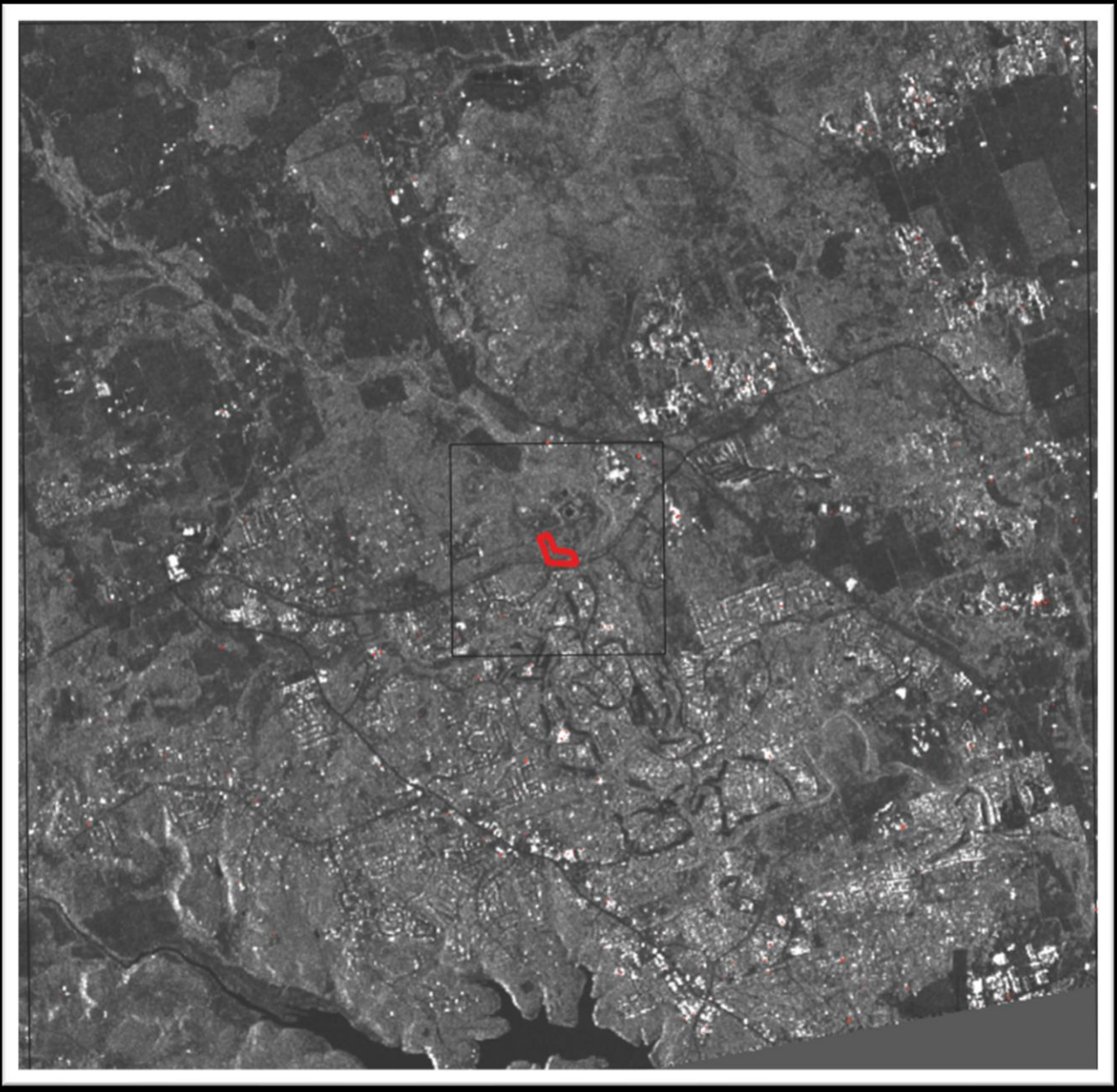
Long-term settlement –
Loose Holocene dunes may continue settling post-construction, necessitating preloading or deep foundations.

Summary:
Building on Quartz Sand Decomposition Residuum requires deep or raft foundations due to poor load-bearing capacity and heterogeneous soil, while addressing settlement risks, expansive clays, and erosion through stabilization, drainage, and slope management.

URBAN ANALYSIS

SYNTHETIC APERTURE RADAR

Space-borne radar systems with 10-meter resolution, such as those onboard modern SAR (Synthetic Aperture Radar) satellites, provide highly detailed imagery capable of discerning individual buildings and infrastructure with remarkable clarity. In this application, the radar data is leveraged to compare urban landscapes over time, enabling the detection of newly constructed buildings, demolished structures, and other changes in infrastructure. By analyzing these high-resolution images, one can track urban development patterns, assess growth or decline in specific areas, and gain insights into the evolving character of cities, including density, spatial distribution, and the pace of construction or decay. This approach is particularly valuable for monitoring urbanization,.

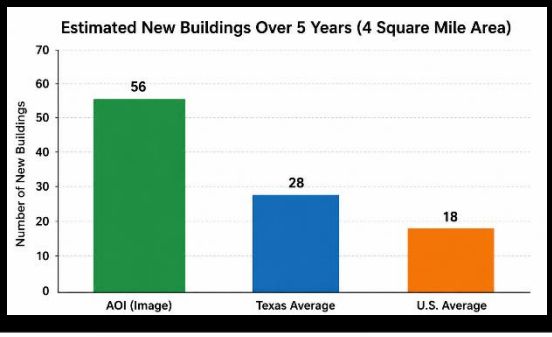


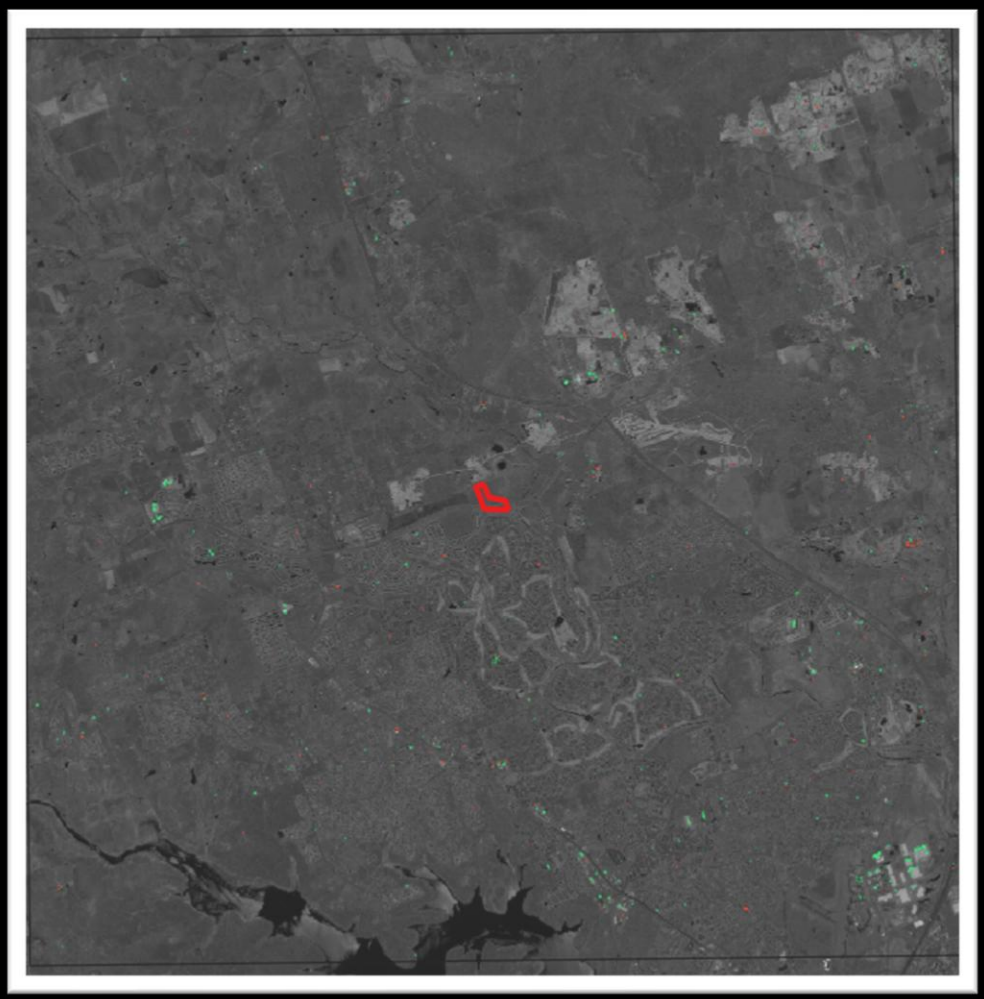
Multi look radar image of a 20 sqm area around the AOI (red) outlining radar signature of infrastructure in 2026.

URBAN ANALYSIS - 2021-2026

SYNTHETIC APERTURE RADAR

The image at the bottom compares multi-look radar images acquired in 2026 and 2022, with green indicating newly constructed buildings and red indicating demolished buildings. The radar-derived change information is overlaid on a near-infrared optical satellite image acquired on 2026-05-18. Approximately 56 new buildings and 22 demolished buildings were identified within the 4-square-mile Area of Interest (AOI), resulting in a net increase of 34 structures over the five-year period. Compared with estimated benchmark values for similarly sized areas (28 new buildings in Texas and 18 new buildings across the United States), the AOI experienced a higher level of residential development. However, the relatively modest number of changes across the entire study area indicates that development has been incremental rather than transformative, with the overall neighborhood pattern remaining largely intact. For prospective homebuyers, this suggests a well-established community that continues to grow at a manageable pace, offering the benefits of improving housing stock while avoiding the widespread disruption often associated with large-scale redevelopment, such as extensive construction, major traffic changes, or significant alterations to neighborhood character.

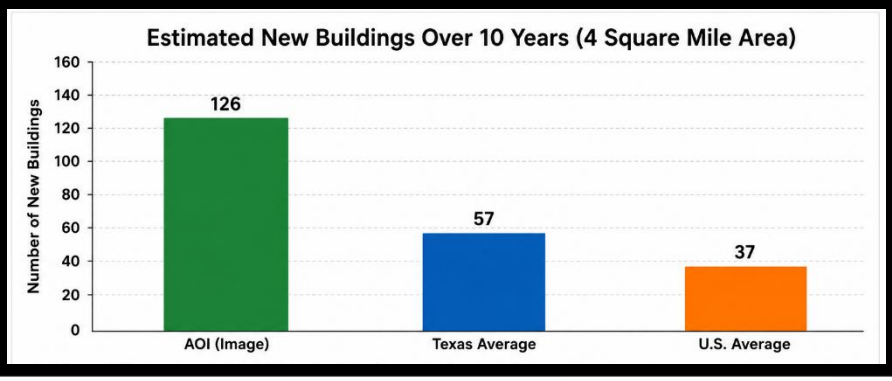


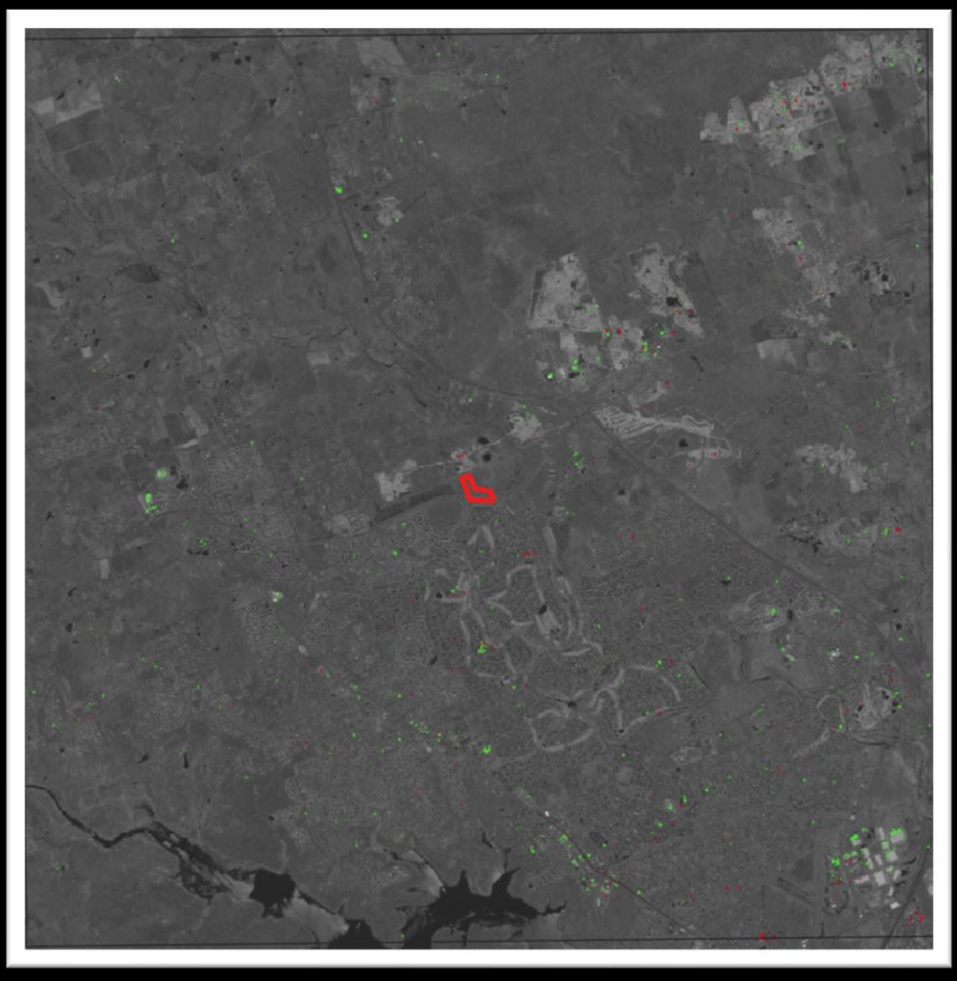


URBAN ANALYSIS - 2016-2026

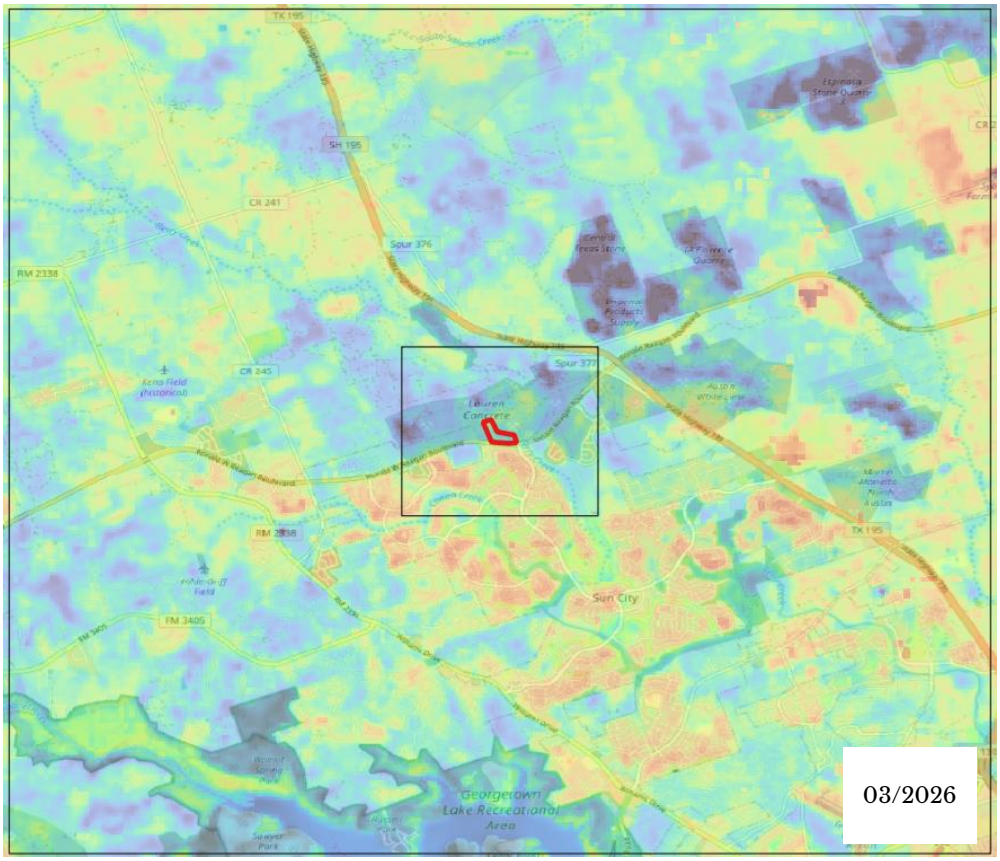
SYNTHETIC APERTURE RADAR

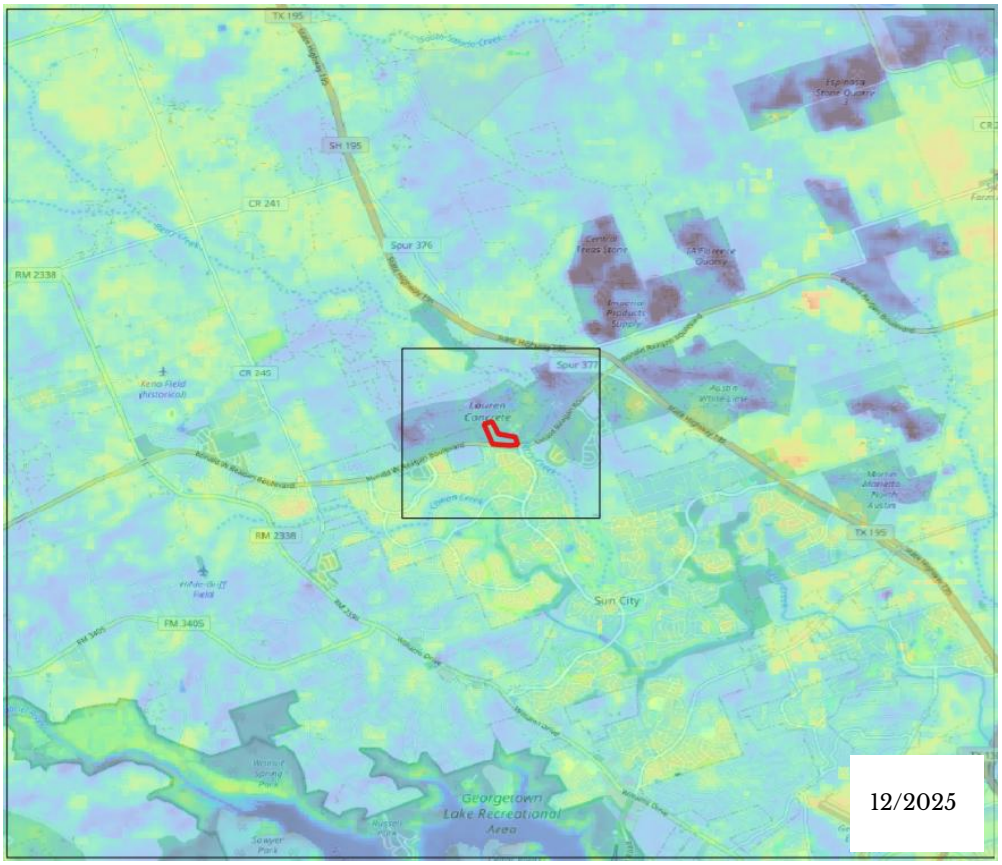
The multi-look radar image compares data acquired in 2026 with 2016, where green indicates newly constructed buildings and red indicates demolished buildings. Over the 10-year period, approximately 126 new buildings and 56 demolished buildings were identified within the 4-square-mile Area of Interest (AOI), resulting in a net increase of 70 structures. Compared with benchmark estimates for similarly sized areas, the AOI experienced substantially greater development than both the Texas average (57 new buildings) and the U.S. average (37 new buildings) over the same period. This indicates sustained, above-average residential growth while maintaining the area's overall neighborhood layout. For prospective homebuyers, this level of development suggests a community that has benefited from continued investment and renewal over the past decade. The observed changes are consistent with gradual neighborhood expansion rather than large-scale redevelopment, supporting long-term confidence in property values, local amenities, and community character while avoiding the disruption often associated with rapid urban transformation.





MICRO CLIMATE – 2026 - 2025



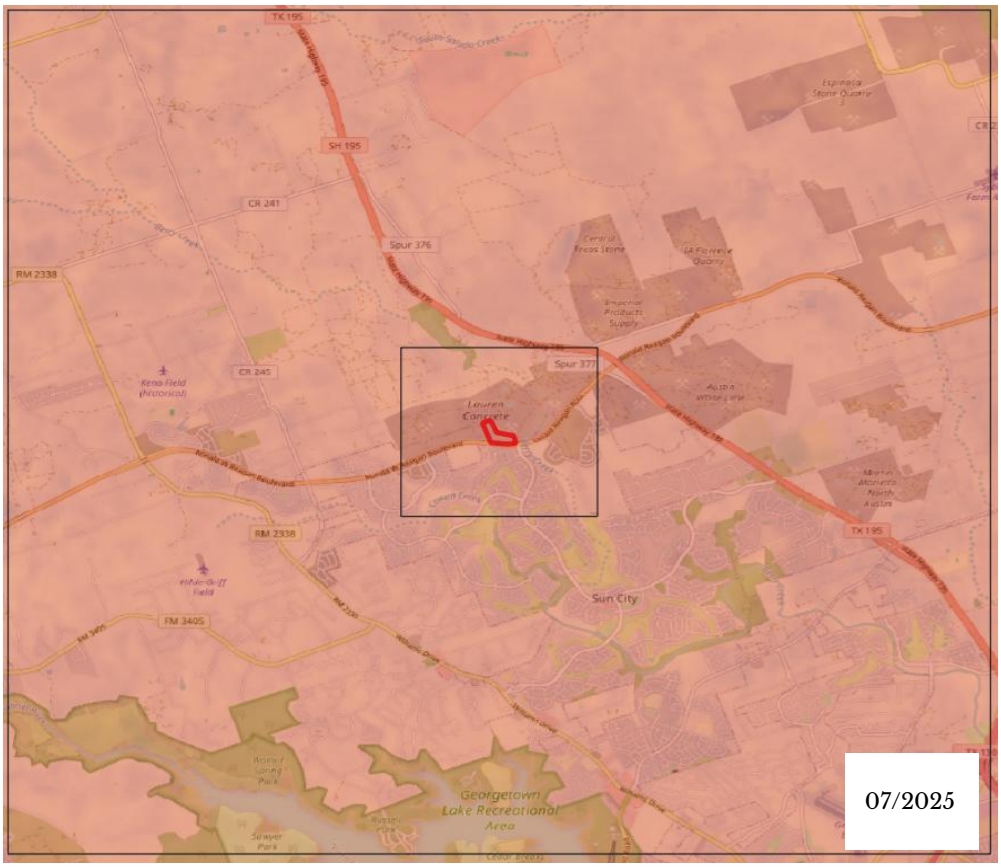


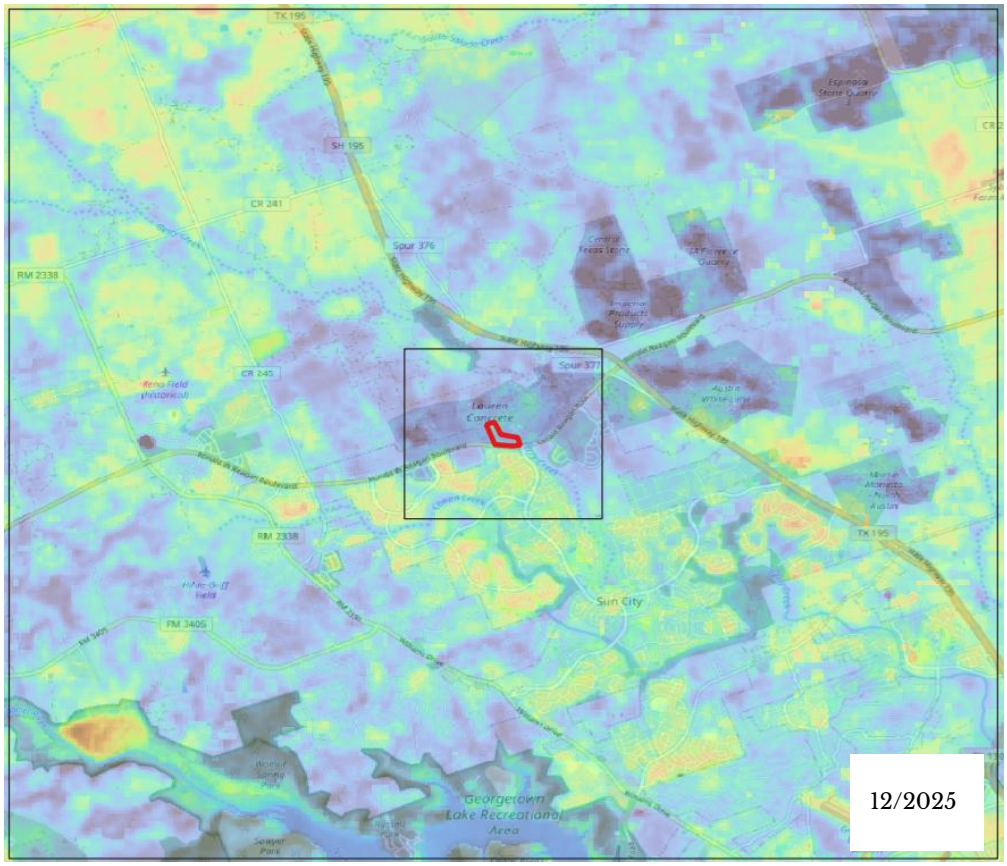
These images show space-borne thermal infrared imagery in 03/26 and 12/25 depicting average surface temperatures. These images cover a 4 and a 20 square mile perimeter around the area of interest.

A microclimate refers to the localized atmospheric conditions—such as temperature, humidity, and wind patterns—that differ from the broader regional climate due to factors like topography, vegetation, urban structures, or proximity to water bodies. These variations can significantly impact ecosystems, agriculture, urban planning, and energy use, as they influence everything from plant growth to human comfort. In conclusion, given the minimal temperature deviation observed, there appears to be no significant microclimate pattern present in this area.

Source: Landsat8, Band10

MICRO CLIMATE – 2025 - 2024

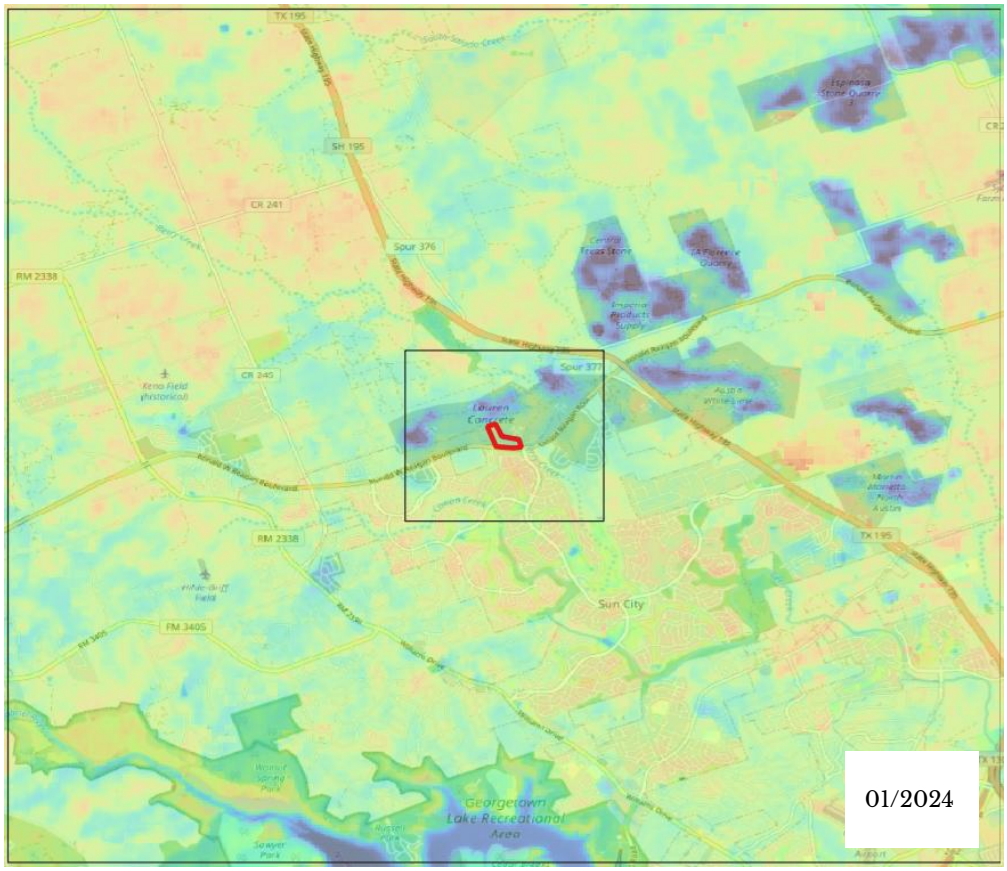


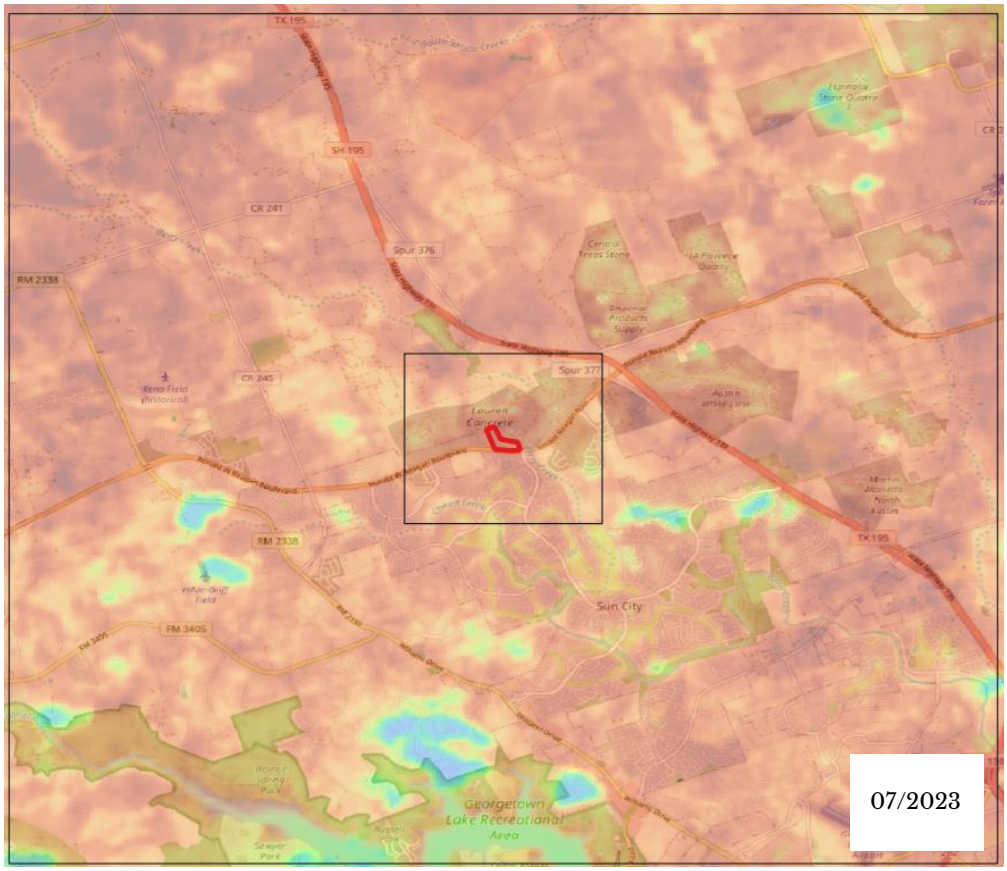


These images show space-borne thermal infrared imagery in 07/25 and 12/24 depicting average surface temperatures. These images cover a 4 and a 20 square mile perimeter around the area of interest.

Source: Landsat8, Band10

MICRO CLIMATE – 2024 - 2023

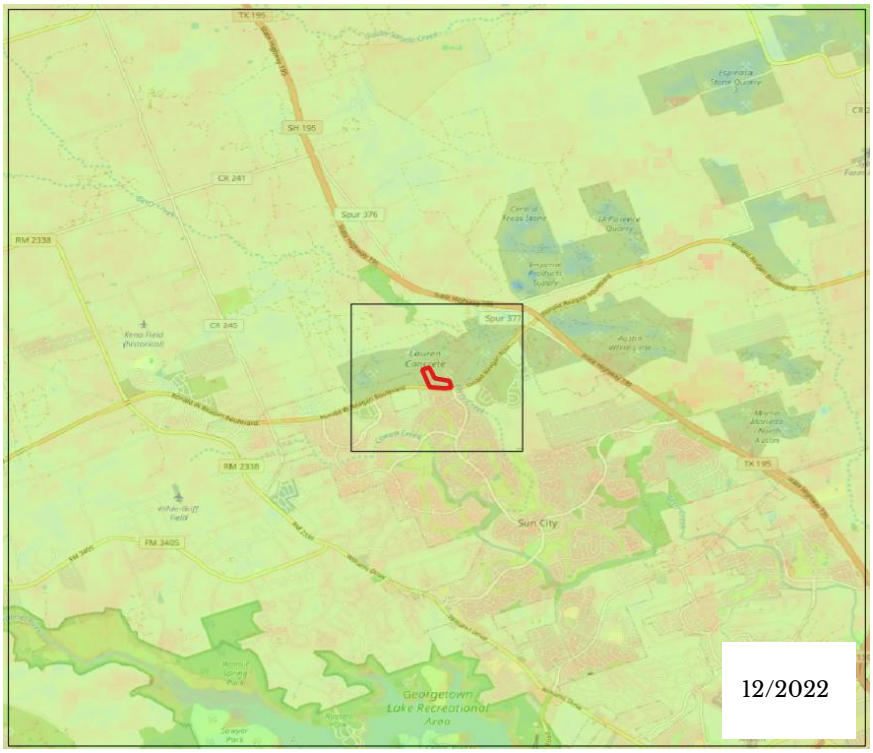




These images show space-borne thermal infrared imagery in 01/24 and 07/23 depicting average surface temperatures. These images cover a 4 and a 20 square mile perimeter around the area of interest.

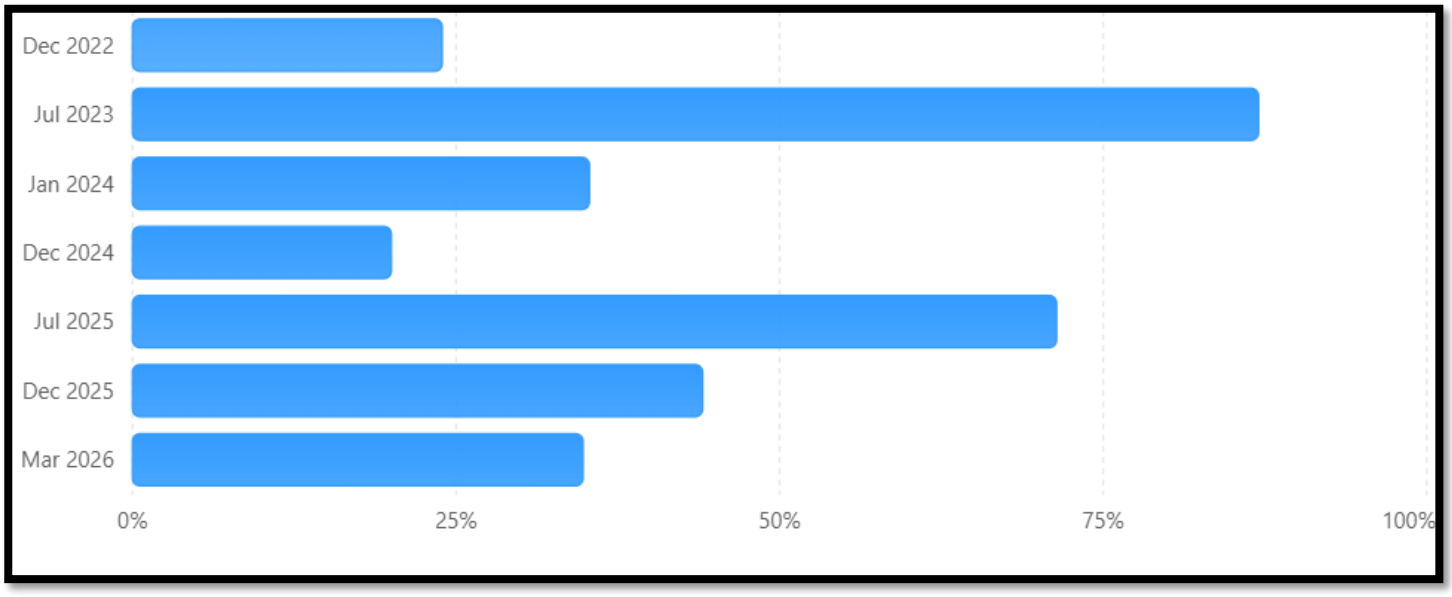
Source: Landsat8, Band10

MICRO CLIMATE – 2022



This image show space-borne thermal infrared imagery in 12/22 depicting average surface temperatures. This image cover a 4 and a 20 square mile perimeter around the area of interest.

The chart shows the relative land surface temperature of the Area of Interest (AOI) expressed as a percentage of the average land surface temperature for the corresponding Landsat 8 tile on each observation date. The results indicate a clear seasonal pattern, with the AOI exhibiting higher relative temperatures during summer (July) and lower relative temperatures during winter (December–January), while year-to-year variations remain within a typical seasonal range and do not indicate a consistent long-term warming or cooling trend. This suggests that the AOI experiences a stable local microclimate relative to the surrounding region. For prospective home buyers or developers, these findings indicate no apparent temperature-related concerns that would adversely affect long-term livability or development potential; however, cooler winter conditions may warrant consideration of energy-efficient building design, insulation, and heating systems, while the absence of persistent temperature anomalies suggests a relatively low risk of localized urban heat island effects.

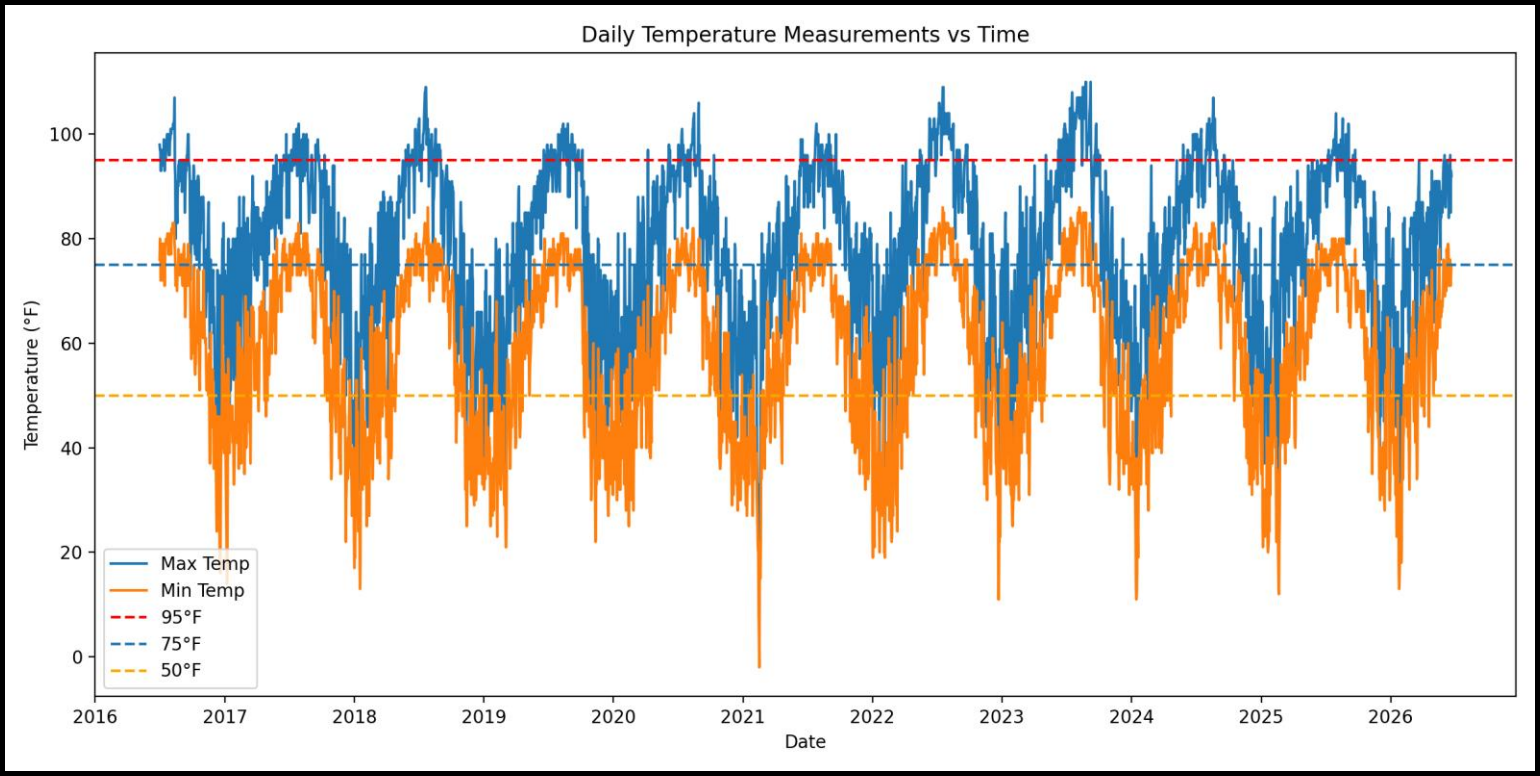


Source: Landsat8, Band10

10 year

Temperature

A 10-year weather report with daily temperatures helps identify climate trends, such as increasing extreme heat days (>95˚F), heating needs (below 50˚F), and AC demand (>70˚F), revealing climate change impacts and enabling cost estimates for heating/cooling systems. This data ensures informed decisions on energy efficiency and long-term property suitability.



Source: NOAA (National Centers for Environmental Information – National Oceanic and Atmospheric Administration)

10 year

Temperature - Summary

Year	Days with Tmax ≥ 95°F	Days with Tmax ≥ 75°F	Days with Tmin ≤ 50°F
2016	51	132	34
2017	55	255	105
2018	76	197	136
2019	69	201	142
2020	42	208	127
2021	48	219	113
2022	88	225	124
2023	89	218	113
2024	67	234	99
2025	49	244	106
2026	5	106	55

Summary from a statistical standpoint:

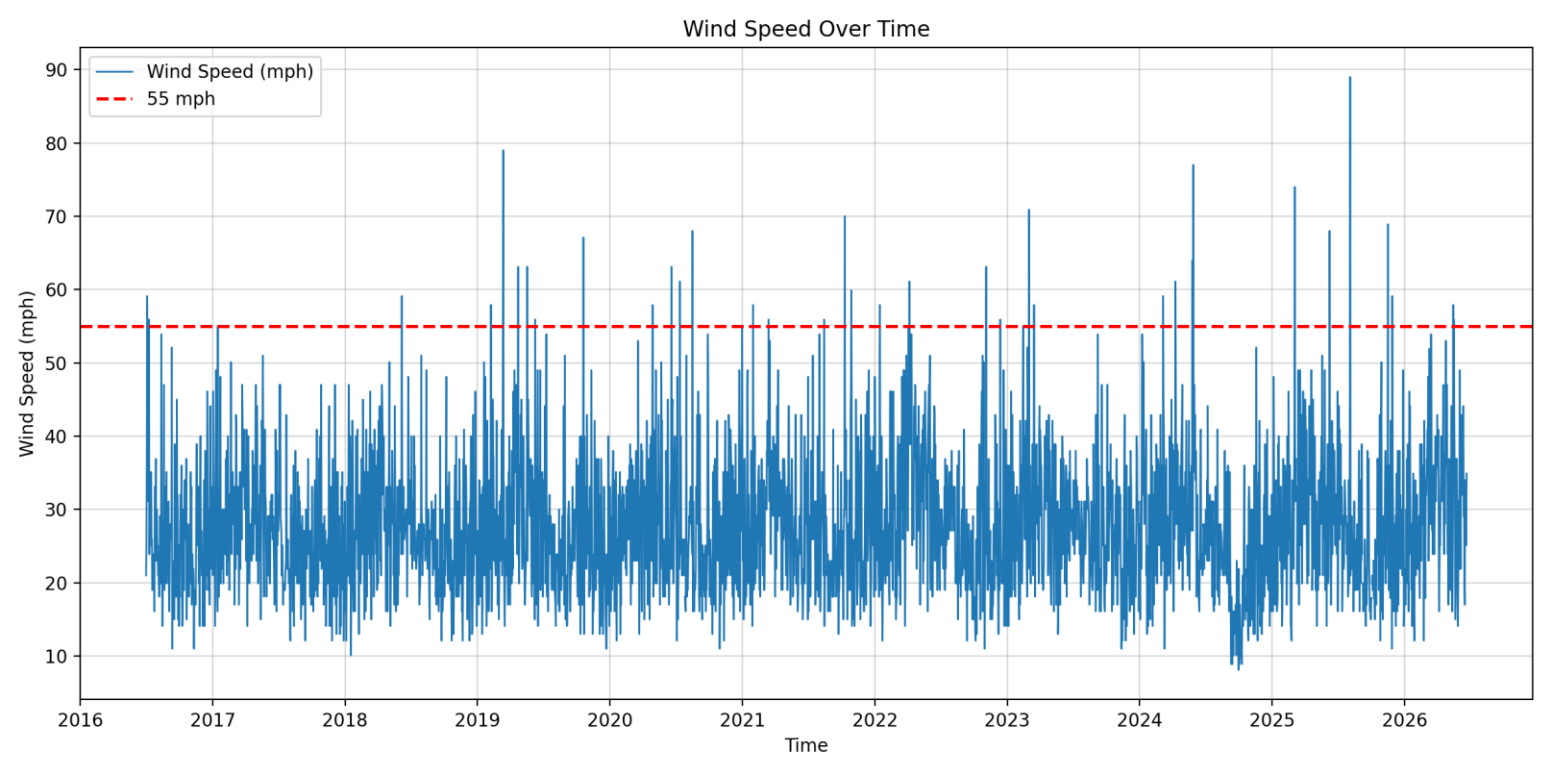
- **No metric shows a significant trend at the 95% confidence level.**
- The **number of days above 75°F** shows the strongest evidence of change ($p \approx 0.09$), but the dataset is still too short and noisy to confidently distinguish a trend from natural variability.
- The **2022–2023 heat spike is real**, but the subsequent decline in 2024–2025 weakens the case for a sustained increase.

Source: NOAA (National Centers for Environmental Information – National Oceanic and Atmospheric Administration)

10 year

Wind/Storm

A graph of sustained maximum wind speeds highlights days exceeding 55 knots (damaging winds), helping assess structural storm risks and track climate change trends over time. This data enables buyers to estimate potential damage risks and plan for resilient construction or insurance needs.



Year	Days with WSF5 ≥ 55 kt
2016	2
2017	0
2018	1
2019	6
2020	4
2021	1
2022	4
2023	2
2024	4
2025	5
2026	2

The number of days exceeding **55 mph** does **not** show a statistically significant trend. However, the underlying wind-speed data in **WSF5** do show a statistically significant increase:

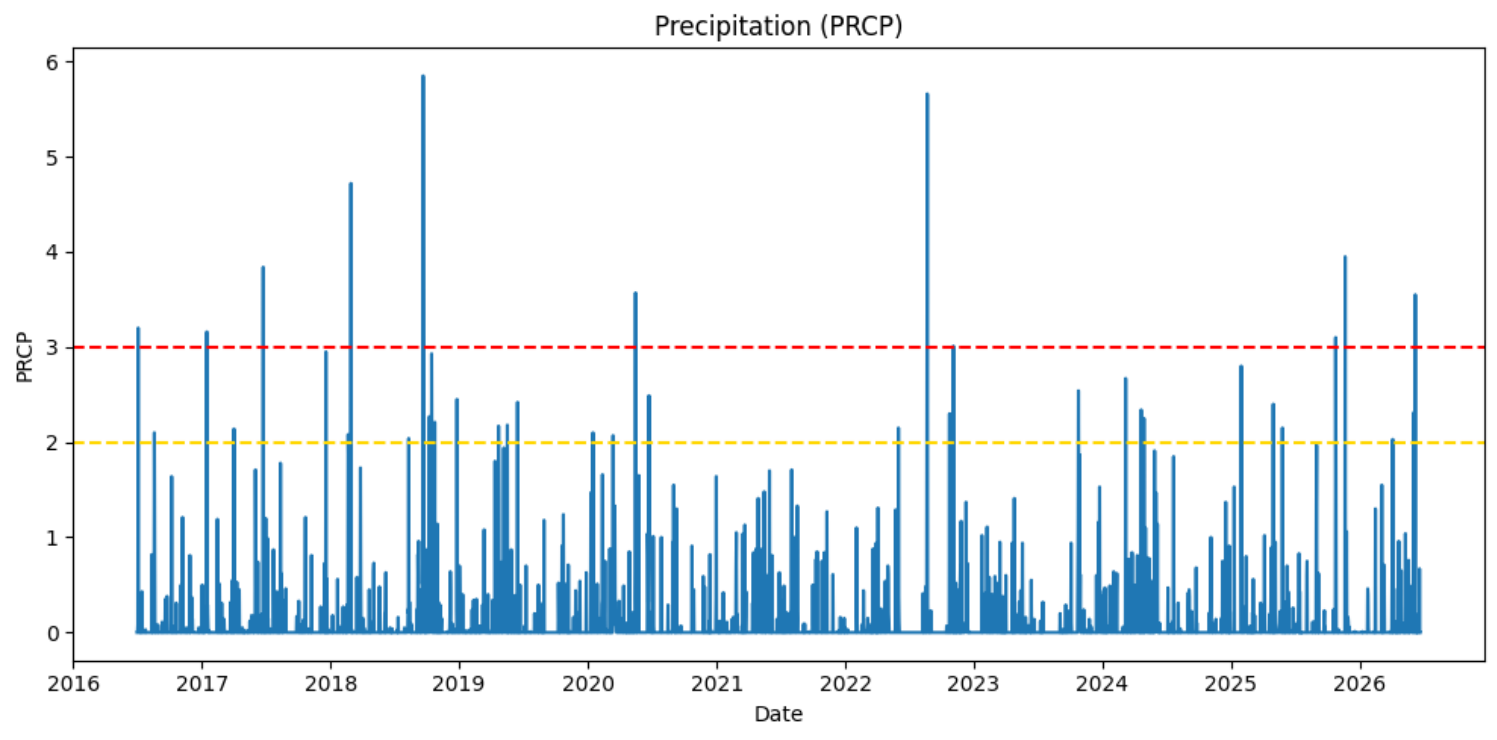
- Average WSF5 has increased by about **0.26 mph per year**.
- Median WSF5 has increased by about **0.38 mph per year**.
- Over 10 years, that's roughly a **2.5–4 mph increase** in typical wind speeds.
- The strongest annual gusts (annual maxima) have not increased significantly because extreme events are noisy and rare.

Source: NOAA (National Centers for Environmental Information – National Oceanic and Atmospheric Administration)

10 year

Rain/Precipitation

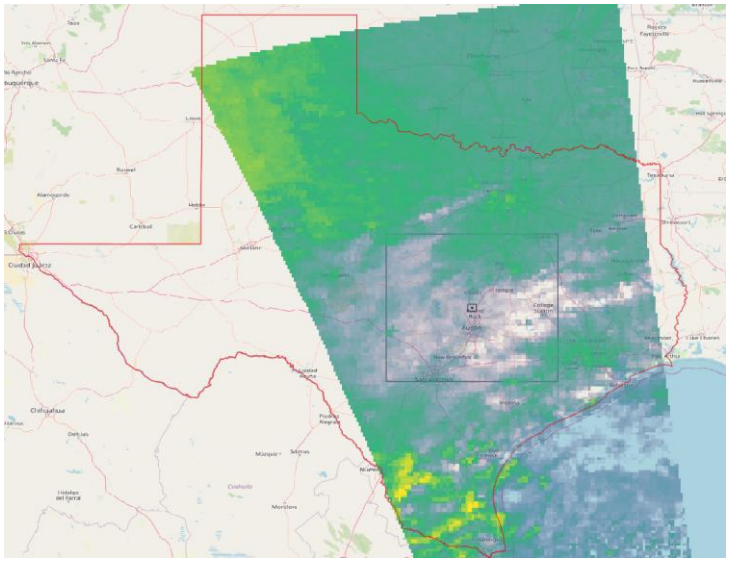
A 10-year precipitation report highlighting days with 2+ or 3+ inches of rainfall helps identify flood risks, drainage challenges, and climate trends (e.g., increasing extreme rainfall events). This data allows buyers to assess water management needs and potential long-term impacts on land stability or infrastructure.



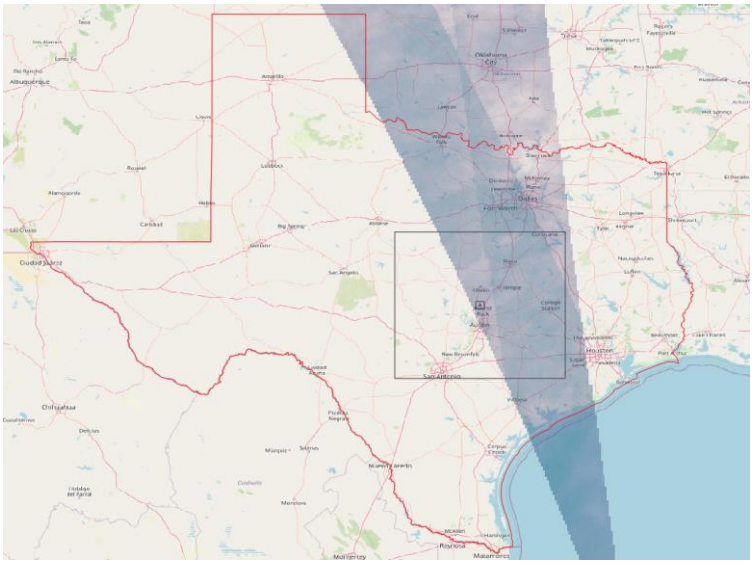
Year	Days with 2" < PRCP < 3"	Days with PRCP > 3"
2016	1	1
2017	2	2
2018	8	2
2019	3	0
2020	3	1
2021	0	0
2022	2	3
2023	1	0
2024	3	0
2025	3	2
2026	2	1

The data show substantial variability from year to year, but there is no clear evidence that:
• average daily precipitation is increasing,
• average daily precipitation is decreasing,
• moderate-heavy precipitation events (≥2) are becoming more common,
• or very heavy precipitation events (≥3) are becoming more common.

Source: NOAA (National Centers for Environmental Information – National Oceanic and Atmospheric Administration)



2026



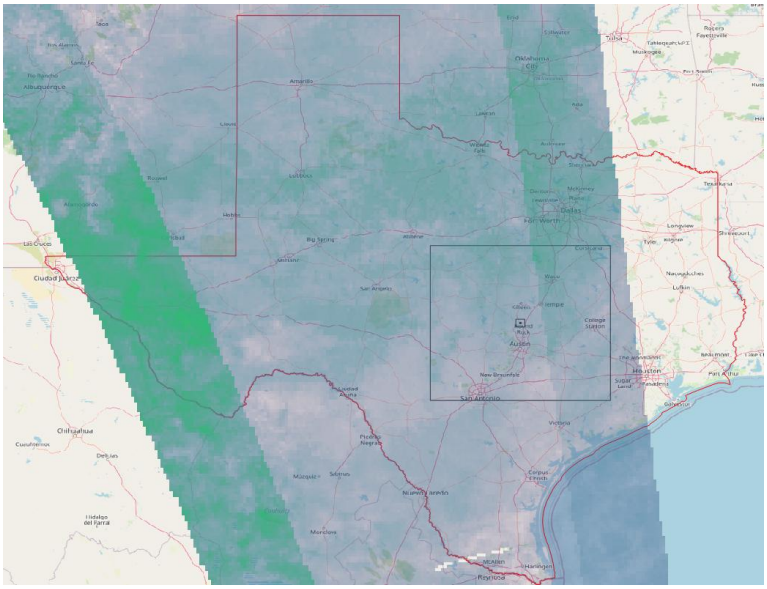
2025

min max

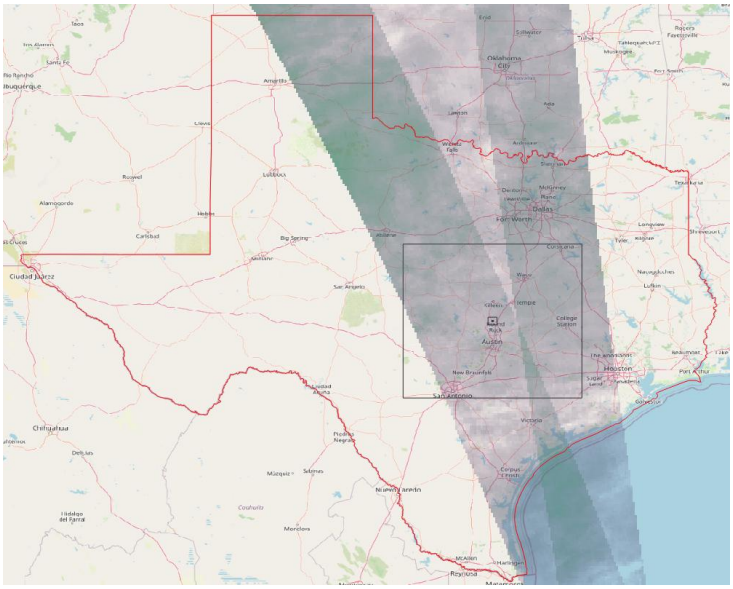
AEROSOL Index 2025-26

Aerosols are microscopic solid or liquid particles suspended in the air, originating from natural sources (e.g., dust, sea salt, volcanic ash) or human activities (e.g., industrial emissions, vehicle exhaust, wildfires). They pose severe health risks by penetrating deep into the lungs and even entering the bloodstream, causing or exacerbating respiratory diseases (asthma, bronchitis), cardiovascular issues, lung cancer, and stroke, with fine particles ($PM_{2.5}$) linked to millions of premature deaths annually; some aerosols also influence climate by scattering or absorbing sunlight.

Source: Sentinel 5P, 2025-2026 avg



2024



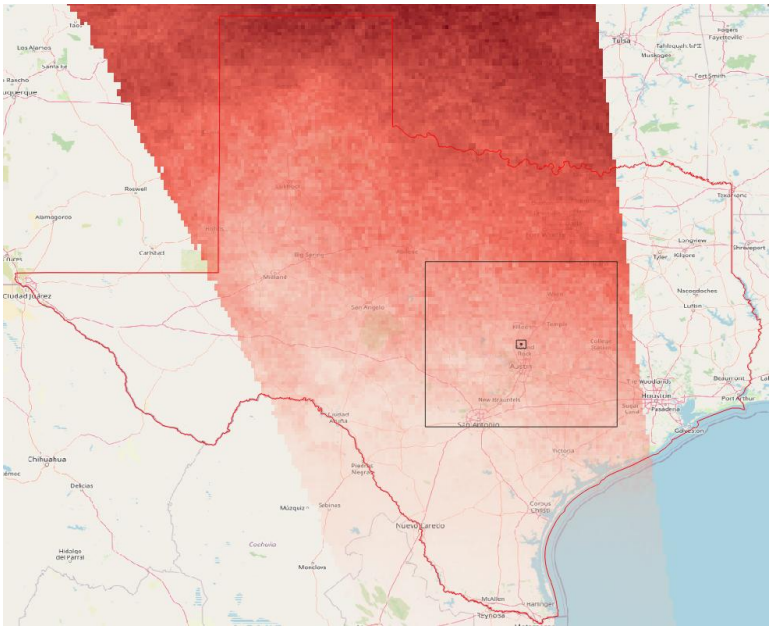
2023

min max

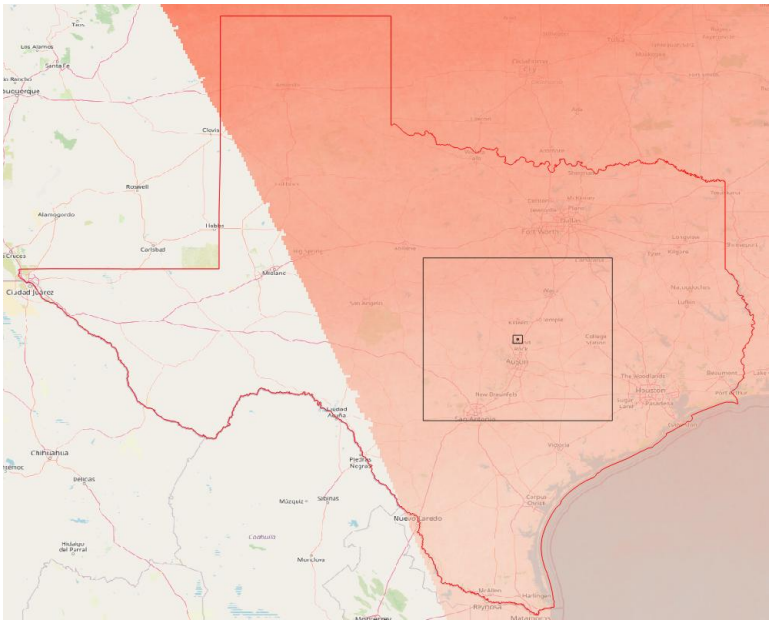
AEROSOL Index 2024-23

Aerosols are microscopic solid or liquid particles suspended in the air, originating from natural sources (e.g., dust, sea salt, volcanic ash) or human activities (e.g., industrial emissions, vehicle exhaust, wildfires). They pose severe health risks by penetrating deep into the lungs and even entering the bloodstream, causing or exacerbating respiratory diseases (asthma, bronchitis), cardiovascular issues, lung cancer, and stroke, with fine particles ($PM_{2.5}$) linked to millions of premature deaths annually; some aerosols also influence climate by scattering or absorbing sunlight.

Source: Sentinel 5P, 2025-2026 avg



2026



2025

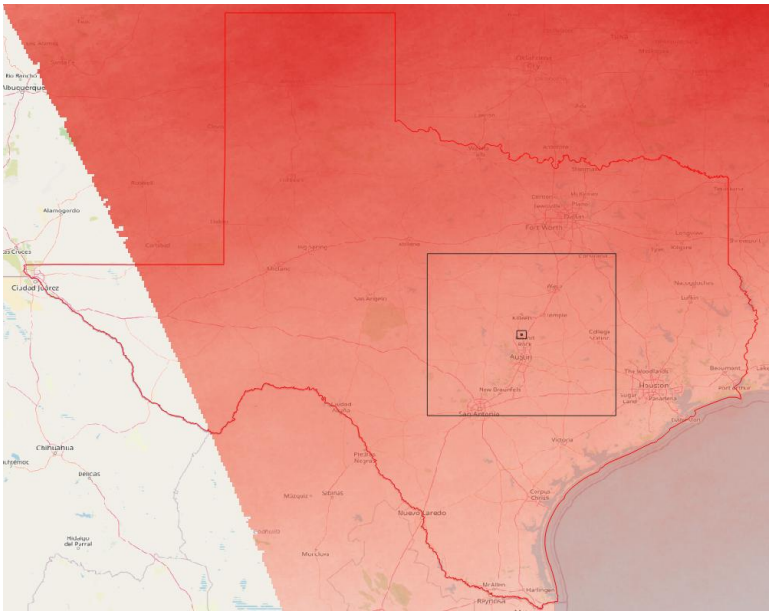
min

max

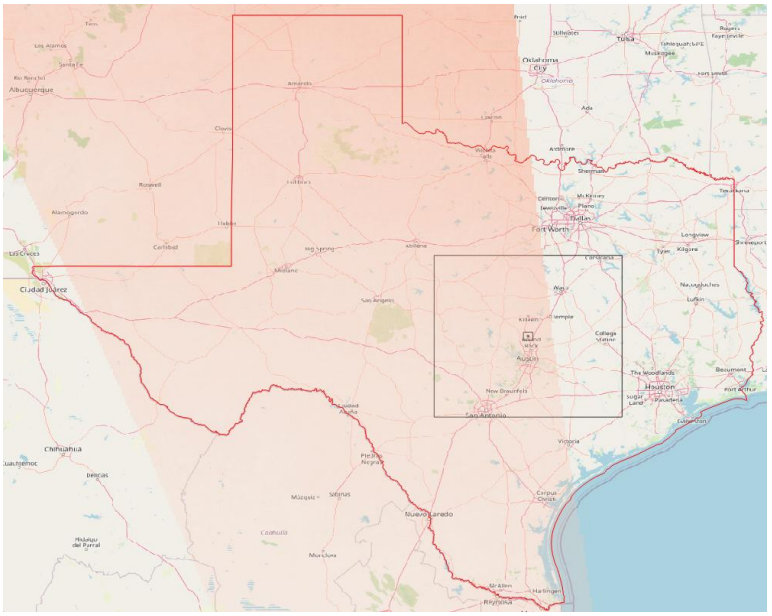
OZONE 2025-26

Ozone (O_3) is a gas that exists in two atmospheric layers: the stratosphere (where it forms a protective layer shielding Earth from harmful UV radiation) and the troposphere (where it acts as a harmful pollutant). At ground level, ozone is a secondary pollutant created by chemical reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOCs) under sunlight. It irritates the respiratory system, reduces lung function, exacerbates asthma and COPD, and causes chronic respiratory diseases, cardiovascular issues, and lung inflammation, with long-term exposure linked to premature death; children, the elderly, and those with pre-existing conditions are most vulnerable.

Source: Sentinel 5P, 2025-2026 avg



2024



2023

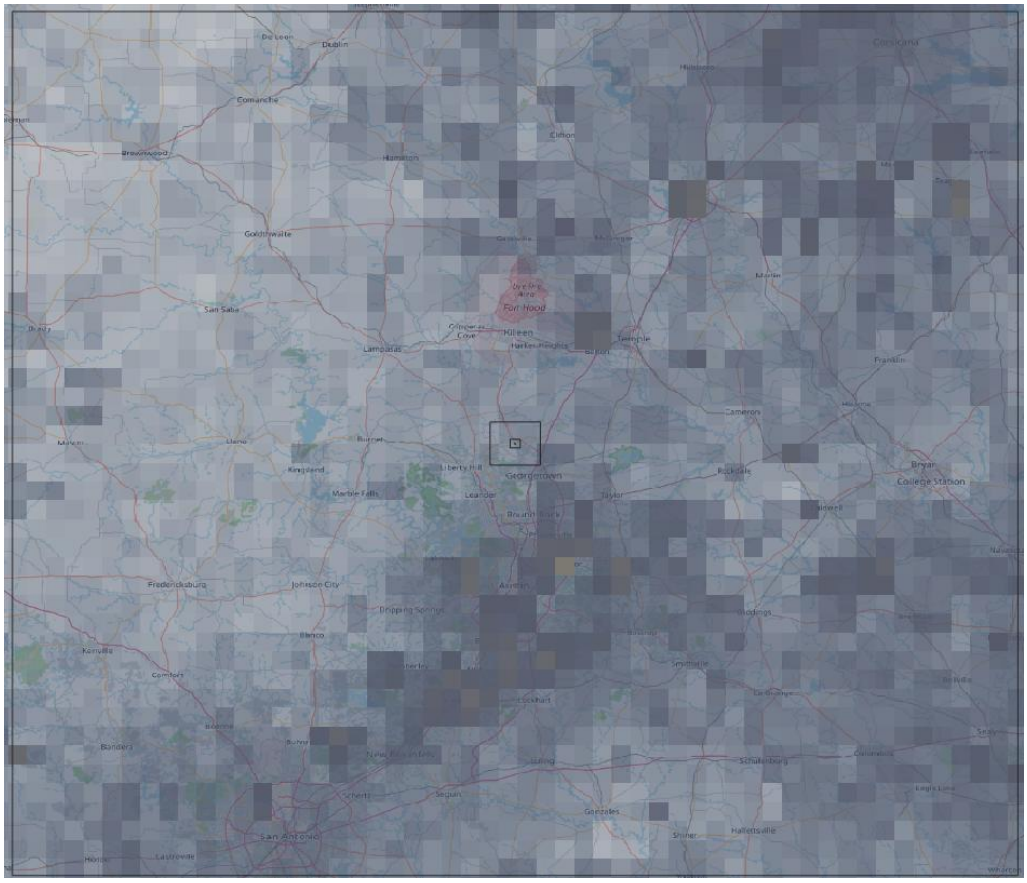
min

max

OZONE 2023-24

Ozone (O_3) is a gas that exists in two atmospheric layers: the stratosphere (where it forms a protective layer shielding Earth from harmful UV radiation) and the troposphere (where it acts as a harmful pollutant). At ground level, ozone is a secondary pollutant created by chemical reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOCs) under sunlight. It irritates the respiratory system, reduces lung function, exacerbates asthma and COPD, and causes chronic respiratory diseases, cardiovascular issues, and lung inflammation, with long-term exposure linked to premature death; children, the elderly, and those with pre-existing conditions are most vulnerable.

Source: Sentinel 5P, 2025-2026 avg



2026

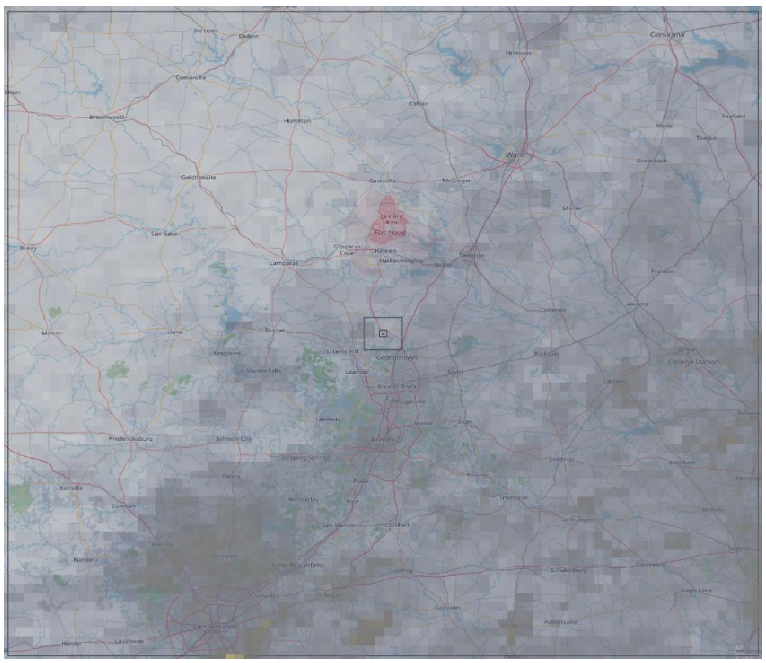
min

max

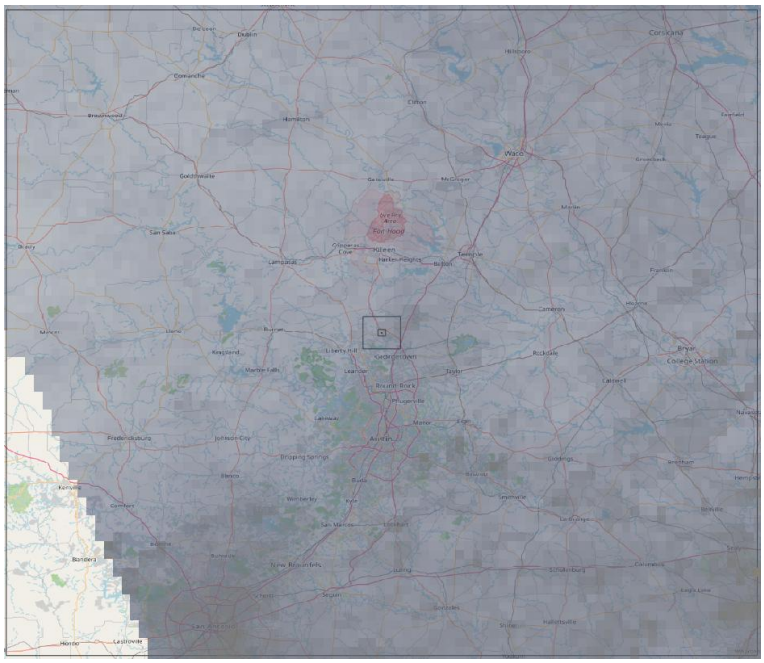
NITROGEN DIOXIDE 2026

Nitrogen Dioxide (NO_2) is a toxic, reddish-brown gas primarily emitted from combustion processes, such as vehicle exhaust, power plants, and industrial activities. As a key component of urban air pollution, NO_2 reacts with sunlight and other pollutants to form ground-level ozone and fine particulate matter ($PM_{2.5}$), further degrading air quality. Exposure to NO_2 irritates the respiratory tract, worsens asthma, bronchitis, and COPD, and increases the risk of respiratory infections, heart disease, and premature death. Long-term exposure is particularly harmful to children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions, as it impairs lung development and function while contributing to systemic inflammation.

Source: Sentinel 5P, 2025-2026 avg



2024



2025

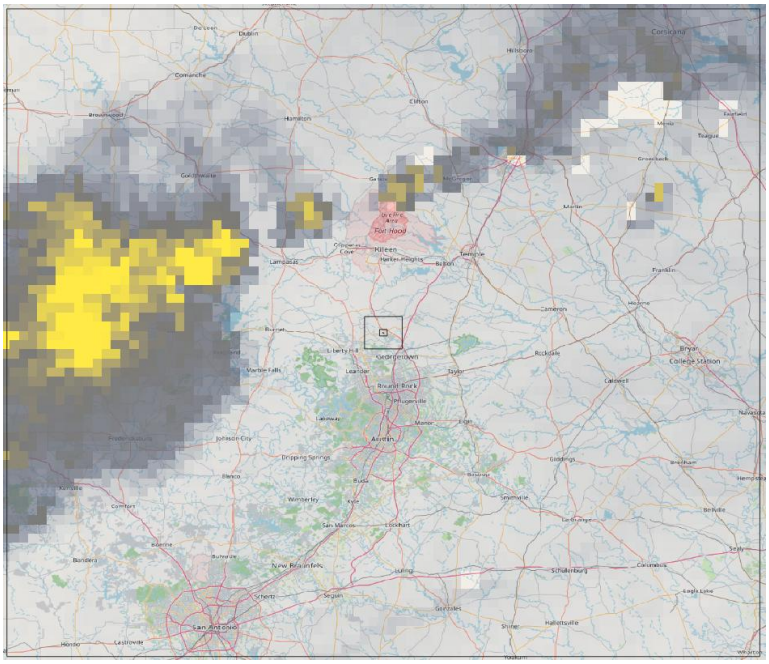
min

max

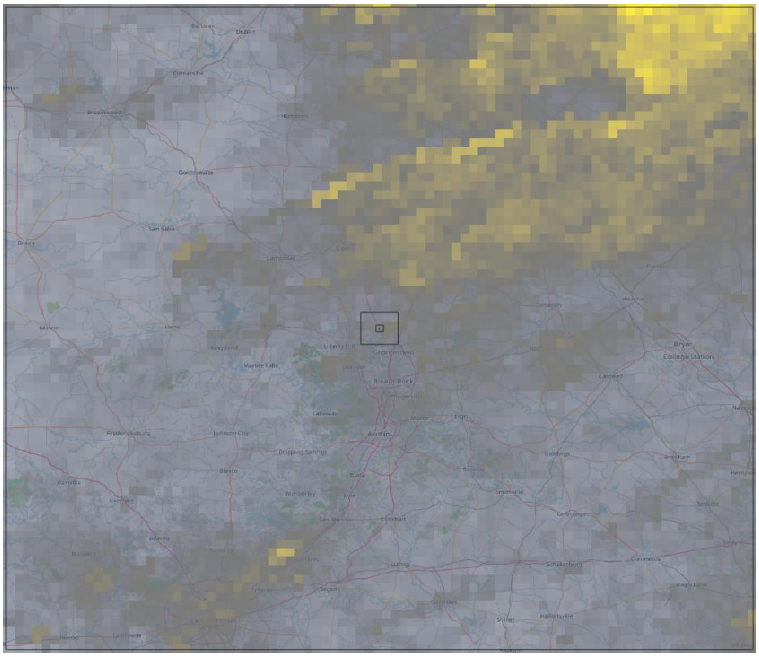
NITROGEN DIOXIDE 2024-25

Nitrogen Dioxide (NO_2) is a toxic, reddish-brown gas primarily emitted from combustion processes, such as vehicle exhaust, power plants, and industrial activities. As a key component of urban air pollution, NO_2 reacts with sunlight and other pollutants to form ground-level ozone and fine particulate matter ($PM_{2.5}$), further degrading air quality. Exposure to NO_2 irritates the respiratory tract, worsens asthma, bronchitis, and COPD, and increases the risk of respiratory infections, heart disease, and premature death. Long-term exposure is particularly harmful to children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions, as it impairs lung development and function while contributing to systemic inflammation.

Source: Sentinel 5P, 2025-2026 avg



2022



2023

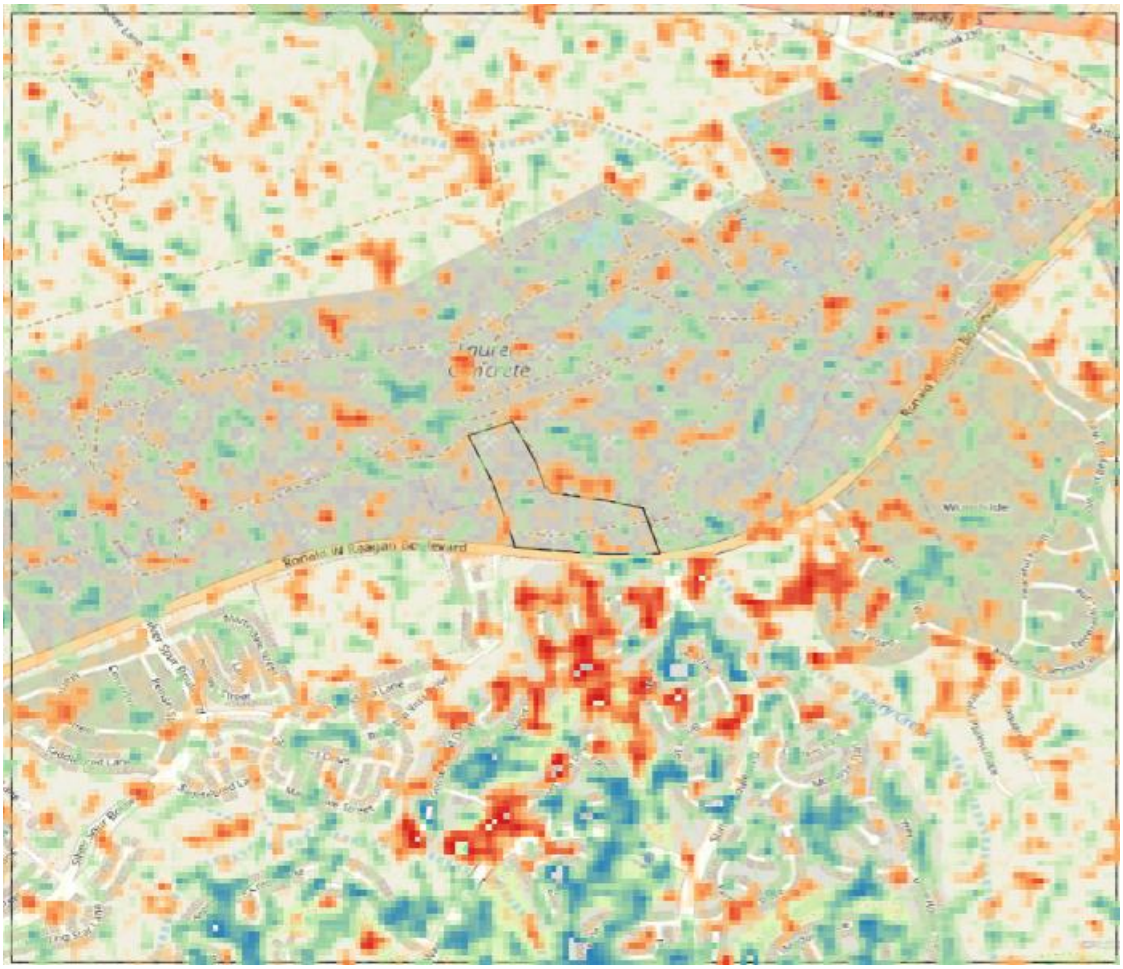
min

max

NITROGEN DIOXIDE 2022-23

Nitrogen Dioxide (NO_2) is a toxic, reddish-brown gas primarily emitted from combustion processes, such as vehicle exhaust, power plants, and industrial activities. As a key component of urban air pollution, NO_2 reacts with sunlight and other pollutants to form ground-level ozone and fine particulate matter ($PM_{2.5}$), further degrading air quality. Exposure to NO_2 irritates the respiratory tract, worsens asthma, bronchitis, and COPD, and increases the risk of respiratory infections, heart disease, and premature death. Long-term exposure is particularly harmful to children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions, as it impairs lung development and function while contributing to systemic inflammation.

Source: Sentinel 5P, 2025-2026 avg

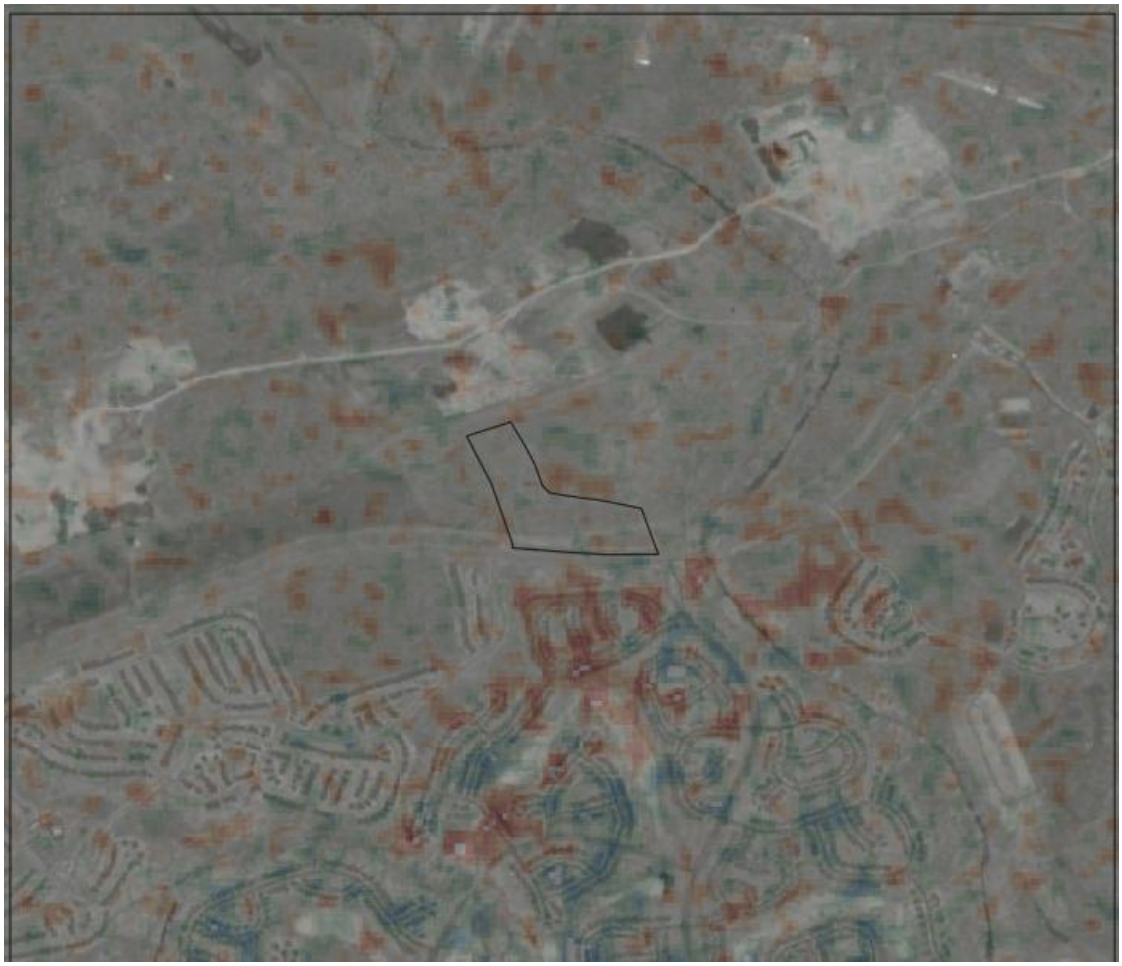


neg pos

SUBSIDENCE MAP 2026-2016, 4sqm

This subsidence map, generated using spaceborne radar images from 2016 to 2026, visualizes ground sinking—a gradual or sudden lowering of the Earth's surface due to soil compaction, groundwater extraction, mining, or natural geological processes. Subsidence is critical to monitor because it can damage building foundations, crack roads, and disrupt infrastructure, leading to costly repairs, reduced property values, and safety risks. For homebuyers, developers, and urban planners, understanding these patterns helps avoid high-risk areas and ensure long-term stability.

Source: Sentinel 1 inSAR 2016-2026



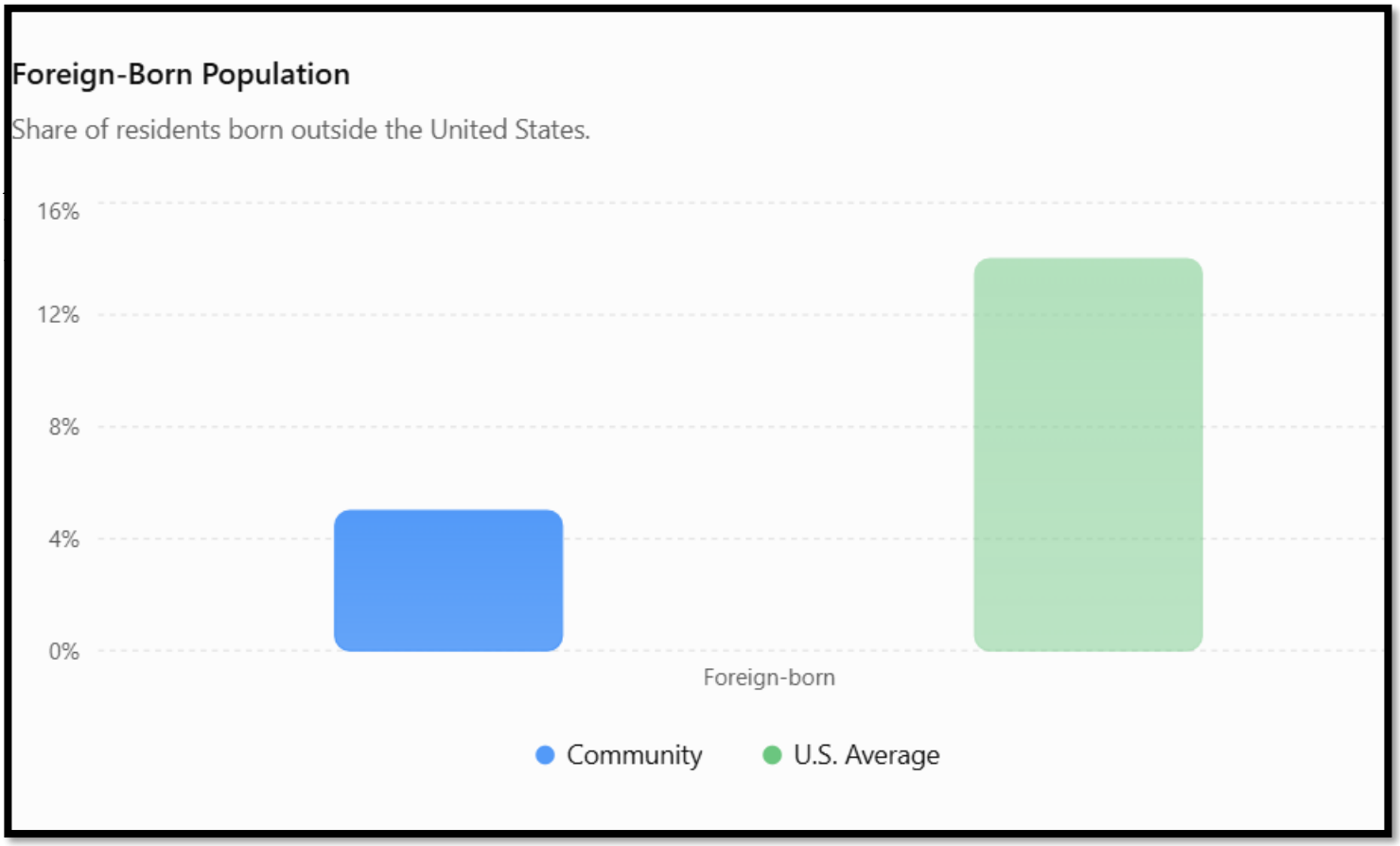
neg pos

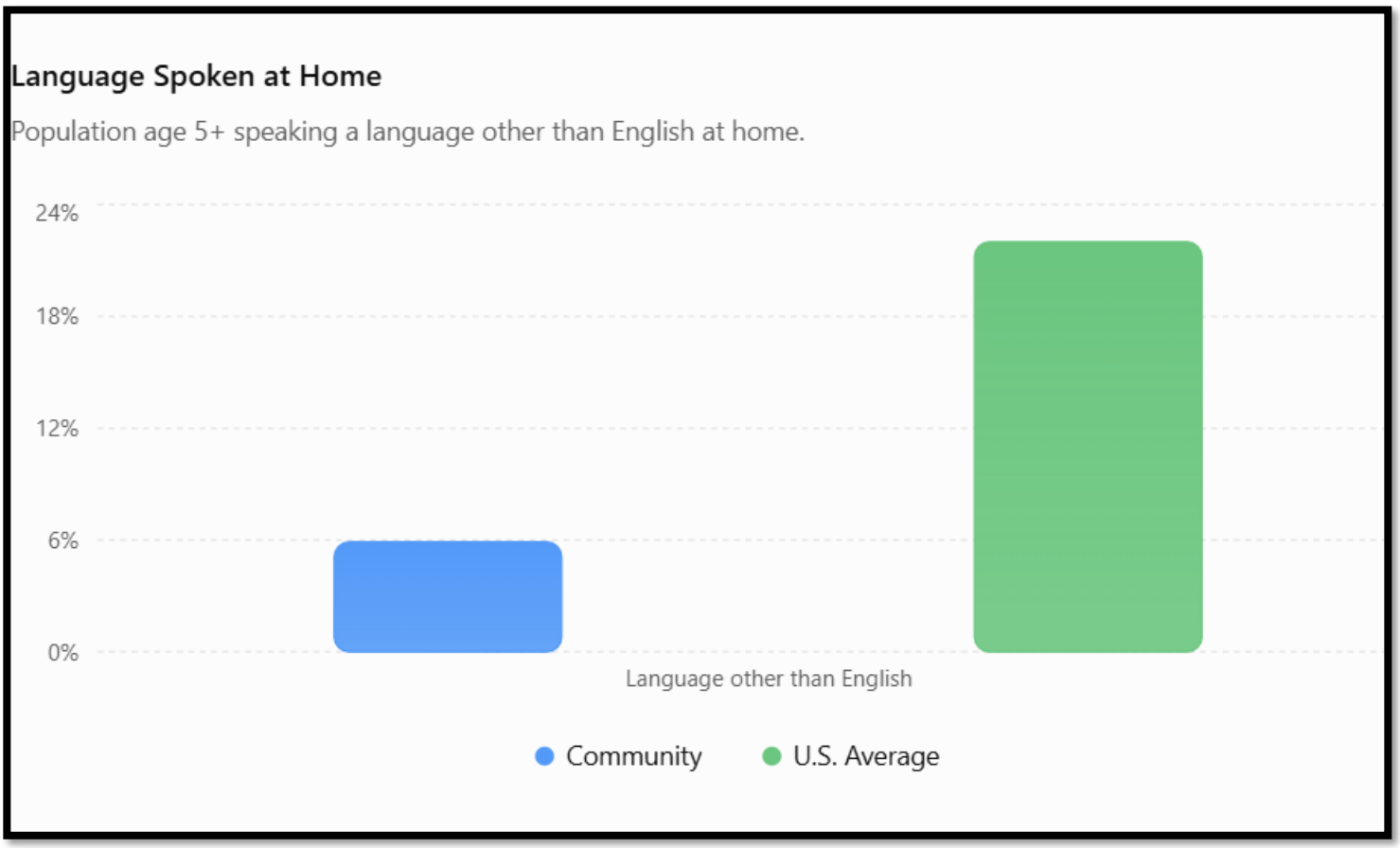
SUBSIDENCE MAP 2026-2016, 4sqm

This 2016–2026 subsidence map, overlaid on a near-infrared radar image, visualizes ground sinking—the gradual or sudden lowering of the Earth's surface caused by soil compaction, groundwater extraction, mining, or natural geological processes. Monitoring subsidence is critical, as it can damage building foundations, crack roads, and disrupt infrastructure, leading to costly repairs, reduced property values, and safety risks. For homebuyers, developers, and urban planners, understanding these patterns helps avoid high-risk areas and ensures long-term stability.

Source: Sentinel 1 inSAR 2016-2026

CENSUS DATA - POPULATION

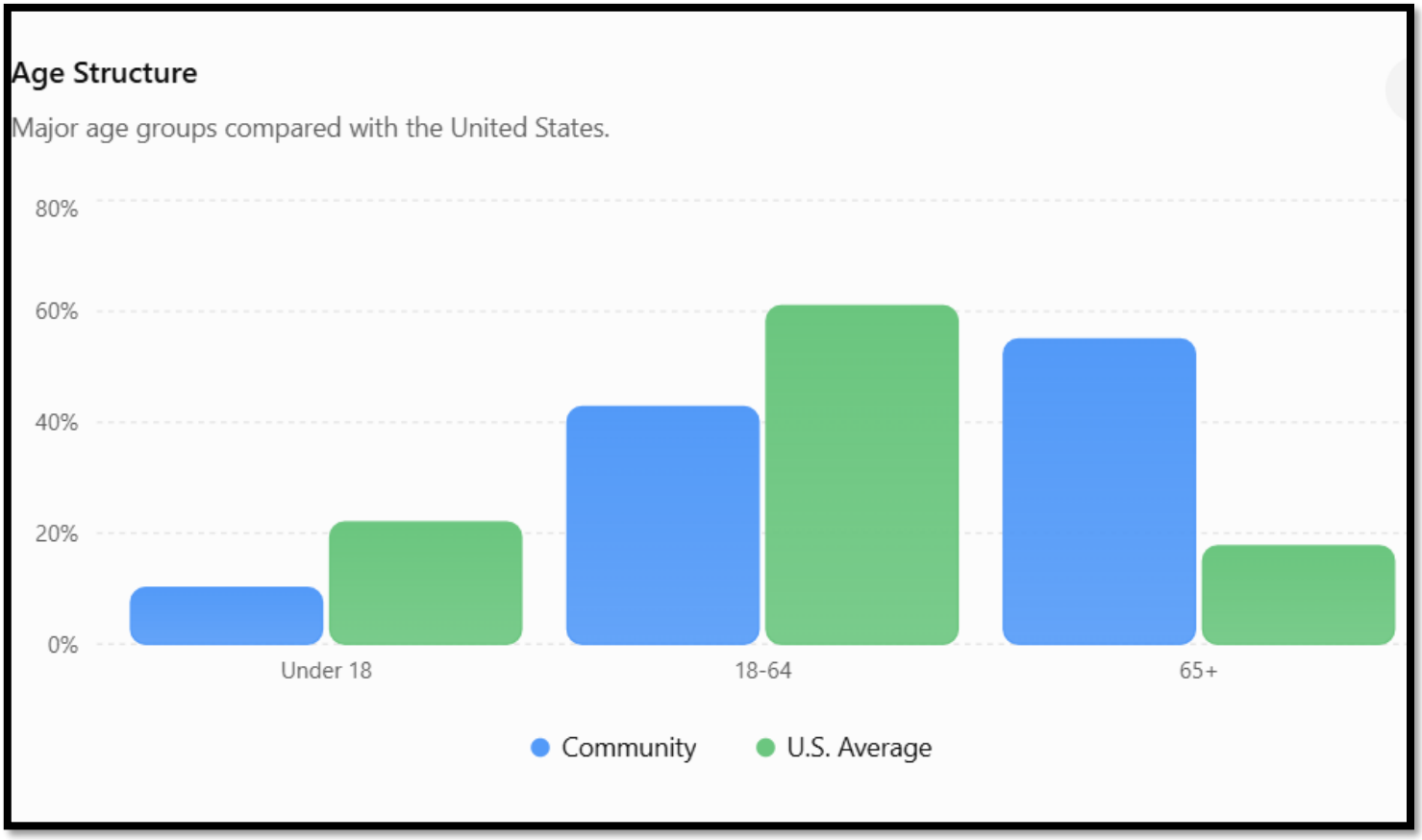




Source: US Census Data

CENSUS DATA - POPULATION

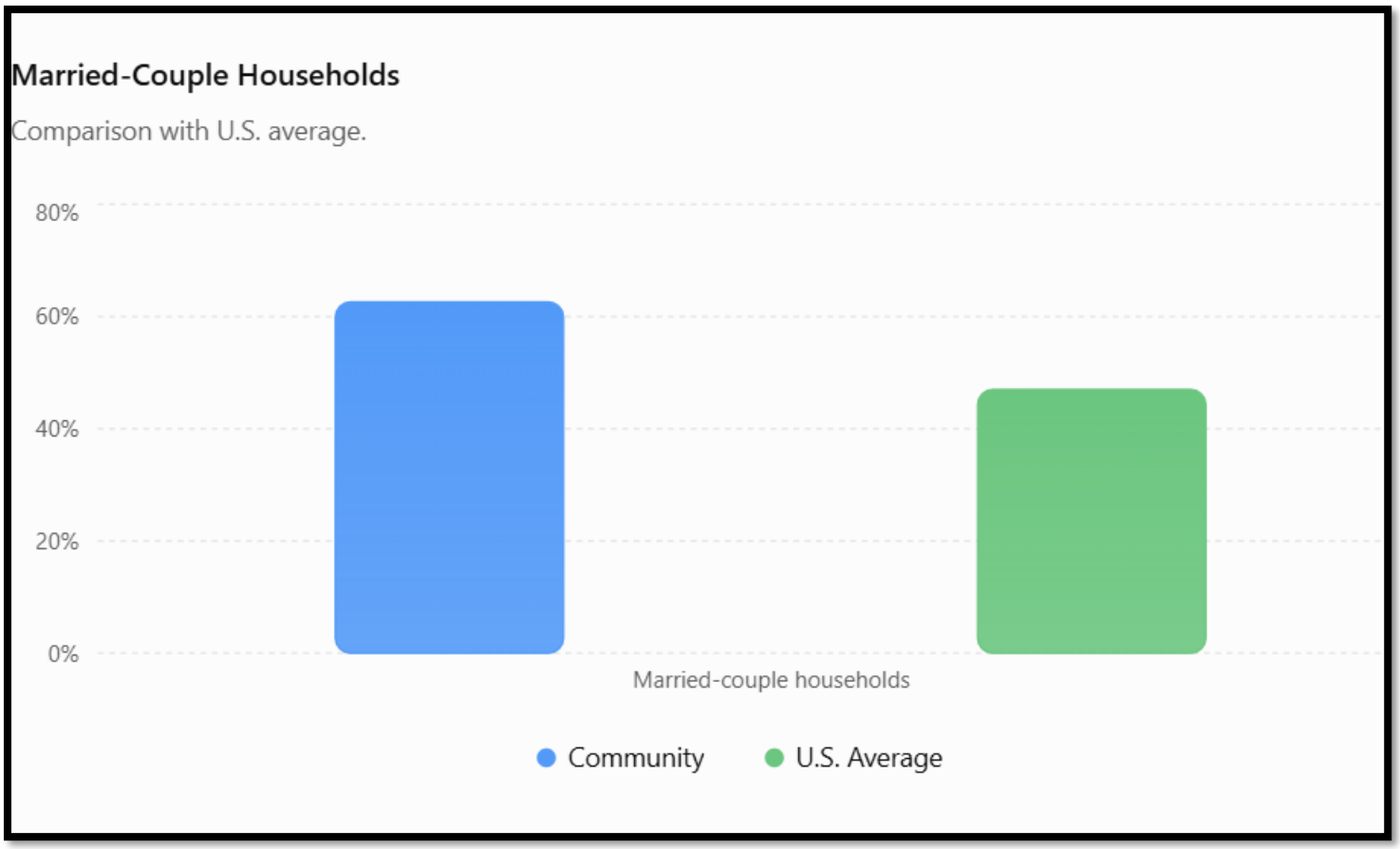
From a real estate perspective, this demographic profile suggests a stable residential environment with potentially lower turnover and fewer large-scale family housing developments. However, it may also indicate slower long-term population growth and a housing market driven primarily by retirees or older homeowners rather than young families.



Source: US Census Data

CENSUS DATA - POPULATION

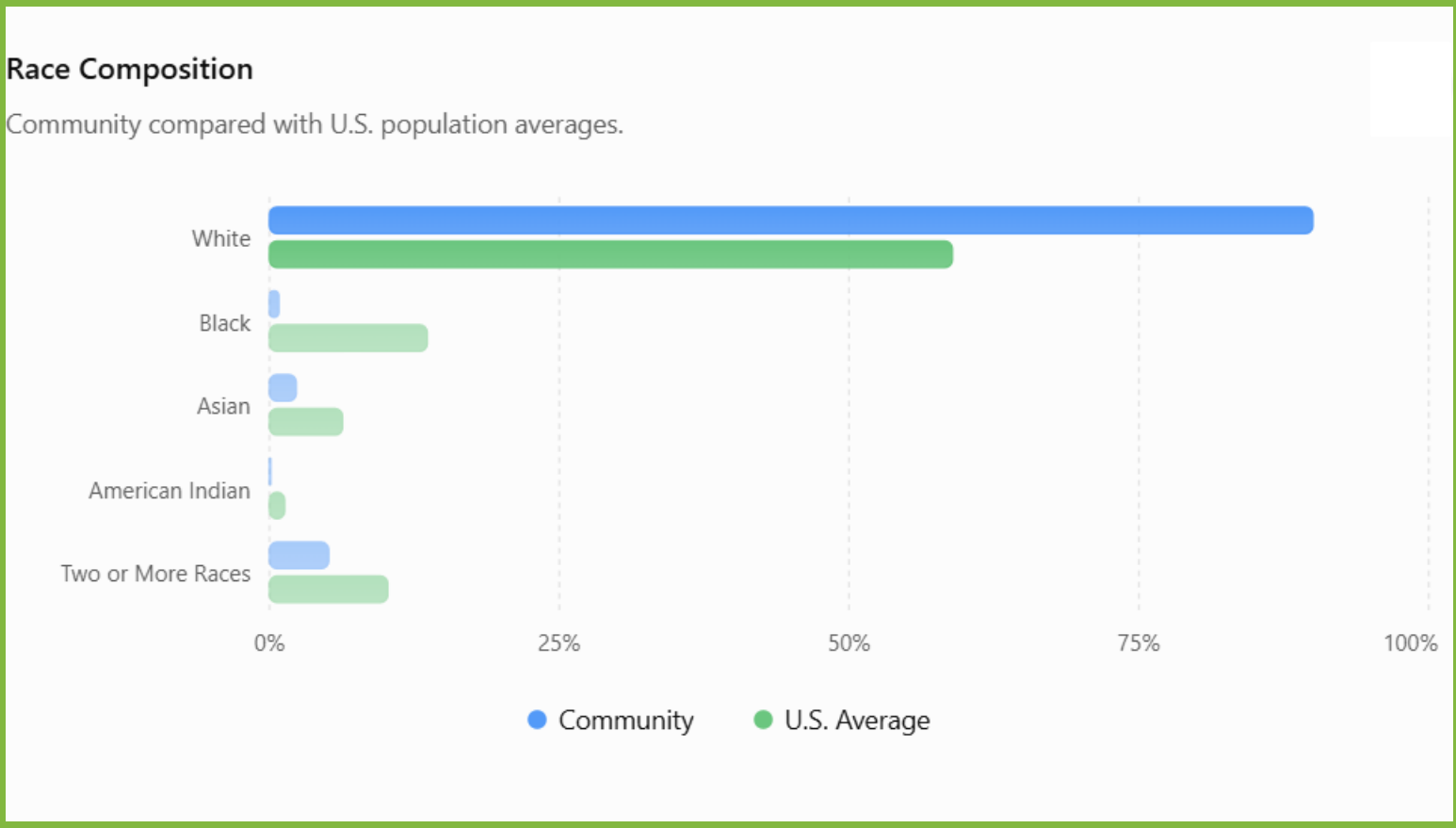
The community has a higher proportion of married-couple households (approximately 62%) than the U.S. average (approximately 47%), indicating a stable, family-oriented residential environment. Higher rates of married households are often associated with greater neighborhood stability, stronger community cohesion, and longer-term homeownership, making the area attractive to homebuyers seeking an established and predictable community.



Source: US Census Data

CENSUS DATA - POPULATION

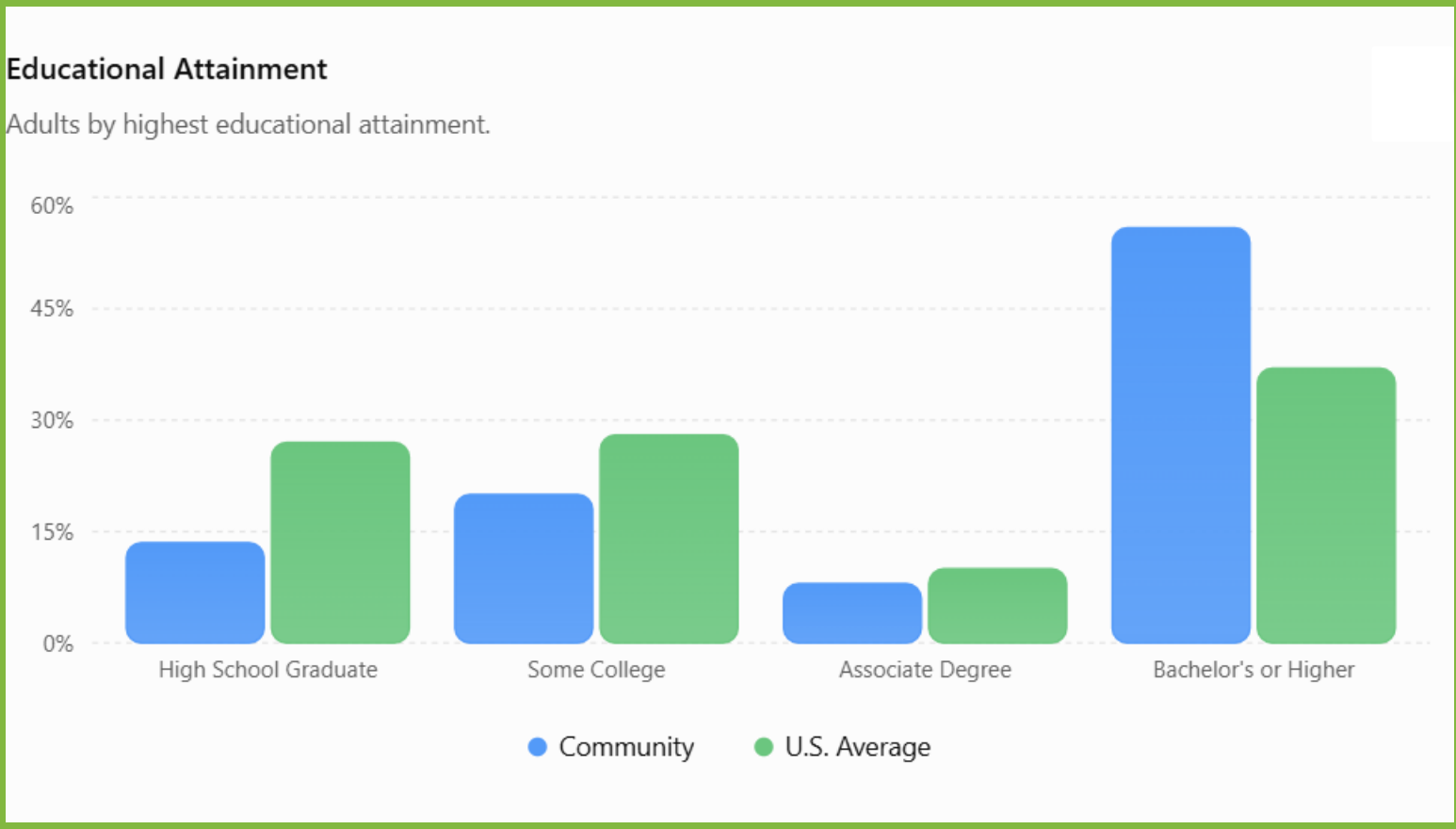
The community is considerably less racially diverse than the United States as a whole. Its population is overwhelmingly White, while Black, Asian, and multiracial residents are underrepresented compared with national averages.



Source: US Census Data

CENSUS DATA - EDUCATION

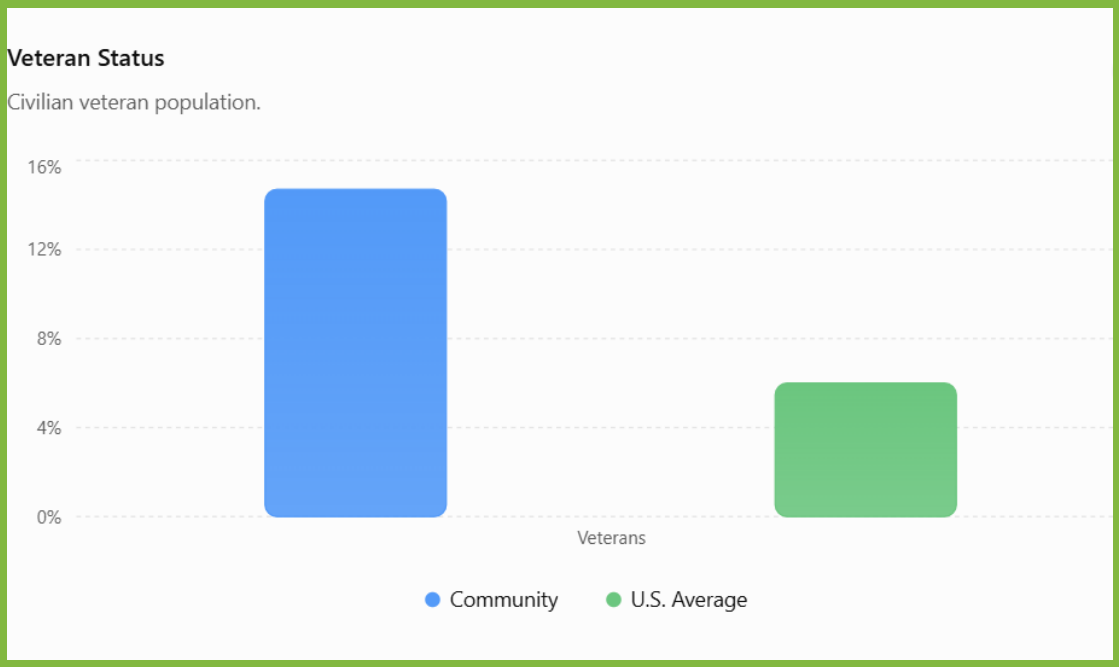
The community is significantly more highly educated than the average U.S. community. More than half of adults have earned a bachelor's degree or higher, which is well above the national average. Correspondingly, fewer residents stop their education after high school, some college, or an associate degree.



Source: US Census Data

CENSUS DATA – VETERANS/DISABILITY

The community has a substantially higher concentration of veterans than the national average, indicating that veterans represent an important demographic group whose unique health, social, and economic needs should be considered in community planning.

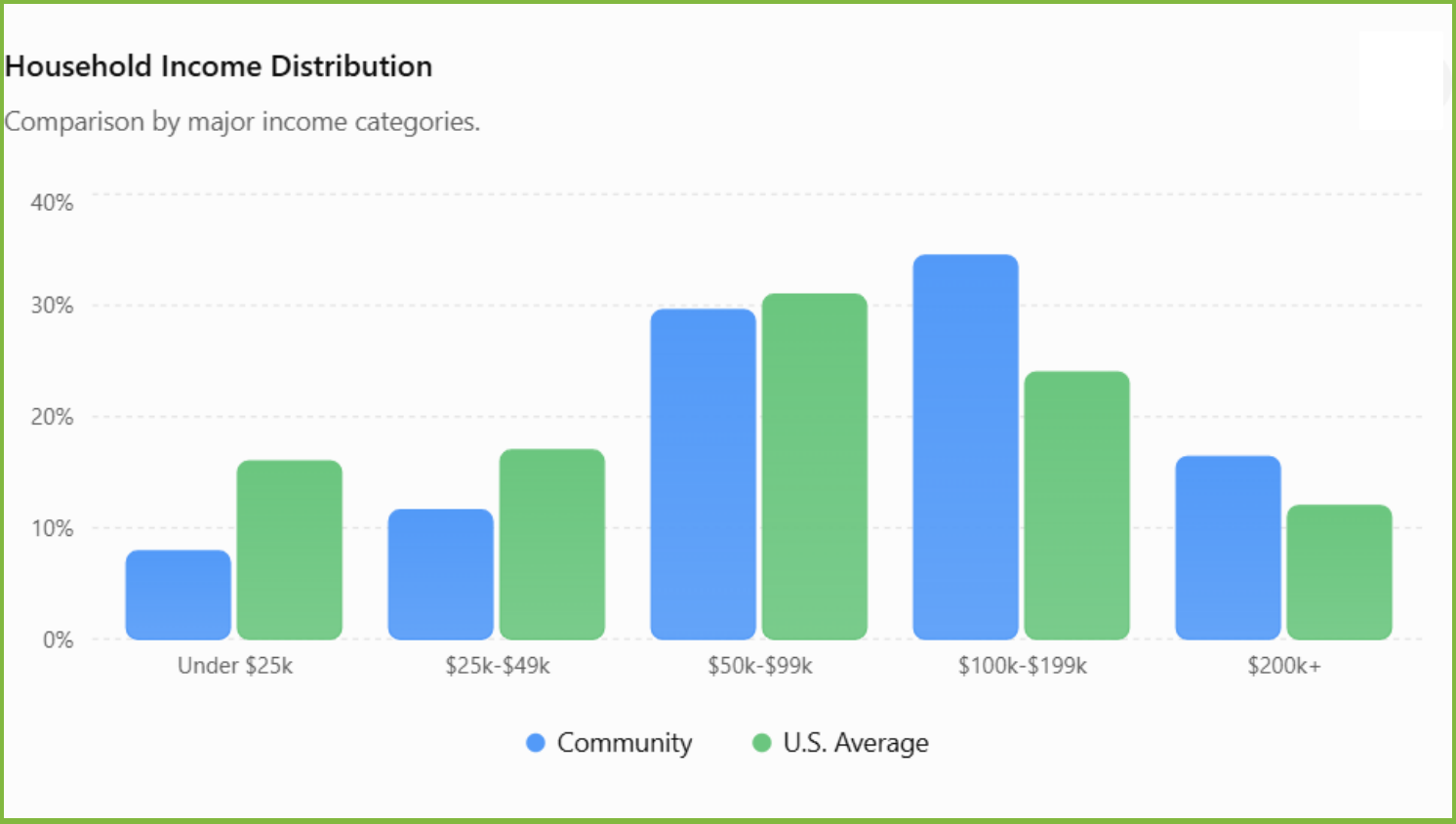


The community has a higher prevalence of disability than the national average, suggesting an increased need for accessible services, healthcare resources, and programs that support individuals living with physical, sensory, cognitive, or developmental disabilities.

Source: US Census Data

CENSUS DATA - INCOME

Overall, the community's household income distribution reflects higher socioeconomic status compared with the U.S. average. There are fewer households in lower-income categories and a greater share earning $100,000 or more. This pattern may indicate stronger local economic conditions, higher educational attainment, or employment in well-paying industries. At the same time, while poverty appears less prevalent, a portion of the population still falls into lower-income brackets, suggesting that affordable housing, financial assistance, and other support services remain important for some residents.



Source: US Census Data