High quality urban and rural human habitat in Texas in perpetuity
Scenario Planning for Texas Metropolitan Planning Organizations (MPOs)

Equitable, sustainable planning for 50 million Texans

Jay Blazek Crossley, Farm&City, September 3, 2020
Scenario Planning for Texas MPOs
Equitable, sustainable planning for 50 million Texans

In this presentation:

- What is Scenario Planning?
- Some examples of Scenario Planning in Texas
- Fixing our regional growth and long term planning processes
- Entertaining a future of safe multimodal access
- Fixing our major corridor decision making processes
Scenario Planning for Texas MPOs
Equitable, sustainable planning for 50 million Texans

The key points of this presentation:

• Texas MPOs should stop the practice of adopting a single growth forecast and instead adopt three distinct alternatives.

• We also should allow for Travel Demand Model practices that allow for the possibility of a shifting paradigm.

• We need equitable processes that entertain different growth scenarios, different travel demand models, and different investment packages for major projects like I-35 and I-45.
Scenario Planning for Texas MPOs
Equitable, sustainable planning for 50 million Texans

Next month, October 1, 6-8pm:

• We have invited representatives of TXDOT-Austin, TXDOT-Houston, H-GAC, CAMPO, Stop I-45, Reconnect Austin, Downtown Austin Alliance and the City of Austin, the City of Houston, and experts on environmental justice and social justice.

• The event will be Pecha Kucha style with each speaker having 6 minutes and 20 slides to share their point of view.
What is Scenario Planning?
Figure 7 The Scenario Funnel

Based on Timpe and Scheepers (2003).
How to Use the Guidebook

The remaining chapters of this Guidebook cover the following:

Chapter 2: What are Scenario Planning and Performance-Based Planning and Programming (PBPP)? provides an overview of the purpose of scenario planning and of tools commonly used for scenario planning. It also discusses the PBPP process, the framework for which FHWA developed over the past few years. This chapter lays the foundation for understanding the concepts in Chapter 4.

Chapter 3: How Can Scenario Planning Inform Performance-Based Planning and Programming? Chapter 3 relates the practical applications of scenario planning to each of the four main stages of the PBPP process: Direction, Analysis, Programming, and Implementation. It also provides an overview of the potential synergies between PBPP and scenario planning tools.

Chapter 4: Getting Started: Considerations for Designing Your Scenario Planning Process is intended for use by practitioners as a self-assessment tool or guideline with questions to consider in developing a scenario planning process appropriate in the context of a specific region or State.

Chapter 5: Keys to Success summarizes the content of the Guidebook and provides a summary of the themes outlined throughout the guide that helps practitioners achieve the maximum benefit from a scenario planning process.

Chapter 6: Case Study Summaries contains three summaries of the full case studies in Appendix C that identify the practices and lessons learned of three agencies in different regions of the U.S. that used scenario planning to address unique sets of circumstances and challenges. The agencies profiled are the Champaign-Urbana Urbanized Area Transportation Study (CUUATS), Fresno Council of Governments (COG), and Hillsborough County Metropolitan Planning Organization (MPO).

The Resources section provides links to the guidance and examples referenced throughout the document and additional material on scenario planning and PBPP.

Appendix A contains a worksheet version of the questions provided in Chapter 4 (Getting Started) that practitioners can use for self-assessments.

Appendix B provides a table of detailed information on the PBPP and scenario planning tools that are summarized at the end of Chapter 3.

Appendix C contains in-depth case studies about the three agencies profiled in Chapter 6, including more details on practices and lessons learned.
From “Supporting Performance-Based Planning and Programming through Scenario Planning,” US Department of Transportation, Federal Highway Administration

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

1. How should we get started?
   Output: Work plan.

2. Where are we now?

3. Who are we and where do we want to go?
   Outputs: Set of working principles that document broad state, community, region, or study area goals and preferences.

4. What could the future look like?
   Outputs: Identification of appropriate scenario analysis tool or refinement of travel demand model. Baseline and alternative scenarios.

5. What impacts will scenarios have?
   Outputs: Refined or calibrated analysis tool(s) or model(s) if necessary. List of indicators to compare scenario outcomes. Qualitative or quantitative assessment of scenario impacts.

6. How will we reach our desired future?

- Vision scenarios inform values-based goals and measurable objectives.
- Scenario indicators broaden performance metrics.

- Scenario tools and exercises enrich trend and strategy analyses.
- Goals inform priorities.

- Investment scenarios allow exploration of innovative funding strategies.
- Vision, goals, and indicators inform allocation criteria.

- Scenario indicators inform outcome-based reporting metrics.
- Expanded stakeholder engagement fosters new partnerships.

Strategic Direction
Where do we want to go?
- Goals and Objectives
- Performance Measures

Analysis
How are we going to get there?
- Identify Trends and Targets
- Identify Strategies and Analyze Alternatives
- Develop Investment Priorities

Programming
What will it take?
- Investment Plan
- Resource Allocation
- Program of Projects

Implementation
How did we do?
- Monitoring
- Evaluation
- Reporting
Some examples of Scenario Planning in Texas
Figure 4-1: Plausible Futures

TTP 2050 Universe of Plausible Futures

- **Today**
- **Time**
- **Optimistic Baseline**
- **Expected Baseline**
- **Scope of Uncertainty**
- **Range of Future Scenarios**
- **More Optimal**
- **Less Optimal**
This shows some of your input compared to all users so far. Click the headers to re-sort the information. The numbered columns show how many times this value has been given.

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Figure 4-7: TTP 2050 Investment Strategy Allocations

**Balanced Approach**
Continuation of current investment allocations
- Highway Safety: 8.9%
- Highway Preservation: 25.2%
- Urban Congestion Relief: 56.1%
- Rural & Multimodal Connectivity: 9.8%

**Keep It Smooth**
Focus on infrastructure preservation
- Highway Safety: 10.6%
- Highway Preservation: 39.4%
- Urban Congestion Relief: 42.2%
- Rural & Multimodal Connectivity: 7.8%

**Congestion Relief**
Prioritize reducing congestion
- Highway Safety: 8.9%
- Highway Preservation: 14.2%
- Urban Congestion Relief: 67.4%
- Rural & Multimodal Connectivity: 9.5%

**Reliably Connect Texas Communities**
Focus on access, connectivity, and reliability
- Highway Safety: 8.9%
- Highway Preservation: 14.2%
- Urban Congestion Relief: 42.2%
- Rural & Multimodal Connectivity: 34.6%

**Stakeholder and Public Outreach Generated**
Synthesis of TTP 2050 respondent preferences
- Highway Safety: 9.4%
- Highway Preservation: 23.0%
- Urban Congestion Relief: 51.3%
- Rural & Multimodal Connectivity: 16.3%
How do we keep Central Texas one of the nation’s most livable regions, considering that an estimated 1.25 million more people may live here within the next 20 to 40 years? How can we apply today’s lessons to tomorrow’s housing, environmental, transportation and land use challenges? The answer involves tough decisions for the people of Central Texas.

Envision Central Texas (ECT) is a project to assist in the public development and implementation of a regional vision addressing the growth of Central Texas. ECT works with state and local government, business and community leaders, developers and civic leaders, and has listened to more than a thousand people at community meetings to address these decisions, with an emphasis on land use, transportation and the environment. Using input gathered during public workshops held in June 2002, Envision Central Texas has developed a set of four possible growth scenarios that outline how and where growth could occur throughout the region. Each Scenario illustrates a particular pattern of growth in the Central Texas region.

This document summarizes each growth Scenario and explains its impacts on housing choice, traffic congestion and transit options, the environment, the regional economy, and other indicators. The Scenarios can be used to explore the trade-offs between different growth patterns.

The Scenarios are the basis for the next round of citizen input. This input will be used by the ECT Board of Directors in developing a vision for Central Texas. This vision can be used as the foundation of the region as we continue to develop locally-appropriate detailed plans and implementation strategies, as a guide to the future we want for ourselves and our children.
Exploring the Scenarios in Detail

In the following sections, all four Scenarios are explored in detail, using a wide variety of indicators. All Scenarios have advantages and disadvantages for different groups within the region. Over the next few months, we will ask the people of the region to share with us what they like and don't like about each of these Scenarios, and how they want to shape our future. From that feedback, and using all of the previous community input, we will construct a vision for the future of Central Texas, and the best set of strategies we should move to develop.

Your help is needed in getting the largest possible community participation in responding to these scenarios and helping shape ECT’s final community vision.

Scenario D concentrates growth in existing communities. More than one-third of the households and two-thirds of the jobs would be accommodated on existing developed land. Regional transit includes extensive commuter rail and a full light rail transit system.

- For every 1000 new people, 75 acres of land would be developed
- 80,900 acres of land would be developed
- 19,193 acres of land would be redeveloped in Scenario D
- Daily time spent getting around (all modes) per capita—57 minutes
- Aquifer recharge zones developed—397 acres (Total recharge zone acreage—145,000)
- Distribution of new jobs by County: Bastrop—7.64%, Caldwell—5.41%, Hays—1.71%, Travis—54.38%, Williamson—21.31%
- New jobs in concentrated low-income areas—16,042

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 7,406,569 acres, which is 553 acres of land for every 1000 people. (Total land area for the five county region is 2,739,161 acres. There are 40 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 67,447 acres out of the total acreage (Total recharge zone acreage—145,000)
- Job distribution: Bastrop—2.16%, Caldwell—1.34%, Hays—7.08%, Travis—78.45%, Williamson—12.36%
- 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 668,000 new acres would be developed
- 5,259 acres of land would be redeveloped in Scenario A
- Daily time spent getting around (all modes) per capita—68 minutes
- Aquifer recharge zones developed—36,250 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—34.76%, Williamson—14.09%
- New jobs in concentrated low-income areas—143

Scenario B is best described as a balanced scenario in which the new development is well dispersed among all the counties, and the existing developed areas are redeveloped. This Scenario is very different from Scenario A, but not as growth-oriented as Scenario C.

- For every 1000 new people, 134 acres of undeveloped land would be developed; a total of 240,000 new acres would be developed
- 1,349 acres of land would be redeveloped in Scenario B
- Daily time spent getting around (all modes) per capita—55 minutes
- Aquifer recharge zones developed—46,000 acres out of the total acreage (Total recharge zone acreage—145,000)
- Distribution of new jobs by County: Bastrop—2.67%, Caldwell—1.32%, Hays—7.36%, Travis—34.76%, Williamson—14.09%
- New jobs in concentrated low-income areas—143

Scenario C is the most growth-oriented of the four Scenarios. It is based on an assumption of strong population growth, economic development, and a significant amount of new development that will occur on undeveloped land. Regional transit includes extensive commuter rail and a full light rail transit system.

- For every 1000 new people, 50 acres of undeveloped land would be developed; a total of 108,000 new acres would be developed
- 886 acres of land would be redeveloped in Scenario C
- Daily time spent getting around (all modes) per capita—45 minutes
- Aquifer recharge zones developed—27,000 acres out of the total acreage (Total recharge zone acreage—145,000)
- Distribution of new jobs by County: Bastrop—2.97%, Caldwell—1.42%, Hays—7.36%, Travis—34.76%, Williamson—14.09%
- New jobs in concentrated low-income areas—143
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 80 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 600,000 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

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 predictions 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 shape 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.
Analysis of Alternative Concepts

In order to examine the possible impacts of varied approaches to transportation investment and demographic distribution in the region, CAMPO developed and analyzed three alternative concepts and presented the results of that analysis to the public in Fall 2009. Each concept included a unique combination of transportation projects and land use policies. Investments under each concept were financially constrained based on an assumption that the region will have access to approximately $9.5 billion in revenues for new transit and roadway capacity between 2010 and 2035.

No Build Concept

This No Build Concept assumed that growth trends continue in the region and current committed projects were built, but that no investments are made to add capacity to the transportation system between 2010 and 2035. Under this concept all available funding would be invested in additional operations and maintenance activities.

Trend Concept

The Trend Concept assumed that the density, location and mix of future development will be driven by a continuation of current policies and market trends. The concept also assumed that projects currently in the investment pipeline will be built. Under the Trend Concept, the remaining funding is invested to continue to build out the region’s freeway system and to expand state highways and arterial roadways.

Centers Concept

The Centers Concept assumed that the region establishes policies and incentives to concentrate new growth in multiple higher density, mixed-use centers around the region. The concept assumed that some of the projects currently in the investment pipeline do not move forward over the next 25 years. Under the Centers Concept, the funding available is invested to expand the region’s public transit system (including buses and rail), to implement a network of high capacity roadway lanes, and to build new arterials serving the mixed use centers.

Based on the performance of the concepts and input from the public, CAMPO tested several additional scenarios that combined elements of the three concepts, before identifying the preferred concept reflected in the CAMPO 2035 Regional Transportation Plan. The process used to develop and analyze these concepts is described in more detail in Appendix 3.
The graphics illustrate significant improvements in system performance with the projects in the financially constrained 2035 RTP compared to a No-build scenario. However, more investment would be needed to address all areas of peak period congestion in the region. The potential impact of an alternative land-use arrangement, such as the Envision Scenario (D) shows further reductions in the most congested areas compared to the Trend (A) scenario.
Less Time on the Road

The Less Time on the Road alternative promotes more growth in existing communities where infrastructure and services already exist.

Promoting growth in existing communities

In this alternative, most of growth takes place in cities and towns, particularly in activity centers and other areas where housing, jobs and activities are located closer together.

New development strengthens the local tax base in these places, enabling them to improve maintenance and services without raising taxes.

Transportation strategies are less focused on widening freeways and major roads and more on public transportation-buses, light rail and commuter rail-and improvements to sidewalks and bikeways. Local plans, codes and incentives are revised to encourage new development in areas with existing street systems and services, and to promote more pedestrian-oriented design.

Much of the new housing built is smaller than today's norm and, in the most walkable areas, more expensive. This is a tradeoff many are willing to make to reduce their travel time and cost. There is still an ample amount of traditional single family suburban housing throughout the region, and residents in these areas benefit from reduced competition for space on major roadways.

Click here to see the survey results.
Greener Region

The Greener Region alternative preserves natural in the region and improves air and water quality.

Preserving high-quality natural areas

In this alternative, the region has made a major effort to preserve its best natural areas wetlands, forests, prairies and shorelines and to reduce air and water pollution.

Suburban growth trends continue, with the exception that development is greatly reduced in those areas most vulnerable to flooding and hurricane storm surge, which are also some of the region's best wildlife habitat.

Public and private funds are used to preserve many prime natural areas and provide access to residents and visitors for outdoor recreation. These efforts increase the quality of life for residents and enhance the region's ability to recruit new business and skilled workers and to attract tourists.

Private sector initiatives to promote green building and low impact development are accelerated, and these practices become the norm, reducing energy consumption and runoff pollution. These efforts are coupled with local government initiatives to adopt greener practices and provide more services to residents that enable them to recycle, and reduce energy and water use and household pollution. While these programs entail up-front costs, many of them result in cost-savings over the long term.

EcoTypes base map

Click here to see the survey results.
Competitive Workforce

The Competitive Workforce alternative increases educational attainment for residents, thus improving the regional economy.

Increasing educational attainment

In this alternative, the region makes a major effort to increase the educational achievement of its residents. Improving high school graduation rates, particularly in low-income communities where dropout rates are high, becomes a priority.

The focus is not only on improving schools, but also addressing community factors such as poverty, crime, and substandard housing that can negatively affect educational outcomes.

These efforts are coordinated with increased educational enrichment, including pre-school, after-school tutoring and mentoring, and English-language skills programs. Additionally, improved opportunities for vocational training, adult education, and counseling and support for small business owners are provided throughout the region.

These initiatives require a substantial taxpayer investment, but also receive major support from the private sector and non-profit organizations. Costs to the public are offset by major increases in the earning power of residents, strengthening of the local tax base, and the economic development benefits of having a highly-skilled workforce.

Methodology

Click here to see the survey results.
Current Course

The Current Course alternative is meant to represent a future in which the status quo development trends are maintained.

Representing the status quo

In this alternative, *most of the growth occurs outside existing towns and cities*. This helps keep housing prices down, but does not create long-term value for most homeowners, as older cities, suburbs and towns decline with the continuous movement of people to newer communities.

The distance between jobs, housing and activities also continues to increase, meaning that driving remains the option for almost all the trips people make. Despite major upgrades in roads and freeways, *traffic congestion keeps increasing*, as the number of new drivers grows faster than the funds available for road expansion and maintenance. Public transportation, walking and bicycling increase somewhat, but don’t make a dent in the congestion problem.

Large amounts of green space and natural areas are converted to suburban-style development. Better designs and technologies help offset some of the environmental impacts, but these and other efforts to improve air and water quality are insufficient to keep up with the rate of population growth.

There is a substantial decline in the region’s overall education level as population growth exceeds capabilities of the existing education system. The region’s minority communities, now the majority of our population, are disproportionately affected. This makes the workforce less competitive for many high-demand jobs, and economic competitiveness suffers.

Click [here](#) to see the survey results.
Population and Employment

**2010**

**Population**

**2040**

**Employment**

Legend:
- **Green**: 0 - 50
- **Dark Green**: 51 - 200
- **Light Green**: 201 - 500
- **Yellow**: 501 - 1,000
- **Orange**: 1,001 - 2,500
- **Dark Orange**: 2,501 - 5,000
- **Red**: Over 5,000
SWIFT
Sustainable Ways to Integrate Future Transportation
Catherine McCreight, MBA, MA
IMAGINE...

WE HAVE A TOOL THAT CAN QUICKLY EVALUATE:

SCENARIO #1
"Surprise" Land Use Changes

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

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

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

And many more...

July 24, 2020
SWIFT – Sustainable Ways to Integrate Future Transportation

A tool where uncertainties can be properly captured in the planning process.

A SCENARIO-PLANNING TOOL that is data-driven and performance-based.

AN EXPLORATORY MODEL that is able to build a wide range of scenarios and evaluate their societal impacts thoroughly and quickly.

AN INTERACTIVE TOOL that integrates land use allocation model and transportation model seamlessly with a user-friendly interface.
Some examples of Scenario Planning in Texas
Fixing our regional growth and long term planning processes
"Typical" MPO Structure

- MPO Policy Board
  - Executive/Management Committee
  - Citizens Advisory Committee
  - Planning Committee
    - Subcommittees
  - Other Special Standing and ad hoc Committees

- MPO Professional Staff
This chart shows how much over- or under-represented each subgroup of people is comparing their percent of the population versus the percent of voting members of the transportation decision making entity who appear to be members of their subgroup.

\[ X = \text{subgroup (gender, race, or ethnic)} \]
\[ A = \text{Number of people of } X \text{ in region} \]
\[ B = \text{Number of voting members who seem to be } X \]
\[ C = \text{Total Number of people in region} \]
\[ D = \text{Total number of voting members of TPC} \]
\[ Y = \frac{(B/D) - (A/C)}{(A/C)} \]
1.5 million sub-urban and rural residents

.5 million urban residents
3 million sub-urban and rural residents
1 million urban residents
2 million sub-urban and rural residents

2 million urban residents
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.
How many more or less people were added 2010-2018 to each county compared to CAMPO 2040 Forecasts

- Bastrop: -9,391
- Burnet: -3,490
- Caldwell: -3,947
- Hays: -14,903
- Travis: 25,243
- Williamson: -30,340
Actual CAMPO Region Growth vs. CAMPO Forecasts 2010-2018

- Growth 2010-2018 forecasts
- Growth 2010-2018 actual census estimates

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<th>Burnet</th>
<th>Caldwell</th>
<th>Hays</th>
<th>Travis</th>
<th>Williamson</th>
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Projected annual growth rate by county in the Austin region
2010-2050

Data: Texas Demographic Center
2018 Texas Population Projections
(Most recent estimates available)
How Texas Demographer Projected County Growth Rates Compare to Recent Census Estimates

- **Bastrop**: Projected: 1.5%, Estimated: 1.6%
- **Burnet**: Projected: 1.0%, Estimated: 1.3%
- **Caldwell**: Projected: 1.4%, Estimated: 1.6%
- **Hays**: Projected: 7.6%, Estimated: 4.7%
- **Travis**: Projected: 1.9%, Estimated: 2.6%
- **Williamson**: Projected: 6.2%, Estimated: 3.8%
2nd Draft (October 2019) 2045 Forecasts

- **2045 Growth**
- **2015 Population**

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## Current CAMPO Planning Regime

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<td>Alternative A</td>
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</tr>
<tr>
<td>Alternative C</td>
<td>$300 / capita</td>
</tr>
</tbody>
</table>

## Proposed CAMPO Planning Regime

<table>
<thead>
<tr>
<th></th>
<th>Growth Forecast X</th>
<th>Growth Forecast Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Costs</td>
<td>Benefits</td>
</tr>
<tr>
<td>No Build Scenario</td>
<td>$450 / capita</td>
<td>$400 / capita</td>
</tr>
<tr>
<td>Alternative A</td>
<td>$550 / capita</td>
<td>$650 / capita</td>
</tr>
<tr>
<td>Alternative B</td>
<td>$650 / capita</td>
<td>$700 / capita</td>
</tr>
<tr>
<td>Alternative C</td>
<td>$300 / capita</td>
<td>$350 / capita</td>
</tr>
</tbody>
</table>
Projected 2045 ridership on Austin’s proposed Orange Line Light Rail in alternative growth scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2040 regional growth forecast</td>
<td>241,705</td>
</tr>
<tr>
<td>2040 sustainable, equitable growth forecast</td>
<td>305,795</td>
</tr>
<tr>
<td>2040 transit-oriented growth forecast</td>
<td>519,665</td>
</tr>
</tbody>
</table>
Projected 2045 ridership on Austin’s proposed Orange Line Light Rail in alternative growth scenarios

<table>
<thead>
<tr>
<th>Forecast Scenario</th>
<th>Ridership</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2040 regional growth forecast</td>
<td>241,705</td>
<td></td>
</tr>
<tr>
<td>2040 sustainable, equitable growth forecast</td>
<td>305,795</td>
<td>+26%</td>
</tr>
<tr>
<td>2040 transit-oriented growth forecast</td>
<td>519,665</td>
<td>+115%</td>
</tr>
<tr>
<td>2045 regional growth forecast</td>
<td>272,460</td>
<td>+13%</td>
</tr>
</tbody>
</table>
How many jobs are in your opportunity zone?

Jay Blazek Crossley
June 18, 2007

How we measure various aspects of our regional growth has a tremendous impact on the quality of life for Houstonians. By State mandate, we are required to reduce emissions of the precursors of ozone to improve our air quality and reduce the health impacts for the humans living in our region. The Houston-Galveston Area Council (H-GAC) illustrates in the 2035 Regional Transportation Plan (RTP) that we will be on target for going below the State mandated levels of NOx and VOC's over the next several years and will actually go significantly below these levels. This action should actually reduce the number of people in our region who suffer from asthma and other respiratory problems. The lower the target, the more relief.

In his Policy Framework appendix to Joel Kotkin's "Opportunity Urbanism" Tory Gattis suggests we measure "the opportunity zone" for either an individual seeking work, shopping, and schools, or a business seeking customers and employees, by measuring how far one can travel in a certain amount of time. This is an interesting measure of an urban area and its transportation infrastructure that was used in the 2025 RTP and appears in the System Analysis section of the 2035 RTP. As shown in the maps to the right, this concept is a measure of mobility, how far you can drive in a certain period of time. In these maps each red ring represents a half hour drive further from the center.

While this is an interesting measure and has successfully been used to focus our transportation spending on maintaining the pace of road building so that we can continue to drive the same distance in half an hour, it does not accurately reflect our "opportunity zones." When Gattis speaks of access to jobs and restaurants, the focus is not on how far you can drive, but how many people you can interact with in a reasonable amount of time. To measure the breadth of "opportunity zones" within our region, we could take this one step further and develop a different model that measures how many people are within your thirty-minute travel zone, or how many jobs. It might take a good amount of computing power, but H-GAC could measure this data point across the region, yielding the true "opportunity zone" measures for every point in the region.

The benefit of this new measure is that it would not bias road building as a policy alternative like the old measure does. Instead it would actually measure the intended economic development goal that Gattis correctly notes as a reasonable objective of local government. Dense transit oriented development provides more opportunities for those living near it, but this would not be captured by the old measure. Measuring access in the new way will also allow us to compare the Livable Centers program to other transportation infrastructure investments. Interestingly, the new measure would also capture the same benefits of road building that the old measure captures alongside density and transit.

Also, this new measure of "opportunity zones" across our region will not be focused solely on downtown like the previous measure. Houston is distinguished among American cities in that for a long time it has developed as a polycentric region instead of the simple downtown and surrounding suburbs model that is assumed in many urban planning discussions. In terms of jobs, Uptown is the largest "satellite city" in America and we have several other downtowns, including the Med Center and Greenway that are larger than downtown Miami or San Diego. Our measures and our transportation infrastructure should recognize the importance of our many existing Livable Centers.

For more information on the 2035 RTP, see http://www.gulfcoastinstitute.org/2035rtp.

Tory Gattis’ Policy Framework Appendix is available at:
http://www.houston.org/events/kotkin/

The Mission of the Gulf Coast Institute is to “improve the quality of life in the Houston Gulf Coast region.”
2035 RTP Travel Time Contours to CBD.

Figure 7- 2005

Figure 8-2035 No Build

Figure 9- 2035 RTP
Traffic deaths per VMT is a bad metric
Fixing our regional growth and long term planning processes
Entertaining a future of safe multimodal access
Texans living in rural, sub-urban, and urban census tracts based on 2017 population per square mile

- Rural (<1000): 8,132,489
- Sub-urban (1001-3800): 9,139,964
- Urban (3801-59157): 10,147,159
Percent of large Texas MPO residents living in rural, sub-urban, & urban census tracts

<table>
<thead>
<tr>
<th>MPO</th>
<th>Rural</th>
<th>Sub-urban</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFW</td>
<td>17%</td>
<td>35%</td>
<td>48%</td>
</tr>
<tr>
<td>Houston</td>
<td>17%</td>
<td>36%</td>
<td>47%</td>
</tr>
<tr>
<td>San Antonio</td>
<td>22%</td>
<td>29%</td>
<td>49%</td>
</tr>
<tr>
<td>Austin</td>
<td>32%</td>
<td>34%</td>
<td>34%</td>
</tr>
<tr>
<td>Rio Grande Valley</td>
<td>28%</td>
<td>50%</td>
<td>22%</td>
</tr>
<tr>
<td>El Paso</td>
<td>11%</td>
<td>36%</td>
<td>53%</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>23%</td>
<td>31%</td>
<td>46%</td>
</tr>
</tbody>
</table>

Residents per square mile

Data:
2017 ACS 5-Year Estimates, US Census Bureau
Large Texas MPO residents living in rural, sub-urban, & urban census tracts

- **DFW**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)
- **Houston**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)
- **San Antonio**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)
- **Austin**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)
- **Rio Grande Valley**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)
- **El Paso**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)
- **Corpus Christi**: Residents per square mile: 1000 (Rural), 1001-3800 (Sub-urban), 3801-59157 (Urban)

Data: 2017 ACS 5-Year Estimates, US Census Bureau
A Reasonable Future for Texas: No More Roads Necessary

How much Texans would drive in the future if we keep growing like we have been growing and keep driving a little less each year, like we have been.

DVMT = daily vehicle miles traveled every day in Texas (including trucks)
DVMT / Pop = how much each Texan has to drive, on average

TXDOT changed DVMT data collection methodology starting in 2015, specifically because the Houston region complaints numbers were low. Yet 2016 to 2017 shows similar downward trend seen previously.
Selection of TXDOT AADT traffic counts on Austin core roadways

- I-35 at UT
- Mopac at about 45th
- 183 just north of Lamar
- North Lamar just north of 183
Selection of TXDOT AADT traffic counts on Austin core roadways

\[ y = -1136.3x + 225425 \]
\[ y = -393.05x + 149956 \]
\[ y = -774.99x + 155838 \]
\[ y = -780.77x + 58839 \]

- I-35 at UT
- Mopac at about 45th
- 183 just north of Lamar
- North Lamar just north of 183

City of Austin Mobility Talks Survey

Question 2: Which mode of transportation would you like to use more often? Rank in order with 1 being the mode you would like to use the most, select N/A if you do not want to use the mode more often.

- Public Transportation: 42%
- Bike: 23%
- Driving Alone: 15%
- Carpool: 2%
- Motorcycle: 1%
- Ground transportation services: 7%
- Car sharing services: 1%
Transportation Mode

Question 1: Which mode of transportation do you use most often? Rank in order with 1 being the most used or select N/A if not used.

The percent of participants who identified driving alone as the mode of transportation they use most often is in line with ACS data for Austin, which shows that 73% of Austinites drive alone during their commute.
Texas road spending per capita (2017 dollars)

2000:
- User Fees: 625
- Not User Fees: 216

2017:
- User Fees: 575
- Not User Fees: 608
Governor Abbott Says Texas Is Finished Building Highways

In a San Antonio speech, Gov. Greg Abbott says Texas may be experiencing its "last major build-out of roads." Has the state changed its tune on transportation?

BY PETER SIMEK | PUBLISHED IN FRONTBURNER | JANUARY 10, 2020 | 10:56 AM

For generations, the state of Texas’ transportation policy has boiled down to one simple maxim: more roads equal better
Entertaining a future of safe multimodal access
Fixing our major corridor decision making processes
TxDOT’s proposed expansion dramatically changes I-35 in downtown Austin
Reconnect Austin
<table>
<thead>
<tr>
<th>Growth Scenarios</th>
<th>Sprawl</th>
<th>Balanced</th>
<th>equitable Transit Oriented Development</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Travel Demand Model Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep on Driving</td>
</tr>
<tr>
<td>Balanced</td>
</tr>
<tr>
<td>EcoTopia</td>
</tr>
<tr>
<td>Corridor Investment Strategy</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Congestion Relief</td>
</tr>
</tbody>
</table>
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
<table>
<thead>
<tr>
<th>Travel Demand Model Assumptions</th>
<th>Sprawl</th>
<th>Balanced</th>
<th>eTOD</th>
</tr>
</thead>
</table>
# Kinder Houston Area Survey

<table>
<thead>
<tr>
<th>Metfunds2</th>
<th>Should we continue to use 25 percent of the funds from METRO for street improvements and other non-transit projects, or should all METRO funds be dedicated to transit improvements?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>RF/DK</td>
<td>4.7%</td>
</tr>
<tr>
<td>Continue to fund non-transit projects</td>
<td>41.1%</td>
</tr>
<tr>
<td>Use all funds for transit improvements</td>
<td>54.2%</td>
</tr>
<tr>
<td>Total Responses</td>
<td>1286</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stratag4</th>
<th>Which of these would be better for the Houston area? (ROTATE) Spending more taxpayer money to improve rail and buses; or: Spending more taxpayer money to expand existing highways?</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK/RF</td>
<td>0.1%</td>
</tr>
<tr>
<td>Improve rail and buses</td>
<td>52.3%</td>
</tr>
<tr>
<td>Expand existing highways</td>
<td>47.6%</td>
</tr>
<tr>
<td>Total Responses</td>
<td>656</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traffic1</th>
<th>Which of these proposals would be the best long-term solution to the traffic problems in the Houston area: building bigger and better roads and highways, making improvements in public transportation, such as trains, buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK/DK</td>
<td>0.0%</td>
</tr>
<tr>
<td>Better roads and highways</td>
<td>30.6%</td>
</tr>
<tr>
<td>Improvements in public transportation</td>
<td>44.6%</td>
</tr>
<tr>
<td>Communities where people live close to work</td>
<td>25.2%</td>
</tr>
<tr>
<td>Total Responses</td>
<td>1558</td>
</tr>
</tbody>
</table>

[https://www.datahouston.org/khas](https://www.datahouston.org/khas)
Proposition 7 Funds

On Nov. 3, 2015, 83 percent of Texas voters approved the ballot measure known as Proposition 7, which authorized a constitutional amendment for transportation funding. Under the amendment, a portion of sales and use taxes as well as a smaller portion of motor vehicle sales and rental taxes may only be used pursuant to Section 7-c, Article VIII of the Texas Constitution, to:

(1) construct, maintain, or acquire rights-of-way for public roadways other than toll roads; or (2) repay the principal of and interest on general obligation bonds issued as authorized by Section 49-p, Article III, of this constitution.

This means Proposition 7 funds may also pay the debt service on Proposition 12 bonds, which are guaranteed by state general revenue.
The Texas legislature needs to make TXDOT funding performance based
Fixing our major corridor decision making processes
High quality urban and rural human habitat in Texas in perpetuity