Volume 2: Developing Vision 2040

The Visioning Process

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Prepared for

VIA

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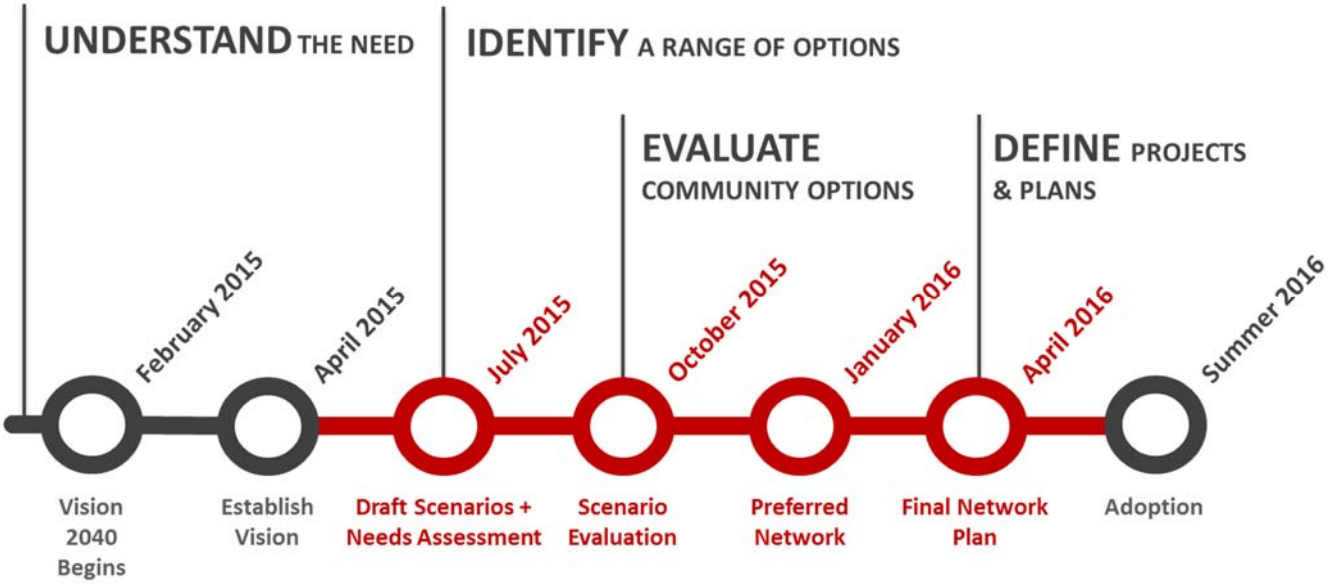
1.0 Introduction

VIA Metropolitan Transit (VIA) updates its long range plan every five years to reassess the region's public transportation needs and establish a strategic framework to guide transit investment in the region. The Vision 2040 Long Range Plan (Vision 2040) identifies a system of bus service enhancements, policies, programs, and a network of potential high-capacity transit projects in the Greater San Antonio Region that will help achieve a shared regional transit vision for the future.

VIA divided the Vision 2040 Long Range Plan development process into four key phases (Figure 1.1). *Phase 1: Understand the Need* identified demographic trends, travel patterns, and activity centers that define the region's transportation needs. The first round of public involvement identified community needs for a high-quality transit system. This report documents the process used to move through *Phase 2: Identify a Range of Solutions* and *Phase 3: Evaluate Community Solutions* in order to create the Vision 2040 Long Range Plan. Each of these phases was also supported by additional rounds of stakeholder and public involvement.[1]

Figure 1.1 Vision 2040 Planning Phases and Key Milestones



[1] For more detail on the public involvement process, see *Phase 1* through *Phase 4* of the Stakeholder Involvement Summaries in *Volume 2: Developing Vision 2040*.

The Vision 2040 Long Range Plan was developed through a community-driven process that iteratively informed a technical evaluation, proceeding through the following four major steps:

- **Understanding the Need for a Vision** – This step describes the motivation behind the development of the Vision 2040 Long Range Plan. The three key sources of information used include:
  - The change in population and employment distribution as the Greater San Antonio Region continues its rapid pace of growth;
  - The needs and desires for a robust transit network, as communicated by the public, VIA Transit Advisory Council (VTAC), and the VIA Board of Trustees; and
  - The current infrastructure and travel patterns in the Greater San Antonio Region.
- **Developing Vision Components** – This process represents the establishment of components and plans needed to supplement transit in the Greater San Antonio Region from the "business as usual" scenario to a community vision for the future. The key steps were:
  - Develop a list of policies, programs, and network elements with various service types to build the Vision 2040 Long Range Plan;
  - Gather feedback from public and stakeholders on the priority of service types and focus corridors;
  - Define the evaluation criteria used to measure the efficiency of prospective networks; and
  - Proceed through the refinement process of evaluating interim networks to determine the draft transit vision network.
- **Establishing the Vision** – The Vision 2040 Long Range Plan is the suite of capital and operating enhancements representing the synthesis of technical needs assessment, public input, and leadership from the VTAC and VIA Board of Trustees and resulting from the evaluation and refinement process. The plan includes three components (Figure 1.2):
  - A **Better Bus System** that ensures access to a robust network of reliable and frequent transit across the region;
  - A **Rapid Transit Network** that provides efficient, reliable and convenient service to major activity centers and along key corridors; and
  - **Innovative Solutions** that keep transit service in the Greater San Antonio Region at the forefront of developments in transportation technology.

Figure 1.2 Vision 2040 Long Range Plan Components

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A BETTER BUS SYSTEM A RAPID TRANSIT NETWORK INNOVATIVE SOLUTIONS

- **Implementing the Vision** – The Implementation Plan is the prioritized list of capital projects, operational changes, policies, and that fulfill the Vision 2040 Long Range Plan while meeting fiscal constraints.
  - **Capital Investments** are investments in physical infrastructure and rolling stock that support VIA's services.
  - **Operational Improvements** are adjustments and expansions to scheduling, service planning, and other day-to-day characteristics.
  - **Policy Goals** involve interagency coordination, guiding principles, and areas of research and development.

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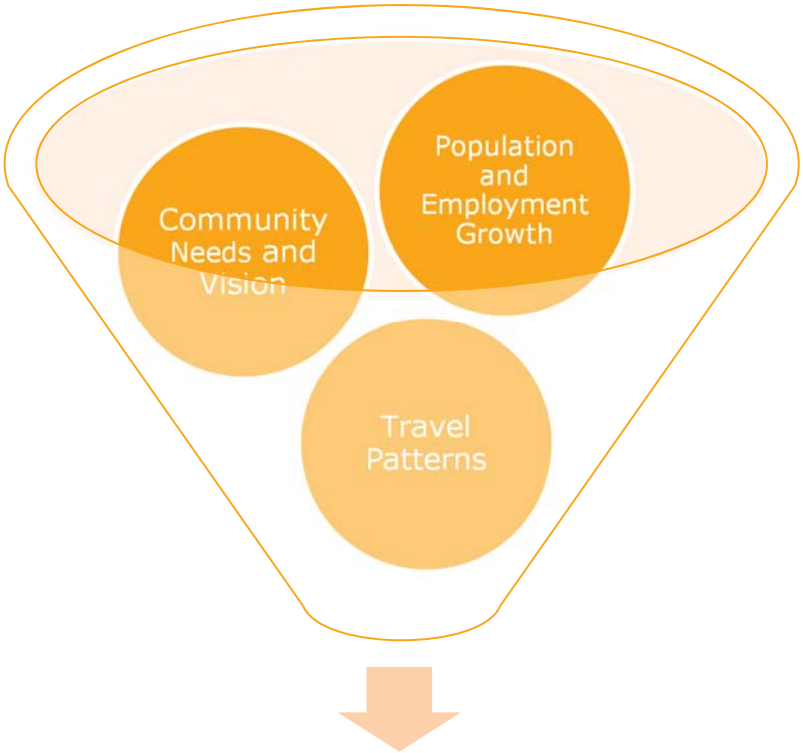
2.0 Understanding the Need for a Vision

Three elements drove the formation of the Vision 2040 Long Range Plan: the Greater San Antonio Region's rapid population and employment growth; an assessment of community needs and vision for transit, and a thorough review of current travel patterns (Figure 2.1).

Figure 2.1 Scenario Development



Vision 2040 Long Range Plan

2.1 Population and Employment Growth

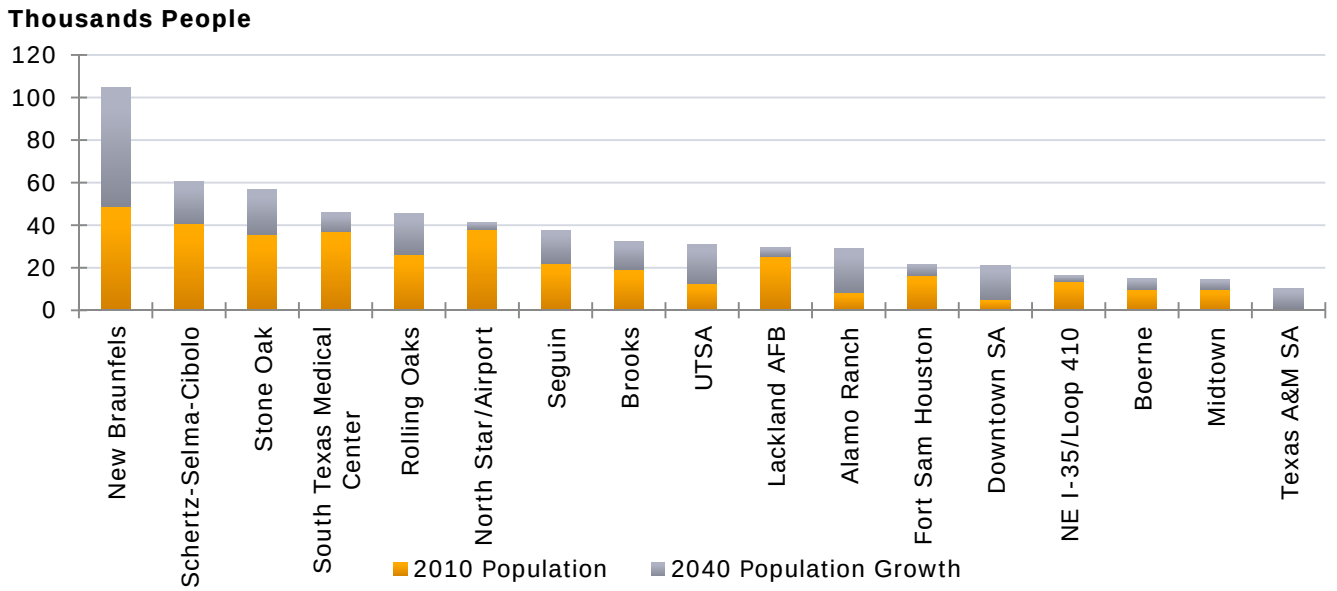
Demographic projections for the Greater San Antonio Region show that the region's population and employment patterns will change substantially over the next 25 years:

- The Greater San Antonio Region is projected to be one of the fastest growing Metropolitan Statistical Areas (MSA) in the country. The San Antonio-New Braunfels MSA is expected to grow by 1.6 additional residents between 2010 and 2040, an increase of 76 percent.[2]
- Job growth in the region will attract more employees. Between 2010 and 2040, the total number of employees in the Greater San Antonio Region is predicted to nearly double, from 0.9 to 1.7 million.[3]
- Most population and employment growth will be concentrated in key regional employment centers. Key areas of population growth are projected to occur in New Braunfels, Schertz-Selma-Cibolo, Stone Oak, and Rolling Oaks; and employment growth is expected in the area around the South Texas Medical Center, North Star/Airport area, and the City of San Antonio's Central Business District (Figure 2.2 and Figure 2.3).
- Increased travel activity due to population growth will cause many roadways to approach or exceed their design capacity (Figure 2.4), causing many trips to become unpredictable and congested. Average speeds are expected to decrease by 35 percent, while average travel time spent driving will increase by 76 percent on average, per person.

[2] Alamo Area Metropolitan Planning Organization (2014); Statewide Analysis Model (2014).

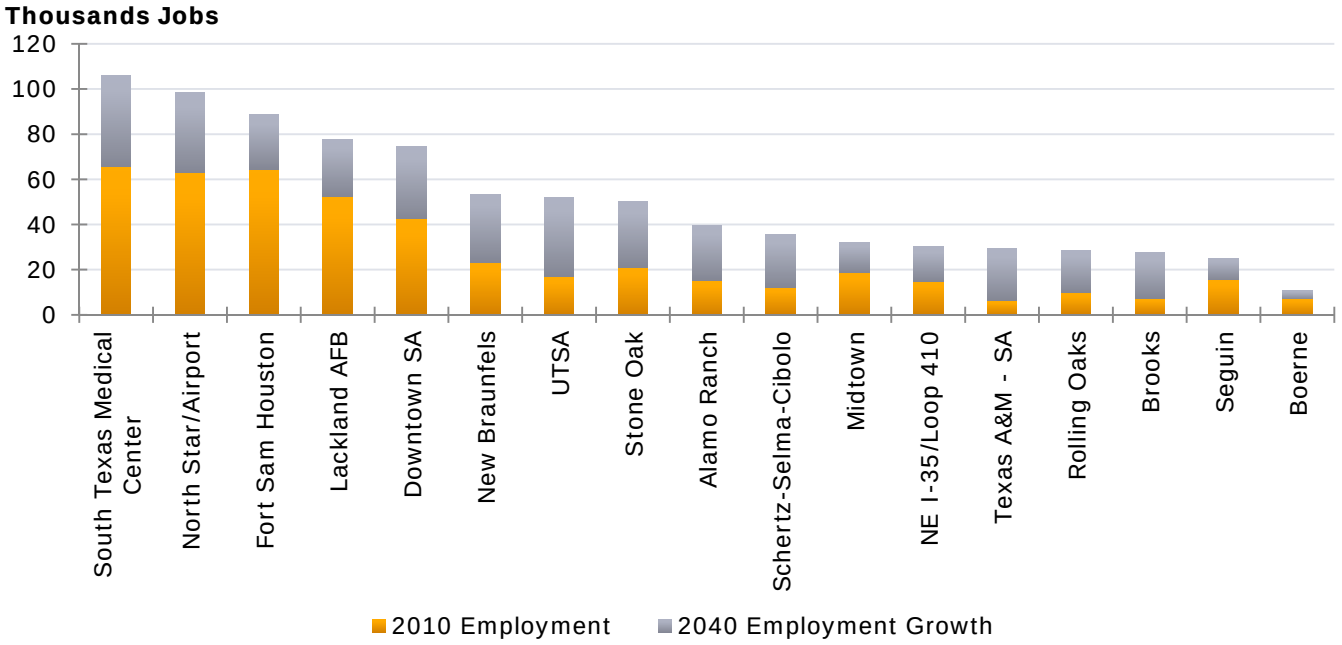
[3] *Ibid*.

Figure 2.2 Activity Center Population Growth
2010 to 2040



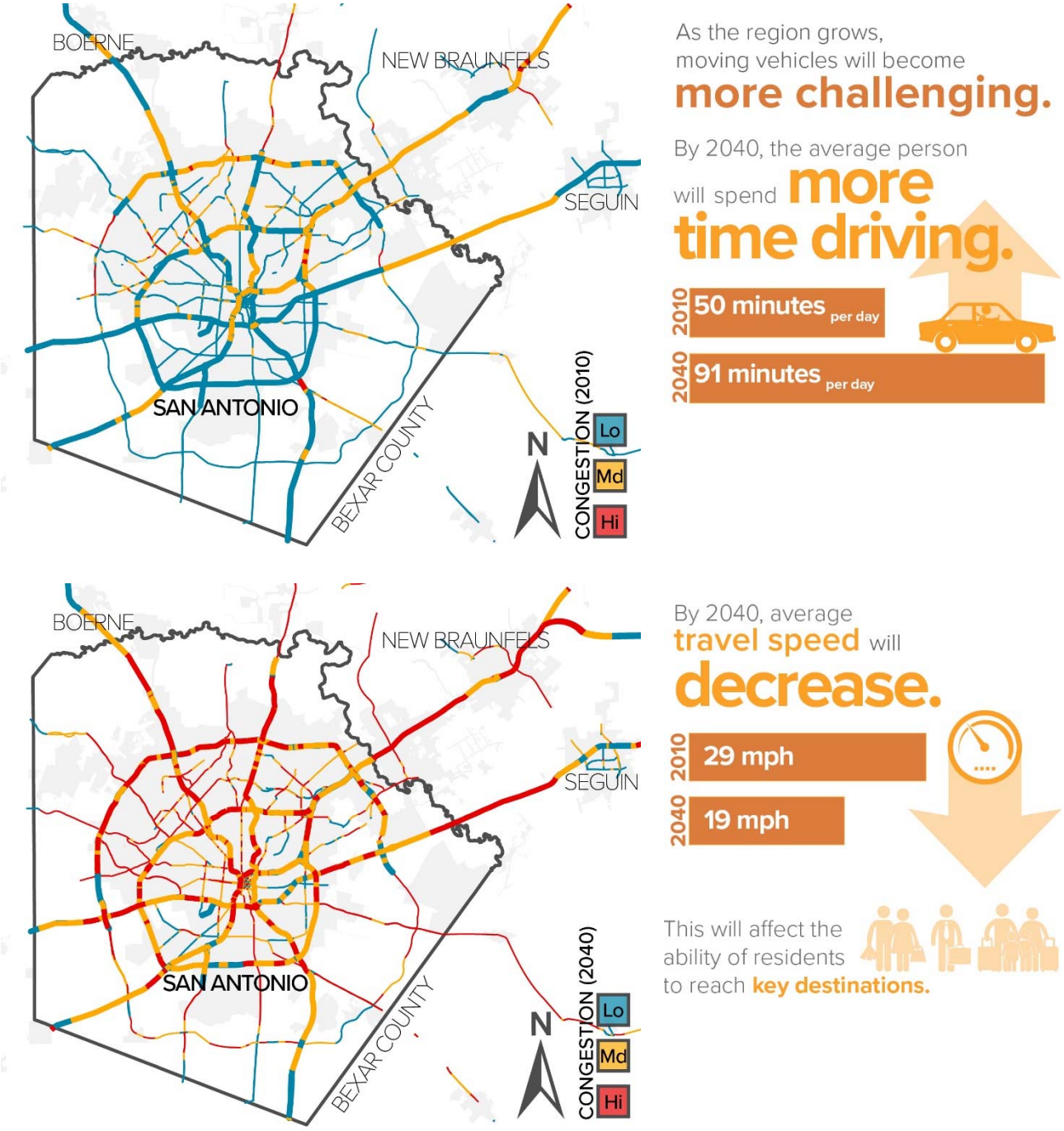
Source: Alamo Area Metropolitan Planning Organization (2014).

Figure 2.3 Activity Center Employment Growth
2010 to 2040



Source: Alamo Area Metropolitan Planning Organization (2014).

Figure 2.4 Regional Travel Patterns
2010 to 2040



Source: Alamo Area Metropolitan Planning Organization Model, Texas Department of Transportation Statewide Analysis Model (2014).

Note: 2040 projections of congestion include funded improvements to the transportation system.

2.2 Community Needs and Vision

2.2.1 Public Involvement

Community involvement was a critical part of the scenario development process. Three rounds of surveys were conducted, and VIA worked closely with the public at over 275 community and outreach events.

The first phase of public involvement focused on identifying the priorities, features, and elements of transit service that would meet the needs of the community. Participants also were invited to identify geographic areas as current barriers or opportunities for improvement. Demand for a frequent and reliable transit network including high-capacity elements (e.g., Bus Rapid Transit (BRT) or Light Rail Transit (LRT)) emerged as a common theme throughout responses.[4]

The second phase of public involvement focused on what kinds of transit investments are needed most. Participants were asked questions about specific transit elements (e.g., stop spacing, frequency, and transit-dedicated lanes), and then asked to evaluate a series of potential corridors for increases in service levels.[5]

The third phase of public involvement focused on ranking transit recommendations, such as specific corridors and service types. Participants were asked to rank specific corridors and projects, as well as whether or not they supported LRT and high-occupancy vehicle (HOV) projects.[6]

Comments from the community helped guide recommendations for both specific and general enhancements to the transit network. Some of these comments are highlighted in Figure 2.5.

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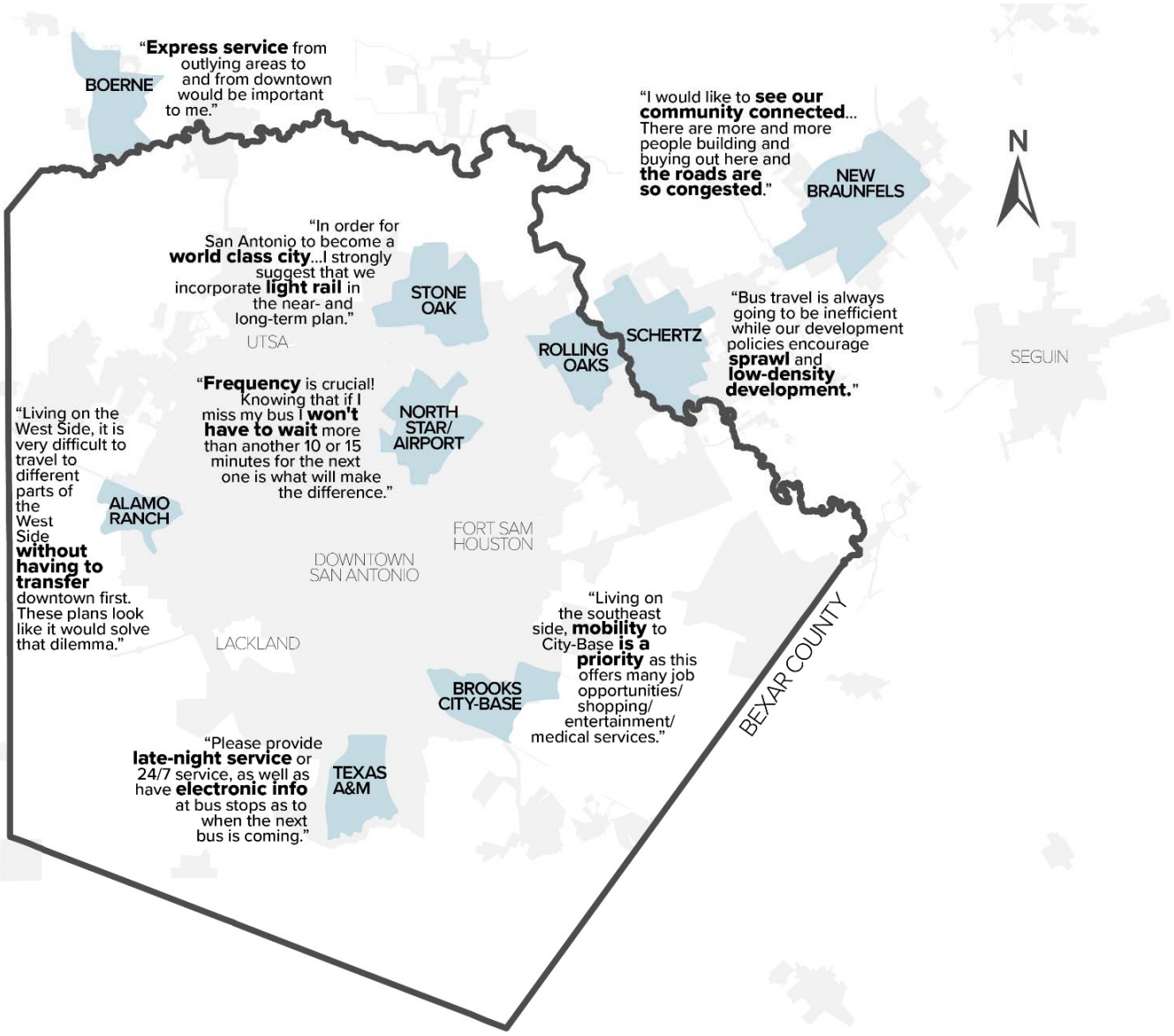
[4] Refer to the *Phase 1 Stakeholder Involvement Summary* in *Volume 2: Developing Vision 2040* for more information.

[5] Refer to the *Phase 2 Stakeholder Involvement Summary* in *Volume 2: Developing Vision 2040* for more information.

[6] Refer to the *Phase 3 Stakeholder Involvement Summary* in *Volume 2: Developing Vision 2040* for more information.

Figure 2.5 Selected Public Involvement Comments



2.2.2 Key Stakeholder Input

VIA conducted a series of workshops and presentations with staff, the VIA Board of Trustees, and the VIA Transit Advisory Committee (VTAC).[7] This phase leveraged these groups' familiarity with the implications of the Vision 2040 Long Range Plan on operations, service planning, political process, and

[7] The VTAC, an ad-hoc committee established by the VIA Board of Trustees, serves to assist the Board in clarifying the purpose, role, and image of VIA as a leader in regional planning for transportation that increases mobility and promotes economic development and sustainability in the region. The VTAC acts as both an advisor to the Board and as a liaison to the public-at-large, the business sector, and other major civic organizations to provide a forum for discussion regarding various initiatives.

fiscal stability. The stakeholder ideas, suggestions, and feedback helped guide the development of the plan.

2.3 Travel Patterns

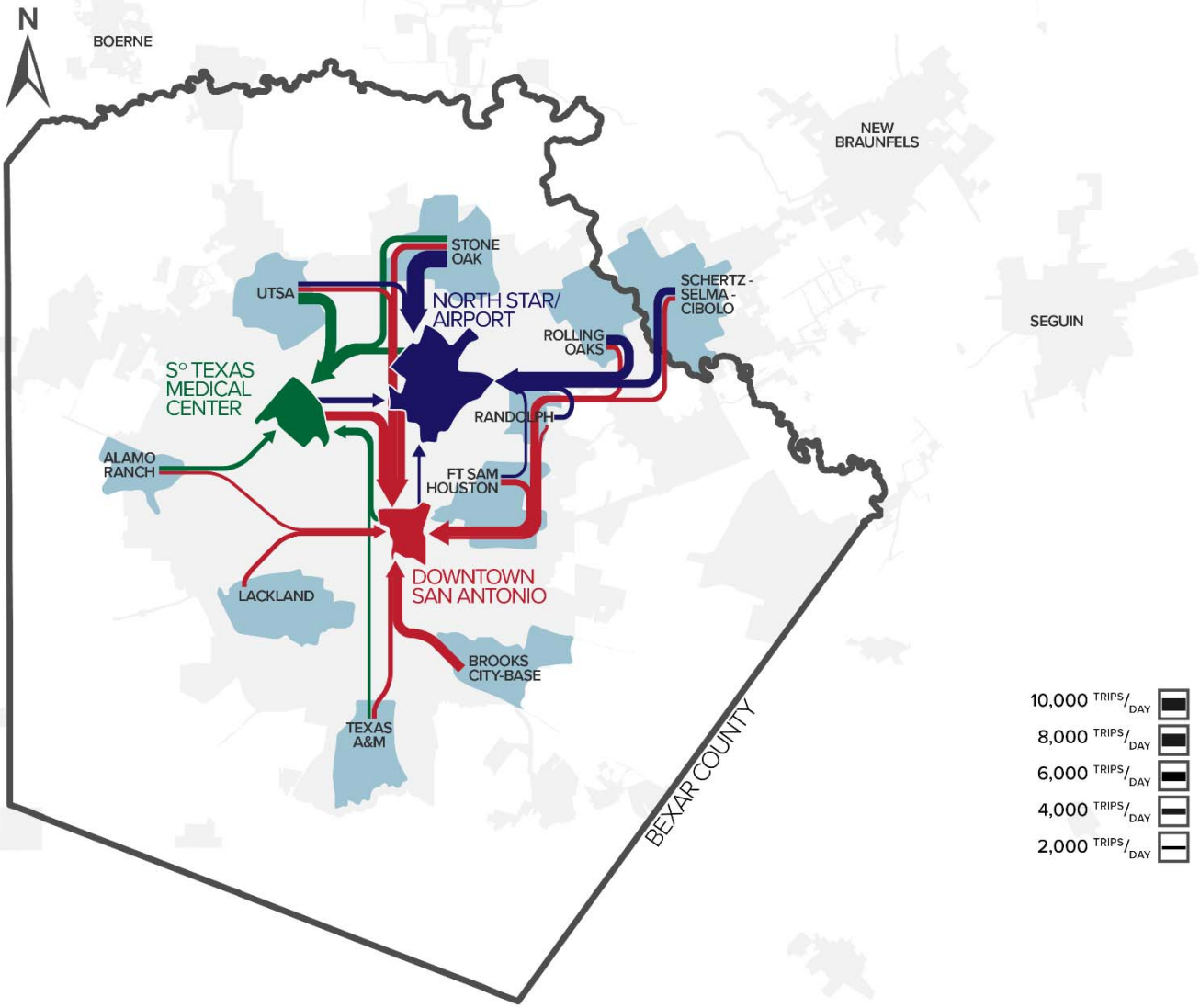
The final component informing the development of scenarios was to analyze travel flow patterns around the Greater San Antonio Region. Estimates of the flow of travel between activity centers in 2040 provided information to inform two key components of the Vision 2040 Long Range Plan:

- Where is demand for transit the greatest?
- What type of transit is appropriate for a given location?

For example, trips to the City of San Antonio's Central Business District originate in great numbers from the South Texas Medical Center (to the northwest), North Star/Airport area (to the north), and Brooks City-Base (to the southeast), indicating a need for high-capacity transit such as BRT or LRT in those corridors (Figure 2.6). Trips to the City of San Antonio Central Business District from the Port San Antonio activity center (to the southwest) are less numerous, indicating that this connection might be better served by express service. This analysis was completed for each major employment activity center in the region.[8]

[8] For a detailed report on travel patterns, see *Needs Assessment* in *Volume 1: The Role of Transit in a Growing Region*.

Figure 2.6 Trip Flows to key Activity Centers



3.0 Developing Vision Components

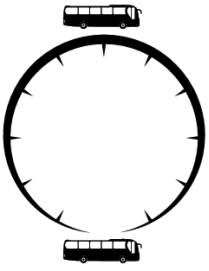
Once transit needs and high-priority corridors were identified, specific components to address those needs were refined. Two types of components were developed: network elements, consisting of fixed and non-fixed transit service; and support elements, consisting of facilities and projects designed to support the public facing transit service. Next, a scenario evaluation framework was created in order to combine these elements into a cohesive vision.

3.1 Establish Vision Elements

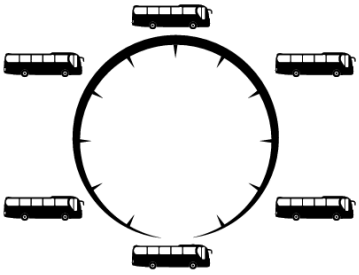
The needs assessment process helped to establish the demand for transportation options in the Greater San Antonio Region; the first round of public involvement determined what type of transit investments would meet the community's expectations for service. Based on current and planned service in the Greater San Antonio Region and a review of transit practices in peer cities, different transit service types were considered and used for developing the Vision 2040 Long Range Plan.[9]

3.1.1 Network Elements

Frequency describes how often vehicles arrive to pick up passengers. High-frequency service allows transit users to ride vehicles without having to consult a schedule, but may not be appropriate for lightly used routes.



LESS FREQUENT SERVICE
(30 minutes between arrivals)



MORE FREQUENT SERVICE
(10 minutes between arrivals)

[9] For a more detailed description of service types, see *Fixed Route Services: Building a Transit Foundation* in *Volume 3: Defining Projects and Plans.*

Capacity describes how many people can fit on a transit vehicle. Higher-capacity vehicles move more people, but are more expensive and difficult to operate on narrow streets.

LOW CAPACITY
(40 People)

MODERATE CAPACITY
(60 People)

HIGH CAPACITY
(100+ People)

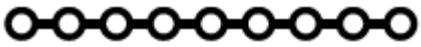
Right-of-Way describes how much separation transit vehicles have from other traffic on the road. Mixed traffic routes are appropriate for low-congestion roadways, such as those through neighborhoods; dedicated-lane service is more appropriate for high-capacity systems through congested areas to minimize travel delay for transit patrons.

MIXED TRAFFIC
(All vehicles share the road)

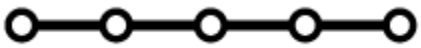
MIXED TRAFFIC + TSP
(Transit has priority at traffic signals)

DEDICATED LANES/RAIL/HOV
(Transit has its own lane)

Stop spacing describes the space between transit stops and stations which impacts the overall speed of travel in the corridor. Close stop spacing is appropriate for neighborhood routes and community circulation, while distant stop spacing can help link distant activity centers quickly and efficiently.



CLOSE STOP SPACING
(Connecting city blocks: ¼ mile)

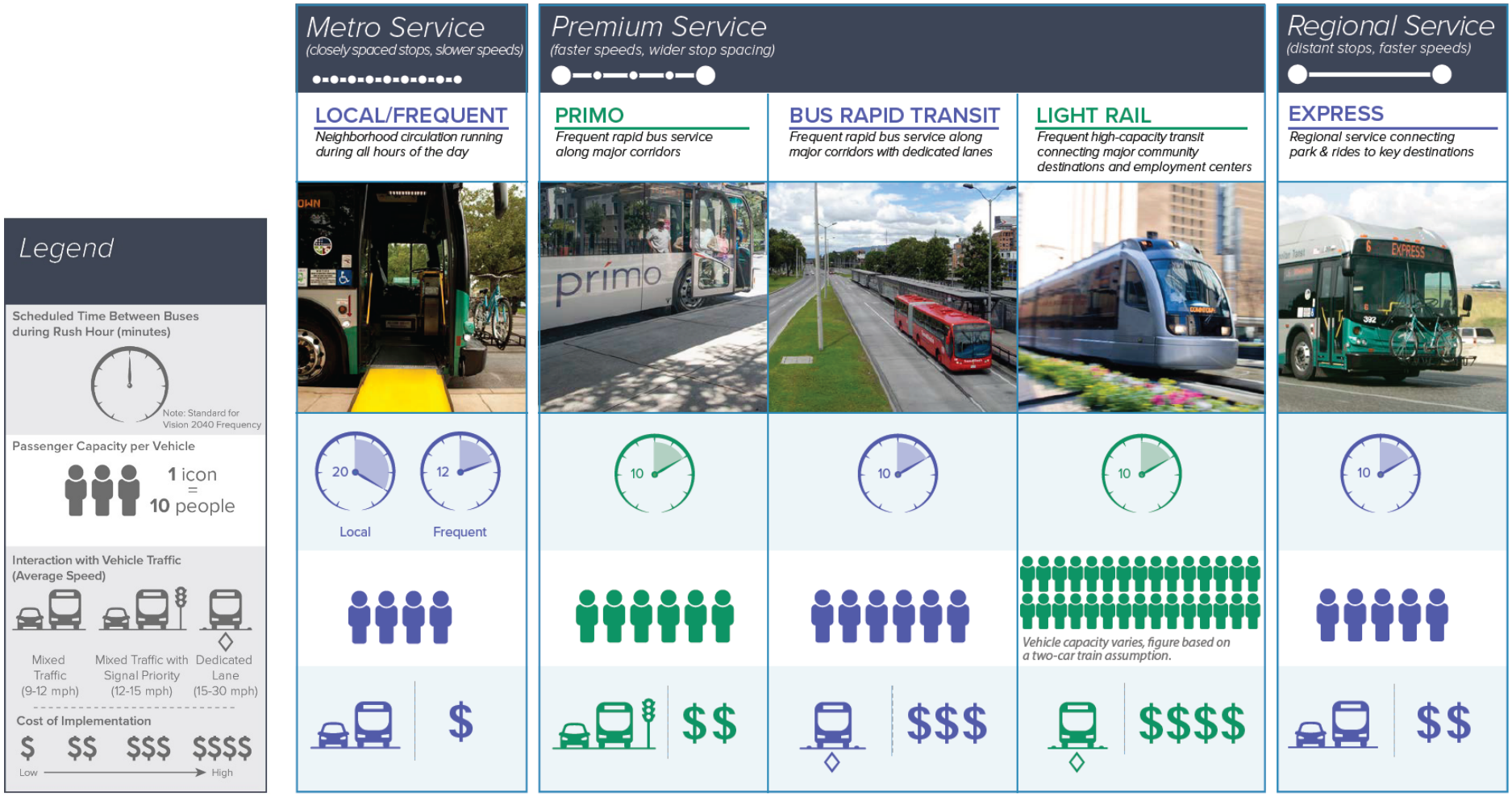


MODERATE STOP SPACING
(Connecting neighborhoods: 1 mile)

DISTANT STOP SPACING
(Connecting regional centers: 10 miles)

To meet the region's transit needs and provide mobility options, six fixed route service types were included in the Vision 2040 Long Range Plan (Figure 3.1). They can be loosely divided into two groups: those operating in mixed traffic (Local, Frequent, and Primo service) and those operating in their own right-of-way (BRT, LRT, and Express when operating on freeways with HOV lanes).

Figure 3.1 Fixed Route Service Type

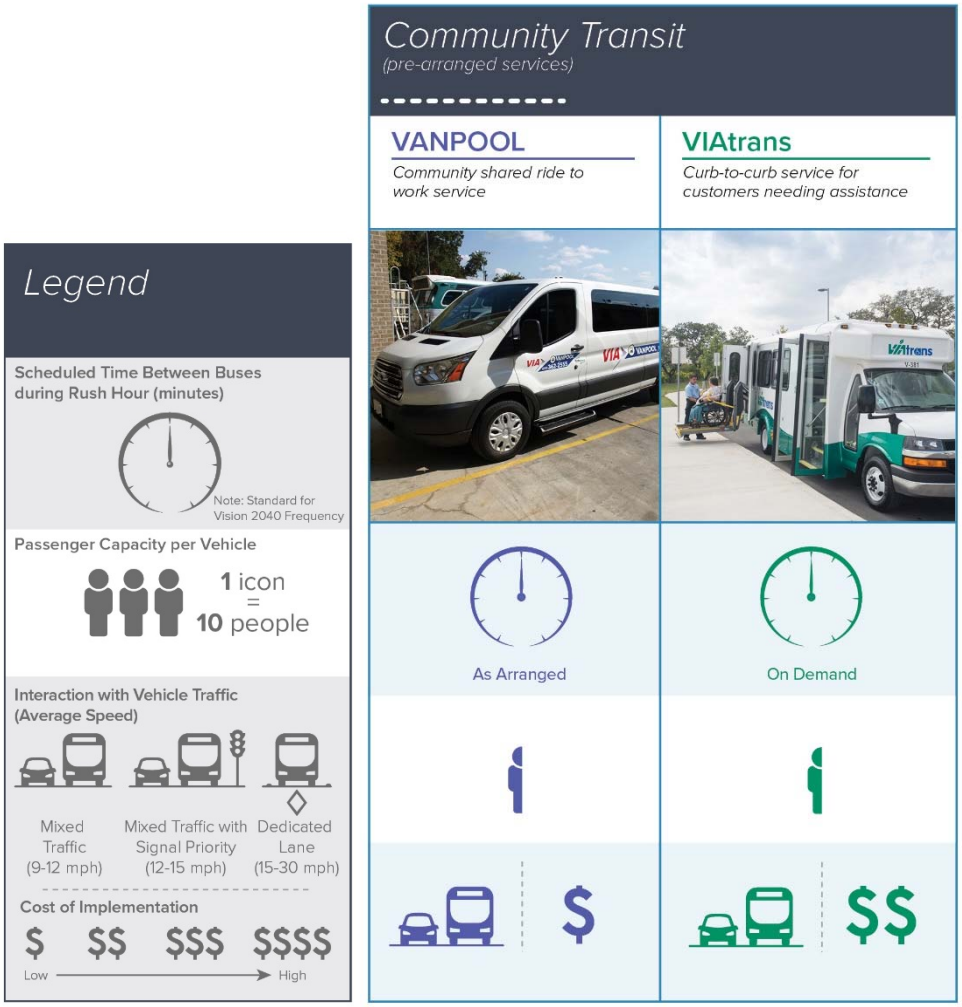


Bus Rapid Transit photo source: "TransMilenio – Heroes Station" by Jorge Láscar, 2010; https://creativecommons.org/licenses/by/2.0/

3.1.2 Non-Fixed Route Elements

In addition to fixed route service, VIA operates both paratransit (VIAtrans) and vanpool services (Figure 3.2). VIAtrans provides curb-to-curb service for passengers in a Federally-required ¾-mile radius around regular fixed route service who are unable to use VIA routes. Vanpool is a specialized service that provides commuters with similar destinations with subsidized van rentals and coordination support. Policies and enhancements related to both of these programs were included in the Vision 2040 Long Range Plan.[10]

Figure 3.2 Non-Fixed Route Service Types



10 For a more detailed discussion of VIAtrans and Vanpool services, see *Non-Fixed Route Services: Expanding Transit Choices* in *Volume 3: Defining Projects and Plans*.

3.1.3 Support Elements

A complete transit system includes more than just routes for transit travel. Both passenger facilities (e.g., park & rides, transit centers, stops, and station areas) and support facilities (e.g., maintenance, storage, and administration facilities and traffic control devices, such as networked signals, queue jumps, and dedicated lanes) play a critical role in the Vision 2040 Long Range Plan. Beyond infrastructure, transit-supportive policies can have a great impact on the transportation network. Coordination between land use, environmental, and transportation ordinances and policies is a crucial component of the Vision 2040 Long Range Plan.

3.2 Establish Development Framework

Once network elements were established, a scenario development framework matched elements into a cohesive plan. The development process relied on both quantitative metrics (e.g., modeling analysis, demographic projections, and geographic analysis) and qualitative information (e.g., feedback from public surveys, VIA staff, and members of the Board of Trustees and VTAC). Three key guidelines were used to iteratively develop a cohesive plan that addresses community and stakeholder needs: access, quality, and efficiency (Figure 3.3).

- **Access:**
  - **Connecting Activity Centers:** Transit routes must meet the expressed needs and desires of the community. The Vision 2040 Long Range Plan has upgraded low-frequency routes and established several Primo/BRT/LRT routes that link key activity centers.
  - **Equitable Access:** Transit routes were distributed around the region in order to connect communities. Income, vehicle ownership, employment, and other factors were considered when proposing routes in order to ensure a system of equitable design.
  - **Convenient and Safe Stations:** In the Vision 2040 Long Range Plan, station areas are located in neighborhood nodes and high-activity areas. The physical infrastructure around Primo/BRT/LRT stations (e.g., sidewalks, crosswalks, lighting, and connections to bike infrastructure) are areas of focused improvements in order to ensure that the network is safe and easy to access.
- **Quality:**
  - **Reliable and Frequent Service**: Frequency and reliability were consistently noted as key needs in each round of public involvement. The Vision 2040 Long Range Plan addresses this need in two ways. First, providing Primo/BRT/LRT service along key corridors (i.e., those connecting activity centers, high-density neighborhoods, and employment clusters) creates a wide-reaching network of frequent and reliable service. Many of these lines operate in dedicated lanes (either as BRT or LRT) and are able to avoid congestion. Secondly, increasing the frequency of all routes (i.e., local and frequent service) provides system-wide

improvements that give all riders a higher level of service and serve as key neighborhood connections to Primo/BRT/LRT stations.

- **Avoiding Congestion:** Traffic congestion affects travelers by slowing down day-to-day travel speeds and making trip times unpredictable. A transit network can avoid this by operating in a dedicated right-of-way (e.g., BRT or LRT corridors) or in a shared but limited access lane (e.g., express services operating in HOV lanes on a freeway).

- **Innovative Technology**: Innovative solutions are a cornerstone of the Vision 2040 Long Range Plan. Key elements include passenger amenities and tools (mobile applications, WiFi on buses, and integration with multimodal services); planning for the role of autonomous and connected vehicles, and integration of transit operations with traffic control and monitoring devices.

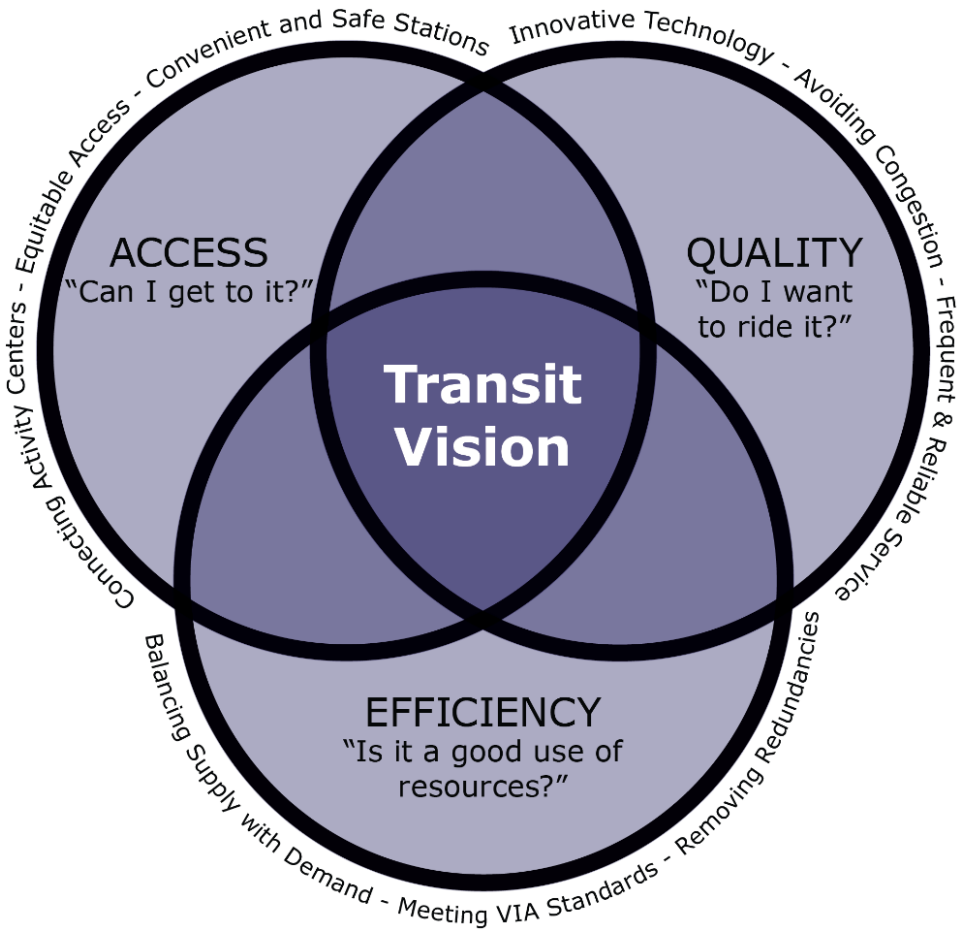
- **Efficiency:**

  - **Balancing Supply with Demand:** Ridership on a route will generally increase as frequency and connections to other routes improve, but system improvements must be balanced with demands across the system. Making sure that an appropriate amount of service is supplied is fundamental to establish an efficient transit network.

  - **Meeting VIA Standards:** Productivity (the number of transit boardings per hour of service) and total ridership measure how effective a route is moving people to their destinations. While raw ridership numbers are helpful in determining the route's overall impact on the region's transportation network, productivity accounts for how many resources are required to deliver transit service along the route, meaning that routes are not rated higher simply for being longer. Generally, VIA requires routes to have 15 passenger boardings per hour of service to be considered viable.

  - **Removing Redundancies:** In some cases, upgrading or adding transit routes may result in similar service being supplied along a corridor by more than one route. Removing or reducing underlying service along some corridors served by multiple routes helps keep the network efficient, while still ensuring and accessible and effective network.

Figure 3.3 Development Guidelines



Though bold, the Vision 2040 Long Range Plan is not a complete reimagining of VIA's current service network. The existing and committed projects (many from the 2035 Long Range Comprehensive Transportation Plan) were used as a base network to which service additions and upgrades were added and evaluated in an iterative fashion. Iterative rounds of analysis, public involvement, and modeling ultimately resulted in the Vision 2040 Long Range Plan.

The Vision 2040 Long Range Plan refinement process helped determine which combination of service types and corridors provided the best quality service to the most people in the most efficient manner. In many cases, multiple possibilities for corridor alignments were tested against each other to find the route that would serve the most residents; in other cases, the balance between Primo/BRT/LRT and underlying local service was adjusted to maintain high coverage while providing better access to high-frequency transit. A more detailed account of the iterative modeling process is provided in Appendix B. Ultimately, the Vision 2040 Long Range Plan reflects a balanced blend of robust frequency improvements across all routes, high-capacity, congestion-proof transit corridors, and a new range of transit-supporting policies to satisfy the community's demand for frequent, reliable transit service.

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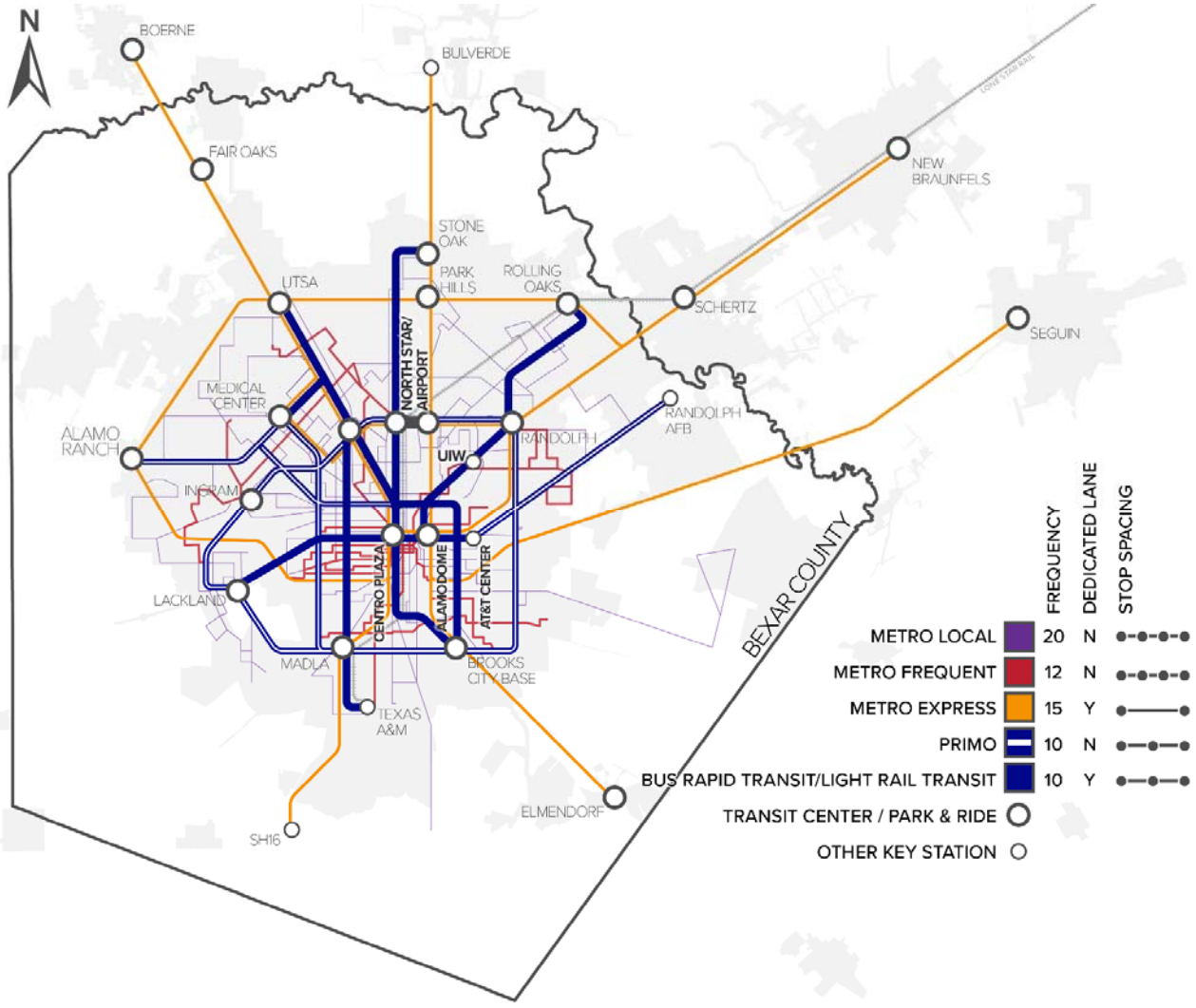
4.0 Establishing the Vision

The Vision 2040 Long Range Plan network, shown in Figure 4.1, represents the additions and improvements driven by community input, refined, and made more efficient by the evaluation process The robust network of Primo, BRT, and LRT corridors connects key activity centers across the densest parts of the region; a network of express routes connects regional communities with key economic centers (Figure 4.1). For local and express routes, increased operating frequency and longer service spans increase the quality of service throughout the system.

Figure 4.1 Vision 2040 Long Range Plan Network



4.1 System Evaluation

Evaluation of system-wide benefits of the Vision 2040 Long Range Plan network were determined by comparing to the network of existing services future planned improvements, referred to as the "Existing and Committed" network (Figure 4.2). An additional scenario was included using a speculative Transit-Oriented Development (TOD) growth pattern, with higher employment and population densities within Primo/BRT/LRT station areas. In total, three scenarios were compared:

- The **Existing and Committed Network**, including all currently-planned projects such as VIA's South/West Corridor Primo and incremental changes to current line service;
- The **Vision 2040 Long Range Plan**, including all projects and plans described in this and supporting documents; and
- The **Vision 2040 Long Range Plan with Transit-Oriented Development**, including all projects and plans described in this and supporting documents with revised demographics assuming patterns of denser development along Primo/BRT/LRT corridors.

The Vision 2040 Long Range Plan provides an increase in the number of residents within one-half mile of frequent service (i.e., arriving at least every 15 minutes) over the Existing and Committed network of 34 percent; the TOD scenario increases this change to 60 percent (Table 4.1). Reflecting the plan's commitment to increasing access to frequent and reliable services (Primo, BRT, and LRT), 42 percent of transit trips are taken on these service types in the Vision 2040 Long Range Plan, compared to 9 percent in the Existing and Committed network. Decreases in total time spent driving and increases in average travel speeds for all vehicles demonstrate that the plan improves conditions for everyone on the road, not just transit passengers.

Figure 4.2 Existing and Committed Network

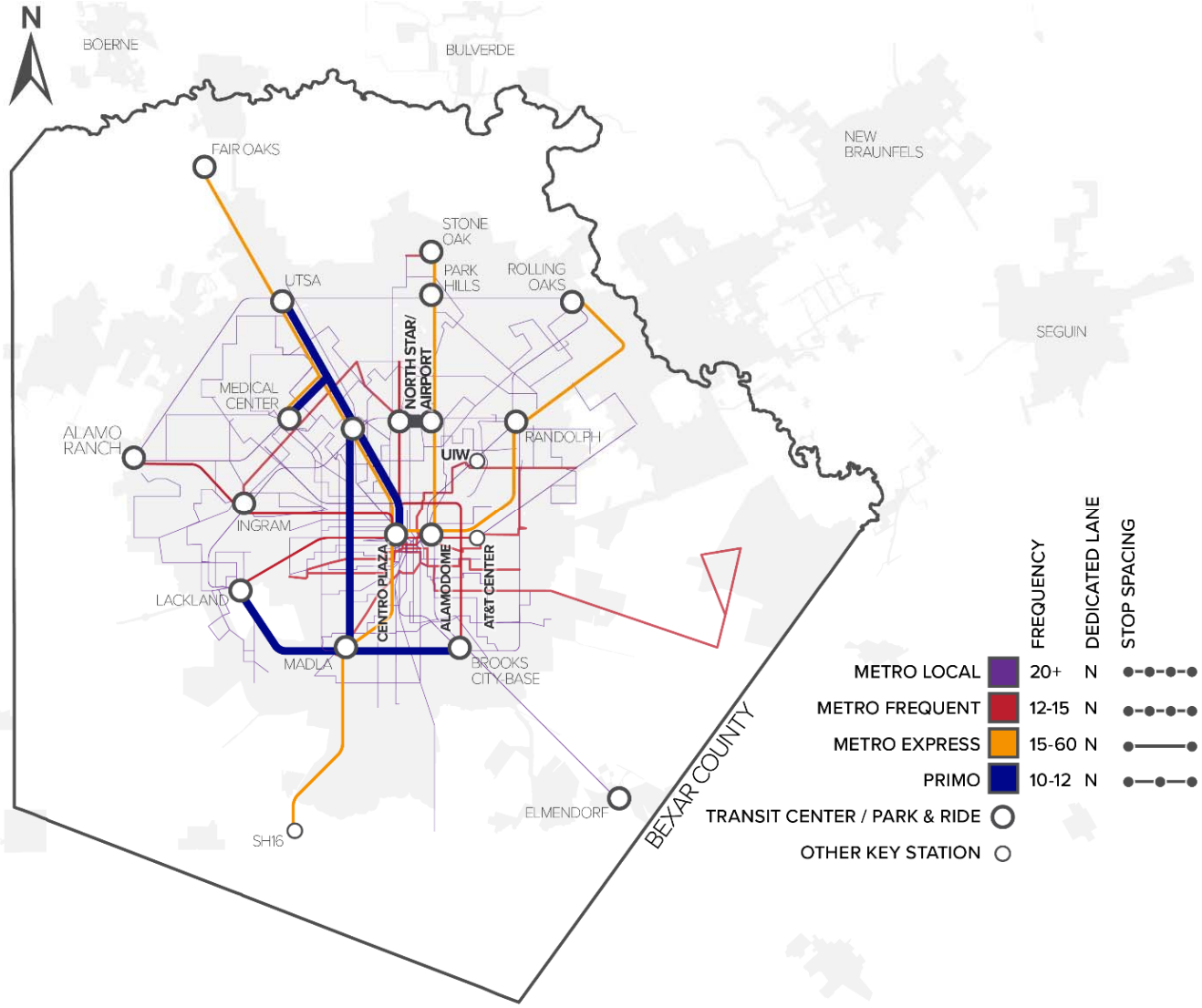


Table 4.1 Vision 2040 Long Range Plan Network Performance

	Existing and Committed Network (2040)	Vision 2040 Long Range Plan Network (2040)	Vision 2040 Network + TOD[a] (2040)
Population[b]	3,569,000	3,569,000	3,569,000
VIA Service Area	*2,324,000*	*2,324,000*	*2,443,353*
Daily transit boardings	256,000	338,600	392,000
Primo/BRT/LRT	*24,000*	*142,200*	*166,200*
Peak commute mode share	2.5%	3.0%	3.8%
Number of Routes	107	100	100
Primo/BRT/LRT	*3*	*12*	*12*
Peak Vehicles in Service	373	921	921
Primo/BRT/LRT	*26*	*180*	*180*
Population within one-half mile of 15 minute or better service	679,799	910,854	1,085,343
Average Peak Transit Headway	30 minutes	17 minutes	17 minutes
Annual Revenue Hours	2.0 million	4.0 million	4.0 million
Mean travel speed (all vehicles)	17 mph	18 mph	18 mph
Minutes spent driving (per person per day)	97 minutes	91 minutes	89 minutes

a: The Transit-Oriented Development (TOD) scenario assumes that higher-density development will occur within station areas of Primo/BRT/LRT transit lines as a result of joint development and private development projects. Total study area population remains unchanged.

b: The Alamo Area MPO's modeling domain consists of Bexar, Kendall, Comal, Guadalupe, and Wilson Counties; all statistics presented here represent values from that region only. The Vision 2040 study area also includes the counties of Bandera, Medina, and Atascosa.

4.2 Projects and Plans

The Vision 2040 Long Range Plan consists of three layered approach to provide a bold, visionary, transit system to shape and support the continued growth of the Greater San Antonio Region: a **better bus system**, a **rapid transit network**, and **innovative solutions** (Figure 4.3).

Figure 4.3 Vision 2040 Long Range Plan Components

BETTER BUS SYSTEM

Robust system-wide improvements to the bus network.

- More frequent, reliable transit across the entire network.
- Improved frequency and service span on Metro Local and Metro Frequent routes.
- More Primo routes.
- Safe routes to transit.

RAPID TRANSIT NETWORK

Network of corridors connecting the region's major community destinations and employment centers.

- High-capacity transit (BRT or LRT in dedicated lanes).
- Metro Express in high-occupancy vehicle (HOV) lanes connecting park & rides to key destinations.

INNOVATIVE SOLUTIONS

Investments to keep the system smart and flexible.

- Emerging transit technologies.
- Mobile applications.
- Transit-oriented development (TOD).
- New partnerships.

Each component has a list of projects that fall into three major categories: **capital investments**, **operational improvements**, and **policies** (Figure 4.4).

Figure 4.4 Vision 2040 Long Range Plan Project Types

CAPITAL INVESTMENTS

Physical infrastructure:

- Rolling stock;
- Station areas and stops; and
- Right-of-way purchases, guideways, and signal prioritizations.

OPERATIONAL IMPROVEMENTS

Changes to day-to-day operations:

- Route scheduling;
- Efficiency and bottleneck analysis;
- Operating and maintenance procedures; and
- Administrative items.

POLICY GOALS

Long-range and collaborative initiatives that guide VIA's actions over the long term:

- Funding and finance policies;
- Collaboration with peers and stakeholders;
- Development guidelines;
- Legislative efforts; and
- Research and development.

4.2.1 Projects: A Better Bus System

The "Better Bus System" portion of the Vision 2040 Long Range Plan highlights the response to the community's demand for more frequent, reliable transit across the entire network (Figure 4.5). Service types include Metro Local, Metro Frequent, and Primo services, all of which are available in VIA's network today; however, capital and service improvements will continue to make the network robust and responsive to regional growth and development.

Figure 4.5 Better Bus Network

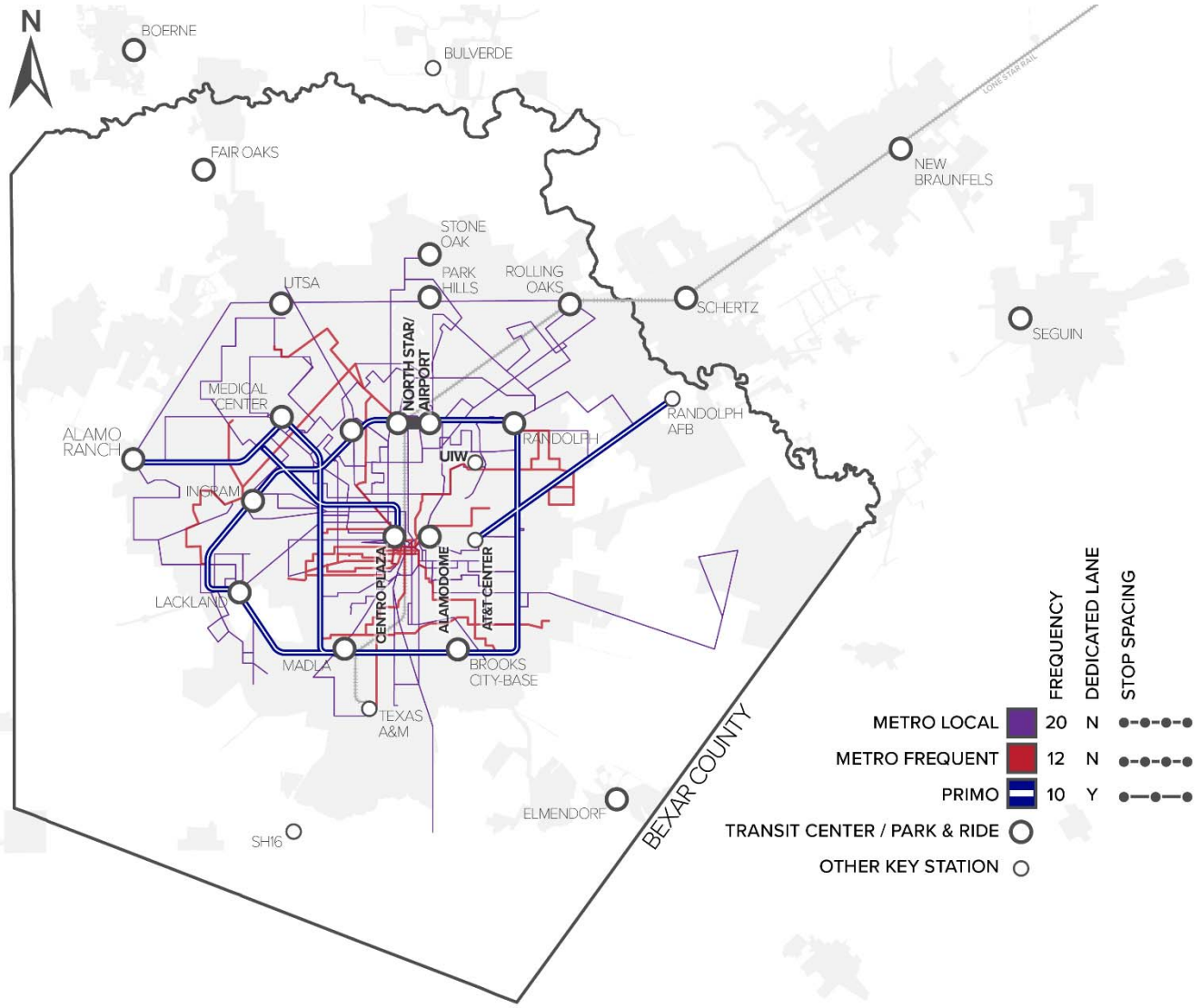


Table 4.2 Better Bus Projects

Category	Project	Description	Capital	Operating	Policy
Primo Expansion	**Vehicles**	Specially branded vehicles, equipped with WiFi and transit signal priority.	✓		
	Frequency	Vehicles arrive every 10 minutes, allowing passengers to ride without consulting a schedule.		✓	
	Station Upgrades	Upgraded station areas and transit centers provide real-time arrival information and passenger amenities.	✓		
General Service Improvements	**Frequency**	An improved schedule means vehicles arrive more often. During peak hours, local service arrives every 20 minutes, and frequent service arrives every 12 minutes.		✓	
	Service Span	Expanded schedules mean buses operate later at night or earlier in the morning.		✓	
	Operations and Delay Analysis	A delay reduction program identifies bottlenecks and slowdowns (e.g., at railroad grade crossings) to help buses arrive on time; a comprehensive operations analysis makes the system more efficient and cost effective.			✓
	Paratransit	A paratransit efficiency review keeps VIAtrans running efficiently and effectively.			✓
Station Areas	**Transit Centers**	Transit centers provide customer support and help riders learn about VIA services as well as provide comfortable waiting areas. Existing Transit Centers will have parking and bus boarding facilities modernized and expanded as necessary.	✓		
	Sidewalk and Shelter Programs	More sidewalks, pedestrian facilities, and covered waiting areas make station areas more safe, easier to access, and more comfortable.			✓
	Fare Collection	Ticket kiosks allow passengers to purchase ticket in advance which makes boarding the bus easier and faster. Mobile ticketing offers a cashless option for travelers.	✓		
Support Facilities	**Maintenance Facility**	New maintenance facilities keep vehicles clean and in good repair. Satellite facilities decrease nonrevenue (deadhead) service, keeping operations costs down.	✓		
	Storage Yards	New storage facilities make the system more efficient and accommodate VIA's growing bus fleet.	✓		

4.2.2 Projects: Rapid Transit Network

The Rapid Transit Network component of the Vision 2040 Long Range Plan introduces a higher speed, reliable, and frequent network of routes that serve to connect the region's key corridors and employment centers (Figure 4.6).

BRT and LRT routes link the region's key universities, activity centers, and high-density residential neighborhoods with reliable, dedicated-lane service. Express routes link regional destinations in the growing communities surrounding Greater San Antonio Region, using planned HOV lanes to avoid congestion.

Figure 4.6 Rapid Transit Network

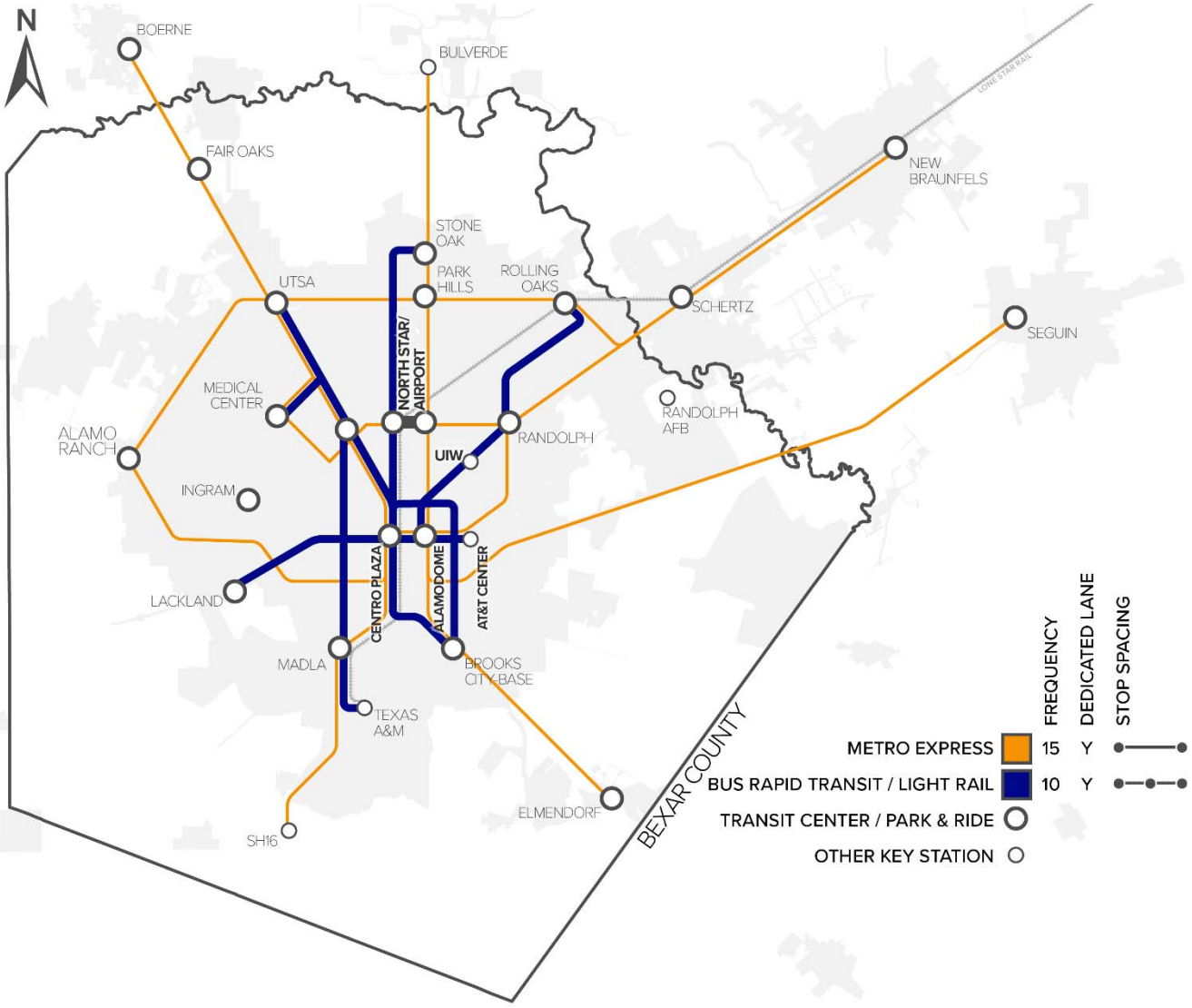


Table 4.3 Rapid Transit Projects

Category	Project	Description	Capital	Operating	Policy
Light Rail Transit	**Dedicated Right-of-way**	Dedicated tracks provide congestion-proof access to major community destinations and employment centers.	✓	✓	
	Stations	Distinctive stations make the system comfortable and easy to navigate.	✓		
	Vehicles	Rail vehicles are comfortable, easy to board, and carry more passengers.	✓		
	Maintenance Facility	New maintenance facilities keep rail vehicles clean and in good repair.	✓		
Bus Rapid Transit	**Dedicated Lanes**	Vehicles operate in their own lane and get priority at traffic signals to improve reliability. Other transit routes may use these lanes where possible, increasing reliability across the system.	✓	✓	
	Vehicles	BRT uses the same premium vehicles and high-frequency schedule as Primo, keeping the system efficient, comfortable, and familiar.	✓		
	Stations	Upgraded stations have real-time arrival information and ticketing kiosks.	✓		
Express Service	**Vehicles**	Special Express vehicles provide comfortable seating and WiFi, making working or relaxing on the bus easy.	✓		
	Park & Rides	Park & ride facilities provide convenient access points in outlying communities.	✓		
Regional Transit	**High-Occupancy Vehicle (HOV) Lane Network**	HOV lanes provide reliable highway trips for Express buses and carpoolers alike.	✓		✓
	Vanpool Service	Vanpool service provides affordable rental vans to regional commuters with common destinations.			✓

4.2.3 Projects: Innovative Solutions

The final component of the Vision 2040 Long Range Plan is the adoption of innovative solutions and coordinated planning process to complement the bus system improvements and rapid transit network.

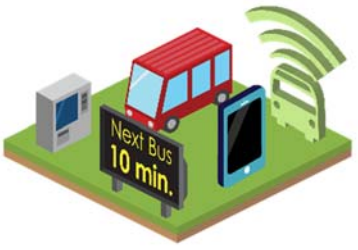


Table 4.4 Innovative Solutions Projects

Category	Project	Description	Capital	Operating	Policy
Multimodal Integration	**Carshare**	Integration with carshare and ride-hailing companies allows transit users to plan flexible, affordable, reliable journeys without having to own or park a private vehicle.			✓
	Bikeshare	Partnership with BCycle bikeshare facilities can make more destinations reachable from transit centers and allow for shorter trips during the day.	✓		✓
Emerging Technology	**Autonomous and Connected Vehicles**	Autonomous and connected vehicles have the potential to extract more capacity from existing transportation facilities, make transit vehicles more efficient, and reduce the risk of collisions and injuries.			✓
	Integrated Multimodal Application	An integrated multimodal mobile application combines multimodal trip planning, real-time vehicle arrival information, and cashless fare payment into a single mobile presence.			✓
Transit-Oriented Development	**Mixed-use development**	Targeted development at appropriate densities keeps amenities and activities within an easy walk or transit trip.			✓
	Complete Streets	Pedestrian and transit-friendly infrastructure makes trips pleasant, safe, and accessible for everyone.			✓
Coordinated Planning	**Joint Development**	Joint development projects bring public and private stakeholders together to stimulate the economy, and invest in the region's future.			✓
	New Partnerships	Regional coordination and new partnerships ensures we are all moving in the same direction toward a shared vision of future mobility.			✓
	Land Banking	By planning today for tomorrow's future land acquisition needs, buying early in the planning process, at a lower investment cost, and saving it for later development ensures VIA can continue to provide access to key destinations well into the future.			✓

a: Pew Research Center (2015). Technology Device Ownership: 2015. Retrieved 23 February 2016 from http://www.pewInternet.org/2015/10/29/technology-device-ownership-2015/.

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5.0 Implementing the Vision

The Vision 2040 Long Range Plan is a series of projects, operational improvements, and policies that guide the growth of VIA services over the next 25 years and beyond. The plan's near-term investments are consistent with the existing capital plan, VIA SmartMove, which identifies projects and plans currently under development. These projects, which include Zarzamora Primo, Military Primo, Brooks Transit Center, Stone Oak Park & Ride, and new bus shelters, are consistent with the vision and purpose identified throughout the Vision 2040 process.

Longer-term projects require a framework to decide when to begin planning, construction, and operation. Constraints on funding, available technology, project development capacity, and the need to limit concurrent infrastructure projects require a phased implementation approach to completing the Vision 2040 Long Range Plan; the Implementation Plan addresses this need. While the Implementation plan is a subset of the full vision, it is carefully planned to grow into the Vision 2040 Long Range Plan while maintaining a cohesive network of transit improvements at each step.

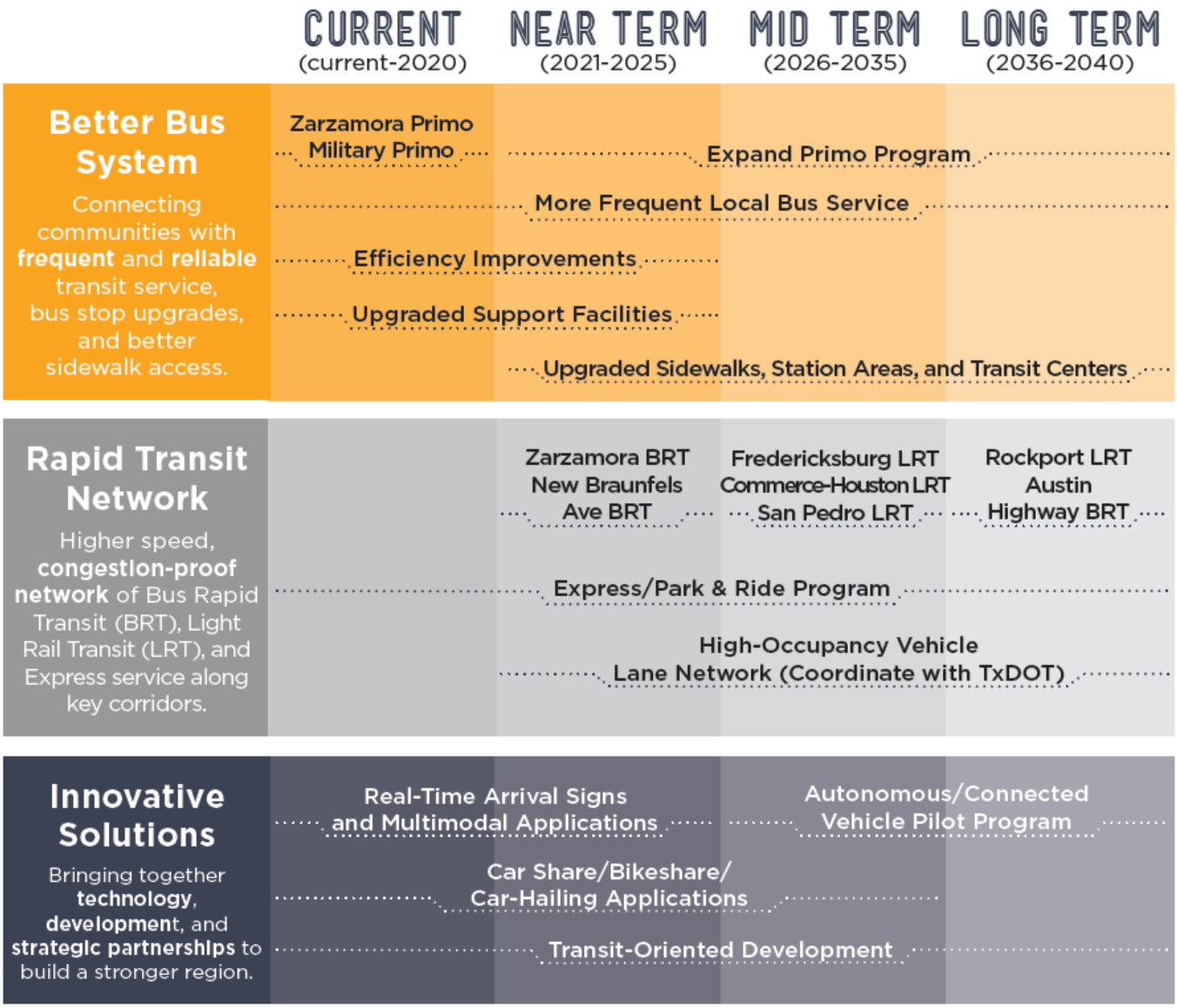
5.1 Implementation Plan Development

The Implementation Plan takes the full set of projects described in Section 4.0 and applies four criteria:

- **Benefit**: What does this project bring to the region? Does this project compete well for Federal discretionary grants? How much does it support the development of sustainable, economically robust communities? For corridors, does it meet VIA's performance standards? How does it compare to other corridors?
- **Cost**: How much does this project cost to build and operate? Are grants available for construction costs? At the time of construction/initiation, is sufficient capital funding available? Will projected revenue be sufficient to cover annual operation and maintenance costs after this project is completed?
- **Dependency**: Does this project require another project to already be completed before it is useful? Does this project support other projects? Will delay of this project prevent or delay the construction of other projects?
- **Consistency**: When should this project be implemented in order to best support local and regional planning efforts, including those of VIA and other agencies and stakeholders? Does it meet an urgent need identified by the community?

Depending on the project type, each criteria has different weight. Some projects, like construction of Transit Centers, Primo/BRT/LRT corridors, and support facilities have significant capital timelines that must be phased in over time. Other projects, like autonomous and connected vehicles, rely on technology that may not be available or affordable now, but might be in a decade or two. Some projects, such as development of a smartphone application, may be relatively short in duration, and can be implemented in a few years; others may take as long as 10 years to plan and construct. Finally, some strategies (especially policies) may not have any associated costs, but depend on the availability of planning staff and community partners to implement. Guidance on the implementation order of projects can be found in Figure 5.1.

Figure 5.1 Implementation Plan Project Phasing



5.2 Corridor Phasing

While the Vision 2040 Long Range Plan contains many projects, the construction of Primo, BRT, and LRT corridors represent the most significant expenditures of capital and operational costs. Because of this, special attention was paid to the project phasing process for these corridors. Three major factors contributed to the corridor ranking process:

- **Corridor score** based on five quantitative metrics (Table A.1). Corridors were prioritized based on performance in the full network of the Vision 2040 Long Range Plan.
- **Existing or planned improvements** to the corridor (Fredericksburg Road, Zarzamora Street, and Military Drive all have current or planned Primo Routes)
- **Network cohesiveness and geographic coverage** during the construction phase. For the best performance and to keep support costs low, new Primo/BRT/LRT corridors should connect to the existing network wherever possible.

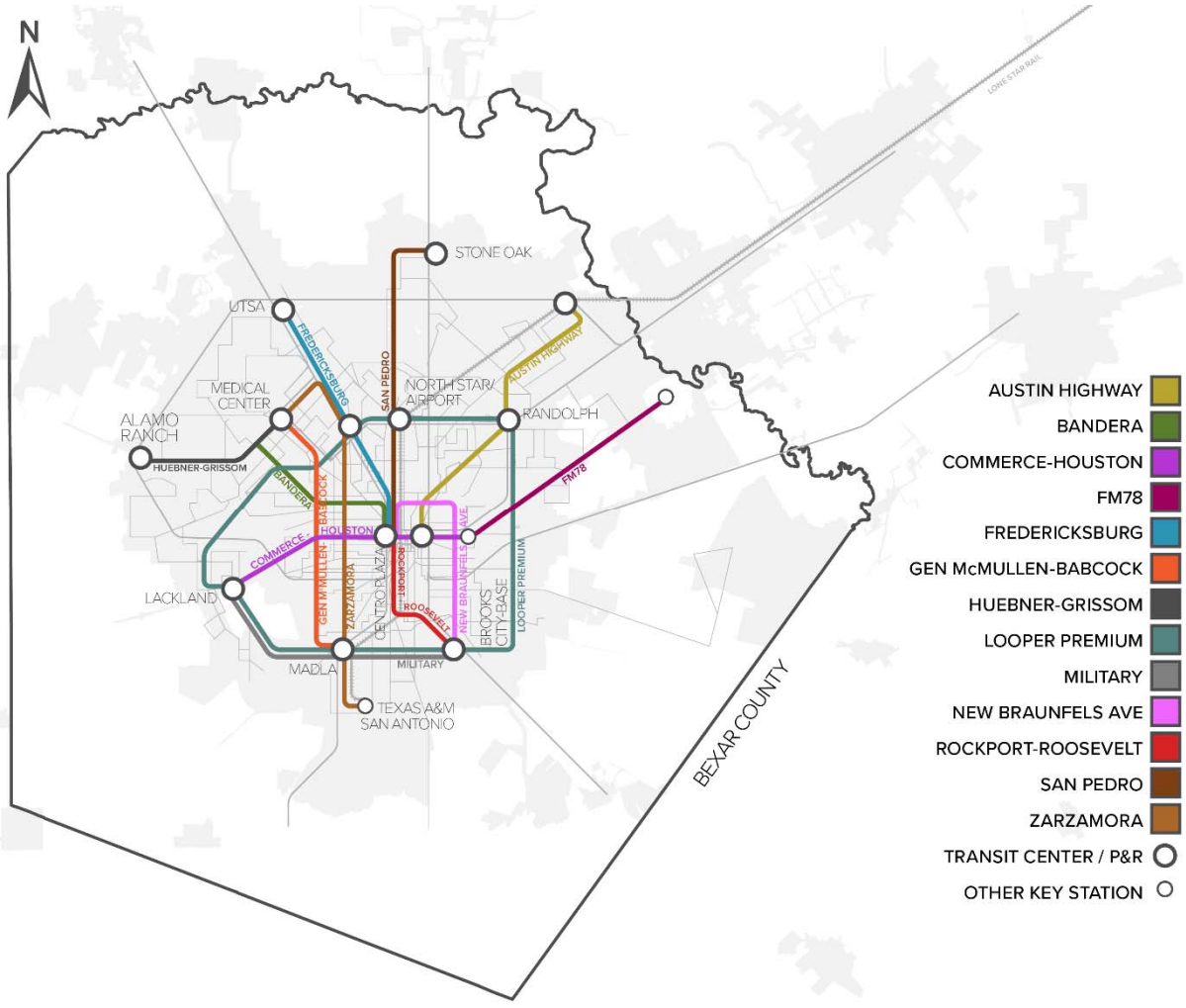
In some cases, a segment of a corridor performed poorly in comparison to the rest of the corridor; in these cases, only the most high-performing portions were included in the Implementation Plan.

Of the 12 candidate Primo/BRT/LRT corridors, seven were selected for inclusion in the phased Implementation Plan:

- Zarzamora Street BRT
- New Braunfels Avenue BRT
- Fredericksburg Road LRT
- Commerce Street-Houston Street LRT
- San Pedro Avenue LRT
- Rockport LRT
- Austin Highway BRT

Corridors not selected for Primo/BRT/LRT service as part of the Implementation Plan are still considered highly competitive corridors, and are included in the network as frequent (12-minute headway) routes. As funds become available, these corridors will be revised to Primo/BRT or LRT status described in the Vision 2040 Long Range Plan.

Figure 5.2 Primo/BRT/LRT Long Range Plan Corridors and Rankings



NAME	RIDERSHIP	CONGESTION EFFECT	PRODUCTIVITY	SITE POTENTIAL	ACCESS	OVERALL
Fredericksburg	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Zarzamora	HIGH	HIGH	HIGH	HIGH	MED/LOW	MED/HIGH
Commerce-Houston	MED/HIGH	MED/HIGH	HIGH	HIGH	MED/LOW	MED/HIGH
San Pedro	MED/HIGH	HIGH	MED/HIGH	MED/HIGH	HIGH	MED/HIGH
New Braunfels Ave	MED/HIGH	MED/HIGH	HIGH	HIGH	MED/LOW	MED/HIGH
Looper Premium (incl. SW Mil.)	HIGH	HIGH	LOW	MED/HIGH	MED/HIGH	MED/HIGH
Austin Highway	MED/LOW	MED/LOW	HIGH	MED/HIGH	MED/LOW	MED/LOW
General McMullen-Babcock	MED/LOW	MED/LOW	MED/LOW	HIGH	LOW	MED/LOW
Rockport/Roosevelt	MED/LOW	MED/LOW	HIGH	MED/LOW	LOW	MED/LOW
Bandera	LOW	MED/LOW	MED/LOW	HIGH	LOW	MED/LOW
Huebner-Grissom	LOW	LOW	LOW	MED/HIGH	LOW	LOW
FM 78	LOW	LOW	LOW	MED/LOW	LOW	LOW

5.3 Moving Forward

Thinking longer term, the path toward implementation of the regional Vision 2040 Long Range Plan proceeds through a series of steps that take into account forecasted transit funding, prioritization and sequencing of high-capacity transit investments to maximize ridership and system performance, and collaboration across the region's planning partners and stakeholders. In keeping with the Vision 2040 community-driven process, public engagement will continue to inform project development and outcomes as the plan unfolds.

Identify Funding Sources: VIA's ability to maintain and expand the regional transit system critically depends on strategies to obtain new or increased funding. Over the next 25 years VIA will pursue a combination of Federal, state, and local funding sources.

Prioritize Projects: Criteria such as forecasted ridership, mobility improvements, and development potential provide the basis for prioritizing projects for implementation as new funds become available. The Implementation Plan especially should be a living document, updated as often as new information becomes available.

Partner and Collaborate: The Vision 2040 Long Range Plan is interconnected with other regional planning efforts, and several key elements are outside of VIA's direct control or influence. Therefore, partnerships and collaboration are essential to achieving the vision.

Develop Projects: Each major project will be developed individually and will proceed through advanced planning, environmental review, and engineering and design before initiating construction.

Monitor and Update: Change is inevitable in a dynamic, growing region. As a result, regular updates to VIA's dynamic Long Range Plan are key to ensuring planned projects reflect public priorities, regional growth, and new development.

Given all of these factors, VIA recognizes the importance of taking an agile approach to planning and implementing projects in the region. In essence, the Vision 2040 Long Range Plan is a living document continuously shaped and informed by community feedback.

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A. Evaluation Criteria

Two sets of evaluation criteria were used in optimizing the recommendation Vision 2040 Long Range Plan system (Table A.1) and prioritizing corridors for implementation (Table A.2). The system-wide criteria were based on outputs from the Alamo Area Metropolitan Planning Organization's travel demand model. Corridor phasing criteria were based on demographic information and economic analysis as well as output from travel demand modeling.

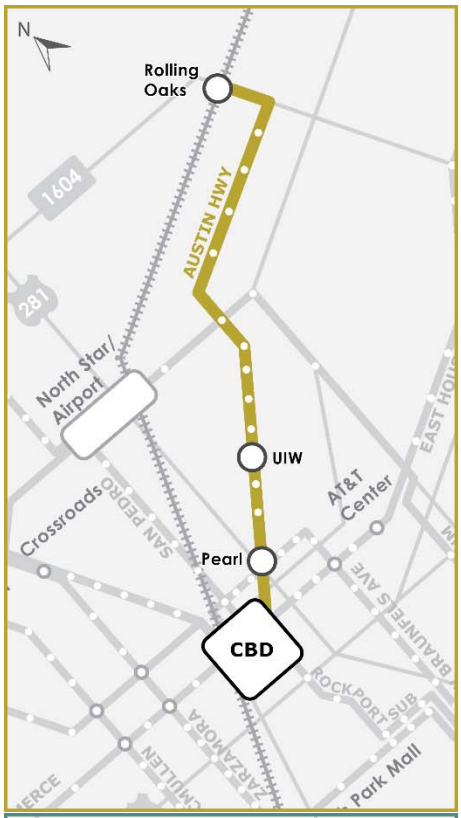
Table A.1 System Evaluation Criteria

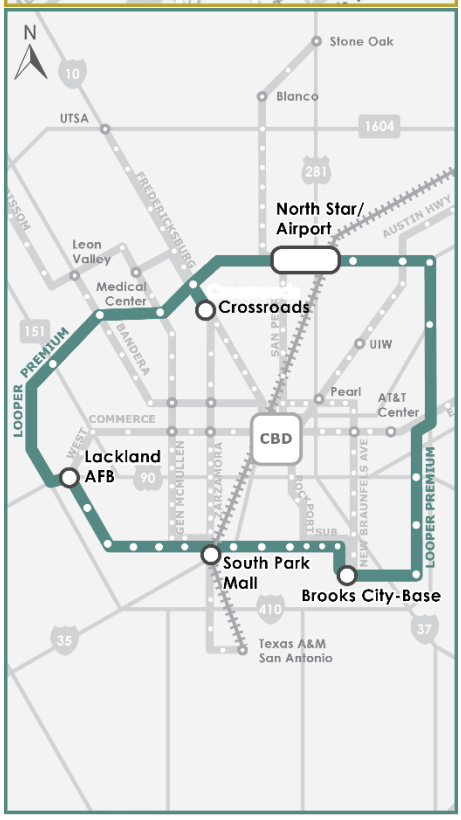
System Evaluation Criteria	Units	Rationale
Ridership	Daily Transit Trips	Total system ridership reflects the degree to which the system is used.
Usage Rate	Percent of commuters using transit during peak travel period	Peak-hour commute trips occur when the transportation network is at its busiest, and reflect an opportunity to provide travelers with congestion-proof transportation choice.
Primo/BRT/LRT Service	Miles/quantity of Primo/BRT/LRT routes	Measuring the route-miles and number of routes of Primo/BRT/LRT service (that is, service with 10-minute or better frequency) is a simple way of showing the development of new routes.
Primo/BRT/LRT Access	Population/jobs within one-half mile of a station with Primo/BRT/LRT service	One-half mile is about the limit that people are willing to walk for high-quality transit; this number represents the population who could conceivably take Primo/BRT/LRT routes to their destination.
Wait time	Average time spent waiting for a transit vehicle	Average system wait time is a reflection of average vehicle frequency across the system.
System Travel Speed & Drive Time	Average travel speed and time spent driving for all vehicles in the region	System travel speed measures how congested the system is as a whole. More cars (and therefore fewer people using transit) on the same number of roadways will results in substantially decreased average speeds and increased travel time.

Table A.2 Corridor Prioritization Criteria

System Evaluation Criteria	Units	Rationale
Ridership	Total daily boardings with double weight given to low-income station areas	Boardings are a count of each time an individual enters a vehicle. Multiple transit connections are counted separately to allow comparison between routes. Weighting low-income neighborhoods higher is consistent with Federal Transit Administration grant guidelines, and helps evaluate equitable access to transit.
Congestion Effect	Index of corridor congestion and daily boardings	This measure compares the number of people riding each segment of the route with the congestion level in that area. A route with high ridership and high levels of congestion will score highly, as it offers an opportunity to bypass congestion.
Productivity	Boardings per vehicle revenue hour	Productivity measures how many people ride a route relatively to the costs of operating the route. A very long route may have high total ridership, but low productivity due to its length.
Site Potential	Index of development potential and urban form	Site potential measures both degree to which development is likely to occur at station areas along a route and the suitability of physical infrastructure along the route (e.g., sidewalks and block density), which increases the chances of successful transit-oriented development projects.
Access	Number of jobs and residents near station areas	Access measures the number of residents and jobs located within ½ mile (walking distance) of a route's station.

B. Corridor Descriptions





Austin Highway

Rolling Oaks – UIW – Downtown SA

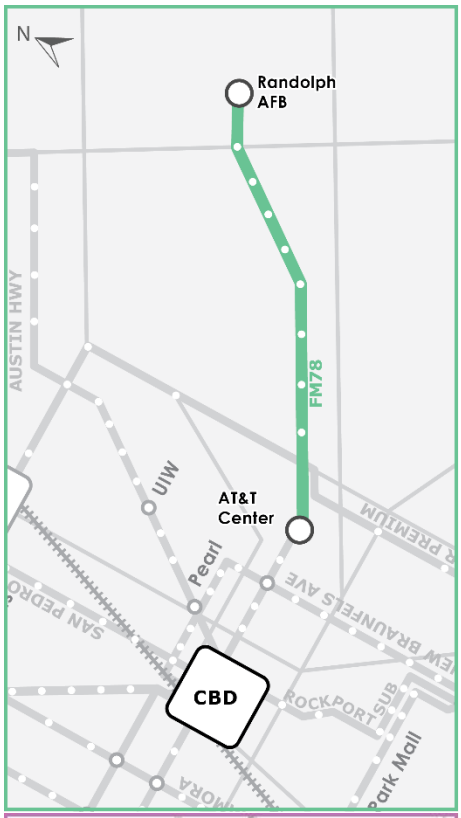
	RIDERSHIP (AVERAGE DAILY BOARDINGS)	●●○○
	PRODUCTIVITY (BOARDINGS/HOUR)	●●●○
	CAPITAL COST (2015 $)	●●○○
	ANNUAL O&M COST (2015 $)	●○○○
	AVERAGE SPEED (PEAK PERIOD MPH)	●●●●
	RELIABILITY NEED (CONGESTION & RIDERSHIP)	●○○○
	BLOCK DENSITY (BLOCKS/SQUARE MILE)	●●●○
	PERCENT BIKE ACCESSIBLE	●●●●
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	**ROUTE DISTANCE** (MILES)	●○○○
	CONNECTIONS TO REGIONAL CENTERS	●●●○
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	●○○○
	POPULATION PER ACRE	●●○○
	EMPLOYMENT PER ACRE	●●●○
	POP. + EMP. PER ACRE	●●●○
SOCIOECONOMIC BENEFITS	**LOW-INCOME**	●○○○
	POPULATION	●●○○
	EMPLOYMENT	●●●○

Looper Premium

Brooks City-Base – North Star/Airport – Crossroads – Lackland AFB – South Park Mall

	RIDERSHIP (AVERAGE DAILY BOARDINGS)	●●●●
	PRODUCTIVITY (BOARDINGS/HOUR)	●○○○
	CAPITAL COST (2015 $)	●○○○
	ANNUAL O&M COST (2015 $)	●●●●
	AVERAGE SPEED (PEAK PERIOD MPH)	●●○○
	RELIABILITY NEED (CONGESTION & RIDERSHIP)	●●●○
	BLOCK DENSITY (BLOCKS/SQUARE MILE)	●●○○
	PERCENT BIKE ACCESSIBLE	●●○○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	**ROUTE DISTANCE** (MILES)	●●●●
	CONNECTIONS TO REGIONAL CENTERS	●●●●
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	●●●○
	POPULATION PER ACRE	●○○○
	EMPLOYMENT PER ACRE	●●○○
	POP. + EMP. PER ACRE	●●○○
SOCIOECONOMIC BENEFITS	**LOW-INCOME**	●●●○
	POPULATION	●●●●
	EMPLOYMENT	●●●○

VIA



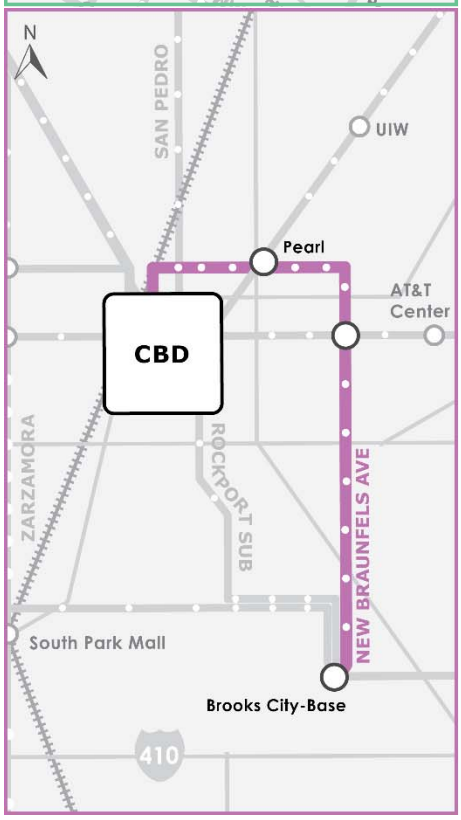
FM 78

Randolph AFB – AT&T Center

RIDERSHIP (AVERAGE DAILY BOARDINGS)	● ○ ○ ○
PRODUCTIVITY (BOARDINGS/HOUR)	● ○ ○ ○
CAPITAL COST (2015 $)	● ○ ○ ○
ANNUAL O&M COST (2015 $)	● ○ ○ ○
AVERAGE SPEED (PEAK PERIOD MPH)	● ○ ○ ○
RELIABILITY NEED (CONGESTION & RIDERSHIP)	● ○ ○ ○
BLOCK DENSITY (BLOCKS/SQUARE MILE)	● ○ ○ ○
PERCENT BIKE ACCESSIBLE	● ○ ○ ○
ROUTE DISTANCE (MILES)	● ○ ○ ○
CONNECTIONS TO REGIONAL CENTERS	● ○ ○ ○
MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	● ○ ○ ○
POPULATION PER ACRE	● ○ ○ ○
EMPLOYMENT PER ACRE	● ○ ○ ○
POP. + EMP. PER ACRE	● ○ ○ ○
LOW-INCOME	● ○ ○ ○
POPULATION	● ○ ○ ○
EMPLOYMENT	● ○ ○ ○

LAND USE AND DEVELOPMENT/ TOD POTENTIAL

SOCIOECONOMIC BENEFITS



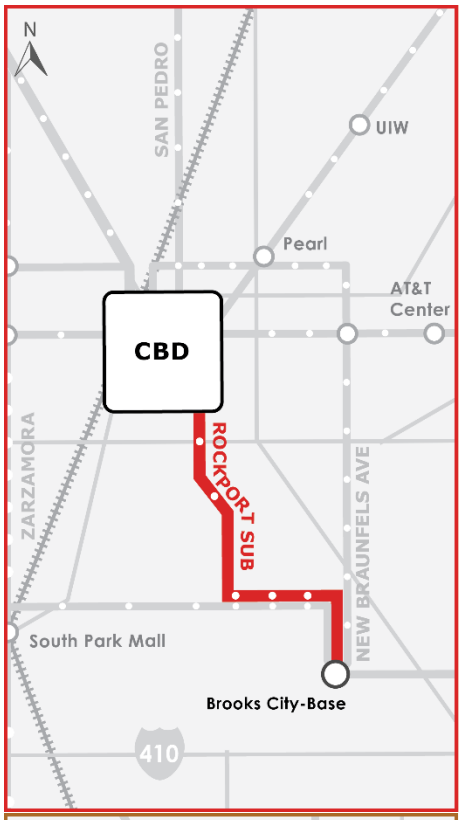
New Braunfels Ave

Brooks City-Base – Fort Sam Houston – Pearl – Downtown SA

RIDERSHIP (AVERAGE DAILY BOARDINGS)	● ● ● ○
PRODUCTIVITY (BOARDINGS/HOUR)	● ● ● ●
CAPITAL COST (2015 $)	● ● ○ ○
ANNUAL O&M COST (2015 $)	● ● ○ ○
AVERAGE SPEED (PEAK PERIOD MPH)	● ● ● ○
RELIABILITY NEED (CONGESTION & RIDERSHIP)	● ○ ○ ○
BLOCK DENSITY (BLOCKS/SQUARE MILE)	● ● ● ●
PERCENT BIKE ACCESSIBLE	● ● ● ●
ROUTE DISTANCE (MILES)	● ○ ○ ○
CONNECTIONS TO REGIONAL CENTERS	● ● ● ○
MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	● ● ● ○
POPULATION PER ACRE	● ● ● ●
EMPLOYMENT PER ACRE	● ● ○ ○
POP. + EMP. PER ACRE	● ● ● ○
LOW-INCOME	● ● ● ●
POPULATION	● ● ● ○
EMPLOYMENT	● ● ○ ○

LAND USE AND DEVELOPMENT/ TOD POTENTIAL

SOCIOECONOMIC BENEFITS



Rockport Subdivision ★

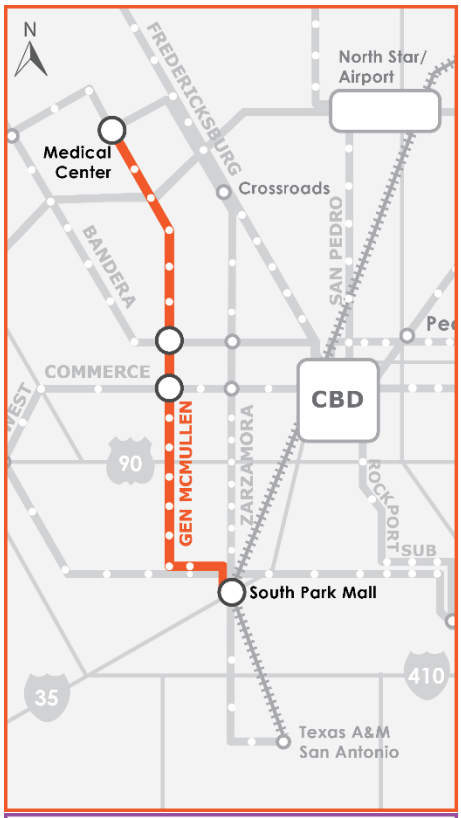
Brooks City-Base – Blue Star – Downtown SA

	RIDERSHIP (AVERAGE DAILY BOARDINGS)	●●○○
	PRODUCTIVITY (BOARDINGS/HOUR)	●●●○
	CAPITAL COST (2015 $)	●●○○
	ANNUAL O&M COST (2015 $)	●○○○
	AVERAGE SPEED (PEAK PERIOD MPH)	●●●●
	RELIABILITY NEED (CONGESTION & RIDERSHIP)	●○○○
	BLOCK DENSITY (BLOCKS/SQUARE MILE)	●●●○
	PERCENT BIKE ACCESSIBLE	●●●○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	**ROUTE DISTANCE** (MILES)	●○○○
	CONNECTIONS TO REGIONAL CENTERS	●●○○
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	●●○○
	POPULATION PER ACRE	●●○○
	EMPLOYMENT PER ACRE	●●○○
	POP. + EMP. PER ACRE	●●○○
SOCIOECONOMIC BENEFITS	**LOW-INCOME**	●●●●
	POPULATION	●○○○
	EMPLOYMENT	●○○○

Zarzamora ★

Medical Center – Crossroads – South Park Mall – Texas A&M San Antonio

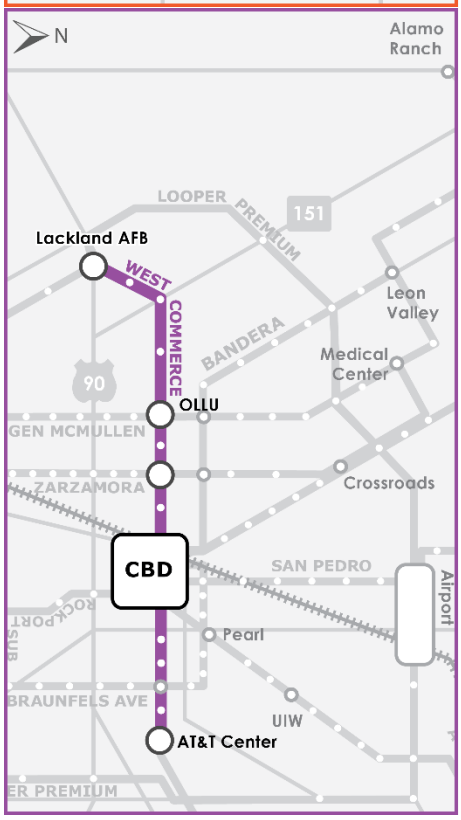
	RIDERSHIP (AVERAGE DAILY BOARDINGS)	●●●●
	PRODUCTIVITY (BOARDINGS/HOUR)	●●●●
	CAPITAL COST (2015 $)	●●○○
	ANNUAL O&M COST (2015 $)	●○○○
	AVERAGE SPEED (PEAK PERIOD MPH)	●●●●
	RELIABILITY NEED (CONGESTION & RIDERSHIP)	●●●●
	BLOCK DENSITY (BLOCKS/SQUARE MILE)	●●●○
	PERCENT BIKE ACCESSIBLE	●●●●
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	**ROUTE DISTANCE** (MILES)	●○○○
	CONNECTIONS TO REGIONAL CENTERS	●●○○
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	●○○○
	POPULATION PER ACRE	●●●○
	EMPLOYMENT PER ACRE	●●○○
	POP. + EMP. PER ACRE	●●○○
SOCIOECONOMIC BENEFITS	**LOW-INCOME**	●●●○
	POPULATION	●●●●
	EMPLOYMENT	●●○○



General McMullen-Babcock

Medical Center – South Park Mall

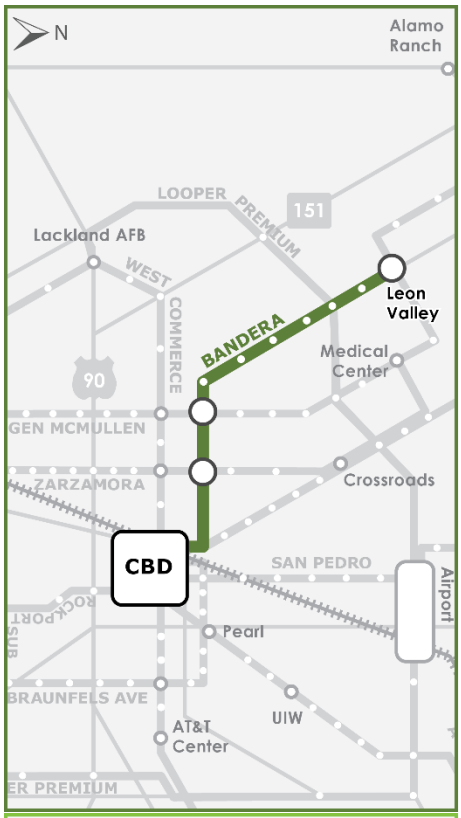
RIDERSHIP	RIDERSHIP (AVERAGE DAILY BOARDINGS) ● ● ○ ○
	PRODUCTIVITY (BOARDINGS/HOUR) ● ● ○ ○
CAPITAL COST	CAPITAL COST (2015 $) ● ○ ○ ○
ANNUAL O&M COST	ANNUAL O&M COST (2015 $) ● ○ ○ ○
AVERAGE SPEED	AVERAGE SPEED (PEAK PERIOD MPH) ● ○ ○ ○
RELIABILITY NEED	RELIABILITY NEED (CONGESTION & RIDERSHIP) ● ○ ○ ○
BLOCK DENSITY	BLOCK DENSITY (BLOCKS/SQUARE MILE) ● ● ○ ○
	PERCENT BIKE ACCESSIBLE ● ● ○ ○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	ROUTE DISTANCE (MILES) ● ○ ○ ○
	CONNECTIONS TO REGIONAL CENTERS ● ● ○ ○
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX) ● ● ○ ○
	POPULATION PER ACRE ● ● ● ○
	EMPLOYMENT PER ACRE ● ○ ○ ○
	POP. + EMP. PER ACRE ● ● ○ ○
SOCIOECONOMIC BENEFITS	LOW-INCOME ● ● ● ○
	POPULATION ● ● ● ○
	EMPLOYMENT ● ○ ○ ○



Commerce–Houston ★

Lackland AFB – OLLU – Downtown SA – AT&T Center

RIDERSHIP	RIDERSHIP (AVERAGE DAILY BOARDINGS) ● ● ● ○
	PRODUCTIVITY (BOARDINGS/HOUR) ● ● ● ●
CAPITAL COST	CAPITAL COST (2015 $) ● ● ● ●
ANNUAL O&M COST	ANNUAL O&M COST (2015 $) ● ● ● ○
AVERAGE SPEED	AVERAGE SPEED (PEAK PERIOD MPH) ● ● ● ○
RELIABILITY NEED	RELIABILITY NEED (CONGESTION & RIDERSHIP) ● ● ○ ○
BLOCK DENSITY	BLOCK DENSITY (BLOCKS/SQUARE MILE) ● ● ● ●
	PERCENT BIKE ACCESSIBLE ● ● ● ●
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	ROUTE DISTANCE (MILES) ● ○ ○ ○
	CONNECTIONS TO REGIONAL CENTERS ● ● ○ ○
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX) ● ● ● ○
	POPULATION PER ACRE ● ● ● ●
	EMPLOYMENT PER ACRE ● ● ● ●
	POP. + EMP. PER ACRE ● ● ● ●
SOCIOECONOMIC BENEFITS	LOW-INCOME ● ● ● ●
	POPULATION ● ● ● ○
	EMPLOYMENT ● ● ○ ○



Bandera

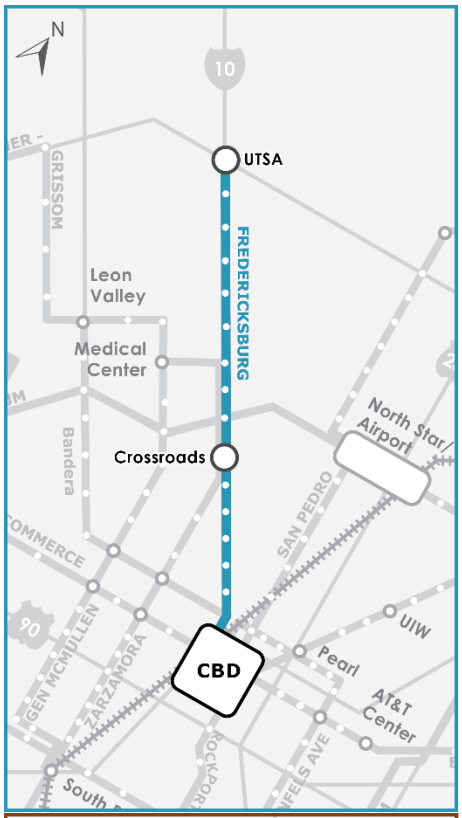
Leon Valley – Downtown SA

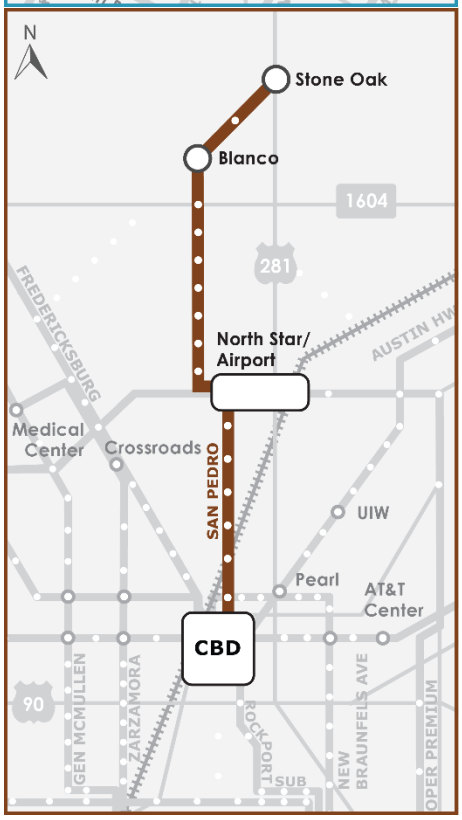
	RIDERSHIP (AVERAGE DAILY BOARDINGS)	● ○ ○ ○
	PRODUCTIVITY (BOARDINGS/HOUR)	● ● ○ ○
	CAPITAL COST (2015 $)	● ○ ○ ○
	ANNUAL O&M COST (2015 $)	● ○ ○ ○
	AVERAGE SPEED (PEAK PERIOD MPH)	● ○ ○ ○
	RELIABILITY NEED (CONGESTION & RIDERSHIP)	● ● ○ ○
	BLOCK DENSITY (BLOCKS/SQUARE MILE)	● ● ● ○
	PERCENT BIKE ACCESSIBLE	● ● ● ○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	ROUTE DISTANCE (MILES)	● ○ ○ ○
	CONNECTIONS TO REGIONAL CENTERS	● ● ○ ○
	MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	● ● ● ●
	POPULATION PER ACRE	● ● ● ○
	EMPLOYMENT PER ACRE	● ● ○ ○
	POP. + EMP. PER ACRE	● ● ○ ○
SOCIOECONOMIC BENEFITS	LOW-INCOME	● ● ● ○
	POPULATION	● ● ○ ○
	EMPLOYMENT	● ○ ○ ○

Huebner – Grissom

Alamo Ranch – Leon Valley – Med Center

	RIDERSHIP (AVERAGE DAILY BOARDINGS)	● ○ ○ ○
	PRODUCTIVITY (BOARDINGS/HOUR)	● ○ ○ ○
	CAPITAL COST (2015 $M)	● ○ ○ ○
	ANNUAL O&M COST (2015 $M)	● ○ ○ ○
	AVERAGE SPEED	● ○ ○ ○
	RELIABILITY NEED	● ● ● ○
	BLOCK DENSITY (BLKS/SQ MI)	● ○ ○ ○
	PERCENT BIKE ACCESSIBLE	● ● ● ○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL	ROUTE DISTANCE	● ○ ○ ○
	CONNECTIONS TO REGIONAL CENTERS	● ● ○ ○
	MARKET SUPPORT	● ● ● ○
	POPULATION PER ACRE	● ● ○ ○
	EMPLOYMENT PER ACRE	● ○ ○ ○
	POP. + EMP. PER ACRE	● ○ ○ ○
SOCIOECONOMIC BENEFITS	LOW-INCOME	● ○ ○ ○
	POPULATION	● ○ ○ ○
	EMPLOYMENT	● ○ ○ ○





Fredericksburg

UTSA – Crossroads – Downtown SA

RIDERSHIP (AVERAGE DAILY BOARDINGS)	● ● ● ●
PRODUCTIVITY (BOARDINGS/HOUR)	● ● ● ●
CAPITAL COST (2015 $)	● ● ● ●
ANNUAL O&M COST (2015 $)	● ● ● ○
AVERAGE SPEED (PEAK PERIOD MPH)	● ● ● ●
RELIABILITY NEED (CONGESTION & RIDERSHIP)	● ● ● ●
BLOCK DENSITY (BLOCKS/SQUARE MILE)	● ● ● ○
PERCENT BIKE ACCESSIBLE	● ● ● ○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL: ROUTE DISTANCE (MILES)	● ○ ○ ○
CONNECTIONS TO REGIONAL CENTERS	● ● ● ○
MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	● ● ● ●
POPULATION PER ACRE	● ● ● ●
EMPLOYMENT PER ACRE	● ● ● ●
POP. + EMP. PER ACRE	● ● ● ●
SOCIOECONOMIC BENEFITS: LOW-INCOME	● ● ● ○
POPULATION	● ● ● ●
EMPLOYMENT	● ● ● ●

San Pedro

Stone Oak – Blanco – North Star/Airport – Downtown SA

RIDERSHIP (AVERAGE DAILY BOARDINGS)	● ● ● ○
PRODUCTIVITY (BOARDINGS/HOUR)	● ● ● ○
CAPITAL COST (2015 $)	● ● ● ●
ANNUAL O&M COST (2015 $)	● ● ● ●
AVERAGE SPEED (PEAK PERIOD MPH)	● ● ● ●
RELIABILITY NEED (CONGESTION & RIDERSHIP)	● ● ● ●
BLOCK DENSITY (BLOCKS/SQUARE MILE)	● ● ● ○
PERCENT BIKE ACCESSIBLE	● ● ● ○
LAND USE AND DEVELOPMENT/ TOD POTENTIAL: ROUTE DISTANCE (MILES)	● ● ○ ○
CONNECTIONS TO REGIONAL CENTERS	● ● ● ○
MARKET SUPPORT (DEVELOPMENT POTENTIAL INDEX)	● ● ● ●
POPULATION PER ACRE	● ● ● ○
EMPLOYMENT PER ACRE	● ● ● ●
POP. + EMP. PER ACRE	● ● ● ○
SOCIOECONOMIC BENEFITS: LOW-INCOME	● ○ ○ ○
POPULATION	● ● ● ●
EMPLOYMENT	● ● ● ●

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