



Preventing theft, building community.



Miles S. Thomas
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University of Illinois at Urbana-Champaign
Advisor: Dr. Mary Edwards

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Executive Summary

Neutral Cycle is an independent bicycle shop in Champaign-Urbana, Illinois, which opened in 2012 as a small collaborative workshop amongst friends and bicycle enthusiasts. The shop and brand has grown over the past few years, and now includes a sizable retail store in Champaign, Illinois and an entrepreneurial incubator in Urbana, Illinois. Throughout our team's collaboration we've focused on the development of a tight-knit community of cyclists that engage in equitable growth of bicycle infrastructure, education, and policy. Neutral Design Studio itself serves to engage the bicycle shop in relationships with non-profits, governmental, and non-governmental organizations to further the usage and accessibility of bicycles in our community and beyond.

As a local resource for bicycle news and collaboration, Neutral has been closely observing the high incidence of bicycle theft in Champaign-Urbana. We began to assess the impact of theft on our community in 2014 by reaching out to local public safety organizations, analyzing their data, and having open discussions about the processes that exist to prevent theft and lead to recoveries. What we observed was that there are many formal and informal systems for registering bicycles, which may or may not be connected in an intuitive manner to the public safety officials that recover the bikes. On top of the variety of registration/reporting systems, there is no uniform product serialization for bicycles and often very little way to systematically track and recover bicycles through the assessment of a national database.

Between 2012 and 2014, over \$140,000 worth of bicycles were reported stolen in Champaign-Urbana, which considering our relatively small urban community means that we were likely towards the bottom of reported losses. Extrapolated to the nation, we're looking at an obscene number of bicycle thefts and hundreds of thousands of dollars lost on individual investments for a valuable primary transportation and recreation choice. In this assessment of our local theft reports we're only able to assess the thefts that are actually reported, and when looking at the national theft trends (where available) we can assume that vast underreporting occurs as well.

There are a variety of systems on the market that seek to provide for registration of bicycles, but as of the time of this writing we've not come across a system that intuitively combines all of the information necessary for large-scale registration and reporting. In developing our bicycle registration system, BikeNet, we have developed a mobile app and website that collects necessary registration information and ties it together in an intuitive interface. In the short term we are focusing on the key features of the app so that regardless of your location, the app functions to register your bike and create an intuitive theft report in the unfortunate event it is stolen. In the long term we hope to continue developing relationships like we've been building thus far to replace inconsistency in local registration systems, and build tools to supplement public safety officials with a universally accessible and easy-to-use interface for making successful theft recoveries.

We feel that what we're producing empowers cyclists to act as their own best advocate by preemptively registering their bike, and working together to identify thefts and make recoveries. BikeNet is and will be constantly evolving as we create a better system to encourage registration and reduce thefts, and will continue to be the recipient of further development as the passion project of a team of diverse and engaged cyclists. For more information or to support the development of this project, visit us at www.savethebike.net.



The Team

Neutral Cycle Supply Company (Neutral) is an independent bicycle shop in Champaign-Urbana; home to the University of Illinois. Neutral began in 2012 as a small bicycle workshop run by a group of friends out of their garage, with a mission to bring reliable bikes, bike maintenance, and bicycle education to their community. Neutral Cycle grew into their current retail store in 2014, and has since expanded the 'Neutral' brand to include a variety of businesses under the entrepreneurial umbrella of Neutral Design Studio.

Neutral, standing for the common ground the team and products are built upon, continues to use its relationships with local governmental, non-governmental, non-profit, and educational institutions to create a space for collaboration. In Fall 2014, Neutral Design Studio began working on Save the Bike, an initiative designed to research bike theft and design solutions to empower the local community with a scalable theft prevention network. The following text describes the research performed, and the solutions recommended after numerous meetings with local stakeholders and decision makers.

Introduction

Bicycles are a necessary and valuable resource for socioeconomic independence, and for a community like Champaign-Urbana (CU) they offer a reliable mode of recreation, leisure, and transportation. The whole of CU's urbanized area is comprised of roughly forty-seven square miles, with the localized urban density contained within roughly one-quarter of that area. Given the urban density the local community rarely has more than a fifteen-minute commute time to work or school, which when paired with more than eighty-six miles of bicycle infrastructure creates ideal conditions for bicycle-based, shared, active transportation.

These model conditions are marred within our community when taken in consideration with the likelihood of bicycle theft, and the very thin margin of recovery. Looking back at only two years of data, we were met with more than one-hundred-forty thousand dollars in value lost to bicycle theft. Through this report we outline the need and importance of cycling, the current state of bicycle theft, the ongoing work towards theft prevention/recovery, and Neutral Cycle's proposed solution to mitigating theft at home and nationwide.

The Impact of Cycling

Cycling as one mode of active transportation is associated with low-cost of entry, efficiency, and health within a short-list of positive socioeconomic attributes. While bicycles can be costly, particularly when associated with racing and fitness, they are generally accessible at a relatively low-cost. There are a number of used yet mechanically sound bicycles on the road, and the learning curve to bring even the most road-worn bike back to road-worthiness is narrow. Likewise, the general accessibility of bicycles contributes to a social context that is self-equalizing; allowing diverse groups to participate in cycling as an activity regardless of economic status. The three main nodes that we generally associate cycling with in a socioeconomic perspective are health, recreation and leisure, and transportation.

Cycling for Public Health

Many articles about cycling as active transportation allude to the healthy benefits of a public that is engaged in even leisurely/sporadic bicycle use. Many of these attributes are outlined in the 2016 Benchmarking Report produced by the League of American Bicyclists (www.bikeleague.org, see graphic on page 7), which reports on various studies by public health institutions and within the US Census. One such statistic, represented by the National Institutes of Health (NIH), finds, “higher proportions of people biking to work were associated with a lower body mass index” and is correlated with, “increasing bike-to-work proportions from 0.4% to 0.8% could reduce the average weight for men by roughly 2.3 pounds.”

Cycling for Recreation and Leisure

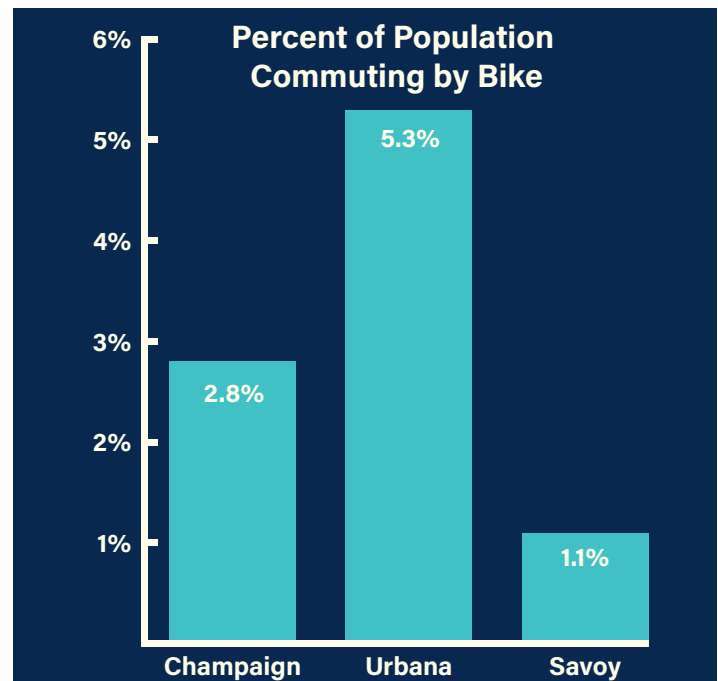
Cycling for recreation and leisure is the mode we commonly associate with our first introduction to bicycling, and provides an easy way to engage in an active lifestyle. We can also consider cycling for exercise as within the context of cycling for recreation, which meshes public health with recreation and leisure. A study identifying characteristics that promote walking and bicycling notes, “A study in the Twin Cities area of Minneapolis/Saint Paul, Minnesota, found recreation, entertainment,

and fitness trips to be the longest (of all bicycle trips, at around 30 to 40km) . . .” (Forsyth, p. 435). In consideration of our local community, Champaign-Urbana (CU), we’re looking at a community rife with opportunity for recreational bike trips. Within CU we have a number of green spaces, parks, and community bicycle trails; a short distance away we have numerous regional trail networks as well including the Kickapoo State Recreation Area, Constitution Trail, Conservation Trail, and Sangamon River trail to name a few.

Cycling for Transportation

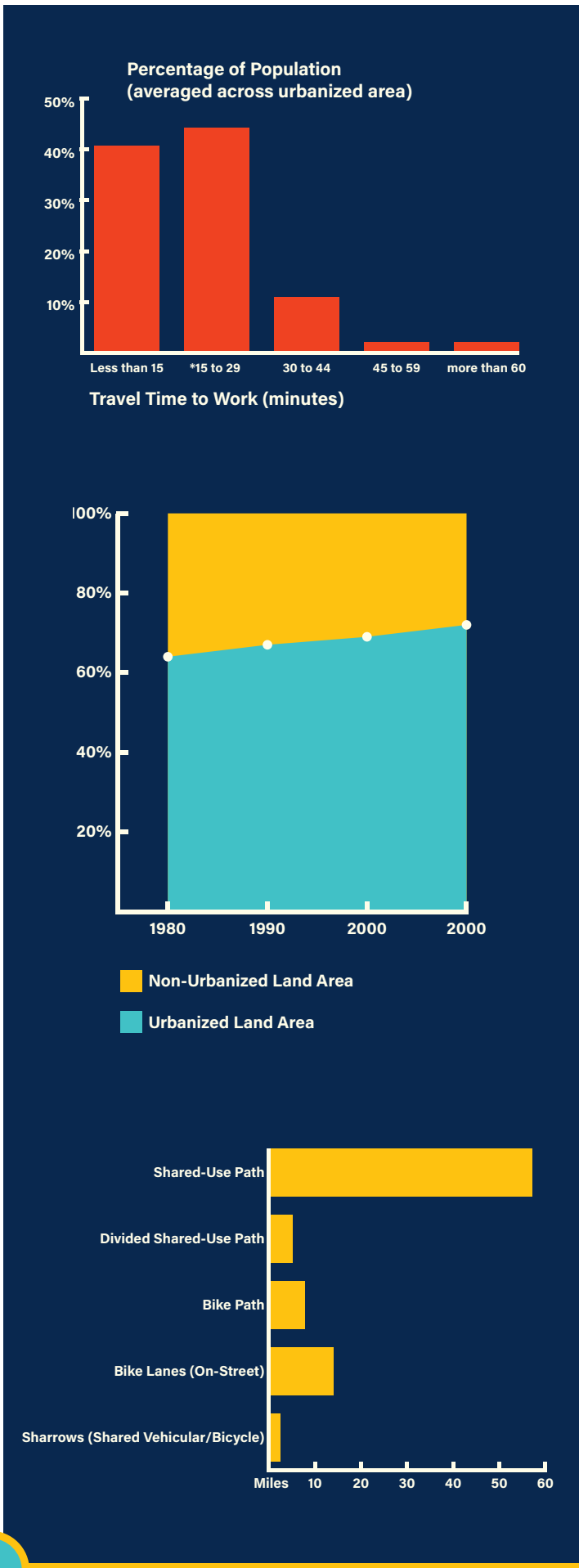
Transportation is the key opportunity to engage a cycling public, and bicycles are used by thousands of students and community members across CU year-round. Out of CU’s eighty-six miles of bicycle infrastructure, there are roughly fourteen miles of dedicated on-street bike lanes, seven miles of bikes paths, five miles of shared use path, and nearly three miles of sharrows (CUUATS LRTP, p. 57). The mileage left out of the infrastructure calculation is the roughly fifty-seven miles of share-use paths, which are not typically considered to be primarily for transportation. The bicycle based infrastructure in CU has steadily increased year-to-year over the past decade, with an assessed 44% increase from 2009-2012 alone.

The local municipalities, businesses, and organizations have similarly supported the bicycle infrastruc-

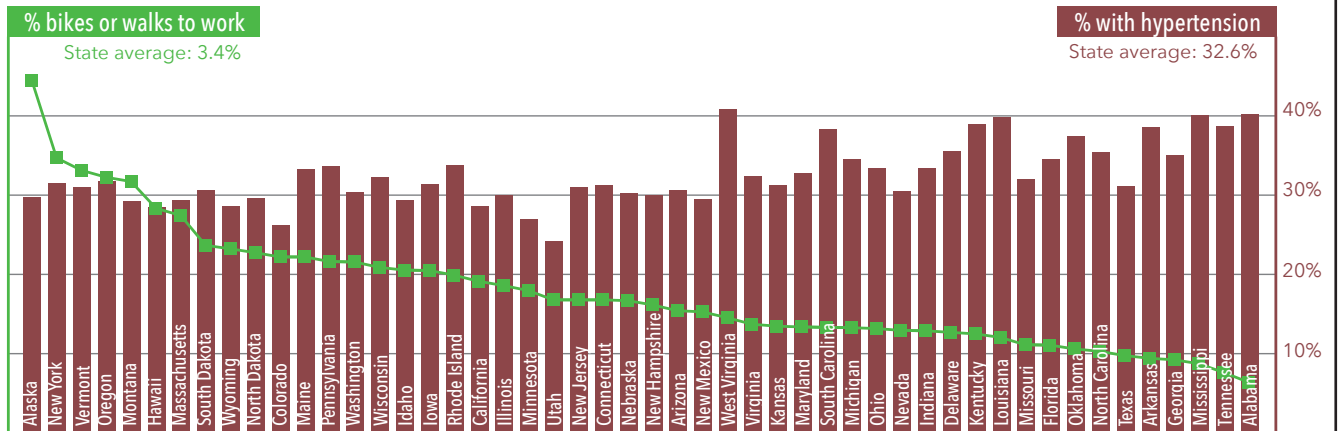
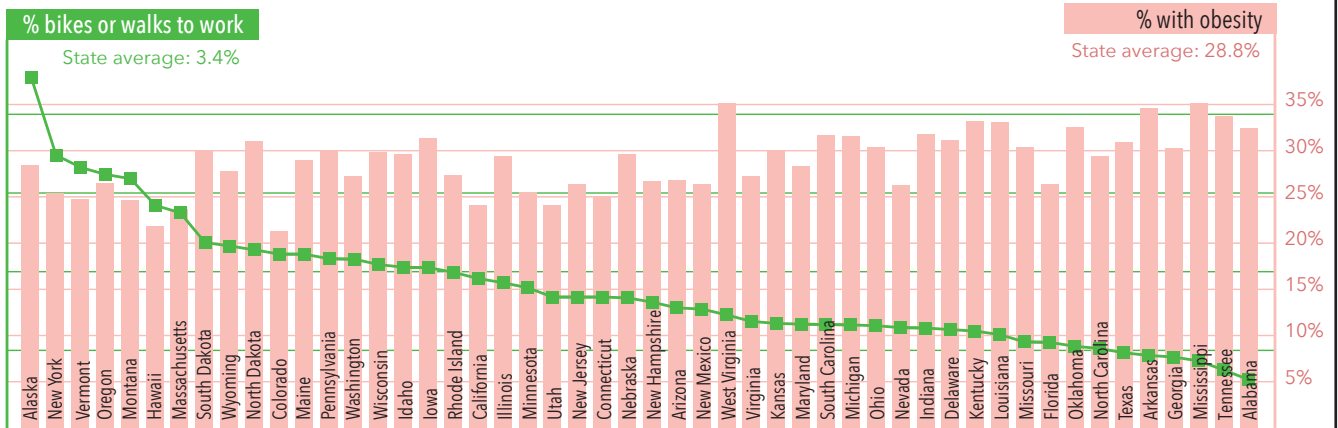
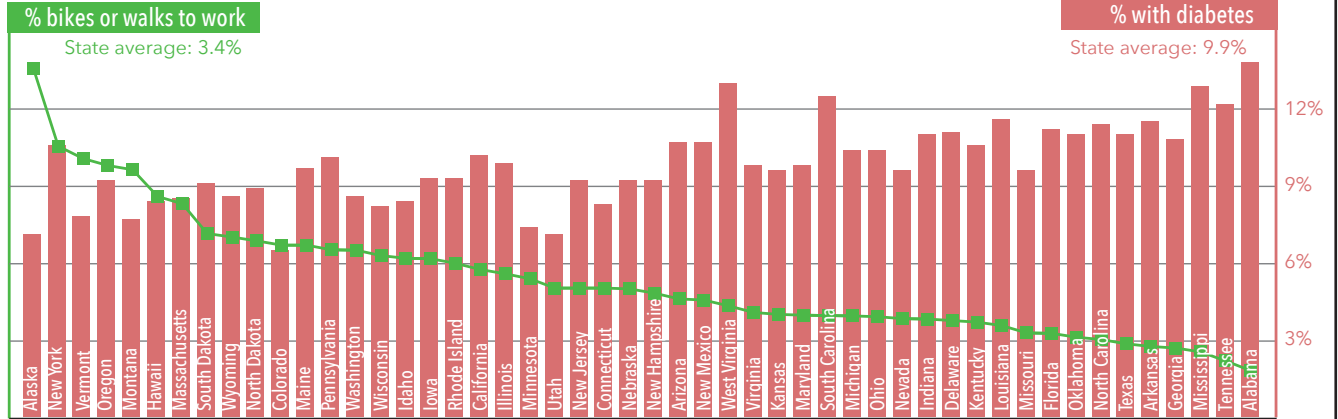


ture connecting the community, and there are many opportunities for employees, residents, and students to reach necessary services by bike. The main policy based decisions from the municipalities Champaign (Champaign Zoning, Article VII – Division 7) and Urbana (Urbana Zoning, Section VIII – Section 7) to encourage bike infrastructure growth has been to require the installation of bicycle parking at commercial businesses. With each new construction and major site renovation/expansion, commercial businesses are required to provide bike parking spaces calculated by the type of business and anticipated customer traffic. The businesses themselves don't seem to need much convincing though, and many businesses have provided bike parking and supplementary services to their employees as an incentive.

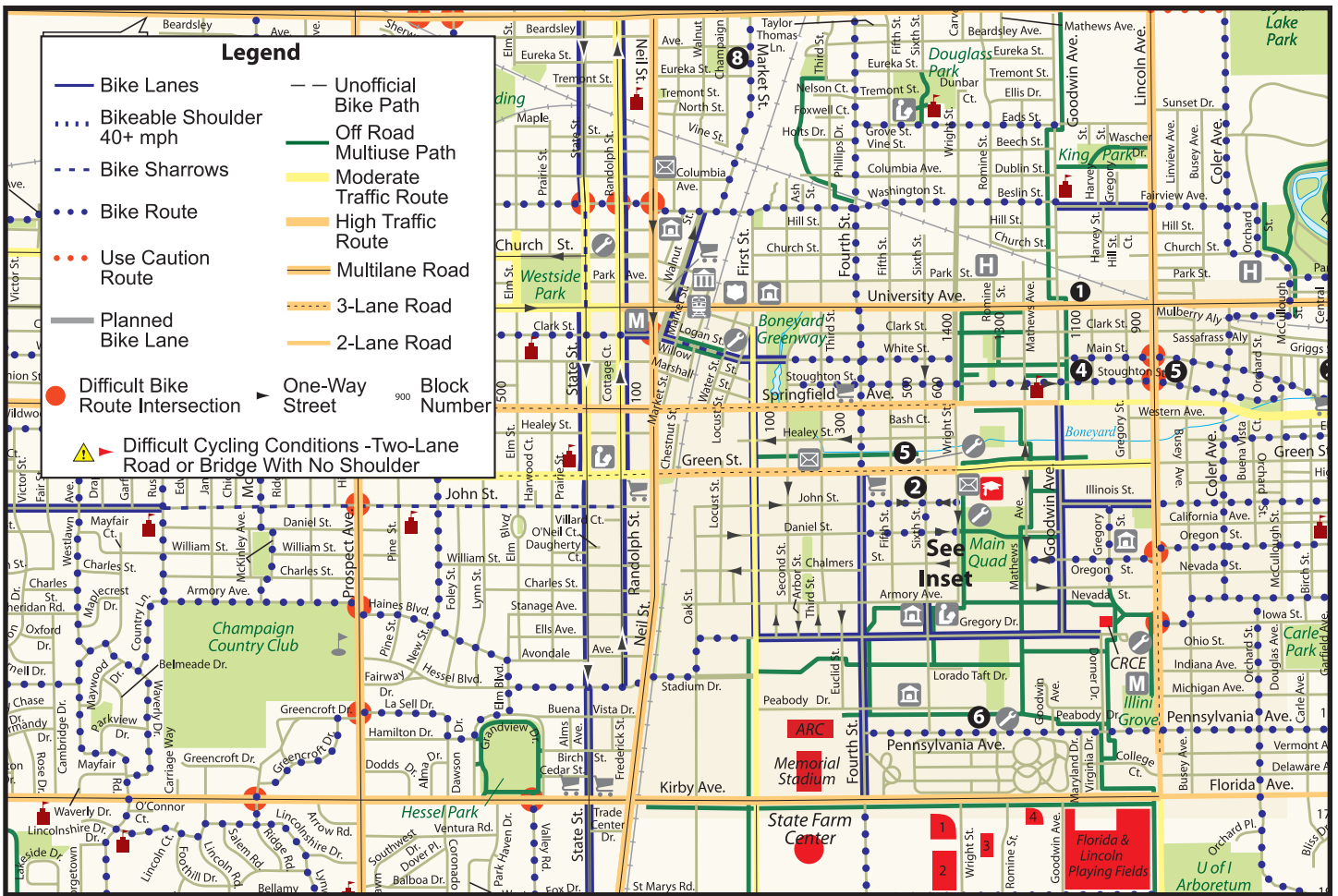
The University of Illinois at Urbana-Champaign provides bike parking for students, faculty, and employees alike; their installations at nearly every campus building. In fact, while researching and interviewing faculty and students about their cycling habits we found that many departments have their own facilities, separate of the paid gyms and workout facilities, which allow employees to shower after they arrive at work by bike. Another local business Human Kinetics, an educational journal and book publisher in North Champaign, provides their employees indoor bike parking in addition to lockers and showers. The confluence of services and infrastructural resources within the community make transportation by bike an easy alternative to driving, and in-turn makes CU an ideal place to go by bike.



Active Transportation Compared to Health Indicators



Sources: ACS 2013, 3-yr est; BRFSS 2013



Excerpt: Champaign County Go by Bike, Champaign County Regional Planning Commission

Cycling in Champaign-Urbana

Neutral Cycle took a sample survey from January to February 2016, which took a look at cycling population demographics, behavior, and patterns in the community. In an effort to collect a diverse population sample the survey was initially shared via Neutral Cycle's blog, and shared amongst members of the public by advertising the survey across many local businesses, news outlets, and community organizations. The survey itself was intended to gather a broad sweep of information, and gathered survey data from the perspective of Neutral's active living program. Through this survey, Neutral found some valuable information about the duration of 'prime' cycling season, the ways and places bicycles are used, and the characteristics we needed to be cognizant of in preventing bike theft.

The survey garnered a sample of 327 unique respondents, 99% of whom currently live in CU and a remain-

ing 1% that lived in CU at some juncture in the recent past. Of the respondents, roughly 1/3rd represented a target age cohort relevant across their responses, including persons:

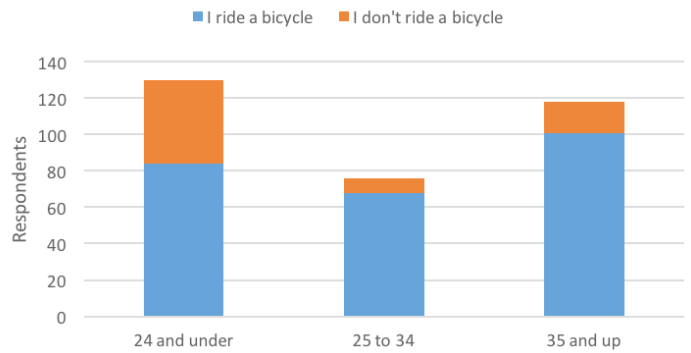
- Aged 24 and under, representative of students, graduate students, and young professionals entering their career path.
- Aged 25 to 34, representative of some undergraduate/graduate level students completing their studies, and young to middle aged professionals relatively situated within their career.
- Aged 35 and older, representative of middle aged professionals in their career, and older professionals beginning to transition into retirement.

Of the respondents, persons aged 25 to 34 led with

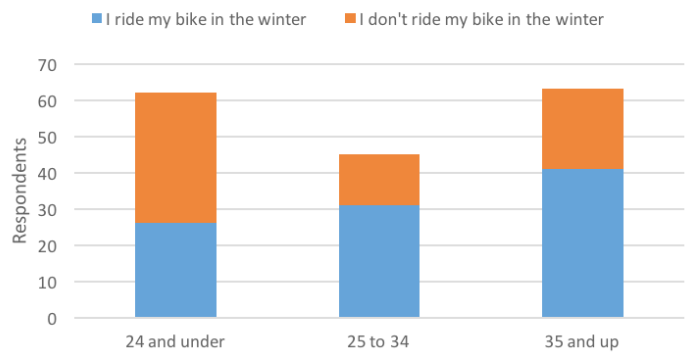
nearly 90% of respondents regularly riding a bicycle, compared to 65% of regular cyclists in the 24 and under age cohort. The 35 and up population closely followed the group in the 25 to 34 age group, with 86% of respondents being regular cyclists. The middle aged, young professional group were also the most sizeable group of cyclists who rode their bike year round, with nearly 69% indicating they rode their bike through the winter.

Regardless of age cohort, most cyclists indicated that they cycled for leisure, exercise, or transportation; much fewer cyclists indicated that they regularly rode with a group or organization or participated competitively in a group or team. Slightly more of the respondents 24 and under cycled for transportation to work regularly (73%), closely followed by the 25 to 34 age cohort. A relatively equal proportion of respondents indicated they regularly rode their bike near home or two a bike path or route, with a spike in the 25 to 34 age group that regularly rode their bike to the Farmers Market or a community event.

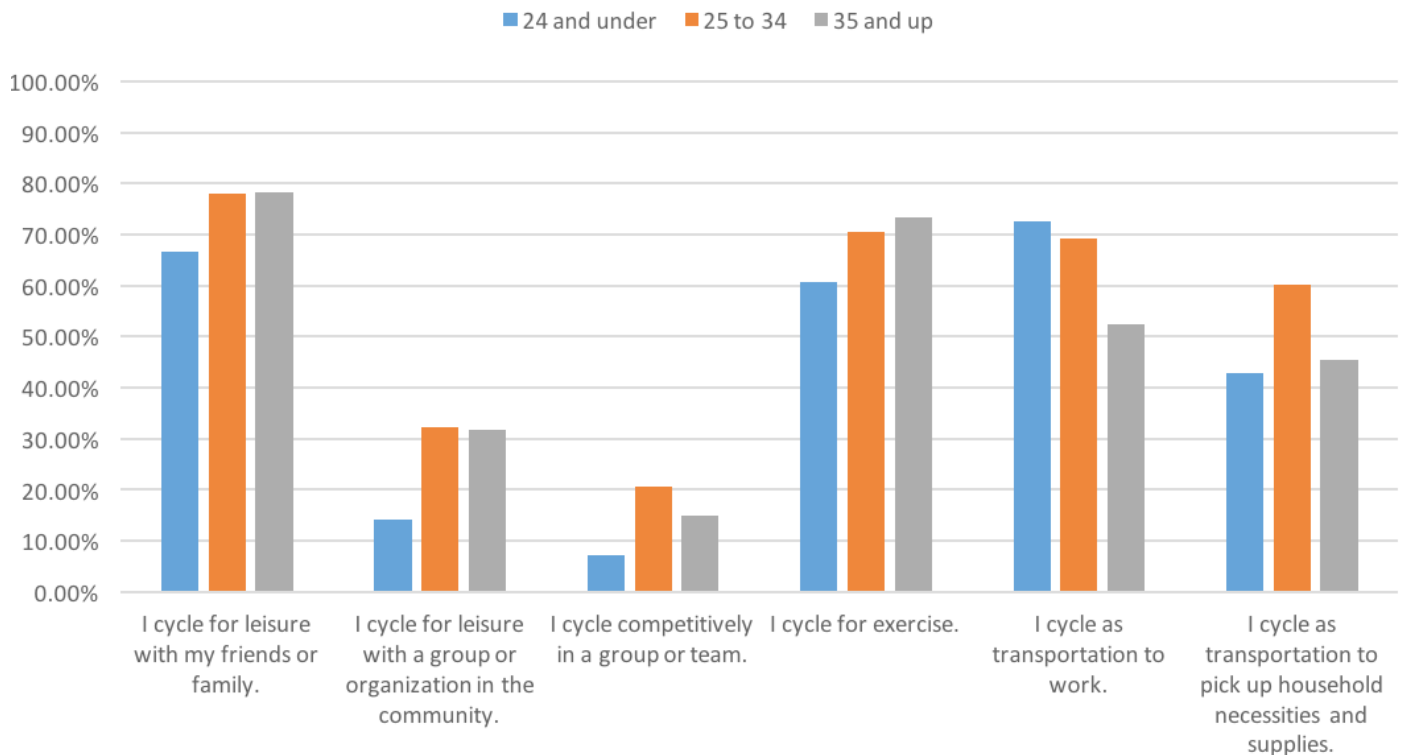
Bicycle Riders by Age Cohort



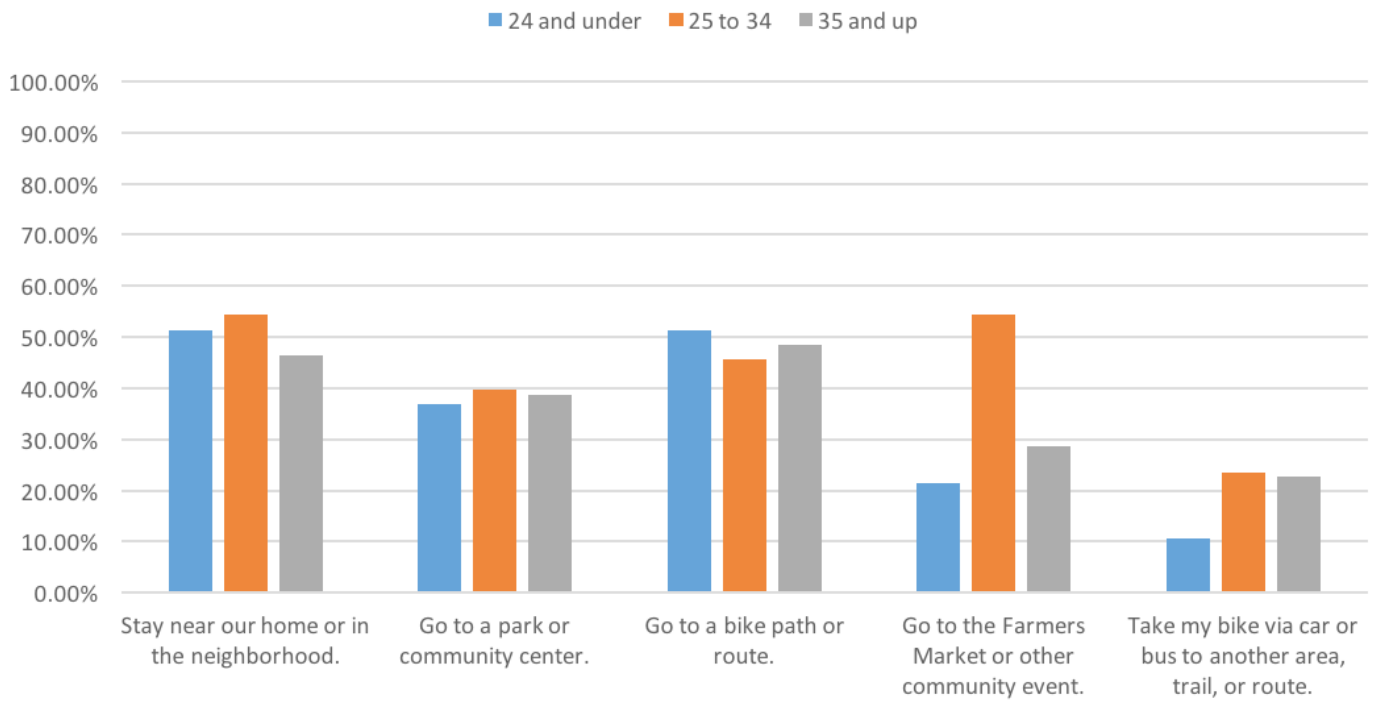
Winter Cyclists by Age Cohort



Cycling Patterns by Age Cohort



Cycling Locations by Age Cohort



The State of Bike Theft

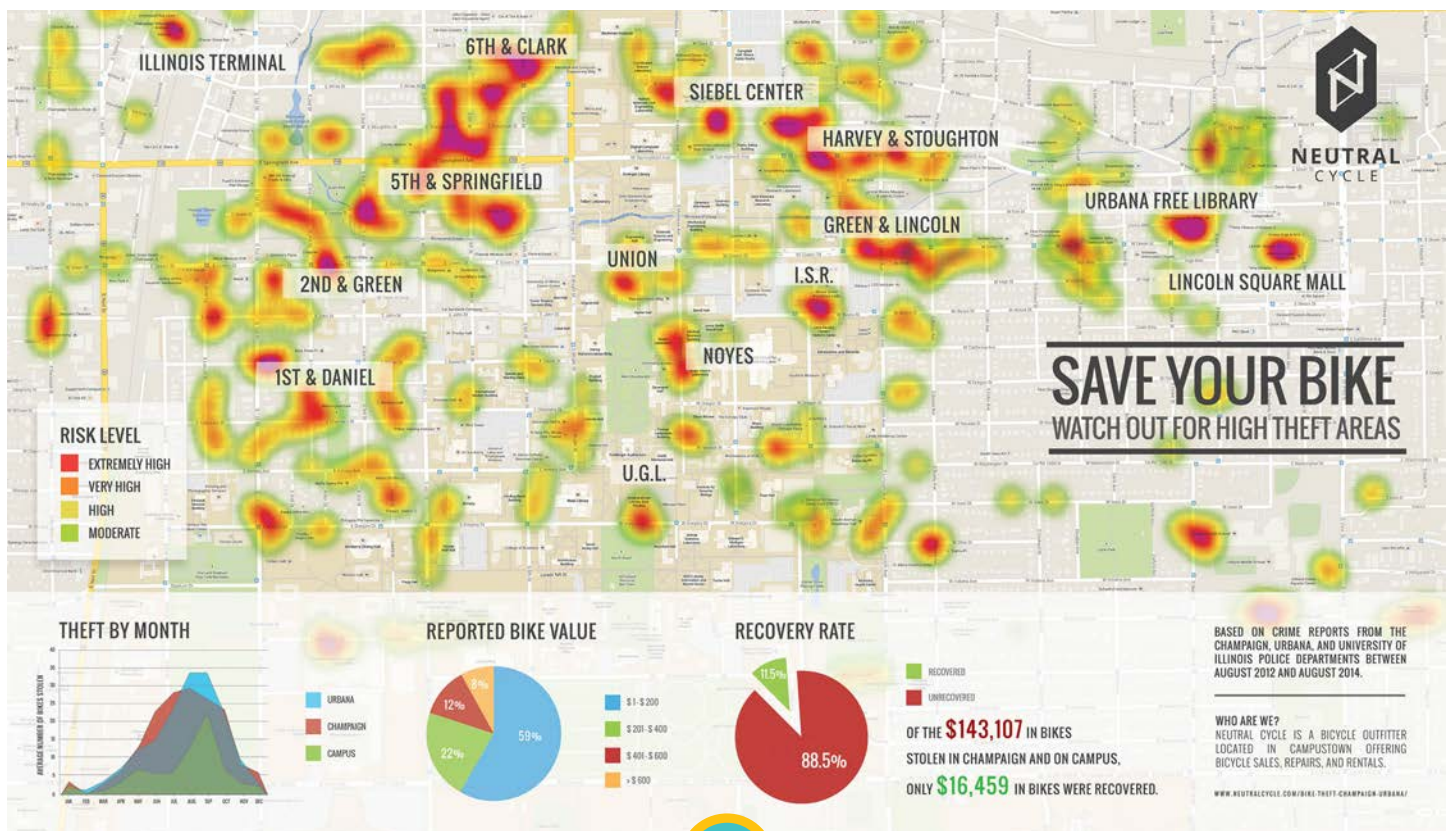
Bike theft occurs everywhere, a crime of convenience, made easier by the compliance of the public by ignoring or not knowing the signs to recognize as it occurs. In a place like Champaign-Urbana with dozens of bikes locked up together its difficult to notice when a theft is occurring, and even more difficult to know what to do if you realize a bike theft is in progress. Even if you're in the perfect situation to observe, call-out, and report theft, who do your report a theft to? There are three police departments: City of Champaign Police, City of Urbana Police, and University of Illinois Police; amongst the departments they have conflicting districts and scopes of influence that are not easily identified.

National Statistics

National statistics on bicycle theft are difficult to assess, and there is rarely any data collected on bikes that are recovered unless they are simply noted as recovered before being placed in police auctions. As noted by the National Bike Registry's report on bicycle theft in America, there is no standardized method of serial numbers for bikes, and even if there were there is almost no systematic collection or reporting of the data at a national scale (National Bike Registry). The same report notes that although we can estimate roughly two-hundred billion dollars lost in stolen bikes each year, we can only surmise that this is the number through the various data collection exercises that gather police reports at the local level.

Local Statistics

Neutral Cycle's bike shop remains a common place for people to share their stories of bike theft, and often is the first place people check-in to see if we would be willing to share with our community and advise others to be on the lookout. This was where our curiosity in improving the status-quo began, and our effort to see just how precarious bike theft had become in Champaign-Urbana. In 2014, Neutral Cycle began collecting data from Police in Champaign, Urbana, and the University of Illinois; the scope of the data encompassing all bike thefts from August 2012 to August 2014.



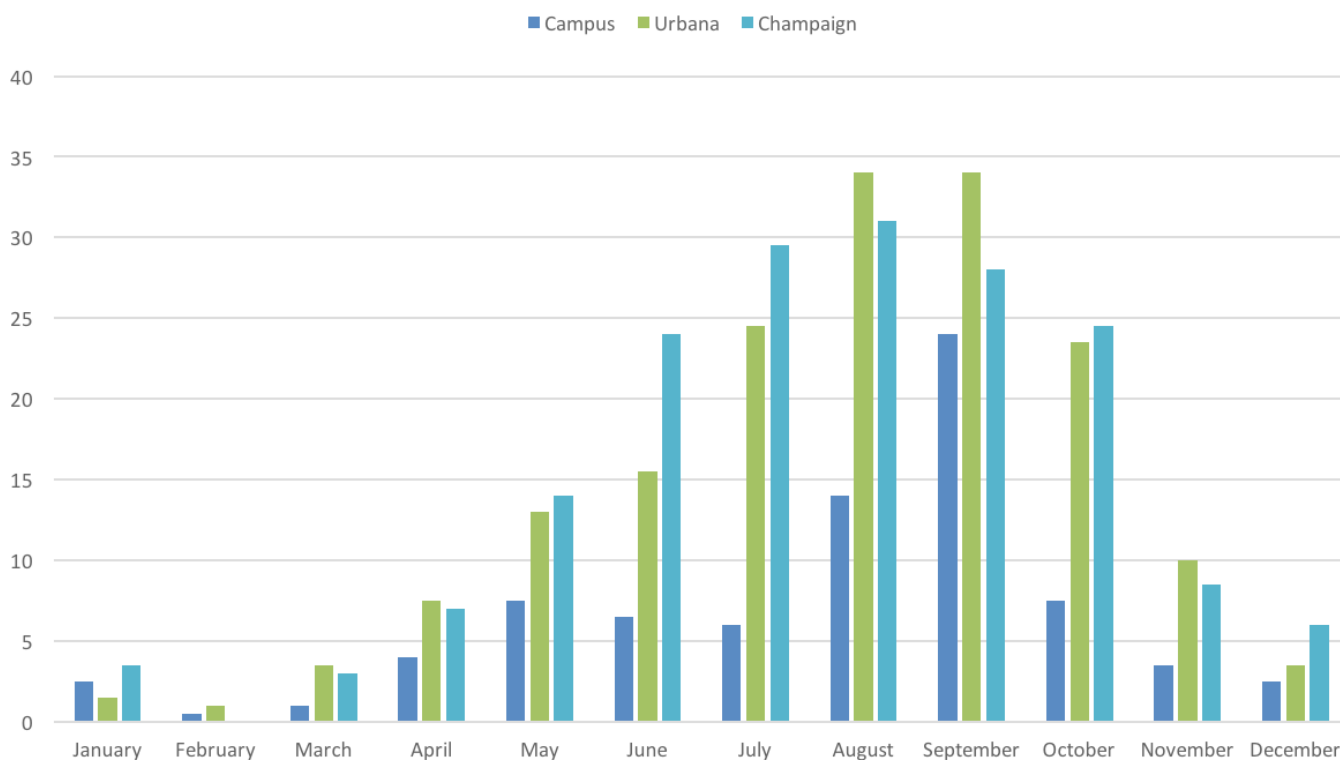
Codifying data across the three departments was a bit difficult considering that we were looking at variability in data collection, and that the data itself is only representative of reported thefts. The fact that reported thefts are our only resource for reliable data on bike thefts was a major factor in making the system for registering/reporting more simple to use, and provides justification for a myriad of improvements. With the 'reported thefts' disclaimer in mind, we still found plenty of data on local bike theft that causes alarm.

In the two years that we collected data for we found that of \$143,000+/- in reported stolen bikes, only a mere \$16,000+/- in value were recovered. There are two variables that further muddle the results, including that many victims reported their bikes at only a single dollar in value and that in Urbana the only value data reported is whether or not the reported bike was greater/less than five hundred dollars in value. In response, we normalized the data across the other two police departments, and represented an average value for thefts reported to the Urbana police department. When broken down month-to-month, we saw that averaged across all three reporting departments there

were thefts reported every month of the year, but that the most thefts were reported in August and September.

One assumption we have based on campus trends is that the most number of thefts do not actually occur in August/September, as it makes more sense that students would leave/abandon/lock-up their bike for an indeterminate amount of time when they leave for the semester to go home. The high propensity of thefts across August/September is likely a confluence of students returning to campus to find their bikes missing, and/or a prime time for students to purchase or bring their bikes back to campus. While the University of Illinois data portrays a balance in the number of thefts per department, if we take out the University and look purely at thefts on either side of the municipal boundary then we see Urbana has nearly twice the number of thefts per-capita of Champaign. When we look at population characteristics Urbana has 40,000+/- residents, Champaign has roughly 80,000+/-, and the University has an annual enrollment of 44,000+/- students (some of whom are residents of one or the other community).

Bike Thefts per Month
Averaged Monthly 2012-2014



Current Trends in Bike Theft Prevention

Programming for the prevention of bike theft is mostly centered around education for the general public, which is inclusive of: lock types, where to lock, and how to use locks. Neutral Cycle itself has provided a few articles about locking your bike, and the one permanently linked here provides a good all around resource for lock types and how to use them effectively (<http://www.neutralcycle.com/lock-bike/>). The two recommended lock types (at least from avid cycling perspectives) is a keyed U-Lock or chain lock with a hexagonal or octagonal shape to the links. When teaching cyclists how to utilize these locks, it's generally recommended to use multiple locks, or a combination of lock and cable types to discourage the determined thief. Educational programs have and continue to discourage the use of cable or coated wire locks, which are easily snipped apart with common hand tools in a matter of seconds.

Distribution of educational information about locking bikes is the fundamental first step in preventing theft, but realistically no bike is safe from theft just by locking it. It comes down to awareness and the ability to rely on one another to observe bike theft occurring, and be able to identify when/where/how to report theft incidents. Throughout the next few sections we'll take into consideration how current physical, digital, and social programs are helping to curtail theft and how Neutral plans to amplify the efforts.

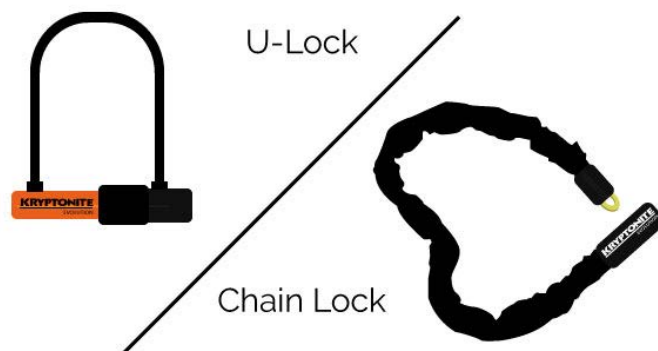
Locks and Digital Prevention/Recovery

There are numerous lock types to use, as were briefly introduced in the preceding section, but all locks are meant to do is discourage thieves from easily making off with your bike. They are the first line of defense in protecting your bike, but they haven't really changed much in terms of ultimately protecting against determined thieves. If we limit our discussion to only U-Lock and chain locks (the two recommended types), there are many new methods that are being employed to make the locks more digitally connected.

A few companies including Bitlock (<https://bitlock.co/>), Skylock (<http://www.skylock.cc/>), and Noke ([## Physical Theft Prevention Graphics](http://</p></div><div data-bbox=)



Prime Locking Locations for Typical Bikes



Recommended Physical Lock Types

noke.com/products/noke) have begun creating solutions to add Bluetooth and WiFi so that locks can be unlocked with a smartphone or fob.

All of these options contribute to prevention of theft, but because they are still easily removed they don't lend much in the way of increasing recovery. Digital tracking, via proximity and GPS location based systems have been hitting the market, but for the average cyclist they are still priced out of affordability. GPS tracking solutions are worth the investment when you have a very expensive bike, but the key is to purchase a solution that itself is not very easily identified by a professional thief. A GPS unit incorporated into the look and feel of the bike is ideal, with many manufacturers

DORMS

SURVEY OF HOW BIKES ARE LOCKED ON CAMPUS.



LOCK TYPE:

CABLE 52%
U-LOCK 46%
NONE 2%



METHOD OF ATTACHMENT:

FRAME 55%
FRAME + 1 WHEEL 21%
FRAME + 2 WHEELS 9%
JUST WHEEL(S) 13%
NOT ATTACHED 2%



*147 BIKES SURVEYED

USE A GOOD LOCK AND LOCK YOUR BIKE FRAME TO LOWER THE CHANCES OF YOUR BIKE GETTING STOLEN.

WWW.NEUTRALCYCLE.COM

QUAD

SURVEY OF HOW BIKES ARE LOCKED ON CAMPUS.



LOCK TYPE:

CABLE 47%
U-LOCK 52%
NONE 1%



METHOD OF ATTACHMENT:

FRAME 68%
FRAME + 1 WHEEL 20%
FRAME + 2 WHEELS 3%
JUST WHEEL(S) 7%
NOT ATTACHED 3%



*151 BIKES SURVEYED

USE A GOOD LOCK AND LOCK YOUR BIKE FRAME TO LOWER THE CHANCES OF YOUR BIKE GETTING STOLEN.

WWW.NEUTRALCYCLE.COM

offering solutions that incorporate into the handlebars, seat post, or frame itself.

National Bike Theft Prevention/Recovery

There are a few national level databases for registering your bike, and to search for bikes that may have been reported as stolen. The most notable national registries are the National Bike Registry and Bike Index, each fa-

cilitating for consumers to claim their bikes identifiable features and offering a searchable database to ensure the bike you've found or intend on purchasing has not been reported as stolen. National Bike Registry (www.nationalbikeregistry.com) is supported by a number of national bike and bike accessory manufacturers, and allows consumers to register their bike with the registry for a small fee (supporting the registry and their costs of administration). Bike Index (www.bikeindex.org) began

as the product of a few friends that had been victims or interacted with victims of bicycle crime, which was expanded into a national database with integrations for bicycle retail stores and consumers.

Local Registration, Reporting, and Recovery

Within Champaign-Urbana there are multiple agencies that deal with theft; in the core urbanized area there are three police departments: Champaign, Urbana, and University of Illinois. Nearby there are a number of other agencies including the Champaign County Sheriff's Department, as well as a few smaller municipal police departments. However, the same authorities you might report your bike to are not the same that you would contact about registration. In order to recover your bike, you need to have either original proof of purchase, or you would need to have registered your bike with at least one (but preferably all three) of the local authorities.

Bike registration is required (albeit not regularly enforced) for students who have bikes on the University of Illinois campus, and registration can now be start-

ed online and a registration sticker picked up from the Bike Project of Urbana-Champaign (<http://go.illinois.edu/mybike>). Bike registration can be performed for the City of Champaign at any Fire Station location, and in Urbana at the Urbana Finance office. Registration performed at the City of Champaign or City of Urbana are still collected on paper forms, and are entered into separate databases that can be queried utilizing your registration number to give to police when reporting a theft.

Reporting bicycle crime is a similarly difficult process, and in order to report your bicycle stolen you must make a report in the jurisdiction that the bike was thought to have been stolen in. Through our research, you may notify the other police departments that your bike was stolen in a nearby jurisdiction, but there is not a concise method for the thefts and reports to be shared amongst the police departments. Neutral has consistently encouraged all cyclists to register their bike in each jurisdiction, which ensures that regardless of where your bike is recovered that the police have access to registration information to make a successful return to the bike's owner.



BikeNet



Check out the activity board to see recently reported thefts. Leave helpful comments if you've seen a stolen bike.



Buying a pre-loved bike? Do your due diligence and search the BikeNet database to make sure you're not buying a bike reported stolen.



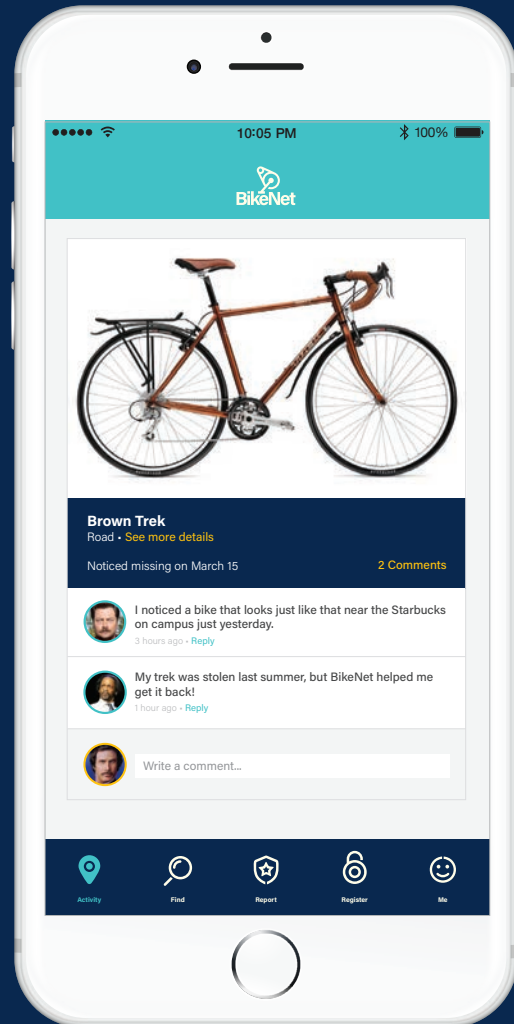
Report a stolen bike instantly. The report will show up on the activity board, share it on social media, and create a report to share with local police.



Register your bike(s) into the BikeNet database. Registration is private to you, and will provide evidence of ownership if your bike is stolen.



Create your BikeNet user profile, and manage your registered bikes.



Save the Bike Project and the BikeNet App

Beginning in 2014, Neutral Design Studio began working on the Save the Bike project as a response to the status-quo of bicycle registration systems and the mechanisms to efficiently and proactively report bike theft. At the core of the research was to identify a few of the characteristics that were necessary but missing from other systems, and to bring together the oft-repeated features across each system that would contribute to a universally valuable registration/reporting system for our community. As Save the Bike developed into an actual database and application (web and mobile) Neutral named the product BikeNet, which allowed us to incorporate the project name and app name into a unified web address.
www.savethebike.net.

In developing the BikeNet application there were two characteristics to quickly address in the standard process for creating and publishing an application; users and usability. In order for BikeNet to replace the current mechanisms for bicycle registration and maintain an active user population, the application itself has to be easier to use than the current systems and provide features that would encourage people to use it more than once. The current systems for bicycle registration (locally and nationally) are not interconnected, and the reporting mechanisms that exist do not make it very user-friendly for local public safety officials to query for necessary registration information.

How does BikeNet work?

BikeNet comprises features we found useful from many different registration/reporting systems, and includes a portal for registering your bike, reporting a theft, and searching for open thefts before purchasing a bike. The registration system allows you to upload the brand, model, color, type, serial number (and location), value, identifying details, and images. The reporting mechanism whether on mobile or desktop allows a user to identify the location the bike was stolen from (automatically using GPS on mobile), and to attach a new bike or a currently registered bike to the report. The reporting function allows for photos to be uploaded of the conditions where the bike was stolen, missing or broken locks, and other identifying features that may help to recover the bike.

The activity feed is a comprehensive list of bikes that have been reported missing or stolen, and allows for anyone to search for reported bikes. This function incorporates the identifiable information about the bike, including photos of the bike and incident, allowing people to identify whether the bike they've found is the one reported. The activity feed is one component where we're beginning to assess how we can impact awareness surrounding bike theft, and allow people to share their theft on social media to increase the visibility of a 'fresh' theft.

Continued usage of the application, especially by individuals and groups that come into contact with a variety of bikes on a regular basis is key. The social media component (search, activity feed, Facebook/Instagram/Twitter sharing) is where we see people like bike shop employees, cycling groups, and people that regularly buy/sell/trade bicycles have the most day-to-day interaction with the app.

Increasing Awareness

Bike theft is more than being able to prevent your bike from being physically cut out of its lock and stolen, and the activity feed is where we hope to really leverage the observations of community in preventing theft. Along with regular educational information about bike theft, the next step is to increase awareness by exhibiting the

shear numbers of bike thefts in our community and utilize social media to its full effect. A go-to place to share information about your life, including the unfortunate reality of having your bike stolen, typically ends up being on social media (Facebook, Twitter, Instagram). We are in a period of connectivity that extends our social reach to extents that can be easily considered beyond the limits of our community; if you share a post about your bike being stolen, its likely to be shared to friends-of-friends or neighbors just based upon the location algorithms inherent to social media.

With the ability to share individual bike theft reports, we have the opportunity to get the entire community on the lookout and reduce the burden of reconnaissance and recovery on public safety officials. The individual reports and the missing/found data connected to them will also help to unify and expand the availability of theft information, and create a platform for presenting information for public consumption. With the possibility of systematic data collection, an opportunity exists for sharing data on a consistent basis and representing the true state of theft and recovery in our community. The ideal use of such data being the option to show how current policy supports (or doesn't support) reducing bicycle theft, and creating a case for improvement of public policy.

A true story about theft

In the early days of our research about theft in Champaign-Urbana, we came across a Facebook post from a close friend and bicycle advocate in our community. Our friend had posted that she lost her bike, a nice Peugeot from the 80s, and that it had been stolen earlier that day and she wanted to share a photo and a few details in hopes that someone had seen it.

Within a short time, someone commented that they had seen the bike at a local eatery, no person around it, but that it appeared to be the bike in the photo. We rushed to the restaurant to see if it might be the same bike and found it sitting there next to the bike rack propped up, and unlocked. We were able to recover the bike and return it to its owner, all because of a simple Facebook post with relatively little information and a team of advocates that by nature of their interests were always looking at the bikes around town.

Improving Data

As referenced throughout this report, much of our data supporting BikeNet as a unified registration/reporting mechanism for bicycles is focused on the state of theft in Champaign-Urbana. There are of course allusions to national theft data but only as observed in the few research reports, and our own assessment of data from similar platforms for registration and reporting. The short term goal is to begin importing registration and reports from other sources, and curate them with the registration and reporting data that BikeNet will be collecting.

One database we alluded to earlier in our 'State of Theft' section was Bike Index, which is an open source database for registering your bike and reporting thefts. We see a platform like Bike Index as a peer, and the efforts they've made towards registration/reporting has even encompassed the 'pre-registration' of bicycles by certain bicycle manufacturers and integration into point-of-sale systems in local bike shops. The open source functions of Bike Index make it easy for our database to connect to theirs and utilize the data they've already collected as a frame of reference; BikeNet then becomes an easy to use front-end application to extend the interconnectivity of the two systems in an easy to use mobile application.

Between the BikeNet database and the other theft reports we have access to we can begin building a better understanding of the variables that lead to theft. With our process we hope to reduce underreporting or insufficient access to proper reporting mechanisms, and demonstrate the true state of theft.

What happens next?

As of May 2016, BikeNet is live in the Apple App Store, Android Store, and online as an operational beta test. Bicycle registration may be submitted for a bike you own, and the reporting function releases priority information to the application's activity feed. The team will be launching a fund raising campaign from May through June 2016 to support development up to this juncture, but there are quite a few features that we will be adding during fund raising and into the foreseeable future.

First and foremost we want to continue our beta test, and get feedback from our users to assess what we've done. While we've had beta testers to assess the app, we want to reach beyond our normal testers to have real cyclists around the nation give us feedback on what we've done and how we can do better.

Following this project to market our goal has been to make a system that is centered on user-friendliness, and that is effective in early registration of bicycles, reporting bicycle theft, and usable as a tool for recovery. In order to make this project successful as a national tool we've focused on recording the most important information, so that whether you're reporting in Boston, San Francisco, or Springfield your information is secure and effective. Our focus follows the research we've done up to this point, and ensures that what we're producing does not become fragmented in the same manner as many localized attempts at bicycle registration.

After stable development of our public release candidate, we will be working towards building tools for local governments, organizations, and public safety to increase the use and awareness of registration for BikeNet. Localized tools include local or regional branding of our application and website, albeit with our global database as the backend so that a local registration or reporting still maintains the data quality seen in the national application. Local and regional branding offers the opportunity for localities to offer their own registration identifier, as well as to add additional fields that correspond with data important in local recovery operations (university identification numbers, addresses, integration with existing registration systems, etc.).

Public safety tools include simple applications for searching the national registry and theft reports, and advanced applications that offer greater analytics for local organizations to assess bicycle ridership, frequency of theft, and target improvements in high-theft areas.

Where can I find more information?

Visit the project and app at www.savethebike.net; the application may be downloaded on the Apple App Store or Android Store as well, just search 'BikeNet'

Email info@savethebike.net for information related to bringing the application to your locality, supporting our efforts, or just general contact. We're available by phone as well Monday through Friday, 10:00 am to 5:00 pm CST, send us an email with your name and phone number and we'll be in touch shortly.

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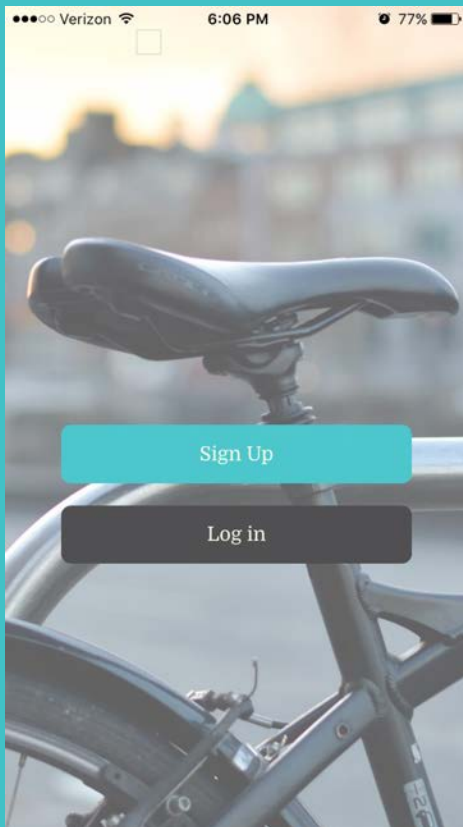
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National Bike Registry. Crime and No Punishment: Bicycle Theft in America. Retrieved from <https://www.nationalbikeregistry.com/crime.html>

BikeNet App Overview



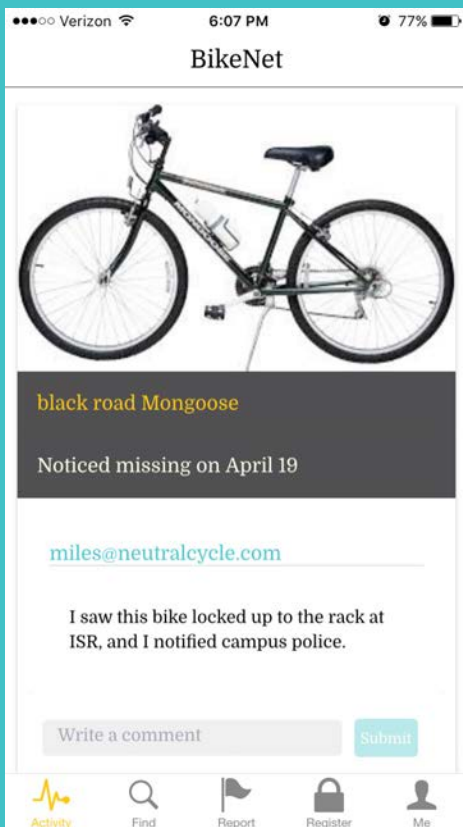
Log in to the App

Whether using iOS or Android the app interface is fairly similar, and getting an account is as easy as signing up with your email or Facebook.

We encourage users to either sign-up with Facebook from the start, or to connect their account after login so that they're able to share reports on social media.

We collect minimal contact info from our users, email and phone suffice for creating an account, but additional info can be added later when making a report if the user chooses.

We do not require an address for account creation, and locations are only stored when making a report by manually entering an address or using your phones GPS to locate the theft location.



Activity Feed

The activity feed is the same if used on mobile or on the web, and provides a 'card' catalog gallery for viewing active theft reports.

The photo, short description, and date missing are located on the card.

By clicking the card you can view more details like where the theft was reported, a full description, and all comments on the theft.

Use the short-form card to add quick comments, and to scroll through most recent thefts.

Using the website, you can view reported thefts as a map.

BikeNet App Overview

Verizon 6:07 PM 77%

Find A Bike

Serial
insert serial

Brand
ex. Schwinn

Type Please Choose ▾

Color Please Choose ▾

Search

Activity Find Report Register Me

Find a Bike (Search)

Found an awesome ride on Craigslist? Yep, Cannondale for \$50... Seems a bit fishy. Use the search tool to search if the bike has been reported.

The search tool can be searched by serial, brand, style, type, color, or a combination of all of the above.

The bike you're looking at has been reported? No problem, don't get yourself in a bind, just comment on the report and let us and the owner know.

Verizon 6:07 PM 77%

Describe Location

413 E Fairlawn Dr, Urbana, IL 61801, USA

Next

Activity Find Report Register Me

Report a Theft: Part 1

If you've just had your bike stolen or witnessed a theft, report it on the app.

When you open the reporting function, the first screen is a GPS enabled map. Let the app pick your location, pan the screen to move the marker, or manually enter an address.

BikeNet App Overview

Verizon 6:08 PM 76%


Describe Location

Description
A bike was stolen from in front of our neighbors house.

Earliest Possible Time of Theft
May 10, 2016, 5:08 PM

Latest Possible Time of Theft
May 10, 2016, 5:12 PM

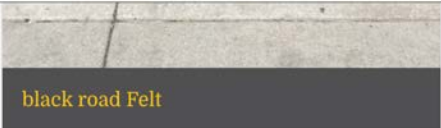
Take Photo Upload



Activity Find Report Register Me

Verizon 6:09 PM 76%

Describe Location



black road Felt

Report This Bike >

Brand
ex. Roadmaster

Model
ex. Mountain Fury

Type Please Choose ▾

Color Please Choose ▾

Take Photo Upload

Back Submit

Activity Find Report Register Me

Report a Theft: Part 2

Whether you're reporting your own theft or one you witnessed, provide a description of the circumstances. Add details about what's around or what you witnessed about the situation.

This is also a good place to indicate whether the bike was locked, what type of lock was used, and how it was removed.

Indicate the earliest and latest possible range for the date and time the bike may have been stolen, and take a photo or upload a photo of the incident.

Report a Theft: Part 3

The last screen allows you to select from the bike(s) you've previously registered, or to upload a new bike.

Report your own bike, or fill in the info for the bike you witnessed as best you can.

Take or upload a photo of the bike.

BikeNet App Overview

Verizon 6:10 PM 76%

Save The Bike

Brand
ex. Roadmaster

Model
ex. Mountain Fury

Type Please Choose ▾

Serial Number
ex. U7-04-12594

Color Please Choose ▾

Value
\$80

Take Photo Upload

Register

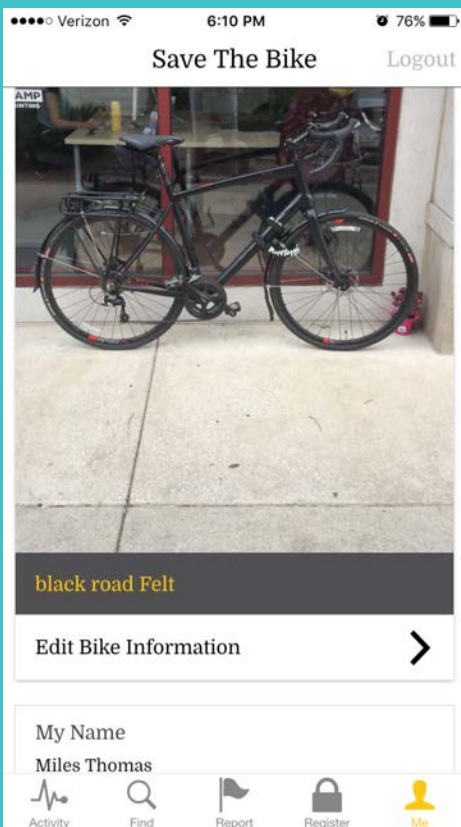
Activity Find Report Register Me

This screenshot shows the registration form for a bike. It includes fields for Brand, Model, Type, Serial Number, Color, and Value. There are buttons for 'Take Photo' and 'Upload', and a large 'Register' button at the bottom. A bottom navigation bar contains icons for Activity, Find, Report, Register, and Me.

Registration

Register all of your bikes on the app, we allow you to upload multiple photos in addition to the details about your bike. Use the photos to upload multiple views of your bike, as well as receipts if available.

Registration is private to you, and only need-to-know information is shared with the public if your bike is reported stolen.



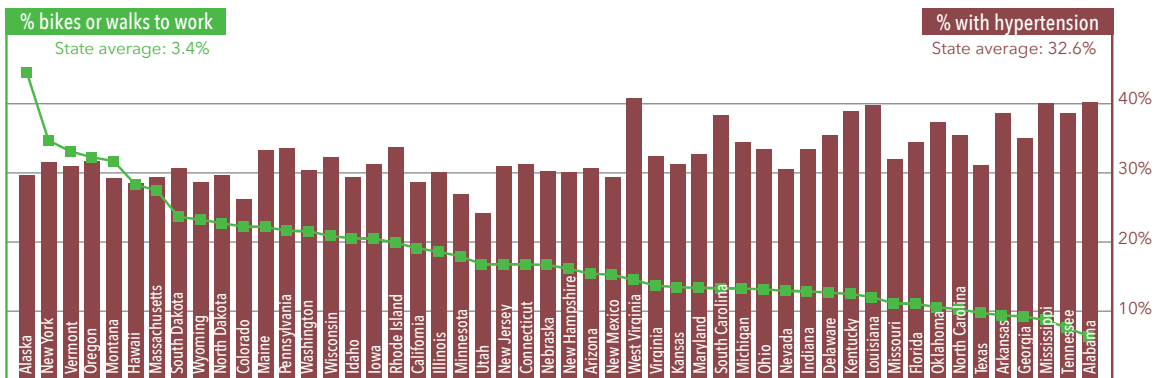
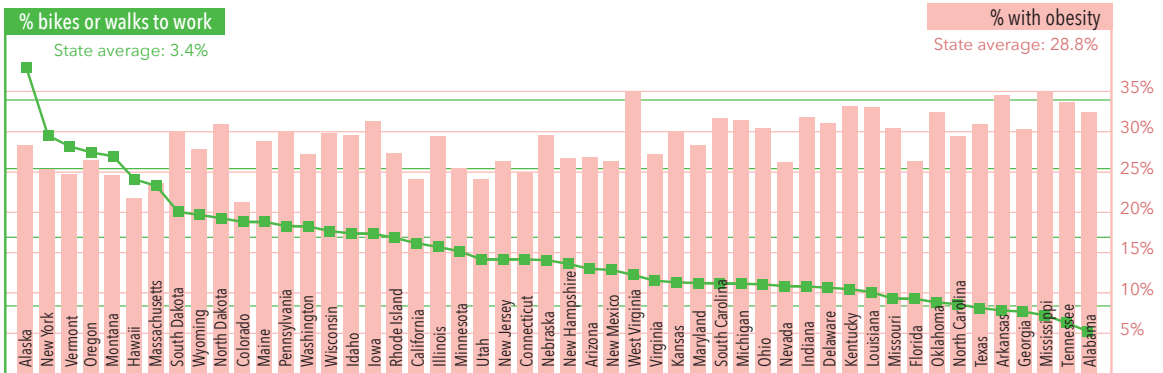
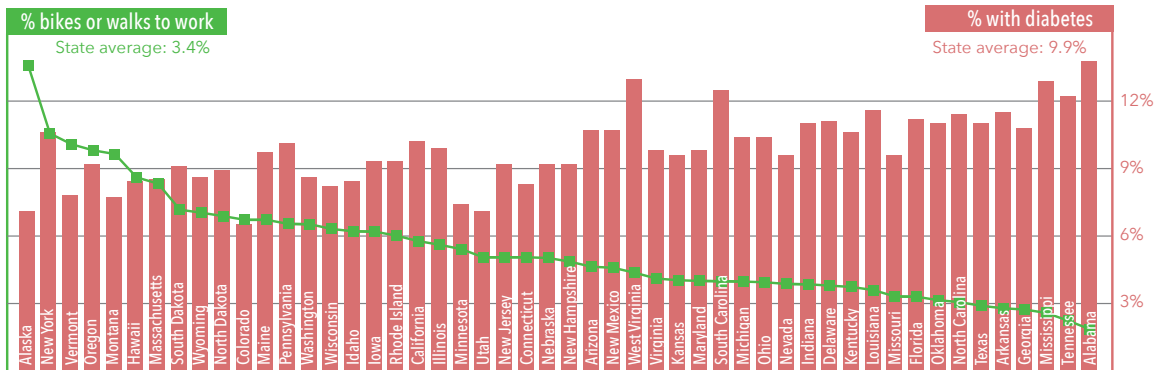
Your Profile

View your bikes in the app or online, and update photos and information. The first photo you upload will be the featured photo for your bike, but this can be modified online.

Edit your contact info so contact can be made if your bike is recovered.

Appendix - Active Transportation by Health Indicators

Active Transportation Compared to Health Indicators

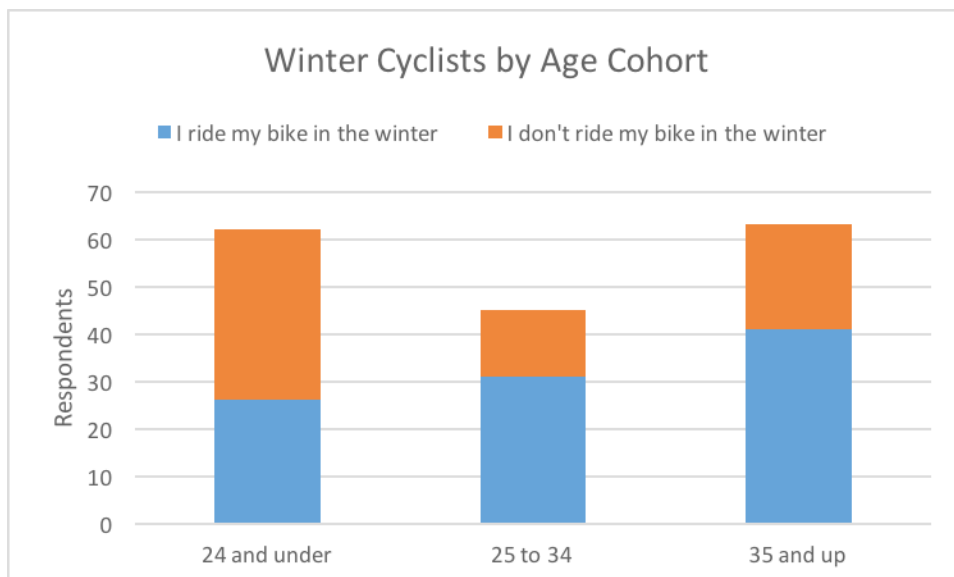
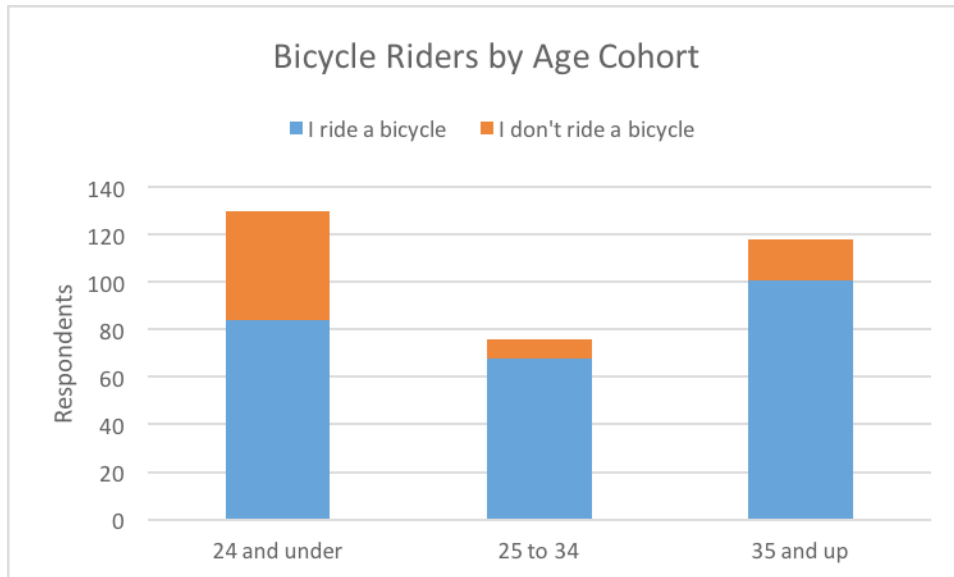


Sources: ACS 2013, 3-yr est; BRFS 2013

Appendix - Bike Theft Map Neutral Cycle

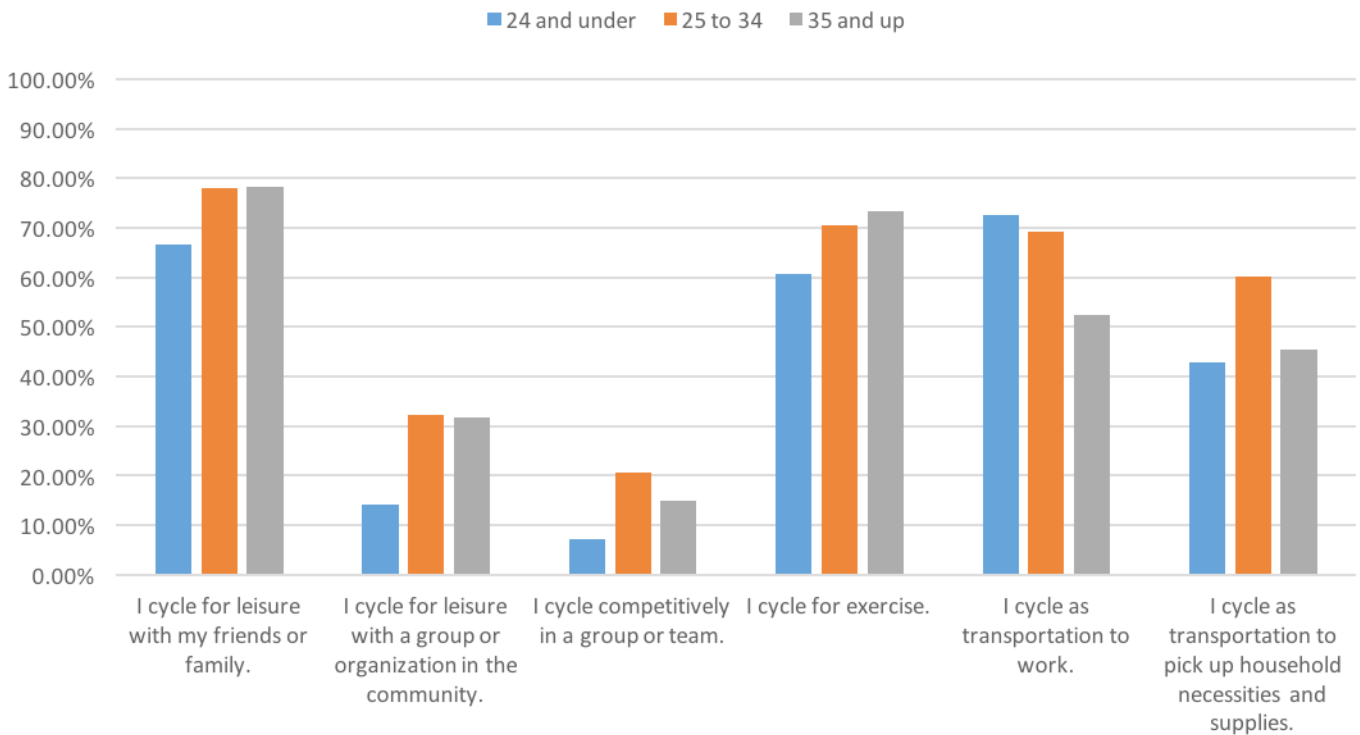


Appendix - Neutral Cycle Survey Results



Appendix - Neutral Cycle Survey Results

Cycling Patterns by Age Cohort



Cycling Locations by Age Cohort

