student sustainability committee
university of illinois at urbana-champaign

Campus Bike Parking Overhaul

Phase I: Request for Funding

Facilities and Services
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Section 2. Project Description

Section 2.1 Project Description

Project Vision: ***To replace obsolete bike parking on campus with safe and secure bike parking in addition to adding additional biking amenities that will contribute to the improvement of the bicycle network on campus, which will ultimately contribute to a more sustainable future on campus at the University of Illinois at Urbana-Champaign.***

Goals

- **Create convenient bike parking**
- **Provide safe and secure bike parking**
- **Encourage biking**
- **Discourage illegal bike parking**
- **Support a sustainable and healthy campus**

Providing convenient, safe and secure bike parking is a vital compliment to creating an effective bike network on campus. UIUC currently does not provide adequate bike parking consistently across campus. UIUC has many locations on campus that contain obsolete bike parking which can discourage biking. The obsolete bike parking is problematic because it is unsecure, outdated, potentially damaging to bikes and encourages bikers to park their bikes in unconventional areas such as on trees, fences, signs, etc. Replacing obsolete bike parking on campus may not *directly* encourage greater bike ridership on campus. However, not replacing the obsolete bike parking will certainly interfere with efforts to move forward in creating a more bike friendly campus that will promote energy efficiency and a sustainable future.

A field survey completed in the summer of 2009 found that half of the existing bike parking on campus was outdated and not up to current standards. The aforementioned "outdated bike parking" mostly includes the "donut-hole" style bike rack. The donut-hole bike parking is the most common form of outdated bike parking on campus. Donut-hole bike racks are problematic because they are unsecure, can damage bikes and can also fail to provide strong security against theft as a result of the loop design which is meant for only tires to be locked to. In addition, many of the donut-hole bike parking locations have severely deteriorated since they were first installed. The deterioration of the donut-hole bike parking has often left them to be unused and a waste of space in addition to being an eyesore on campus.

Replacing the current obsolete bike parking on campus with safe and secure bike parking is a ***fundamental*** and ***necessary step*** that must be taken in order to move forward in creating more innovative bike facilities - i.e. bike paths, bike storage - and a more sustainable future. We believe a three phase approach is the best way to address the issue of bike parking on campus. While this proposal outlines all three phases, **we are only requesting funding for Phase I.** Separate proposals will be submitted for future phases.

Section 2.

Section 2.2 *Definition of sustainability and the relationship of the project to this definition:*

Sustainability is a complex term which aims to minimize the negative effects of present behaviors on the world of tomorrow. Biking has essentially no negative impacts on the future. Biking leaves virtually no carbon footprint, increases mobility for those who do not have or prefer not to use motor transport and promotes a healthy lifestyle. Biking is one of the most popular alternatives to motor transport and will continue to be a major contributor to fulfilling the Universities goal of becoming carbon neutral.

Section 2.3 *Feasibility evaluation*

The bike parking overhaul is very feasible. U-Loop bike parking funded by the SSC has already been installed in areas such as the Undergraduate Library. Many other areas on campus already have U-Loop bike parking installed. Replacing donut-hole bike parking with U-Loops also fits well with the school year. The process will be relatively straight forward and will cause minimal disruptions for students and faculty. This will allow the project to be implemented while classes are in session, as well as during the summer months.

Section 2.4 *Longevity and/or permanence of project results on campus*

The installation of U-Loop bike racks will be permanent. Maintenance will be minimal.

There may be limited longevity for the air pump attached to a bike rack or Fix-It station. The bike fix it stations may require maintenance or replacement of specific tools periodically.

Section 2.5 *Comparisons to similar projects at other campuses*

About ten years ago, Penn State had a similar bicycle parking problem. They lacked appropriate bike parking for most of campus, and cyclists parked to trees, fences, and railings. There solution was to install better bike parking and to require cyclists to use the designated parking areas. The advancements in bike parking have resulted in a bike parking supply that is both accessible and convenient which has also reduced the illegal bike parking.

Section 2.6 *Other relevant information*

The League of American Bicyclists awarded UIUC as a Bicycle Friendly University this summer (2011) and provided the following feedback on how to improve bike parking on campus.

“Increase the amount of secure bicycle parking at popular destinations such as transit stops, class room/lab buildings, dorms, recreation and entertainment facilities, and retail and office locations on campus. Regulations that require bike parking, e.g. as part of new developments, can secure private funding for bike parking. More and more institutions also ensure that off-campus student housing provide secure and covered bike parking. Ensure that bicycle parking adheres to APBP standards. In addition, allow students to bring their bikes into dorm rooms.”

Section 3. Timeline & Budget

Section 3.1 *Long-term Project Timeline and Budget Overview*

The campus bike parking overhaul will be implemented in three phases. Phase I will replace the most deteriorated donut-hole bike racks in locations that are also in high demand by campus users. We plan to replace about 400-500 donut-hole bike parking units in the locations outlined in § 2.6. In Phase II (FY 2013), we plan to replace 1,000 donut-hole bike parking units with U-Loops. In Phase III (FY 2014), we plan to replace an additional 1,000 donut-hole bike parking units with U-Loops. When all phases are complete, there will be no donut-holes left on this campus.

Longterm Project Timeline

Phase	Bike Parking Funding Requested	Bike Fix-It Stations Funding Request	End Date
Phase I	$ 200,000 - $ 225,000	$ 1,500	December 31, 2012
Phase II	$ 300,000 - $ 325,000	$ 1,500	December 31, 2013
Phase III	$ 300,000 - $ 325,000	$ 1,500	December 31, 2014
Total	**$ 800,000 - $ 875,000**	**$ 4,500**	

We are using an incremented approach in implementing the campus bike parking overhaul because it would be difficult to manage replacing all 2,500 donut-hole units in one step. Dividing the project into three phases allows greater flexibility in replacing and installing adequate bike parking on campus.

Furthermore, using three phases significantly reduces the initial funding commitment by SSC. At this stage, it is difficult to estimate the exact cost of removing the donut-hole bike parking and replacing it with U-Loops. There are multiple factors involved in bike parking removal and the installation of U-Loops that are yet to be determined i.e. site dimensions, base connections, pavement condition, etc. Historical costs per U-Loop have ranged from $200 to $520 over the last four years. We are using a high-end estimate of $500 per U-Loop, and any unused funds can be returned to SSC or used for additional bike parking at SSC's discretion. A detailed estimated cost pertaining to each site will be defined by F&S Construction Services if funding is approved.

A basic estimated cost has been made based on a previous example. The estimates above are based on an example used in the LOI submitted by Morgan Johnston on November 14, 2011. In this example, it cost $17,000 to replace 56 donut-holes with 33 U-Loops at the Art & Design Building. Based on this example it would take 1,500 U-Loops to replace 2,500 units of donut-hole bike parking at an estimated construction cost of $760,000. Additionally, there would be design cost for each location, so we are anticipating a total cost of $800,000 to $875,000.

Section 3.

Section 3.2 *Phase I Timeline and Budget Overview*

Phase I bike parking replacement and U-Loop installation will be implemented in locations containing the most deteriorated donut-hole bike parking with priority being given to locations that are highly used by bikers. Highly used bike parking locations are determined by the results of the 2010 campus bike parking survey (Attached in Appendix).

Each site will have a specific installation cost defined by F&S Construction Services. Our estimates are based on a previous example outlined in § 3.1. Using this location for reference, the $200,000 - $225,000 requested in Phase I would allow between 400 and 450 U-Loops to be installed. Once funding is approved, firm estimates will be obtained for each location. These can be shared if requested by SSC.

Designs for bike parking will be started upon approval by the SSC. Installation of U-Loops will begin one month after approval when bike parking designs are completed. The first step for installation is to ORDER the bike racks. After the bike racks arrive, the actual installation will be scheduled with the labor shops.

Also, one additional Bike Fix-It station will be installed this year in Phase I. The location will be selected by discussions with key bicycle advocates on campus.

Section 3.3 *Phase I Bike Parking Locations*

The following table shows donut-hole bike parking locations we are requesting funding to replace in Phase I. Please note that other locations containing donut-hole bike parking, such as the Illini Union, are not included in Phase I because they have already acquired funding from other sources.

Phase I Bike Parking Locations

Site Name	Location (side)	City	Units (Donut-Holes)	Surface
Armory	North	Champaign	81	Cement
Armory	North	Champaign	90	Cement
Art & Design	West	Champaign	56	Cement
David Kinley	East	Both	43	Cement
David Kinley	West	Champaign	53	Brick
David Kinley	South	Champaign	32	Cement
Education	North	Champaign	36	Cement
Education	North	Champaign	37	Cement
Foreign Language Building	Northeast	Urbana	103	Cement
Loomis Laboratory	North	Urbana	72	Cement
Loomis Laboratory	South	Urbana	109	Cement
Main Library	South	Champaign	49	Cement
Main Library	South	Champaign	64	Cement
Mechanical Engineering Building	West	Urbana	13	Asphalt
Psychology Building	East	Champaign	56	Cement

Section 4. Fundraising

Section 4.1 *Local Cost Matching*

Historically, individual departments are not responsible for facility improvements outside their walls. The University eliminated the F&S funding line for bicycle parking over ten years ago, and that has led to the current state of bike parking throughout campus. The Transportation Demand Management department has very limited funding to cover street painting and traffic sign maintenance for safety, and in some cases can contribute a very small amount towards active transportation improvements such as this bike parking issue. Each department that will benefit from the bike parking improvements will be asked to contribute 20% towards the bike parking improvements. TDM department will be able to share some of their costs for departments that are unable to contribute due to their limited budgets. However, we cannot guarantee that this method will raise the full 20% local match for any phase of this project. Thus, we request SSC's consideration of this fund raising effort and hope you are willing to modify the cost share requirement if it becomes necessary.

We will try to secure funding from the local entities connected to the bike parking overhaul locations, however, securing funding first from SSC is the most efficient way to address the issue of obsolete bike parking on campus.

Section 4.2 *List any cost-share funds provided by the applying department and partners*

Staff time from Morgan Johnston and Patrick Clark will be an "in-kind" contribution to this project and all printing needs. Departmental cost sharing provisions are described in § 4.1.

Section 4.3 *List any grants or other sources of funding that have been obtained or applied for*

Bike parking grants are usually available through Congestion Mitigation and Air Quality Improvement (CMAQ) to encourage active transportation. However, Champaign County is a Clean-Air Attainment County, therefore no CMAQ funding is available. Additionally, parking departments on some campuses are able to support active transportation. Unfortunately, due to the legislated parking permit price structure, UIUC parking department is unable to contribute.

Section 5. Environmental Impact

Section 5.1 *Greenhouse Gas Impact*

The direct connection between appropriate bicycle parking and a reduction in greenhouse gases is nearly impossible to quantify. However, this is one part of the overall transportation goal to reduce transportation emissions, by reducing the number single occupancy vehicles being driven on campus. This project will install 1,000 new bicycle parking loops, which will contribute to that long range goal.

The long range reduction in greenhouse gas emissions can be estimated as follows: assuming 2,500 new cyclists and a minimal impact of one gallon of gasoline savings per new cyclist per month, that is a reduction of 48,500 pounds of CO2 per month, based on 19.4 pounds of CO2 per gallon of gasoline.

This project has the potential to have a significant positive environmental impact on campus through an increase in bicycling.

Please detail any significant negative environmental impacts from project creation to disposal and any efforts that you will undertake to mitigate these impacts.

There will be some metal removed at the locations containing obsolete bike parking. It will be recycled at the Waste Transfer Station. There are no other negative environmental impacts.

Section 6. Social Impact

Section 6.1 *Detail both positive and negative social impacts, if applicable.*

Biking is one of the most affordable modes of transportation. Replacing obsolete bike parking on campus will enhance bike parking and make biking more appealing as a mode of transportation. Improving bike parking will benefit campus users who do not have a car on campus.

Section 7. Economic Impact

Section 7.1 *Detail both positive and negative economic impacts using quantifiable metrics if possible.*

The American Recovery and Reinvestment Act (ARRA) states that for every $92,000 spent, one job is created/retained. Based on the total estimated cost for all phases of the project, about 10 jobs will be created or retained. In Phase 1, about 2 jobs will be created or retained

Section 8. Outreach and Education

Section 8.1 *Role that students will play in the project*

Patrick Clark, a senior in Urban and Regional Planning, is assisting in preparing this proposal. He is also assisting in developing general concept plans for bike parking locations that currently contain obsolete bike parking.

There is also an opportunity for greater student involvement through developing creative bike parking designs. In an effort to diversify the existing and future U-Loop bike parking stock, F&S is considering reaching out to UIUC students involved in design (engineers, architects, industrial design, art and design, urban planning, etc.) to create alternative bike parking designs. The installation of creative bike parking in select locations could contribute to aesthetics on campus as well as create greater excitement and attention for biking on campus.

Section 8.2 *Visibility of the project to students*

Student Sustainability Committee stickers will be placed at each new bike parking location. The sticker design is shown to the right.

Section 8.3 *Media opportunities*

Press releases will be issued after each phase.