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Typical Trip Characteristics

The system should be designed for an average trip length of 1-3 miles and duration of 15-30 minutes. Trips will be made both during daylight and at night.

The pricing system will be designed with incentives to encourage users to return the bicycles to a kiosk within 30 minutes, so that many trips can be made on the same bicycle each day. For this reason, many trips will be one-way (i.e., the bicycle is checked into a kiosk near the destination). The system should also encourage two-way trips for quick errands (such as dropping of a package or getting a haircut). Encouraging those two-way trips maximizes convenience to the user and reduces kiosk rebalancing.

Design Approach:

The system should be designed for the target users on a short trip within the service district in all seasons. A system designed for recreational rides, which are typically longer, on bike pathways or low-traffic roads outside the center city, in fair weather, by users wearing athletic clothing, would be insufficient.

Basic Operating Requirements:

The system should be designed to allow bicycles to be removed from the self-service kiosks by two user groups: subscribers and walk-up renters.

Subscribers will be the largest user group. They will use a web page to register, submit credit card data, and execute a user agreement. After registration, subscribers should be able to immediately access a bike at any kiosk. Subscriptions should last one year with an automatic renewal option. Shorter Subscription periods, such as 3-day and 7-day, should also be available.

Walk-up renters will include out-of-town visitors and first-time users. The system should be designed to allow one-time use by walk-up registration at any kiosk. The system should enable walk-up renters to register, submit credit card data, and execute a user agreement at any kiosk.

The system should be designed to automatically complete financial transactions with data input at the web page and kiosks. For subscribers, a subscription fee (which will be determined by the City and the managing partner based on average market costs) would be withdrawn after registration. Subscribers who return the bicycle to a kiosk within 30 minutes will not be charged. After 30 minutes, charges will be automatically withdrawn. These charges should be sufficient to encourage users to get the bicycles back into circulation quickly.

If a bicycle is not returned to a kiosk within 24 hours and the user has not contacted customer service, the system should automatically deduct a predetermined amount (dependent on bicycle acquisition costs) from the user's credit card account, notify the user via e-mail of the deduction, and, if the user is a subscriber, terminate the subscription.

Size of the System

It is critical that the system contain a sufficient number of bicycles and kiosks to enable subscribers to have a reasonable degree of certainty that they will find a bike at a kiosk when they look for one and find an empty docking point in a kiosk at their destination. If those conditions are not achieved, sales of Subscriptions will lag. For the Proposed Phase 1 Service Area, we estimate those numbers to be 300-400 bikes and 30-40 kiosk locations with 600 docking points. We request that vendors provide a proposal and pricing for a system

of that size and also make an independent recommendation regarding the minimum size necessary for a successful bike sharing system.

Bicycles

The following desired elements are considered most important:

- Safety and stability in all weather conditions;
- Upright riding position for confident riding in traffic;
- Easy to operate; easy to mount and to hold in stopped position, including for shorter rider;
- Reliable and intuitive braking system;
- Protection from grease, dirt, and tire spray including enclosed drive train and full fenders;
- One size to fit 90% of adult population with seat-only adjustment (small and large bikes should be available for rental at bike centers) (because bikes will move continuously and randomly throughout the system, maintaining a sufficient supply of small and large bikes at anyone kiosk would not be feasible);
- Theft deterrent (potentially through use of components not compatible with other bicycles and/or requiring tools not commonly available).
- Low-maintenance/durable;
- Corrosion resistant;
- Puncture resistant tires;
- Cargo capacity for typical briefcase, book bag, grocery bag weighing up to twenty pounds;
- Lighting system including rear flasher and front headlight;
- Front, rear, and side reflectors;
- Capacity for sponsorship advertising that can be easily changed;
- Gears and shifters that are easy to use and sufficient for operation in head winds and on hills in subsequent phases of the bicycle sharing system.

Additional desired elements include:

- Compatibility with racks inside Cap Metro light rail cars and on the fronts of buses;
- Equipped with lock to enable user to secure bike to any bike rack or post while making a quick stop;
- Equipped with tracking devices, if cost-effective;
- Estimate of the useful life of the bicycle and proposed warranty terms.

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Physical Layout of Kiosks: The following desired elements are considered most important:

- Smallest feasible footprint to enable installation in a space currently used as a parking space or on a wide sidewalk; including not obstructing pedestrian walkways and/or hinder ADA compliance on the sidewalks;
- Aesthetic compatibility with streetscape, both when kiosk is full of bicycles and when it is empty;
- Minimal impairment of pedestrian movement on streets and sidewalks (kiosks cannot create long barriers); again, must not obstruct pedestrian walkways and/or hinder ADA compliance on the sidewalks;
- Pedestrian and rider safety-the kiosk should not have horizontal components that could trip a pedestrian or injure a rider approaching a kiosk at night;
- Low-maintenance/durable;
- Adequate space at each kiosk for a lighted map indicating both kiosk locations and bicycle routes;
- Clear and prominent instructions at each kiosk directing the users who to call in the event of problems (to prevent calls to right-of-way owners).

Additional desired elements include:

- Capacity to add lighting where necessary to facilitate nighttime use of kiosk and adjustment of bicycles and to reduce vandalism;
- Capacity to add emergency call buttons;
- Ability to remove kiosk to a different location without leaving behind attachment points that could impede a pedestrian;
- If wireless internet connections are used, the reliability of that system will be an important consideration.

Operation of Kiosks and Registration System: In addition to the basic operating requirements described above, the following desired elements are considered most important:

- Data security, particularly for financial data, user names, and addresses;
- Capacity to convey bicycle safety information and laws affecting bicyclists via the webpage. (A possible approach would require subscribers to watch a webinar and take a short quiz. Subscribers should also be referred to in-person training programs.)
- Automatic confirmation that subscriber's credit cards is valid and has sufficient funds to cover charge if bicycle is not returned, before each bicycle is removed from a kiosk;
- Limit on the number of subscriptions and walk-up rentals that can be purchased by one user or using one credit card;
- Capacity to maintain security of the system during a power failure event or loss of internet connection;
- Indicator on kiosk showing whether the bicycle is available for use or out of-service (such as when the system is shut down during an emergency or an individual bicycle has been identified as needing repair);
- Capacity for user to identify a bicycle as needing repair;
- Capacity to issue reports indicating to repair crews where to rebalance and where bicycles needing repair are located; (For example, the system could signal repair crews when kiosks are within two bikes of being full or empty.)

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- A process for situations in which a user wants to return a bike to a kiosk that is full. (One alternative would enable the user to add free time and view a map indicating the nearest kiosks with open docking points at the full kiosk. Another would be to enable the user to stop the clock at the full kiosk, lock the bike to a nearby post with the on-bike lock, and drop the key into a drop box, which could be opened by repair crews later.) Additional desired elements include:
- Flexibility to add features and modify system as needed;
- Capacity for user to track number of available bikes and open docking points in each kiosk via web page and/or cellphone;
- Ability to disable walk-up registration at times;
- A mechanism for users to report problems and make suggestions for system improvement via the webpage.
- Language options for web page and kiosk, particularly Spanish.

On-Site Repairs, Cleaning, and Rebalancing:

It is anticipated to contract with a non-profit to maintain, repair, cleaning, and rebalancing the bicycle and maintain the kiosk as needed. The non-profit would be responsible for the following tasks:

- Filling tires
- Cleaning bikes
- Making minor repairs
- Moving bikes needing major repairs or periodic overhauls to a repair facility.
- Moving bikes from overloaded kiosks to under loaded kiosks ("rebalancing").

Building New and Replacement Bikes; Periodic Overhauls: We anticipate the nonprofit will assemble new and replacement bikes and to perform overhauls on each bike at regular intervals.

Major Repairs: We also anticipate the nonprofit will perform or contract out the repairs that cannot be done on-site, such as rebuilding a damaged wheel or drive train.

Customer Service

To drive subscriptions and avoid unnecessary calls to right-of-way owners, a robust customer service program is required. Potential elements of the customer service program include:

- A customer service phone line with adequate staffing to address local problems (i.e., flat tire leaving a stranded rider) and operating system problems (i.e. questions about a subscriber's account). The phone number should appear on every bike. The customer service line should also be reachable through Austin 311.
- Personal customer support in a few locations, such as in bike centers.