Bcycle ™

leadership and innovation in bike sharing

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B-cycle System Overview

B-cycle was named one of Fast Company's **Top 5 Most Innovative Companies in Transportation**

B-CYCLE HISTORY

B-cycle, LLC grew out of Trek Bicycles, and since launching the first U.S. large-scale public bike sharing system In Denver, CO in 2010, B-cycle has established itself as a proven, world-leading bike share equipment supplier and operator. As of early 2014, B-cycle has 27 systems in more than 30 cities with more than 3,500 bikes on two continents. We understand what it takes to develop and operate a successful system. Every B-cycle system has been installed on time and under budget.

In 2007, the founding partners of B-cycle, Trek and Humana, began their bike sharing venture with the nation's largest ever bike sharing program culminating at the 2008 Democratic National Convention in Denver, Colorado. Called Freewheelin, this program made 1,000 bikes available to the delegates at both the Democratic and Republican National Conventions.

B-cycle, as an organization, brings together a unique combination of talent and experience. B-cycle is a joint venture between Trek Bicycle Corporation, Humana Inc. and Crispin Porter + Bogusky. Trek is the largest manufacturer of high quality bicycles in the United States, Humana is a highly regarded health insurance company, and Crispin, Porter + Bogusky was recently named advertising agency of the decade. As a result of the commitment of these founders, B-cycle was named Number 5 on Fast Company's list of innovative transportation companies.

1.2 B-cycle Bike Sharing

SYSTEM OVERVIEW

The B-cycle system was designed to be flexible so that it can help communities achieve a wide range of goals. But the core design principle of B-cycle is to provide an aesthetically appealing and technologically powerful bike sharing system for communities all over the world. We designed our bike sharing system to enhance personal mobility, which leads to a reduction in the use of private automobiles and an increase in personal health and wellness.

B-cycle is visually and programmatically iconic. The big "B" is intended as a way-finding device to inform users where to find bikes.

The iconic B makes it easy for users to find bikes.

Designed from scratch specifically for global bike sharing programs, the B-cycle system is comprised of three main components:

1. The B-cycle itself, which was designed by Trek Bicycle Corporation specifically for bike sharing;
2. The Station, which we believe offers the most efficient footprint in the industry, has several power options, docks that are single or double-sided, with bolted or non-bolted installation, and assembles on-site quickly and easily without the need for a crane truck;
3. The Software, which includes a back-end administration and maintenance system, local consumer web page, individual profiles, and extensive links to social networking sites.

1.3 B-cycle Innovations

A few of the features that set the B-cycle system apart from the competition include:

ONGOING INNOVATION

B-cycle has enjoyed continuous improvement since 2009. Improvements include passive GPS, integrated trikes, new basket configurations, business intelligence upgrades, nationwide reciprocity capabilities, and multi-frequency RFID docks. B-cycle is committed to be the Best-in-Class bike share system, and all product enhancements are designed to be fully backwards compatible with earlier product versions.

B-CONNECTED

An exciting feature of the B-cycle system allows for system reciprocity which will link your B-cycle program to other B-cycle programs so users of your system can use their membership card in other systems, and vice versa.

VIRTUAL KIOSK

B-cycle's back-end software allows the system operator to check bikes in and out using only a computer. At large events, where the operator may want to encourage users to ride B-cycles, the rider can check his or her bike in at a temporary "station" set up for the event. There is no need to set up – and then take down – stations for the event.

MOBILE APPLICATIONS: APPLE AND ANDROID

Included in the software technology, B-cycle provides mobile applications for Apple and Android platforms. With location-based dock and bike locating abilities, users can find bikes and open docks from their smart phone. Users also have the ability to receive system-generated text alerts (overdue bike warnings, etc.) Additionally, the technology is open API for the mobile developer community.

BASKET OPTIONS

B-cycle provides two basket configurations. The standard B-cycle features a front basket that is designed to carry a laptop computer bag and other gear up to 20 pounds. An alternative basket configuration has a smaller front basket and a rear side pannier.

GPS CAPABILITY

Each B-cycle can be equipped with optional, proprietary self-charging GPS technology that provides actual rider data including distance and actual route ridden. This allows the user to see his or her actual statistics on B-cycle's website. More importantly, this GPS data can be aggregated to show city and campus planners exactly where these bicycles are being ridden.

QUICK, EASY, AND PAPERLESS

With a credit card, a customer can sign up for a membership at any kiosk and be on a bike in less than two minutes. The whole process is digital and uses no paper access chits or paper receipts.

MULTI-FREQUENCY RFID

In addition to the B-card that annual members receive to check out bikes, B-cycle technology allows for operators to incorporate an additional RFID frequency as an option. Whether it is a transit system RFID for the city, or a student RFID card, B-cycle has the capability to incorporate them into the membership and checkout processes.

WEBSITE AND METRICS

Each local B-cycle installation includes its own website, which is linked to the B-cycle global site. The local website can post local information, promote local events, and engage cyclists in the local marketplace. Each local site shows the aggregate rider metrics and carbon offset values. These values are true ride measurements not estimated ride metrics.

REDUNDANT LOCKING

B-cycles are locked at each side of the front hub with two, not one, robust locking mechanisms. If one lock fails to engage, the other will keep the bike secure.

MODULAR AND CONFIGURABLE STATIONS

B-stations have bases and docks that can be manipulated to fit even the most unusual spaces including a curve.

The B-cycle bicycle was designed by Trek specifically for bike sharing. It is fun to ride, easy to adjust, and comfortably fits riders from 5' to 6' 2"+. The B-cycle features an optional onboard self-charging GPS computer that runs off the power generation of the front hub and uses RFID technology for tracking and anti-theft purposes. The bicycle is designed at Trek Bicycle Headquarters in Waterloo, WI.

The B-cycle offers several locations for local advertisements, sponsorships, or other messaging:

Messaging Panels

1.4 The B-cycle Bicycle

B-CYCLE COMPONENTS AND SPECIFICATIONS

CUSTOMIZATION

Color choices: Red, Blue, Gray (or custom color for an order of 100 or more bikes)
Branding: Custom graphics
                  Can be branded "B-cycle" or custom branded
Decals: Basket (left & right panels)
                  Shroud (triangle & handlebar surfaces)
                  Skirt guard (left & right panels)

COMPUTER

Each B-cycle can be equipped with proprietary self-charging GPS technology that provides actual ride data including distance and actual route ridden. This allows the user to see his or her actual statistics on B-cycle's website. More importantly, this GPS data can be aggregated to show program operators and city planners exactly where these bicycles are being ridden.

BASKET:

The standard B-cycle features a front basket that is designed to carry a lap top computer bag and other gear, and that dovetails perfectly in a double sided B-station.

However an alternative basket configuration is also available. With a smaller front basket and a rear side basket, it offers additional cargo space. Any combination of these baskets can be used as an option.

FRAMESET

Sizes: One size fits most (specifically 5' - 6'2"+)
Frame: Oversized alpha aluminum
                  Weight is designed to be carried directly over bike's center of gravity for superior balance and control for all size of riders
Fork: Proprietary triple clamp aluminum and centering spring

WHEELS

Front: Shimano Dynamo generator hub with alloy rims
Rear: Shimano 3-speed (or 7-speed) internal gear hub with alloy rims
Tires: Puncture resistant Bontrager hard case with reflective sidewalls and sealant filled tubes

DRIVETRAIN

Shifters: Shimano twist shifter
Rear: Shimano Nexus 3-speed (or 7-speed) internal gear hub
Crank: 38T alloy
Chain: KMC Rustproof 1/2x1/8" heavy duty
Pedals: Platform

COMPONENTS

Saddle: Seamless Bontrager all-weather saddle

Seat Post: Proprietary theft resistant indexed post with easy to use proprietary four-finger clamp

Grips: All weather grips with reflective bar ends

Headset: Sealed bearing

Brakeset: Shimano IM40 all-weather internal brake system

Fenders: Color matched alloy with stainless steel hardware

Extras: Fully encased shroud housing, robust kickstand, and bell
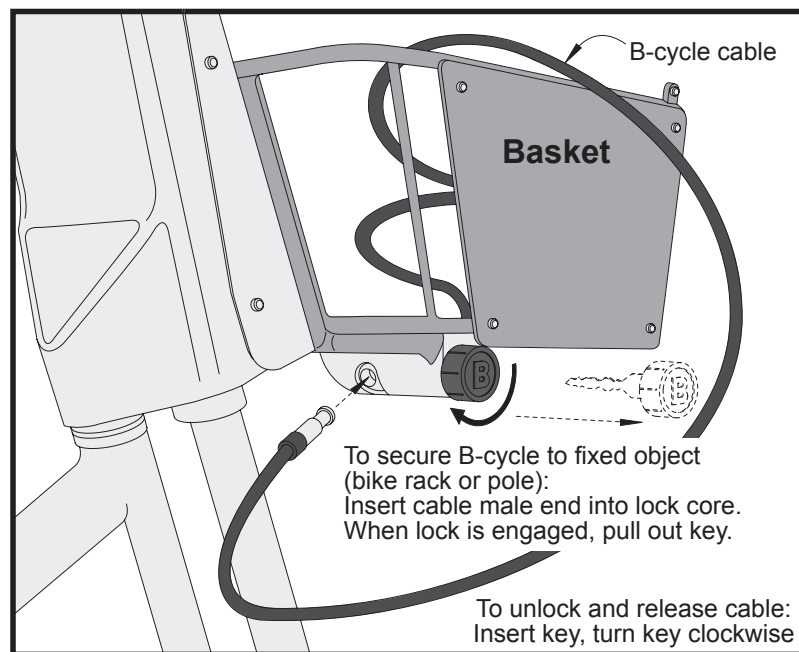
LIGHTING   B-cycles are equipped with always-on Spanniinga 3W 10 Lux LED front and rear lights that run
               off the bicycle's hub dynamo. The lights remain illuminated for approximately four minutes after the
               B-cycle stops, ensuring illumination when the rider stops at a traffic light.

SECURITY

At B-station: Proprietary dual front hub locking design, seamless integration with the B-station

While Away: Built-in Kryptonite cable lock and theft deterrent hardware throughout.

EXTRAS   Fully encased shroud housing, robust kickstand, and bell
               Spring bar handlebar straightening system
               Bicycle weighs under 50 pounds completely assembled (with on-board lock).
               Front and back reflectors (in addition to pedal powered lights)
               Multiple areas for graphics and signage
               Decal opportunities to communicate safety and customer service messaging

B-cycle cable

Basket

To secure B-cycle to fixed object
(bike rack or pole):
Insert cable male end into lock core.
When lock is engaged, pull out key.

To unlock and release cable:
Insert key, turn key clockwise

1.5 The B-cycle Station

A few important things to note:

1. Stations are highly configurable to meet the needs of each location. This station can be configured as a single or double-sided station. Single-sided offers the least impact on pedestrian traffic, while double-sided maximizes the number of bikes at a station with a limited amount of space. The base can turn corners or be situated completely around urban obstacles such as trees or monuments.

2. Stations can be easily added to, removed and/or relocated due to its modular construction.

3. The station has three base options--a lighter bolted base or one of two heavier non-bolted bases depending on the power source.

4. Highly secure - the station locks the bicycle at the hub, using two robust locking mechanisms to double secure the bicycle. If one lock fails to engage, the other will secure the bike. This proprietary locking mechanism is highly robust and has been proven reliable in all weather conditions. These locks function to secure a bicycle whether or not a station is under power. Further, because they are redundant, should one lock fail to engage, the second lock will secure the bicycle by itself.

5. The stations can be solar, A/C or battery powered, or a combination. Alternate powers sources are available. Wireless cellular technology with encryption is used to connect each station to B-cycle's secure computer server. The system will maintain equipment security in the event of a power failure or wireless data connection disruption.

6. Kiosks at each station allow walk-up users to purchase short-term memberships. Longer-term members are issued B-cards with RFID chips, and can bypass the kiosk completely and use their card to check a bike out directly from any dock.

7. Stations are new and of a uniform model; stations have availability for decal customization on kiosk and ad/map module.

8. The B-cycle stations are made in the USA.

KIOSK

The kiosk replaces one dock at each station. It can be powered by solar, AC, battery or a combination. A standard B-cycle kiosk covers all basic station functionality (registration with a credit card, check-in/out, provides nearest bike/dock availability, 15 minute extensions for full stations).
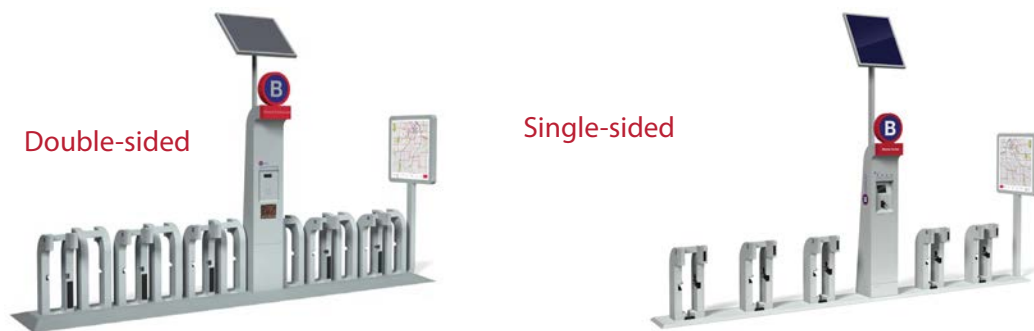
- Frame: Zinc-coated Galvanneal
- Paint: Powder Coat
- Power Options:
  - Solar powered (single 135-watt panel with dual battery backup)
  - A/C (110 VAC, 60 Hz, 3 Amps)
  - Battery
- Display: Color Touchscreen
- Language: English and Spanish (with other language availability)
- Magnetic stripe all-weather credit card reader
- Communications to central server via broadband cellular (wireless)

AD/MAP MODULE

Taking the place of one dock, the ad/map module can display a map of the system and also offers a sponsorship opportunity. Additionally, the ad/map module can be lit for improved nighttime display.

DOCKS/BASES

Docks can be single or double-sided on the same base. Single-sided docks allow for "walk through" access, while double-sided docks maximize the number of bikes at a station.
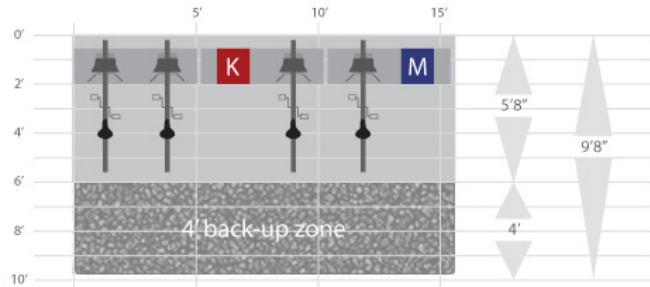

Double-sided

Single-sided

The bases are zinc-dipped powder-coated steel that can be mounted either by "dropping" (no bolting required) or bolting. The bases are configurable to fit many kinds of spaces including a curve.
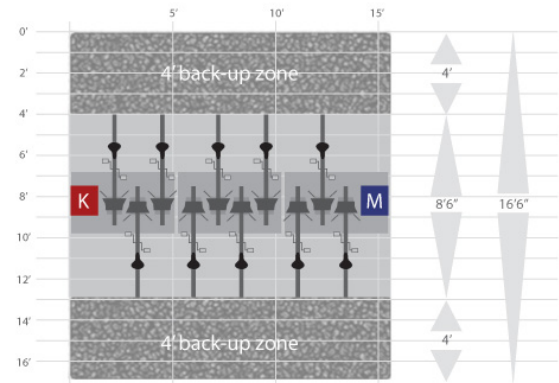
STATION FOOTPRINTS

SINGLE

DOUBLE

Number of bases	Exact length required for bases (Each base is 5'2")	Number of docks if single-sided (Requires 5'8" of depth space, plus a 4' back-up zone or 9'8" total)	Number of docks if double-sided (Requires 8'6" of depth space, plus two 4' back-up zones or 16'6" total)
2	10'4"	3	6
3	15'6"	5	10
4	20'8"	7	14
5	25'10"	9	18
6	31'	11	22
7	36'2"	13	
8	41'4"	15	
9	46'6"	17	
10	51'8"	19	
11	56'10"	21	
12	62'	23	

1.6 The B-cycle Software

B-cycle has developed a proprietary, best-in-class, web-based enterprise bike sharing software system. The software features both back-end and consumer-facing web pages that enable members to be part of an expansive bike sharing community, maintain a personal profile, and participate in an open source, affinity-based social network. The B-cycle bicycle includes an optional, integrated self-charging GPS computer, which works in unison with the software to show actual rider metrics and ride maps. Furthermore, B-cycle owns all software licenses, thus avoiding any potential future licenses issues.

The B-cycle bike sharing software system includes a digital platform comprised of five components.

1. Community Website (customizable)
    - Static information pages (what is B-cycle, how do you use it, etc.)
    - Interactive content and tools
    - Local news and events published via live, relevant Twitter feeds
    - Online subscription purchases, renewals, and upgrades
    - Hooks to established social networking sites (links and live feeds)
    - Password-protected member portal with personalized data:
        - Individual profile information
        - Ride and payment history
        - Health and environmental impact
        - Leader board – user population ranking
    - Global rider and carbon offset metrics
    - "See My Ride" provides the user of with a map of his/her latest rides, and can be shared via Twitter, Facebook, or Email

2. Self Service Bike Rental
    - Color touchscreen access at kiosk provides:
        - Bike check-out for members
        - Short-term rentals via credit card
        - Real-time status of nearby stations to locate bikes for rental or open docks for returns
        - 15 minute credit requests when station is full
    - Dock-based check-out for members with B-cards (bypass Kiosk)

3. Virtual Kiosk
    - Standard bike check-in and check-out performed by bike sharing staff members from a standard computer.
    - This option allows communities to encourage use of the bike sharing system at special events, such as festivals or sporting events, without the need to set up large stations at the event. Using the virtual kiosk, bikes can be checked in and out of the system using only a computer. The user does not need to find an available station to dock his/her bike.

4. Mobile Applications: Apple and Android Platforms
    - Location-based Dock and Bike Locator (find bikes and open docks relative to user's GPS coordinates)
    - Open API for mobile developer community
    - Outbound system-generated text alerts (overdue bike warnings, etc.)

5. Back-End Operations Management
   - Tiered, role-based access
   - Manage system and kiosk functions remotely from the office or from your own personal computer with internet access (disable system or just a kiosk, lock down a bike so that a user is not able to rent it, adjust hours of operation of the system or by kiosk)
   - Subscriber and member management (including bulk-loading)
   - Ability to adjust pricing for check-out and usage
   - Track system use and performance in real time
   - Inventory management (kiosks, RFID cards, bikes, docks, etc.)
   - Configurable notifications (maintenance events, overdue bikes, etc.)
   - Fulfillment process support
   - Rebalancing, maintenance and issue tracking (including reporting capabilities)
   - Program personalization and configuration (notifications, subscription types and pricing)
   - Virtual kiosk management – mobile bike check ins/outs, off-site maintenance
   - Ability to lock bicycles remotely
   - Ability to collect email addresses, telephone numbers, addresses, zip codes and other pertinent information
   - Ability to limit the number of membership and walk-up rentals that can be purchased using one credit card
   - Generate many different reports with many different metrics for flexible time frames, including:
     - Total users (and types of subscriptions)
     - Trip characteristics
     - Miles traveled
     - Calories burned
     - User demographics
     - Carbon emissions reduced
     - Real time distribution of bikes
     - Maintenance
     - Financial
     - Real time availability
     - Gallons of gas saved

PRODUCT TESTING
- Trek designed and tested the B-cycle to meet or exceed at U.S. CPSC and CEN standards for bicycles.
- The B-stations, designed and built in the United States by B-cycle's station vendor, were tested to UL standard 60950, including extreme temperatures, excessive vibration or moisture. Additionally they are wind rated to 150 Mph.
- For the last four years, B-cycle systems across the U.S. operated in all seasons and extreme weather – scorching heat, torrential rain, freezing snow, ice and cold. This experience helped B-cycle develop a system that can withstand the elements of the seasons.

PRODUCT WARRANTIES

Bicycles: The B-cycle bicycles have a five-year frame warranty and one-year parts warranty, excluding theft, vandalism, accident, or misuse.

Stations: The B-cycle station comes with a manufacturer's one-year parts warranty, excluding theft, vandalism, accident, or misuse.
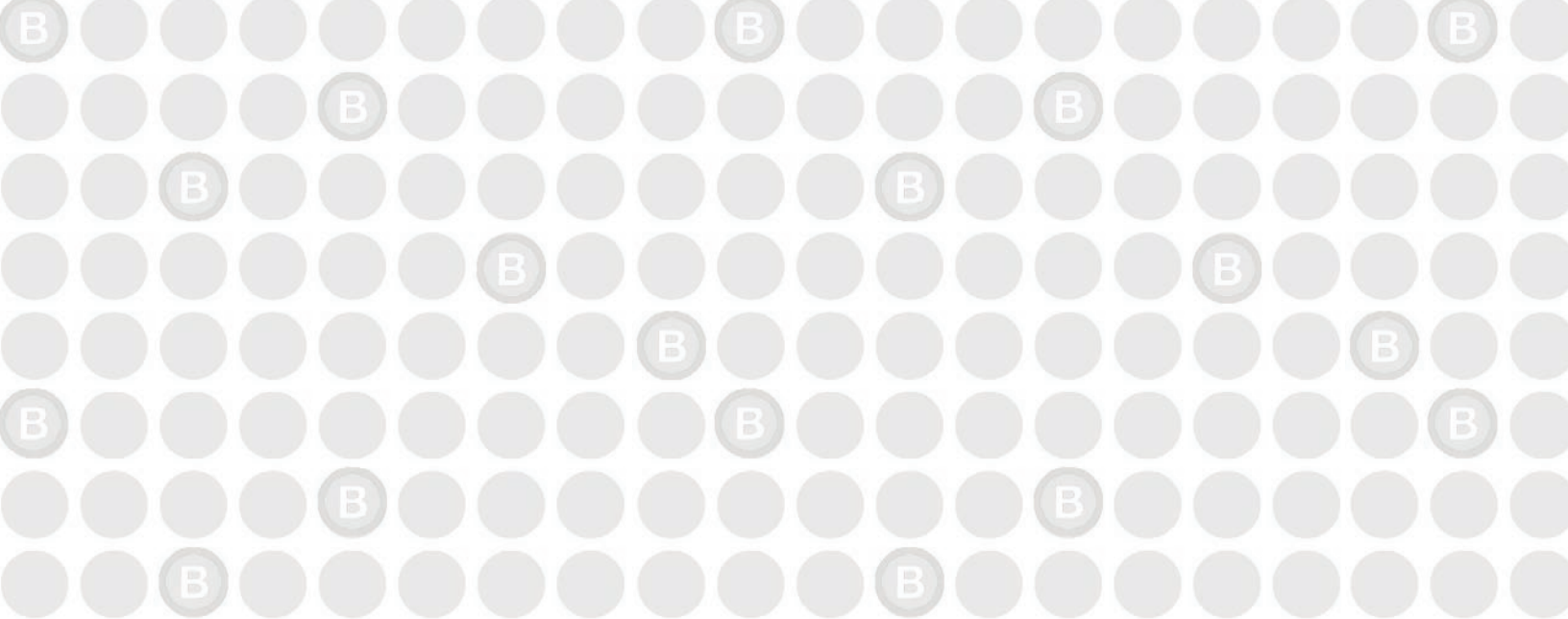
PRODUCT SUPPORT

B-cycle has a full customer support staff which provides 24/7 system monitoring and top notch support for all of our operators. We provide system set-up training before the program launch, in-depth program training just before launch, and support our customers with all of their ongoing needs post-launch.

Bicycles: We work with operators on initial bicycle assembly, bicycle maintenance, and provide support for any bicycle warranty needs.

Stations: We work with operators on Tier 1 station troubleshooting, elevate service requests and answer any questions a customer may have regarding a B-station.

Software: We provide ongoing operator support with regard to any aspect of the B-cycle system software whether it be an issue a user is having, answering questions an operator may have, or providing additional training with respect to improvements made to the software.