As the Alamo Area adds an additional 1.5 million people by 2045, policy makers must make important decisions about when and where to invest transportation funding in the region. *Mobility 2045* is a living document that sets forth a vision and the policies guiding these decisions over the next four years and also identifies the challenges we face in the coming decades.

**Background**

Planning for the future transportation needs of the Alamo Area region requires a comprehensive look at the current transportation system, future population and employment, and the anticipated available funding for the area for transportation projects. Although this seems like a simple exercise, there is extensive work involved in improving the region’s transportation infrastructure. The metropolitan area’s economy and environment depend heavily on the condition and efficient performance of the regional transportation system. Recognizing the mobility needs of the community and addressing those needs will lead to improvements in the economy and quality of life. This update to the Metropolitan Transportation Plan (MTP), *Mobility 2045*, takes steps in that direction. Public involvement in the planning process is necessary to ensure that transportation decisions are not made independently and that Federal tax dollars are used in accordance with legitimate public needs and desires.
In August 1977, the Governor of Texas designated the San Antonio – Bexar County Transportation Steering Committee as the Metropolitan Planning Organization (MPO) for San Antonio and Bexar County. This organization is the forum for cooperative transportation planning and decision-making by officials of the urban area's local governments and transportation agencies. In 2013 the MPO expanded its boundaries to include all of Bexar, Comal, Guadalupe counties and a portion of Kendall County, and became known as the Alamo Area MPO. The MPO Transportation Policy Board (TPB) is comprised of 21 elected and appointed officials representing the following entities: Bexar, Comal and Guadalupe counties and a portion of Kendall County; Cities of New Braunfels, San Antonio and Seguin; the Advanced Transportation District, the Alamo Regional Mobility Authority, Greater Bexar County Council of Cities, Northeast Partnership, the Texas Department of Transportation, and VIA Metropolitan Transit.

**Federal Legislation**

The signing of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) on December 18, marked a significant change in the planning and development of metropolitan transportation systems. In its Declaration of Policy, ISTEA mandated "a National Intermodal Transportation System that is economically efficient and environmentally sound...and will move people and goods in an energy efficient manner." Specifically, "the National Intermodal Transportation System shall consist of all forms of transportation in a unified, interconnected manner . . . to reduce energy consumption and air pollution while promoting economic development . . . ."

On June 9, 1998, the Transportation Equity Act for the 21st Century (TEA-21) was enacted, authorizing highway, highway safety, transit and other surface transportation programs for the next six years. TEA-21 built on the initiatives established in ISTEA. TEA-21 combined the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety as traffic continues to increase at record levels, protecting and enhancing communities and the natural environment, and advancing America’s economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

To further build and strengthen TEA-21 legislation, the President signed the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) on August 10, 2005. SAFETEA-LU focused on several of the programs and initiatives put in place under TEA-21 and continued the authorization of highway, transit and other surface transportation programs. SAFETEA-LU was the largest transportation authorization bill passed into law and continued the focus on eight planning factors.

Following SAFETEA-LU, Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012 and took effect on October 1, 2012. MAP-21 focuses on a
streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991. MAP-21 was a two-year bill.

The current transportation bill, signed into law on December 4, 2015, is the **Fixing America’s Surface Transportation (FAST) Act**. The FAST Act is the first law enacted in over ten years that provides long-term funding certainty for surface transportation projects, meaning MPOs, States and local governments can better plan for critical transportation improvements, including larger highway and transit infrastructure projects.

The FAST Act mostly maintains the current funding structures and funding shares between highways and transit. However, some of the key differences in this transportation bill are outlined below.

- Provides a dedicated source of federal dollars for freight projects. The FAST Act establishes both formula and discretionary grant programs to fund transportation projects that directly benefit the movement of freight.
- Supports an outcome-oriented, performance-based approach to the evaluation of proposed transportation projects. The FAST Act continues the performance management approach adopted by MAP-21 and requires the US Department of Transportation (DOT) to begin developing new tools (and improve existing tools) to better manage project performance within one year of enactment.

Under the FAST Act, MPOs are now required to address ten planning factors, rather than the previous eight. The ten planning factors are listed below.

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and non-motorized users.
- Increase the accessibility and mobility of people and for freight.
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- Enhance the integration and connectivity of the transportation system, across and between modes, people and freight.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
- Enhance travel and tourism.
Mobility 2045 Vision
The vision statement for Mobility 2045 is:

The 2045 Metropolitan Transportation Plan will meet growing needs while:

- Ensuring environmental quality;
- Enhancing the safety of the traveling public;
- Fostering appropriate land use patterns;
- Advancing alternative modes of transportation; and,
- Increasing accessibility for all users.

Mobility 2045 Goals
The following goals reflect the goals and values of citizens and stakeholders and guide the development of the long-range transportation plan for the region:

- Identify opportunities to improve and enhance the regional transportation system and preserve the investment in the existing transportation system.
- Increase the efficiency of the transportation system and manage traffic congestion.
- Maintain a focus on safety.
- Address the social and environmental issues of the region in transportation planning efforts.
- Support economic activity, employment growth and encourage innovative partnerships.
- Facilitate the involvement and participation of communities, agencies, organizations and the general public in the transportation planning process.
- Ensure the transportation planning efforts are coordinated with local land use plans to support future growth and development patterns.

Components of the Plan

Demographics
The basis of any effective planning effort rests primarily on a determination of the area’s base year demographics (population, household size, employment, household income, and land use) and future projections of these demographics. The MPO used 2015 as the base year for this update of the MTP. Population is forecast to increase by nearly 1.5 million people (to 3.7 million people) by 2045; employment is forecast to increase by over 800,000 (to over 1.8 million) in the region.

Emerging Technologies
Transportation is rapidly being changed by new technologies. Over the duration of this long-range transportation plan, technology and automation could make significant improvements in
roadway capacity without the addition of pavement, generate better travel time reliability, and tackle safety challenges. The extent that technology impacts will be felt over the next 25 years, will likely depend on decisions made by both public and private entities as well as the cost and benefits of the technological advances.

The Alamo Area is a high growth region and the challenge will be to continue to build, operate and maintain a safe, reliable multimodal transportation system. Technological advancements will be integral to being able to move people and goods. But, at this time, no agency knows exactly what, where and how significant advancements in technology will impact our current and planned systems.

Expected elements of transportation technology in the timeframe of Mobility 2045 include:

- Autonomous and Connected Vehicles (cars and trucks platooning)
- 5G, or the fifth generation of cellular mobile communications
- Increasingly smarter phones (handheld communication technology)
- Collision warning systems
- Enhanced traffic signal control technology
- Expanded traveler information systems
- Increases in rideshare and car sharing
- Land use impacts
- Low cost, same and next day delivery (by drones)
- More alternatively fueled vehicles
- More mobility/navigation apps
- Smart cards (payment system)
- Trackless transit vehicles
- Wireless traffic management
- Implications to revenue – federal and state gas tax impacts

Public Involvement

The MPO believes in the proactive involvement of citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, and other interested parties in the development and updates of the MTP, the Transportation Improvement Program and significant transportation studies.

A proactive approach to an effective public involvement process requires several elements:

- Early, continuous, and meaningful public involvement;
- Reasonable public access to technical planning information;
- Collaborative input on transportation alternatives, evaluation criteria and mitigation needs;
Executive Summary

- Transportation planning meetings that are open to the public; and
- Access to the planning and decision-making process.

The public has been involved in the planning process early, continuously, and in a meaningful way. Members of the public were provided reasonable technical information and collaboratively determined alternatives and solutions. The MPO used innovative outreach techniques and social media to encourage participation in the plan development. This process made the public true partners in creating the metropolitan area’s updated long-range transportation plan.

Active Transportation

In the last five years the region has continued to see significant expansion of bicycle and pedestrian plans (Regional Bicycle and Pedestrian Plan, Bike Share Master Plan Study, as examples), projects and programs, such as Vision Zero. Regional leaders understand the importance of creating and maintaining a safe multimodal transportation system.

Bicycling and walking are cost effective, energy efficient, clean, and healthy ways to travel. With the growing concerns of congestion, air quality and the public interest in promoting alternative transportation modes, active transportation is critical to achieving the region’s goals.

Public Transportation

VIA Metropolitan Transit (VIA) is a political subdivision of the State of Texas, authorized by State Enabling Legislation to receive locally-generated sales tax income, fare box revenue, Federal Transit Administration (FTA) funding, advertising revenue, and interest income.

VIA is governed by an eleven-member Board of Trustees. Five of the Trustees are appointed by the City of San Antonio, three by Bexar County and two by the Greater Bexar County Council of Cities. These appointed Trustees elect an eleventh person to serve as Board Chairman.

The VIA service area is 1,226 square miles in size, which is equivalent to 98% of Bexar County. It currently includes the City of San Antonio, thirteen suburban cities and the unincorporated areas of Bexar County. Suburban cities located within the service area are Alamo Heights, Balcones Heights, Castle Hills, China Grove, Cibolo, Sandy Oaks, Converse, Elmendorf, Kirby, Leon Valley, Olmos Park, St. Hedwig, Shavano Park, and Terrell Hills.

As of 2018, VIA operates 95 bus lines, with 7,700 bus stops, along 1,100 miles of roadways. VIA also operates from 14 transit centers and park and ride facilities.

VIA’s fleet, consists of 508 buses, comprising 48 North American Bus Industries (NABI) diesel buses, 4 NABI compressed natural gas buses, 107 New Flyer diesel buses, 30 New Flyer...
diesel-electric hybrid buses, 3 Proterra electric buses, 19 NABI 60-foot CNG buses, 270 NOVA CNG buses, 15 New Flyer CNG buses (VIVA), and 17 Optima streetcars. All buses purchased by VIA are low-floor, kneeling vehicles with ramps to accommodate patrons with limited mobility, and the replica trolleys in the downtown area are equipped with lifts.

The active VIAtrans fleet consists of 159 vehicles owned by VIA, all of which are equipped with wheelchair lifts. Each vehicle has the capacity to carry 5 ambulatory and 2 wheelchair patrons or 4 ambulatory and 3 wheelchair patrons.

The Alamo Area faces many challenges in the area of public transportation. While VIA has long been one of the most financially efficient transit systems in the country, its fiscal constraints and service area characteristics somewhat limit what it can offer. However, VIA recently adopted its Vision 2040 Plan that looks at the needs of the region and how the region is best served with different modes of traditional transit and high-capacity transit. VIA has also partnered with other regional transportation agencies, including the MPO, the Alamo Regional Mobility Authority, Bexar County, City of San Antonio, and TXDOT, to develop ConnectSA, a framework for implementing planned multimodal transportation projects. The MPO has also funded a study to analyze the feasibility of fixed route transit service in New Braunfels.

Additionally, work continues on the High-Speed Rail Study as another future transportation option for the region.

Roadway System
As population and employment continue to grow in the San Antonio metropolitan area, a greater burden will be placed on the transportation system. To accommodate traffic increases on the roadway system, additional travel lanes, including High Occupancy Vehicle lanes, and operational improvements will be needed. In addition to congestion levels, factors considered when developing the future year roadway network included impacts to neighborhoods, acceptability by the public, environmental concerns and fiscal constraint.

The proposed roadway system improvements in the long range plan are limited by the amount of funding available, or revenue that can be reasonably expected over the 25-year life of the MTP. While more improvements are necessary than funding available, the roadway projects selected address the most congested areas of the MPO study area.

Even with the anticipated investment made over the next twenty-five years in transportation infrastructure, regional traffic congestion is expected to increase. Transportation demand management strategies will become increasingly important and, when implemented, can have a positive effect on air quality, growth, land use, travel patterns and travel behavior.
Executive Summary

**Freight Movement**

There has been a dramatic increase in goods movement across the United States via heavy duty trucks and an accompanying increase in truck traffic in the San Antonio region, especially along IH 35 and IH10. In January 2017 the MPO hosted two freight workshops at which regional freight and logistics stakeholders provided input, generating a large amount of data needed for the Mobility 2045 plan, including the identification of Critical Urban Freight Corridors.

NAFTA related trade as well as freight and goods movements from the East and West coasts along IH 10 will continue to impact the San Antonio metropolitan area. The growth in freight movement and the growth in local population and employment will increase the level of service on local expressways. Planning agencies in this region understand that transportation planning efforts must increase the focus on freight movement in order to improve the area’s transportation system.

**Environmental Concerns**

Environmental issues in transportation planning continue to be a priority. Environmental issues are required to be considered in the transportation planning process in order to mitigate negative impacts to valued resources including wildlife, water sources, agricultural land and floodplains.

Air quality issues also play a major role in metropolitan transportation planning. In July 2018, Bexar County was designated non-attainment for ozone, effective September 2018. Being non-attainment, the MPO is now required to demonstrate transportation conformity: ensuring that vehicles emissions from transportation projects will not adversely impact the county’s air quality.

**Congestion Management Process**

Although the San Antonio region is not considered one of the most congested areas in the country, it has been identified as having one of the fastest growing congestion levels. The average citizen in San Antonio spends more than xx hours stuck in traffic each year, an increase of xx% over the past decade (Urban Mobility Study, Texas Transportation Institute, 20xx). Congestion is a major contributor to air quality concerns and overall efficiency of the area wide transportation system. Since Bexar County has been designated non-attainment for ozone, congestion management strategies and transportation control measures must be applied effectively, relieving congestion throughout the region.

The MPO’s Congestion Management Process outlines eight specific congestion management objectives that work toward the Mobility 2045 goal to increase the efficiency of the transportation system and manage traffic congestion. These include:
Executive Summary

- Maintain congested VMT per capita through 2022
- Maintain current level of congested hours through 2022
- At least 65% of the Interstate should be reliable by 2022
- At least 45% of the Non-Interstate NHS should be reliable by 2022
- Average reliability of the transit system should be 85% by 2040
- Double the population and employment within a quarter-mile access of frequent transit by 2040
- Maintain 60 minutes or less incident clearance time on expressways through 2022
- Maintain travel time for freight moved on highways through 2022

Performance Measurement

The Alamo Area recognizes the importance of transportation performance tracking, goal setting and measurement to provide greater accountability and transparency and to achieve a more efficient and effective investment of transportation resources. To date, the MPO has met all of the deadlines as set forth for the adoption of performance measures and has developed innovative ways of communicating the performance measurement tracking to partner agencies and the public.

For development of Mobility 2045, it was extremely important in planning to know the travel demand on the transportation system and to determine how people will travel throughout the region. Two computer models are used to analyze regional data for transportation planning purposes: the Travel Demand Model and the Mode Choice Model.

Geographic Information Systems, or GIS, uses computer hardware, software and data capturing to display geographically referenced information. GIS allows people to view, analyze and, most importantly, visualize data related to transportation programs and projects.

Financial Constraint

The transportation system in the MPO study area requires maintenance and enhancement to meet the mobility needs of people and goods for the 25-year horizon of this plan. To meet the growing travel needs, it was necessary to identify reasonable and available federal, state, and local transportation funds, both public and private. Traditional transportation funds are available through a variety of sources, many of which contain restrictions on how they can be used and/or allocated. In addition, it is also necessary to estimate relevant expenses including capital for both maintenance and operation of the system. The Funding Summary is provided in Table ES-1.

A number of issues and events occurred that have brought great awareness to the state of transportation financing and future funding streams. Even with billions of dollars investment in our region’s transportation infrastructure, the congestion levels will continue to increase at a
faster rate than funding is made available. The fact remains that transportation needs far outweigh available funding resources, but as demand increases, it is essential to develop a fiscally constrained, prioritized and acceptable list of transportation improvement projects for the community.

**Project List**

The project lists reflect consultation with the public, implementing agencies and other affected stakeholders. The MPO has undertaken an extensive amount of technical and financial analysis to arrive at the list of projects contained in this plan. The roadway and transit project lists meet FAST Act planning requirements of financial constraint with projected financial resources available over the next 25 years. The financially constrained revenue and expenditure summary can be found in Table ES.1. Lump sum figures have been included in the project list to allow for some flexibility in safety, bicycle and pedestrian projects as well as roadway preservation over the next 25 years. The MTP and the project list can be revised, as necessary, to meet the changing needs of the community. It is important to note this financially constrained plan will not eliminate congestion. Levels of congestion are projected to continue to grow.
### Executive Summary

**Table ES - 1. Roadway and Transit Project Funding Table**

<table>
<thead>
<tr>
<th>TxDOT Funding Category</th>
<th>FY 2019-2022</th>
<th>FY 2023-2045</th>
<th>Total Funding</th>
<th>Unprogrammed Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Programmed 6</td>
<td>Allocated 6</td>
<td>Allocated 6</td>
<td>Balance 6, 8</td>
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<td>TxDOT Preliminary Engineering (SBPE) 1</td>
<td>$156,590,000</td>
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<td>TxDOT Right of Way ($102) 1</td>
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<tr>
<td>1 - Prvnt Maint 3, 9</td>
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<td>$12,000,000</td>
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<tr>
<td>2 - Metro Corridor</td>
<td>$895,325,000</td>
<td>$757,722,960</td>
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<td>$1,346,952,040</td>
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<td>3 - Local Contribution</td>
<td>$328,666,693</td>
<td>$34,400,000</td>
<td>$363,066,693</td>
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<td>4 - Connectivity</td>
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<td>5 - Congestion Mitigation/Air Quality 2</td>
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<td>0</td>
<td>$549,575,000</td>
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<td>6 - Structures 3</td>
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<td>7 - Surface Transportation Block Grant</td>
<td>$246,390,384</td>
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<td>8 - Safety 3</td>
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<td>9 - Transportation Alternatives</td>
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<td>10 - Miscellaneous 3</td>
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<td>11 - District Discretionary 9</td>
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<td>12 - Supplemental 4</td>
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<td>12 - Strategic Priority</td>
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<td>12 - Clear Lanes</td>
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<td>Proposition 1/Proposition 7 5</td>
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<td>$4,029,400,568</td>
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<td><strong>$5,065,145,271</strong></td>
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### Transit Funding Category

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<tr>
<th>Transit Funding Category 7</th>
<th>FY 2019-2025 Programmed</th>
<th>FY 2026-2045 Allocated</th>
<th>Total Funding Allocated</th>
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<td>Operating Revenue</td>
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<td>Sales Tax Revenue</td>
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<td>Grant Funds</td>
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<td>Other Operating Funds</td>
<td>$77,930,000</td>
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<td>Capital Funds</td>
<td>$278,610,000</td>
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<td>Other</td>
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<td><strong>Total</strong></td>
<td><strong>$2,282,830,000</strong></td>
<td><strong>$8,776,160,000</strong></td>
<td><strong>$11,058,990,000</strong></td>
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</tr>
</tbody>
</table>

**Notes:**
1. These amounts for engineering and right of way are shown for the short term only.
2. The MPO will not receive CMAQ funding until FY 2020.
3. These projects are selected by the State and let based on Grouped CSJs.
4. This funding is not available after FY 2020.
5. This funding is shown in the short range plan as Categories 2, 4 or 12.
6. Indicates funding includes both federal portion and match as necessary.
7. See Chapter 6 Public Transportation for more information.
8. Unprogrammed amount is an estimate based on current funding assumptions used in the draft FY 2020 UTP.
9. This amount is available to the entire TxDOT San Antonio District, not just the MPO study area.