

SU Bikes

A Spatial Inventory of Bike Use on Campus

Bikes are a great way to get around the Susquehanna University Campus because of the high proportion of students that reside either on or very near campus, the compact nature of the campus academic buildings and the nature of our limited, peripheral auto parking. Bicycling promotes fitness, health, environmental sustainability, green space, and contributes to a more interactive campus compared to the car culture that clogs roads, gobbles open space for parking, and drains wallets. Many universities around the country are providing college students with free bikes to encourage fewer cars on campus (New York Times, October 20, 2008, p. A18.)

To learn about bike use on campus, students in Earth and Environmental Sciences were provided with handheld computers (Windows Mobile 5.0) with ArcPad 7.0 (ESRI Inc, Redlands CA) and built in GPS receivers. Eleven surveys were conducted in September 2008 where all bikes in the vicinity of academic buildings were logged. Date, time, building, and parking place (bike rack, lamp post, and hand rail, etc.) were recorded along with the spatial reference.



Bikes line Academic Row and are chained

At the academic building core, Garret Fitness, Hassinger Hall, Seibert Hall, and Blough-Weis Library have nearby bike racks that accommodate 47 bikes. Although the numbers of bikes on campus (Table 1) could be accommodated by existing racks, it is clear by parking locations (Figure 1) and the percentage of bikes stored in bike racks (Table 1) that existing bike racks are not conveniently located to a user's destination or that users find it difficult to use

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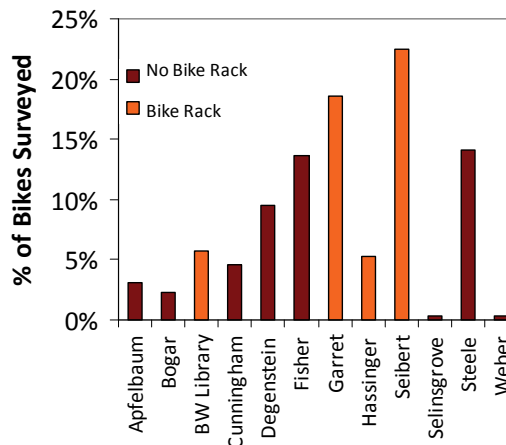
QUICK FACTS:

| | |
|--|-----|
| Bikes Surveyed | 263 |
| Number of Surveys | 11 |
| Number in Racks | 150 |
| No. on Lamp Posts | 57 |
| No. on Hand Rails | 24 |
| Maximum on Campus at one time | 38 |
| Bike Rack Capacity | 47 |
| Percent of Bikes in Racks | 61% |
| Number of Academic Buildings with Bike Racks | 3 |
| Number of Academic Buildings with no Racks | 8 |

Table 1: Survey Dates

| Date | Time | Bikes | % in Racks |
|-----------|----------|-------|------------|
| 9/5/2008 | 1:30 PM | 28 | 61 |
| 9/7/2008 | 4:30 PM | 11 | 88 |
| 9/9/2008 | 1:30 PM | 26 | 44 |
| 9/9/2008 | 4:00 PM | 21 | 72 |
| 9/11/2008 | 1:00 PM | 36 | 58 |
| 9/12/2008 | 10:00 AM | 32 | 72 |
| 9/16/2008 | 1:00 PM | 29 | 62 |
| 9/16/2008 | 2:30 PM | 38 | 56 |
| 9/18/2008 | 12:30 PM | 30 | 64 |
| 9/22/2008 | 3:00 PM | 4 | 0 |
| 9/25/2008 | 1:00 PM | 7 | 0 |

Figure 1: Parking Distribution on Campus



HIGHLIGHTS:

- Racks are used 61% of the time to park a bike (median)
- Garret Sports Complex and Seibert Hall have racks and draw the largest number of bikes
- Fisher Science, Steele, and Degenstein account for 37% of the bikes, but have no bike racks

Table 2: Parking Places

| Place | Percent |
|---------------------|---------|
| Bike Racks | 57% |
| Lamp Posts | 22% |
| Hand Rails | 9% |
| Stairs | 5% |
| Doorways | 3% |
| Walls | 2% |
| Trees and Furniture | 2% |

Table 3: Bike Racks

| Building | Bike Capacity | Median Occupancy |
|---------------|---------------|------------------|
| Garret Sports | 15 | 40% |
| Seibert | 20 | 35% |
| Library | 12 | 18% |



RECOMENDATIONS:

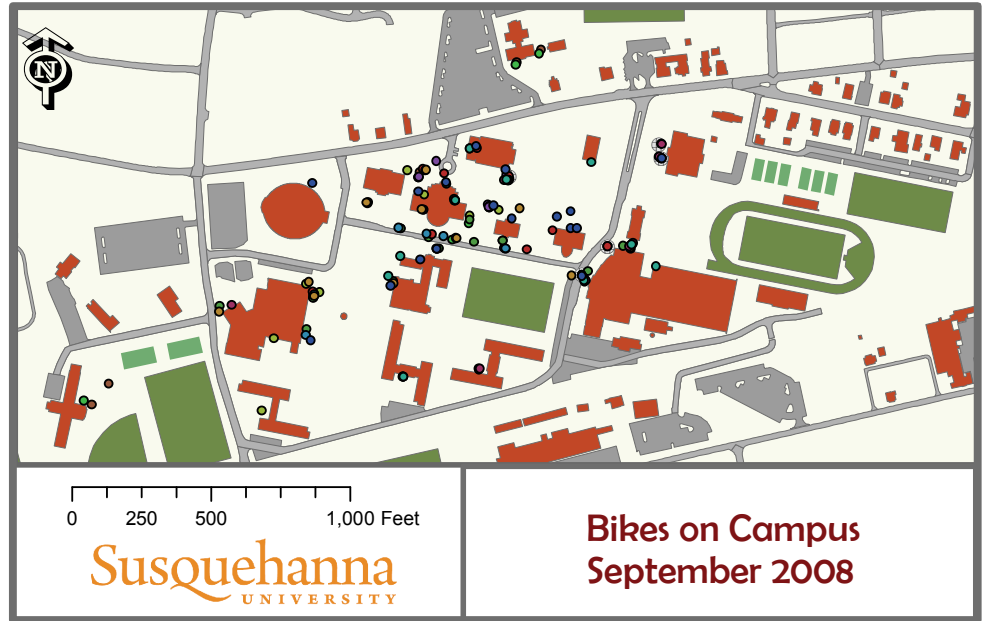
- Spaces for 60 bikes required in the academic core of campus
- New racks near Fisher Science, Steele Hall, and Degenstein Campus Center
- Assess needs for additional facilities to support bikes on North Campus as campus grows

ABOUT THE INVENTORY:

Faculty Sponsor: Dan Ressler, Earth and Environmental Sciences

Students: Andy Kilmer
Jennifer Cullin
Chris Albright
Andrew Cole
Joel Patch

Figure 2: Parking Locations During the Inventory



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bike racks above some occupancy threshold.

Our data suggest that bike parking strategies become predictable when there are 20 bikes or more on campus. Under these conditions, about 57% of bikes are stored in bike racks (Table 2), bike racks reach about 35% occupancy (Table 3), and about 22% are chained to lamp posts.

Our analysis of the spatial distribution of bikes and the places where they are parked indicates:

- Bike racks are not positioned where users need them
- There is insufficient bike rack capacity on campus
- When bike racks are about 35% occupied, users look for other structures which are easier to access (mostly lamp posts)
- More than one third of the bikes on campus surround buildings with no bike racks (Fisher Science, Steel Hall, and Degenstein Campus Center)

Bikes parked randomly detract from the campus aesthetic because they may:

- Suggest that alternative means of transportation are neither encouraged nor desirable
- Impede egress or access to campus buildings

- Interfere with pedestrians' use of railings around stairs or patios

- Interfere with landscaping activities

To remedy these issues, the inventory data suggest:

- A new rack between Fisher Science and Apfelbaum
- A new rack between Fisher Science and Cunningham Center
- New racks on either end of the terrace at Degenstein Campus Center
- A new Rack between Fisher Science and Steele Hall, or between Steele Hall and Bogar Hall. Additional bike racks with 60 spaces are required to handle maximum load

Bicycles are a convenient way to get around a small campus while also promoting fitness, reducing the need for auto parking spaces, and creating a sense of community. With just a few upgrades, Susquehanna University could better accommodate and support this alternate form of transportation.

For Future Study:

- Needs on additional bike parking on North Campus (opening of new science building and the renovation of former church property)
- Needs of Ecology Research Center and remote campus locations like the former Silk Mill