



Executive Summary

November 26, 2018

Prepared by:



1. Introduction

The Alamo Area Metropolitan Planning Organization (AAMPO) commissioned this study to evaluate the role of bike share and other forms of shared mobility in the Greater San Antonio Region including expansion or changes to the existing bike share program in San Antonio (Bexar County), planning for new shared mobility options such as electric-assist (e-assist) bikes and electric-powered scooters (e-scooters), and considering shared mobility options suitable for smaller communities in Guadalupe, Comal, and Kendall Counties.

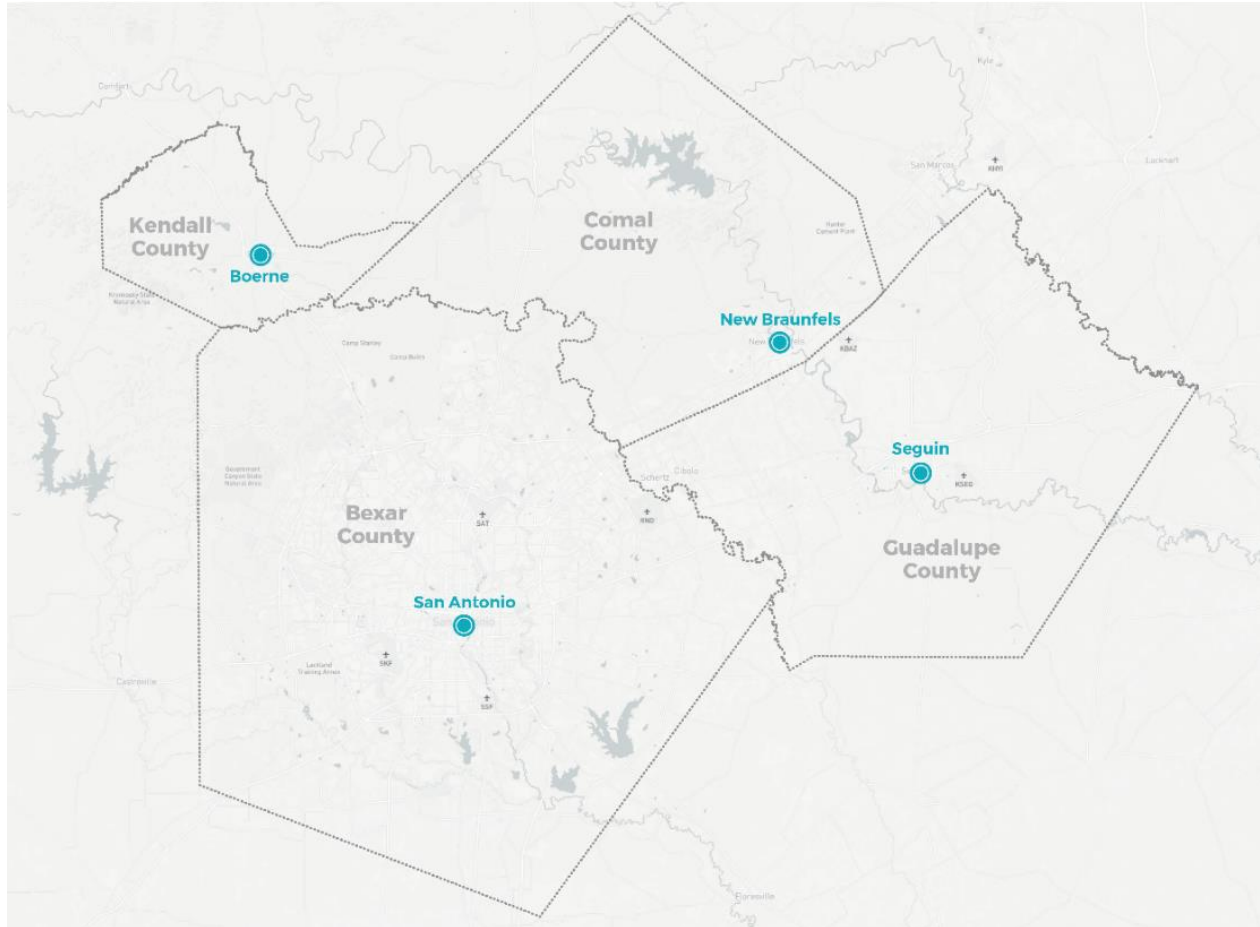


Figure E1: The Alamo Area Bike Share Master Plan Study Area.

The study was overseen by a Study Oversight Committee (SOC) made up of representatives from AAMPO, the Cities of Boerne, New Braunfels, San Antonio, and Seguin; Bexar, Comal, Guadalupe, and Kendall Counties; San Antonio Bike Share (SABS); the Texas Department of Transportation (TxDOT); and VIA Metropolitan Transit.

The findings of the study are presented in four reports – one for each community. For Bexar County, the report presents a background and history of the existing bike share program, explores the City of San Antonio’s new dockless pilot program, and presents the results of an independent analysis that looked at demand, equity, public and stakeholder opinion, and experience from other cities to develop options and recommendations for how San Antonio should move forward and best leverage public and private investment in shared mobility.

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In the smaller communities that do not have bike share or shared mobility, the feasibility assessment process undertaken is shown in Figure E2. The study explored opportunities and challenges and reviewed geographic conditions, land use patterns, demographics, population trends, transportation infrastructure, city infrastructure, and local and regional policies.

Outreach was conducted to gather feedback from stakeholders and the public. Stakeholder outreach included interviews and meetings with City, County, and other agency staff and public outreach included an online survey and crowdsourcing map that were promoted through traditional and online media and at in-person outreach events.

Community assessments also included a map-based demand analysis to identify areas with the highest potential demand for shared mobility and areas with traditionally transportation underserved populations.

These inputs were combined to identify the types and forms of shared mobility programs that could meet the needs of each community. A variety of different technologies and business models were considered and informed by case studies of comparable cities. Based on this analysis the project team made recommendations about which types of programs would be most successful given the interest, capacity, and funding environment in that community. A cost assessment and implementation plan were then developed for these recommendations.

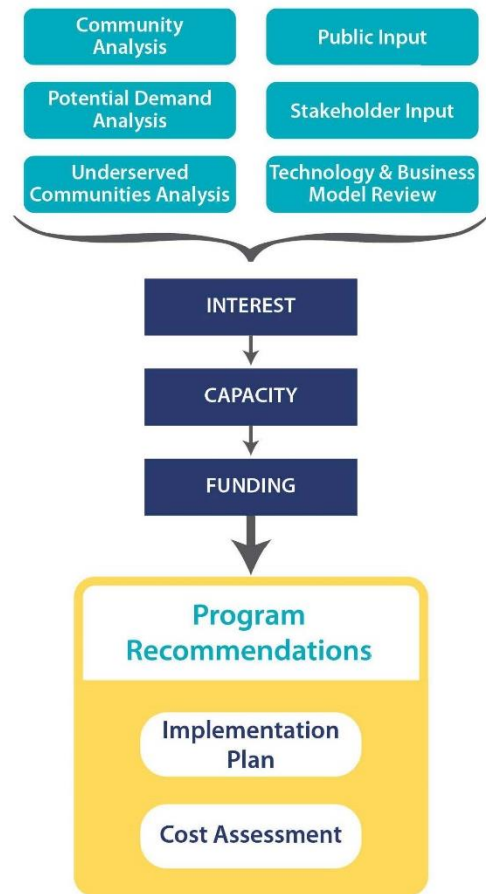


Figure E2: Feasibility Assessment Process.

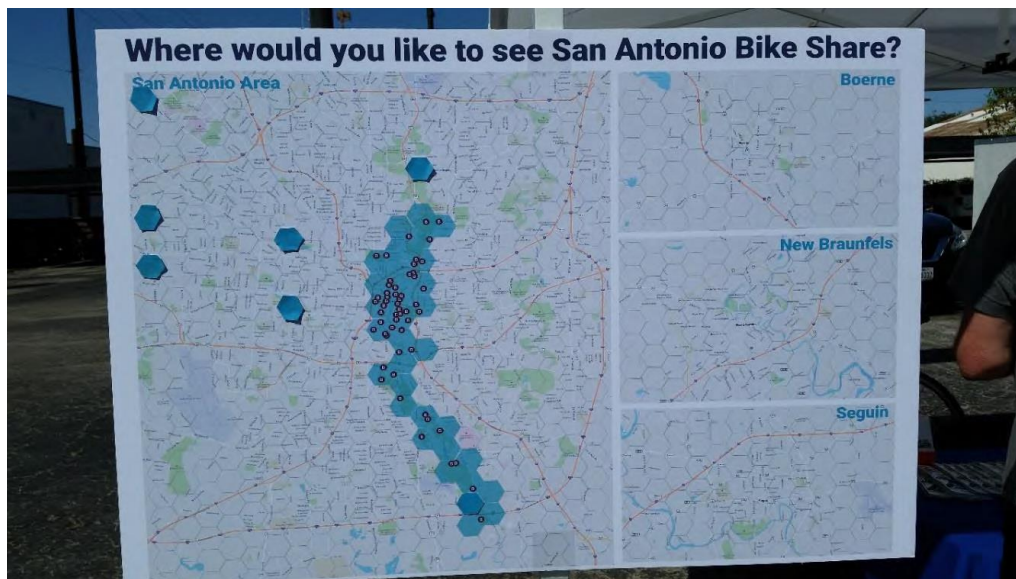


Figure E3: Bike Share Expansion Areas Suggested by a Member of the Public at Siclovía in October 2017.

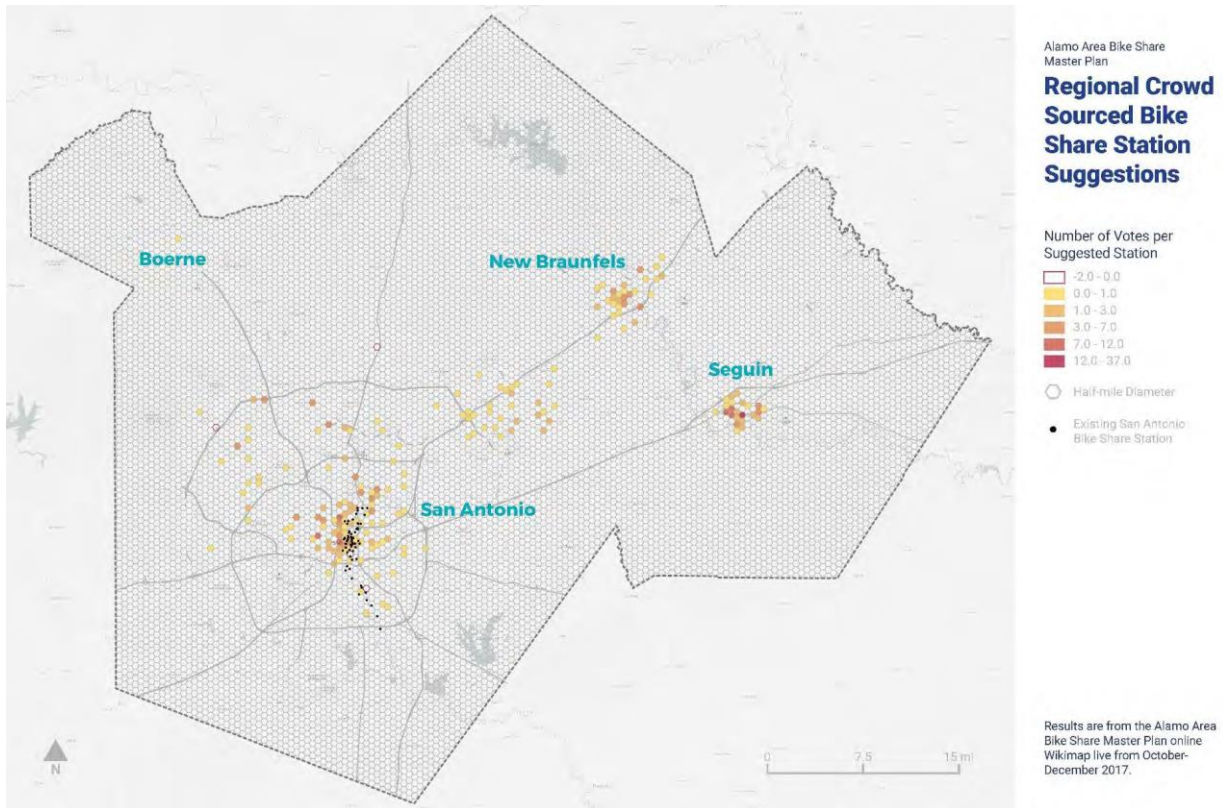


Figure E4: Crowdsourcing Suggestions for Future Expansion of San Antonio Bike Share (AAMPO Region).

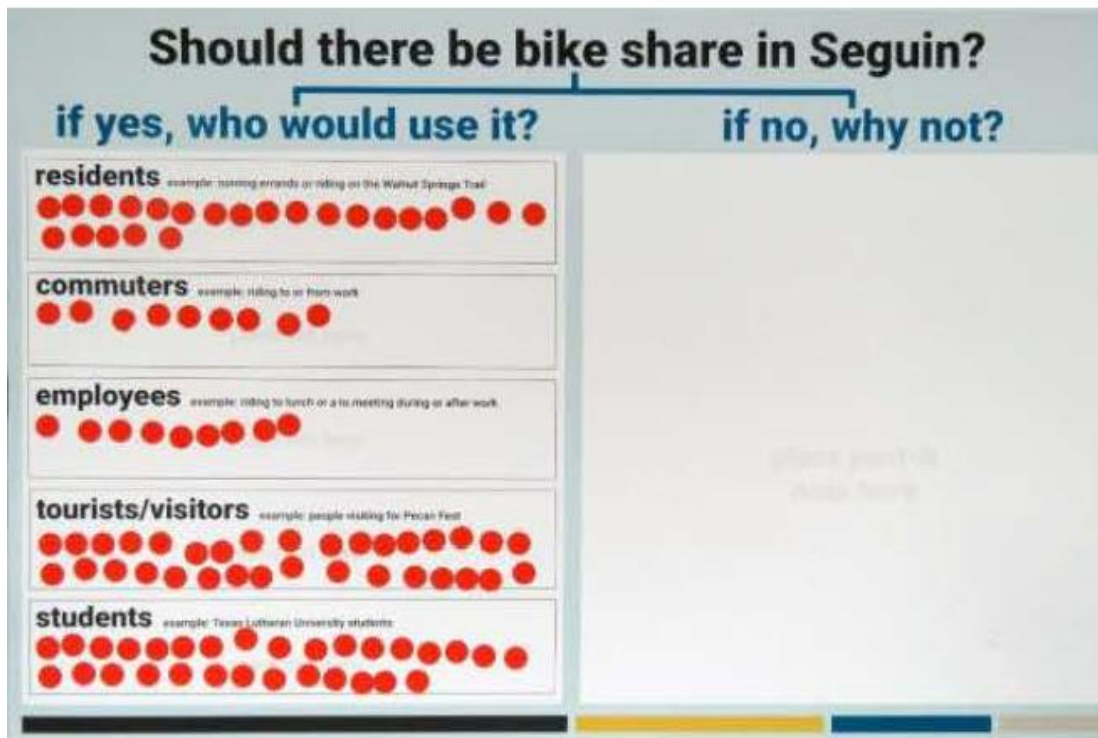


Figure E5: Example of Public Input from Seguin Sip-and-Stroll.

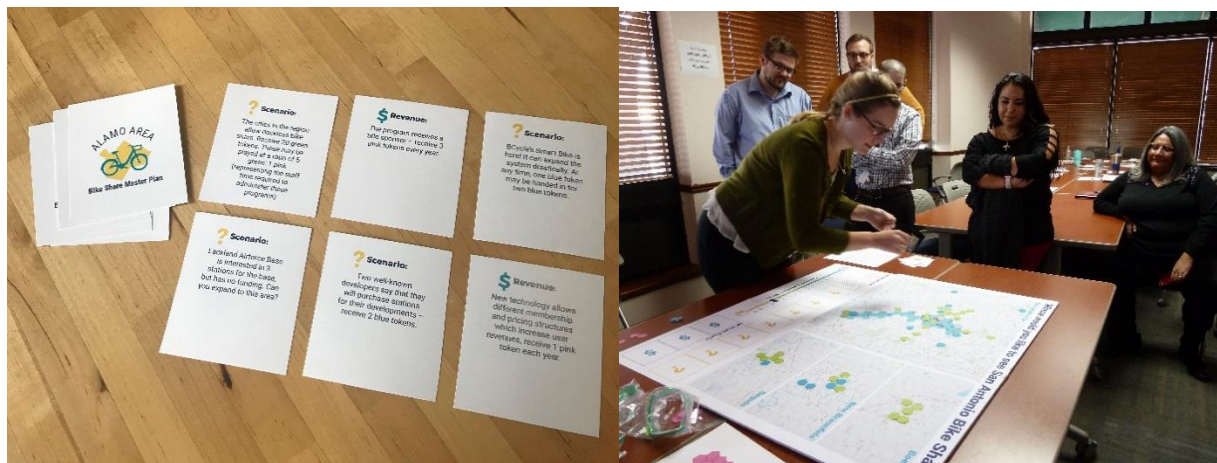


Figure E6: The AAMPO Bike Share Board Game.

2. Shared Mobility

The term “shared mobility” is used to describe transportation systems that make use of a pool of resources that can be used by a broad group of people to increase their transportation and mobility options. For this report, “shared mobility” refers to traditional docked and dockless bike share, e-assist bicycles within a bike share platform, and e-scooter programs.

3. Bexar County

The Bexar County study started prior to dockless e-scooters being launched in San Antonio. It focused on the role of the existing bike share program operated by San Antonio Bike Share (SABS) in the context of the new dockless environment, but also explored the opportunities offered by dockless shared mobility.

3.1 San Antonio Bike Share

SABS is a long-running and successful bike share program. It has broad community support and has increased access to bicycling and enhanced visitor experience and mobility options since starting in 2011. However, the technology is dated and some of it is coming to the end of its useful life. It is a smart dock system and because of the upfront capital required for stations, it is not well suited to expansion into lower density areas of the city.

3.2 Industry Trends

Trends in the industry are for more flexible “shared mobility systems” that include dockless bikes, pedal-assist bikes (e-assist bikes), and electric-powered scooters (e-scooters) and allow users to park a device at their destination. These systems are well funded by venture capital, tech companies, and large mobility companies. They are privately-owned businesses that provide the system and use (or often pay to use) the public right-of-way.

Dockless shared mobility has expanded rapidly since 2017 and most recently, these companies have focused on e-scooters that appear to have better ridership than other shared mobility modes and appeal to a number of different demographics as compared to bike share. In June 2018, several dockless companies deployed unpermitted e-scooter fleets in San Antonio. As a result, the City of San Antonio conducted outreach to stakeholders, the dockless companies, and the public and utilized examples from other cities to develop regulations to permit dockless shared vehicle operations. This is a 6-month pilot program with no limits on the number of companies or devices. Although this is open to all types of dockless vehicles, the companies have so far only deployed e-scooters. Unless there is significant future interest to provide bikes, SABS may be able to fill this market niche.



Figure E7: Different Bike Share Technology Options (clockwise from top left): smart dock station in San Antonio, TX; smart bike with U-lock in Memphis, TN; e-scooters in San Antonio, TX; self-locking dockless bikes in Seattle, WA.

3.3 Program Adaptation and Expansion

Other cities with established smart dock systems have also been navigating the introduction of dockless shared mobility. These cities have taken a number of directions including business-as-usual, transitioning from non-profit ownership to agency or transit agency ownership, privatization to adapt the program to the market-driven model, replacement of the program, and protection of the existing program through bans on other models. All of these options are available to SABS. However, until the impacts of dockless shared mobility are better understood, or until the resources, such as grant funding, sponsorship, etc., are no longer available, the SABS has a desire to continue operating. It is a long-term fixture in Central San Antonio with a proven record. It also provides access to bicycles not currently provided by the e-scooter companies.

Nevertheless, SABS understands that it needs to adapt to better compete and to enable expansion into new areas. BCycle, the provider of the current technology, has recently developed and implemented a smart bike (dockless) model and an e-assist bicycle compatible with either a smart dock or smart bike system. They are also working on a blue-tooth add-on that will convert smart dock bikes to smart bikes.

Committing to these technology upgrades will allow SABS to expand the system both in terms of the geography covered as well as the flexibility within the service area. An extensive stakeholder and public outreach process identified that east-west expansion into the westside neighborhoods to provide

coverage to Our Lady of the Lake University, St. Mary's University, and Woodlawn Lake and into the eastside neighborhoods serving the Eastside Promise Neighborhood, Denver Heights, and Highland Park. Expansion should also include Alamo Heights and as this is a separate jurisdiction, SABS would require some form of Memorandum of Understanding or other agreement to allow them to use the public right-of-way. A pilot satellite program in the Westside Medical District is also recommended to leverage the investment being made into the protected bikeway along Floyd Curl Drive.

3.4 Recommended Transition Plan

It is recommended that transition to the new technology and geographic expansion occur together in the following process.

- Phase 1 – Optimize the Existing Program: by relocating underperforming stations to new and better performing locations. SABS has already relocated most of the stations recommended in this study but should evaluate station locations every year.
- Phase 2 – Pilot E-Assist Bicycles: the remaining TxDOT grant funds will be reallocated to purchase 25 e-assist bikes that will be incorporated into the existing fleet. These will be evaluated for performance and the experience from other cities is that e-assist bikes get considerably more ridership that regular bikes.
- Phase 3 – Replace the Bicycle Fleet with E-Assist Bicycles: over time, the remainder of the fleet should be replaced with e-assist bikes. As existing bikes come to the end of their useful life they can be retired from the fleet and in the meantime, additional e-assist bikes should be purchased and added to the fleet as funding allows.
- Phase 4 – Develop a Hybrid System: the e-assist bikes can be used in a smart dock or smart bike set up. In addition, BCycle is developing a Bluetooth locking technology that will allow smart dock bikes to be converted to smart bikes. As the system is being converted to a smart bike system, it will need to operate as a “hybrid” system. This means that over time, regular bike racks should be added to every existing smart dock station so that both smart dock and smart bikes can be parked there; as well, some of the smart dock stations should be relocated from underperforming locations downtown and be replaced with regular bike racks. These should be relocated to key destinations in the new expansion areas. Beyond that, additional hubs can be added with regular bike racks in the expansion areas.



Figure E8: LA Metro Bike Share is conducting a pilot program with BCycle's new e-assist bicycle.



Figure E9: Minneapolis recently created a hybrid bike share system co-locating dockless bike parking areas with smart dock stations. They are transitioning the program to a dockless system.

- Phase 5 – Convert the System to Dockless: this is the end result of Phase 4 and would include retiring old smart dock bikes that have come to the end of their useful life, converting (or enabling) the smart bike function on the new e-assist bikes, and using the Bluetooth lock technology (once developed) to convert the existing fleet to smart bikes.
- Phase 6 – Continue to Expand the System: once the system is fully converted to an e-assist fleet and is dockless, expansion can continue to occur by adding bikes and bike racks to the system.

This transition will require approximately \$2 million in capital funding that is yet to be identified. Additional operations and maintenance will also be needed to accommodate the additional scale of the system. There may be opportunities to increase ridership through a more attractive and flexible product as well as additional opportunities for sponsors to get involved with the program. The timeline of this transition and expansion is dependent on a number of factors. Phases 1 and 2 can be completed now as they have resources through the latest TxDOT grant to complete them. However, Phases 3-6 require funding to be identified and allocated, which could take a number of years.

In the meantime, dockless shared mobility could be a way to provide coverage to areas of the city that would otherwise have to wait or may never get traditional bike share. Providing access for underserved areas could be greatly improved through more specific terms in the City's dockless regulations that specify the amount of coverage expected in these areas and options for providing access to the system for people without a credit card or smartphone.

The partner agencies can support shared mobility in the region by continue to develop policies and programs that leverage the opportunities and address the challenges for these programs. The City of San Antonio is a key player in this through its evaluation of the existing dockless pilot program and any changes that they make to the terms of a more formal program. As well, there are a number of city codes that need to be changed for long-term accommodation of e-scooters. AAMPO can assist through incorporating these modes in their plans and policies, incorporating them in programs and education materials, and along with the City, County, and TxDOT can continue to pursue capital grants for SABS to transition their technology and expand the system. VIA is exploring options to better integrate bike share and shared mobility into their operations and this could include cross-promotion, integration of fare payment systems, or deeper involvement in operations.

4. Comal County (New Braunfels)

There is currently no bike share or other shared mobility system in New Braunfels and in fact the city is still in the process of building out a more comprehensive and connected bike network and currently only has a few miles of bike lanes. The City is taking proactive steps to improve bicycling conditions with construction of new trails and bike lanes and the addition of active language in city policies to encourage these and other more sustainable modes of transportation. Shared mobility could be used as a way to accelerate this process through the visibility and ridership that these programs bring. It could also be a way to alleviate some of the traffic and parking pressures the City observes during the summer months and a way to create a new visitor experience that connects the major visitor destinations around town including Downtown New Braunfels, Gruene, Landa Park, the Schlitterbahn, river float drop-in and take-out points, and other places.

Based on feedback received during the outreach process, there was general support for bike share and shared mobility. Most people thought that out-of-town visitors and tourists would be most likely to use the system with some use also potentially coming from local residents taking recreational rides or connecting to entertainment destinations and discounted bulk memberships that may get employees to ride to work and reduce traffic and parking demands.

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Based on the findings of the community analysis and public and stakeholder input, any future bike share program should attempt to:

- Use limited public funds, although there may be some local grant funding opportunities,
- Require minimal agency staff time,
- Connect the major tourist attractions to reduce traffic and parking demands,
- Provide reliable bike availability,
- Consider e-assist technology to reduce the impact of topography, and
- Minimize clutter and the opportunity for discarded bikes.

It was determined that a smart bike program provided by a third-party vendor would best meet these goals. It requires minimal staff effort and public funding and the technology provides the best balance of bicycle availability and user flexibility. The “lock-to” ability of this technology would help organize the bikes in the public right-of-way and discourage clutter and vandalism.



Figure E10: Possible New Braunfels smart bike system.



Figure E11: Smart bike station at the Savannah College of Art and Design, GA.

However, the recommended smart-bike program is dependent on interest from third-party vendors to provide this service. Trends in the industry show that although smaller cities were included in early rollouts of dockless bike share, a number of mobility companies are now focusing their efforts on larger markets. Some vendors have pulled out of smaller and suburban communities. Vendor interest could be tested through an RFI process or the City could approach the river outfitters to determine their interest in a bike share program. Although the vendor will be responsible for the cost and operation of the program, some staff time will be needed to update necessary policies, create a contractual framework, and oversee

and monitor the program.

The following questions need to be answered to move forward a smart-bike program:

- Is there interest from the private sector to establish a system in New Braunfels? How will this interest be determined?
- Do current policies and regulations define or restrict the use of pedal-assist e-bikes? Are policy changes required to allow these bikes?
- What sort of contracting (or procurement) mechanism will be used to allow vendors to operate the program?
- What are the preferred program boundaries and hub locations?

5. Guadalupe County (Seguin)

In Seguin, there was quite a lot of interest around a bike share program and the concept was generally well supported in public and stakeholder outreach. Seguin has a number of opportunities including a compact downtown, the Texas Lutheran University campus, the Guadalupe Medical Center, and a number of other attractions each separated by about a mile, which is a reasonable bike or scooter distance. Although the bicycling network is not comprehensive or complete, the City has recently opened the Walnut Branch Trail and there are a number of local streets that are generally low-speed and low-volume that could be used to connect these destinations. Shared mobility also provides an opportunity to provide low-income residents with a reasonably low-cost transportation option that can supplement the existing transit service which runs infrequently.



Figure E12: Family bike ride in Seguin.

Based on the findings of the community analysis and public and stakeholder input, any future bike share program should attempt to:

- Use limited or no public funds,
- Require minimal agency staff time,
- Lower potential barriers to entry including:
 - Being accessible to low-income and under-served populations,
 - Minimizing costs to use the system,

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- Encouraging residents to try bicycling or non-auto modes,
- Supplement Seguin’s transit and mobility options,
- Be flexible to accommodate low density and spread-out land uses, and
- Include an adaptable bike fleet to accommodate a variety of users.

It was determined that either a low-tech bike library or a dockless bike share or e-scooter program would best meet these goals. These options require the least upfront capital and ongoing funding and would minimize staff effort.

Bike libraries are similar to book libraries in that there is a fleet of bikes that can be checked out for a few hours or a few months before being returned. They can be an extension of the public library system or independently operated by city-contracted staff, volunteers, or bicycling advocacy groups. The most critical need would be to identify a champion for the program. This could be a partnership between the City (representing the public library), Texas Lutheran University, the Guadalupe Regional Medical Center, and other interested parties with the potential for multiple check-out locations. Bike libraries have upfront capital costs to purchase or refurbish the bikes and purchase equipment, tools, and spare parts. Operating costs include the cost to lease space, pay staff, maintain the bikes, and other expenses. There may be some opportunity to minimize these costs through in-kind donation of physical space, incorporating staff needs into existing positions, etc.



Figure E13: Bike library in Golden, CO.

The following questions need to be answered to move forward a bike library in Seguin:

- Would the City’s public library be interested and have the capacity to oversee the program and check bikes in and out?
- Do current staff have the capacity to add the program to their responsibility of duties?
- What other partners are interested in participating in the program and what is the extent of their involvement?
- Where would the bikes be sourced? Would they be purchased new or would they be recycled / refurbished? What capital funds are available to fund this?
- Is there sufficient space available at each location to store bikes before they are checked out?
- What is the checkout process? Can the same check-out technology used for books be used for the bikes?
- Who determined when a returned bicycle needs maintenance? Who conducts maintenance?
- What funding sources are available to cover ongoing operating costs?

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Figure E14: Dockless bike and e-scooter in San Francisco, CA.

A dockless mobility system could include bikes, e-bikes, and/or e-scooters. The program would be operated by a third-party or multiple third-parties and would provide the most comprehensive coverage and flexibility for where users could check-out a device. This type of program would best accommodate the low-density and spread-out development patterns in Seguin. However it is dependent on interest from third-party vendors to provide this service. Trends in the industry show that although smaller cities were included in early rollouts of dockless programs, a number of mobility companies are now focusing their efforts on larger markets. Some vendors have pulled out of smaller and suburban communities. Vendor interest could

be tested through an RFI process or the City could approach vendors to gauge their interest. Although the vendor will be responsible for the cost and operation of the program, some staff time will be needed to update necessary policies, create a regulatory framework, and oversee and monitor the program.

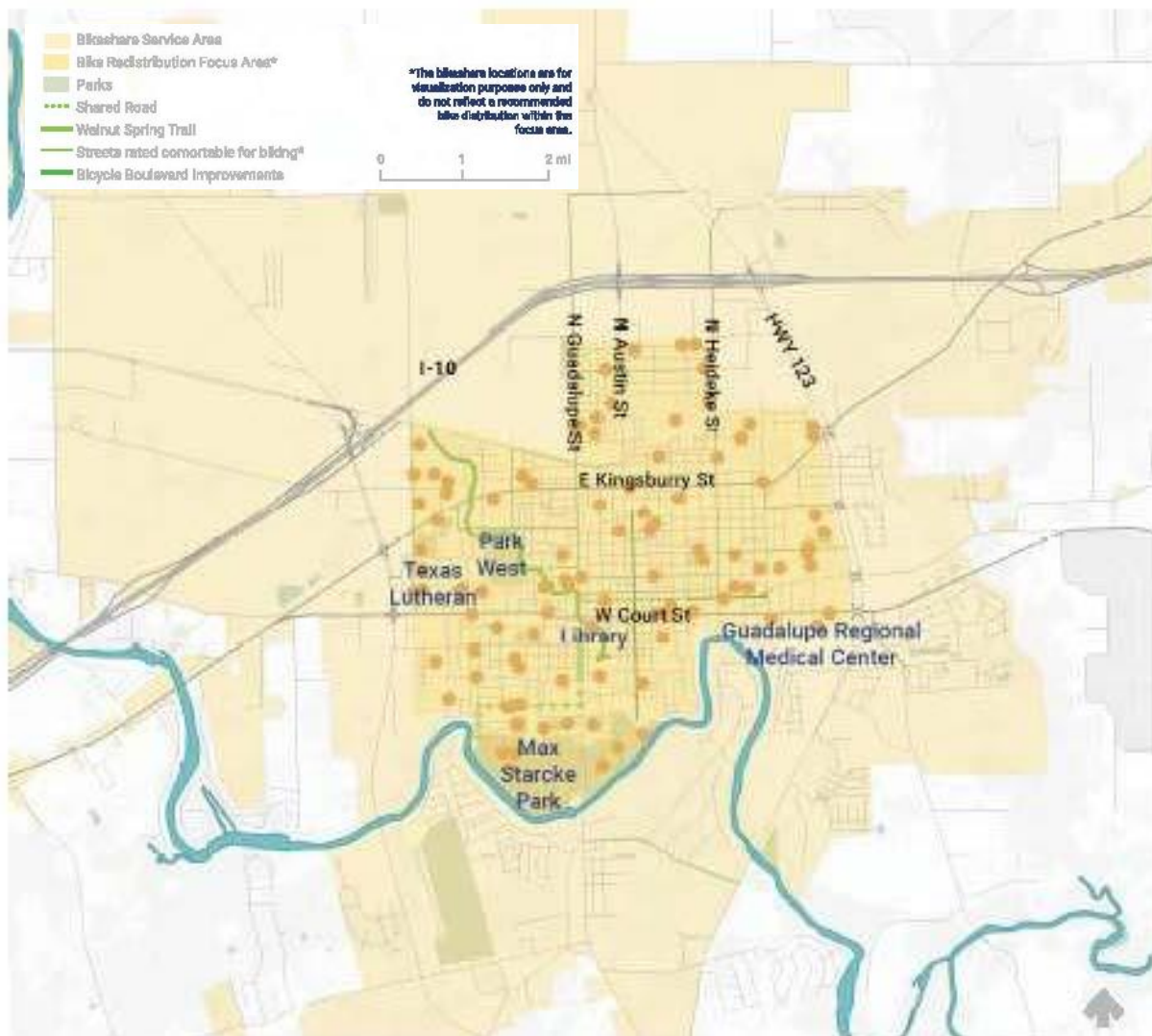


Figure E15: Possible Seguin dockless mobility system.

The following questions need to be answered to move forward a dockless mobility program:

- Is there interest from the private sector to establish a system in Seguin? How will this interest be solicited?
- Do current policies and regulations define or restrict the use of pedal-assist e-bikes and scooters? Are policy changes required to allow these devices?
- What sort of regulatory framework will be used to allow dockless vendors to operate in the public right-of-way?
- Will vendors be charged to operate the program or apply for a permit?
- How will revenues be used to offset staff time and fund bike improvements that will assist the program?
- What are the preferred program boundaries and hub locations?

6. Kendall County (Boerne)

The public and stakeholders in Boerne were probably the least interested in bike share of all the communities in the region. Although the concept was generally well understood and supported, it was not a high priority for local residents. Nevertheless, there may be opportunities to bring some form of bike lending program to the City to support its recent investment in the Old Number 9 Greenway and its commitment to building a more comprehensive network of on- and off-street bikeways.

Bike share would most likely be used by out-of-town visitors and tourists and local residents taking recreational rides or connecting to entertainment destinations. It would be a way of providing a new way to see the City and to connect from the public library to City Park as well as along the Cibolo Creek Trail. A low-stress bikeway could be created to connect the Old Number 9 Trail to the Hill Country Mile with the long-term vision that any future jurisdictional transfer of Highway 87 could initiate a bikeway along the Hill Country Mile that would greatly support shared mobility options.

Based on the findings of the community analysis and public and stakeholder input, any shared mobility program would need to:

- Use limited or no public funds,
- Require minimal or no agency staff time,
- Serve recreational users and visitors,
- Utilize as much as possible the established trail network, and
- Provide different types of bikes including kids and adaptive bicycles.

It was determined that an automated bike rental system with at least two self-service check-out locations would best meet these goals. This opportunity could be offered to a private bike rental shop that could service and maintain the bikes and add it to their physical presence.

The following questions need to be answered to move forward an automated bike rental system:



Figure E16: Automated bike rental station in Bemidji, MN.

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- Is there interest from a local bike shop to establish this sort of system in Boerne? How will this interest be determined?
- What sort of contracting (or procurement) mechanism will be used to allow the vendors to operate the program?
- How big will the checkout stations be, where will they be located, and what permitting mechanism will be used to allow these in the public right-of-way or on public property?

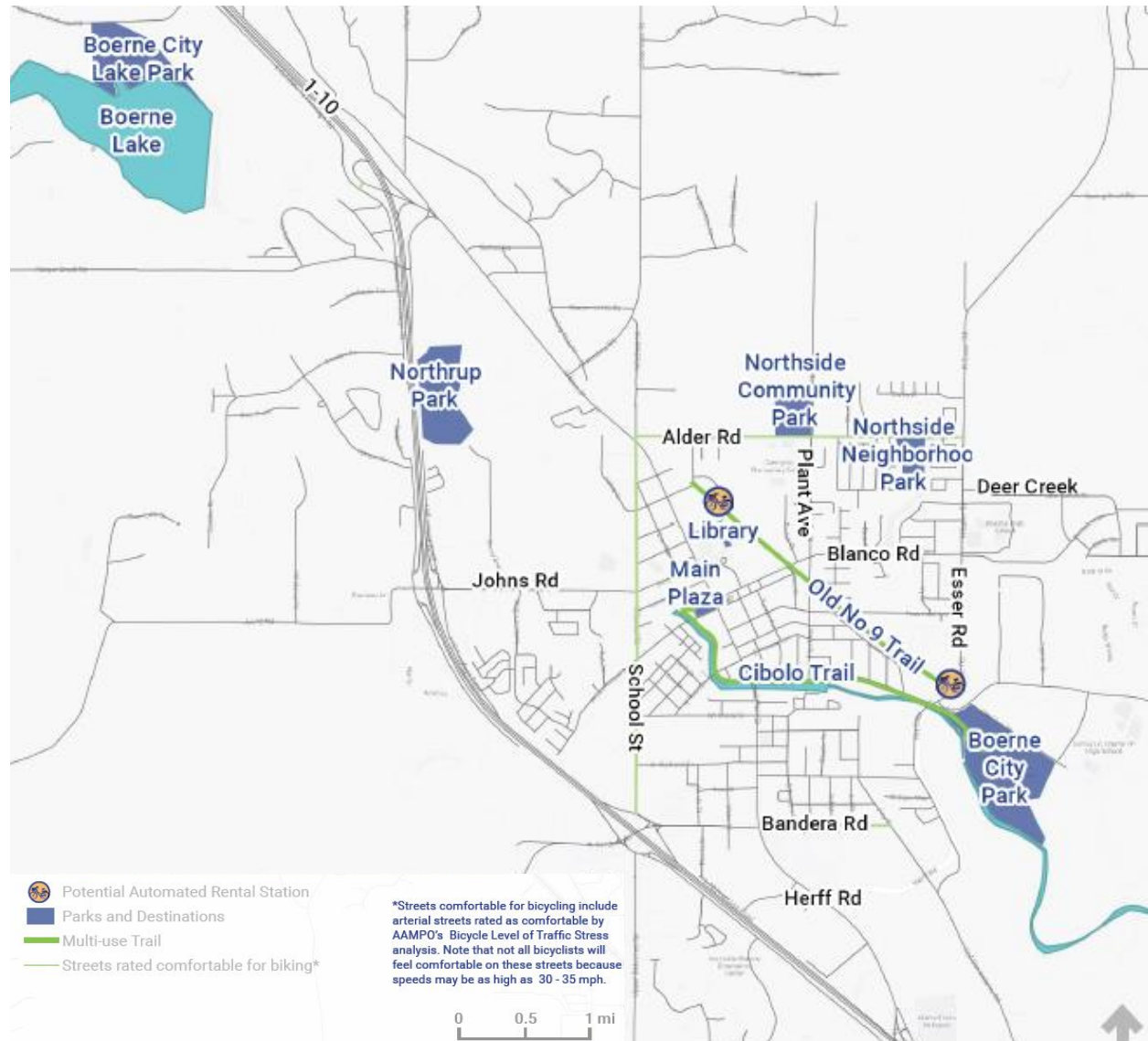


Figure E17: Potential Boerne automated bike rental program map.