

Alternative Transportation

Making Indiana University More Bicycle Friendly

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Introduction

Almost half of Indiana University's population arrives on campus each day by driving alone. IU permits parking in most places to anyone willing to purchase a parking pass. According to a 2008 survey by Michael Steinhoff and Julie Harping, about 5% of IU's total population rides a bike to campus while another 15% rides the bus to campus, which significantly reduces car congestion¹. Among all respondents, there is a great demand for more bus services and for end-of-trip facilities for bicyclists, like showers and more bicycle parking. Approximately 80% of faculty, 70% of staff, and 40% of students reported lack of safe routes to campus as a major deterrent in riding a bike to campus. This report and others² speculate how to shift demand from driving, towards cycling and riding the bus, by correcting these deterrents.

With projected growth in the City of Bloomington, and Indiana University, we have limited options to relieve traffic congestion and limited parking space, accept encourage alternative forms of transportation, like bicycling. Cycling avoids air pollution and carbon emissions otherwise produced by motorized vehicles, encourages healthy lifestyles, reduces the need for costly parking structures, and reduces traffic congestion. Our first step in encouraging cycling on campus is evaluating our current state of bike-ability. This report describes our accomplishments, shortcomings and explains the process of becoming a Bicycle Friendly University. It also provides a list of recommended goals for the short and long term.

Bicycle Friendly University

The League of American Bicyclists, a national bicycle organization, designates entities that exhibit bicycle friendliness through the Bicycle Friendly America program. They award states, cities, communities, universities and businesses as part of their Bicycle Friendly America program for how amicable transportation systems are to cyclists. Bronze, silver, gold and platinum statuses are awarded based on the degree of bicycle friendliness on campuses based on a 94-question survey. IU applied for BFU status in January 2011, and was name a bronze status Bicycle Friendly University in March 2011.

¹ Steinhoff, Michael. Harping, Julie. "Results of 2008 Transportation Survey, Analysis of Campus Bicycle Infrastructure, and Creation of a Bike and Bus Planning Resource." Aug. 2008.

² Kocher, Wes. "Transportation Demand Management Strategies for Indiana University, Bloomington."

This status provides IU with a measureable outcome of sustainability initiatives on campus. The award is a benchmark for us to measure ourselves relative to other schools, a milestone to track our progress over time, and set of goals for our future. The award is valid for four years, and requires annual progress reports to maintain status. The title holds the potential to draw new students into campus, and broaden bicycle culture, creating a new generation of cyclists at IU. News of IU's status generated a lot of attention³, positive and negative, both of which provide fuel to move forward and continue to improve bike-ability on campus. This award is more than a title to display throughout campus. The benefits include resources available to us through the League of American Bicyclists. They provided us with the results from a survey taken by IU stakeholders as part of our application.

The application process was a "forward-seeking initiative" that asks questions to force applicants to examine every aspect of cycling on campus. Entry-level programs are essentially a checklist and a list of technical resources for applicants⁴. We were able to identify a number of shortcomings, and simple solutions. The 94-survey asks questions, ranging from basic profile information (ie: local climate), to infrastructure analysis (ie: number of miles of dedicated bike paths), to significance of bicycle culture (ie: signature campus events). The League was impressed with IU's biking culture, Little 500, our bicycle facilities, bike count data, dedicated staff, and the bike share program. The IU Student Association intends on launching a bike share program called Social Bicycle (SoBi) this fall, which operates on a platform similar to that of Zip Cars⁵.

Short-Term Goals

Throughout the BFU application process, some relatively simple solutions have been identified. These "low-hanging fruits" can be realized through communication with different groups on campus, by the Bicycle Steering Committee (discussed below), and with little cost. For example, making tools available on campus for bike repairs. For a relatively nominal cost, repair kits can be purchased and left at parking garage attendant's booths. Attendants will ensure tools are given back, and users will not have to hassle going downtown for bike necessities or a quick repair. This could later evolve into a bicycle hub on campus, similar to the co-op set-up in downtown Bloomington.

The League also provided recommendations after reviewing our application (see appendix). Major highlights include: creating a bicycle advocacy committee, increasing the amount of secure and covered bike parking increasing way-finding signage, working with the city to increase the number of arterial streets on campus, expanding encouragement efforts, making stronger connections with city law enforcement, expanding efforts to evaluate the bicycle usage and crash statistics, improving education, and creating a comprehensive bike plan (discussed below).

³<http://www.idsnews.com/news/story.aspx?id=80564&search=bicycle%20friendly%20university§ion=search> ,

<http://www.heraldtimesonline.com/stories/2011/03/21/news.qp-3291502.sto>

⁴Bicycle Friendly America publication. "The Blueprint" Jan-Feb 2011.

⁵ Zip Car auto share program <http://www.zipcar.com/>, and Social Bicycle (SoBi) bike share program <http://socialbicycles.com/>

Improving education will need to be at the top of our priority list. Cyclists, motorists, and pedestrians need to learn how to interact safely with one another, through rules of the road courses and on-road demonstrations. The City of Bloomington currently offers courses taught by League certified teachers, but the University needs to expand these efforts by making classes available to students and promoting their existence. The League also suggests ticket diversion programs, which allow cyclists to waive fees by taking a class. New student orientation also plays a large role in education, and encouragement. We currently pass out flyers to new students, but we could expand these efforts into presentations, demonstrations, classes and enforce mandatory bicycle registration. Additionally, efforts are underway for developing an online quiz coupled with bike registration. Students must correctly answer a few simple questions in order to proceed with registering a bike online. Questions would be easy enough not to discourage people from registering their bikes, but still inform cyclists they must abide by the same rules as motorists.

Another simple, low-cost step towards bicycle friendliness is proper reporting of bike accidents. "Click Fix" offers a user-friendly online reporting system for users to log their accidents, for about \$400 a year⁶. Uniform reporting system will allow us to collect data for the bicycle master plan, and justify the need for increased funds for bicycle facilities.

All of these efforts will require marketing to make potential users aware of these resources. Collaborating with student projects is an excellent means to achieve these goals. It is mutually beneficial in that it provides students with practical experience, and provides a service to the University at minimal cost. Past IUOS projects have recruited student capstone courses to achieve goals, like the energy challenge. The 2009 Energy Challenge actually evolved out of a resource monitoring capstone project from The School of Informatics⁷.

Bicycle Steering Committee

While there are many groups that pertain to cycling on IU's campus, and a working group focused on transportation, there is no central place for cyclists, enthusiasts, and activists alike to gather. This hole became apparent while answering questions on the BFU application:

Do you have a Bicycle Program Manager on campus (or contact person responsible for bike-related issues)? Under which department does this fall operate? How many full time equivalent University employees work on bike issues? Do you have a Bicycle Advisory Committee?

To fill this void, the IU Office of Sustainability has since appointed a Bicycle Program Manager, William Brown. It has also created a Bicycle Steering Committee⁸ comprised of

⁶ http://seeclix.com/how_seeclix_works

⁷ Beverage, McKenzie. "2010 Fall IU Energy Challenge: Final Report".

⁸ The name of the committee is not finalized. Bicycle Advisory Committee has been suggested, but the group is not necessarily "advising" anyone what to do, rather it will be tackling issues raised internally. Hence, a title that underscores the working group nature of the committee is appropriate. It has also been suggested to parallel the Bloomington Platinum Biking Task Force, but in the interest of keeping the committee together after 2015- when IU will have to

students, faculty and staff to tackle bicycle issues on campus. The goal of the Bicycle Steering Committee is to serve as a home to bike issues: centralize efforts, exchange ideas, suggest and implement solutions. The impetus for creating the committee is to put power and responsibility of making campus more bicycle friendly into the hands of those who know campus best. Mixing students with faculty and staff creates a professional, activist organization that will hold each other accountable for playing their part in directing campus efforts. This congregation will help identify a consensus of bike-ability on campus, and throughout Bloomington, and set-up framework for the future endeavors.

The committee is open for anyone to join; A public list-serve is available for interested people to add themselves. Meetings dates and times will be determined in Fall of 2011. In addition, the student intern and bicycle manager will be reachable by bicycle@indiana.edu. People may report complaints, suggestions, and praise for bike-ability on campus.

Longer-Term Goals

In order to map out future plans, we need to finalize a Master Bike Plan which should include proper inventory of our bike facilities, installing more covered bike parking, installing end-of-trip facilities for cyclists in campus buildings, bicycle highways, and creating a bicycle hub.

While we already have the underpinnings of a bicycle plan via the campus Master Plan and the Sustainability Master Plan, we need a comprehensive plan with all stakeholders on-board. It is important to build this plan using the blueprints provided by the League, who have identified the “DNA” behind bicycle friendly places: engineering, enforcement, education, evaluation, and encouragement.

These “five E’s” identify the main pillars required to create a successful bicycling community. The key to creating a successful plan that will actually be used is through cooperation of all stakeholders involved. The relationship between IU and the City is growing as we collaborate and exchange ideas. The Bloomington Platinum Task Force is an excellent model for the Bicycle Steering Committee. See the appendix for a list of contacts from the City and the University.

This iterative process may take years to finalize, but it is important to develop a concrete plan that has approval and dedication of proper leadership. Co-creating this master bike plan *with* IU Administration will serve as a policy to direct IU’s bicycle efforts for the next 5-10 years. Carefully formalizing a policy plan now will avoid abandoning the plan down the road due to administrative roadblocks. The document should not only identify goals, but also methodology, funding, and implementation for both the short and long-term using the wide variety of in-house resources available at IU and the City of Bloomington. Accomplishing short-term goals previously mentioned will build relationships and raise awareness around campus, involve a wider working group, and propel us towards long-term goals.

reapply for Bicycle Friendly status- this may not be the best option. In addition, there has been debate over what IU will strive for if and when we reapply. A very feasible goal would be to achieve silver status by 2015 or earlier, however the City is going for platinum designation by 2016 and we could link our efforts through increased coordination.

Minneapolis, MN spent two and a half years creating a Bike Master Plan, which is expected to pass in May of 2011. The draft plan outlines plans for the city as recommended by the League through a formal drafting, revising, commenting and voting process⁹. The University of California Berkley also has an impressive bike plan that may serve as a good model for IU¹⁰. Guidelines for creating a master bicycle plan and for maintain a bicycle advocacy group are outlined in the January-February 2011 publication of Bicycle Friendly America.

Inventory of our current needs is another important step in specifying long-term goals. A quantitative approach will be useful instead of doing another survey¹¹. Two approaches outlined here will create an index to provide transportation planning professionals with a tool to make informed decisions in evaluating design options during the functional design process for our future.

1. Bicycle Compatibility Index- developed for the US by the Federal Highway Administration in 1998 to help urban and suburban transportation planners develop and improve existing roadways, which are shared by autos and bicyclists.¹² It allows planners to see weak links, evaluate existing roadways and prioritize improvements, promote bicycle compatibility maps, and help cyclists pick appropriate bike routes. Cyclists' comfort levels are qualified on a scale of a letter rating A-F. (BCI was developed assuming that cyclists perceptions of their comfort level match their abilities.) A being extremely high road/cyclist compatibility and F being extremely low compatibility. Independent variables and adjustment factors are used to model the road compatibility:
 - Bike lane or paved shoulder
 - Width of bike land or paved shoulder
 - Width of curb traffic lane
 - Motor vehicle traffic volume in the curb traffic lane
 - Motor vehicle traffic volume in other traffic lanes
 - Speed of motor traffic
 - Presence of a parking lane that is utilized
 - Nature of the adjacent land use
 - Volume of truck traffic

⁹ <http://www.ci.minneapolis.mn.us/bicycles/bicycle-plans.asp>

¹⁰ http://pt.berkeley.edu/sites/pt.berkeley.edu/files/content/UCB_BikePlanFinal.pdf

¹¹ This would require the approval of the Human Subjects Committee, and lengthy planning processes. Dr. David Good and Diane Henshel have already done a survey, and we received survey results back from the League as part of our application. Additional surveying may not be necessary at the present time.

¹² Transport Canada. Tools for Measuring Roadway Suitability for Bicycles. 03 09 2010. 02 2011 <<http://www.tc.gc.ca/eng/programs/environment-utsp-casestudy-cs44e-bikeindex-270.htm>>.

- Amount of parking turnover
 - Amount of right-turning traffic
2. Bicycle Level of Service (BLOS)- is a logarithmic model that estimates cyclists comfort level on roads based on qualities such as traffic volume and pavement quality. The model was created by cyclists reactions in the field as opposed to filmed situations similar to those present in the BCI. City planners tend to favor this model for its dependence on traffic patterns. The following criteria was used to asses the bicycle friendliness¹:
- Through-lanes per direction
 - The width of outside lane, to outside stripe in ft.
 - Presence of paved shoulder, bike lane or marked parking lane
 - Bi-directional traffic volume (in ADT)
 - Posted speed limit (mph)
 - Percentage of heavy vehicles
 - FHWA's pavement conditions rating (5 best, 1 worst)
 - Percentage of road segment with occupied on-street parking
 - On-street parking time limit (in minutes)
 - Residential or urban area

Roadways have been identified and mapped out, with the help of the City¹³. Traffic Count data (in proper notation) is available, but other data is forthcoming. Bicycle count survey's have been conducted by the City of Bloomington, see appendix for details of the report.

Conclusions

IU has made great strides in accommodating cyclists as an alternative form of transportation to and from campus, but there is still much work to be done. In applying for Bicycle Friendly Status, plans and goals have been formulated along with a group to implement them. Now that we have been awarded bronze status in bicycle friendliness, IU has made a clear stance they we are dedicated to improving bike-ability on campus, and generated more interest in doing so. The way forward has been outlined with identified resources, sources of data, and draft plans. Continuing to cooperate with the City of Bloomington and following guidelines provided by the League of American Bicyclists will help foster a more bicycle friendly community.

¹³ Catisto, Vince. Bicycle and Pedestrian Coordinator for the City of Bloomington, who is also well-versed in the BCI

Appendix

1. Contacts
2. Results from survey from BFU application
3. Comments from the League of American Bicyclists
4. Bicycle Friendly University Application, IU Spring 2011
5. Previous intern reports
6. BCI and BLOS implementation manuals
7. Bicycle count report

Contacts

The Bicycle Steering Committee Listserv:

The listserve email address is bicycle-l@indiana.edu. You can access list management (ie: adding and deleting recipients) through <https://listserv.indiana.edu/cgi-bin/wa-iub.exe?INDEX>. Emilie and Bill are owners of the list, they can help set you up with owner privileges of the list. All participants have been added to the list, and original sign-up sheet hard copies are provided. Other helpful people I have worked with are listed below:

- Professor David Good. good@indiana.edu
- Perry Maull, Bloomington Transit. pjmaull@indiana.edu
- Emilie Rex, Assistant Director of IUOS. ekrex@indiana.edu
- William Brown, Director of IUOS. brownwm@indiana.edu
- Professor Tom Evans. evans@indiana.edu
- Professor Kerry Krutilla
- Scott Robinson, City of Bloomington, Planning. robinsos@bloomington.in.gov
- Raymond Hess City of Bloomington, Planning. hessr@bloomington.in.gov
- Vince Caristo, City of Bloomington. caristov@bloomington.in.gov
- Timothy Stockton, Associate Director of RPS. tstockto@indiana.edu
- Neil Kely, Chief of Staff IUSA Bike Share
- Buff Brown, buff.brown11@gmail.com
- Pamela Loebig, Little 500. pmloebig@indiana.edu
- Nathan Morris, IUSA
- Lt. Craig Munroe, IUPD
- Jake Knight, Jacob Schumacher, Students who did bike count report
- Mike Girvin, Grounds and Maintenance
- Mia Williams/ Mark Ramsey, Architects office
- Doug Porter, Parking Manager. porterjd@indiana.edu
- Bill Nesper, Director of Bicycle Friendly America