

ride iit EnPRO 352: Increasing Alternative Transportation at IIT

Problem

- Increasing awareness about the benefits of biking.
- Continuing IIT's effort to be more environmentally friendly and sustainable.
- Creating a profitable business model.

Background

IIT campuses are located in areas that make the use of alternative transportation methods easy and affordable.

However, approximately 90% of the faculty, staff and student population use their own vehicle to commute to and between campuses.

Alternative transportations have many benefits; it promotes health awareness and creates an environmentally friendly and sustainable campus.

The office of Campus Energy and Sustainability would like to focus on bicycles as an alternative transportation method for both commuting and pleasure.

The EnPRO 352 team strives to create a business enterprise which will provide services in order to increase the use of bicycles on and around campus.

Objective

- On Campus Storage Options
- Bike Rental and Repair Services
- Safety and Awareness
- Easy online access via IIT webportal

Methodology

Promotion Incentives

Survey: We conducted a survey to inquire the opinion of staff, faculty, and student on how different options will affect their decisions on whether to use bicycle as a transportation method

- Campus Discounts
- Chicago Discounts
- Rental Bikes
- Storage Options
- Repair/Retail Shop
- Safety
- Maps
- Tours
- Lessons
- MerIIT Badges

On Campus Storage Options

Alternative bike storage options provide riders with ease and comfort of knowing their bikes will be safe from weather and theft, while keeping the space efficiency at maximum capacity.

- Cycle Safe:** Cycle-Safe is a bike storage provider that prides itself in maximum durability, quality and security. They sell their bike lockers, shelters, and racks via their website and offer state of the art locking mechanisms on their lockers and shelters. Our team offers a model that would allow for the storage of 80 bikes as a start for the project. (Source : www.cyclesafe.com)

- Bike Connect:** BikeConnect is an integrated bike management system that offers sales of bicycle storage models that come with state of the art computer software that allows for secure access. Our team offers a financial model that would allow for the storage of 72 bikes of the Dome Secure Niagara Roof Shelter for the start of this project. (Source: www.bikeconnect.org)

Bike Rental and Repair Services

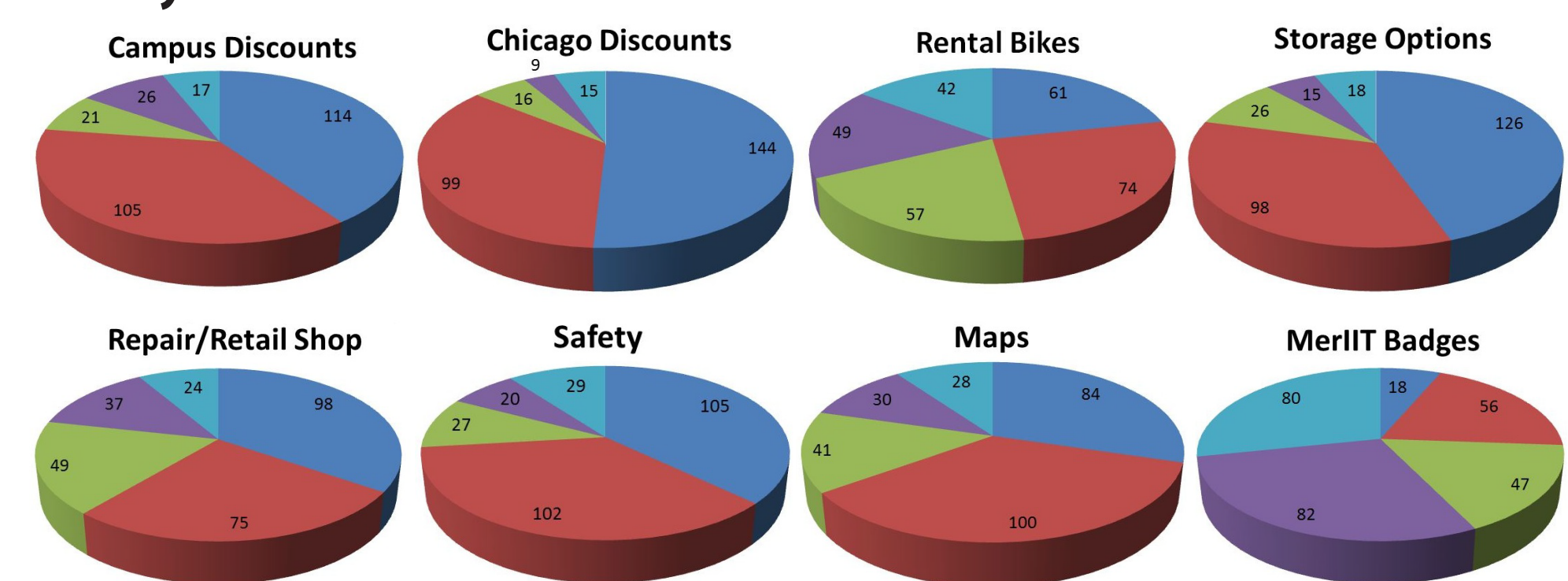
- B-cycle:** first bicycle sharing system in the city of Chicago. Self-service bike rental stations (B-stations) exist along Chicago lakefront and loop. Members can pick up a bike at any B-station and drop it off at any B-station.
- GPS devices:** can be attached to bikes, monitor the time and location of the bike via GPS satellites. The information can be uploaded and accessed through an online website.



Fig 1. Current Situation of IIT Bike Storage and Parking System

Results

Survey Results



Cycle Safe Business Model

	Standard	Platinum		Standard Cash Flow	Platinum Cash Flow
Initial Investment	-\$77,670.00	-\$77,670.00	1 st Year	-\$54,830.00	-\$63,330.00
Annual Fee	-\$13,200.00	-\$19,800.00	2 nd Year	-\$30,390.00	-\$45,490.00
Setup Fee	-\$1,600.00	-\$3,500.00	3 rd Year	-\$5,950.00	-\$27,650.00
Student Salaries	-\$6,120.00	-\$6,120.00	4 th Year	\$18,490.00	-\$9,810.00
Total Startup Costs	-\$98,590.00	-\$107,090.00	5 th Year	\$42,930.00	\$8,030.00
SAF funding	\$5,000.00	\$5,000.00			
Grants	N/A	N/A			
Advertising	\$15,000.00	\$15,000.00			
Membership fees	\$23,760.00	\$23,760.00			
Total Revenue	\$43,760.00	\$43,760.00			
Standard Difference	-\$19,320.00	-\$25,920.00			
	\$43,760.00	\$43,760.00			
	\$24,440.00	\$17,840.00			

Bike Connect Business Model

	Standard		Standard Cash Flow
Initial Investment	-\$120,000.00	1 st Year	-\$82,360.00
Annual Fee	\$0.00	2 nd Year	-\$44,720.00
Setup Fee	\$0.00	3 rd Year	-\$7,080.00
Student Salaries	-\$6,120.00	4 th Year	\$30,560.00
Total Startup Costs	-\$126,120.00	5 th Year	\$68,200.00
SAF funding	\$5,000.00		
Grants	N/A		
Advertising	\$15,000.00		
Membership fees	\$23,760.00		
Total Revenue	\$43,760.00		
Standard Difference	-\$6,120.00		
	\$43,760.00		
	\$37,640.00		

GPS Business Model

Device	Company	Price per Unit (\$)	Service Plan	Cost (\$)	10-year Service Plan Cost (\$)	Total Cost (\$)	Total Cost for 50 Units (\$)
Zoombak Universal A-GPS Locator	Zoombak, Inc.	99.99	Lifetime Plan	399.99 prepay	399.99	499.98	24,999.00
			2-year Plan	239.76 prepay	1,198.80	1,298.79	64,939.50
			Annual Plan	155.88 prepay	1,558.80	1,658.79	82,939.50
			6 plus 6 Plan	69.99 prepay first 6 months	2,348.85	2,448.84	122,442.00
				35.00 activation fee			
				19.99 per month after 6 months			
entouragePS	ESCORT, Inc.	299.95	Pre-pay Monthly	44.85 prepay first 3 months	1,823.95	2,123.90	106,195.00
				14.95 per month			
				29.95 activation fee			
			Annually	179.95 per year no activation fee	1,799.50	2,099.45	104,972.50
Tracking Key	LandAirSea Systems	229.00	No service plan fee		229.00	229.00	11,450.00

Conclusions

IIT needs to make a change to how it is currently encouraging its students and faculty to commute to and from campus. There are many faculty, staff and students, along with some of our own Ride IIT members that would commute to campus, but they are discouraged due to the lack of proper and ease of security. Ride IIT has aimed to change that mentality by instituting the bike storage along with other incentive programs. The programs will initially require a decent investment along with some grants and SAF funding, but over time (i.e. about 3-4 years depending on the package) it will turn a profit and prove its worth in more ways than just financially. With our new bike storage program, IIT will be reducing their carbon footprint, providing better campus security, encouraging more members of the IIT community to ride their bikes, and setting an example for other college campuses to follow. Ride IIT's new plan for on campus bike storage is a great step in the right direction for IIT and its community.

Future Works

The future of this project is uncertain. The greatest obstacle in the way of this project currently is the overwhelming financial burden. Overcoming this burden is key to the development of the project. The team will have to find a method to raise funds to offset the initial costs of the project or a line of credit to cover these costs. The team will have to potential speak to investors, alumni, and administrators at the school to combat these needs.



Fig 2. CycleSafe Bike Storage



Fig 3. CycleSafe Bike Parking



Fig 4. BikeConnect Bike Storage

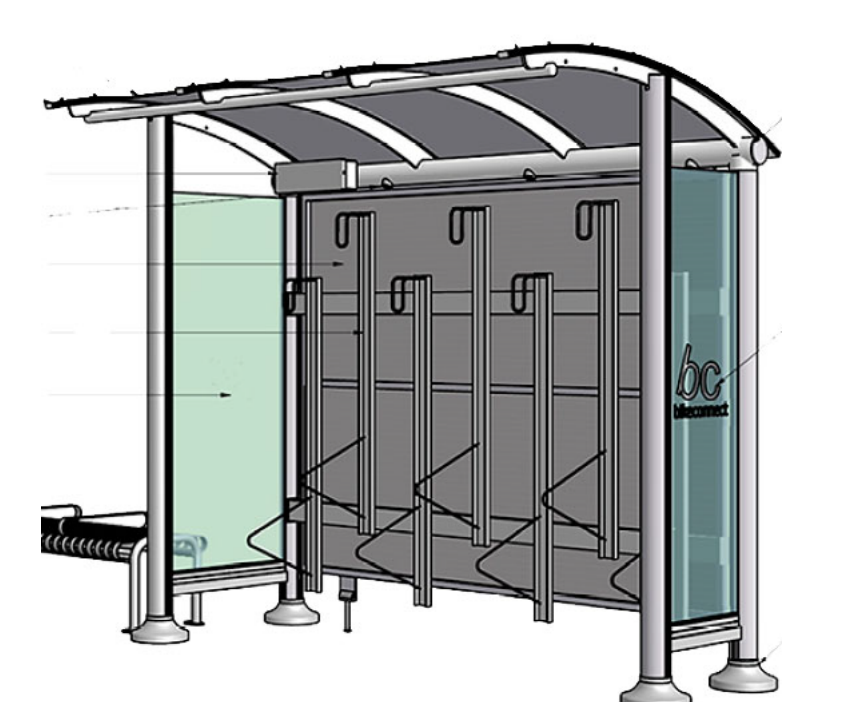


Fig 5. BikeConnect Bike Parking