

## SYSTEM PLANNING

### 1. Public and Stakeholder Engagement

To gather input from the local community about the potential for bike share in Tucson, the project team conducted outreach to the general public and engaged local stakeholders. Outreach to the general public included an online survey, crowdsourcing map, and a public information session. Stakeholders, who represent individuals, organizations, and community groups that could play a role as supporters, sponsors, or participants of a bike share system, were identified and invited to a series of stakeholder workshops.

The overall theme of the input was that there is significant support for bike share in Tucson, however there will be challenges to overcome including finding sustainable funding sources to maintain long term operations. Details of the public and stakeholder outreach effort are described below.

#### 1.1 Online Survey and Crowdsourcing Map

A webpage was created for the project and linked to the City's Bicycle and Pedestrian Program website (<http://bikes.tucsonaz.gov/bicycle/tucson-bike-share>). It was updated throughout the project with information about the project and key milestones. For the public outreach process, an online survey and crowdsourcing map were created and linked to the bike share webpage.

##### 1.1.1 Online Survey

An online survey was made available between October 1 and December 31, 2014 and promoted through a variety of media including links from the project webpage, student media at the University of Arizona, press releases, local publications, an announcement at the public information session, and through social media. The survey included 22 questions asking respondents demographic and employment information; current bicycling habits; and opinions on bike share implementation. A copy of the survey is included in **Appendix A**.

A total of 271 responses were received and the results are summarized below. It is noted that there are some limitations to this survey, e.g., many of the respondents are self-selecting individuals who either strongly support or oppose bike share and may be more inclined to complete the survey rather than a randomly chosen sample.

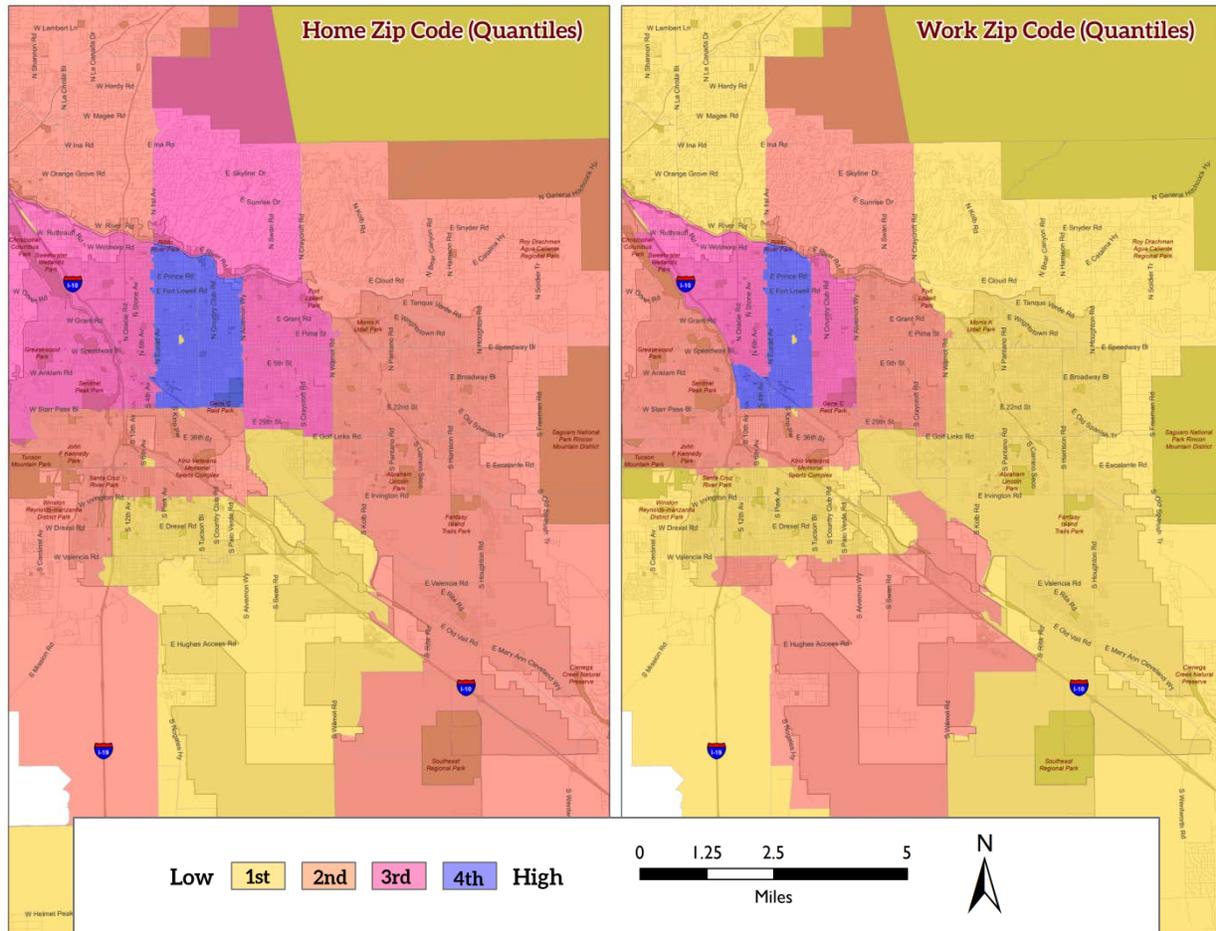
#### **Demographic and Employment Information**

Survey participants were asked to provide demographic and employment information. Based on the results of the survey, **Table 1** compares the demographics of respondents with the citywide population of Tucson. This shows that survey respondents tended to over-represent individuals enrolled in college as well as older, white, and higher income populations.

The survey also asked respondents to provide the zip code of their current residence, place of employment, and school (if currently enrolled). **Figure 1** shows the distribution of survey responses – the majority of respondents (96%) live in the City of Tucson.

**Table 1: Comparison of Survey Respondent and Citywide Demographics**

Demographic	Survey Respondents	Tucson Population	Representation
Age (median)	39	33	Survey over-represents older populations
Gender (% female)	52.3%	50.5%	Survey represents gender split
Ethnicity (% white)	78.1%	47.4%	Survey over-represents white populations
Annual Household Income (median)	\$60,000	\$37,032	Survey over-represents higher income households
College Enrollment (% enrolled)	20%	7.5%	Survey over-represents individuals enrolled in college



**Figure 1: Distribution of Survey Responses by Zip Code.**

### Current Bicycle Usage

Generally, survey respondents represented active cyclists with a significant percentage of respondents (82%) having access to a working bicycle and two-thirds (66%) stating that they ride daily or multiple times per week.

Just over one-third of respondents (37%) indicated that they had previously used a bike share system, with Capital Bikeshare (Washington, D.C.), Denver B-cycle (Denver, CO) and Citi Bike (New York, NY) being the most common. A summary of bicycling usage amongst survey respondents is included on **Figure 2**.

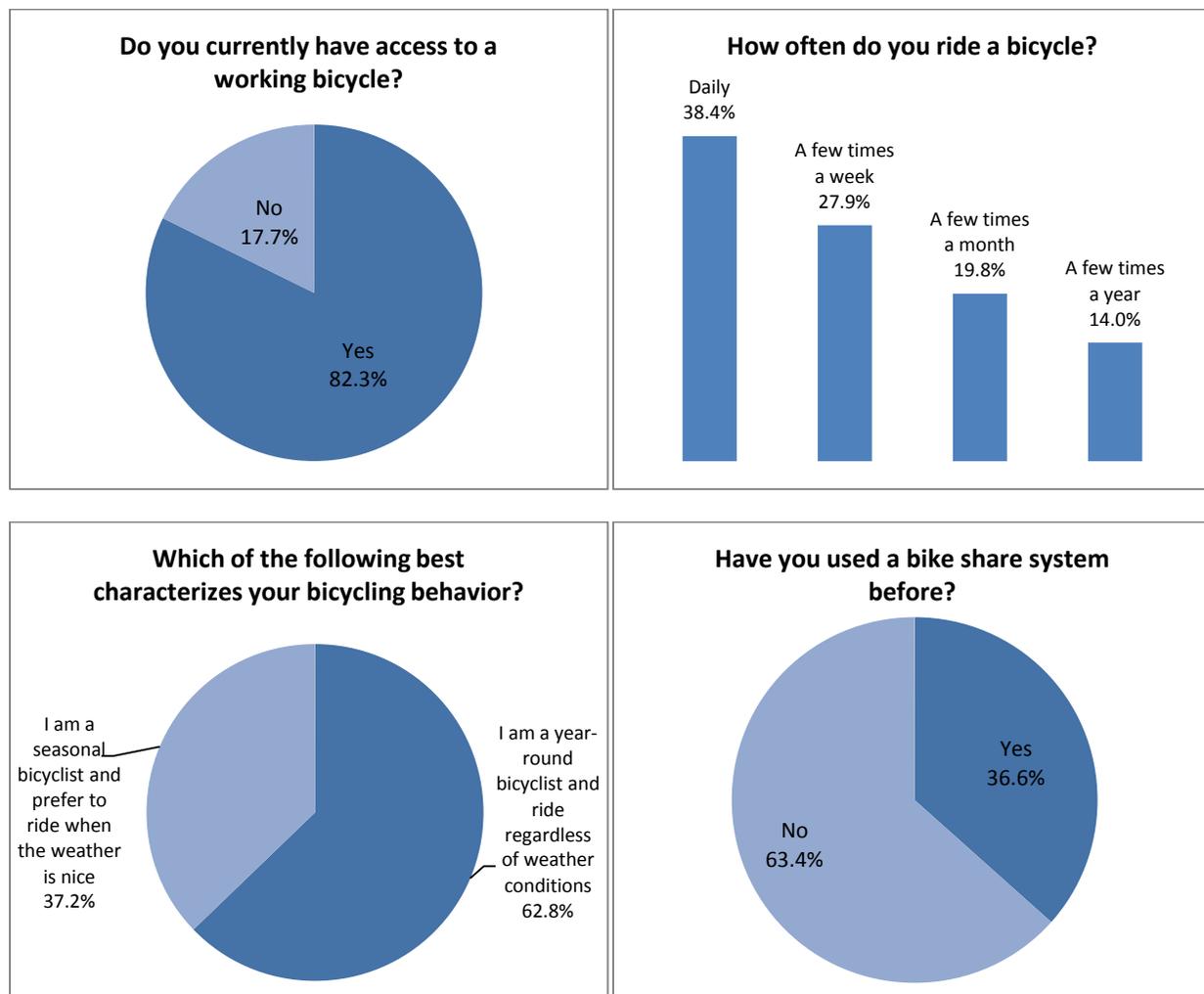


Figure 2: Bicycling Usage Trends among Survey Respondents.



### Opinions on Bike Share and its Feasibility in Tucson

A majority of survey respondents (75%) were of the opinion that a bike share system is a good idea for Tucson, approximately 12% were not sure, and approximately 13% did not think it was a good idea.

When asked why bike share was a good idea, respondents included as reasons:

- It provides all community members with access to a cheap and efficient form of transportation;
- It can increase connectivity to transit;
- It can help reduce traffic and increase transit options;
- It can promote health, tourism and local businesses; and
- It would provide additional connections between Downtown Tucson and the University of Arizona.

Respondents who indicated they didn't think bike share was a good idea for Tucson cited the following reasons:

- Concern regarding the cost of implementation and maintenance;
- Opportunity cost, i.e., other bicycling investments may have larger returns;
- Barriers to entry (e.g., many people who may want to participate don't have credit cards); and
- Safety concerns related to using bike share near the streetcar tracks and on streets that aren't bicycle friendly.

Forty-three percent (43%) of survey respondents stated that they would utilize a bike share system at least once a week, while an additional 28% stated they would use it at least once a month. Sixteen percent (16%) stated that they would never use the system and 12% were unsure.

Respondents stated that the most likely trips that they would use bike share for included: running errands; going to or from transit stops; recreation or exercise; and transportation during the day while at work or school. A full break down of anticipated trip types is included on **Figure 3**.

Respondents stated that they would pay an average of \$100 for annual membership, \$32 for weekly membership, and \$6 for daily membership. These responses are at the high end of the price range of other programs in the United States.

<b>\$100</b>	Annual membership
<b>\$32</b>	Weekly membership
<b>\$6</b>	24-hour access

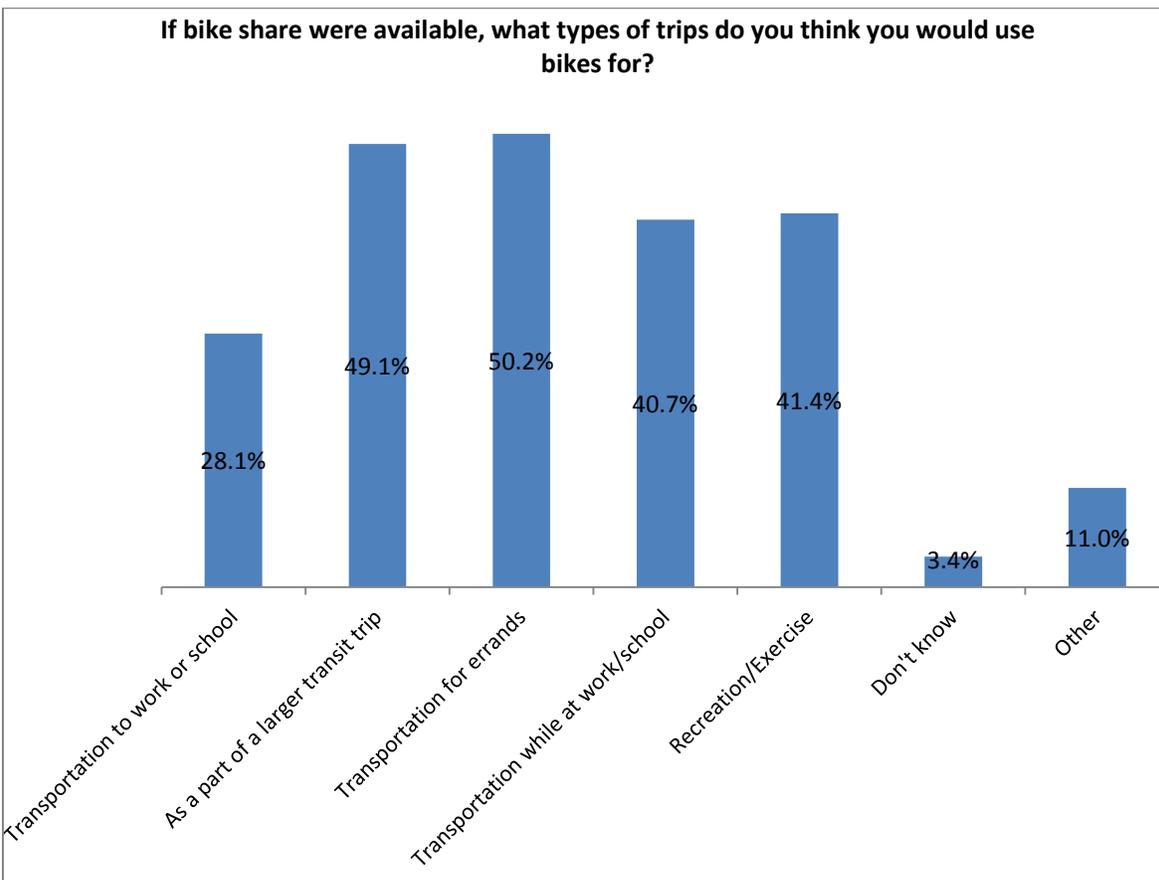
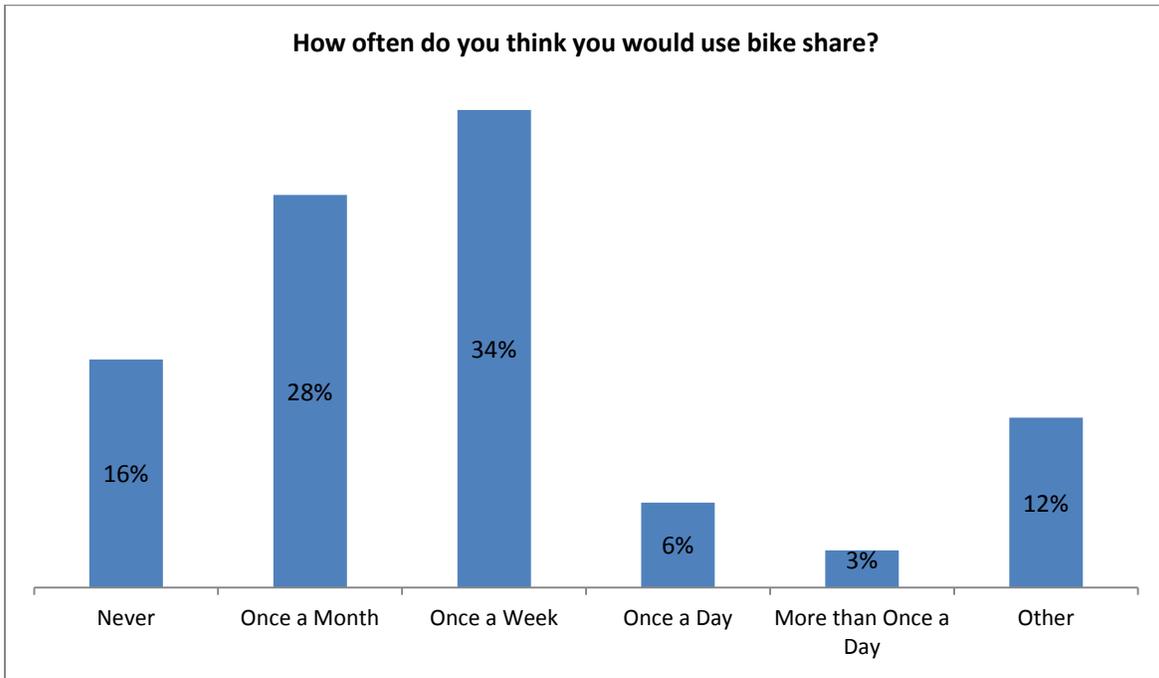


Figure 3: Stated Frequency and Trip Purpose for Bike Share Trips in Tucson.

## Other Results

Further analysis of the survey responses found that:

- Of those people who do not currently have access to a working bicycle (18% of respondents), 42% stated that they would use bike share about once a week and 24% stated that they would use it at least once a month. Similarly, of those people who bicycle only a few times per year (14% of respondents), 58% stated that they would use a bike share at least monthly.
- Typically under-represented bicycling population groups provided the following responses:
  - Female respondents (52%) identified that they would use bike share primarily for running errands, exercise, and riding to transit.
  - About 22% of respondents self-selected as non-white and most (72%) stated they would use bike share at least once a month.
  - Lower income individuals (i.e., those people earning less than the median income in Tucson) represented 32% of respondents and of these, 72% stated that they would use bike share at least once a month. These individuals reported that if bike share were available they would use bicycles for running errands, exercising, and meeting family and friends most often.
- Of the 37% of respondents that had previously used bike share, 75% supported a bike share system in Tucson.
- Of the 20% of respondents that reported being students, 51% stated they would use bike share at least once a day.

### 1.1.2 Crowdsourcing Map

The project website provided a link to an interactive map where the public could suggest possible bike share station locations. A total of 292 station suggestions were made between October 1 and December 31, 2014 with many of these locations being “liked” by multiple users. A map of suggested locations is shown on **Figure 4** with each location weighted by the number of “likes”.

The map shows that the highest concentration of suggested locations is in Downtown Tucson and at the University of Arizona campus, however there is strong support for stations along corridors to the north and east of campus that would connect to student housing and student services in these areas. As well, there are pockets of support in the Mercado neighborhood west of I-10 and around Reid Park, which could be connected to the Downtown network via the Arroyo-Chico Greenway. There was also support for stations along the Rillito River corridor including at the Tucson Mall, Rillito River Park, and along the Loop Trail. Although this area would be disconnected from the rest of the system, a “mini-system” along this section of the Loop could serve both recreational trips and could extend the reach of transit services by connecting residents to the Tohono Tadaí Transit Center. These results were used along with the community analysis to plan the bike share system.

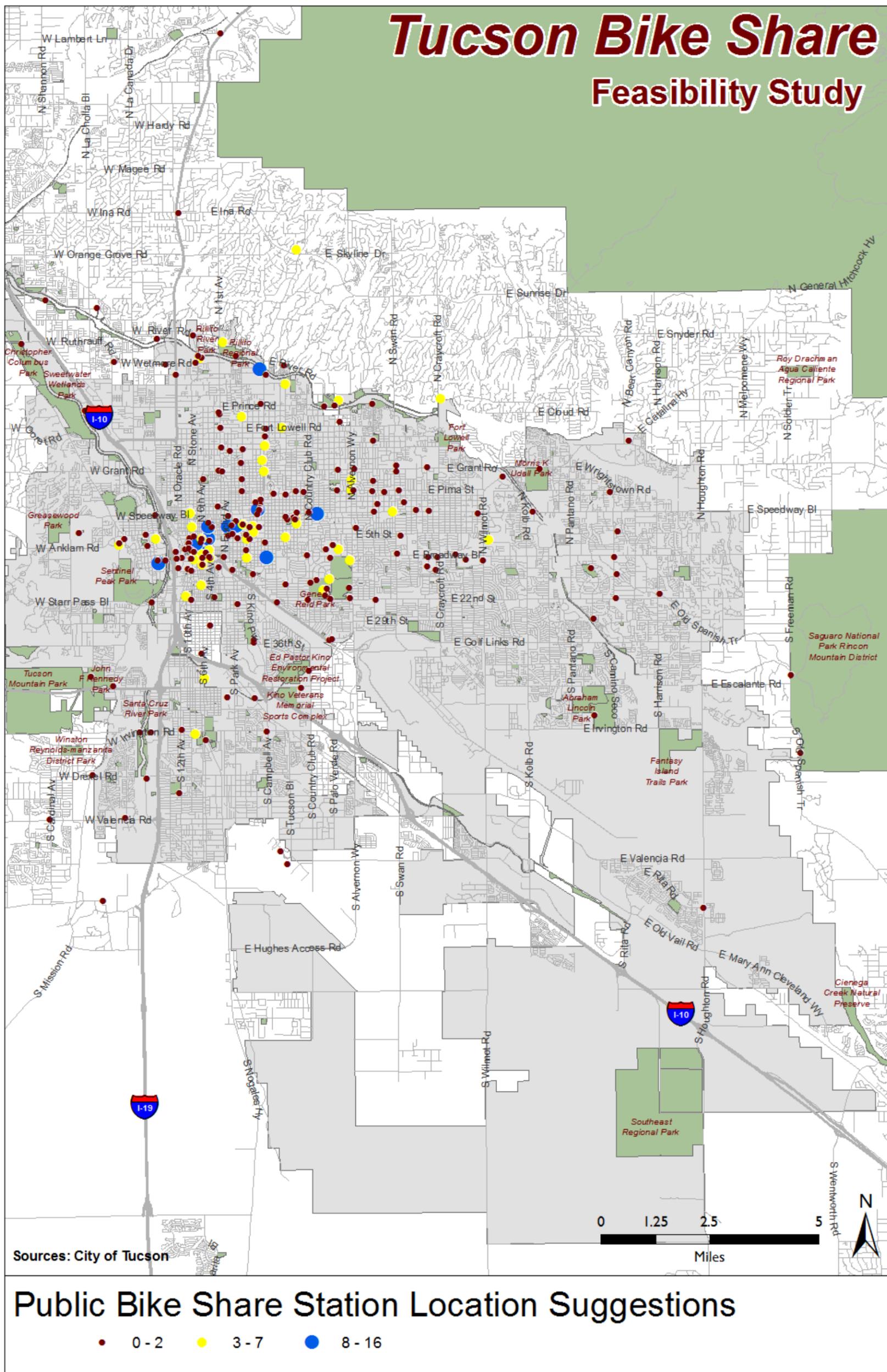


Figure 4: Suggested Bike Share Station Locations.

## 1.2 Stakeholder Engagement

Stakeholder outreach was conducted through a series of workshops held in Tucson between October 6 and October 8, 2014 with individuals, organizations, and community groups that could play a role as supporters, sponsors, or participants of a bike share system. Overall, the project team gathered information from over 30 organizations including:

- Mayor Jonathan Rothschild and the Mayor's Office;
- City Council Member Offices;
- City of Tucson staff (including representatives from the Department of Transportation, the City Manager's Office, the Office of Integrated Planning, the Development Services Department, Parks and Recreation, and the Finance department);
- Pima County;
- Pima Association of Governments;
- City of South Tucson;
- Regional Transportation Authority;
- University of Arizona staff (including representatives from Parking and Transportation Services, Planning Design and Construction Services, and the Sustainability Department);
- Pima County Public Health;
- University of Arizona Public Health;
- Tucson Medical Center;
- Downtown Tucson Partnership;
- Downtown Neighborhoods and Residents Council;
- Visit Tucson; and
- Tucson Bicycle Advisory Committee.

In addition, a public information session was held at the Main Library in Downtown Tucson on Monday October 6, 2014.

Each meeting asked participants to identify how bike share might be relevant to them or their organization and to identify any opportunities and challenges they saw to implementing a bike share system. Depending on the group, the project team also worked with participants to identify the level of support for program sponsorship.

The majority of organizations were supportive of a bike share system in Tucson. In particular, organizations believed that bike share could help Tucson enhance its reputation as a livable and bikeable city to attract and retain younger workforce talent; and to provide first and last mile connections to transit and in particular leverage the City's recent investment in streetcar.



Other opportunities and challenges identified by stakeholders and the public included:

- Creating a sustainable business model to operate the system on an ongoing basis. In particular utilizing innovative funding mechanisms given that the pool of potential large corporate sponsors is limited in Tucson.
- Needing to better understand the regulations and limitations around advertising and sponsorship at the stations and on the bicycles. In particular, investigating whether sponsorship would be allowed on the University campus and whether sponsorship could be added to the City's existing advertising contracts.
- Integrating the system with the existing transit fare payment system so that transition between modes is seamless and ensuring the safety of bicyclists around streetcar tracks.
- Ensuring standards are in place to design the system with enough additional docks and to maintain the system in good condition.
- Using the system as an economic development tool – not only to attract and retain workforce talent but to attract visitors and tourists to Tucson, and to use the system to connect these people to their destinations. There may be an opportunity to create “themed rides” to encourage use of the system and encourage business at local shops and restaurants.
- Engaging a variety of stakeholders to support and promote the system and create local opportunities for sponsorship where possible.
- Siting stations in visible locations to encourage ridership and reduce opportunities for theft and vandalism. Locating stations in place of on-street parking could be challenging in some areas.
- Ensuring that the system is affordable and engages lower-income communities. This could include locating stations in low income communities, reducing barriers to access (such as the need for a credit card), and engaging targeted marketing towards low income populations.

## 2 Preliminary System Plan

This section summarizes recommendations for the service area, size, and phasing of a potential bike share system in the City of Tucson. The recommendations consider the areas expected to have the highest demands for bike share (as shown on the heat map included in the *Task 3: Community Analysis* memorandum and supported by crowdsourcing input collected as part of the public engagement process - see Section 1.1.2) and system planning principles developed from industry best practice and experience in the peer cities. These are described below.

### Density and Breadth of Coverage

A key decision is to determine the balance between breadth of coverage and station density. Some cities have chosen to launch their initial system with a high density of stations in a smaller area (e.g., Chattanooga, Salt Lake City, etc.), whereas others have chosen to spread out their stations at lower densities and cover a larger area (e.g., Minneapolis-St. Paul, Madison, etc.). There are a number of aspects to consider in making this decision:

- Providing stations at high densities maximizes the visibility and utility of the system by providing users with a reasonable expectation that there will be a station within walking distance from anywhere in the system area. It also provides redundancy so that if a station is empty or full, a user can go to a nearby station and find an available bicycle or an empty dock.
- If stations are provided at high densities but the coverage area is too small, then the system may not serve a sufficient range of destinations and may not be an effective alternative to walking. For more dispersed systems or for stations at the edges of the system, it is important to make sure that there is additional capacity available (i.e., more docking points) so that users are not faced with empty or full stations.

In peer cities, station densities average approximately 5.5 stations per square mile and in most cities, station densities are higher in downtown and inner-city areas and get progressively lower as the system moves away from these areas. Please see **Table 2** below for peer city station densities and comparisons to the Tucson system proposed below.

### System Size and Layout

A system that provides too few stations will be limited in the number of destinations it serves and therefore be less attractive to potential users. However, cities generally must take a measured approach due to funding and political constraints and may not initially launch with the full system.

Most systems are generally contiguous. Providing a contiguous system offers a larger number of connections between stations than if the same resources were split into several smaller (disconnected) systems. Please see **Figure 5** for the layout of several peer cities, showing how they can vary from dense to sparse, from clustered to linear.

Table 2: Peer City System Statistics

City	Program Name	Stations	Area (sq.mi.)	Station Density (stations / sq.mi.)	Bikes	Docks	Dock-to-Bike Ratio	Population Density (per/sq.mi.)
Denver	Denver B-Cycle	84	13.2	6.4	709	1,228	1.7	4,193
Minneapolis / St. Paul	Nice Ride Minnesota	170	46.4	3.7	1,550	3,010	1.9	6,559
Phoenix	Grid Bike Share	39	9.2	4.2	290	n/a	n/a	2,798
Salt Lake City	GREENbike	12	1.5	8.0	65	165	2.5	1,720
San Antonio	San Antonio B-Cycle	53	10.1	5.2	450	830	1.8	3,057
<b>Tucson (proposed)</b>	<b>Phase 1</b>	<b>30</b>	<b>6.3</b>	<b>4.8</b>	<b>300</b>	<b>510</b>	<b>1.7</b>	<b>2,294</b>
	<b>Phases 1 &amp; 2</b>	<b>60</b>	<b>9.9</b>	<b>6.1</b>	<b>600</b>	<b>1,020</b>	<b>1.7</b>	

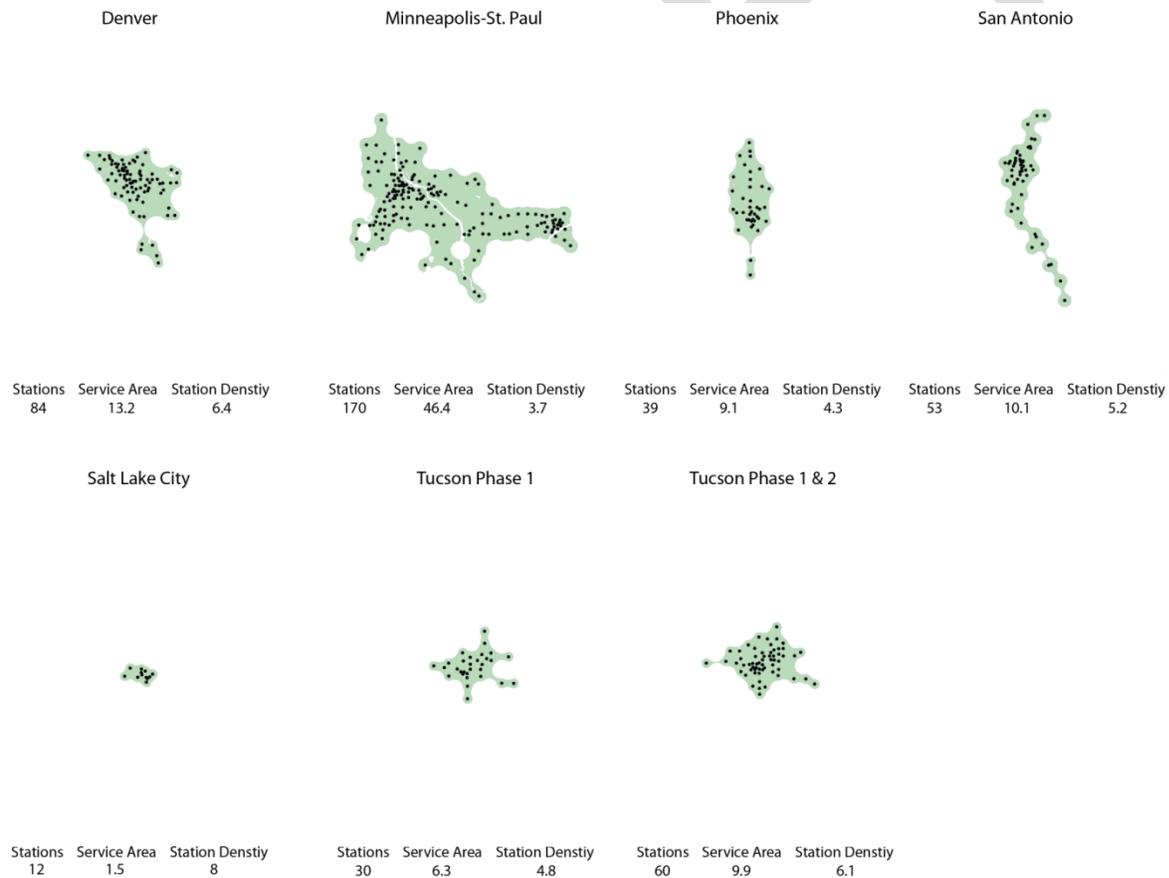


Figure 5: Comparison of System Size, Coverage Area, and Station Density for Peer U.S. Bike Share Cities.

## Dock-to-Bike Ratios

For smart dock systems, other cities have adopted dock-to-bike ratios ranging from 1.5 to over 2.0 docks per bike. This ratio is important as higher ratios reduce rebalancing needs and therefore operating costs, but must consider the higher upfront capital cost. A ratio of 1.7 docks-per-bike has been assumed for Tucson to balance these factors. Smart bike systems have different technologies depending on the vendor with different requirements for a docking mechanism. For a system like Phoenix that doesn't require specialized docking points, this ratio is not as relevant, as bikes can be locked up outside of a docking point. Please note that when we discuss numbers of docks below, this is referring to systems that require a specific docking point only.

### 1.1 System Phasing Plan

A phasing plan was developed to show the potential build out of a bike share system in Tucson. The phasing plan is shown on **Figure 6** and summarized in **Table 3**. The phasing plan does not preclude future expansion into other areas or accelerated expansion into areas identified in later phases. Expansion should be considered after an initial operating period of six to twelve months when operation of the system is better understood and funding commitments for expansion are in place.

Table 3

The first two phases of the program include the highest demand areas of Downtown and the University of Arizona campus and extend the reach of the streetcar system further into neighborhoods north of Downtown and the University, into the Mercado neighborhood and areas west of I-10, extend south of Downtown including into South Tucson, and cover key neighborhoods around the University campus.

Phase 1 represents approximately 30 stations, 300 bikes, and 510 docks, and includes key locations in Downtown, on the University campus, and at key streetcar station and extend into neighborhoods currently beyond the reach of the streetcar system. The average station size is 10 bikes and 17 docks.

A second phase of approximately 30 stations, 300 bikes, and 510 docks would be added later to fill in more destinations in Downtown and on the University campus and extend the system further into nearby neighborhoods.

A third phase would be added to include approximately 20 stations, 200 bikes, and 340 docks and extend coverage along the Broadway corridor and into neighborhoods northeast of the University campus.

Future phases could include the following areas:

- A mini- system along the Rillito River using the Loop Trail to connect neighborhoods to recreational bicycling opportunities, Rillito River Park, the Tucson Mall, and the Tohono Tadaí Transit Center, which provides frequent transit service into Downtown. This mini-system would



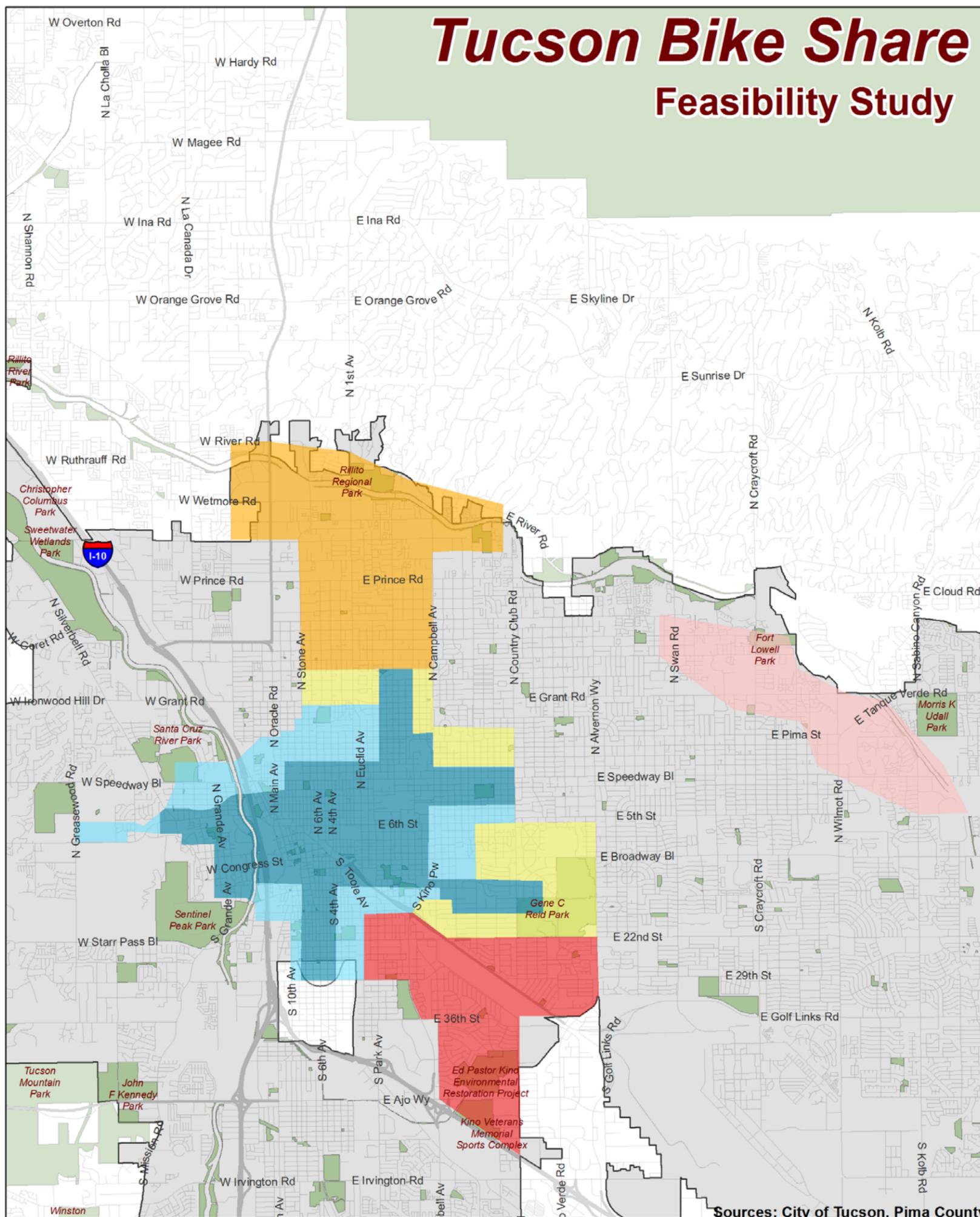
be connected with a certain number of stations to the rest of the system. Approximately 25 stations, 250 bikes, and 425 docks.

- A satellite system that connects the health campuses, neighborhoods, retail attractions, and hotels in the north-east part of the City. Approximately 15 stations, 150 bikes, and 255 docks.
- Extension of the service area into the neighborhoods to the south and south-east of Downtown along the Aviation Bikeway and other bikeways to connect to the Kino Sports Complex and the University of Arizona Medical Center’s south campus. Approximately 20 stations, 200 bikes, and 340 docks.
- Other phases could include employer-based programs to help employees and visitors move around or between large campuses such as the Airport or the Davis-Monthon Airforce Base.

The phasing plan does not preclude future expansion into other areas or accelerated expansion into areas identified in later phases. Expansion should be considered after an initial operating period of six to twelve months when operation of the system is better understood and funding commitments for expansion are in place.

**Table 3: Proposed Phasing Plan**

Phase	Description	Stations	Area (sq.mi.)	Station Density (stations / sq.mi.)	Bikes	Docks
1	Downtown, University, and inner-city neighborhoods	30	6.3	4.8	300	510
2	Infill and extension into inner-city neighborhoods	30	3.3	9.1	300	510
3	Broadway Corridor	20	3.3	6.1	200	340
<i>Potential Future Phases:</i>						
	The Loop / Rillito River	25	5.9	4.3	250	425
	NE Medical District	15	3.5	4.3	150	255
	S/SE Expansion	20	4.3	4.7	200	340
<b>TOTAL</b>		<b>140</b>	<b>26.6</b>	<b>5.3</b>	<b>1,400</b>	<b>2,380</b>



### Draft System Phasing Plan

- Phase 1
- Phase 2
- Phase 3

### Potential Future Phases

- The Loop / Rillito River
- NE Medical District
- S/SE Expansion

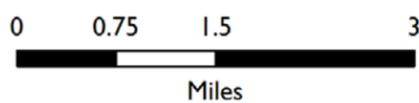


Figure 6: Proposed Phasing Plan for Bike Share in Tucson.



## 1.2 Initial System

Potential station locations were identified for the first two phases of the system and are shown on **Figure 7** and listed in **Table 4**. These are general locations only and will require additional public outreach and field work to confirm the availability of space, identify right-of-way and property ownership, meet the specific needs of the equipment vendor (such as solar exposure requirements), react to potential sponsorship agreements, and identify the interest of the adjacent property and business owners to finalize station locations.

Under this plan, Phase 1 would include 30 stations, 300 bikes, and 510 docks at a station density of approximately 4.8 stations per square mile. The addition of Phase 2 would increase the system to 60 stations, 600 bikes, and 1,020 docks and a station density of approximately 6.1 stations per square mile. These station densities are within the range of station densities in peer city systems.

**Table 4: List of Preliminary Station Locations**

Number	Station Name	Number	Station Name
Phase 1		Phase 2	
101	Warren Avenue – Helen Street Station	201	Banner University Medical Center
102	Park Avenue Garage	202	Highland Garage
103	Student Union / 2 <sup>nd</sup> Street Garage	203	Centennial Hall
104	University Transit Hub	204	1 <sup>st</sup> Street & Tyndall Avenue
105	Main Gate Village	205	5 <sup>th</sup> Street & Tyndall Avenue
106	ENR Building	206	University Rec Center
107	Mountain Avenue & Copper Street	207	Linden Street & 1 <sup>st</sup> Avenue
108	Mountain Avenue & Linden Street	208	Adams Street & Tyndall Avenue
109	8 <sup>th</sup> Street & Park Avenue	209	Broadway & Highland Avenue
110	Himmel Park	210	3 <sup>rd</sup> Street & Norton Avenue
111	Pima Community College	211	Mansfield Park
112	Catalina Park	212	Main Street & Adams Avenue
113	University Blvd & Stone Avenue	213	University Blvd & 3 <sup>rd</sup> Street
114	4 <sup>th</sup> Avenue & 5 <sup>th</sup> Street	214	7 <sup>th</sup> Street & 6 <sup>th</sup> Avenue
115	4 <sup>th</sup> Avenue & 8 <sup>th</sup> Street	215	Aviation Bikeway at 3 <sup>rd</sup> Avenue
116	Lost Barrio	216	14 <sup>th</sup> Street & Highland Avenue
117	Rincon Vista Sports Complex	217	Reid Park Zoo
118	Reid Park	218	Congress & 6 <sup>th</sup> Avenue
119	Broadway & 4 <sup>th</sup> Avenue	219	Convention Center
120	Armory Park	220	Toole Street & 7 <sup>th</sup> Avenue
121	Church Avenue Streetcar	221	Franklin & Court
122	Stone & Pennington	222	Congress & Granada
123	Presidio Park	223	The Loop at Granada Avenue
124	Granada & Franklin	224	Bonita Avenue
125	Mercado	225	Pima Community College (West Campus)
126	Menlo Park	226	The Loop at Speedway Boulevard
127	The Loop at St. Mary’s Road	227	El Rio
128	St. Mary’s Hospital	228	Santa Rosa
129	Five Points	229	Santa Rita Park
130	South Tucson	230	22 <sup>nd</sup> Street & 6 <sup>th</sup> Avenue

\* Phase 2 station locations may move into Phase 1 if there are private entities willing to fund the station.

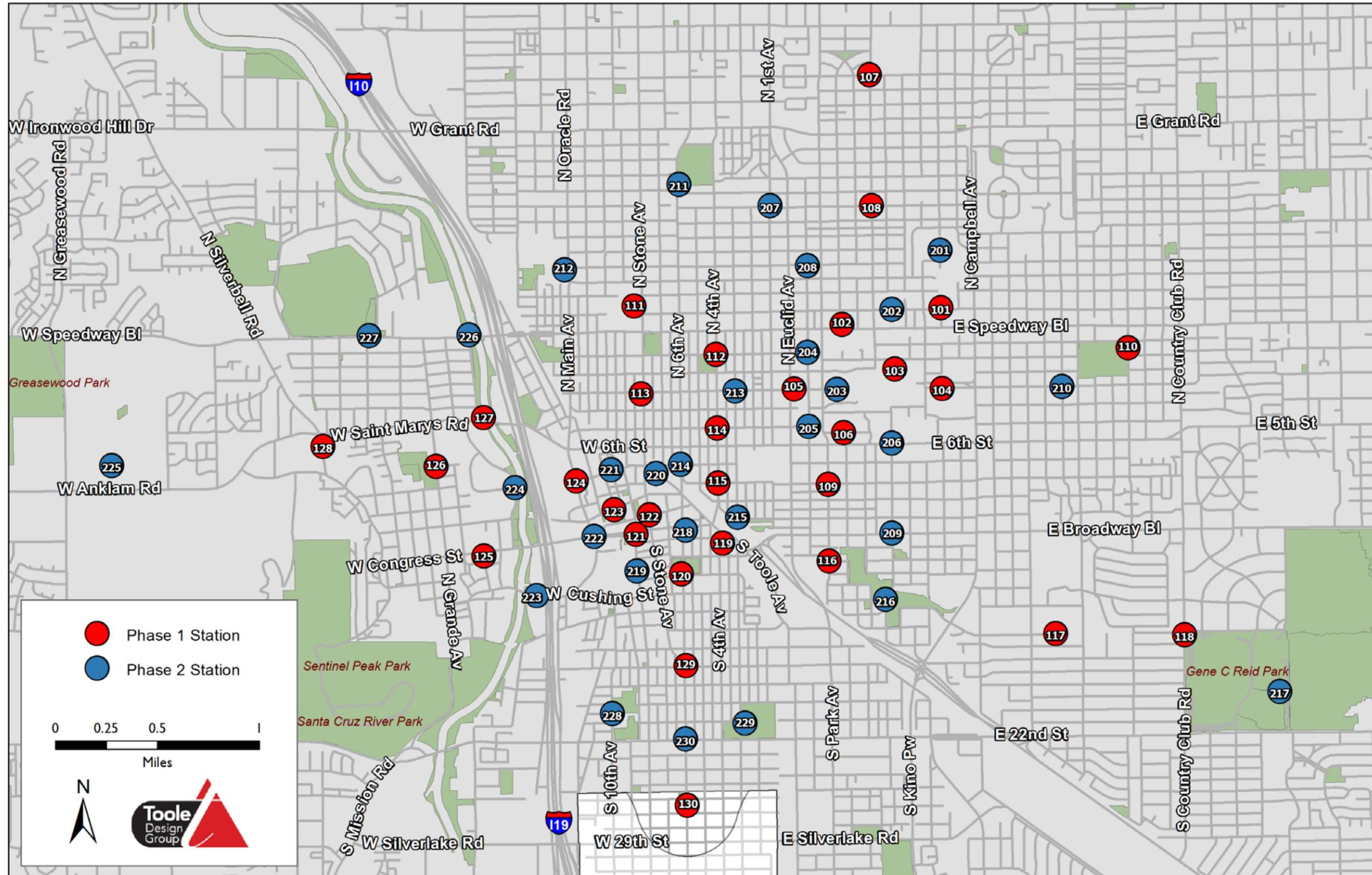


Figure 7: Potential Station Locations in the Initial Service Area.



### 1.3 Station Siting Guidelines

Stations should generally be placed in safe, convenient, and visible locations and can include installations in-street, on sidewalks, in parks and other public lands, or on private property through the use of a License Agreement with the property owner. In all instances stations should be available at all times to the public and to the operator for the purposes of maintenance and bicycle redistribution.

Bike share stations should be placed on a hard, level, paved surface and must meet the solar exposure and cellular signal requirements specified by the equipment vendor. In cases where stations do not meet solar or connectivity requirements, hard wiring may be necessary.

The footprint of the station will depend on the proposed number of docks. Actual station dimensions will need to be confirmed once an equipment vendor is selected. However, approximate station sizes are shown in **Table 5**. For example, a 15 dock, single sided station is approximately 40 feet long and 6 feet deep.

**Table 5: Approximate Station Dimensions**

Characteristic	Approximate Dimension
<b>Height</b>	
Dock height	2'-8"
Kiosk / map panel height	7'-0"
Height to top of solar panel	11'-6"
<b>Depth</b>	
Base plate with dock	<3'-0"
Station with bicycle	<6'-0"
<b>Length</b>	
11 docks + kiosk	30'-0"
12 docks + kiosk	32'-6"
13 docks + kiosk	35'-0"
14 docks + kiosk	37'-6"
15 docks + kiosk	40'-0"
16 docks + kiosk	42'-6"
Additional docks	2'-6"

The stations identified in Section 1.2 will need to be verified in the field prior to deployment and may need to be relocated depending on right-of-way availability and ownership, physical space availability away from utilities and other obstacles, operating requirements such as solar and wireless communication access, and consultation with adjacent land owners.

The implementation team will need to work with staff at the City of Tucson, the University of Arizona, and other agencies and property owners to understand the permitting process and to develop a set of

site guidelines. It is recommended that if possible, a streamlined or bulk permitting process be established to expedite implementation. The following provides some of the key considerations for each station type. A set of example station guidelines is included in **Appendix B**.

### Sidewalk Site Requirements

Sidewalk sites should not interfere with existing pedestrian travel patterns and must maintain sufficient clearance to fixed objects and utilities. A photo rendering of a potential sidewalk bike share station in Tucson is shown on **Figure 8**.



**Figure 8: Example of a Sidewalk Bike Share Station.**

### On-Street Site Requirements

On-street sites typically make use of converted parking spaces; however restricted parking areas may also be considered where these sites do not impact sight lines. It is preferred that on-street sites first consider conversion of non-metered parking and that any metered parking conversion be reviewed by the City's Parking Department.

Generally, on-street stations should first consider low traffic volume streets. However, higher traffic volume streets can be considered where there is sufficient width for a user to pull a bike from the station without encroaching into the traffic lane, or where there is a buffer provided between the station and moving traffic, e.g., a bike lane or painted buffer.

Standard safety treatments should be developed for on-street stations in consultation with the City's Engineering Department and may include street markings, flexible delineators, or other safety equipment. A photo rendering of a potential on-street bike share station in Tucson is shown on **Figure 9**.



**Figure 9: Example of an On-Street Bike Share Station.**

### **Parks and Other Public Property**

Sites may be placed on Parks Department or other City property at the discretion of the relevant agency. In general, sidewalk siting guidelines apply to these sites. A photo rendering of a potential station on the University of Arizona campus is shown on **Figure 10**.



Figure 10: Example of a Potential Bike Share Station on the University of Arizona Campus.

### Private Property

Sites may be placed on private property at the discretion of the owner. The operator must secure a License Agreement to establish the terms of use, to transfer liability, and to ensure the site is accessible to the public at all times. Generally, sidewalk siting guidelines apply to these sites.



## **Appendix A**

### **Online Survey Form**



## **Bicycling Preferences**

### **1. Do you currently have access to a working bicycle?**

- a. Yes
- b. No

### **2. How often do you ride a bicycle?**

- a. A few times a year
- b. A few times a month
- c. A few times a week
- d. Daily

### **3. Which of the following best characterizes your bicycling behavior?**

- a/ I am a seasonal bicyclist and prefer to ride when the weather is nice
- b. I am a year-round bicyclist and ride regardless of weather conditions

## **Attitude Toward Bike Share**

### **4. Have you used a bike share system before?**

- a. Yes
- b. No

### **5. What system did you use? (Please Name the system or the city, for example, "Capital Bikeshare" or "Washington, DC)**



**6. Do you think a bike share program is a good idea for Tucson?**

- a. Yes
- b. No
- c. I don't know

**7. Please tell us why you think bike share is a good idea for Tucson.**

**8. Please tell us why you think bike share is a not good idea for Tucson.**

**9. If bike share were available, what types of trips do you think you would use the bikes for?**

- a. Transportation to work or school
- b. As a part of a larger transit trip (eg, to get to or from bus, streetcar)
- c. Transportation for errands/other non-work
- d. Transportation during the day while at work/school
- e. Recreation/Exercise
- f. Wouldn't use it
- g. Don't know
- h. Other

**10. About how often do you think you would use bike share?**

- a. Never
- b. Once a month
- c. Once a week
- d. Once a day



- e. More than once a day
- f. Other

**11. What price would make you likely to subscribe to a single ride or daily bike share pass in Tucson?**

- a. Single 30-minute pass? Range from \$0 to \$20
- b. Daily pass with unlimited 30-minute rides? Range from \$0 to \$20

**12. What price would make you likely to subscribe to an monthly or annual bike share pass in Tucson?**

- a. Monthly pass with unlimited 30 minute rides? Range from \$0 to \$200
- b. Annual pass with unlimited 30 minute rides? Range from \$0 to \$200

**About You**

**13. Age**

**14. Sex**

- a. Male
- b. Female
- c. No Response

**15. Ethnicity**

- a. Asian or Pacific Islander
- b. Black or African American



- c. Hispanic or Latino
- d. Native American Indian
- e. White or Caucasian
- f. Other

**16. What is your annual household income?**

- a. Less than \$20,000
- b. \$20,001 to \$40,000
- c. \$40,001 to \$60,000
- d. \$60,001 to \$80,000
- e. \$80,001 to \$100,000
- f. \$100,001 to \$120,000
- g. More than \$120,000

**17. 5-digit zip code for your home address**

**18. Are you currently employed?**

- a. Yes
- b. No

**19. What is the zip code of your place of employment?**



**20. Are you currently enrolled in school?**

- a. Yes
- b. No

**21. What is the zip code of the school you attend?**

**Stay Informed**

**22. Would you like to stay informed about the Figure Bike Share Feasibility Study?**

- a. Yes
- b. No

Please enter your email address below. Please note that all email addresses and responses will be kept confidential.



DRAFT

**Appendix B**

**Example Site Planning Guidelines**

### General Siting Requirements

- The footprint for a 15 dock station is approximately 6-feet wide x 40-feet long. It is recommended that additional width be provided behind the back of the bicycle to allow it to be pulled out of the dock without encroaching into the traffic lane behind it. On lower volume streets, 1- to 2- feet may be sufficient, however, on busier streets it is recommended that at least 8-feet be provided to allow for 2-feet of clearance behind the bikes, unless there is a buffer such as a bike lane or painted separation adjacent the station. Additional width should be provided where the bikes back up to a constrained condition such as a wall, heavy traffic street, etc. Additional length will be required for larger stations.
- Sites must have unrestricted public access at all times.
- Sites should ensure maximum visibility.
- Sites must not impede the use of any existing facilities, such as bus stops or fire hydrants.
- Sites need to meet the necessary solar (or non-solar) and cellular signal requirements specified by the equipment vendor.
- Sites must have a hard, level surface.
- Sites should consider access for installation and for regular maintenance and rebalancing.
- Where possible, sites should make use of existing lighting.
- Except in specific circumstances, stations should be located as close as possible to the corner / crosswalk.

### Sidewalk Sites

- In busy pedestrian areas (such as the CBD), the following guidelines should be considered:
  - Curbside installations: a minimum sidewalk width of 14-feet, which allows for a 2-foot clear zone between the back of curb and the front of station, 6-feet for the width of the station and bikes, and 6-feet for the pedestrian thoroughfare.
  - Non-curbside station installations: a minimum sidewalk width of 12-feet if unconstrained; or 13-feet if the station abuts a building or other physical constraint (to provide a 1-foot space for maintenance and debris cleaning).
- On less traveled sidewalks, and depending on the level of pedestrian activity, a minimum width of 5-feet should be maintained for pedestrian travel. Stations could be placed on the grass verge adjacent the sidewalk or a concrete pad constructed (See Example C-2 in Appendix C).
- Sites should not interfere with existing pedestrian travel patterns and where possible should be placed in line with other street furniture.
- Sites may not be placed:
  - Within 5-feet of a crosswalk.
  - Within 10-feet of driveways.
  - Within 15-feet of fire hydrants.
  - Within 5-feet of stand pipes.
  - Within 2-feet of fixed objects such as lamp posts.

- Within 15-feet of a bus stop and ensuring sufficient distance from rear bus egress doors (if the station is placed on the curbside. Stations can be closer if placed on the non-curbside (See Example C-1 in Appendix C).
- Directly in front of the main entrances to major buildings.
- Sites should be set back a minimum of 2-feet from the curb when adjacent to on-street parking to allow for the opening of automobile doors. A minimum of 18-inches is acceptable where parking is not allowed.

### On-Street Sites

- Sites should first be considered in the parking lane of side streets or low traffic volume streets. See “General Siting Requirements” for width requirements.
- Higher volume streets can be considered where there is additional space or separation from traffic such as an adjacent bicycle lane or painted buffer (2-foot minimum).
- Sites should be arranged with the docks on the curbside of the station and bicycles pulling into the street.
- Sites may not be placed:
  - In no stopping zones.
  - Within 15’ of the end of a bus stop.
  - Within 15-feet of a fire hydrant.
  - Within 10-feet of signed loading zones, driveways or curb cuts.
  - Within 5’ of a crosswalk.
- Stations may be placed in no parking and no standing zones as long as the station does not impact sight lines.
- Stations are discouraged on the inside of turns unless the geometry is such that the location is deemed appropriate by the City’s engineers.
- A minimum of 6-inches should be left between the back of the station and the curb to allow for drainage flow.
- Sites must be reviewed to ensure they meet appropriate safety criteria.
- Standard safety treatments should be developed in consultation with the City’s Engineering Department and may include street markings, bollards or other safety devices.

### Parks and Other City Property

- Sites may be on Parks or other City properties at the discretion of the relevant agency.
- In general, sidewalk siting guidelines apply.

### Private Property

- Sites may be on private property at the discretion of the property owner.
- Sites on private property must have unrestricted public access at all times.