

Toward equitable, sustainable regional transportation planning for the Austin region

City of Austin Urban Transportation Commission

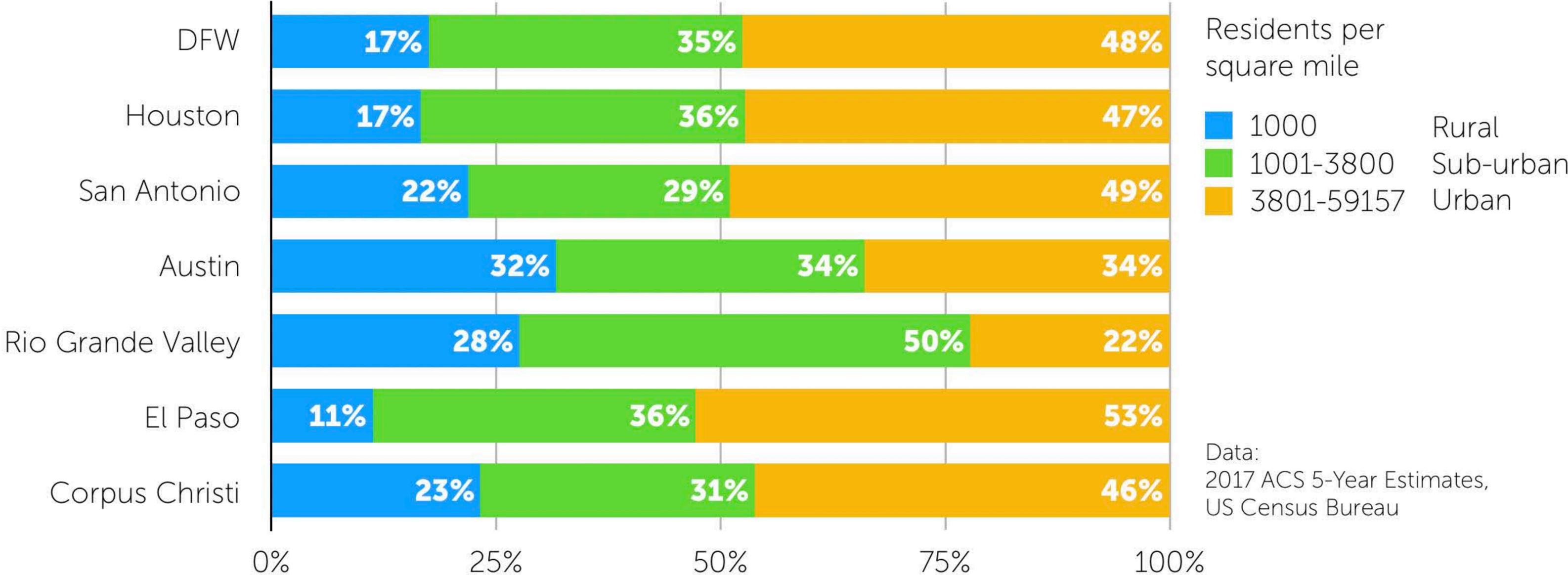
Jay Blazek Crossley, Farm&City, December 7, 2021



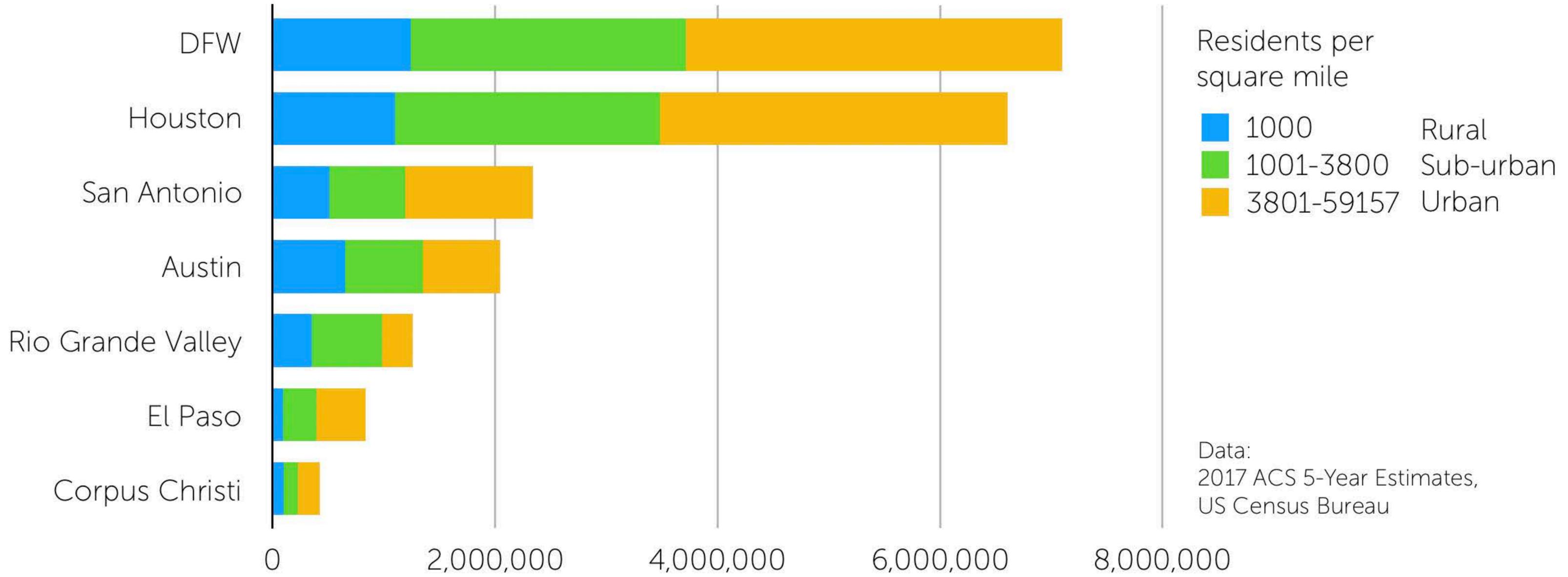
Farm
& City

**A 501(c)(3) charitable nonprofit
dedicated to high quality urban & rural
human habitat in Texas in perpetuity.**

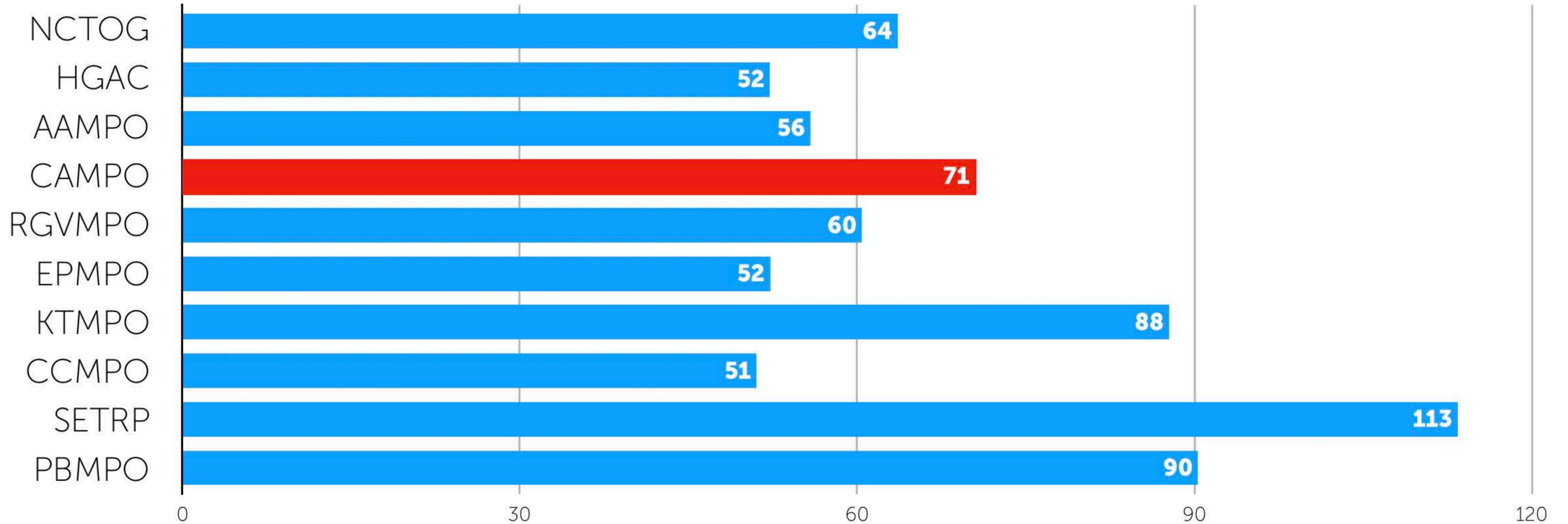
Percent of large Texas MPO residents living in rural, sub-urban, & urban census tracts



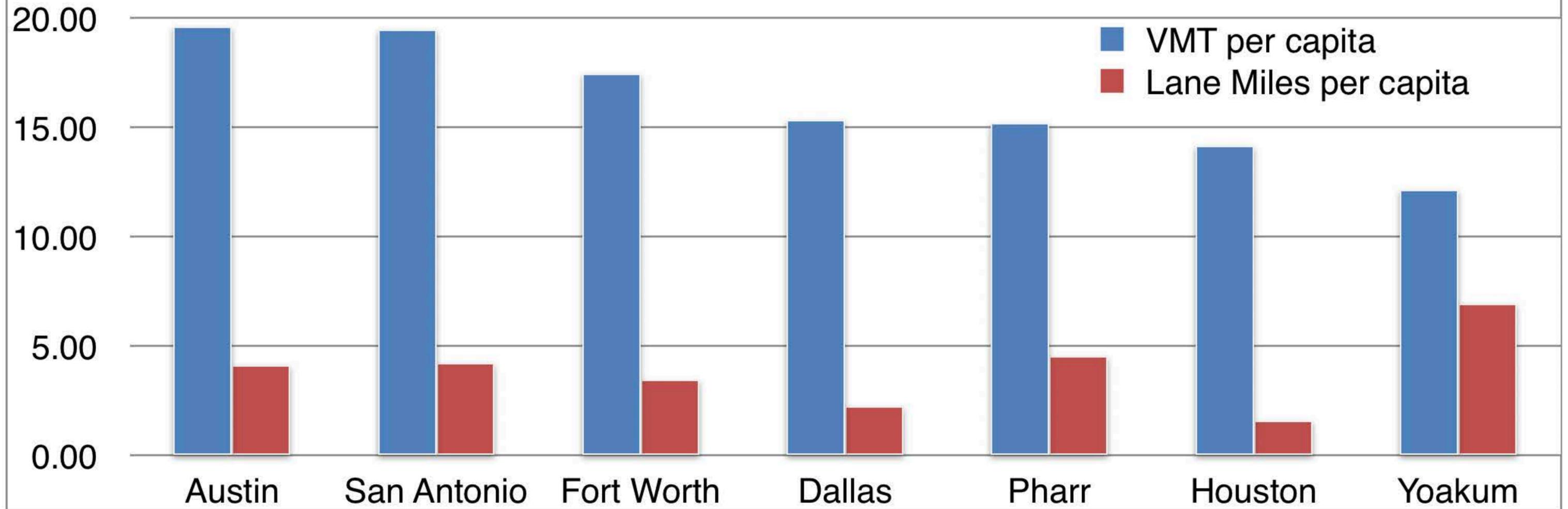
Large Texas MPO residents living in rural, sub-urban, & urban census tracts



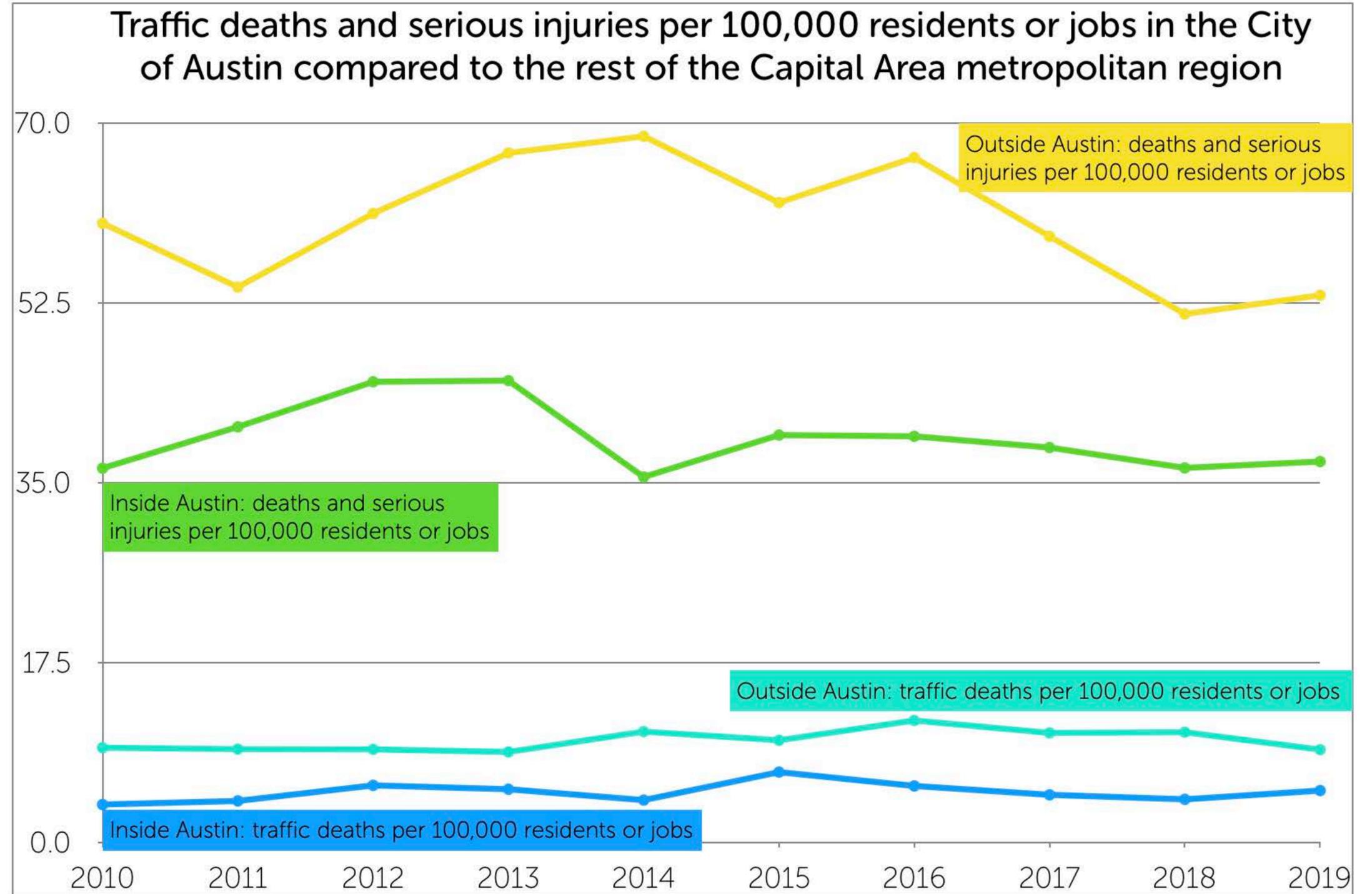
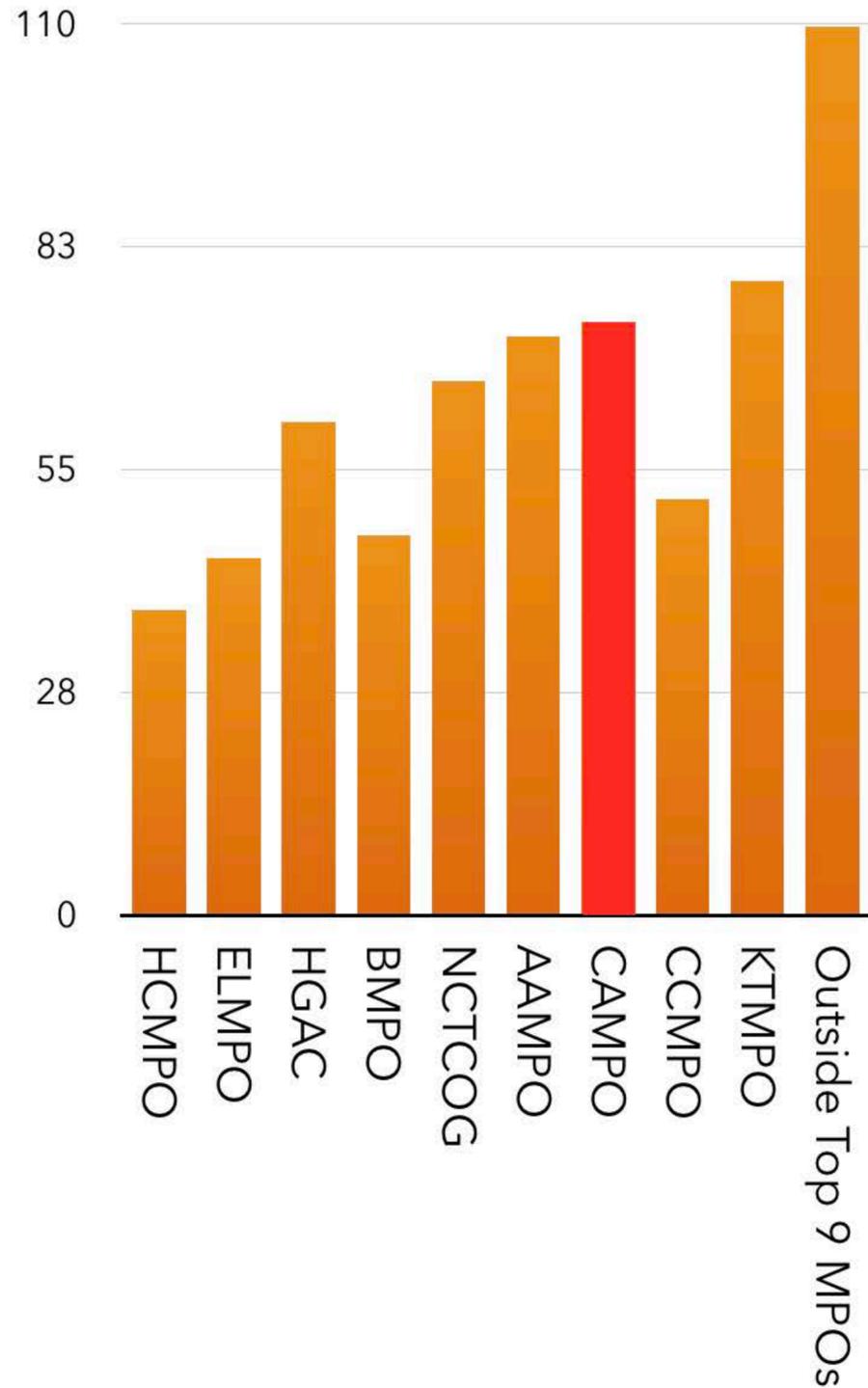
Total lane feet of road per capita in 10 largest Texas MPOs



All TXDOT Districts with more than a million residents

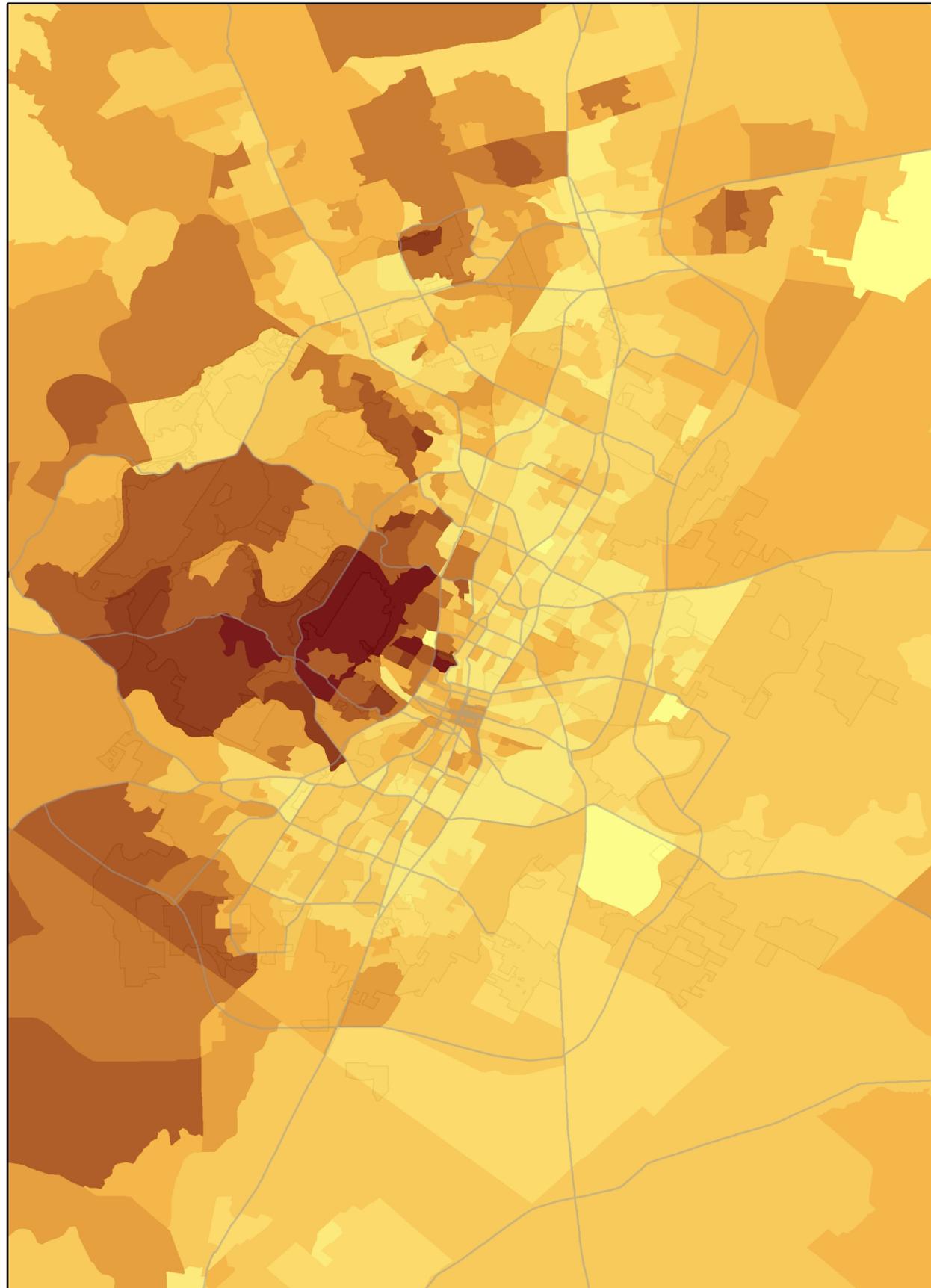
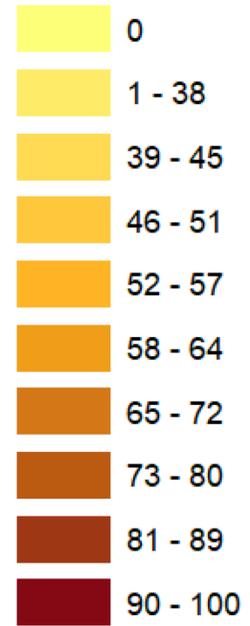


2015 Traffic Deaths & Serious Injuries per 100K by TX MPO



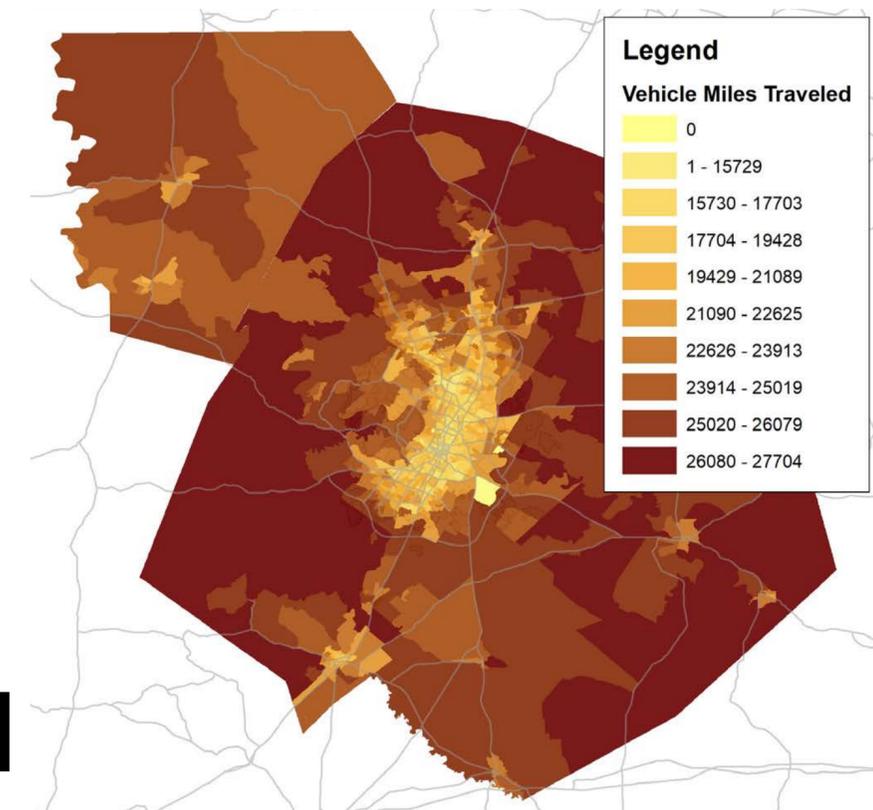
Legend

H+T Costs % Income



Average Housing + Transportation Costs as a Percent of Regional Typical income

Vehicle Miles Traveled



Urban Austin

All the places that are home to more than 3,800 people per square mile

People

735,659 109,982 11,434

Households

272,582 33,422 3,296

Average Housing + Transportation Costs as percent of Regional Typical Income

45% 36% 39%

Total vehicle miles traveled

5,206,634,672 5,568,521,504 5,236,638,780

VMT per capita

7,078 4,852 3,909

Renter occupied households

154,813 28,097 3,245

% of urban households who are renters

57% 84% 98%

% of region's renters

52% 9% 1%

Average household size

2.7 3.3 3.5

Total square miles

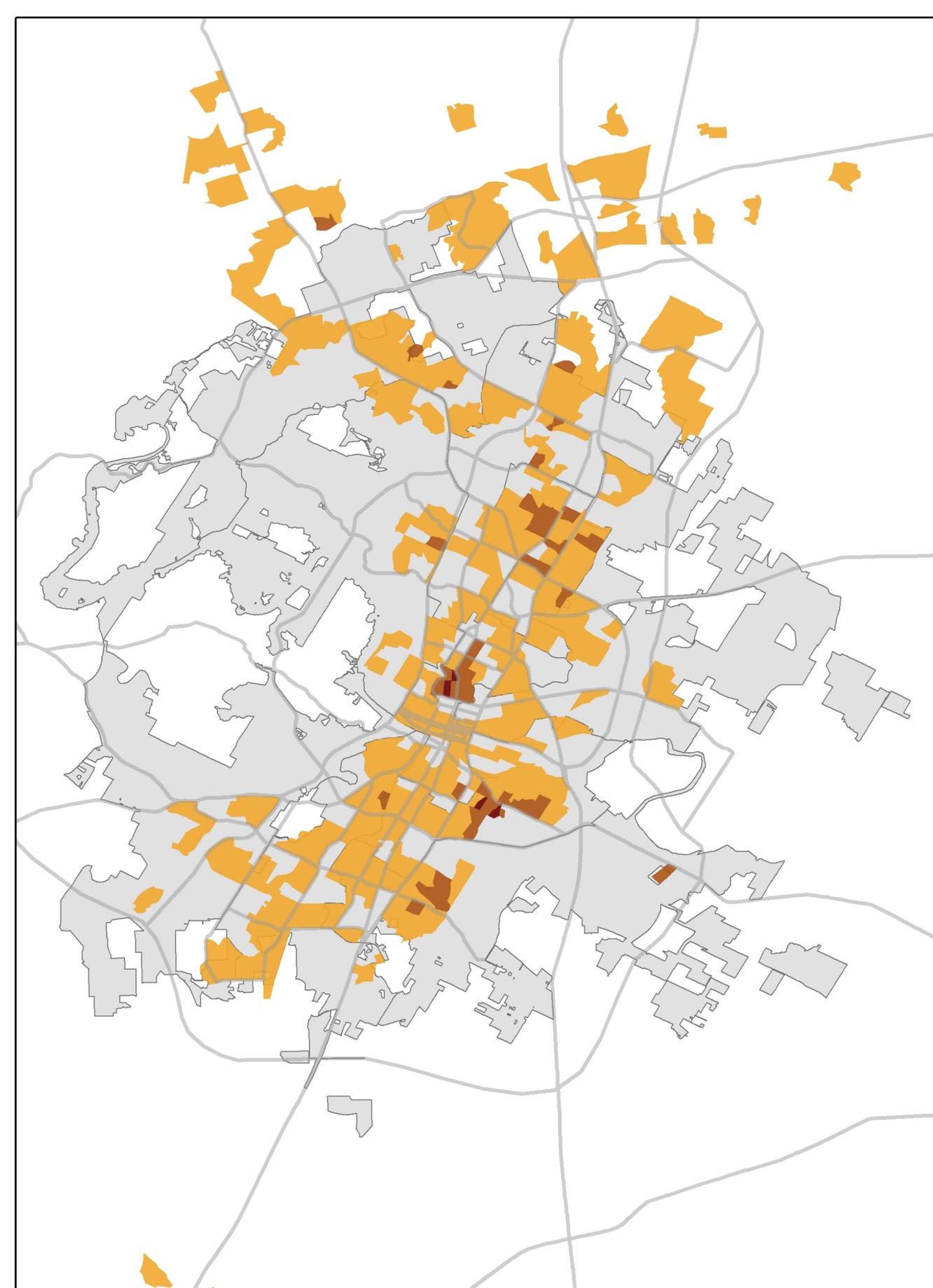
118 7.8 0.3

Total Annual CO2 emissions from household transportation use

2,157,910 215,205 15,923

CO2 emissions per capita

2.93 1.96 1.39



Sub-urban Austin

All the places that are home to between 1,000 & 3,800 people per square mile

People
672,614

Households
251,433

Average Housing + Transportation Costs as percent of Regional Typical Income
52%

Total vehicle miles traveled
5,568,521,504

VMT per capita
8,279

Renter occupied households
96,084

% of sub-urban households who are renters
38%

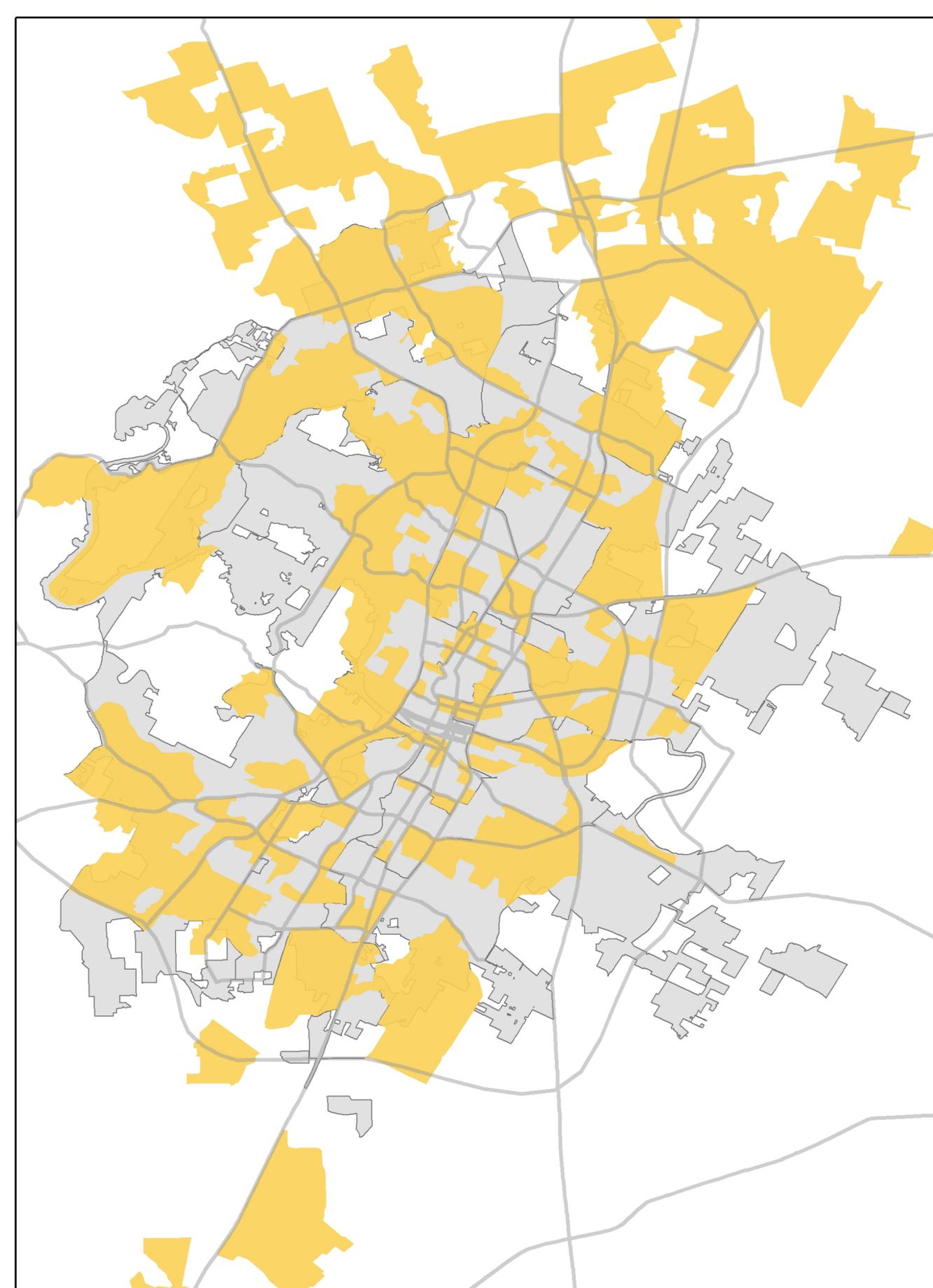
% of region's renters
32%

Average household size
2.7

Total square miles
348

Total Annual CO2 emissions from household transportation use
2,310,421

CO2 emissions per capita
3.43



Rural Austin

All the places that are home to less than 1,000 people per square mile

People
592,217

Households
207,080

Average Housing + Transportation Costs as percent of Regional Typical Income
55%

Total vehicle miles traveled
5,236,638,780

VMT per capita
8,842

Renter occupied households
9,608,395

% of rural households who are renters
23%

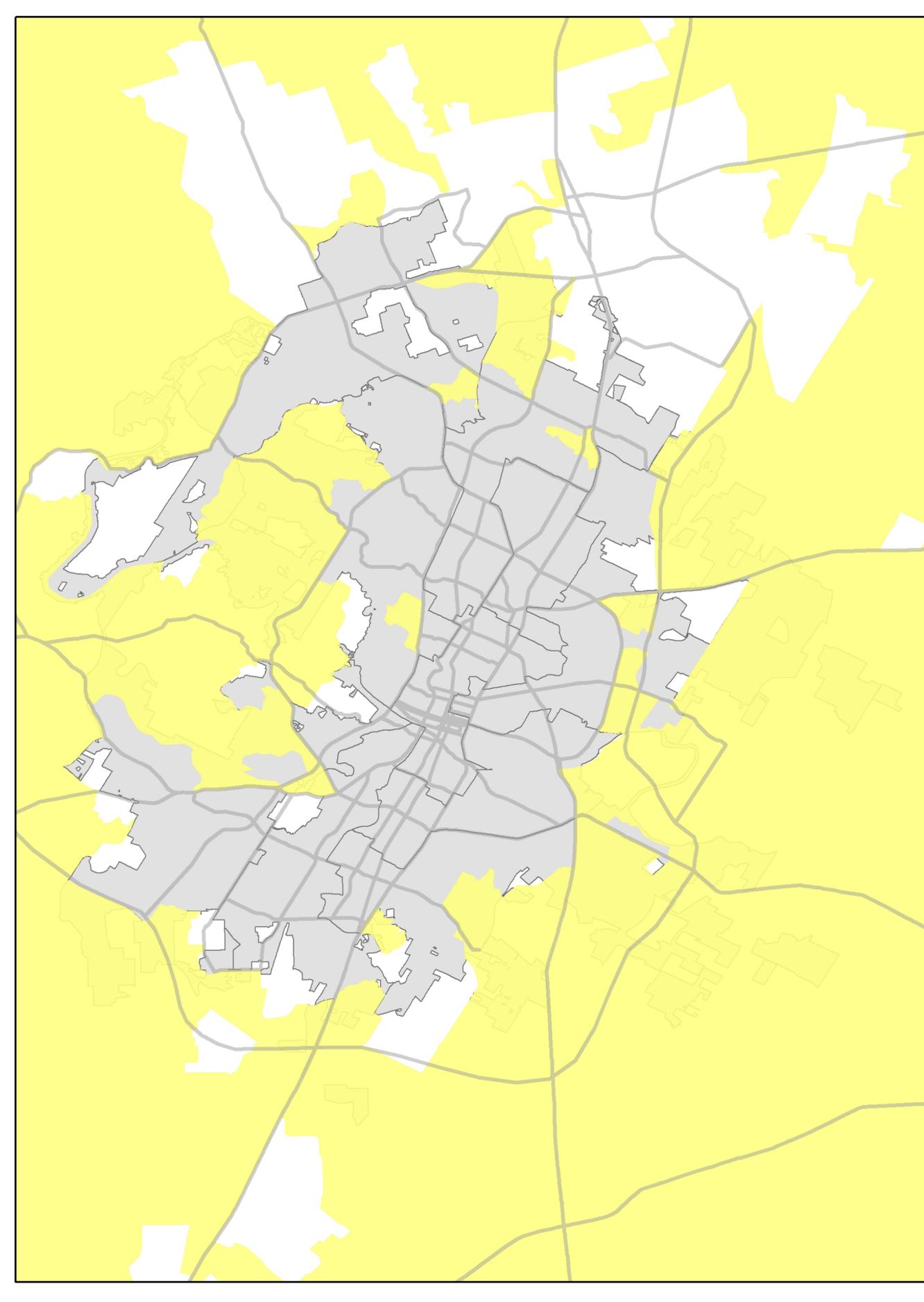
% of region's renters
16%

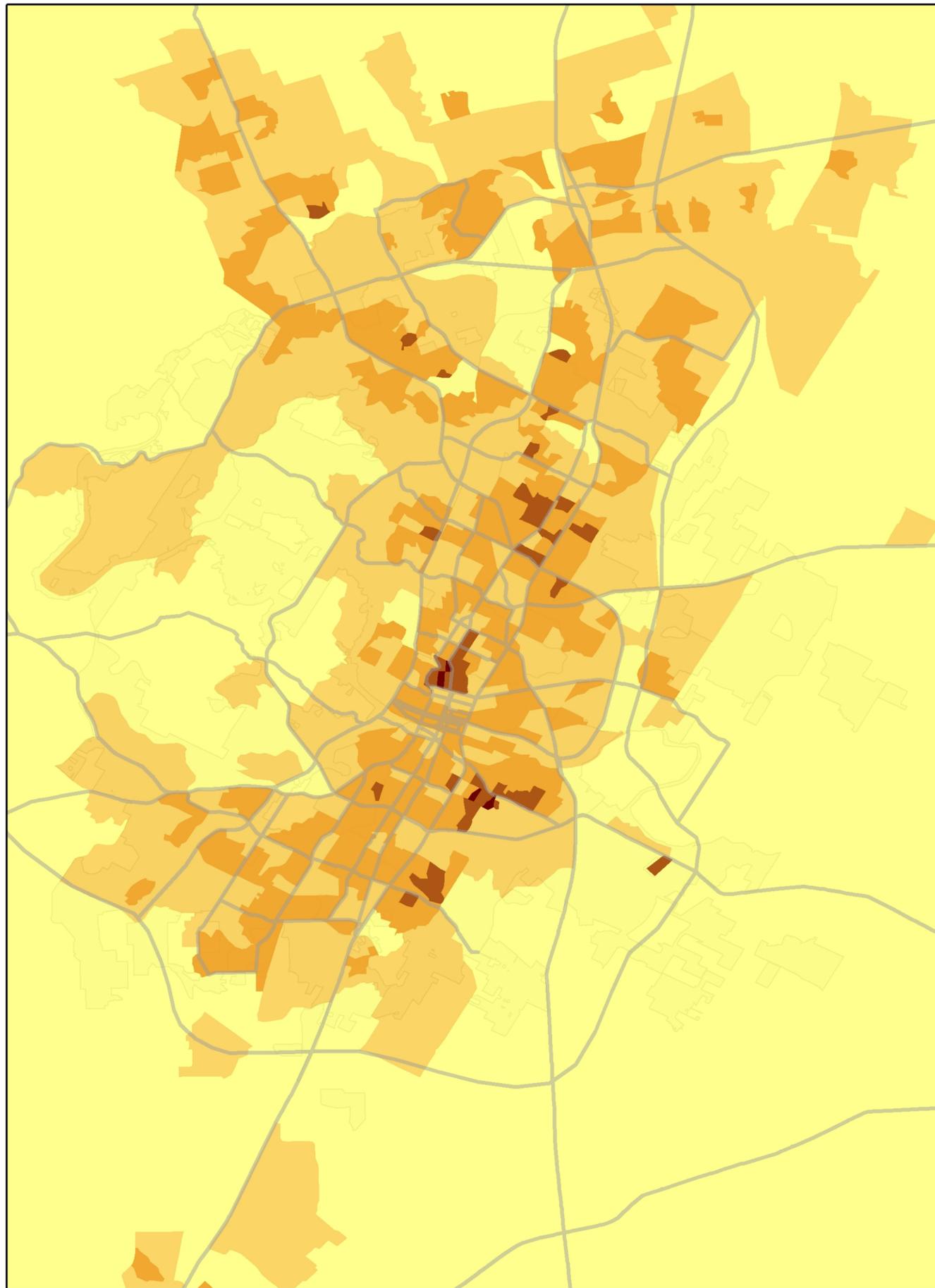
Average household size
2.9

Total square miles
8,747

Total Annual CO2 emissions from household transportation use
2,186,908

CO2 emissions per capita
3.69

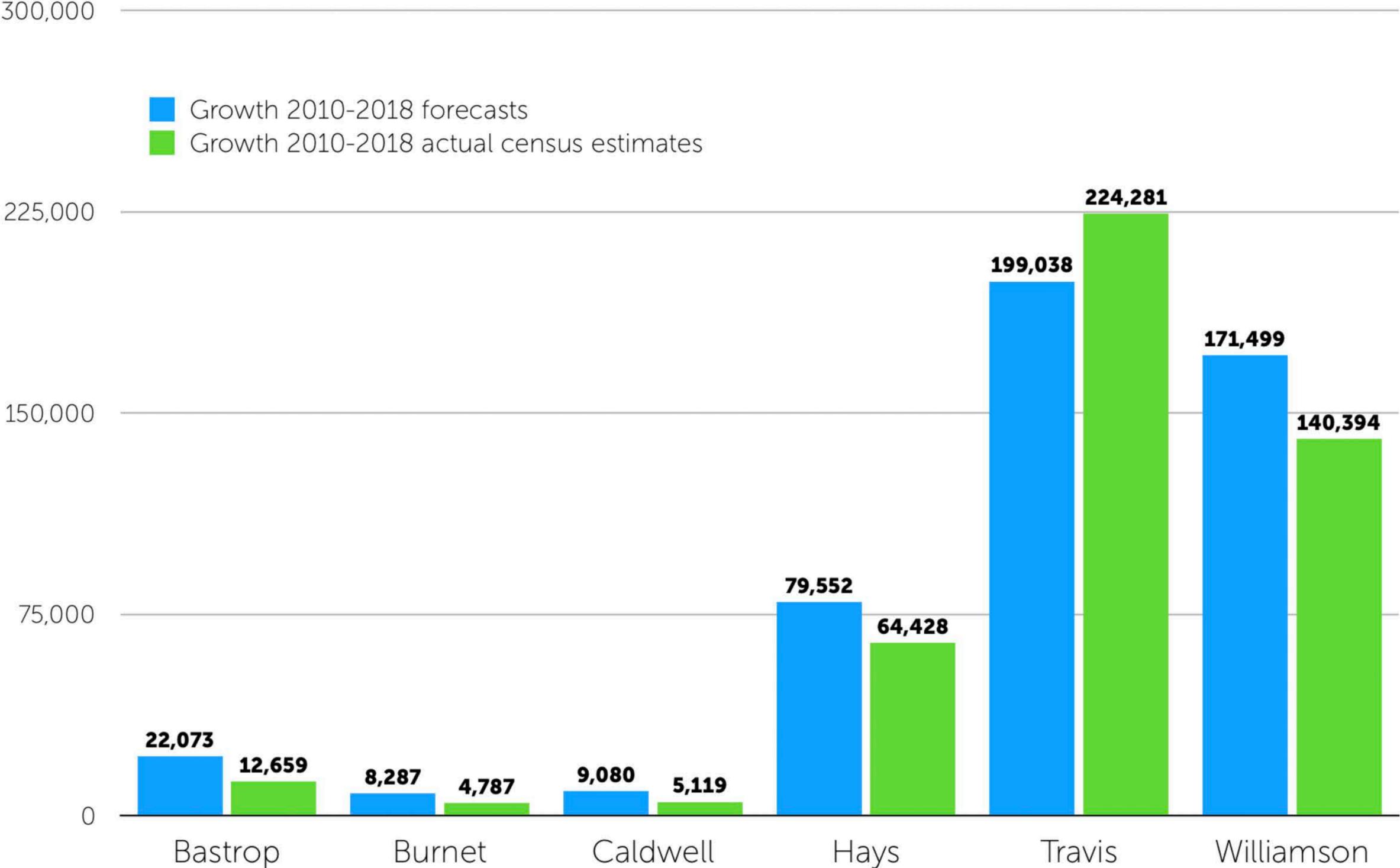




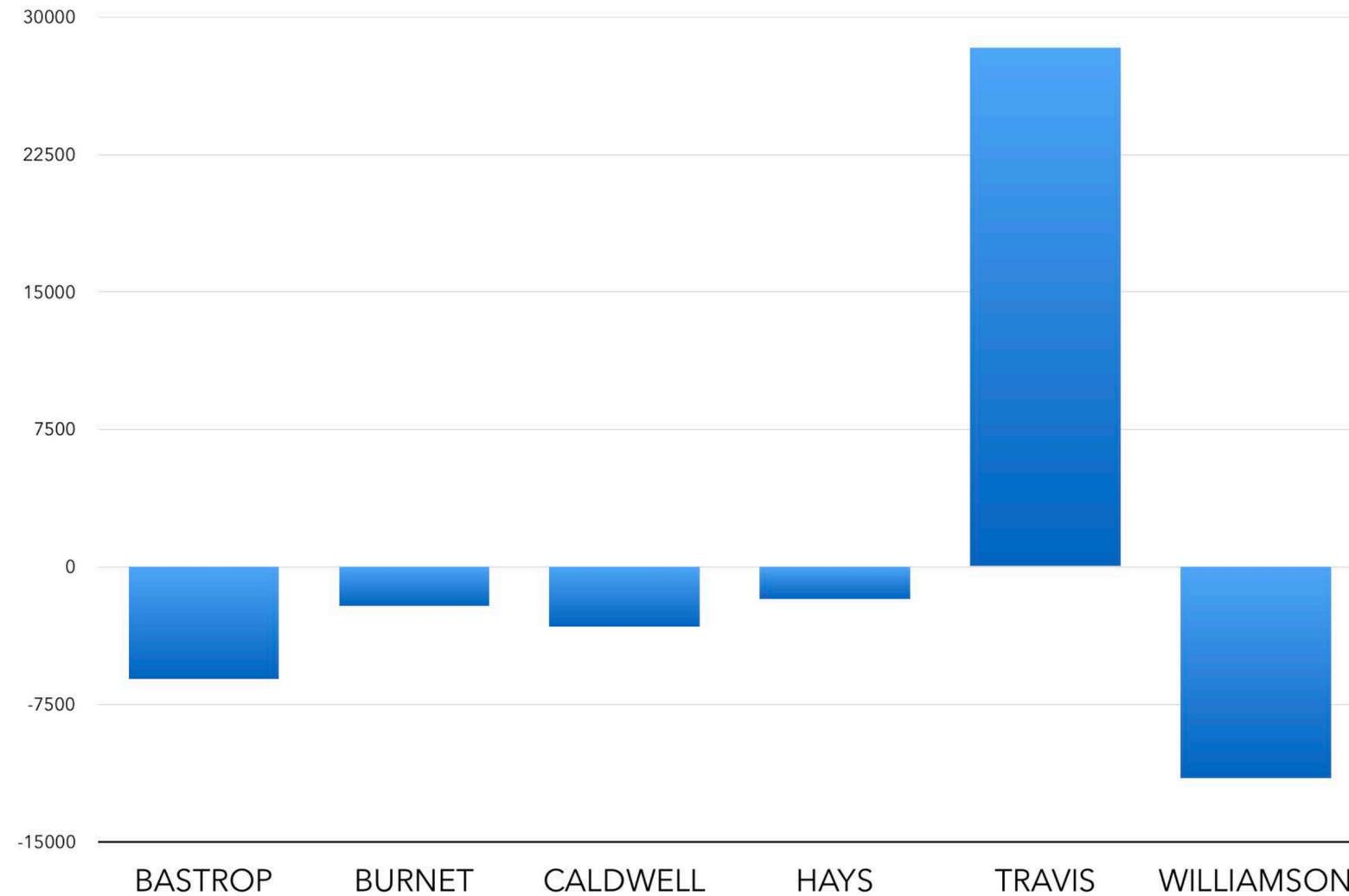
The three Austins

	HT%AMI	VMT/Cap
Urban	45%	7,078
Sub-urban	52%	8,279
Rural	55%	8,842

Actual CAMPO Region Growth vs. CAMPO Forecasts 2010-2018



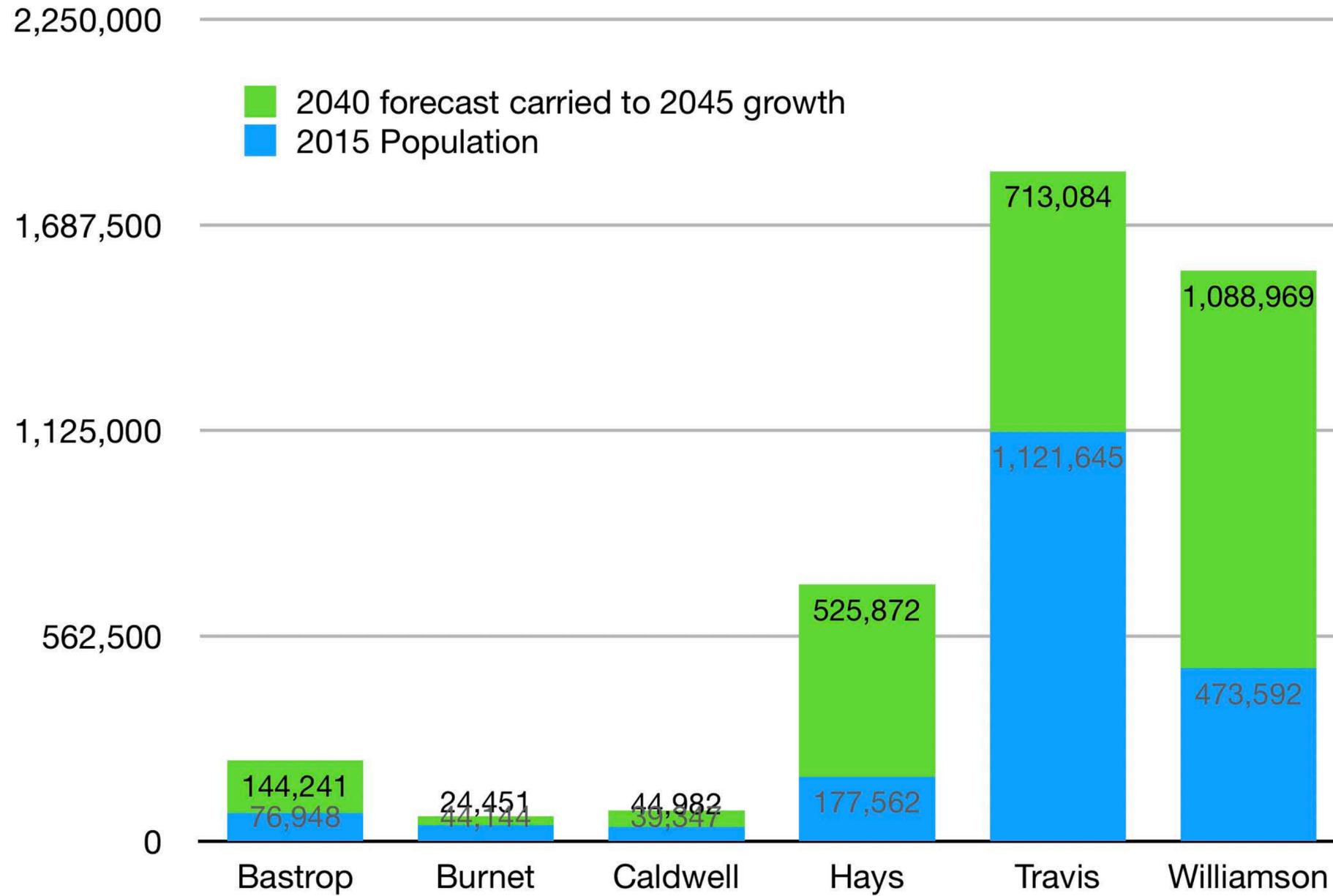
How much more or less has each CAMPO county grown 2010-2016 compared to official forecasts?



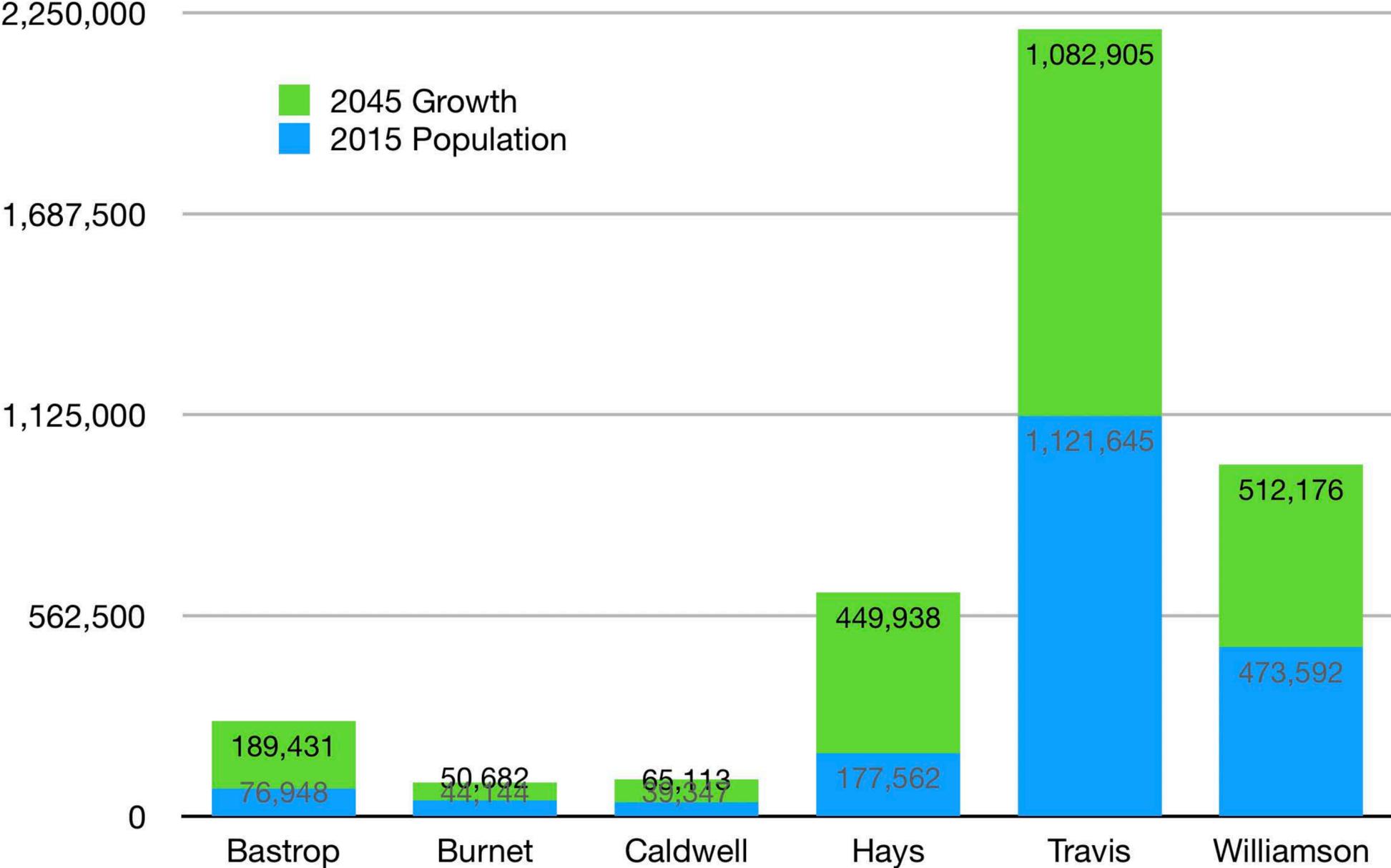
This chart compares the Texas State Demographers' 2000-2010 trend estimates for county's growth to US Census estimates for actual county population in 2016. The Capital Area Metropolitan Planning Organization uses the high estimates from the Texas State Demographer for long-range transportation planning, regional growth forecasts, and travel demand models. These figures are then used for allocating funding, prioritizing projects, and presented to the public when considering alternative proposals for projects, such as whether or not to add single occupant vehicle capacity to I-35.

While Travis County has grown more from 2010 to 2016 than all the other counties in the region combined, the inequitable regional planning process has been used to allocate higher funding per capita to suburban and rural counties than Travis where the majority of regional residents live and the vast majority of the region's economy is made.

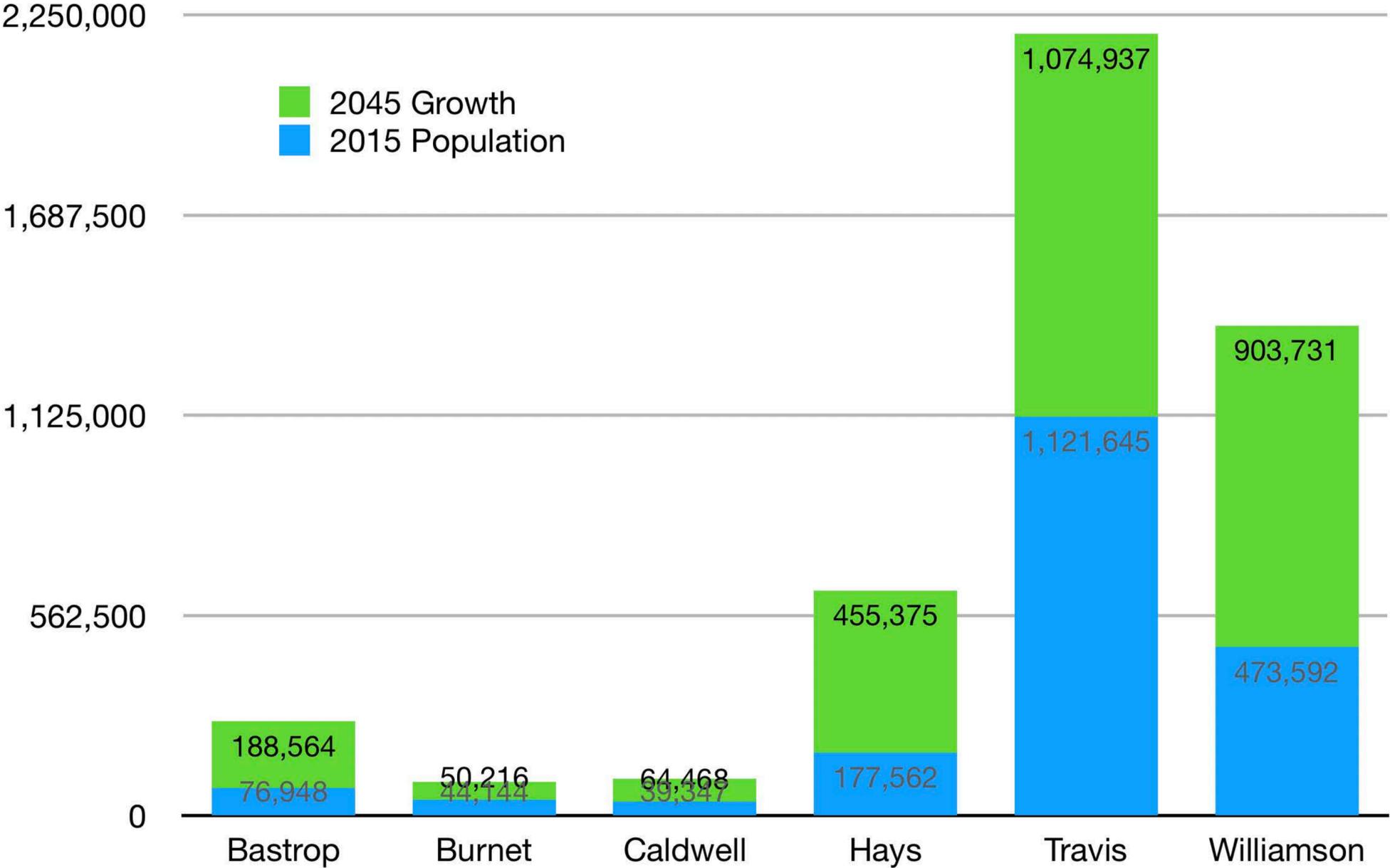
Current official regional forecasts extended to 2045



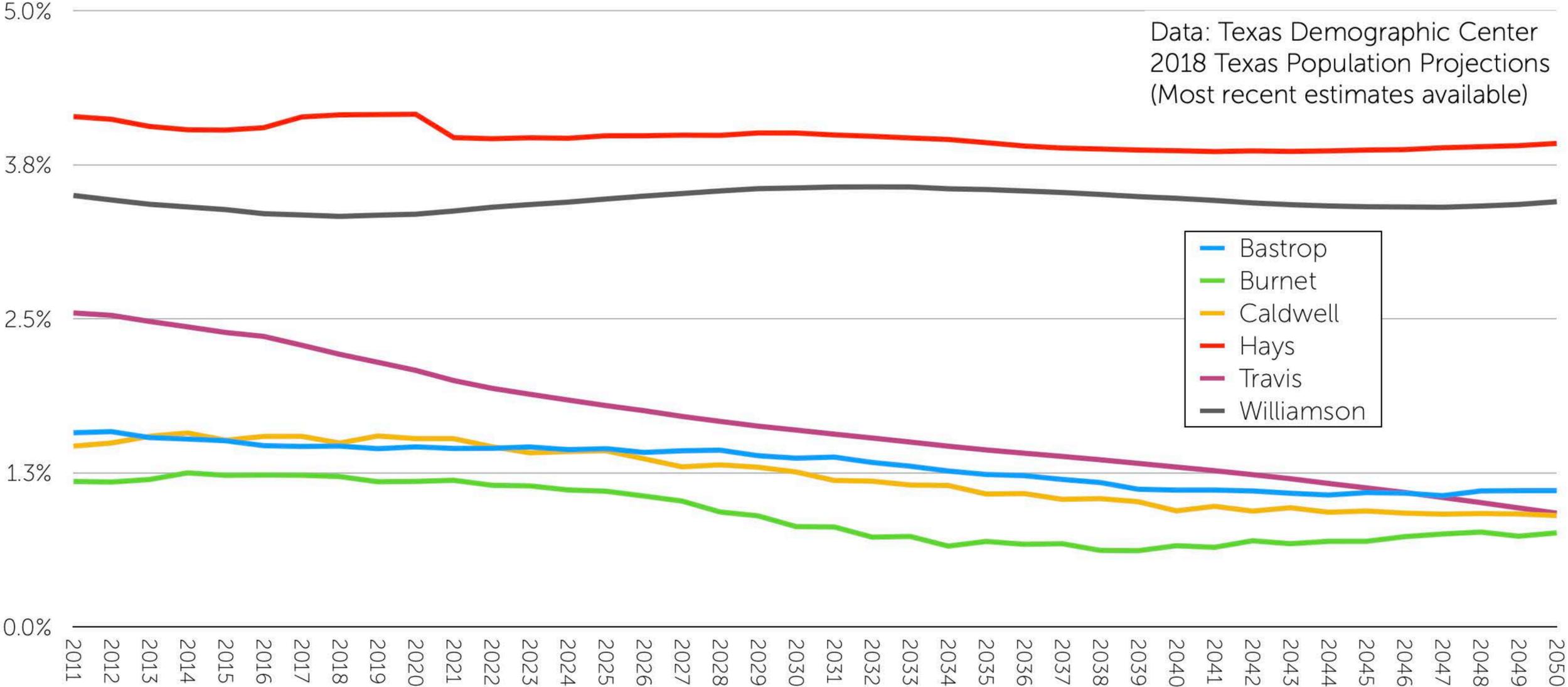
1st Draft (November 2018) 2045 Forecasts

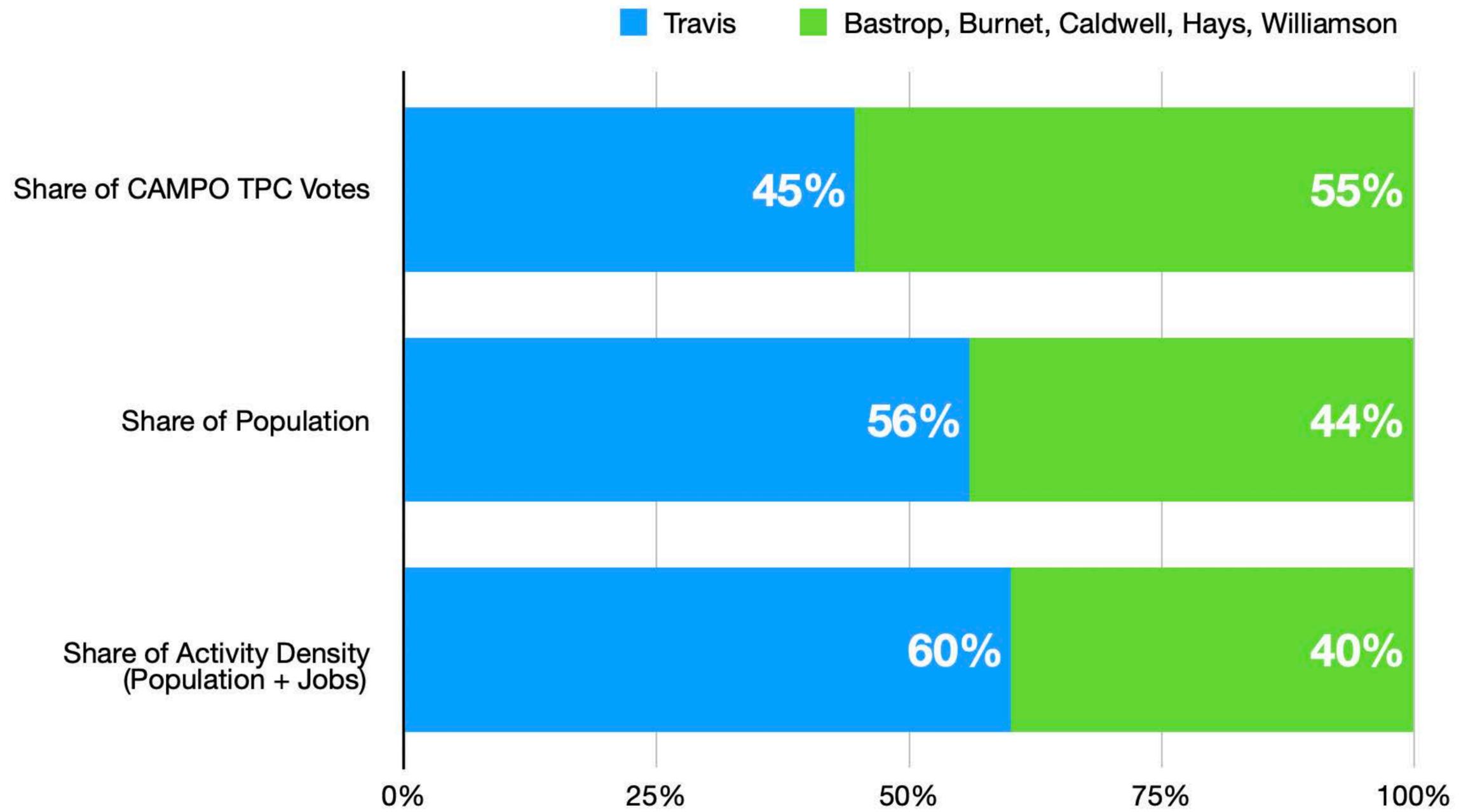


2nd Draft (October 2019) 2045 Forecasts



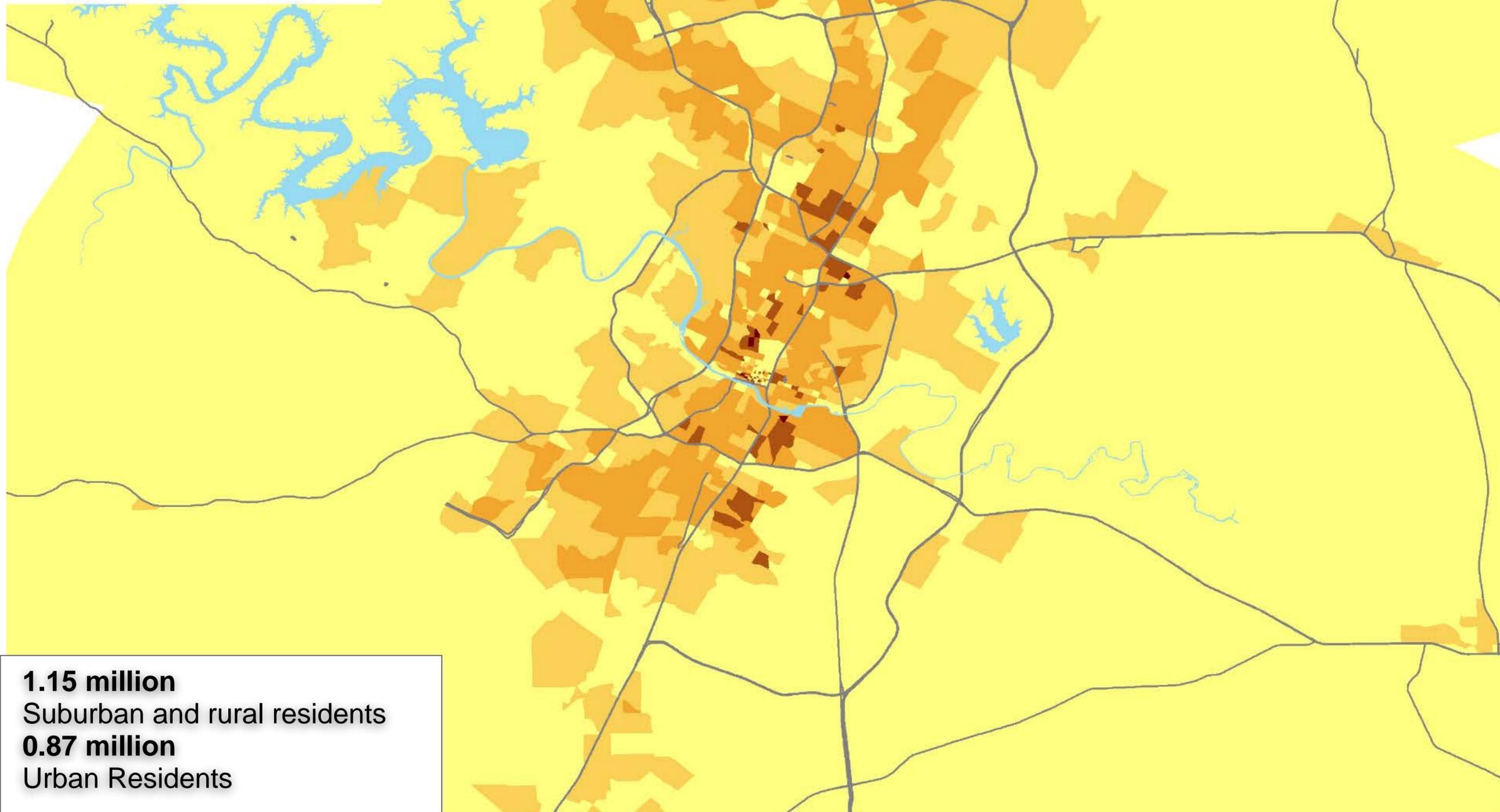
Projected annual growth rate by county in the Austin region 2010-2050





Austin Region Today

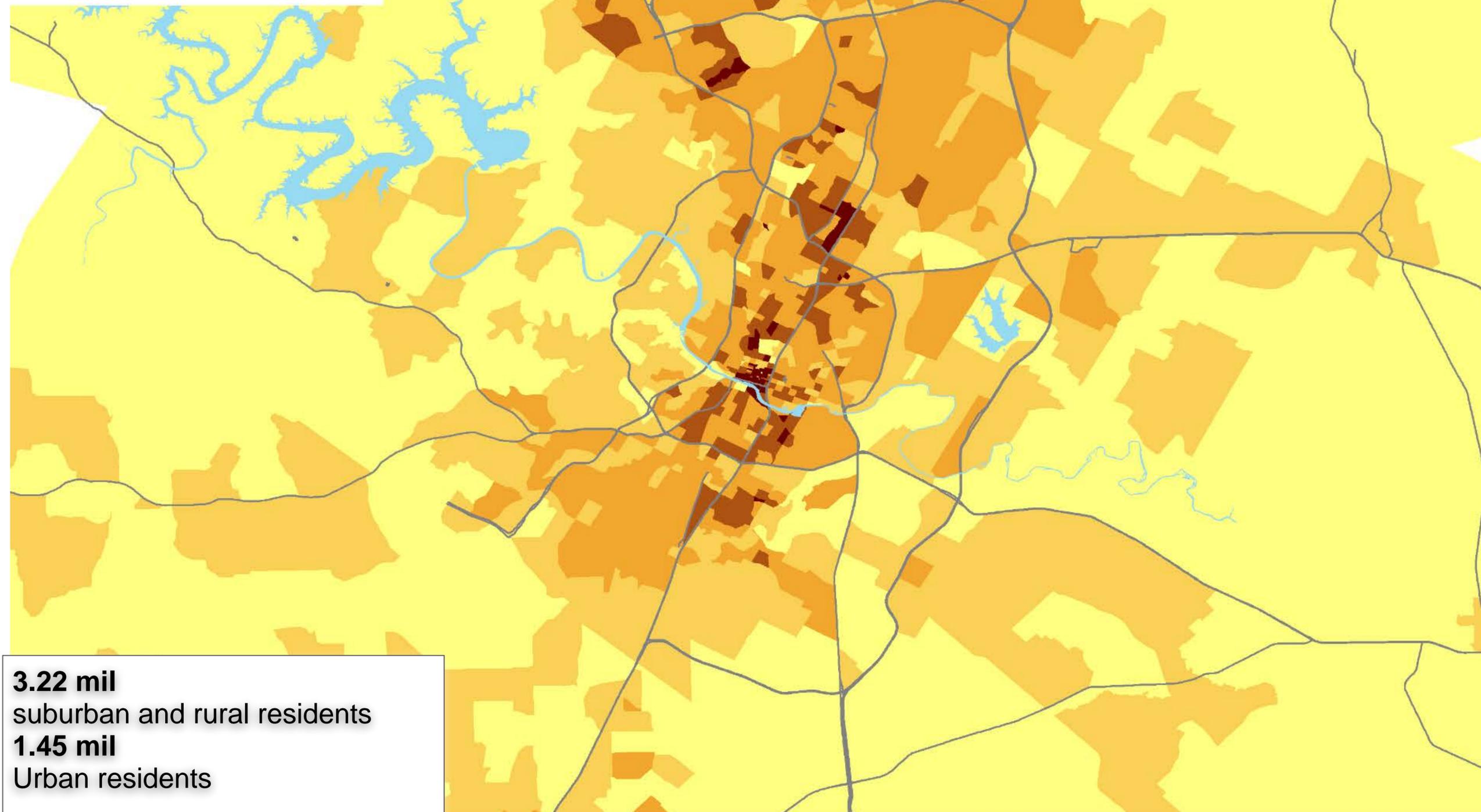
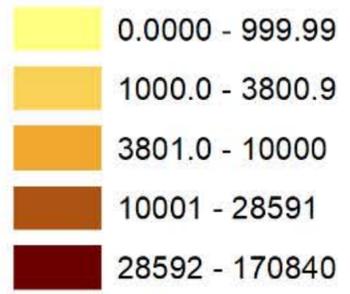
Population Density (people/sq mile)



1.15 million
Suburban and rural residents
0.87 million
Urban Residents

Official 2045 CAMPO Forecast

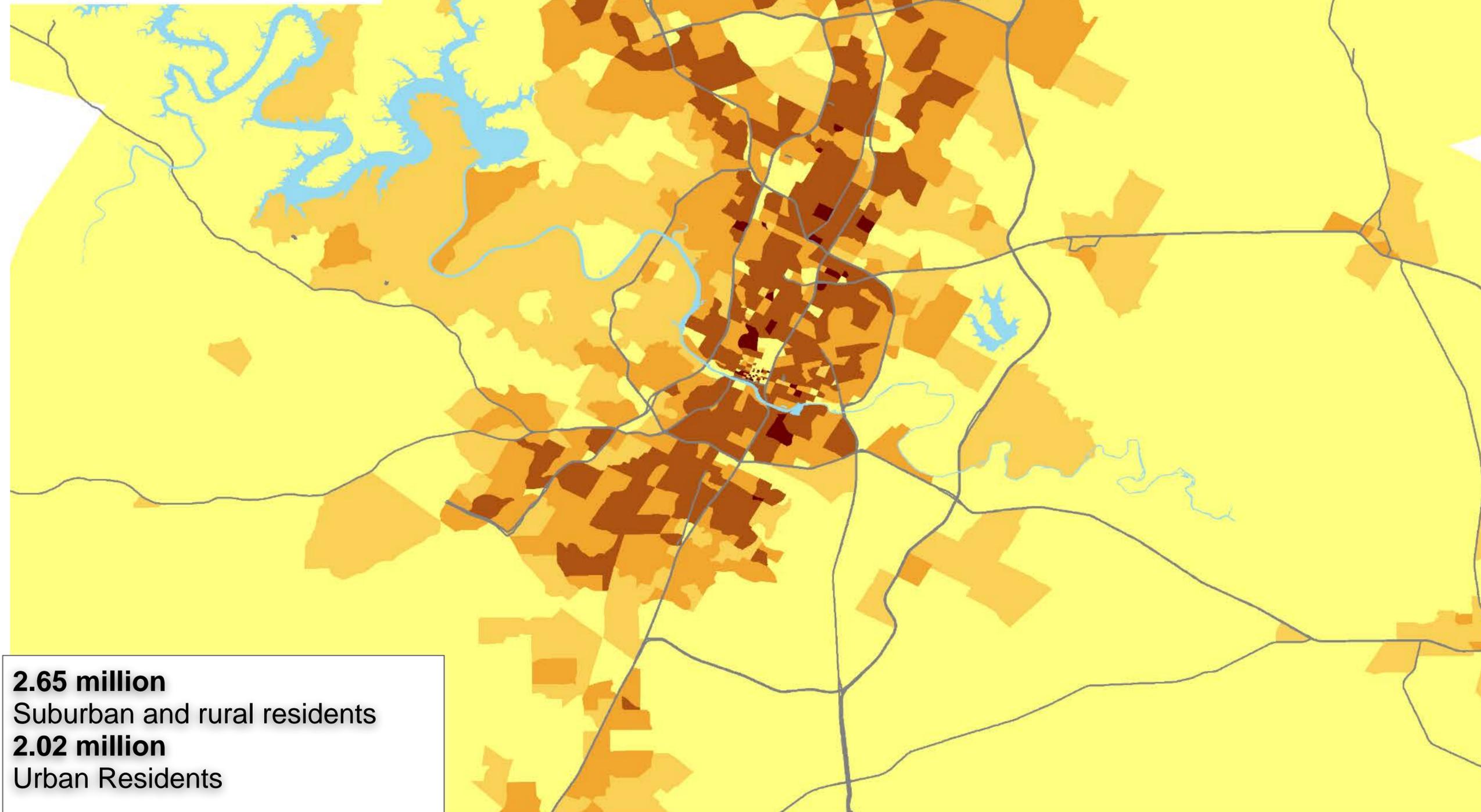
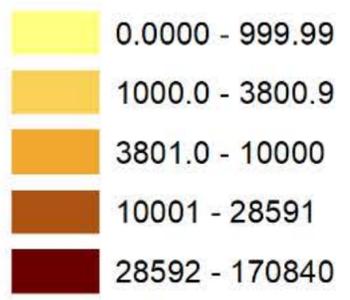
Population Density (people/sq mile)



3.22 mil
suburban and rural residents
1.45 mil
Urban residents

Everywhere grows the same

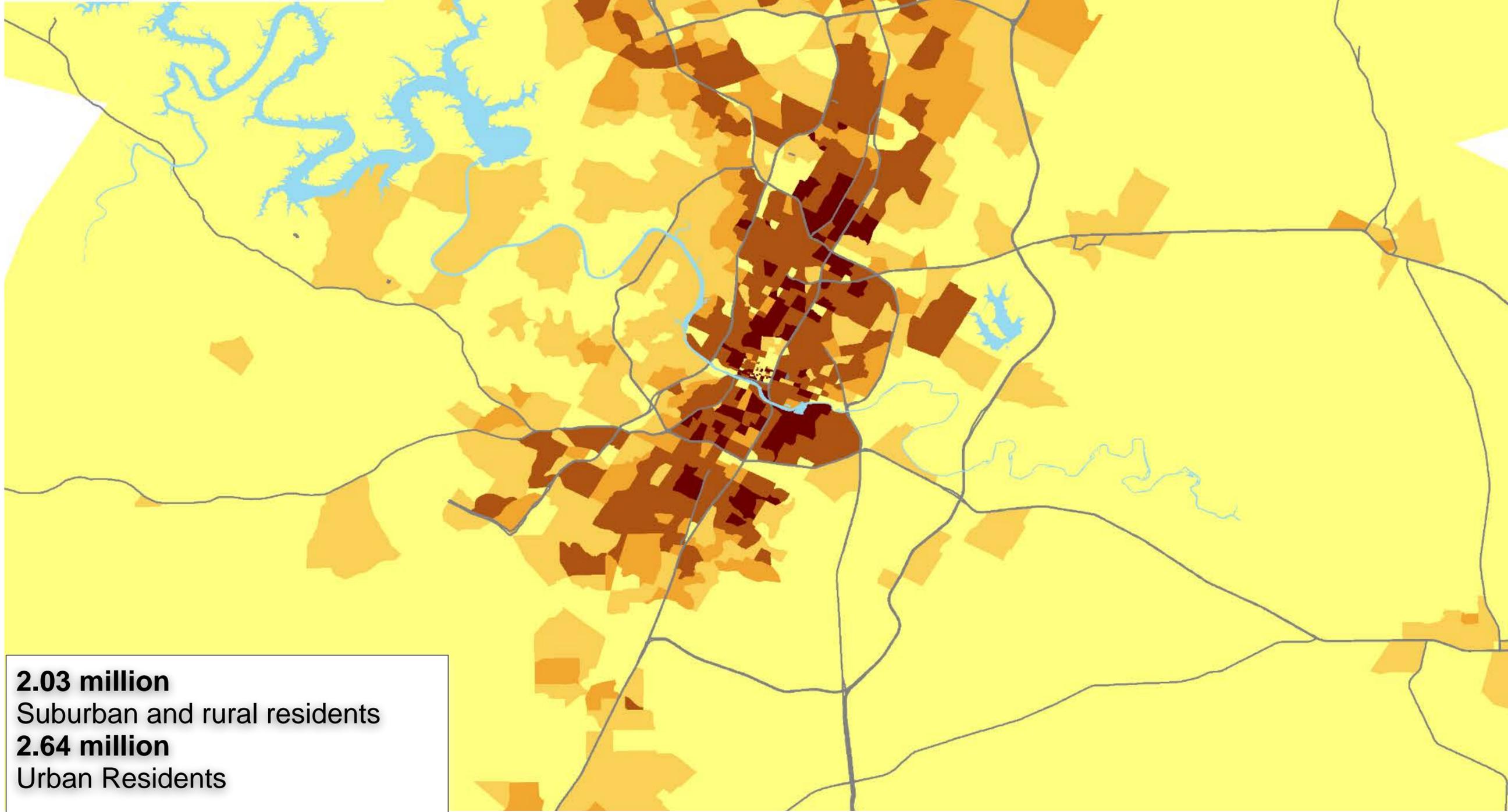
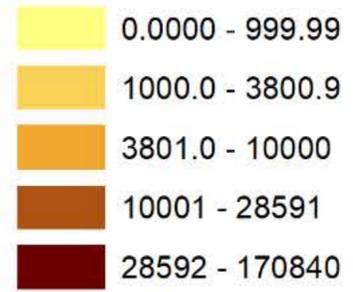
Population Density (people/sq mile)



2.65 million
Suburban and rural residents
2.02 million
Urban Residents

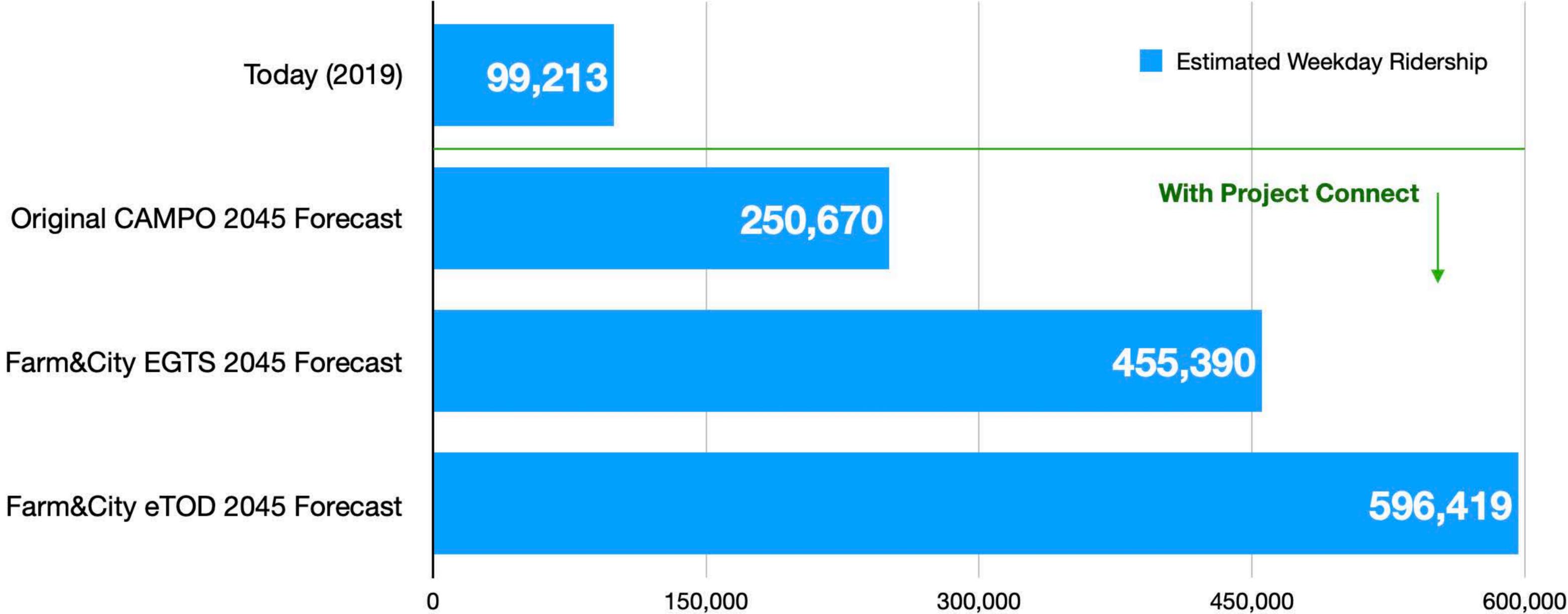
Equitable Growth Scenario

Population Density (people/sq mile)



2.03 million
Suburban and rural residents
2.64 million
Urban Residents

People able to use transit in Austin in various future scenarios



2045 Evening Peak Volume Changes

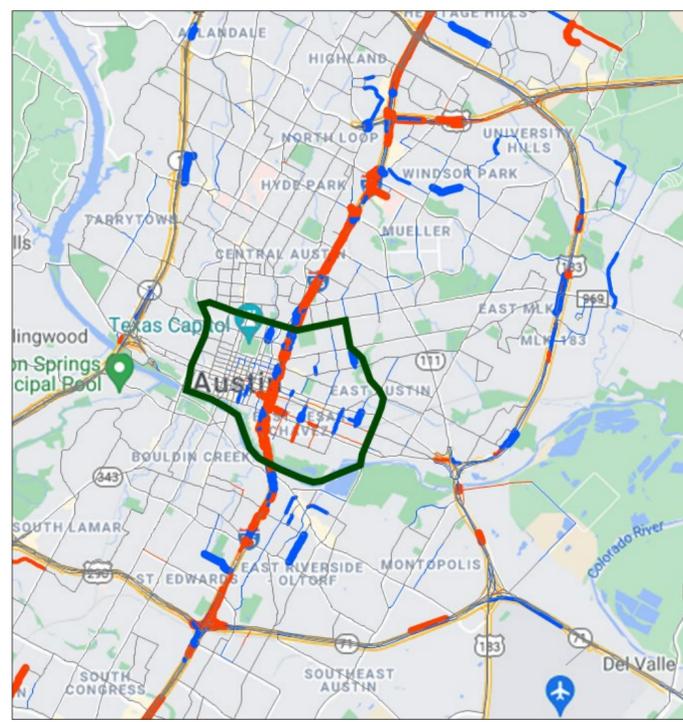


RECONNECT AUSTIN

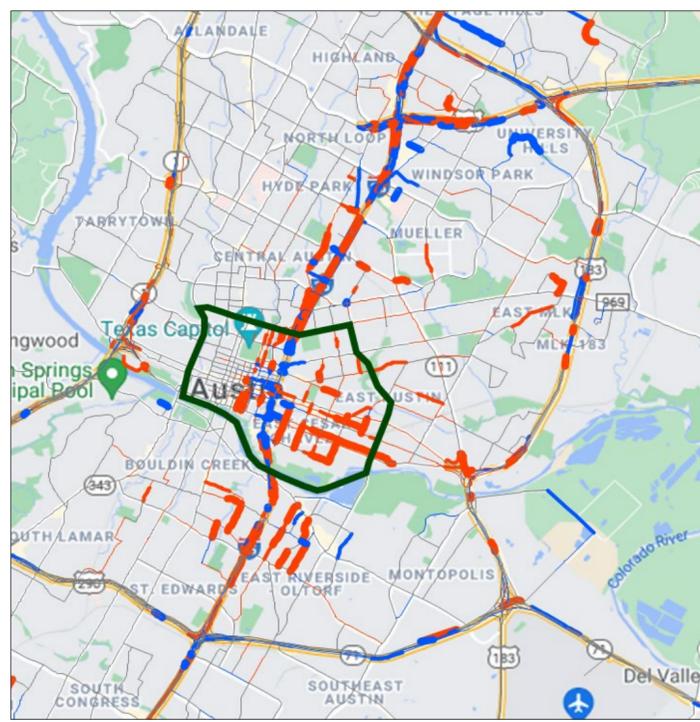
RETHINK 35

Legend

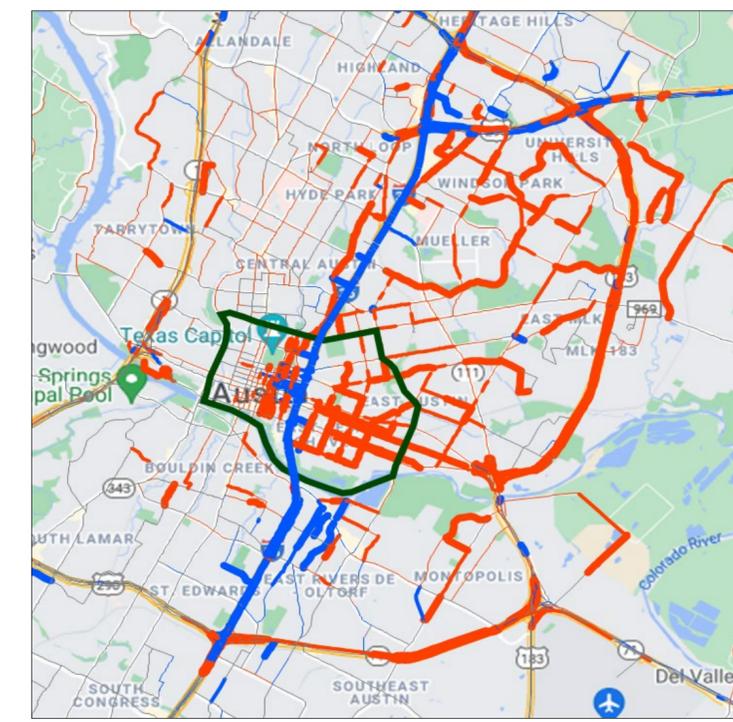
- 25% or more
- 15% to 25%
- 5% to 15%
- 5% to 5%
- 5% to -15%
- 15% to -25%
- 25% or more



TxDOT Alternatives
Volume increases on I-35 but decreases on city streets.



Reconnect Austin
Reduces entrance/exit ramps through downtown pushing traffic to city streets primarily in east Austin.



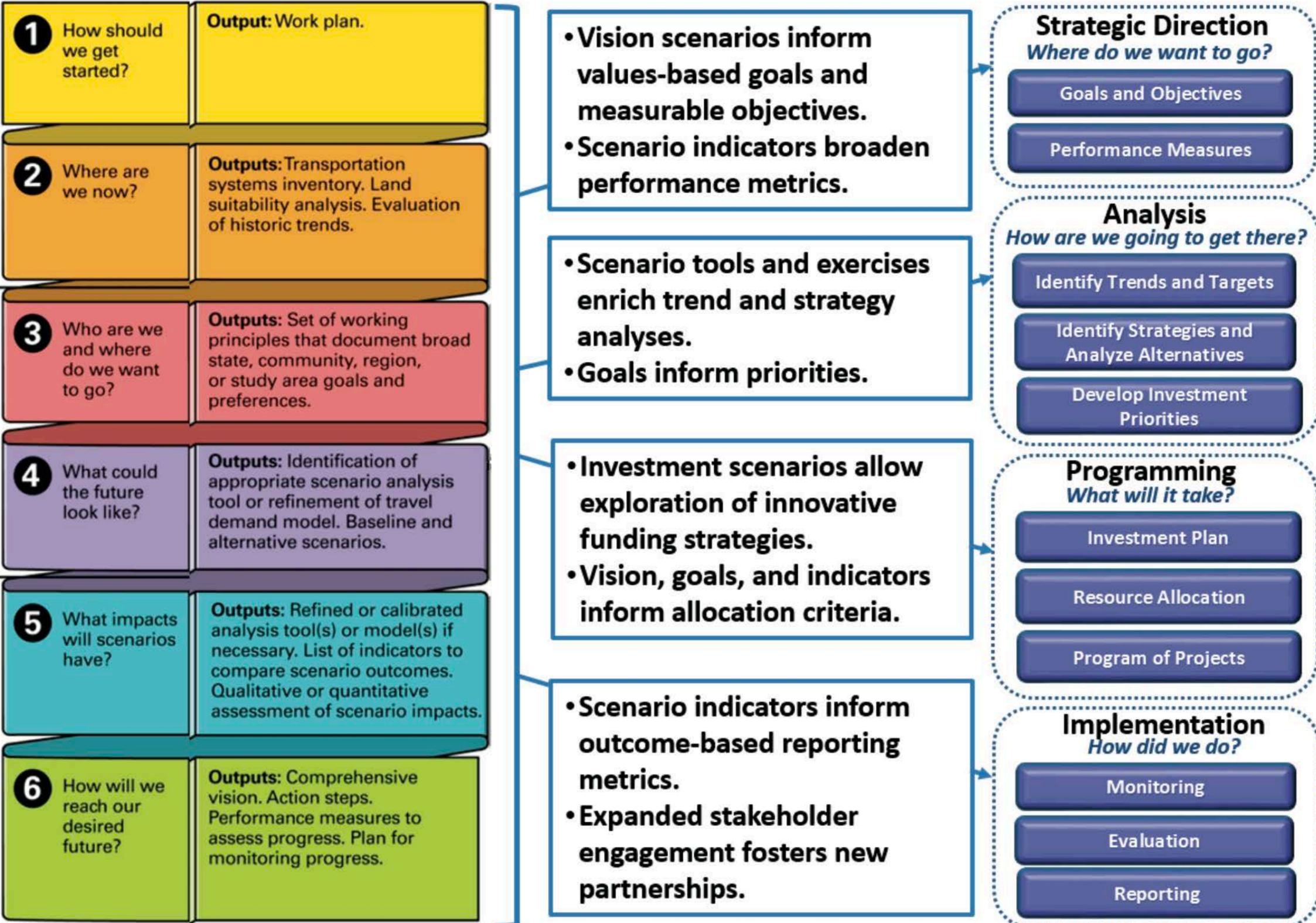
Rethink35
Converts I-35 to a boulevard and pushes traffic to city streets primarily in east Austin.

RED Volume increases	GREY Links with low volume (less than 100 trips) and small changes
BLUE Volume decreases	

Texas A&M Transportation Institute analysis of I-35 for TxDOT Austin

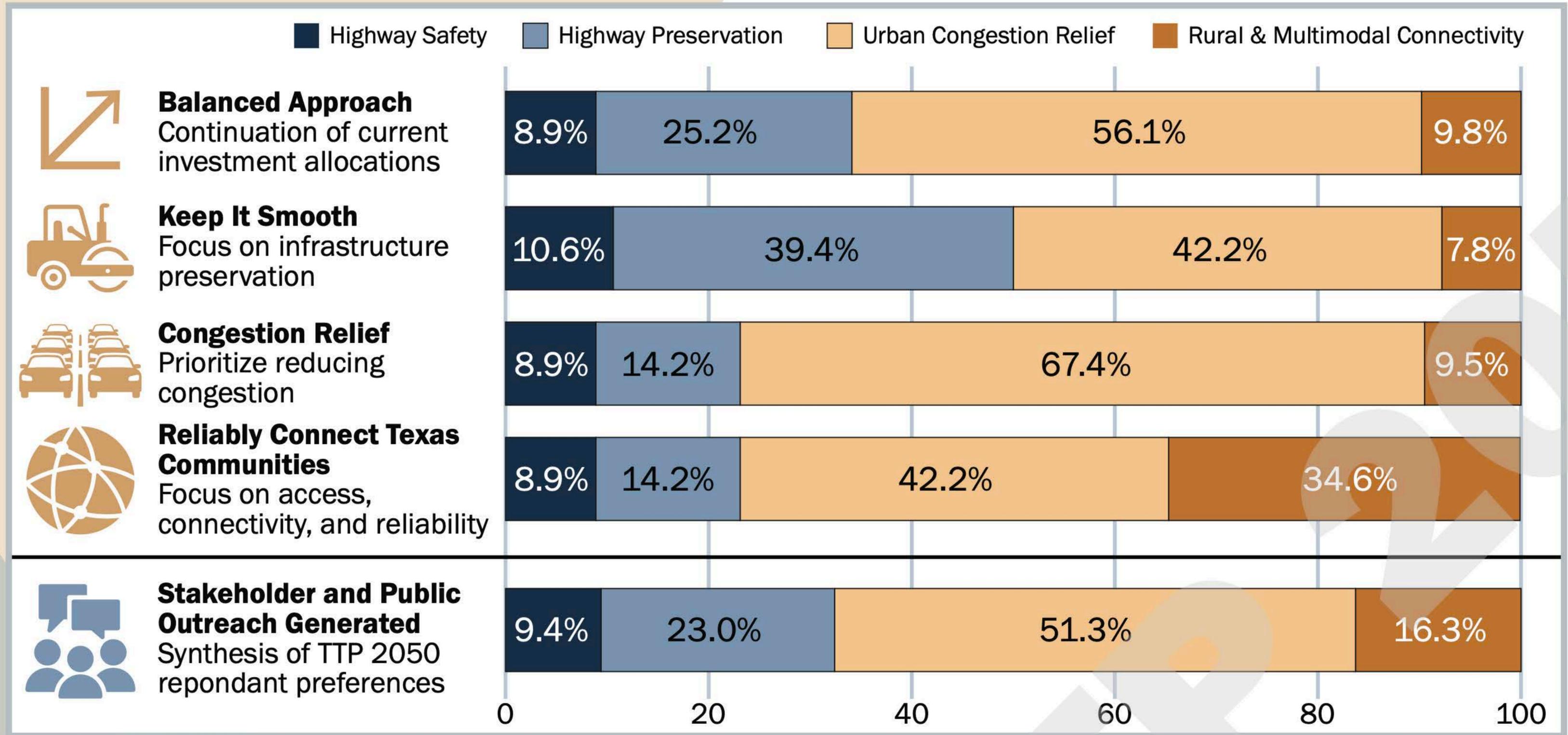
- In June, Farm&City worked with TTI to supply them with meaningful alternative growth scenarios in their analysis of I-35.
- TTI told us in a meeting with TxDOT staff on August 10th that they did run the travel demand models with the different scenarios.
- The report released by TxDOT on August 10th does not include this work and does not provide any meaningful data to be able to critique the traffic maps.
- I have asked TxDOT and TTI for the full report and have not received any response.

Figure ES-1: Applications of Scenario Planning to Performance-Based Planning and Programming



From “Supporting Performance-Based Planning and Programming through Scenario Planning,” US Department of Transportation, Federal Highway Administration

Figure 4-7: TTP 2050 Investment Strategy Allocations





SWIFT

Sustainable Ways to Integrate Future Transportation

Catherine McCreight, MBA, MA



The world is rapidly changing:



Generational
Shifts &
Behaviour
Change



Uncertain Growth
&
Urbanization/
Suburbanization



Aging
Infrastructure



Emerging
Technology

We need to understand these uncertainties



IMAGINE...

WE HAVE A TOOL THAT CAN QUICKLY EVALUATE:

SCENARIO #2
Behavior Changes
(Telecommute, TNC...)



SCENARIO #1
"Surprise" Land Use
Changes



SCENARIO #3
Technology Adoption
(CAV, EV, UAS...)



SCENARIO #4
Transportation Policies
(VMT fee, Cordon
Pricing...)

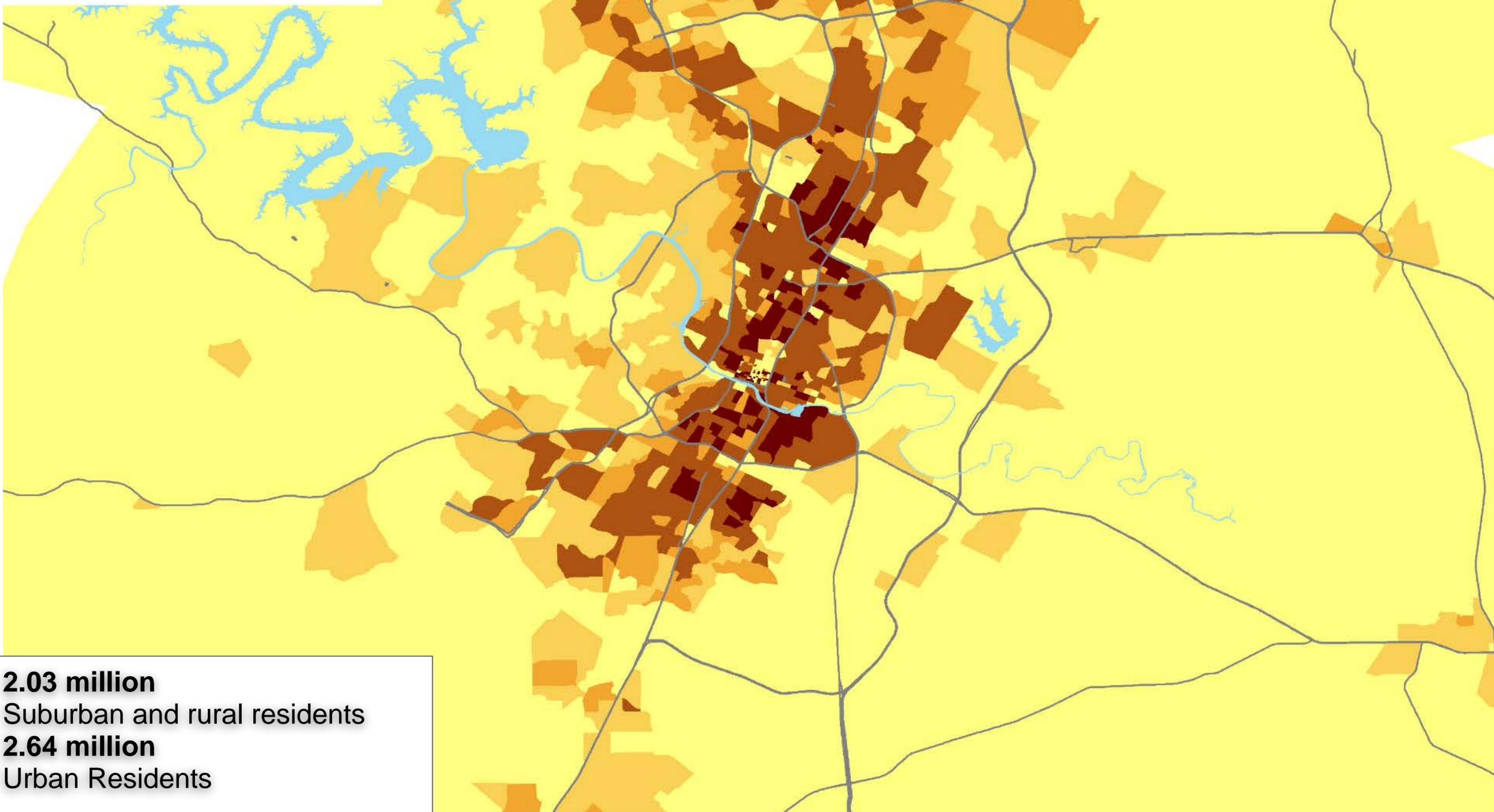
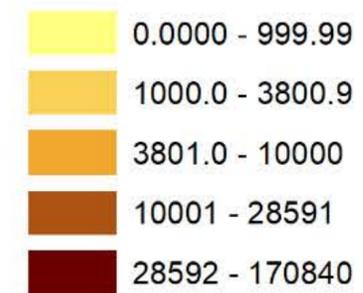


And many more...

ZO

Equitable Growth Scenario

Population Density (people/sq mile)



2.03 million
Suburban and rural residents
2.64 million
Urban Residents

Current CAMPO Planning Regime

	2040 Regional Growth Forecasts	
	Costs	Benefits
No Build Scenario	\$450 / capita	\$400 / capita
Alternative A	\$550 / capita	\$650 / capita
Alternative B	\$650 / capita	\$700 / capita
Alternative C	\$300 / capita	\$350 / capita

Proposed CAMPO Planning Regime

	Growth Forecast X		Growth Forecast Y	
	Costs	Benefits	Costs	Benefits
No Build Scenario	\$450 / capita	\$400 / capita	\$450 / capita	\$350 / capita
Alternative A	\$550 / capita	\$650 / capita	\$700 / capita	\$800 / capita
Alternative B	\$650 / capita	\$700 / capita	\$600 / capita	\$500 / capita
Alternative C	\$300 / capita	\$350 / capita	\$400 / capita	\$900 / capita

Growth Scenarios

Sprawl

Balanced

**equitable Transit
Oriented
Development**

Travel Demand Model Assumptions

Keep on Driving

Balanced

EcoTopia

Corridor Investment Strategy

Congestion Relief

**Safe Multimodal
Access**

Keep It Smooth

Growth Scenarios		
Sprawl	Balanced	equitable Transit Oriented Development

Travel Demand Model Assumptions		
Keep on Driving	Balanced	EcoTopia

Corridor Investment Strategy		
Congestion Relief	Safe Multimodal Access	Keep It Smooth

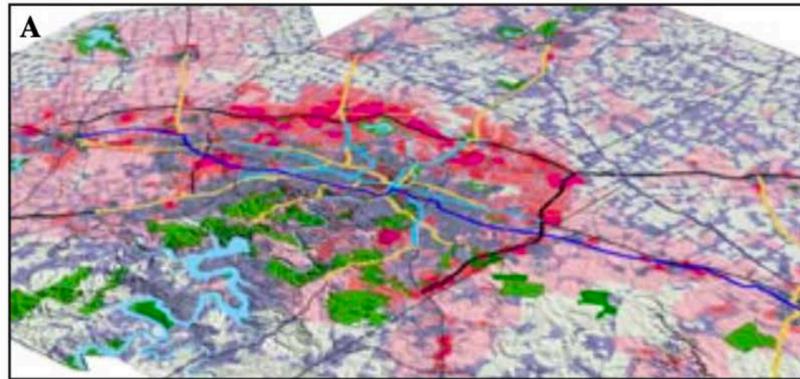
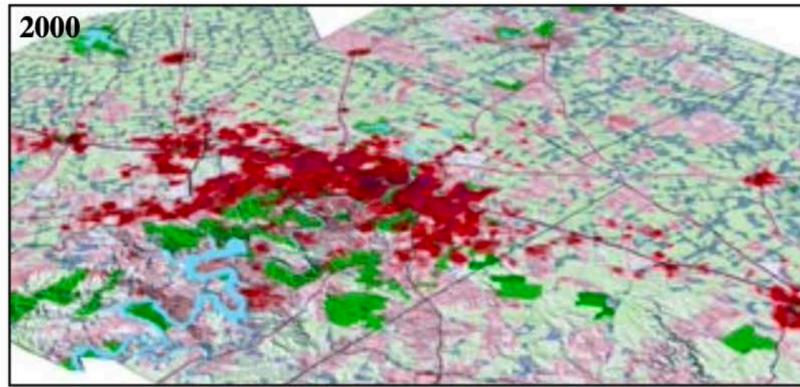
	Growth Scenarios			Travel Demand Model Assumptions
	Sprawl	Balanced	eTOD	
Congestion Relief	Costs: 900 Benefits: 1600	Costs: 700 Benefits: 1300	Costs: 600 Benefits: 1400	Keep on Driving
	Costs: 750 Benefits: 1200	Costs: 600 Benefits: 1200	Costs: 550 Benefits: 1500	Balanced
	Costs: 800 Benefits: 800	Costs: 600 Benefits: 1100	Costs: 300 Benefits: 1600	Ecotopia
Safe Multimodal Access	Costs: 700 Benefits: 900	Costs: 550 Benefits: 1200	Costs: 500 Benefits: 1200	Keep on Driving
	Costs: 600 Benefits: 1000	Costs: 500 Benefits: 1200	Costs: 425 Benefits: 1400	Balanced
	Costs: 700 Benefits: 1100	Costs: 500 Benefits: 1400	Costs: 250 Benefits: 1900	Ecotopia
Keep It Smooth	Costs: 600 Benefits: 900	Costs: 400 Benefits: 1200	Costs: 400 Benefits: 900	Keep on Driving
	Costs: 450 Benefits: 850	Costs: 400 Benefits: 1200	Costs: 350 Benefits: 1400	Balanced
	Costs: 600 Benefits: 800	Costs: 400 Benefits: 1000	Costs: 200 Benefits: 1200	Ecotopia

FOUR ALTERNATIVE FUTURES

Where We Are Today

It might help to have a picture of where we are today. Based on the latest available information, the following indicators on the current state of Central Texas may be useful in considering the four Scenarios of possible futures.

- Central Texas has a total developed area of 740,563 acres, which is 593 acres of land for every 1000 people. (Total land area for the five county region is 2,739,161 acres. There are .46 people per acre in the entire region and 1.69 people per acre in the developed area.)
- Daily time spent getting around (all modes) per capita—56 minutes
- Aquifer recharge zones developed 47,447 acres out of the total acreage (Total recharge zone acreage—145,000)
- Job distribution: Bastrop--2.16%, Caldwell--1.34%, Hays--5.68%, Travis--78.49%, Williamson--12.34%
- Housing mix: 64% single-family, 2% town home and 32% multifamily, primarily rental.

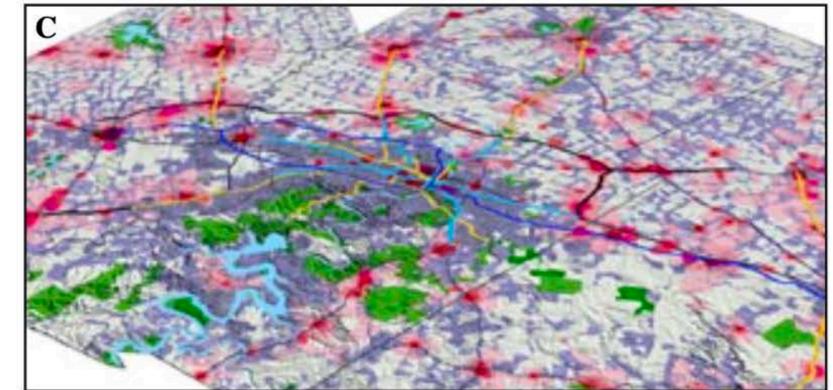
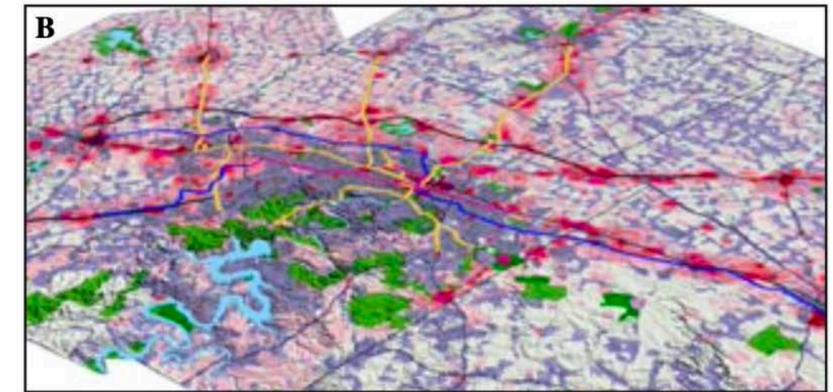


Scenario A is based on an extrapolation of recent land development trends, and some economic models. Most residential growth occurs as single-family homes on separate lots in new developments. There is very little redevelopment or infill in Scenario A. Most of the job growth occurs in Travis County. As the region's development spreads out, the trips get longer and so more time is spent in getting around; to jobs, shopping, schools, etc. In Scenario A, the regional transit system includes a commuter rail system and a bus rapid transit system designed for the concentration of jobs in the urban core.

- For every 1000 new people, 373 acres of undeveloped land would be developed; a total of 468,000 new acres would be developed
- 3,559 acres of land would be redeveloped in Scenario A
- Daily time spent getting around (all modes) per capita—68 minutes
- Aquifer recharge zones developed—36,258 acres out of the total acreage (Total recharge zone acreage—145,000)
- Distribution of new jobs by County: Bastrop--2.37%, Caldwell--1.42%, Hays--7.36%, Travis--74.76%, Williamson--14.09%
- New jobs in concentrated low-income areas—753

Scenario B illustrates a future where most of the growth in Central Texas would occur along major transportation corridors – both existing and new ones. A significant amount of this growth occurs in mixed-use developments. All counties get significant job growth as well as housing growth. Across the region, average daily travel time is lower than in Scenario A, but congestion in the urban core is significantly higher. Regional transit includes commuter rail and a core light rail system.

- For every 1000 new people, 152 acres of land would be developed; a total of 192,000 new acres would be developed
- 5,472 acres of land would be redeveloped in Scenario B
- Daily time spent getting around (all modes) per capita—64 minutes
- Aquifer recharge zones developed—18,300 acres (Total recharge zone acreage—145,000)
- Distribution of new jobs by County: Bastrop--7.00%, Caldwell--5.08%, Hays--9.58%, Travis--52.85%, Williamson--25.49%.
- New jobs in concentrated low-income areas—63



Scenario C shares new growth between both existing and new communities in Central Texas. Each existing city and town would add jobs and people, primarily in mixed-use developments. In addition, new towns would be built along major transportation corridors, with open space between each community. Regional transit includes commuter rail and a bus rapid transit system.

- For every 1000 new people, 136 acres of land would be developed; 170,000 new acres would be developed
- 7,973 acres of land would be redeveloped in Scenario C
- Daily time spent getting around (all modes) per capita—60 minutes
- Aquifer recharge zones developed—53 acres (Total recharge zone acreage—145,000)
- Distribution of new jobs by County: Bastrop--12.20%, Caldwell--9.19%, Hays--10.59%, Travis--34.79%, Williamson--33.23%
- New jobs in concentrated low-income areas—2295

SCENARIO PLANNING

EXPLORING ALTERNATIVES



The process used in Envision Central Texas is called Scenario planning. Scenario planning is widely used in managing complex problems. Given the complexity of the issues we face in today's environment, the number of variables that have to be considered, and the 20 to 40-year time frame, it is apparent that getting the right prediction really isn't possible or even necessary. What is needed is a way to put forth possible future Scenarios.

Scenarios are really stories about what might be. They are not forecasts and they are not predictions. They are possible futures that are based on what already exists, on trends that are evident, and on the values and preferences of our region. The essential requirement of any Scenario is that it be plausible, within the realm of what exists and what is now known. Usually three or four Scenarios are built as a way to compare outcomes and learn about the forces that are shaping the future. If a particular

outcome is preferred, strategies can be developed to achieve those outcomes.

Envision Central Texas has created four principal growth Scenarios for the Central Texas region. Each one is a different snapshot of the future with its own attendant consequences. The Scenarios will allow us to compare how different growth patterns are likely to shape or affect the future. A Scenario can serve as a vision of the future, or elements of multiple Scenarios can be combined to create a regional vision. Of course, the future path of Central Texas cannot be known. It may be more like one Scenario in some ways and more like another Scenario in others, and unlike all Scenarios in yet a third aspect. Technical change, cultural shifts, economic factors, and many other driving forces can and will make the future different from any one Scenario or forecast. Policy choices will affect the future; Scenario planning is one tool for making better policy choices possible.

SCENARIO PLANNING IS:

- A way of dealing with an unpredictable future
- Used widely in Business and the Military
- Stories, not predictions
- Contrast choices and consequences
- Depend on thorough and consistent analysis
- Lead to effective and pragmatic plans and strategies
- Works well with visions

THE PUBLIC PROCESS

GATHERING INPUT FROM PUBLIC WORKSHOPS

As part of the public process, we conducted a survey of the region in July of 2002. The results are available on our website at www.envisioncentraltexas.org. In general, we found that people thought we should be planning for the future – over 86 percent agreed that “Planning for growth is necessary if we are to keep our livability.” In the survey, the number one issue on people’s minds was transportation. When it came to solutions, people had many ideas – about land use, about the role of transit in the solutions, and about development in blighted areas.

In the fall of 2002, a regional workshop and a series of subregional workshops were

conducted by ECT, during which the public told us how and where they would like to accommodate the region’s possible next 1.25 million people and 800,000 jobs. The result consisted of nearly one hundred maps to examine, each showing a potential future for Central Texas. Three of the four growth Scenarios were derived from this collection of workshop maps.

In each of the public workshops, people from around the region accommodated the region’s projected household and job growth through a variety of different development types. Each workshop table (consisting of 8-12 people) was given a regional or subregional base map which included existing





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dedicated to high quality urban & rural
human habitat in Texas in perpetuity.**

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