
KTMPO
KILLEEN-TEMPLE
metropolitan planning organization

# Killeen-Temple Metropolitan Area Bike Share Feasibility Study 2022

## ACKNOWLEDGMENTS AND DISCLAIMERS

The Killeen-Temple Metropolitan Planning Organization (KTMPO) is a federally mandated and federally funded entity that oversees transportation planning and programming for the Metropolitan Planning Area (MPA).

The KTMPO Transportation Planning Policy Board (TPPB), Transportation Advisory Committee (TAC), and Bicycle and Pedestrian Advisory Committee (BPAC) helped provide guidance in the development of the Bikeshare Feasibility Study. For more on the KTMPO please visit https://ktmpo.org/

The preparation of this report has been financed in part through grant(s) from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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This report was prepared on
behalf of KTMPO by

ATG ALLIANCE
TRANSPORTATION GROUP

# Report Contents

# Chapter 1: Introduction to Bike Share

# Overview

The Killeen Temple Metropolitan Planning Organization (KTMPO) initiated this Bike Share Feasibility Study to explore the feasibility of shared micromobility system (transportation provided by single-person vehicles like bicycles and scooters), in the Killeen Temple Metropolitan Area. This high level approach; exploring feasibility at the regional level is intended to gauge readiness and provide a toolbox that the KTMPO can use to coordinate with its planning partners on moving towards readiness.

This study employs a strong people-oriented process with a particular emphasis on mobility justice and how a bikeshare program can improve mobility for under-served populations. This study also examines the relationship between active transportation and transit and how a bike share program can improve connections to transit and broaden transit's reach to unserved markets.

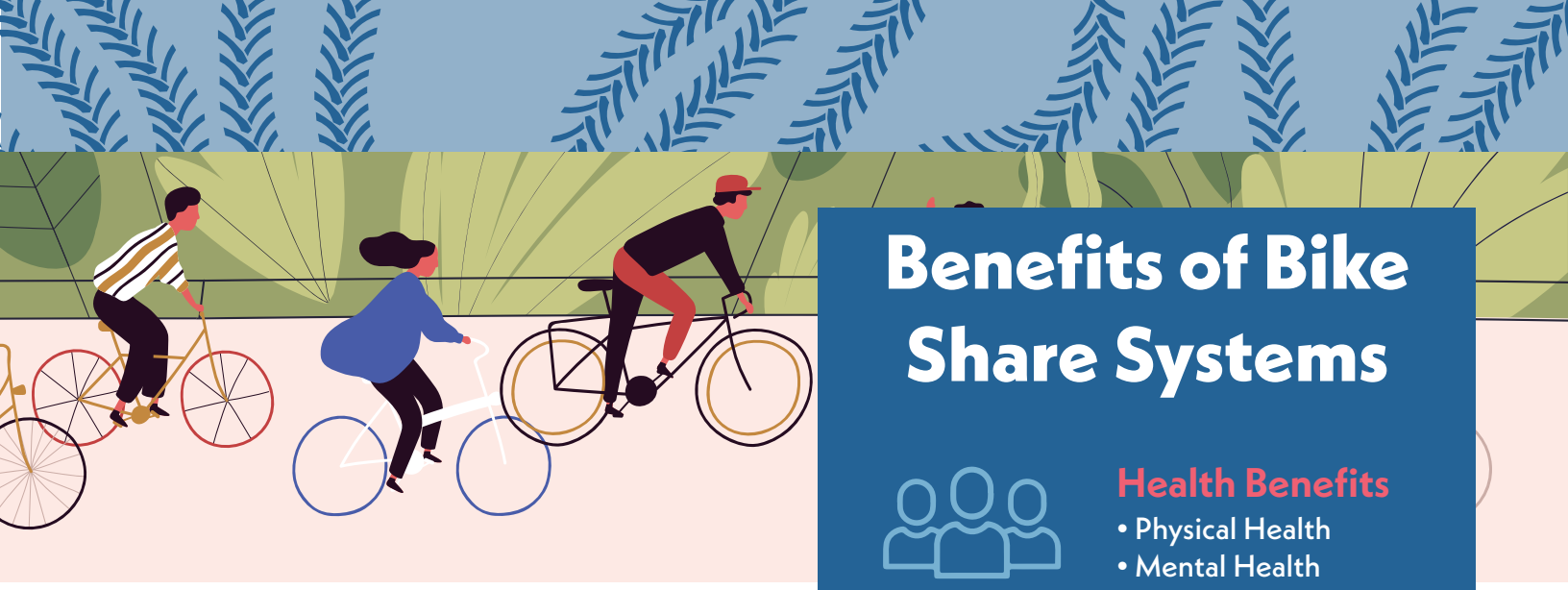
The methods used in this study considered the possible structure of any future bike share program, including necessary policies and ordinances, vendor relationships, and potential business and community partnerships.

The final step of this project was to identify and develop business case recommendations for implementation. These high level recommendations include possible funding sources, approaches to raising community awareness, as well as possible infrastructure condition or street design initiatives that are needed as precursors to any proposed bike share / micromobility program.

Bike share programs originally gained popularity and success in major cities throughout the United States. Today, smaller urbanized areas and suburban settings are adopting this form of micromobility. Bike share systems are associated with a wide array of benefits, including reduction of traffic congestion, improved public health, quality of life enhancement, economic vitality and more. Bike share systems provide more transit options and can often serve as a design intervention to encourage active transportation and community building opportunities.

Affordable transportation options like bike share programs provide communities with greater accessibility and increase the community's mobility and overall connectivity. Over the last couple of years, nationwide demand for bicycles has increased significantly due to the COVID-19 pandemic. Similarly, due to supply chain shortages in semiconductor chips, the demand for used cars has also increased. The KTMPO and their planning partners have the potential to catalyze these trends through the introduction of bike share into the community as a transportation choice.

The initial success of new forms of transportation are often dependent on how the local government introduces the service; this is especially true in car dependent areas. Smaller urban areas may have greater success than a larger city as they can learn from the best practices, opportunities, and weaknesses of previous systems in other areas. If the new transportation service is introduced too hastily, it can do more harm than good.



Special consideration must also be given to providing the public with information to avoid spikes in injuries, sidewalk obstructions, and excessive enforcement activities. Disparities in transportation services (cost, safety, accessibility, and infrastructure) can severely impact a resident's quality of life. Bicycling is no exception, as it is a more vulnerable form of transportation, with greater safety concerns. Specifically, the uneven policing of people of color, harassment of riders (particularly female riders) and auto centric dominance in the American fabric can dissuade people from bicycling. Bike share, when embraced widely and marketed to all demographic groups, has the potential to reduce these barriers and enact major social change.

Bike share programs can experience a wide range of results based on implementation and marketing. To avoid the challenges of a failed bike share system, municipal governments must actively plan to avoid public alienation and negative results. The KTMPO is sponsoring the analysis of these considerations to achieve maximum success and avoid potential pitfalls. Through a mobility justice framework, the KTMPO can leverage best practices for safety and engagement with underrepresented populations if and when such a program is implemented.

As previously mentioned, while the primary goal of the study is to determine the feasibility of a bike share program, this report is intended as a business case that the KTMPO can use as a tool box of strategies needed to deploy and integrate a bicycle sharing program safely into the community.

# Benefits of Bike Share Systems

## Health Benefits

- Physical Health
- Mental Health
- Active Transportation Opportunity
- Lower Healthcare Costs

## Mobility Benefits

- Air Pollution Reduction
- Reliability
- Sustainability
- Satisfies First/Last- Mile Connectivity

## Economic Benefits

- Affordable
- Data Technology Entrepreneurship
- Embraces Shared Economy

## Safety Benefits

- Fewer Accidents
- Reduction of Traffic Volume
- Driver Awareness

# What is Bike Share?

A bike share program, is a shared transportation service in which bicycles are made available for shared, public, use. In this type of system individuals may use the bicycles for a short period of time. Use of the bicycle could come at cost, or it could be free or subsidized.

Although bicycle sharing was conceptualized in the 1960s in Europe, the market did not take off globally until the mid-2000s. Over the past two decades, municipalities experimented with different business models and vehicle options for ride sharing. Each municipality invites micromobility share systems into their transportation network based on their infrastructure, policies, and sociopolitical climate.

The bike share system traditionally deploys a fleet of durable vehicles at stations placed in centralized locations. Usually rented out for shorter trips and tourist needs, bicycle share is an affordable, environmentally friendly form of transportation.

Rivaling personal vehicles and mass forms of public transportation, bike share is a community-based form of micromobility. While some city's share programs are associated with a government partnership, in communities with smaller populations, area institutions such as public universities, nonprofits, private businesses, and medical facilities often operate or sponsor the program.

## 1960s

**Type**
- Free Bicycle Systems

**Components**
- Bicycles

**Characteristics**
- Distinct Bicycles
- Unlocked Bicycles
- Free
- No Stations

## Early 1990s

**Type**
- Coin Deposit Systems

**Components**
- Bicycles
- Docking Stations

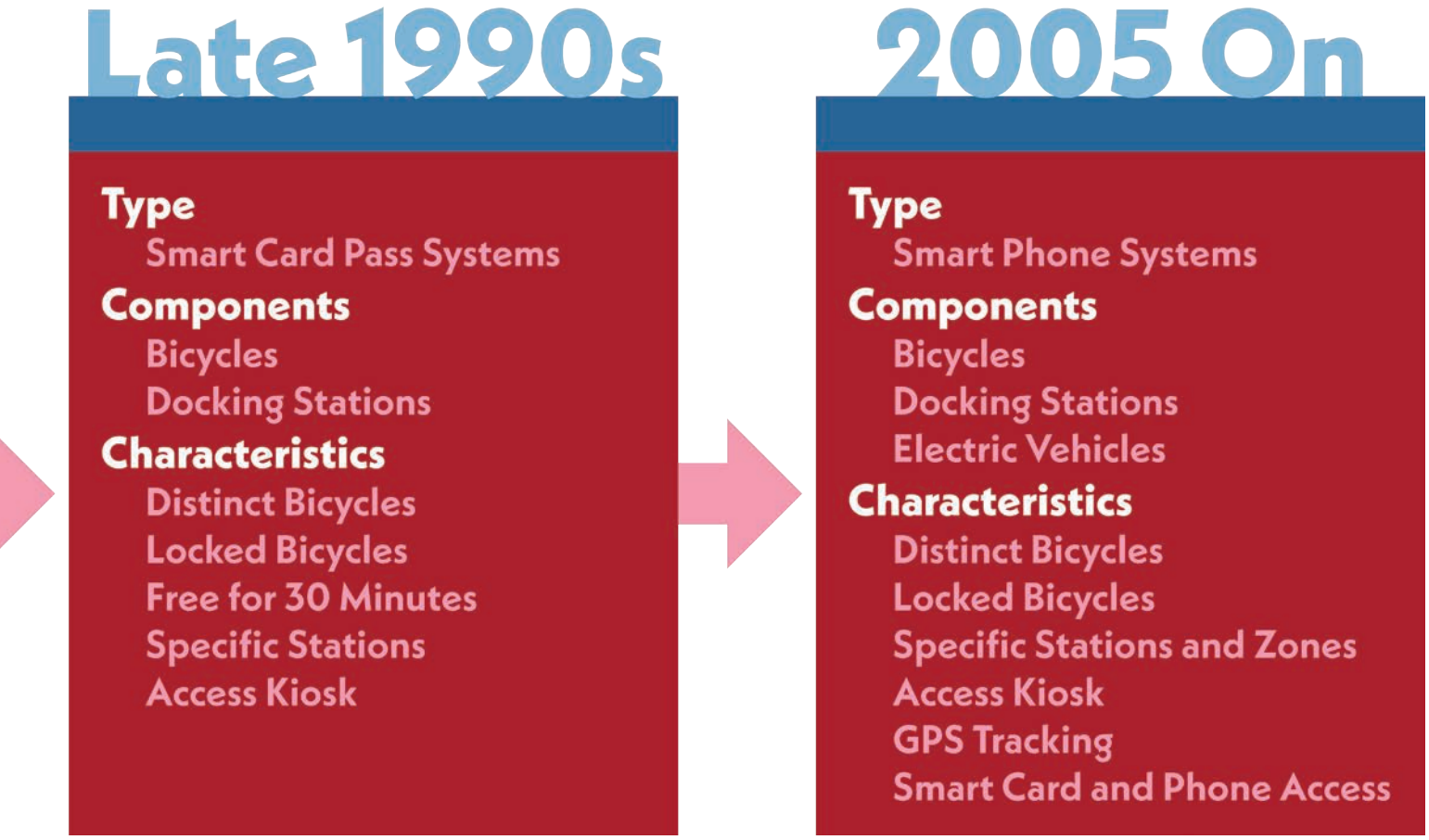
**Characteristics**
- Distinct Bicycles
- Locked Bicycles
- Free
- Coin Access
- A Few Stations

In addition to traditional manual bicycles, some cities have recently introduced electric micromobility through e-bikes and e-scooters. Electric micromobility share programs are dockless, meaning they do not require the user to pick up or drop off the vehicle at a designated station. In the years following their mass debut, important updates to these technological innovations are an increased battery life, interchangeable rechargeable batteries, sturdier models, and larger wheels.

Facets of bike share programs include not only the vehicles, but station facilities and payment systems. The bicycles are heavier than most types of road bicycles, with a distinct color scheme branded toward the municipality where they are located.

Many successful bicycle share programs construct stations in popular locations that are boldly designed and have large technological bicycle racks with a payment kiosk.

Accessible through smartphone applications, bicycle share payment plans include ride costs, day passes, monthly passes, and yearly memberships. Oftentimes, partnerships with institutions and businesses offer discounted rates for users. Many bike share programs offer an income-based reduced fare program.



# Benefits of Bike Share

## Health Benefits

According to the United States Department of Health and Human Services, the physical health of most citizens is below healthy standards. Only a third of the adolescent population in the United States are physically active every day and less than 5% of adults partake in the recommended 30 minutes of physical activity each day.[1] Since a lack of physical activity is a major public health issue in the United States, improving strategies for engagement at a residential level is essential.

The most marketed benefits of introducing a bike share network into a community are the public health advantages. Consistent participation in physical activity has a wide range of both physical and mental health benefits including reduced risks of cardiovascular diseases, hypertension, weight gain and depression.

The decision individuals make on method of travel affects their physical and mental health. A 2021 study estimated each American spends approximately one hour in their car each day, totaling to over 20,000 minutes a year.[2] Policies that promote active transportation present an opportunity for the community to shift population behaviors for increased quality of life. Active transportation, by means of walking, running and biking, serves as another chance to rival personal vehicles or public transportation.

**Bike share encourages users to participate in a less sedentary form of transportation. Instead of sitting in a personal vehicle or form of mass public transit, biking burns calories and builds muscle.**

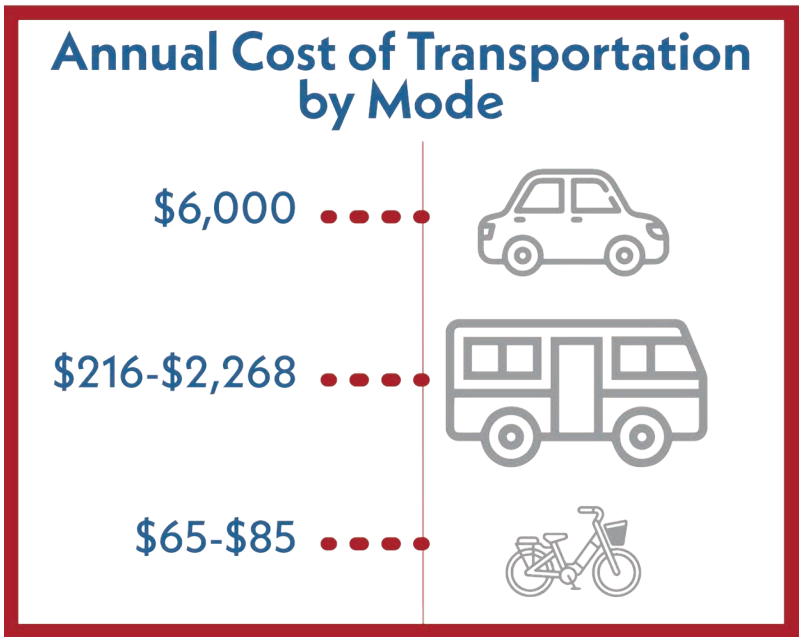
Recent planning research explores a wide range of options and impacts besides traditional commuting preference. For example, integrating health intentions with transportation planning can be a cost-effective method to improve overall public health. The Killeen-Temple Metropolitan Area has recently adopted efforts to help support changes in physical behavior. The expansion of off-road infrastructure, pursuit of connected mobility hubs and transformation of roads to provide more room for non-vehicular transportation options are key examples of effective strategies.

Bike share encourages users to participate in a less sedentary form of transportation. Instead of sitting in a personal vehicle or form of mass public transit, biking burns calories and builds muscle. Even electric biking, which engages the user in less rigorous activity, facilitates more active engagement. A study found individuals cycle twice as much with an electric bicycle, therefore biking longer and more frequently.[3]

1. *U.S. Department of Health and Human Services. (n.d.). HHS.gov. Retrieved Septem¬ber 27, 2020, from https://www.hhs.gov/*
2. *Steele, L. (2021, October 11). How Much Time Do American Families Spend in Their Cars? Fatherly. Retrieved February 7, 2022, from https://www.fatherly.com/gear/how-much-time-do-american-families-spend-in-their-cars/*
3. *Alberto Castro et al. Physical activity of electric bicycle users compared to conventional bicycle users and non-cyclists: Insights based on health and transport data from an online survey in seven European cities. Transportation Research Interdisciplinary Perspectives, Volume 1, 2019*

Bike share also has the potential to lower health costs. A study at Colorado University indicated $36 million would be saved in the national healthcare system with the introduction of bike sharing throughout the United States. Additionally, the riders followed in the study collectively saved 737 years spent living with a debilitating health condition.

The risk of developing or dying from diseases related to physical inactivity (diabetes, cancer, ischemic heart disease) is marginally lowered, as well as the risk of a traffic accident or pollution related ailments.[4] Similarly, a study in New York City indicated if 100,000 people used bike share, there would be 15 fewer deaths annually and $111 million less spent in healthcare.[5]




## Economic Benefits

Bike share is well-known for being an affordable transportation option with maintenance and operating costs that are well below those of maintaining and operating personal vehicles or the cost of using public transportation. In Seattle, for example, the estimated annual cost of owning a vehicle is $6,000 and between $216-$2,268 to ride public transportation. In comparison, national average costs of having a bikeshare membership, range between $65-$85 annually, which is a significant cost savings.[6]

Bike share not only benefits the user economically, it also embraces new technological advancements in micromobility, global positioning system data, and user-friendly smartphone application design. Micromobility is a profitable industry for municipal transportation data organizations, such as Remix, who provide insight to cities on public transit routes and track vehicles to analyze trends in ridership.

For example, municipal transportation data companies can track popular locations of usage, pinpoint broken vehicles, and identify peak times of usage. Data sharing could bring new economic opportunities and help municipalities better understand their user base.

Bike share systems operate in multiple types of economic markets. Its community based approach of sharing vehicles promotes an efficient and sustainable use of resources Additionally, the municipal economy also benefits greatly from the introduction of bike share.

The need for retrieval, operation, web presence and maintenance of the bicycles requires different types of jobs to maintain a functional system. Municipalities also use the deployment of bike share systems in historically disenfranchised areas in conjunction with other revitalization efforts such as Mainstreet programs or Complete Streets.

4. *Raeven Lynn M. Clockston, David Rojas-Rueda, Health impacts of bike-sharing systems in the U.S., Environmental Research, Volume 202, 2021, 111709, ISSN 0013-9351, https://doi.org/10.1016/j.envres.2021.111709.*
5. *100 Million. (2020). Citi Bike NYC. Retrieved February 7, 2022, from https://ride.citibikenyc.com/blog/100million*
6. *City of Redmond, Washinton. (2016, March). Bicycle Share Feasibility Study. https://altago.com/wp-content/uploads/Redmond-Final-Report.pdf*

## Mobility Benefits

Active transportation has many benefits to the transportation system as a whole. Integrating the deployment of bikeshare programs with a transit system can lead to more environmentally friendly and less congested forms of mobility choices. These changes can come from the advocacy of urban planners, community activists and public health officials.

Cyclists experience the benefits of more reliable transportation and produce less traffic related air pollution compared to vehicle operators. This is especially true for cities that provide designated bike infrastructure such as bicycle lanes or off-road trails. Bike share, and biking in general, is a sustainable transportation mode that promotes trip origins and destinations being closer together.

**"The availability of bicycles as a first/last mile mode creates a more robust multimodal hub that expands the first/last mile options and promotes increased transit usage to a wider range of origins and destinations."**

In the United States, 46% of car traffic results from personal automotive trips spanning less than three miles in distance. These vehicle trips could be eliminated by bicycle share, which works ideally for short distance riding. In this case, connectivity refers to how well different aspects of the transportation network interact with one another. In the multimodal context, the level of connectivity is often used to describe the ease of moving from one form of transportation to another. For example, people typically drive or walk to a transit stop near their origin or walk from a transit stop near their destination.

This non-transit connection is referred to as the first mile/last mile mode. In many bike share programs, share stations are placed adjacent to major transit hubs (bus stops/stations, light and heavy rail train stops/stations) to take advantage of popular transportation routes. The availability of bicycles as a first/last mile mode creates a more robust multimodal hub that expands the first/last mile options and promotes increased transit usage to a wider range of origins and destinations.

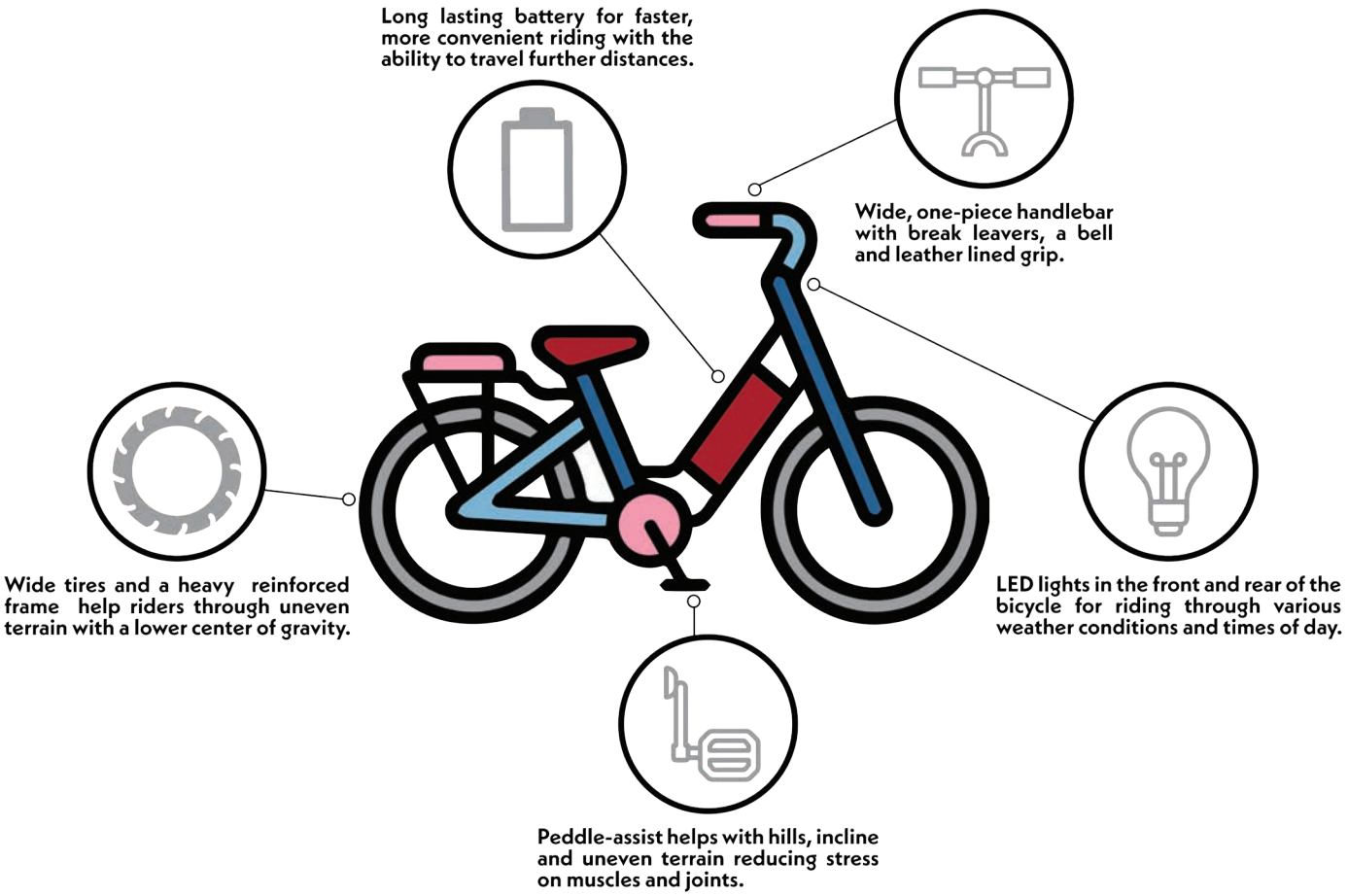
## Safety Benefits

In cities with dedicated cycling infrastructure, bicycle share is a relatively safe form of transportation. Even without dedicated cycling infrastructure, the United States saw no deaths related to shared micromobility from 2007 to 2014, when shared transportation became increasingly popular.[7] To this day, deaths related to shared micromobility are still rare and significantly lower than personal automobile use.

Further, by reducing the number of drivers on the road, all road users experience fewer accidents and the benefits of reduced traffic volume. A reduced traffic volume also increases the visibility of different types of road users and creates a safer environment for all. Safety is an integral part of a bicycle share system design.

Bright colors and clear marketing of bicycle share vehicles alerts driver's awareness to the technology. If drivers occasionally use the technology themselves or see many users on the road, it can also increase visibility. There are many safety concerns surrounding bicycle use on a vehicle dependent road, particularly with electric bicycles.

The deployment of electric micromobility in the United States initially was rushed and resulted in many injuries and accidents, sometimes death. The major cities who adopted the technology too quickly had to retract deployment until proper safety and infrastructure regulations were in place. Safety can be one of the most beneficial aspects of bicycle share but also the greatest challenge.




7. *Goldberg, B. (2014, August 12). After 23 million rides, no deaths in U.S. bike share programs. U.S. https://www.reuters.com/article/us-usa-transportation-bikes/after-23-million-rides-no-deaths-in-u-s-bike-share-programs-idUSKBN0GC10T20140812*

# What is Mobility Justice?

## Mobility Justice

According to **Untokening**, a multiracial advocacy program, mobility justice is a lens for transportation planning that acknowledges historic disenfranchisement, disinvestment, disproportionate exposure to pollution and oppressive policing of communities of color in the United States transit system. These behaviors continue to have negative consequences on mobility, therefore affecting collective health, wealth, and security. Through the acknowledgment of these historical transportation practices, advocates and professionals should excavate, recognize, and reconcile injustices and actively work to help oppressed communities who face structural inequities. Considering mobility justice during planning goes beyond equity in transportation but calls attention to safety, health, supporting infrastructure, economic opportunity and more.[8]

## As a Lens for Bicycle Share

Individuals with limited travel options travel less overall. This constraint effects individual mobility and therefore increases the difficulty of applying for and getting to places of employment. Limited mobility also decreases access to healthy food options and medical resources, which in turn affects levels of social isolation.

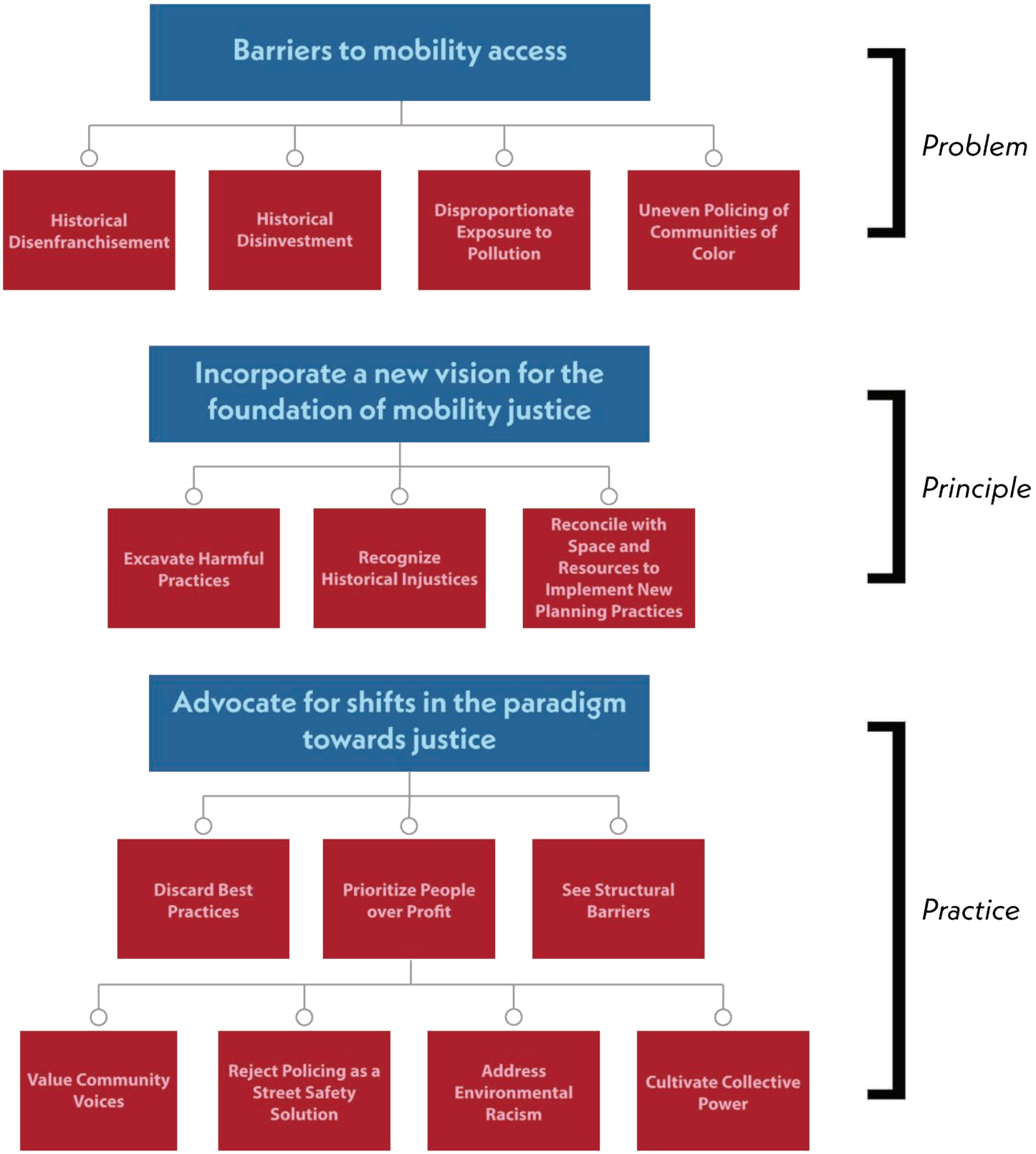
In a study performed in the United States, researchers found demographic minority populations and women feel less safe traveling by bicycle than non-minority men. The women and minority groups agreed that given more supportive infrastructure, they would be more likely to use a bicycle. Ensuring equity in the transportation decision making process reduces barriers to affordable and accessible mobility options.

Active transportation, associated with the benefits described above, is a great opportunity for the intervention and disruption of the typical, traditionally auto-centric, planning. To proactively plan for bicycle share deployment in the metropolitan area, planners, policy leaders, and decision makers must consider the different components of mobility justice in regard to the Killeen-Temple Metropolitan Planning Area to combat the complex relationship between transportation and forms of systematic inequality.

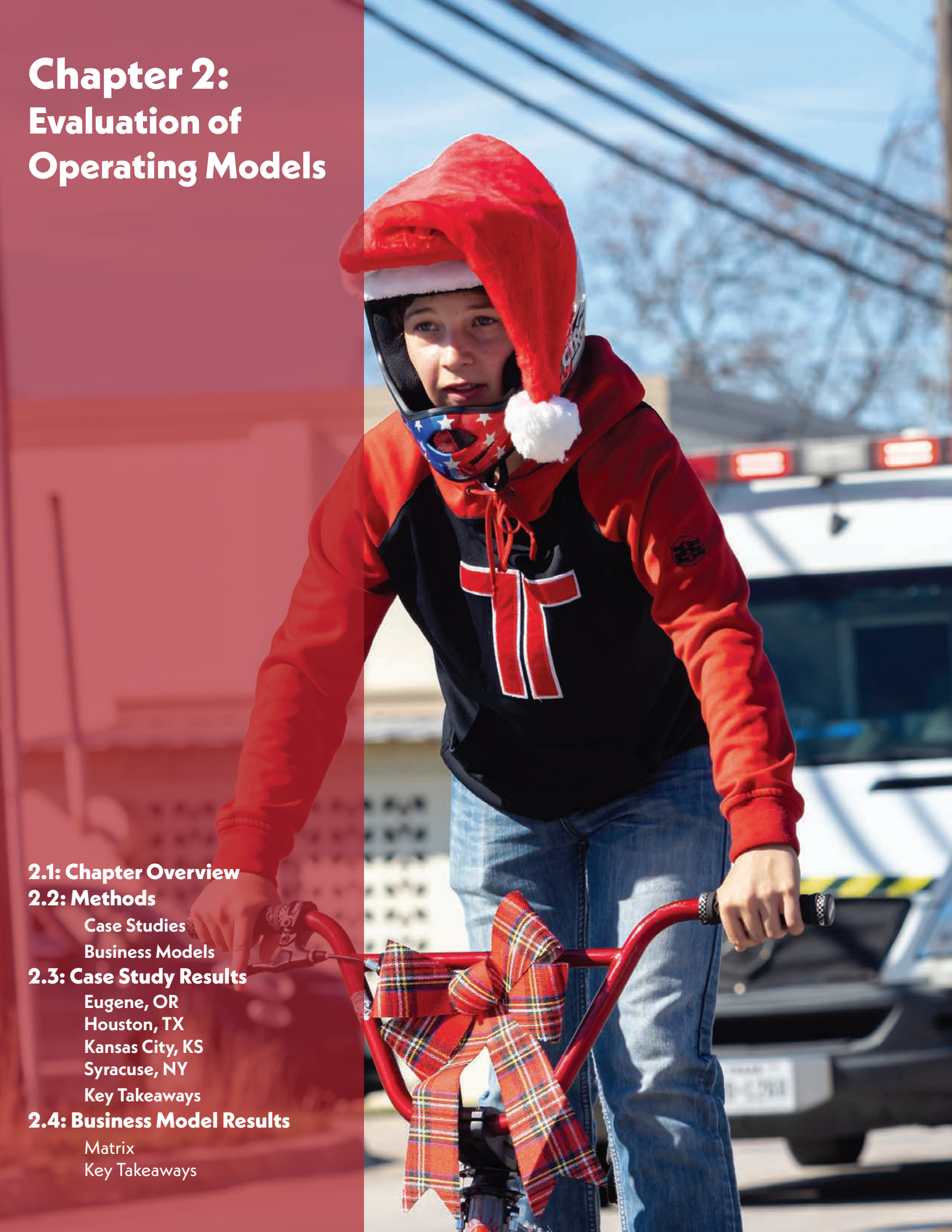
This report represents research on best practices through a mobility justice lens using reported information from bicycle share programs around the country. Additionally, the market analysis used in this report recognizes under-served populations in the Killeen-Temple Metropolitan Area as defined in the KTMPO Public Participation Plan. The recommendations presented later in this report likewise consider action steps at multiple levels from neighborhood and community initiatives to higher-level decision-making processes that consider the inclusion of all individuals.

8. *Collective, U. (2018, November 7). Untokening 1.0 — Principles of Mobility Justice. The Untokening. Retrieved February 7, 2022, from http://www.untokening.org/updates/2017/11/11/untokening-10-principles-of-mobility-justice*

# Mobility Justice Framework



# Chapter 2:
# Evaluation of Operating Models



# Chapter Overview

Prior to assessing the conditions of the Killeen-Temple Metropolitan area in terms of bike share feasibility, the project team conducted a two-pronged approach to research best practices in the United States. The Killeen-Temple Metropolitan Area has the benefit of learning from other programs and models implemented for years in cities across the United States.

Using the mobility justice framework, the case study analysis considered four programs operating in cities of a similar size to the MPO and one other rideshare organization in the State of Texas. The second part of the market analysis explored different types of business models for bike share operations by organizational structure in terms of funding, staff structure, benefits, and challenges. The synthesized result from both evaluations gives insight for the KTMPO to consider for a successful deployment.

# Methods

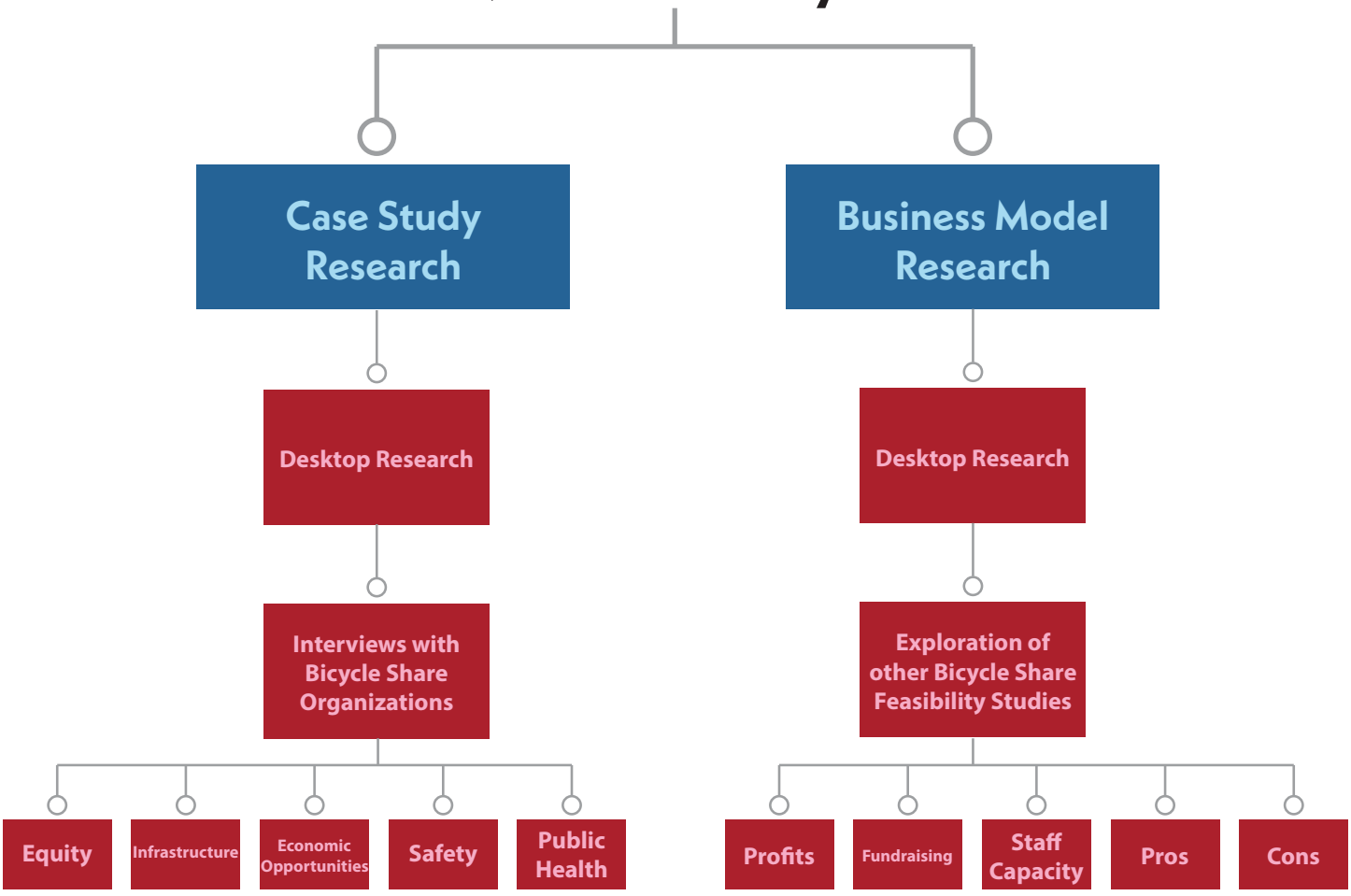
## Case Studies

Many cities in the US have invested in bikeshare systems through various levels of intervention and operating models. These precedents serve as guides for municipalities that are considering deployment of a shared micromobility system. For the case study research, the project team identified four cities in the United States and conducted interviews with organizational leads on bike share initiatives.

Desktop research from rideshare websites and mobile applications, as well as recent news articles and planning documents provided a robust background on each organization. Using a mobility justice lens, the project team considered several ways bike share increases residents' quality of life.

These factors include public health improvements following deployment, connection to economic opportunity for the city as well as the user, infrastructure in terms of on road/off road facilities, safety initiatives to decrease policing of riders, local community partnerships that expand advocacy and strengthen the success of the program.

# Bike Share Feasibility Qualitative Analysis




# BCycle Houston, Texas

Run by Houston Bike Share and funded by local organizations.

## Pricing

Charges apply until bikes are firmly docked at any BCycle station. $26 hold is issued to your card but is removed within 1-7 business days.

**$5 for 30 minutes (ebike)**

**$3 for 30 minutes (bike)**

**$13 for a month**

**$79 for a year**

**$5 for a month**

## Business Model

Houston BCycle, operated by Houston Bike Share, is the largest nonprofit bike share in the United States. Financially supported by funding partners across the city, BCycle benefits from not focusing on the "for profit" part of business but rather delivering a quality resource. Partners include CHI St. Luke's Health, Texas Medical Center, Greystar, Memorial City, University of Houston, and more. Houston BCycle programming covers approximately 80 percent of all the organization's expenses while the other 20 percent comes from sponsorships and fundraising.


## Public Health

Many of Houston BCycle's partners are health care organizations, supporting their mission to provide mobility and personal wellness. In partnership with Legacy Community Health and the American Heart Association, B-cycle provides "Bike Rx" an opportunity for healthcare professionals to prescribe a bike share membership for pre hypertensive and diabetic patients. Legacy Community Health pays an annual membership fee to BCycle and houses a station outside the clinic to assign and train patients on the equipment after providing a prescription.

## Safety

For safety purposes, Houston BCycle exclusively offers bicycle share instead of more diverse micromobility, such as e-scooters. The website, newsletter, and social media platforms for Houston Bike Share post content on bicycle trainings and regulations.

Texas State Law does not require the use of helmets on micromobility; therefore, Houston Bike Share does not offer helmets to riders. No individual under the age of 18 is allowed to use the bike share because a helmet mandate cannot be issued. To offset this challenge, the organization provides members a discount on helmets through local businesses.

## Equity Practices

Houston BCycle is rolling out a cash-based program for individuals without access to a card payment. Based on Go Pass in Cincinnati, the program would allow riders to make in person payments at specified weekly times or through other nonprofits and community organizations.

The organization is working toward a local library program, where riders can check out a bicycle after checking out a book. This program will cater to areas in the city with lower income individuals.

The landing page and mobile application for Houston BCycle both have Spanish versions.

## Economic Opportunity

Houston BCycle is in collaboration with a mobile application developer to create a software that maps routes to themed destinations. The organization intends to work with local businesses to promote restaurants, retailers and more along the routes.

Prior to the pandemic, Houston Bike Share had "Bicycle Bites" with local restaurants to promote their business and offer riders specials and discounts.

## Connectivity

The pedal assisted e-bicycle is welcome on any street or pathway a manual bicycle is allowed. In parks with trails or urban green ways the speed limit for ebicycles is 15 miles per hour. Houston BCycle supports Bike Houston, an advocacy group in the city campaigning for more infrastructure and policies regarding micromobility.


# PeaceHealth Bikes, Eugene

Sponsored by PeaceHealth, a bicycle share nonprofit in Eugene, Oregon.

## Pricing

As long as you bring the bike back into the system and lock it up there is no additional charge.

Out-of-system fee (locking up your bike outside the system): $25

**$1 for 15 minutes**

**$15 for a month**

**$5 for a month**

## Business Model

Similar to Houston B-cycle, PeaceHealth Bikes operates as a nonprofit organization, which they believe helps the organization better serve the public. PeaceHealth, a major health care industry contributor in the City of Eugene is the title sponsor of the bike share organization and is responsibility for contributing most of the finances. Additionally, the city contributes an operator fee while rider revenue is a smaller source of money. Instead of focusing on revenue, the PeaceHealth dedicates their time to improving services. The organization considers the nonprofit a more sustainable model as a public service.

A program of PeaceHealth Bikes offers to businesses and organization in Eugene is the availability of "Group Passes", where the recipient pays a lump sum annually to distribute to staff. One user of this service is the City of Eugene. PeaceHealth Bikes is working with the University of Oregon to establish this service instead of The University paying for discounted student rates.

## Public Health

The sponsorship of PeaceHealth empowers the bike share portion of their organization to put public health at the forefront of their mission. The bicycle share company believes their product not only creates a better environment but a more active individual. While the public transit system is another great alternative to personal vehicles in Eugene, the bikes offered by PeaceHealth are more connected to an active lifestyle.

## Connectivity

Bicyclists in Eugene are required to stay off sidewalks and not obstruct right of ways on the transportation system. The organization devotes time and resources to advocating for increased infrastructure within the municipality due to their belief that the area must accommodate ebicycles if Eugene adopts the technology. For example, when the organization first deployed in Eugene, they provided 600 docking points and stations for 300 vehicles.

PeaceHealth is also considering the adoption of e-scooters in Eugene, but is only considering vendors who have technology to detect if they are on the sidewalk. If detected, the scooter with automatically slow speeds or alert the rider to slow speeds.

## Equity Practices

Prior to the deployment of bicycles, PeaceHealth and the City of Eugene worked with community members to understand if there was a need and buy-in for the service. This included marketing campaigns, town hall meetings and inviting the public to the fleet warehouse for demonstrations.
Eugene is broken into "zones" by PeaceHealth Bikes to distribute services. Each zone must meet a standard quota of vehicles and stations, regardless of rider statistics. This is especially important in low-income zones, regardless of trip generation, to remain committed to equitable practices. Similar to most bike share companies, PeaceHealth Bikes offers a discounted program for individuals receiving social aid benefits. However they go through nontraditional channels to seek out eligible participants. PeaceHealth works with organizations who help those receiving social aid and with services that qualify individuals for service aid, to offer discounted rider rates. One example of an organizational partnership is the local food bank.

## Safety

PeaceHealth Bicycles houses tutorials for riders in their in mobile application to ensure safety when using their vehicles. The organization has a service level agreement with The City of Eugene for availability, service and cleanliness of the vehicles. Therefore, the organization inspects each vehicle every 60 days, ensuring the fleet is up to standard.

## Economic Opportunity

PeaceHealth Bikes developed self-guided tours of the city, by theme, to promote businesses at or near docking stations. The tours are posted online, but prior to the pandemic the maps were also printed for those without internet access. Local and independent businesses are specifically sought after for these tours with no cost to them.


# BikeWalk KC Kansas City

A part of the greater RideKC transportation nonprofit organization.

## Pricing

Charges apply until bikes are firmly docked nearby a hub station, within the coverage area, at a pole or in a bicycle rack.

**$0.10/minutes (bike)**
**$0.15/minute (ebike)**

**$39 for a month**

**$149 for a year**

**$10 off annual membership**

## Business Model

BikeWalk KC operates through Ride KC, a larger nonprofit dedicated to mobility in the Kansas City area. Originally an advocacy group, Ride KC is dedicated to its mission of growing a culture of active, healthy, and sustainable transportation. Through planning, advocacy, design and policy work, Ride KC is a public facing program with a high fare box recovery rate. Subsidized funding from federal and state grants as well as private partners aid with financial responsibilities while the nonprofit focuses on delivering the best product possible.

## Public Health

Beyond guaranteeing safe use of vehicles, RideKC takes diligence with vehicle sanitation. During routine maintenance checks, repairs, and movements of vehicles between hubs staff chemically sanitizes all bikes and scooters.

Since its conception in 2012, Blue Cross Blue Shield has been a major sponsor. Additionally, the bike share has partnerships with medical campuses to offer discounted fares and free access to students. Throughout the pandemic, healthcare workers were offered free memberships.

## Equity Practices

As the operator of RideKC Bike, BikeWalk KC believes that Kansas City's bike share system must find a way to reach those underserved areas of Kansas. The organization reaches underserved populations through housing organizations in the area to provide free access for tenants. For example, Healing House, Inc. is a member of Community Program Partner, connecting needs-based providers throughout Greater Kansas City with low-cost transportation for their clients. Additionally, BikeWalk KC is committed to deploying 20% of its fleet to the LifeX zip codes in Kansas City. LifeX zip codes are the six lowest income populations in the region.

## Economic Opportunity

The Bike Share for All program, in partnership with H&R Block and the Health Forward Foundation, reaches residents through other community organizations. Through a feasibility study, BikeWalk KC discovered effective service-based organizations in the region who provide help to disenfranchised populations. After establishing a partnership, membership in the bike share program is offered through the community organization instead of having to access BikeRide KC online or in-person. The discounted rate is occasionally paid for through the partner but offered generally for $10/month to those who qualify.

## Connectivity

BikeWalk KC, the operator of the bicycle share system in the greater Kansas City area is a nonprofit organization advocating for better bicycle and pedestrian infrastructure. The programs and services offered by the organization in addition to bicycle share works toward empowering citizens communities and professionals for better planning and engineering of their environment. The organization has partnerships with the County's parks and recreation department to establish stations in the major greenspaces in Kansas City. Additionally, the organization is an active participant in transportation planning throughout the metropolitan area. BikeWalk KC recognizes cyclists feel most comfortable in areas with protected infrastructure and advocates for increased implementation in the metropolitan area. BikeWalk KC also influences ridership in more subtle ways, such as the installation of bicycle racks in partnership with downtown neighborhood organizations. The organization creates parking plans in addition to the installations.

## Safety

The larger nonprofit organization dedicates staff, resources and funding to safety programs for cyclists. BikeWalk KC teaches residents across the region, old and young to ride safely. Furthermore, at hub locations the team deploys infographics on the best ways to ride and includes safety measures in the mobile application.

The field and shop operations team takes extra steps to ensure clean and sanitized working areas. Each bike receives a visual inspection every few days and a full maintenance check very month.


# VeoRide Syracuse, NY

A partnership between the city and technological innovation.

Electric and manual bicycles all charge a $1.00 unlocking fee for use. Low-income individuals can have the fee waved.

**$1 to unlock, $0.20 per minute**

**$13 for a month**

**$79 for a year**

**$5 for a month**

## Business Model

VeoRide is a business partnership between the City of Syracuse, Syracuse Department of Transportation and Bolt Mobility. Bolt Mobility is a technology design company for electric scooters, bicycles, and mopeds that helps organizations mobilize an electric micro mobility workforce. The minimum requirement for engaging in a partnership with Bolt from an organizational perspective is agreeing to manage at least 200 vehicles. The benefit of working with a third-party micromobility company, such as Bolt, is their ability to provide supplies, insurance, permitting, training, marketing, software, hardware, compliance and more. Veo oversees the business end of the organization while working collaboratively with the City to determine hub locations and fleet size during different seasons.

## Public Health

The Veo goal for a green and sustainable future comes from a commitment to excellence not only in the vehicles we produce but our internal process of research, design and manufacturing as well. During the COVID19 Health pandemic, the City of Syracuse created mobility hubs adjacent to State testing sites. The goal of this initiative was to connect more individuals with access to free testing. Other city and county testing sites are in municipal buildings, where hubs are already in place.

## Equity Practices

Anyone who qualifies for a Syracuse local, New York State, or federal assistance program, such as Supplemental Nutrition Assistance Program (SNAP) or Medicaid, is eligible for Veo Access Syracuse discounts. The Veo Access homepage for instructions on how to apply and also provides a call based system to allow non-smartphone users and unbanked users to access devices. The City worked with VEO to determine the location of mobility hubs, using existing bicycle racks near community centers and historically lower income areas of the city.

## Connectivity

Syracuse was the first city in the State of New York, excluding New York City to introduce micromobility. The Director of the Department of Public Works, Neil Burke, of Syracuse saw the presence of bikeshare as an opportunity to advocate for more off-road infrastructure. This includes the Empire State Trail, a state wide project to connect New York through greenways. Burke said, "If there are opportunities to collaborate, we are absolutely on board."

The scooters and bicycles in Syracuse are dock-less, except for stations in key locations to promote a more connected mobility network. Placement of stations nearby existing bicycle lanes downtown and Centro bus transfer stations encourages the use of the vehicles for "first/last mile". Stations are located primarily within Downtown Syracuse and the adjacent neighborhoods. The hope is for electric micromobility stations to start branching outward to cover more land in the city and inner ring suburbs. Due to the inclement seasonal weather, the City of Syracuse places the hubs close to building facades. This practice avoids the furnishing zone and snow clearings.

## Safety

Beyond instructional use on the website and mobile application, the partnership between VEO and Syracuse works to integrate different types of safety reminders to riders. Excellus Blue Cross Blue Shield provides safety messaging on each Gotcha Syracuse Sync bike and encourages riders to wear a helmet.

# Key Takeaways from Case Studies

## Public Health

The connections between bike share and public health benefits are very strong. Initiatives to maximize health impacts are well-documented with many precedents. Programs such as "Bike Rx" in Houston partner with local health clinics to prescribe memberships to patients with diabetes and hypertension. The cost is offset by the hospital, so that patients find it much cheaper than a pharmaceutical prescription.

PeaceHealth Bicycles in Eugene is sponsored by PeaceHealth , a regional health care network in the Pacific Northwest. This sponsorship prioritizes improving public health. All the programming and initiatives through PeaceHealth aim to help Eugene residents become more active individuals.

Before deploying a fleet of bicycles, PeaceHealth worked with the community of Eugene to gauge the threats and opportunities associated with introducing rideshare. This process included many workshop demonstrations, marketing campaigns, and town hall meetings for open discussion .

## Equity

Most programs throughout the country offer a discounted rate for those who financially qualify. A few of the programs studied work with organizations in high transit need areas to deliver the discounted rate in addition to the organization's services. Houston is working with local libraries to "check out" bicycles to rent along with books. Beyond discounted fares, the deployment of vehicles can achieve equity measures in bike share feasibility.

**Beyond discounted fares, the deployment of vehicles can achieve equity measures in bicycle share feasibility.**

PeaceHealth uses a zone distribution model to maintain service in each area of the municipality equally despite ridership statistics. In Kansas City, the bike share organization deploys at least 20% of the total fleet in LifeX zip codes, the six lowest-income area zip codes in the region. The City of Syracuse worked with their provider to site mobility hubs close to community centers and historically lower-income areas of the city.

## Infrastructure/Connectivity

Infrastructure relates to transportation connectivity and mobility. In addition to the bike station sites and support facilities, other important considerations for bike share include the required level of street connectivity, pavement condition, and street design. Cities enforce their own speed limits on sidewalks and trails and enforce laws about pedestrian right-of-way. Kansas City and Syracuse used the introduction of bike share to influence advocacy for more on- and off-road infrastructure. BikeRide KC also partners with the Department of Parks and Recreation in Kansas City to integrate and connect trails throughout the region.

## Economic Opportunities

The placement of kiosks near "mobility hubs" adjacent to other major public transportation lines as well as existing bike lanes is another common tactic used by municipalities to emphasize the accessibility of first- and last-mile initiatives. A relatively unexplored feature of bike share in municipalities is its capacity to provide economic opportunities. Houston B-cycle and PeaceHealth both work with local businesses to create rider routes with themed destinations. These opportunities promote retailers, restaurants and more along routes with designated bike lanes and infrastructure. Before the pandemic, Houston worked with local restaurants to promote their business while offering special discounts to bike share patrons.

## Safety

One of the most common concerns with introducing bike share into a new area is safety. No formal safety training is mandatory prior to using rental equipment. Additionally, the majority of the United States does not require helmet use on bikes, therefore encouraging bike share participants to use helmets is difficult. Municipalities have overcome this challenge by providing tutorials and courses on their websites and mobile applications. Additionally, some cities, such as Houston, leverage their partnerships to provide in-person training with new members.

Disease transmission and maintenance are also important factors in advancing bike share safety. For cleanliness and route maintenance checks, many of the municipalities highlighted in the case study analysis deploy a service team to inspect the bikes for any issues. PeaceHealth Bicycles partners with the city for maintenance through a service level agreement, guaranteeing inspection every 60 days for each vehicle.

# Methods

## Business Models

The second part of the evaluation of existing programs was to conduct desktop research and review of other bike share feasibility studies to create a matrix of different ownership and operation models for operating bike share programs.

The models were evaluated based on how they accrue profit, fundraising efforts, staff capacity, and example organizations in the United States. Each was assessed in the context of KTMPO's planning area to determine what advantages and disadvantages they might present for the region.

The following pages present different sets of operating model types with corresponding benefits, challanges, responsibilities, and opportunities for the KTMPO and its planning partners to consider. A summary matrix comparing these different business models can be found in the appendix of this report.


*Pictured : Youth Advisory Commission (YAC) Float in front of King of the Mountains (KOM) Cyclery; Nolanville, TX*

# Nonprofit Owned/ Privately Operated

## Profits

The non-profit ownership of the bicycle share organization retains or splits profit with the private operator. The funds go towards improvement, advocacy or expansion of the bicycle share network.

## Benefits

•Board representation can reflect the specific biking community.

•The nonprofit staff can focus on the delivery of the bicycle share mission without the drive to make profit.

•More likely to acknowledge issues on system equity and promote public health.

•Corporate or institutional sponsors often work with non-profits, potential for partnerships.

•Profits can be reinvested into the system for expansion.

•Ability to lower bike share costs depending on the success of fundraising.

•Nonprofits generate foundational and personal donations for revenue.

## Fundraising

Public grants, county sales tax revenue, membership revenue, sponsorship, advertising revenue.

## Staff Capacity

Nonprofit employees are dedicated to the mission of bike sharing.

## Challenges

•Government grant monies must be brokered through government agencies, therefore the nonprofit cannot generate as much funding.

•Need to be profitable may limit ability to prioritize equity and delivering the best product.

•If operations performance is poor, it may be difficult for a non-profit to change course quickly.

•With a larger system (>200 bikes), non-profit may have difficulty assembling experienced staff, more of a learning curve.

•Less likely for bike share to become fully integrated into transportation system without connections to other transit providers.

## Example Model

# Shared Mobility Buffalo, New York

# Nonprofit Owned/ Nonprofit Operated

## Profits

The non-profit organization retains profits of the bicycle share organization. Profits go towards staffing, improvement, advocacy or expansion.

## Benefits

•Board representation can reflect the specific biking community.

•The nonprofit staff can focus on the delivery of the bicycle share mission without the drive to make profit.

•More likely to acknowledge issues on system equity and promote public health.

•Corporate or institutional sponsors often work with non-profits, potential for partnerships.

•Profits can be reinvested into the system for expansion. Ability to lower bike share costs depending on the success of fundraising.

•Nonprofits generate foundational and personal donations for revenue.

## Fundraising

Agency or non-profit (or both) can fund raise. All funding types are in play under this model.

## Staff Capacity

Staff dedicated specifically to the mission of bike sharing.

## Challenges

•Government grant monies must be brokered through government agencies, therefore the nonprofit cannot generate as much funding.

•The need to be profitable may limit ability to prioritize equity and delivering the best product.

•If operations performance is poor, it may be difficult for a non-profit to change course quickly.

•With a larger system (>200 bikes), non-profit may have difficulty assembling experienced staff, more of a learning curve.

•Less likely for bike share to become fully integrated into transportation system without connections to other transit providers.

•Costs related to staffing and union rules will likely make operations more expensive.

•Regional bike share programs require multiple agencies to cooperate and coordinate.

## Example Model

# Denver B-Cycle Denver, Colorado

# Publicly Owned/ Publicly Operated

## Profits

The public agency retains profits of the bicycle share organization. Profits go towards staffing, improvement, advocacy or expansion.

## Benefits

•Highest level of public control and transparency of all the business models.

•Profits could be returned to the City or regional entity as revenue, or reinvested into the system.

•For a multi-jurisdictional system, a regional agency has greater ability to coordinate among the jurisdictions.

•May have stronger connections and higher-level experience to bring in state or federal funding.

•Higher likelihood to coordinate a unified bike share and public transit hub/technology/passes.

•Strong oversight of contract operator.

•Opportunity to integrate with established transportation/transit practices.

## Fundraising

Agency responsible for fundraising. Typically a mix of federal, state, local grants; memberships; sponsorships; and user revenues.

## Staff Capacity

Requires agency staff capacity for fundraising, oversight of the system and operations and marketing staff management.

## Challenges

•Agency may not see it within their mission to govern a bike share system (unless they typically deal with multi-modal transportation)

•Concern may exist about potential liability to the city, county, etc.

•Requires significant time commitment by agency staff.

•Some corporate or institutional sponsors may feel uncomfortable dealing with and giving money to a government agency.

•Minimal precedent - few cities in the US have used a public agency or regional transit authority to operate their bike share systems.

•Public agencies lacks experience and knowledge of bike share operations.

•Costs related to staffing and union rules will likely make operations more expensive.

•Regional bike share programs require multiple agencies to cooperate and coordinate.

## Example Model

### Topeka MetroBike Topeka, Kansas

# Publicly Owned/ Privately Operated

## Profits

The public agency retains profits of the bicycle share organization or splits with the private company. Profits go towards staffing, improvement, advocacy or expansion.

## Benefits

•Highest level of public control and transparency of all the business models.

•Profits could be returned to the City or regional entity as revenue, or reinvested into the system.

•For a multi-jurisdictional system, a regional agency has greater ability to coordinate among the jurisdictions.

•May have stronger connections and higher-level experience to bring in state or federal funding.

•Higher likelihood to coordinate a unified bike share and public transit hub/technology/passes.

•Strong oversight of contract operator.

•Opportunity to integrate with established transportation/transit practices.

## Fundraising

Agency responsible for fundraising. Typically a mix of federal, state, local grants; memberships; sponsorships; and user revenues.

## Staff Capacity

Requires agency staff capacity for fundraising and oversight of the system, but makes use of the private sector experience for operations.

## Challenges

•Agency may not see it within their mission to govern a bike share system (unless they are a transit entity).

•Concern may exist about potential liability to the city, county, etc. if the program fails to be successful.

•Requires significant time commitment by agency staff. Some corporate or institutional sponsors are less likely to donate to a government agency.

•Public agencies lacks experience and knowledge of bike share operations.

•Costs related to staffing and union rules will likely make operations more expensive.

•Regional bike share programs require multiple agencies to cooperate and coordinate.

## Example Model

# MetroBike Austin, Texas

# For Profit Business

## Profits

The for-profit ownership and operation of the bicycle share organization retains all profits. The funds go continuation for the delivery of services.

## Benefits

•A private company takes on risks in terms of financing and safety, relieving the public sector portion of the company.

•Can assemble capital relatively quickly.

•The focus on profitability will increase service and efficiency in high demand areas (especially those frequented by visitors and tourists).

•Can handle multi-jurisdictional systems relatively easily, such as metropolitan planning organizations.

• If operations performance is poor for an extended period, a new vendor can be hired for operations.

•A private experienced company has more knowledge on operational issues from other systems.

•Can mobilize equipment and staff from other systems if needed.

## Fundraising

Private investment, user revenues, sponsorship and advertising.

## Staff Capacity

Small business with entrepreneurial mentality.

## Challenges

•Government grant monies must be brokered through government agencies, therefore the private business is not eligible.

•Need to be profitable may limit ability to prioritize equity and delivering the best product.

•Foundation grants and donations less likely.

•Less public transparency.

## Example Model

# Citi Bike New York City, New York

# Key Takeaways from Operating Models

It's essential for municipalities and intergovernmental organizations, such as KTMPO, who are exploring the feasibility of bike share to contemplate the structure of the program. Selecting a business model will require deciding who will own the assets, administer the program, and oversee day-to-day operations. Each of the explored models presents benefits and challenges specific to the KTMPO area.

If considering a micromobility justice lens for rideshare deployment, the nonprofit models (nonprofit owned and operated, or nonprofit owned and privately operated) are most efficient. Due to mission, capacity, and staff dedication, the nonprofit can focus time, programming, and funding to increasing ridership. Depending on the nonprofit, the organization can choose to prioritize a value that aligns best with their mission such as equity, safety, public health, or active transportation advocacy. Additionally, partnership between nonprofit organizations with public agencies, private funding corporations as well as other grassroots organizations are common.

The nonprofit can leverage these relationships to diversify their funding and explore different methods of boosting ridership. The main challenge with nonprofit models is the difficulty of delivering service to a large region, especially across municipalities due to staff and funding capacity. This would be a relevant challenge to the KTMPO area, which is comprised of both high- and low-density municipalities. Additionally, while partnerships between public transit and nonprofits are possible, the lack of built-in connection creates a barrier to potential mobility hubs. The uncertainty of the business aspect of the bike share organization can be combated through the private ownership model.

**Selecting a business model will require deciding who will own the assets, administer the program, and oversee day-to-day operations.**

If the metropolitan area wants to consider a more holistic approach, a public agency model of bike share is a strong option. The connections to other forms of transportation, as well as the continuity of municipal-wide policies and infrastructure to support cyclists would support micromobility on a more overarching level.

The money generated from the membership and fees can be reinvested into the broader transportation system beyond the bike share system, which can increase opportunities for on- and off-road infrastructure for cyclists in the KTMPO region. Additionally, public agency involvement could be leveraged to strengthen the connection between bike share and other forms of public transportation. With public ownership or operation, there is more transparency for the public. These models do present challenges such as the time commitments they require from untrained government employees to deliver the service. Specifically, a consideration for the KTMPO area is that governing over a multi-jurisdictional region would require increased coordination between public agencies.

By contrast, if the KTMPO area wanted to approach bike share model with built-in expertise, they might use the for-profit business model.

This method offers an opportunity for the municipal governments to vet several private corporations and determine which company aligns best with the region. The benefit of hiring a private company for bike share is that the organization provides full-service maintenance and has experience with larger systems. In a density-diverse region such as the KTMPO, a large systems provider would be an asset. The challenges associated with a for-profit model is the lack of public transparency and lack of equity associated with deployment. This challenge can be overcome with a private-public partnership but would require significant work from the government side.

The business model the members of KTMPO decide to use to deploy micromobility will be dependent on the climate of the metropolitan area and which organizations are prepared to take responsibility for operations. In the recommendations chapter, example initiatives explore different methods of piquing interest in ownership and operations with organizations in the area.

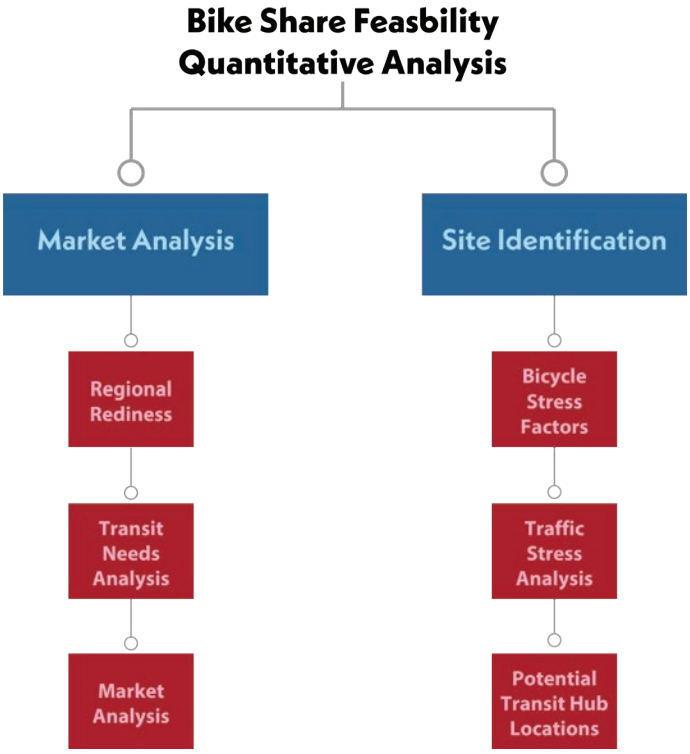
# Chapter 3: Market Analysis and Site Identification

# Chapter Overview

The quantitative analysis in this chapter analyzes the Killeen-Temple Metropolitan Area in terms of characteristics and conditions for bike share preparedness. The bike share program market analysis consists of three components:

1. Regional Readiness,
2. Bicycle Stress Factors, and
3. Assessment of Mobility Needs.

The other part of the quantitative analysis is the site identification of potential mobility hubs in consideration of traffic and proximity to cultural assets. The following sections outline the methodology for all these processes as well as the results and analysis.




# Region Readiness

The first component of the market analysis reviews region readiness for a bike share system; this assessment highlights the stakeholder opinions and experiences as they relate to bike share systems.

## Methods

Killeen-Temple Metropolitan Planning Organization stakeholders meet monthly to review current goals and objectives and to identify new challenges and opportunities. Local businesses and public entities are invited to participate with KTMPO as the lead agency, and the Bicycle Pedestrian Advisory Committee (BPAC) as the main stakeholder. The BPAC has connections to a robust network of transportation providers and is well-prepared to contact and work with the target populations.

As the lead agency, KTMPO facilitates discussions to recognize and prioritize goals. As part of this market analysis, stakeholders were surveyed to gauge the region's readiness for bike share systems. Survey questions focused primarily on understanding the region's capacity and awareness of the practice. Seven members of the BPAC submitted responses.

## Results

BPAC members were asked to rate the region's capacity to support a bike share system on a scale of 1-5. One represented a low capacity for bike share and five represented a high capacity. Most respondents determined the region's capacity fell at a 3, not significantly under-prepared but also not significantly prepared to support a bike share system.

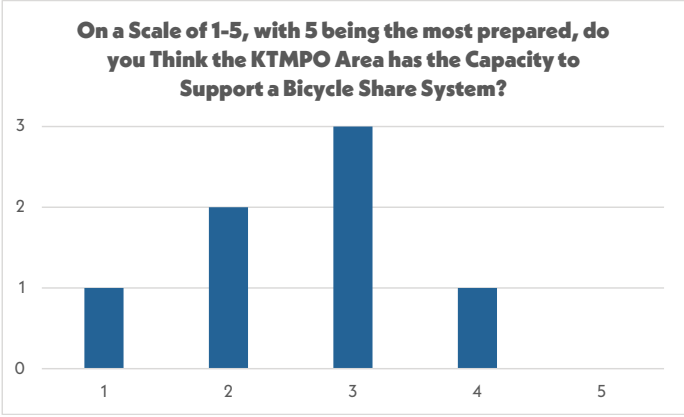



*Figure 3.1: Anticipated KTMPO Bike Share Capacity*

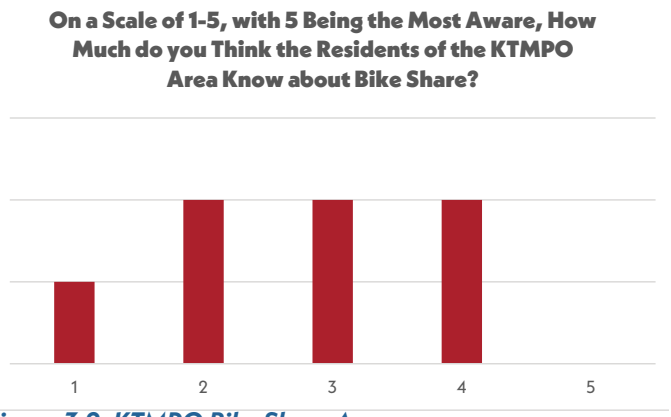



*Figure 3.2: KTMPO Bike Share Awareness*

In a follow up question, the participants were asked to explain their ranking. Most respondents expressed concerns about a lack of regional connectivity. They noted that the lack of connectivity between the municipalities and dedicated infrastructure for cyclists in the region would pose problems. Respondents also shared concerns about the feasibility of a bike share system given the varying populations across the region.

One participant also indicated a need for more education on the topic, noting that there are "not enough safe routes between the communities and driver education [for] interacting with bicycles...". Other concerns included the low level of interest and the challenge of providing equitable access to bicycle infrastructure. A few were hopeful for the collaboration, noting benefits for even smaller parts of the KTMPO.

In a secondary follow-up question, respondents considered the barriers the region would have to overcome to support a bike share system. In preparation for a bike share system, the BPAC respondents emphasized the importance of connecting through trails and bicycle lanes, especially between municipalities. This is especially relevant between Killeen and Copperas Cove, as the main transportation connection is Interstate Highway 14.

Other important facets for KTMPO to consider are a shared vision, residential need, and greater localization. Survey respondents indicated citizens have expressed very little, if any, interest in a bike share system. Only one respondent confirmed a public interest in the system. Another respondent suggested household income may play a role in the public perception of a bike share system; assuming households with greater incomes may not be interested while those with lower incomes may be more open to the idea.

When asked to rate resident awareness of bike share systems on a scale of 1-5, respondents were split.

On a scale of one to five, with five being the most aware, the respondents predominantly selected options two through four, indicating some knowledge of bike share systems but opportunity to learn more.

Residential and driver awareness is a vital component of a successful bike share system. When residents are unaware of the system, they will not use it. When drivers are unaware, there is a greater risk of vehicle and cyclist collisions. Throughout the survey, respondents placed emphasis on a need for education on the subject and regional coordination. If the region decides to pursue a shared bicycle system, informational sessions and materials will be an important tool to address these concerns.

**"Temple and Killeen definitely have the populations to support such a program. Even towns as small as mine (Rockdale) might get some use from it."**

# Bicycle Stress Factors

The second component of the market analysis was to evaluate bicycle stress factors to supplement the data gathered from stakeholders. Generally, where there are high speed limits, multiple lanes of vehicle traffic, and limited access to bicycle infrastructure, there is a greater amount of stress on cyclists and non-motorized traffic. These features are considered bicycle stress factors. Non-motorized trails, protected or buffered bike lanes, and shared lane markings reduce stress and improve pedestrian and cyclist safety.

## Methods

Bicycle Stress Factors were studied using the BLTS (Bike Level of Traffic Stress) method. This method combines speed, average daily traffic, and the number of lanes to determine the overall feasibility and overall safety of the roadway. The daily traffic and lane information came from the Texas Department of Transportation data site.

The matrix below outlines how levels of stress were determined. Roadways with speed limits at or above 35 miles per hour may create significant stress depending on the number of lanes present and the average daily traffic (ADT) counts. Roadways with speed limits at or above 40 miles per hour create significant stress regardless of other factors. Figure 3.3 shows the varying levels of bicycle stress in the KTMPO region.

## Results

The major arterial roads and interstate highways between the four largest municipalities in the KTMPO planning area are some of the most stressful places for bicycle riders.

Highways such as IH-14 and IH-35, in addition to US 190, FM 2410, FM 3369, FM 935, FM 2268, SH 53, SH 36, SH 93, and SH 195 all scored a four on the LTS scale.

This is likely due to the higher speed limits, high number of lanes and traffic on these highways in addition to the lack of bicycle and pedestrian infrastructure. Roadway connections between municipalities are weakened by these same factors.

Within the City of Temple, the NE H K Dodgen Loop, I-35 and N 3rd Street are also all higher stress roadways for riders. Similarly, in Belton the continuation of IH-35, FM 439, SH 93, and FM 436 are difficult places to ride.

In Killeen, the major north-south routes are challenging for bicyclists, as is the W Central Texas Expressway (frontage roads of IH 14).

| Number of Lanes | Average Daily Traffic (ADT) | Speeds | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | < or Equal to 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 1L (no centerline) | 0 - 750 | 1 | 1 | 2 | 2 | 3 | 3 | 3 |
| | 751 - 1,500 | 1 | 1 | 2 | 3 | 3 | 4 | 4 |
| | 1,501 - 3,000 | 2 | 2 | 2 | 3 | 4 | 4 | 4 |
| | 3,000 or > | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| 2-3 | 0 - 750 | 1 | 1 | 2 | 2 | 3 | 3 | 3 |
| | 751 - 1,500 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| | 1,501 or > | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| 4-5 | 0 - 8,000 | 3 | 3 | 3 | 3 | 4 | 4 | 4 |
| | 8,001 or > | 3 | 3 | 4 | 4 | 4 | 4 | 4 |
| 6+ | Any | 3 | 3 | 4 | 4 | 4 | 4 | 4 |

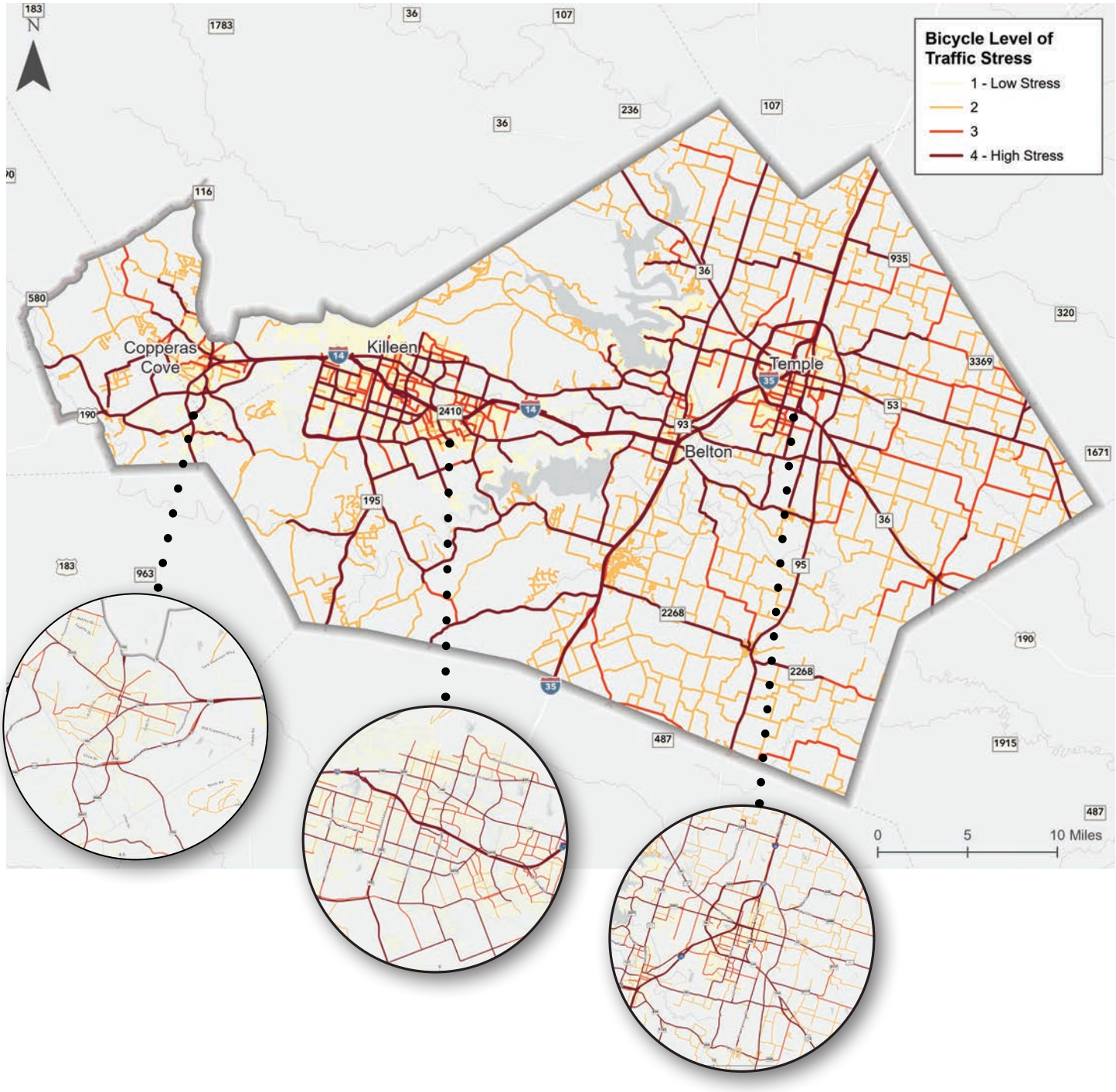
*Table 3.3: Stress Level Indicators*

In Copperas Cove, most streets which run through the area present lower stress, as the high-stress interstate surrounds the higher density streets.

Generally, residential and shorter streets in the municipal cores of the KTMPO were rated as lower-stress due to their lack of vehicular traffic, lower speed limits and fewer number of lanes.

These areas were later considered in the potential mobility hub maps as opportunities for bike share due to their low stress on cyclists and proximity to higher employment, education, and retail opportunities.

*Figure 3.3: KTMPO Bicycle Level of Traffic Stress*



# Mobility Needs Index

Disproportionate distribution of mobility access and transportation services hinders access to a range of social, educational, and employment opportunities. Additionally, lack of mobility access prevents individuals from protecting themselves or escaping as a response to an emergency. To address these challenges and other mobility issues, the third component of the bikeshare market analysis is Assessment of Mobility Needs.

## Methods

The first step in the assessment of a potential market for a bike share program is a demographic mobility needs analysis that highlights communities in the region with disproportionate mobility needs. Results of the analysis are ranked to illustrate which communities have the greatest needs; this ranking creates a Transportation Needs Index (TNI). Communities with greater index values have a higher need for diverse transportation options such as a shared bicycle system. The mobility index uses American Community Survey and Decennial Census data to identify populations with mobility needs.

This index specifically highlights the elderly population, persons 18 years and under, minority populations, households with no vehicles, populations with limited English proficiency, population density, and unemployed populations.

The mobility index evaluates the study area averages of these demographics to indicate whether block groups in the KTMPO have a disproportionately higher amounts of populations with transit needs. This process was completed by dividing each mobility needs population group to the total block group population. This percentage was then averaged across the entire study area. Each block group percentage was then ranked on how much higher they compared to the overall average of the study area. The sum of all the mobility needs group rankings were multiplied by a population density ranking to produce the index.

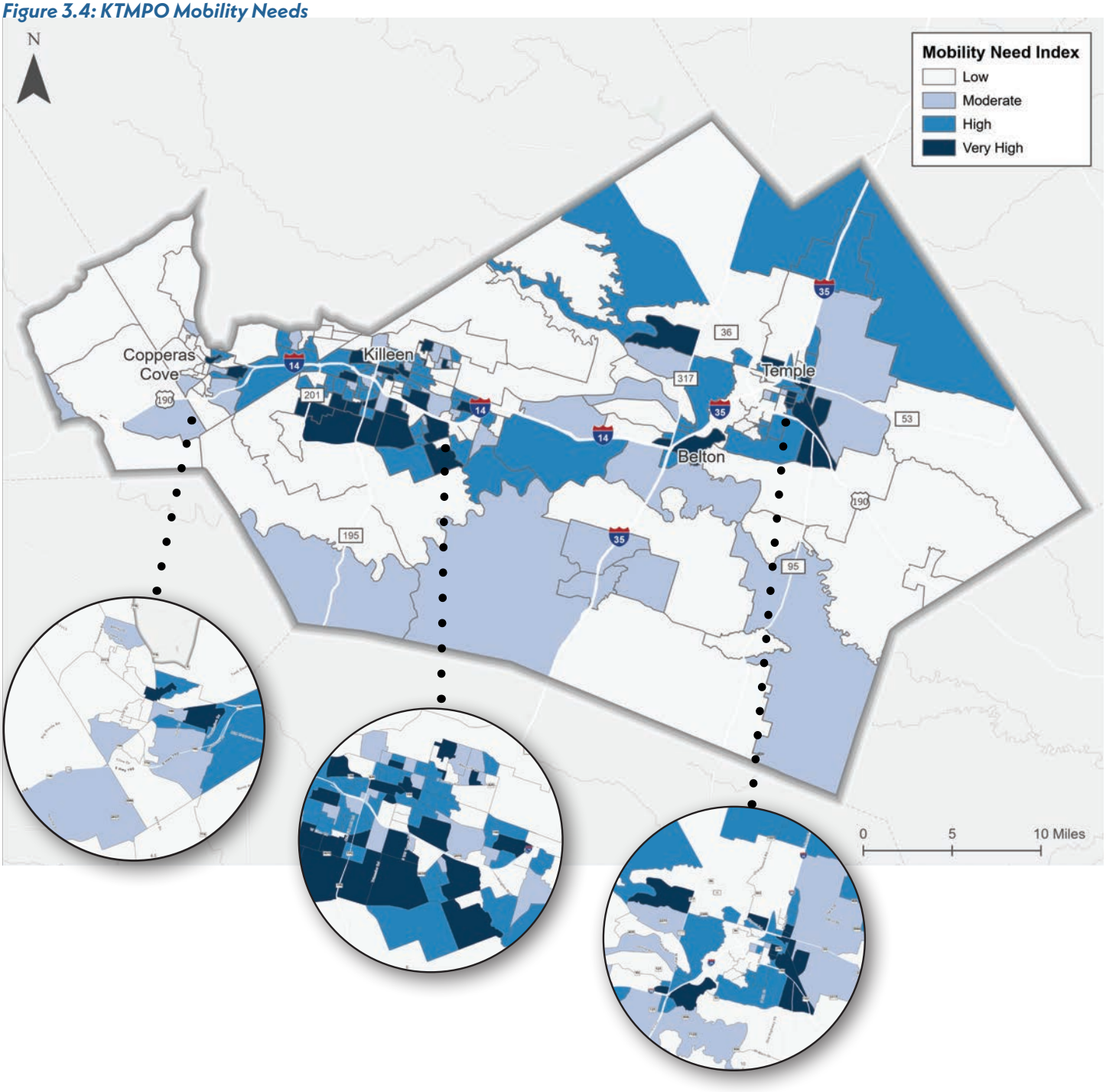
The population and employment densities from the needs index were then used to identify areas that can not only support additional transportation options but are in need of those options. These areas are illustrated on the following page in Figure 3.4 KTMPO Mobility Needs.

## Results

Areas of high mobility need are important to consider for the future deployment of a bikeshare program. For these block groups, access to an affordable, active transportation mode could lead to higher quality of life opportunities.

Figure 3.5 reviews the overlap between population and employment density in the metropolitan area. The map reveals a trend that is similar to the mobility needs index. Generally, the populations with higher transit needs reside in the downtown cores of the major municipalities in the KTMPO region. Exceptions to this pattern include the northeast and northwest outer ring suburbs of Temple, in addition to block groups between Belton and Killeen south of Interstate Highway 14.

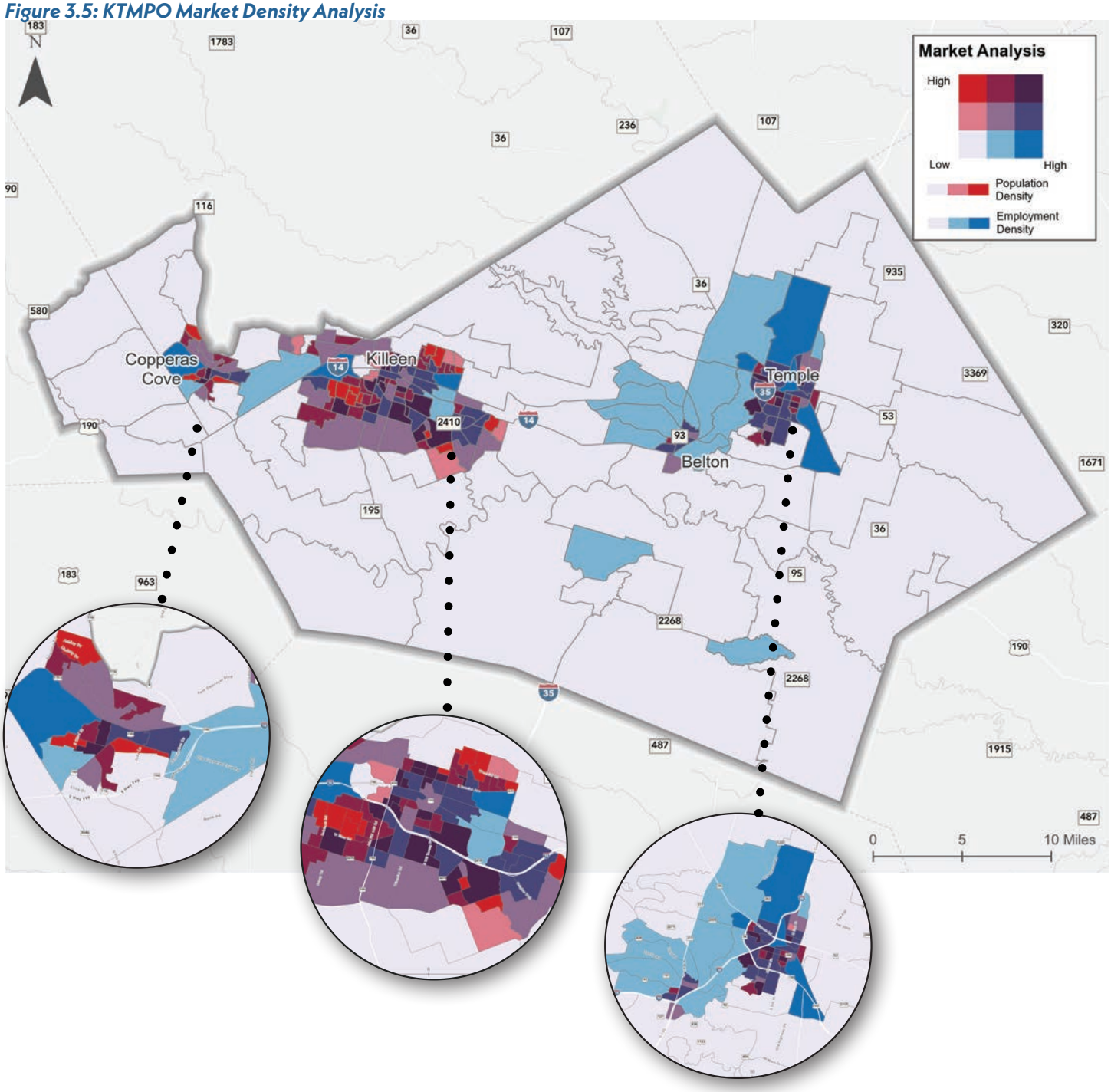
*Figure 3.4: KTMPO Mobility Needs*



Other outliers in this analysis are Holland and Salado areas in the southeast part of the metropolitan area.

The entire core of the Belton area demonstrates high or very high transit needs. In the Temple downtown area, the populations with the highest transit needs were determined to be in the southern and eastern parts of the city along US 190 as well as the neighborhoods between W Avenue H and W Avenue R. In Killeen, the populations with higher transit needs are in the southern portion of the core, south of IH 14. Copperas Cove experiences more transit need on the eastern side of downtown, leading towards Killeen along the highway.

***Figure 3.5: KTMPO Market Density Analysis***



# Potential Mobility Hubs

## Methods

The final component of the market analysis is the identification of likely mobility hubs and evaluating their potential for deployment of bikeshare stations. Mobility hubs are shared destinations for multiple modes of transportation. They create opportunities for connecting between different modes of transportation and thus improve overall connectivity. These access points are most effective when placed near cultural centers, employment centers, schools and public spaces such as parks. Ideally, bike share stations and zones for leaving the vehicles would be within the mobility hubs.

The maps of potential deployment zones for bike share stations concentrate on the previously identified zones with high populations and employment densities, as well as greater mobility-need scores. The analysis uses a combination of the bicycle stress score and market analysis, in addition to identifying transit connectivity and key destinations, to highlight important areas in each major municipality of the KTMPO. These maps highlight amenities such as existing transit stops, bike infrastructure, low levels of bicycle stress as well as proximity to parks, schools, and businesses.

## Results

The following series of maps reflect the inclusion of a quarter mile buffer surrounding the identified locations in Belton, Copperas Cove, Harker Heights, Killeen, and Temple. Figure 3.7 on the following page shows the bikeshare zone in Belton in relationship to existing community resources.

*Figure 3.6: KTMPO Potential Mobility Hubs*

**Parks**



**Business Park**



**School**



**Healthcare Facility**

## Belton

Figures 3.7 and 3.8 provide a comparative view of the potential bikeshare zone in relation to the bicycle stress level on the transportation network in Belton. The identified mobility hub zone surrounds Main St., being a central commercial avenue running north-south in the municipal core.

The zone follows part of the Chisholm Trail along the water and nearby parks like Yettie Polk and Confederate. Southwest Elementary, the Housing Authority, and Bell County Museum are also within the zone.

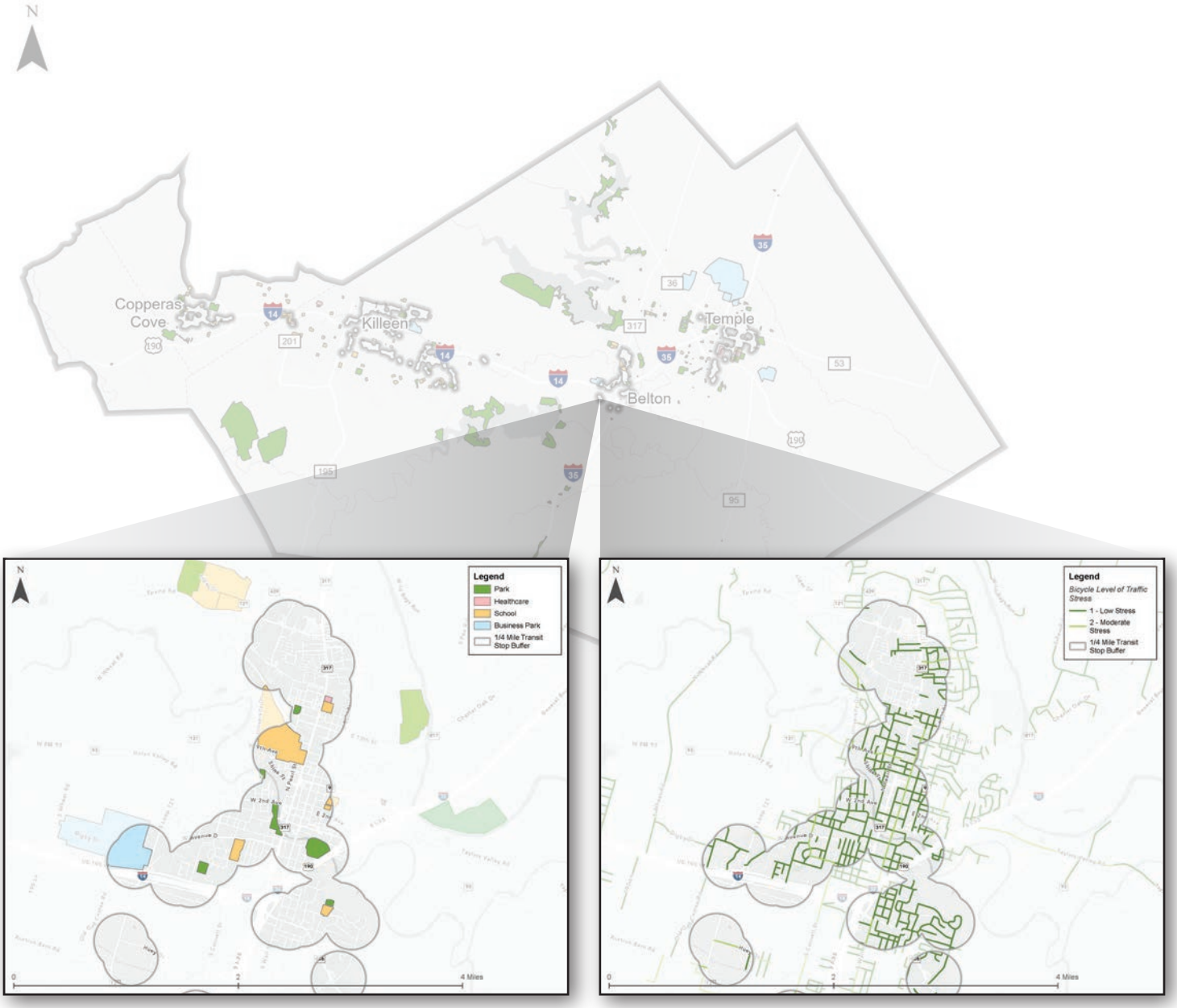



*Figure 3.7: Potential Bike Share Zone in Belton by Cultural Resources*

*Figure 3.8: Potential Bike Share Zone in Belton by Bicycle Stress*

## Copperas Cove

Figure 3.9 and 3.10 illustrate overviews of the potential bikeshare zone in Copperas Cove in relationship the existing cultural resources and areas of bicycle stress respectively. In Copperas Cove, the buffered mobility hub zone follows US 190 going east to west in the northern section of the municipal core. The area highlighted includes cultural centers such as City and Estates Parks as well as Copperas Cove Cemetery. Halstead Elementary, the Junior High School, and High School are within the zone.

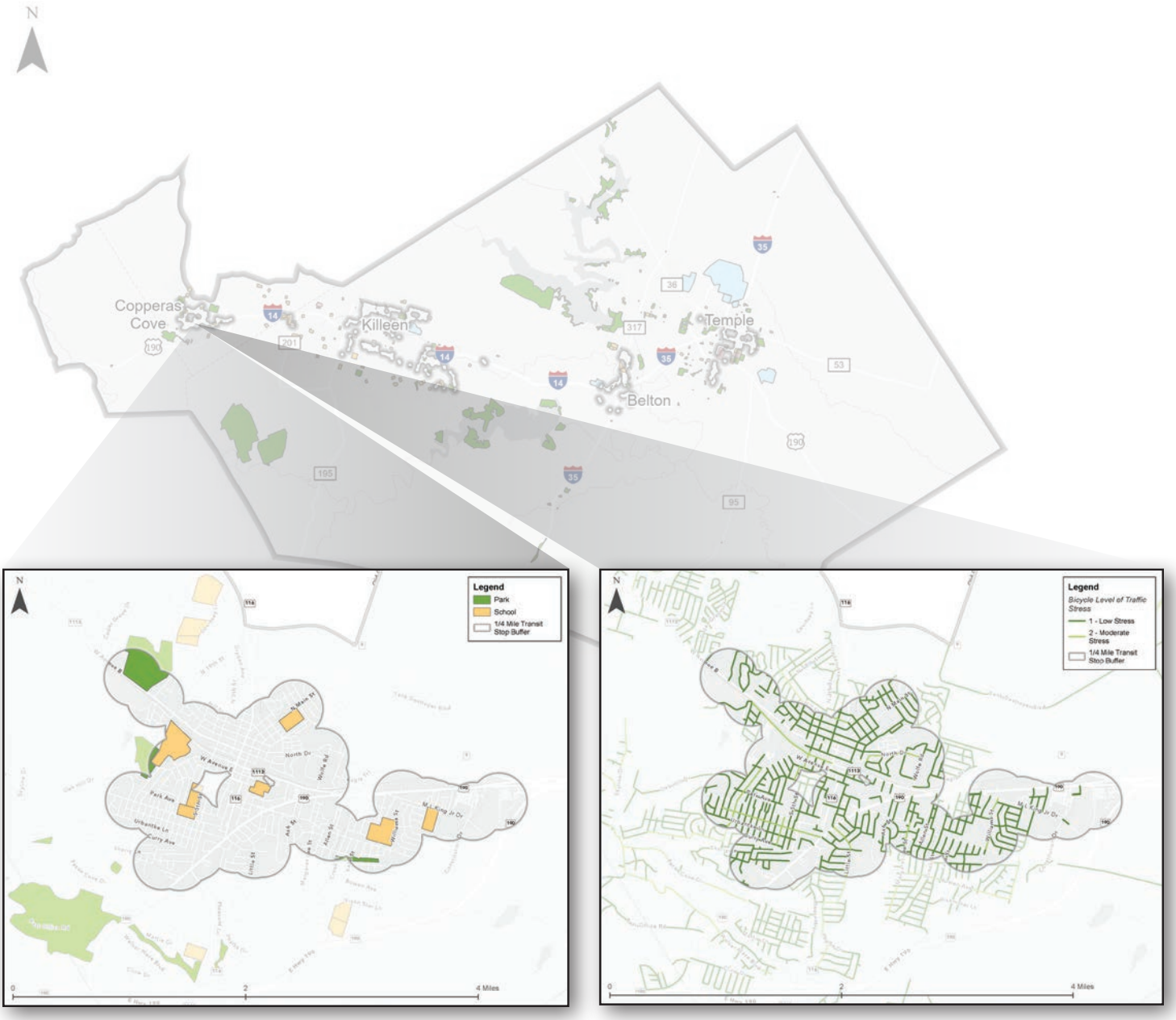



*Figure 3.9: Potential Bike Share Zone in Copperas Cove by Cultural Resources*

*Figure 3.10: Potential Bike Share Zone in Copperas Cove by Bicycle Stress*

## Harker Heights

Figure 3.11 and 3.12 show the potential bikeshare zone in Harker Heights in relationship to the existing cultural resources and areas of bicycle stress. In Harker Heights, the buffered mobility hub zone follows Beeline Ln and Indian Trl east to west straddling a section of IH 14. The area highlighted includes cultural centers such as the Public Library and Carl Levin Park. Harker Heights High School and Community Park are within the zone in addition to a number of commercial centers.


*Figure 3.11: Potential Bike Share Zone in Harker Heights by Cultural Resources*

*Figure 3.12: Potential Bike Share Zone in Harker Heights by Bicycle Stress*

## Killeen

The assessment identified the potential for mobility hubs that could support the deployment of a bikeshare in the downtown area of Killeen. Figure 3.13 provides an illustration of the potential bikeshare zone in relation to cultural resources. The zones are roughly between the E Central Texas Expressway going east to west, a major commercial street in Killeen. Around these zones are important destinations for goods such as the HEB and Target.

The Andy K. Wells Hike and Bike Trail, Long Branch Park, and Harker Heights are all within or nearby the mobility hub zones. The Skylark Airport as well as the High School are also included in this area.

Figure 3.14 shows the bicycle stress levels on the transportation system serving these and other destinations in Killeen.

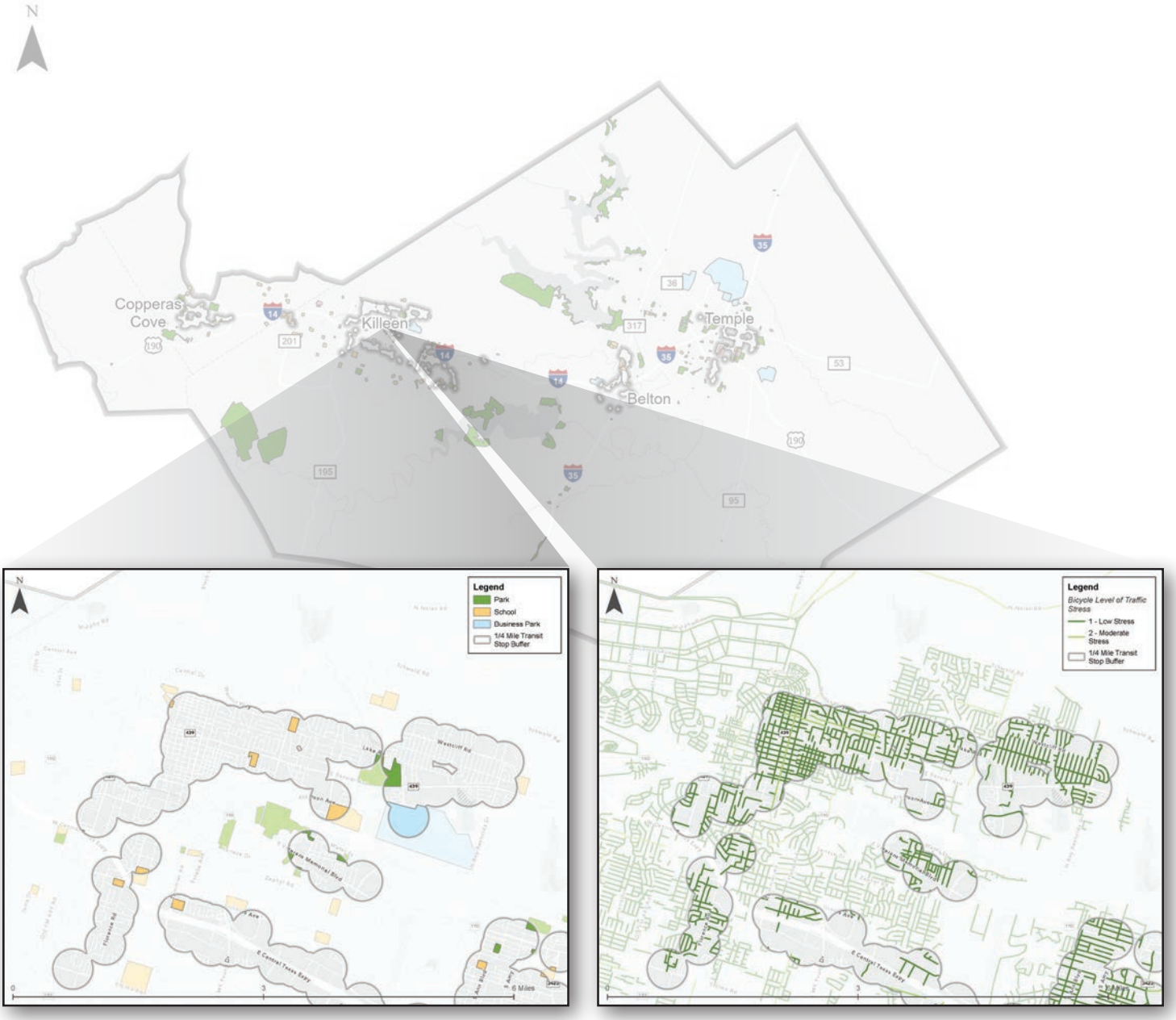



*Figure 3.13: Potential Bike Share Zone in Killeen by Cultural Resources*

*Figure 3.14: Potential Bike Share Zone in Killeen by Bicycle Stress*

## Temple

Figure 3.15 provides a comparative view of the potential bikeshare zone in Temple along with significant area cultural resources. In Temple, the mobility hubs are in the downtown core, which is in the central east area of the municipality. The zone encompasses many commercial and residential streets in the area, specifically Adams Avenue, 3rd Street, and H K Dodgen Loop.

The zone includes educational institutions such as Lamar Middle School, Jefferson Elementary, and Temple College. Cultural Centers such as the Czech Heritage Museum, Temple Railroad and Heritage Museum, and the VA Hospital are in the identified area. Public spaces such as Whistle Stop Park, James Wilson Park and Tarrant Lake Park are also in this area. Figure 3.16 shows the bikeshare zone in relation to the area transportation system bicycle stress.

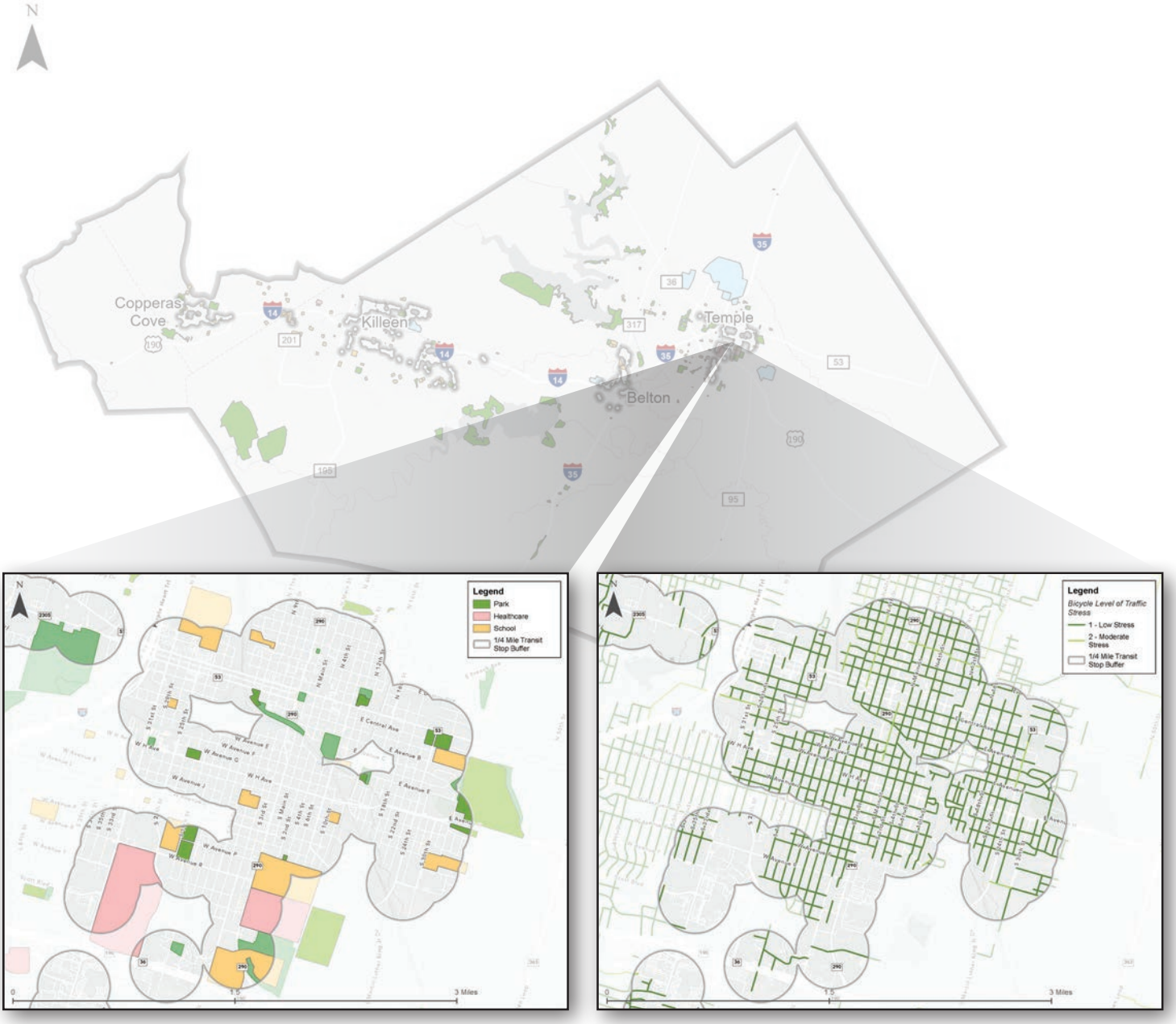



*Figure 3.15: Potential Bike Share Zone in Temple by Cultural Resources*

*Figure 3.16: Potential Bike Share Zone in Temple by Bicycle Stress*

# Conclusion

Overall, streets within the municipal cores of the KTMPO are the most equipped for bike share deployment in the early phases. Places with higher employment and residential densities, streets with lower levels of stress and higher mobility needs are excellent targets for the beginning stages of developing mobility stations and zones.

Bicycle stress as indicated by the maps and leadership survey responses is high between the denser urban cores of the metropolitan area. The need for connection as well as bicycle education were a primary focus of the survey responses from the BPAC in terms of regional readiness. The quantitative data helped support recommendations and strategies for the future of bike share in the KTMPO.

Overall, regional readiness for immediate deployment of a bike share system is low, and the primary thoroughfare network has a high level of bicycle stress factors.

The market density to support a bike share system may already be present in some of the city urban centers, though public surveys and community engagement would need to be conducted to shift from a high level feasibility assessment to a deployment analysis. As this level of detail was not in the scope of the development of this report, the project team is including this and other strategies in the development of the recommendations presented in the next chapter.

# Chapter 4: Implementation Recommendations and Strategies

# Chapter Overview

The analysis from case study research and data assessments of the KTMPO area serves to inform recommendations for elected officials, leadership, and stakeholders of the municipalities. The qualitative and quantitative results from the study indicate the metropolitan area should consider the deployment of shared micromobility but must take interim steps needed to establish a foundation before attempting to develop a system-wide plan. This chapter explores five strategies for the KTMPO to consider to prepare for introducing bike share to the region. Each strategy has example initiatives, goals and objectives satisfied, and a general timeline for completion.

## Implementation Guide Timeline

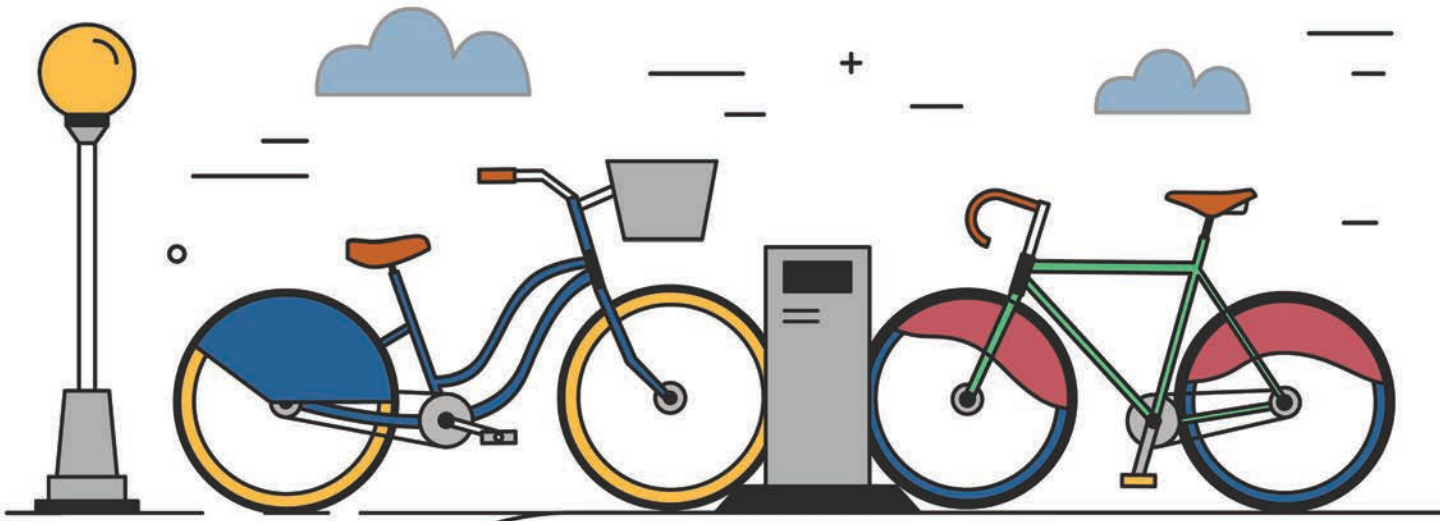
The strategies are listed in chronological order in the following pages. Within each strategy is a suggested timeline for the KTMPO to consider during implementation. The timeline of the recommendation will provide a phased approach for delivering services based on initiatives and efforts the bike share leadership and stakeholders must take to execute successful deployment.

**Immediate**
Efforts to achieve strategy take place over the next 6 months to a year.

**Short Term**
Efforts to achieve strategy occur within one to two years.

**Mid Term**
Efforts to achieve strategy occur within two to five years.

***Ongoing:** Efforts to achieve strategy are continuous.



## Goals

The establishment of overarching goals to satisfy aspects of mobility justice will provide guidance for the preparation and implementation of bike share.

It is crucial the organization, stakeholders, and future bike share leadership acknowledge justice goals to deliver the best transportation service possible to residents in the metropolitan area.

### Equity

The fair distribution of resources and services throughout the KTMPO region to primarily serve individuals without proportional access to mobility options.

### Safety

The protection of vulnerable micromobility users from other vehicles, hazardous road conditions and informational barriers to bicycle use.

### Partnerships

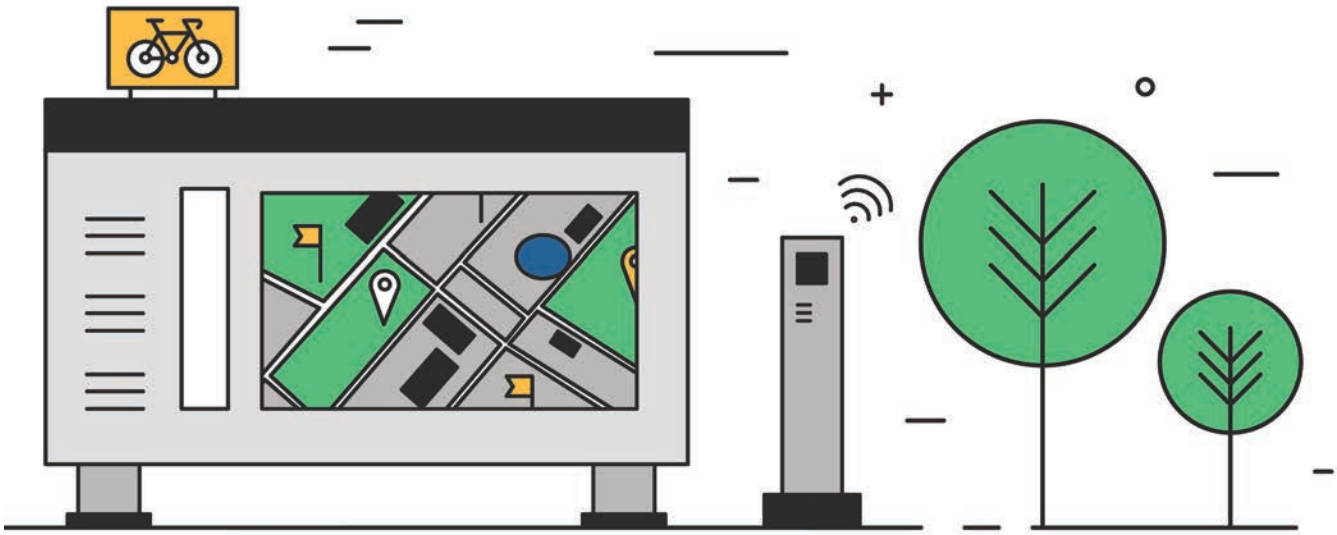
The building of strong relationships with residents, leaders, businesses, and cultural institutions in the KTMPO community for wider delivery of bicycle share services

### Smart Growth

The reinvestment of resources to create transportation choices to serve every type of road user.

### Public Health

The promotion of sustainable transportation options to build live, work and play communities that support the well-being of residents.



# Exploration of Business Models

## Timeline

Immediate

## Goals

Equity

Partnerships

Smart Growth

Public Health

## Performance Measures

- The number of organizations vetted for bicycle share leadership in the region
- Meetings with bicycle vendors
- Selection of business model appropriate for the KTMPO area
- Feedback from bicycle leadership in the KTMPO area.


## Summary

The KTMPO should explore the research presented in this study and work with its planning partners to determine which business model of the five listed in previous chapters will work best for the area. During this time, the KTMPO should consider profits, fundraising, benefits, and challenges specific to the region for bike share models. Building on the case studies and peer program comparisons done in this study, as the local preference of business models emerges, KTMPO should contact other programs around the country with similar practices to gain more detailed insight into their experience with that model. KTMPO should also contact potential local owners or operators to determine their receptiveness to the proposed model. The MPO is encouraged to consider people over profits through a mobility justice lens during this time. This initiative will establish the "leadership team" for all future strategies.


## Example Initiatives

Contact medical leadership throughout the region, such as the VA Hospital Administration in Temple, and ask about the possibility of partial ownership. Prepare a presentation on the benefits of a public health facing organization for community outreach. Include mutual opportunities such as BikeRx and hospital staff receiving annual discounted rates.

Invite bicycle leadership to an informational meeting about the possibilities of bike share in the KTMPO region. Lead discussion on the different business models in terms of benefits and challenges they might present in the region. Deploy feedback mechanism for the stakeholders to decide which model they think will be most successful.

Reach out to bike share vendors in the United States such as Veo, Lime, WingBikes, etc. to explore different costs associated with each program. Ask questions about the organization's role in safety and maintenance and what makes their model successful. Develop a relationship with vendor best suited for the KTMPO area and the business model leadership chooses for bike share ownership.

# Marketing Campaign

## Timeline

Immediate/Ongoing

## Goals

Equity

Partnerships

Safety

Public Health

## Performance Measures

- The number of residents engaged with bicycle share incorporation
- The completion of a bike share implementation study
- Materials created for public education of bicycle share.

## Summary

Start to introduce bike share to the residents of the KTMPO area before deployment of services. The leadership team would create materials promoting active transportation options and encourage feedback in participation. Leadership in this case would want to also take the opportunity to start reaching out to local organizations, education and healthcare facilities about future partnerships and initiatives. The KTMPO should consider this initiative as a larger implementation study with a mobility justice lens to start to familiarize all residents with the possible transformation of transportation in their area.

## Example Initiatives

Bike share leadership initiates a bike share implementation study through a community focus/mobility justice lens. During the study, leadership spends time creating resources and campaigns educating the public on the benefits and features of a bike share system. The plan gauges and generates interest in the region for bike share prior to deployment, working with the community to create goals.

A study presents an opportunity to discover the history of transportation practices throughout the region and the resulting disenfranchisement of vulnerable communities. This research will help determine communities to reach out to first in terms of equity and access.

The creation of a website and mobile application for a landing page of information of the development of bike share in the KTMPO region.

Partnering with local businesses throughout the municipal cores of Belton, Copperas Cove, Harker Heights, Killeen, and Temple to create food and retail rides. Potential bikeshare users (residents and tourists) will be encouraged through the mobile application and website to visit specific vendors to receive exclusive discounts. Businesses would receive increased exposure and discounted annual rates for their participation.

# Community Trials

## Timeline

Mid Term

## Goals

Equity

Partnerships

Safety

Public Health

## Performance Measures

- The number of transit need residents engaged
- Attendance at meetings
- Number of organizations engaged


## Summary

To slowly integrate a new form of mobility in the KTMPO region, owners, operators, leadership, and key stakeholders soft launch the deployment of bike share. The community trials would act as a vehicle for cultivating collective power and valuing residential voices. This includes demonstrations, educational forums, and open town hall discussions on the use and placement of vehicles. Live demonstrations present the opportunity for full safety presentations of the vehicles and answering questions about deployment in real time. The leaders of this strategy should prioritize transit needs and historically disenfranchised populations during this effort.


## Example Initiatives

Plan, market and execute community town hall meetings for information on the bicycles selected for deployment. Provide feedback mechanisms for attendees and encourage them to spread the news to their networks for future attendees.

Partner with organizations working in neighborhoods with disproportionately poor access to transportation resources to put on community demonstrations of bike share vehicles. Exploration of discounted rates and paying with SNAP benefits as well as determining what structural barriers exist to access transportation in the KTMPO area.

Meet the public where they are with bicycles to test ride. Attend public meetings, block club meetings, farmers markets, and community events with an informational booth. Bring the vehicles for in person safety demonstrations and marketing materials for participants to take home.

Work with local police departments to create street solutions beyond criminalization to enforce the safe use of bike share, such as educational workshops and a penalty system. Help law enforcement understand the new technology and determine best practices in terms of street safety.

# Infrastructure Advocacy

## Timeline

Mid Term/Ongoing

## Goals

Smart Growth

Safety

Public Health

## Performance Measures

- The adoption of new mobility plans
- The creation of shared bicycle lanes in the KTMPO area
- The creation of greenways in the KTMPO region,
- Municipal partnerships
- Establishment of regularly scheduled meetings with municipal staff dedicated to creation of bicycle infrastructure

## Summary

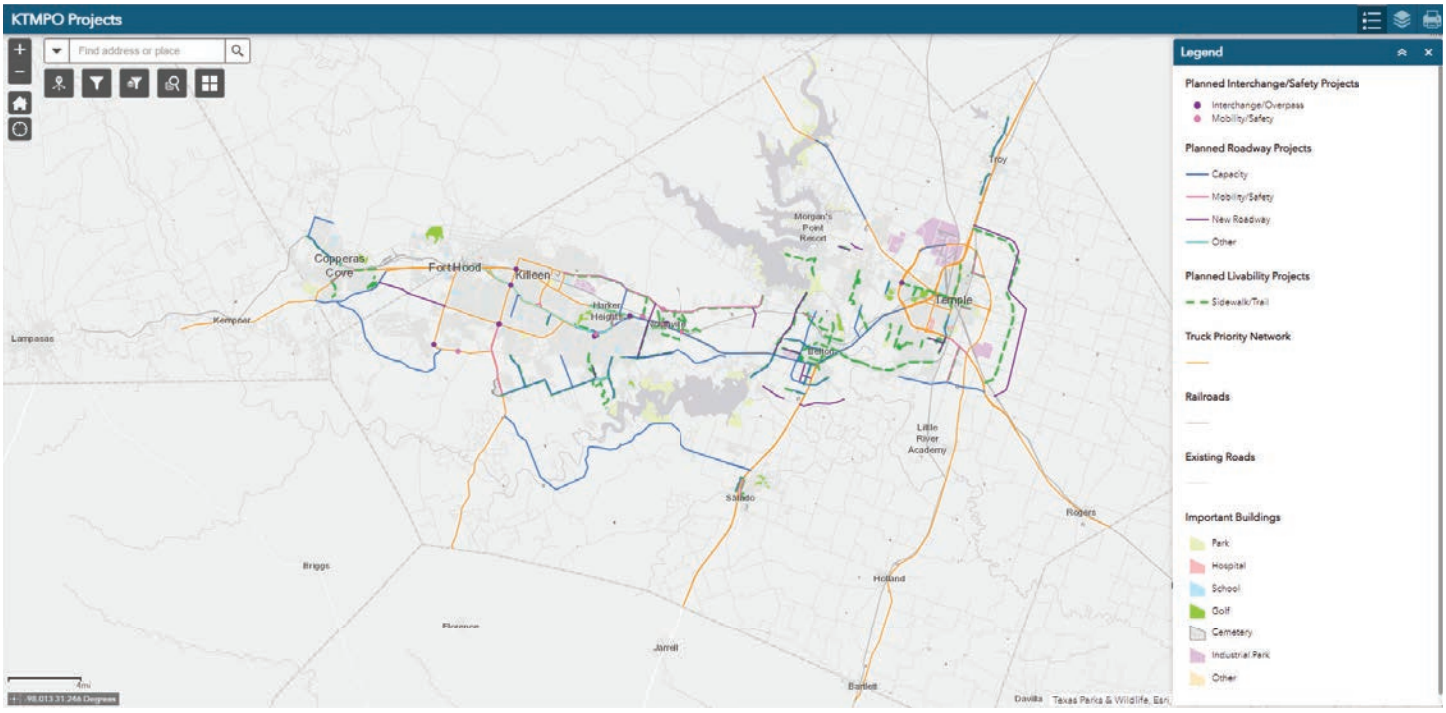
To improve connectivity for micromobility vehicles throughout the KTMPO region, the planning organization should continue efforts to support the creation and maintenance of safe on- and off-road infrastructure. Leadership would want to help find and secure sources of funding, as well as lead advocacy efforts themselves throughout the deployment process of bike share systems.

## Example Initiatives

Partner with planning organizations in municipalities across KTMPO to help fund and support mobility initiatives.

Attend meetings and support the adoption of new transportation plans in the region.

*Pictured below: Screenshot of KTMPO Webmap linked at: https://ktmpo.org/roadway/maps-and-data/*



# Creation of Multimodal Hubs

## Timeline

Mid-Term

## Goals

Equity

Partnerships

Smart Growth

## Performance Measures

- Partnerships achieved
- Locations selected and primed
- Construction of multimodal hub stations


## Summary

After the business model is selected, residents express interest in bike share, and leadership is confident about deployment, the team should advocate for the creation of multimodal station hubs. The stations should be informational, bilingual, and accessible to all users. The leadership team will explore effective designs and work with residents to select locations. Partnerships with transit organizations, park leadership, local businesses, and cultural institution staff will help inform building the stations. The maps provided in the previous chapter in the report can act as a guide for preliminary location development.


## Example Initiatives

After receiving feedback from the public, determine locations of stations to best serve the residents of the KTMPO area. Guarantee even deployment across socioeconomic statuses of residential neighborhoods, establishing quotas for transit needs users.

Reach out to the HOP about a possible partnership for rides between the municipalities in KTMPO to satisfy first and last mile rides. Inquire about the possibility of placing bike share stations near bus stations or along popular bus routes.

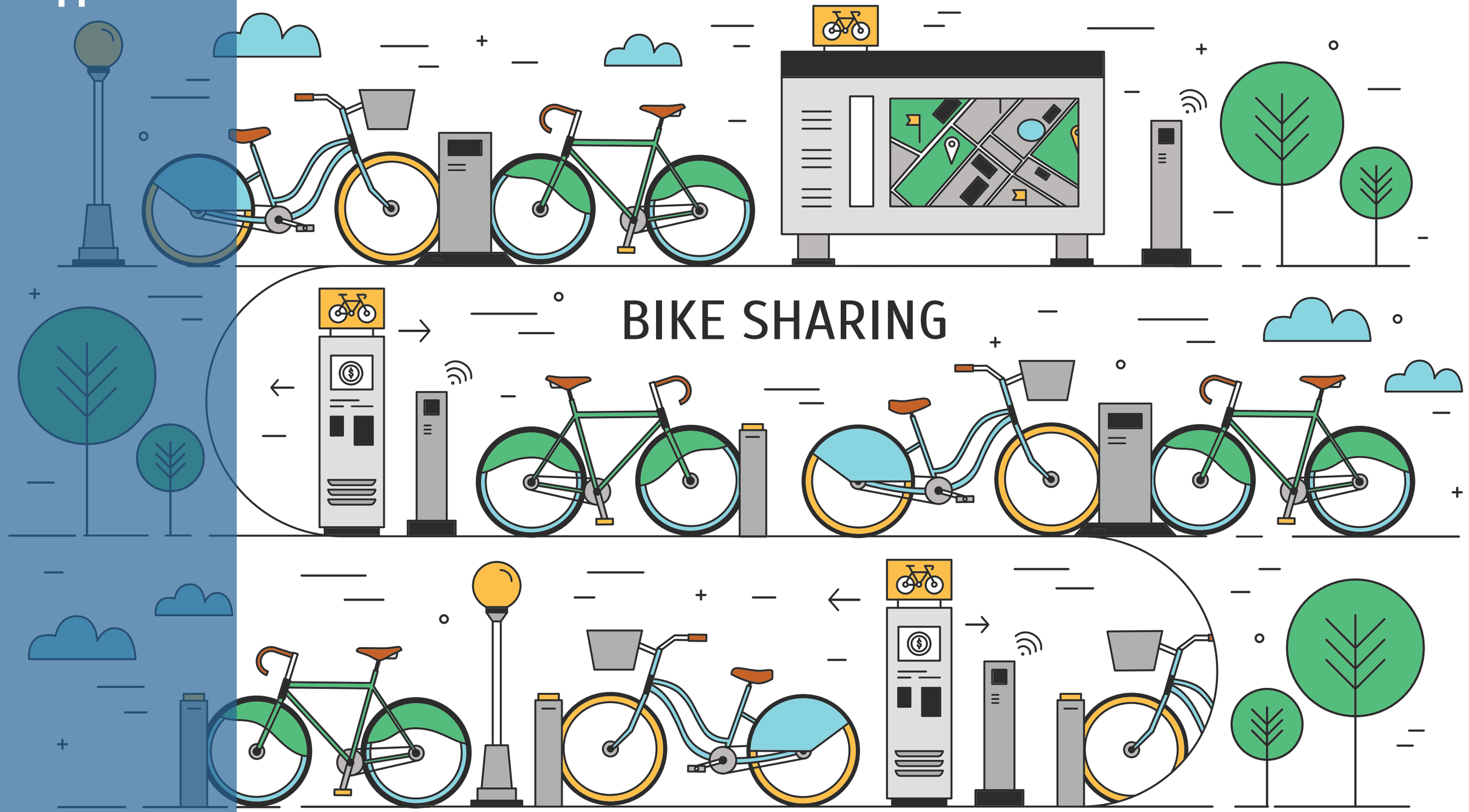
Work with the Parks and Recreation departments across the KTMPO study area to discuss the possibility of placing hub stations in parks and trails. Establish laws and regulations for trail use, such as a speed limit and giving priority to the pedestrian.

# Conclusion

This report outlines research specific to the KTMPO deployment of bike share in addition to exploring precedents throughout the United States for ownership and operation. Recommendations and strategies for the organization are based on the summation of all the qualitative and quantitative research through a mobility justice lens.

Many of the strategies are tailored towards the metropolitan area's capacity to build education and partnership prior to considering the establishment of vehicles on the street. The next few years will be a crucial time for the development of bike share and require strong leadership to guide the process. It is important to understand the desires of the community and develop micromobility to satisfy unmet needs in achieving transportation equity.

# Appendix



# BPAC Survey Results

| Timestamp | On a scale of 1-5, with 5 being the most prepared, do you think the KTMPO area has the capacity to support a bicycle share system? | Based on your selection from question 1, could you provide an explanation of the KTMPO area readiness for bicycle share system? | What needs to happen for the KTMPO area to be ready for a bicycle share system? | One a scale of 1-5, with 5 being the most aware, how much do you think the residents KTMPO area know about bicycle share systems? | Have citizens expressed an interest in a bicycle share system? | What needs to happen for residents to be knowledgeable on bicycle share systems? |
|---|---|---|---|---|---|---|
| 3/18/2022 15:02:18 | 3 | I haven't seen an eagerness to collaborate regionally yet, still hopeful. | Shared, adopted vision | 1 | No, but primarily due to a lack of infrastructure to support safe biking. | Boots on the ground, door hangers in targeted areas to have discussions - "listening tour" |
| 3/28/2022 14:51:25 | 4 | Temple and Killeen definitely have the populations to support such a program. Even towns as small as mine (Rockdale) might get some use from it. | Education and safe bike routes or lanes. | 3 | Some have | The usual suspects, paper, radio, social media, schools. |
| 3/28/2022 14:52:52 | 2 | Not enough safe routes between the communities and driver education of interacting with bicycles is lacking in this area. | A greater trail system that is interconnected. | 2 | No. | First, there needs to be an accessible and safe system - trails and bike lanes. Second, education on the use of that system. |
| 3/28/2022 15:53:35 | 2 | Portions of the Region have connectivity of bike paths but others do not. | A Temple/Belton system and a Nolanville/ Harker Heights/Killeen/Fort Hood system could be feasible with some extensions of current system but significant funding would have to be available. Hard to Connect all the way to Copperas Cove due to safety concerns along 14. | 4 | No | I think residents are knowledgeable but would not feel safe utilizing the system in this area due to multiple safety issues with the connecting ROWs being at high speeds. There would also need to be regional contracts/MOUS executed prior to entering into any project beyond a study by KTMPO. |
| 3/28/2022 16:49:10 | 1 | Geographically wide and few bike lanes | Greater connective trails and bike lanes | 2 | No aware of these interest | Greater education and pilot program |
| 3/29/2022 13:39:31 | 3 | Bike Share program and usually drive by high pedestrian volume. I am not sure KTMPO has that on a consistent level. | Greater localization to work, play, live environment. | 4 | Not that I am aware of. I could see people a higher income level, not being fans of it. | Good marketing with focus on benefits to economic development in the tourism and recreation industry.. |
| 3/30/2022 11:39:54 | 3 | Do you have proof there is an interest in use? Will low income neighborhoods have access? | Resident request | 3 | Not aware. | Awareness campaign that outlines costs for use, requirements to access use, responsibilities for use, proposed locations to access equipment |

# Business Model Matrix

| Ownership Model | Profits | Fundraising | Staff Capacity | Pros | Cons | United States Example |
|---|---|---|---|---|---|---|
| Nonprofit Owned/Privately Operated | Non-profit retains or splits profit for improvement, advocacy or expansion. | Public grants, county sales tax revenue, membership revenue, sponsorship, advertising revenue. | Nonprofit employees are dedicated to the mission of bike sharing. | •Board representation can reflect the specific biking community.<br>•The nonprofit staff can focus on delivery the bicycle share mission without the drive to make profit.<br>•More likely to acknowledge issues of system equity and promotion of public health.<br>•Corporate or institutional sponsors often work with the non-profits, potential for partnerships.<br>•Profits can be reinvested into the system for expansion.<br>•Ability to lower bike share costs depending on the success of fundraising.<br>•Nonprofits generate foundational and personal donations for revenue. | •Government grant monies must be brokered through government agencies, therefore the nonprofit cannot generate as much funding.<br>•Need to be profitable may limit ability to prioritize equity and delivering the best product.<br>•If operations performance is poor, it may be difficult for a non-profit to change course quickly.<br>•With a larger system (>200 bikes), nonprofit may have difficulty assembling experienced staff, more of a learning curve.<br>•Less likely for bike share to become fully integrated into transportation system without connections to other transit providers. | Shared Mobility (Buffalo, NY) |
| For Profit Business | Private company retains profits | Private investment, user revenues, sponsorship and advertising. | Small business with entrepreneurial mentality. | •A private company takes on risks in terms of financing and safety, relieving the public sector portion of the company.<br>•Can assemble capital relatively quickly.<br>•The focus on profitability will increase service and efficiency in high demand areas (especially those frequented by visitors and tourists).<br>•Can handle multi-jurisdictional systems relatively easily, such as metropolitan planning organizations.<br>•If operations performance is poor for an extended period, a new vendor can be hired for operations.<br>•A private experienced company has more knowledge on operational issues from other systems.<br>•Can mobilize equipment and staff from other systems if needed. | •Government grant monies must be brokered through government agencies, therefore the private business is not eligible.<br>•Need to be profitable may limit ability to prioritize equity and delivering the best product.<br>•Foundation grants and donations less likely.<br>•Less public transparency. | CitiBike (New York City) |
| Publicly Owned/ Privately Operated | Agency retains or splits profits for improvement, advocacy or expansion. | Agency responsible for fundraising. Typically a mix of federal, state, local grants; memberships; sponsorships; and user revenues. | Requires agency staff capacity for fundraising and oversight of the system, but makes use of the private sector experience for operations. | •Highest level of public control and transparency of all the business models.<br>•Profits could be returned to the City or regional entity as revenue, or reinvested into the system.<br>•For a multi-jurisdictional system, a regional agency has greater ability to coordinate among the jurisdictions.<br>•May have stronger connections and higher-level experience to bring in state or federal funding.<br>•Higher likelihood to coordinate a unified bike share and public transit hub/technology/ passes.<br>•Strong oversight of contract operator.<br>•Opportunity to integrate with established transportation/transit practices. | •Agency may not see it within their mission to govern a bike share system (unless they are a transit entity).<br>•Concern may exist about potential liability to the city, county, etc. if the program fails to be successful.<br>•Requires significant time commitment by agency staff.<br>•Some corporate or institutional sponsors are less likely to donate to a government agency.<br>•Public agencies lacks experience and knowledge of bike share operations.<br>•Costs related to staffing and union rules will likely make operations more expensive.<br>•Regional bike share programs require multiple agencies to cooperate and coordinate. | MetroBike (Austin, Texas) |
| Publicly Owned/ Publicly Operated | Agency retains profits for improvement, advocacy or expansion. | Agency responsible for fundraising. A combination of federal, state, local grants; sponsorships; and user revenues. | Requires agency staff capacity for fundraising, oversight of the system and operations and marketing staff management | •Highest level of public control and transparency of all the business models.<br>•Profits could be returned to the City or regional entity as revenue, or reinvested into the system.<br>•For a multi-jurisdictional system, a regional agency has greater ability to coordinate among the jurisdictions.<br>•May have stronger connections and higher-level experience to bring in state or federal funding.<br>•Higher likelihood to coordinate a unified bike share and public transit hub/technology/ passes.<br>•Strong oversight of contract operator.<br>•Opportunity to integrate with established transportation/transit practices. | •Agency may not see it within their mission to govern a bike share system (unless they typically deal with multimodal transportation).<br>•Concern may exist about potential liability to the city, county, etc.<br>•Requires significant time commitment by agency staff.<br>•Some corporate or institutional sponsors may feel uncomfortable dealing with and giving money to a government agency.<br>•Minimal precedent - few cities in the US have used a public agency or regional transit authority to operate their bike share systems.<br>•Public agencies lacks experience and knowledge of bike share operations.<br>•Costs related to staffing and union rules will likely make operations more expensive.<br>•Regional bike share programs require multiple agencies to cooperate and coordinate. | Topeka Metro Bike (Topeka, Kansas) |
| Nonprofit Owned and Operated | Profits traditionally reinvested for improvement, advocacy or expansion. | Agency or non-profit (or both) can fundraise. All funding types are in play under this model. | Staff dedicated specifically to the mission of bike sharing. | •Board representation can reflect the specific biking community.<br>•The nonprofit staff can focus on delivery of the bicycle share mission without the drive to make profit.<br>•More likely to acknowledge issues of system equity and promotion of public health.<br>•Corporate or institutional sponsors often work with the non-profits, potential for partnerships.<br>•Profits can be reinvested into the system for expansion. Ability to lower bike share costs depending on the success of fundraising.<br>•Nonprofits generate foundational and personal donations for revenue. | •Government grant monies must be brokered through government agencies, therefore the nonprofit cannot generate as much funding.<br>•Need to be profitable may limit ability to prioritize equity and delivering the best product.<br>•If operations performance is poor, it may be difficult for a non-profit to change course quickly.<br>•With a larger system (>200 bikes), nonprofit may have difficulty assembling experienced staff, more of a learning curve.<br>•Less likely for bike share to become fully integrated into transportation system without connections to other transit providers. | Denver B-cycle (Denver, Colorado) |