

BICYCLE TRANSPORTATION PLAN

March 2011



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The Portland State University *Bicycle Transportation Plan* is an evaluation of existing and potential bicycle facility improvements and program initiatives aimed at increasing the attractiveness of bicycle use in the University District. Bicycling is a highly sustainable mode of transportation and the University has committed to nearly doubling the share of people who bicycle to campus each day by 2030. Significant bikeway upgrades, increasing bicycle parking on campus, and numerous service and encouragements programs are already in place. Expansion of these initiatives and the development of new routes, facilities, and outreach efforts will be vital to making bicycling more appealing and practical for Portland State students and employees and others travelling within the University District.

BICYCLING GOALS AT PORTLAND STATE

Three primary goals relating to overall bicycle use and awareness drive the implementation strategies outlined in the *Bicycle Transportation Plan*.

1. Increase the share of employee and student commute trips taken by bicycle.
2. Increase the percentage of campus residents who use bicycles for their transportation needs.
3. Promote campus awareness of bicycling.

Bicycle Planning Background

According to the University's Fall 2010 Transportation Survey, 12% of employee and student trips to Portland State during the survey period were made by bicycle. The campus area provides parking capacity for over 1700 bicycles in short-term spaces, as well as over 200 more in two secured garages and two indoor bicycle rooms. Peak occupancy counts during the early Fall 2010 quarter showed a two-day average of 1099 bicycles parked on campus. Many bicycle rack locations in the Urban Plaza, throughout areas along the Shattuck Hall to Lincoln Hall core, and in the joint City Development Center and Fourth Avenue Building bike room, among others, are often filled beyond intended capacity.

Major recent improvements to the bicycle network near campus include the Broadway Cycletrack, and a bicycle lane and markings on 5th Avenue, along the Transit Mall. The recently-opened Montgomery Street and Harrison Street Bicycle Garages, the results of partnerships with Metro, the regional metropolitan planning organization, and TriMet, the Portland-area transit operator, have made over 150 secured, covered bicycle parking spots available for \$15/quarter to anyone travelling to the University District.



Amongst various encouragement and service programs instituted by Portland State, the PSU Bike Hub, a bicycle service and retail outlet managed by PSU Transportation and Parking Services and open since January 2010, has been perhaps the most highly-visible and influential bicycle project undertaken by the University in recent years. Hub members can perform bicycle maintenance and attend a range of service and rider education workshops. As a major awareness effort, the University's involvement in the Bicycle Transportation Alliance's Bicycle Commute Challenge helps promote cycling among hundreds of participants.



According to the University's spring 2010 survey of bicycle riders, the Cycletrack, Bike Hub, and other key programs are generally well-received and appear to be supportive of people's choices to make bicycling their primary commute mode. Respondents expressed concerns about the availability of bicycle parking in high-demand locations, bikeway connectivity to key destinations such as across the Hawthorne Bridge, and other impediments to hassle-free bicycle riding.

Increasing bicycle use is a major component of the University's goals of reducing the presence of automobiles and parking demand on campus, curtailing greenhouse gas emissions, and providing a sustainable commuting option. The University also views bicycle use as a meaningful way to promote community and civic engagement.

Implementation Strategy Framework

The University's broadest overall existing goal of promoting bicycle use (defined in the PSU *Climate Action Plan* as a target bicycle mode share of 20% by 2030) will require enacting a series of ambitious facility improvements and encouragement programs. Agencies including the Portland Bureau of Transportation (PBOT), TriMet, the Bicycle Transportation Alliance (BTA), and major employers and regional institutions such as the Oregon Health Sciences University (OHSU), will be integral partners as Portland State seeks to initiate a range of projects.

Continued development of major bicycle facilities, such as secured garages and city bikeways, will help promote growth in bicycle use. Increasing numbers of on-campus residents present one of numerous target audiences that may adopt more regular bicycling. The *Bicycle Transportation Plan* outlines a range of both specific and general strategies for encouraging bicycle use at Portland State University. This plan will guide Portland State as it seeks responsive and flexible methods of making bicycle use ever-more equitable, healthy, vibrant, and sustainable.

IMPLEMENTATION STRATEGIES

The goals of the Bicycle Transportation Plan will be met through the implementation of seven primary strategies addressing facilities, programs, encouragement, and partnerships.

1. Improve bicycle access to, from, and within the University District.
2. Increase the availability and distribution of short-term bicycle parking.
3. Increase the availability of long-term bicycle parking on campus.
4. Expand Bike Hub membership, services, and retail offerings.
5. Promote awareness and support of bicycle commute options for the entire University community.
6. Support and encourage City, TriMet, Metro, and State bicycling initiatives.
7. Continue to expand survey and data collection efforts to identify program and facility successes and deficiencies.

As both the largest and fastest-growing institution in the Oregon University System, Portland State attracts thousands of students, employees, and visitors to its campus on a daily basis. The University's location in Portland's central city makes it a focal point within the region. Providing for the thousands of daily commuters and visitors to Portland State makes sustainable transportation options to, from, and within the University District all-the-more vital.

In order to address the growing demands for transportation access to the University, the Portland State University *Bicycle Transportation Plan* provides an overview of projects and programs designed to increase the number and share of trips made to and from campus by bicycle. Bicycle use can be part of healthy, affordable, and sustainable transportation options available to students and employees. Additionally, reducing reliance on automobiles to access campus can curtail emissions and the need for expensive parking and road expansion. Directing greater resources to bicycle facilities, accessways, encouragement, and outreach will help make bicycle use a more attractive travel option for the University community.



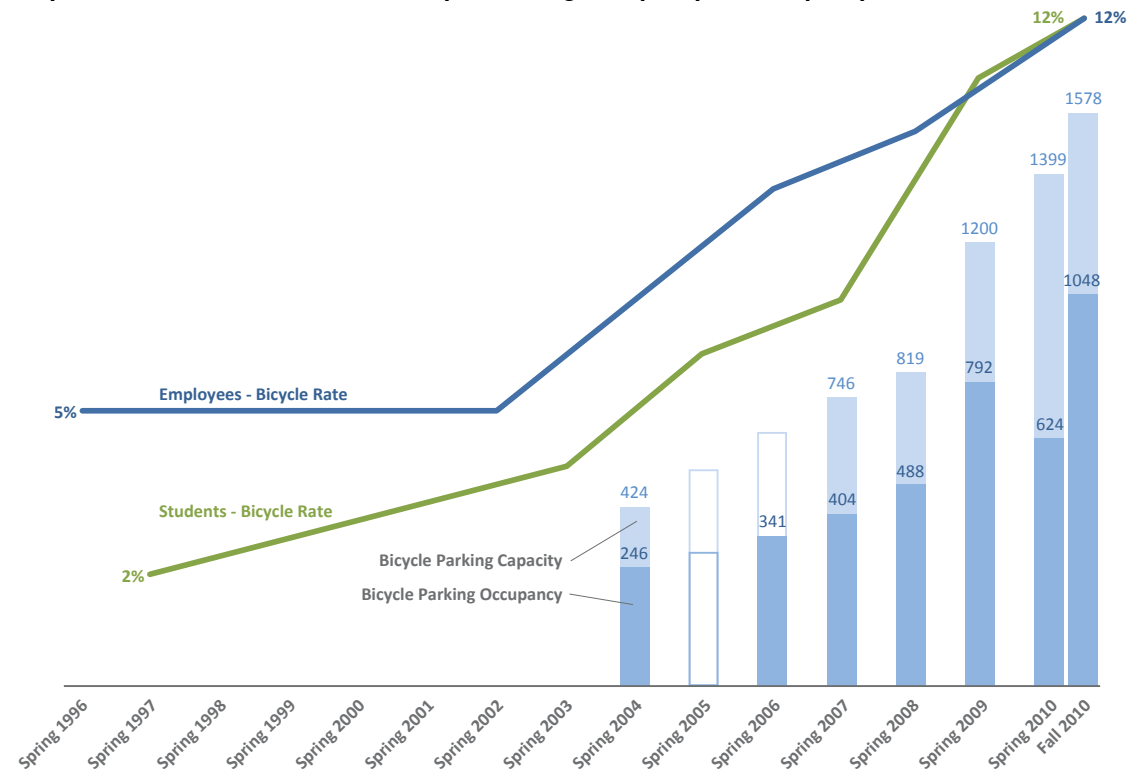
Portland State's dense, centrally-located, and highly-accessible campus has always attracted a portion of daily commuters to use bicycle transportation. However, only in the last ten years has the bicycle mode share on campus increased several-fold to roughly 12%. A range of facility improvements in and around the University District have been outlined in the recent City of Portland *Bicycle Master Plan for 2030*, some of which have already been implemented. A recent example includes the Broadway Cycletrack pilot project, an innovative facility that is being replicated in other parts of the city. Bicycle mode share has gradually increased as build-out of the campus-area bicycle parking capacity has increased and the overall student and employee population has grown.

The City of Portland has been developing bicycle routes and facilities throughout the city and numerous bikeways to and from Portland State have resulted. Portland State works closely with the City of Portland to identify ideal corridors for bicycle access improvements. The University's *Transportation Improvements Inventory* catalogs the school's wish list for bicycle and pedestrian access projects within the University District, including connectivity and mobility improvements that will require coordination with the City of Portland. (See the *Implementation Strategies* section and *Appendix D* for details.)

Once on campus, bicycle riders will find a growing array of bicycle parking options at their disposal. As of Spring 2011, the University District offers over 1650 short-term bicycle parking spaces. Additionally, three secure bicycle garages

provide over 150 controlled-access spaces. Since early 2010, the Bike Hub, an on-campus retail and service facility, has attracted over 1500 members and conducts many of the University's bicycling outreach, training, and encouragement programs.

Bicycle Mode Share and Short-term Bicycle Parking Occupancy* and Capacity 1996-2010



The University's bicycle mode share, according to the 2010 PSU Transportation Survey, stands at 12% for both students and employees. Bicycle parking capacity has grown over 3.5-fold from 2004 to 2010. The occupancy drop during Spring 2010 is likely attributable to the unfavorable weather on May 18 and 19, 2010, the inventory count dates.

*Occupancy figures do not include bicycles locked to trees, benches, railings, or street signs on campus.

Relevant Plans with Bicycling Components and Implications

Numerous other plans produced by both local government agencies and within the University will influence the goals, strategies, and environment in which Portland State continues to develop bicycle programs and facilities. A brief summary of several of relevant plans follows, and more details are available in *Appendix E*.

THE CITY OF PORTLAND AND MULTNOMAH COUNTY CLIMATE ACTION PLAN 2009

This plan calls for bicycling to be encouraged for short- and medium-distance commute and non-commute trips. Goals include boosting the City's bicycle commute mode share from 8% currently to 25% by 2030 and greatly expanding access to low-stress bikeways for most city residents.

PORTLAND BICYCLE PLAN FOR 2030

Since its adoption in early 2010, this plan has outlined the City's intentions to spend \$600 million over 20 years to construct 700 miles of bicycle routes. Portland State worked extensively with the City in support of bikeway improvements in and around the University District. The implications of the *Bicycle Plan for 2030* are extensive and include recommendations that may affect PSU bicycle parking, the design of bikeways, use of public rights-of-way, transit intergration, funding availability, and many other considerations.

PORTLAND STATE'S CLIMATE ACTION PLAN

Produced in accordance with the American College & University President's Climate Commitment, the PSU *Climate Action Plan* proposes numerous emissions-reduction strategies and calls for the increased mode share of bicycle commuter trips to and from campus, from 11% at the time of the *Plan* to 20% by 2030. Accordingly, the *Climate Action Plan* calls for continuing to install bicycle parking, and additional education, training, and encouragement projects.

THE PORTLAND STATE UNIVERSITY DISTRICT FRAMEWORK PLAN

University policies from this plan, approved in June 2010, recognize the importance of bicycle use and potential bikeway development projects, as well as the implications of the University's growth on district-wide mobility.

University Bicycle Research and Academic Programs

OREGON TRANSPORTATION RESEARCH AND EDUCATION CONSORTIUM (OTREC)

OTREC is a joint program between Portland State, the University of Oregon, Oregon State University, and the Oregon Institute of Technology that conducts transportation-related studies. OTREC's research has analyzed bicycle facility impacts, including the Broadway Cycletrack, bicycle travel demand modeling, and evaluations of bicycle-focused curricula at the university level.

INITIATIVE FOR BICYCLE AND PEDESTRIAN INNOVATION (IBPI)

As a division of Portland State's Center for Transportation Studies, IBPI conducts research and training seminars with the goal to "advance bicycling and walking as integral elements of the transportation system in Oregon's communities."¹ Projects have included GPS tracking of bicycle commute patterns and evaluations of user perceptions of bikeway facilities, such as bicycle boulevards. Regularly scheduled courses address on- and off-street bicycle and pedestrian facility design, data collection techniques, and supportive site design and land use planning methods.

UNIVERSITY COURSES

The Portland State College of Urban and Public Affairs has for several years taught a bicycle/pedestrian lecture and lab designed to expose students to professional practice, research, and real-world projects. The courses are taught by professors and staff of the Initiative for Bicycle and Pedestrian Innovation as well as adjunct faculty who work professionally in bicycle and pedestrian planning. Beginning in the Winter 2011 quarter, the College of Engineering and Computer Science will offer a bikeway facilities design course intended to instruct students in many of the points of integrating bicycle infrastructure into streets and urban environments.

¹ Initiative for Bicycle and Pedestrian Innovation. (2010). Retrieved on 29 November 2010 from <http://www.ibpi.usp.pdx.edu/>

A range of access improvement, encouragement, data collection, and service programs are currently in place at Portland State. Assessing the role and impact of these initiatives will help better inform the process of planning for future improvements.

Surveys and Data Collection

BICYCLE SURVEYS

Portland State Auxiliary Services (which oversees non-academic functions including housing, transportation and parking, conference services, dining, and the hotel) has conducted bicycle user surveys and bicycle parking inventories annually in the spring since 2006. The survey is sent to PSU Bike Hub (formerly Bike Co-op) members via email and is also advertised through flyers attached to campus-area bicycles during the weeks of the survey; as a result of these targeted outreach efforts, 80% of respondents are people who list bicycling as their primary year-round commuting mode, compared to 12% of the PSU population as a whole. The surveys have been used to gather information about typical bicycle travel; perceptions, motivations, and challenges; and other input about routes, parking, facilities, programs, and incentives. This information has in the past been gathered in *Bicycle Transportation Reports*, which were produced from 2007-2009. Information from the 2010 survey is incorporated into the PSU *Bicycle Transportation Plan*.

INVENTORY OF CAMPUS BICYCLE PARKING

During inventories, Auxiliary Services staff conduct at least two thorough counts of bicycle parking occupancy on campus, preferably during periods of peak classroom use and warm, dry weather. The purpose of this inventory is to closely approximate peak occupancy and identify the busiest bicycle parking locations. This inventory helps to inform where additional short-term capacity is installed, as well as locations for possible development and expansion of bicycle rooms and garages. Whereas in the past inventories were conducted once annually in the spring, Auxiliary Services has begun to conduct quarterly counts to better estimate seasonal demands. During a recent inventory, on September 27-28, 2010, more bicycles, averaging 1099, were counted on campus than ever before.

Additional University Transportation Surveys

Whereas the annual Bicycle Survey targets a specific sample of regular cyclists, several other PSU surveys target a representative sample of the entire student and employee population. Broad-based data, such as mode splits and commute mode motivations, are gathered through these analyses.

In the past, separate biennial transportation surveys of students and employees were the primary methods by which the University gather commuting data. In the Fall of 2010, both surveys were



combined into a single, comprehensive, annual survey of a representative sample of the entire University.

These surveys have shown noteworthy historic trends. Nearly a quarter of primary mode bicycle riders also used a car at least once during the survey week to get to campus. The PSU survey shows a trend towards non-whites, women, and undergraduate-level students bicycling less regularly than whites, males, and graduate students. For comparison, national trends show that roughly 65% of all bicycle trips are taken by men.¹

These surveys will continue to be instructive in identifying larger university transportation trends and will guide policy decisions, programs, and investment implementation strategies.

¹ Federal Highway Administration. 2009. National Household Transportation Survey. Retrieved on 24 January 2011 from <http://nhts.ornl.gov/>



Among the most popular and high-occupancy bicycle racks on campus are along the stretch of buildings between Shattuck and Lincoln Halls. The racks near Smith Memorial Student Union, shown here, included.

Bicycle Parking

The University, along with public agency partners in many instances, has undertaken in past years numerous innovative programs designed to provide bicycle parking, improve route connectivity to campus, and generally promote bicycling as a travel mode for students and employees alike.

PSU is responsible for managing short- and long-term bicycle parking on campus. The location and installation of bicycle racks, secure bicycle garages, and indoor bicycle parking rooms is managed through Transportation and Parking Services (TAPS). Coordination with other agencies is often sought, as when obtaining funding grants from Metro, the Portland-area metropolitan planning organization, for the Montgomery Street Bicycle Garage and TriMet, the Portland-area transit service agency, for the Harrison Street Bicycle Garage, but most planning, design, and operations are internal efforts. The University has installed bicycle parking at a rapid pace and is seeking further to ensure that bicycle parking is ubiquitous, convenient, and secure.

Respondents to the 2010 Bicycle Survey indicated that weather-protected parking is at a premium and have shown a willingness to use covered parking even when it is not adjacent to their destination. Capacity at the busiest campus locations has been built nearly to maximum, and it is apparent that sizable increases in short-term capacity

will have to develop through the conscious efforts of Transportation and Parking Services, Facilities and Planning (FAP), and numerous other departmental and auxiliary offices. Locations possibly suitable for expanded short-term parking include the Urban Plaza near the PSU Bookstore, pod parking (essentially, areas set aside for high-density bicycle parking rack installation) in the Park Blocks, and near locations undergoing renovation or new construction, such as Science Building 2 and the College Station residence hall. All of these locations will require significant coordination, planning, and design.

The day-to-day management and maintenance of over 1700 bicycle parking spaces on campus is a sizable task. Transportation and Parking Services (TAPS) is largely responsible for maintaining bicycle facilities, enforcing the use of secure bicycle parking, and removing abandoned bicycles from the campus' stock of racks.

Four percent of survey respondents report having had a bicycle stolen while parked on campus. Much more common is the theft of accessories and parts or general vandalism, with 23% of respondents citing this problem. Most thefts go unreported to the Campus Public Safety Office (CPSO) or Portland Police Bureau and little is formally done to pursue recovery of bicycles stolen from campus.

Campus Bicycle Parking Occupancy and Capacity - Fall 2010 Inventory

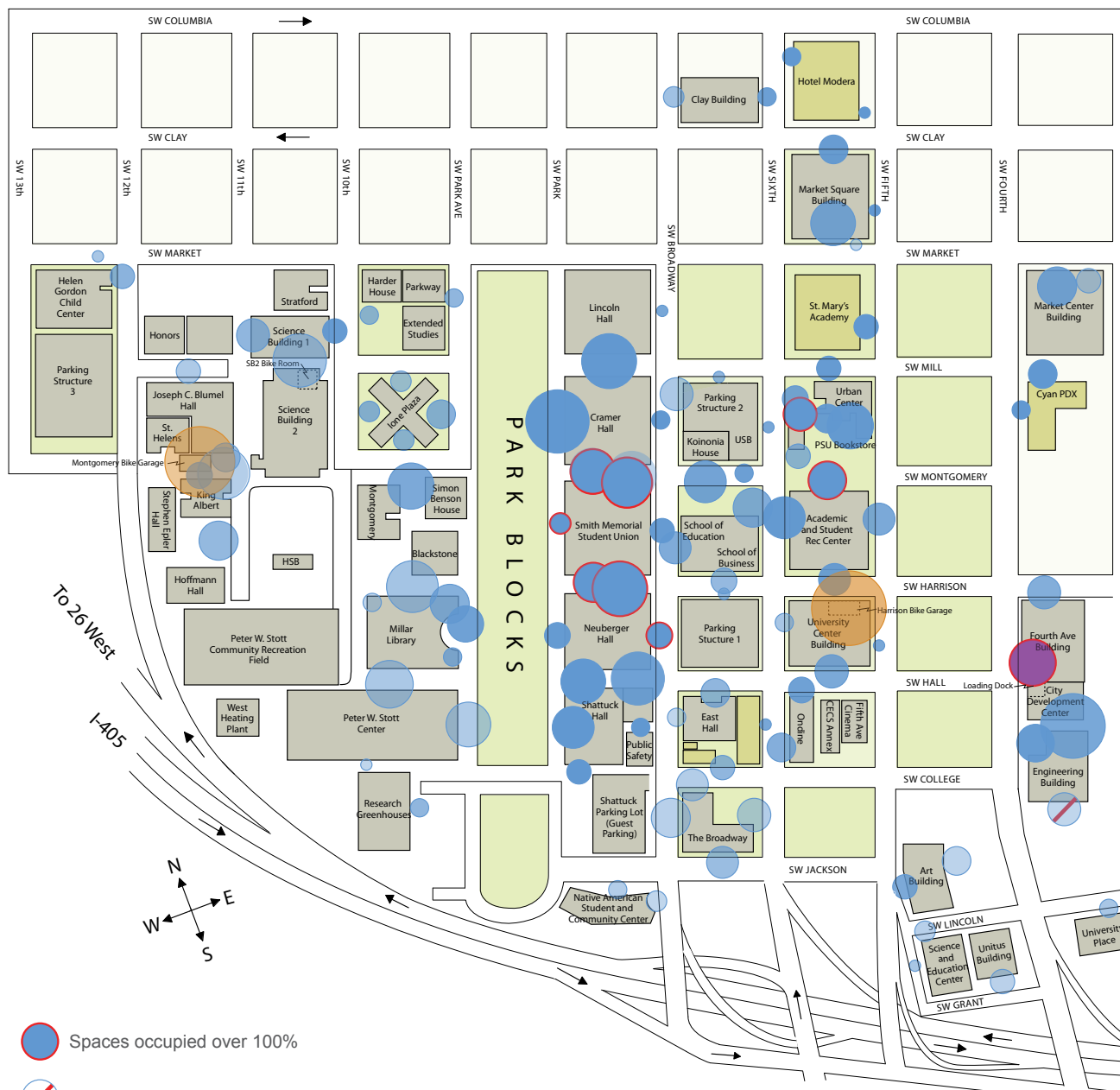
Facility Type

- Short-term
- Secure Garage
- Indoor Bike Room

Capacity

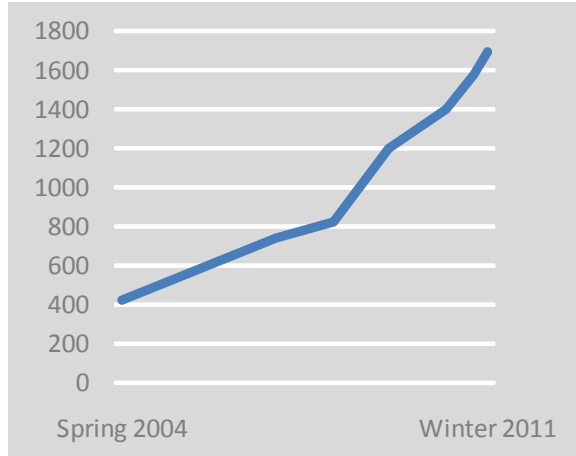


Occupancy Rate



- Spaces occupied over 100%
- Spaces temporarily unavailable during inventory period

Campus-Area Short-Term Bicycle Parking Capacity



Bicycle racks along the Broadway Cycletrack are installed by Portland State in collaboration with the Portland Bureau of Transportation.

Short Term Bicycle Parking

Since 2004, the availability of short-term spaces has grown from around 400 to over 1700 spaces. Bicycle parking counts on September 27-28, 2010, showed overall campus occupancy at roughly 65%, though many of the most central campus locations—including Urban Plaza, Cramer Hall, Smith Memorial Student Union, and the Fourth Avenue Building bicycle room—ran above 80%, some exceeding complete 100% occupancy. (See *Appendix C - Bicycle Parking Inventory Fall 2010.*) Locations in high demand areas suitable for installing additional parking racks and pods have become scarce. Although there are spaces in some of these areas for racks, such as the Urban Plaza and Park Blocks, these locations present significant challenges.

Transportation and Parking Services works with the Portland Bureau of Transportation to identify locations for short-term parking in public rights-of-way. A unique arrangement exists in which PSU installs many of the bicycle racks along campus-area streets, something which is typically done by PBOT. The recent installation of dozens of rack spaces along the western sidewalk of SW Broadway is one example. TriMet similarly has programs to provide bicycle parking in station areas; however, the few racks installed near campus MAX and bus stops provides only a small portion of the total campus parking inventory.

Secure Bicycle Parking Facilities

MONTGOMERY STREET BICYCLE GARAGE

Since early 2010, TAPS has operated a secure, camera-observed, keycard access, covered bicycle garage on SW Montgomery Street between SW 11th and 12th Avenues. The facility cost roughly \$200,000 to construct and was funded using a combination of PSU funds and \$50,000 in Metro Regional Transportation Options (RTO) funds. The garage is available to Portland State students and employees and requires a \$15 quarterly registration fee. Seventy-seven bicycle spaces are available on both staple and articulated lift racks (dual-level mechanical racks that allow additional bicycle storage in a constrained building area). As of Fall 2010 the garage has 52 registered users, all of whom are PSU students.



Seventy-seven bicycles can lock up to the Montgomery Street Bicycle Garage on a range of articulated and staple racks. A key-card access control entry door to the structure and closed-circuit cameras help ensure the security of bicycles in the facility.

While initial membership growth was slow when the Montgomery Street Bicycle Garage opened in Winter 2010, registrations rose steadily through the peak bicycling months and as Housing residents moved into residence halls around the garage during the beginning of the 2010-2011 school year. The opening of the Harrison Bicycle Garage in Fall 2010 also created more awareness of garages in general and likely contributed to spillover registration at the Montgomery Street Bicycle Garage.

PSU's contract with Metro requires the University to develop evaluation procedures to measure the impact of the Montgomery Garage on bicycle mode share and perceptions. Because Metro directed federal funds towards this project, there exist additional requirements that PSU provide marketing material, develop evaluation instruments, and submit project evaluation reports.

survey responses

BICYCLE PARKING

"Buildings with indoor bike parking, like the Fourth Avenue Building, should have enough bike space for everyone who wants to lock their bike indoors, even people who enter the office in the middle of the day."

"covered parking and secure indoor parking would be awesome!"

"It would be nice to have a facility which combines lockers, secure parking, and a changing room or shower facility which is within several blocks of the main campus."

HARRISON STREET BICYCLE GARAGE

A new secure bicycle parking facility along the SW Harrison Street entrance to the University Center Building garage between SW 5th and 6th Avenues opened in September 2010. It is available to the PSU community and general public for \$15 quarterly and provides key-card access to a covered, camera-observed, enclosed space with 86 bicycle parking spaces, some of which are on dual articulated-racks. Because of the closer proximity to primary bicycle routes and the busiest PSU buildings, the Harrison Garage has been in higher demand than the Montgomery Street Bicycle Garage. Permits for PSU students and employees sold out within three weeks during the Fall 2010 term. Sales during the Winter 2011 term, however, slackened somewhat with the season.

The Harrison Garage was funded through a partnership between PSU and TriMet, with each covering costs of \$50,000 and \$150,000, respectively. Several racks in the garage are sized and spaced to accommodate bicycles with non-traditional frame geometries, such as cargo and recumbent bicycles. The Harrison Street Bicycle Garage also provides electric outlets available for electric bicycle charging and a repair stand for self-service maintenance.

SCIENCE BUILDING 2 BICYCLE ROOM

In Fall 2010, a 14-bicycle capacity parking room in Science Building 2 opened for use by Portland State faculty and staff. The room, which was converted from an office during a major retrofit of the entire building, features key-card access and requires a \$15/term fee, administered by TAPS.



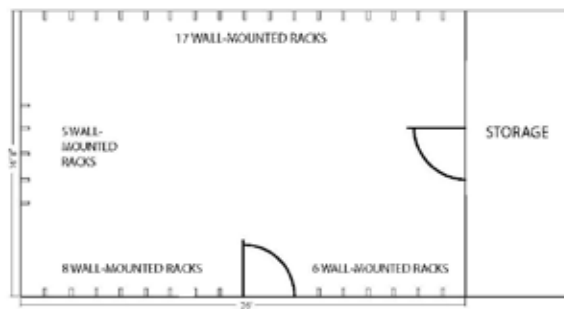
The 86-bicycle capacity Harrison Street Bicycle Garage has been very popular since its opening in September 2010.

background information

UNIVERSITY HOUSING BICYCLE PARKING CAPACITY

Residence Hall	Bicycle Spaces	Units
Blackstone	27	50
Broadway	36	380
King Albert	8	16
Montgomery Court	10	144
Parkway	12	53
St. Helens	12	51
Stephen A. Epler Hall	14	83
Stratford	8	31

BROADWAY BIKE ROOM



Plan diagram of The Broadway Residence Hall bicycle parking room.

UNIVERSITY HOUSING BICYCLE FACILITIES

Eight of the ten University Housing residence halls offer indoor rooms for bicycle parking, which are available for resident use. These rooms provide for safe and convenient long-term storage. Data about how frequently residents of these buildings use their bicycles, their bicycle travel habits, and if and where they may use publicly available short-term bicycle parking has not been collected.

Two housing buildings, Broadway and Stephen A. Epler Hall (both constructed since 2003), have key-card controlled rooms with street-level access specifically for bicycles; Broadway also offers bicycle storage hooks within each residential unit. The Broadway room (a diagram of which is shown at left) accommodates 36 bicycles and the Epler Hall room holds 14. Bicycle rooms in the other six residence halls are typically shared storage, laundry, and maintenance rooms that were not purpose-built, can be difficult to access, and have somewhat limited capacity.

The currently under construction College Station housing facility, between SW 5th, 6th, Jackson, and College, will accommodate over 700 students as well as hundreds of bicycles in in-room closet bicycle hooks. The building will not feature a common, ground floor bicycle room, which is a facility type that the University typically pursues in most new and renovated structures.

FOURTH AVENUE BUILDING LOADING DOCK

PSU and City employees may obtain access to a keycard access, camera-observed loading dock area. The loading docks is frequently filled beyond its intended 34-bicycle capacity and City of Portland employees, who exhibit a high rate of bicycle commuting, have expressed a desire for expanded capacity and additional facilities in the area.

In January 2011, plans to convert an unused kitchen space in the University's Fourth Avenue Building were approved. The room will be a key-card and camera-observed facility with a changing room. The City of Portland Bureaus of Planning and Sustainability and Development Services have been major proponents of this development in order to accommodate bicycle crowding of the existing loading dock.



The loading dock between the Fourth Avenue Building and the City Development Center has space for 34 bicycles in a covered, free facility; the dock often contains more than 40 bicycles, exceeding intended capacity.

PSU Bike Hub and Services

In January 2010, the former PSU Bike Co-op moved from its undersized location in the University Center Building into a new location with 2000 square feet of interior space in the Academic and Student Recreation Center. During normal business hours, the Bike Hub offers repair assistance and training and retail services; after-hour workshops provide instruction on commuter basics and maintenance techniques. Membership access to repair services and discounted purchases costs \$15/term or \$30/year. As of January 2011, the Bike Hub had 1500 registered members, up from a peak of 300 at the former Bike Co-op.

While the Bike Hub offers full-service repair options, its primary function is to assist cyclists in the PSU community in maintaining and repairing



With three maintenance stations available to members, a professionally-equipped shop, and a retail floor, the Bike Hub provides services to its 1500 members as well as the general University community and public.

their own bicycles. The new Bike Hub location has allowed for an expanded menu of workshops and training seminars, including bicycle commuting basics, introductory and advanced maintenance, and women's-specific courses. In 2010 the Bike Hub conducted roughly 45 workshop sessions with over 350 total participants covering a range of maintenance and riding topics. This serves to expose more people to practices that can help them continue or adopt bicycling as a primary transportation mode.

The Hub also maintains a rental bicycle fleet that will become available throughout the University for department offices, visitors, student organizations, and other group functions.

survey responses

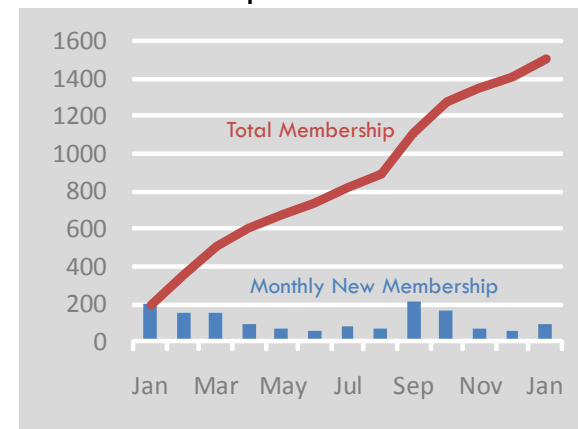
PSU BIKE HUB

"LOVE the Bike Hub!"

"I would have given up on bike commuting several times this year without PSU Bike Hub"

"Bike Hub services are great, although could improve in reaching to more members on announcements of classes offered, events and activities and services. Generally this information has been through word-of-mouth on the street from peers."

Bike Hub Membership From Jan 2010 - Jan 2011



The PSU Bike Hub's location on the SW 6th Avenue side of the new Academic and Student Recreation Center makes it highly visible to the University community and users of the nearby MAX station.



Promotional posters displayed around campus help raise awareness of the annual Bike to Campus Challenge.

Education, Encouragement, and Outreach

In order to expand the appeal of cycling for those who do so regularly and to attract more people to take up riding, encouragement and education programs have become important components of bicycle support at Portland State. Numerous events and programs managed by the University and its partners are designed to raise cycling awareness and encourage active use.

“You don’t have to be a beginner to like or need encouragement.”

– respondent from the 2010 Bicycle Survey

BIKE + WALK CHALLENGE / BIKE COMMUTE CHALLENGE

Each spring, the Portland Bicycle Transportation Alliance (BTA) sponsors a month-long Bike + Walk Challenge event designed to encourage walking and bicycling through friendly competition. PSU students and employees form informal teams, and participants log their commuting information on a website. Prizes and recognition are given to the most bicycle- and walk-committed teams and individuals.

Every September, the Bicycle Transportation Alliance sponsors the Bike Commute Challenge for employees. Companies are encouraged to form teams and compete internally or against other businesses, with bragging rights and prizes as

incentives. Individual participants log both their mileage and commute rate.

These events are advertised through emails to the PSU community and promotional material in the Bike Hub shop and on the website. A push to expand participation among the PSU community could raise awareness of non-motorized modes and introduce bicycling as a viable travel option that many would not have otherwise considered.

EARTH DAY, PARTY IN THE PARK, AND PARTY NEAR THE PARK

These three events are major University-sponsored festivals designed to allow student clubs, campus services, and other departments to staff tables and promote their organizations. TAPS and the Bike Hub typically occupy a booth, using it to attract new members to the Hub, provide advice on transportation modes and routes, and generally inform the University community about their travel options.

PORTLAND STATE UNIVERSITY BICYCLE ADVOCACY COLLECTIVE (PSUBAC)

PSUBAC is a student-organization at PSU with the mission “to build community and improve conditions for cyclists at PSU.”¹ The Bicycle Advocacy Collective has been operating biker breakfasts for the past several years, coordinating partnerships with the Portland Bicycle Transportation Alliance (BTA), and hosting social events and rides.

PORTLAND STATE UNIVERSITY CYCLING TEAM

The University Cycling Team participates in a range of events on campus and throughout the Northwest. The Team organizes recreational, touring, and race training rides around Portland and makes them available to all students. Select members of the Team race competitively in the Oregon Bicycle Racing Association and the Northwest Collegiate Cycling Conference. Cycling Team members also benefit from discounted rates at the PSU Bike Hub.

OFFICE OF SUSTAINABILITY PROGRAMS

The University manages several important programs, including Green Teams and the EcoWiki, which provide forums through which bicycle-related information is distributed to the Portland State community. Green Teams align human and material resources to raise awareness of sustainability

issues on campus, often focusing on energy conservation and transportation. The EcoWiki is structured as an informal blog that allows people from across campus to contribute information about events, news, jobs, and other sustainability topics. The Bike Hub and Auxiliary Services at times use the EcoWiki to broadcast about services and special bicycle events on campus.

ORIENTATION

During campus orientations in the fall, the University conducts informational sessions designed to introduce students to campus life. TAPS, University Housing, and other departments such as human resources, participate in these sessions in order to expose students to the numerous commuting options available to them. Packets containing bicycle maps and other educational material are distributed during orientations and are available in the TAPS office.

¹ Portland State University Bicycle Advocacy Collective. Facebook Home Page. (2010). Retrieved 29 November 2010 from <http://www.facebook.com/pages/PSU-Bicycle-Advocacy-Collective/124177581567>

Portland by Bicycle Existing Routes in downtown Portland



Source: Portland Bureau of Transportation, www.GettingAroundPortland.org

Access and Circulation

The availability of safe, comfortable, and easily navigable bicycle routes to and from campus markedly affect overall perceptions of bicycle commuting and use. New southbound routes along 5th Avenue and the Broadway Cycletrack have improved bicycle access since 2009.

Future network growth on campus will likely feature more dedicated and partially- or fully-separated corridors, including additional cycletracks, green streets, off-street paths, and shared-lane designations. Such city street bikeways are primarily planned, constructed, and maintained by the Bureau of Transportation, which solicits Portland State’s input when addressing campus-area transportation needs.

survey responses

BIKEWAYS AND ACCESS

“Low-stress routes to PSU are seriously lacking. The South Auditorium parks create a major barrier in what would be a mostly quiet, pleasant segment from SE/NE/downtown.”

“The equivalent of the Broadway cycletrack heading north - away from PSU - would be appreciated tremendously.”



The Broadway Cycletrack, an at-grade bicycle route separated from traffic by an automobile parking lane, runs southbound through campus from SW Clay to SW Jackson.

BROADWAY CYCLETRACK

In Fall 2009, a stretch of SW Broadway between SW Clay and SW Jackson Streets was restriped to accommodate a separated, southbound cycle-track route. The Portland Bureau of Transportation spearheaded this pilot project, which entailed removing one travel lane, shifting on-street parking away from the curb, and installing a separated, seven-foot wide bicycle-only lane along the western edge of the street, between the curb and the parking lane. Numerous bicycle boxes and protected turning boxes assist bicycle navigation through many of the cycletrack's busy intersections.

The City is evaluating the usage and impacts of the Broadway Cycletrack in order to determine whether it should be extended and improved with additional grade separation, lane marking, and barriers. As a pilot project the Broadway Cycletrack is also providing a test-bed for this innovative street treatment, which the City is concurrently installing elsewhere in the region. Respondents to the PSU Bicycle Survey in Spring 2010 largely favored the Cycletrack, felt that it improved access to campus, and supported improvements to the existing facility. However, with over 30% of respondents warning that the Cycletrack has created bicycle/pedestrian/automobile conflicts, further study and mitigation is warranted.

survey responses

BROADWAY CYCLETRACK

"i think there have been some initial problems with the cycletrack. once the confusion subsides i think it will work very well. education for cyclists and drivers would be helpful."

"With the cycle track on Broadway being along such a heavy pedestrian route and Portlanders inherently loving to jaywalk i have found conflict between peds and bikers on the cycletrack. I think grade separation would help this."

"The cycle track should definitely be extended down all of broadway."

"i love the cycletrack--such a relief after dodging cars up broadway."

"I find that the cars parked along Broadway create an awareness barrier for drivers making turns across the bike lane."



Most MAX cars hold four bicycles on purpose-built hooks. TriMet employees have remarked that the two campus-area MAX stations are amongst the most popular boarding and exiting locations for riders taking bicycles on board.

BICYCLES AND TRANSIT

Portland State works with TriMet, the Portland-area transit service provider, in a number of areas, including support of bicycles-aboard-transit, the location of bicycle parking racks near transit stops (particularly along the 5th and 6th Avenues Transit Mall), and most recently, the development of Harrison Street Bicycle Garage. Tellingly, 28% of survey respondents take a bicycle aboard transit at least once a month. PSU has also been a supporter of efforts TriMet initiates that reduce the number of automobiles entering downtown and the campus area. These efforts include further provisions for secure bicycle parking, including Bike & Rides, at outlying transit stops. A secure Bike & Ride facility at Sunset Transit Center, west of downtown, opened in September 2010, and two more locations, at Beaverton Transit Center and Gresham Central Transit Center, are in development. TriMet allows passengers to bring bicycles on all MAX trains and to secure bicycles in foldable racks on the front of all buses during all service hours and at no extra fare.

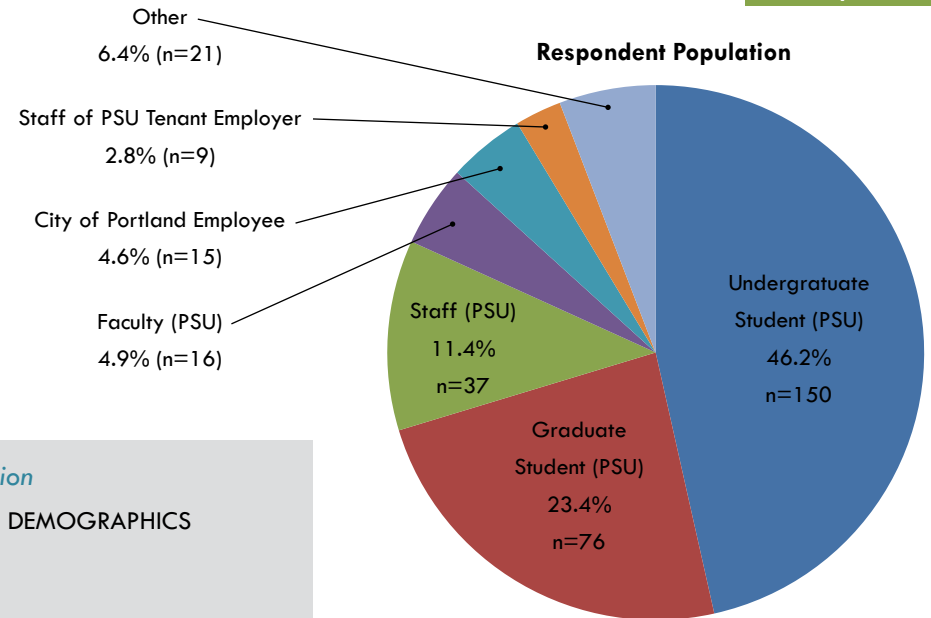


Every bus in the TriMet fleet can accommodate two bicycles in fold-down racks mounted to the front of the vehicle.

Spring 2010 Bicycle Transportation Survey Respondent Perceptions

Annual spring surveys of bicycle commuters, distributed through the Bike Hub listserv and through web links printed on flyers attached to bicycles parked on campus during the survey weeks, reveal important trends and perceptions about facilities, accessibility and routes, and other considerations. Understanding the motivations, concerns, and needs of both the existing and potential future cycling cohort is important. Feedback from bicycle commuters helps the University evaluate existing programs and projects. Responses from “Interested but Concerned” riders can inform the ways that the University manages programs and access improvements that will attract people to ride more frequently.

Respondents from every comfort level agree that additional bicycle-friendly routes would encourage more cycling. Under current conditions, a large majority report to adjusting their routes to follow existing bicycle facilities, paths, and lanes. In some areas, the responses of “Interested but Concerned” cyclists differ significantly from those of the entire survey sample. Highlighting these areas of concern allows the University to better understand the facility and program improvements that could attract infrequent riders to consider bicycle commuting as a more regular transportation method. (Appendix A provides a more detailed catalog of responses and survey results.)



background information

SURVEY RESPONDENT DEMOGRAPHICS

324 total responses

Average Age - 29 years

Male - 59.8%

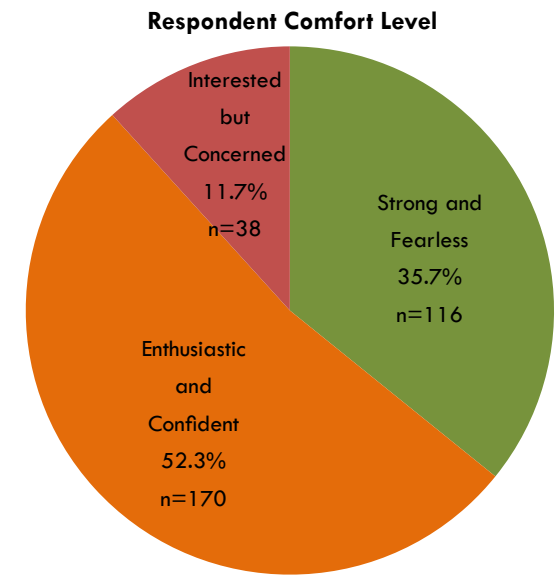
Female - 37.8%

Respondents were asked to self-identify with one of several levels of comfort based on a standard categories developed by the City of Portland. The responses were prompted with the following descriptions:

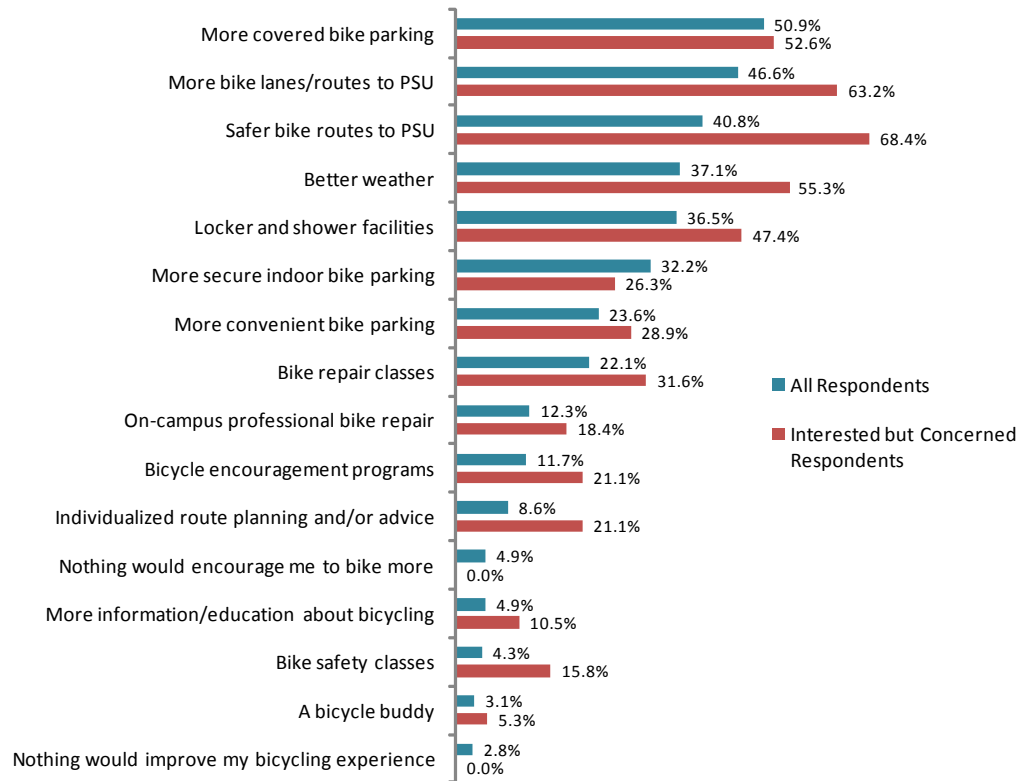
Interested but Concerned - “I feel uncomfortable around fast-moving traffic and where there are few bike routes. I would ride more often if auto traffic posed less of a hazard and bike routes were more prevalent”

Enthusiastic and Confident - “I am comfortable on busy streets with bike lanes. I ride frequently and in most weather conditions”

Strong and Fearless - “I will ride anywhere and in any weather conditions. I ride confidently on roads without bike lanes and may even prefer such routes”



**What would encourage you to bike more often or improve your biking experience?
(Percentage of respondents saying yes to each factor)**



Aside from concerns over weather, survey respondents express a desire for additional covered parking, improved routes to and from campus, and end-of-trip facilities. Among the small sample of “Interested but Concerned” respondents, more and safer routes to campus, end-of-trip facilities, and repair and encouragement were rated more highly by this group than by the overall survey population. Additional parking and improved routes will be necessary to accommodate growing bicycle use, and incentives and training could be expanded in order to attract more riders.

With comments in the survey such as this, “I guess I want more cyclists, but beginner cyclists are stupid and do stupid things and are slow and annoying.”, there are notable (if inarticulately expressed) differences over how bicycle riders of varying skill levels use various facilities. The appeal of varying types of bicycle routes and facilities to different users will be an area worthy of further exploration as the University and its partners seek to implement the most universally inviting programs and improvements.

An increase in the number of bicycle trips to and from Portland State will be perhaps the most direct measure of the success of bicycle projects. This will be measured in terms of the number of primary mode bicycle users, the absolute number of trips taken by bicycle, and the percentage of trips to PSU made by bicycle. A wide range of facility and program improvements and developments will be necessary to achieve this overarching goal. Facility- and project-based implementation strategies will improve access to campus for bicycle riders and provide encouragement, training, and further incentives to riders.

As discussed above, the University's *Climate Action Plan* puts forth the most defined existing goals and strategies, many of which are built upon in further detail in this section. Strategies of the *Bicycle Transportation Plan* will outline how such goals can be met and even exceeded in a shorter timeline. Developing existing and new projects will require coordination within Portland State and with a range of supporting agencies. While many strategies included here offer specific timelines and scopes, other strategies are presented to serve as reminders of undeveloped, but potential, projects and to ensure that the goals of increased bicycle use and improved accessibility and facilities are approached comprehensively and exhaustively.

Bicycle Transportation Goals

1. INCREASE THE SHARE OF EMPLOYEE AND STUDENT COMMUTE TRIPS TAKEN BY BICYCLE

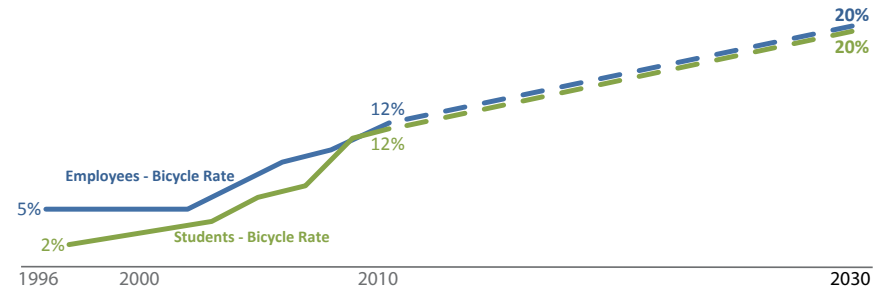
This goal encompasses both increasing the total share of all trips (including occasional trips by non-regular riders) taken by bicycle

as well as increasing the share of commuters who use bicycling as their primary mode. Meeting and exceeding the *Climate Action Plan's* goal of 20% bicycle mode share by 2030 will entail making bicycling a more attractive option for people who do not ride regularly, while a new goal of an increase in the number of students and employees who bicycle to campus at least once a week from 14% in 2010 to 20% by 2020 is being established in this plan.

2. INCREASE THE PERCENTAGE OF CAMPUS RESIDENTS WHO USE BICYCLES FOR THEIR TRANSPORTATION NEEDS

With the University's plan to significantly increase the number of on-campus residents in the coming years, promoting bicycle use as an alternative to cars, for which capacity is already limited, will help make on-campus student living more convenient and sustainable. Providing bicycle parking and storage, maintenance, and access to nearby retail and service amenities will be key towards

Bicycle Mode Share Goals for 2030

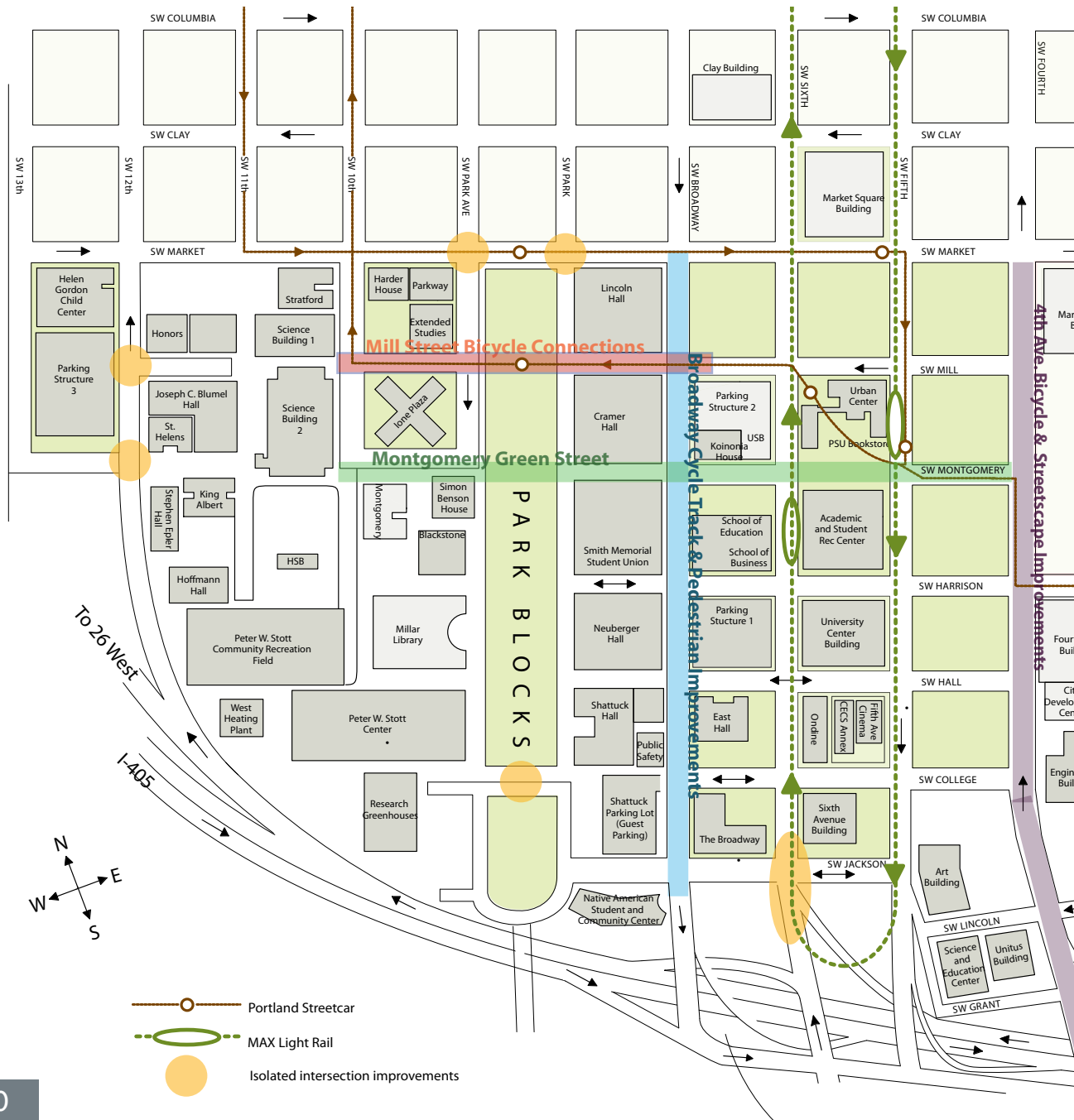


achieving this goal. The capacity of existing residence hall bicycle rooms and garages can accommodate only a small portion of residents. Significantly increasing the availability of long-term parking and services for on-campus residents will encourage more frequent bicycle use.

3. PROMOTE CAMPUS AWARENESS OF BICYCLING

Raising overall bicycle awareness will serve to make it both a safer and more attractive transportation mode. Fostering a sense of community amongst the growing cohort of bicycle riders will be achieved through a combination of education, encouragement, and facility programs designed to make regular bicycle use an easy and appealing option. Similarly, raising awareness of responsible bicycle practices and automobile, pedestrian, and transit use will create a friendlier, more encouraging, and safer bicycling environment.

University District Transportation Improvements Inventory, Fall 2010



background information

PSU TRANSPORTATION IMPROVEMENTS INVENTORY

The PSU *Transportation Improvements Inventory* is a catalog of University District roadway and streetscape improvements. Portland State has prepared the inventory to recommend improvements to the City of Portland. This type of coordination is particularly vital because overall mobility and accessibility to, from, and within campus relies on streets and paths of varying University and City control. Details of the Inventory are available in *Appendix D* of this plan. Recommended improvements to the bicycle network include the following:

- Broadway Cycletrack & Pedestrian Improvements
- 4th Avenue Bicycle & Streetscape Improvements
- Mill Street Bicycle Connection Improvements (Westbound)
- Montgomery Green Street / Buffered Bike Lane (Eastbound 4th-5th and 6th-Broadway; Westbound Park-10th)
- Isolated Improvements

The preceding goals will be addressed through a series of more specific facility and program implementation strategies.

1. IMPROVE BICYCLE ACCESS TO, FROM, AND WITHIN THE UNIVERSITY DISTRICT

The Portland State Auxiliary Services planning team has recently prepared its first *Transportation Improvements Inventory*, a catalog of desired changes and upgrades to the bicycle and pedestrian network that will require coordination between the University and the City. The City, in the *Portland Bicycle Master Plan for 2030*, has also recently proposed a series of bikeway improvements in the University District, which Portland State should seek to assist in implementing.

Implement Transportation Improvements Inventory

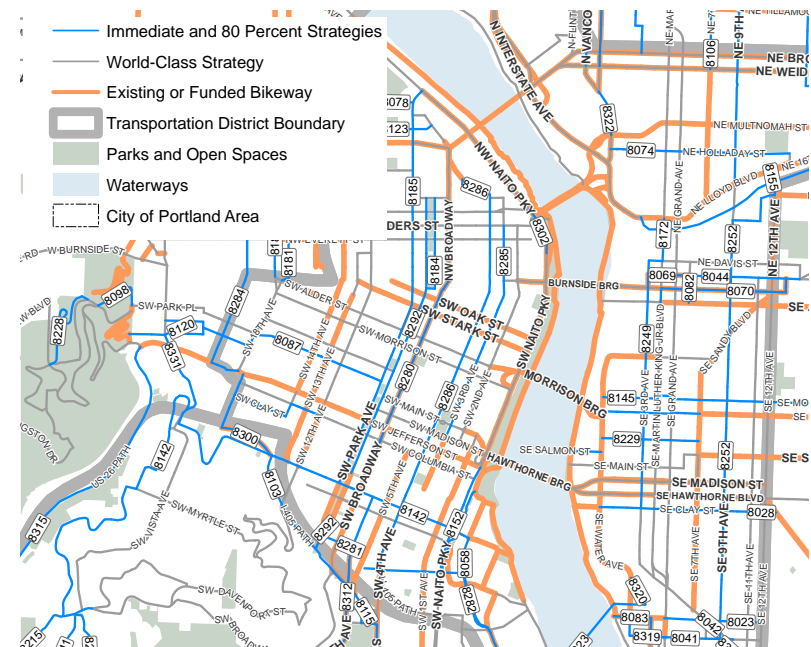
- Enhance the Broadway Cycletrack with continuous grade separation, signage improvements, curb extensions, and bicycle signal heads.
- Along SW 4th Avenue, develop connectivity improvements including shared-lanes markings (“Sharrows”), crosswalk and curb bulb outs, and streetscape enhancements such as furnishings, lighting, and bioswales.
- Consider reducing SW Montgomery Street to a single travel-lane with traffic calming features; curb cuts will allow bicycle access through pedestrian blocks and two-way bikeways will connects through automobile streets.

- Bicycle connections on SW Mill Street should be improved with curb cuts on Broadway and Park Avenue as well as realignments near the Portland Streetcar station on SW Mill and Park.
- Other isolated improvements, such as adding sharrows to SW 6th Avenue and general intersection enhancements, will further facilitate bicycle connections.

Implement Portland Bicycle Plan for 2030 Access Improvements To, From, and Within the University District

- Extend the Broadway Cycletrack northward and provide additional grade separation and conflict reduction mechanisms.
- Design connectivity and safety improvements on SW Montgomery, across I-405, and along Naito Parkway and Harbor Drive.
- Improve and enhance facilities on SW Harrison Street and other streets in order to provide better connections to the South Waterfront, the incoming Willamette River Bridge, and Southeast Portland.
- Explore options to develop the Park Blocks as a neighborhood greenway bicycle route.

City of Portland Bicycle Master Plan for 2030 Central City Projects



Source: Portland Bicycle Plan for 2030, January 2010, p 62.

Other Accessibility and Mobility Projects

- Explore options for improved connections between campus and the Hawthorne Bridge, across which hundreds of University-bound cyclists traverse daily.
- Develop a mitigation strategy to reduce negative impacts from campus-area construction on bicycle connectivity and access.
- Develop overall strategies to reduce conflicts between bicyclists, pedestrians, automobiles, and transit vehicles on increasingly busy campus-area streets.

2. INCREASE THE AVAILABILITY AND DISTRIBUTION OF SHORT-TERM BICYCLE PARKING

Short-term, non-secured racks provide the bulk of bicycle parking capacity on campus. Increasing capacity will allow convenient access for all users during even the busiest bicycle use periods.

- TAPS, FAP, PBOT, and Portland Parks & Recreation (PP&R) should coordinate the installation of additional bicycle racks as necessary in appropriate high-demand locations, including along City rights-of-way.
- Continue to collect data on bicycle parking demand, especially at high-occupancy locations, in order to strategically prioritize installation points.
- Ensure that a sufficient quantity of short-term racks are installed following all campus construction and renovation projects, including campus expansion projects such as those planned on the South Waterfront.
- Increase the supply of sheltered short-term bicycle parking locations on campus.



This high-capacity bicycle rack pod at the University of Minnesota does not interfere with heavily-traffic walking paths and can hold 96 bikes, although occupancy during summer break (as in this August 2010 image) is understandably low.

3. INCREASE THE AVAILABILITY AND ATTRACTIVENESS OF LONG-TERM BICYCLE PARKING ON CAMPUS

Secure, long-term bicycle parking options, such as those provided by the Harrison and Montgomery Streets Bicycle Garages and various residence hall and building bicycle rooms, offer a valuable parking option. Similarly, such facilities provide bicycle parking for campus-residents, who may rely on bicycles for primary transportation. The inclusion of end-of-trip amenities (such as showers and lockers) can also increase the appeal of such facilities and make bicycle commuting a more attractive and pleasant option.

- Evaluate options to construct new bicycle garages in proximity to high-demand academic, administrative, and residential buildings.
- Continue to convert underutilized building and garage spaces into bicycle parking rooms.
- Explore options to add end-of-trip amenities such as lockers, showers, and maintenance stalls to existing and newly-developed secure bicycle parking facilities.
- Further promote bicycle garages and rooms for use by the entire University District community.
- Consider programs to make secure bicycle parking spaces available to local partner institutions, such as OHSU, Portland Community College, and Lewis & Clark College, which use the University District as a transportation node.
- Ensure that new and renovated campus buildings, especially residence halls, provide sufficient secured parking.



The Harrison Street Bicycle Garage is accessible through a ground-level entrance on the north side of University Center Building and has been made more visible and prominent through signage and streetscape improvements along this busy stretch of Harrison Street.

- Evaluate partnership opportunities to allow long-term bicycle parking users access to existing amenities, such as the showers and lockers available through Campus Recreation.

4. EXPAND BIKE HUB MEMBERSHIP, SERVICES, AND RETAIL OFFERINGS

Since moving into its new location in January 2010, the Bike Hub's membership has grown many-fold and the selection of services and goods offered has increased notably. Expanding the availability of goods and services, especially those targeting beginning riders, will support bicycle use growth.

Membership

- Expand advertising strategies and further the Bike Hub's presence and involvement in on-campus programs and events.
- Look to expand membership benefits, possibly by developing a partnership with a bicycle retailer in the city and offering discounted partner rates.
- Evaluate options to expand membership opportunities to PSU Alumni, possibly at a higher membership fee.

Services and Training

- Expand and make more frequent the selection of maintenance and commuting workshops, possibly to the extent of developing a proprietary certification or curriculum.
- Improve advertising of workshop schedules to ensure all members are well informed.
- Evaluate options to expand operating hours into nights and/or weekends, and improve the advertising of established hours.



- Explore the feasibility of and demand for field workshops during which Hub employees would conduct training sessions around campus at the request of various departments.
- Build on the currently-in-development Portland State bicycle fleet, which is administered through the Hub, and explore options to make the fleet available to all University departments, students groups, and visitors.

Retail

- Consider offering a more comprehensive selection of quality, affordable bicycle parts and accessories.
- Explore options to develop a partnership with a bicycle retailer in order to provide bicycle sales to the Portland State community.
- Evaluate the feasibility of a program in which reclaimed bicycles are refurbished and sold or rented out, increasing the availability of affordable bicycles to the PSU population.

5. PROMOTE AWARENESS AND SUPPORT OF BICYCLE COMMUTE OPTIONS FOR THE ENTIRE UNIVERSITY COMMUNITY

In addition to capital improvements, repair services, and education, projects designed to raise bicycling awareness and support of a more informed, prepared, and equipped university community are vital to promoting regular bicycle use. An updated website for the Bike Hub and social media outlets can play a larger role in promoting bicycle services and options.

On-campus outreach events

- Increase the presence of the Bike Hub, and promotion of transportation options, at campus events such as Party In The Park.
- Continue and expand Portland State's involvement in the Bicycle Commute Challenge and other similar events, particularly by increasing participation and encouraging more cooperative competition between University departments.

Marketing material

- Continue to distribute promotional materials,

such as the *PSU Bike Rider's Kit*, to current and potential bicycle riders during Orientation, in the Bike Hub and TAPS office, and at other campus events and venues.

- Specific efforts to target incoming new and transfer students and new employees should be developed in order to attract this demographic to bicycle use.

Nice Ride bicycle sharing pod on the University of Minnesota campus in Minneapolis

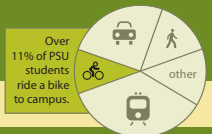


Increase access to bicycles for the PSU Community

- Explore opportunities to partner with local bicycle retail shops in order to provide students and employees convenient access to bicycle purchasing and rental.
- Evaluate the potential demand for an incoming student program that would make purchasing a bicycle and accessories and obtaining maintenance a seamless undertaking during the move-in process; this may entail a partnership with a bicycle retailer.
- Continue to evaluate the feasibility of campus- or city-wide bicycle sharing program, modeling off existing programs in Minneapolis, Denver, Washington, D.C., and Europe.
- Provide students with interest free loans to purchase a bicycle.

PSU Bike Rider's Kit

Get healthy and get green: Go by bike!



Your Kit Includes:

- Portland By Bicycle Map
- TriMet Bike Rider's Guide
- Downtown Portland Bicycle Guide
- PSU Bike Hub Brochure
- A Guide to Your Ride
- Bike Parking Options & Map
- Tips for Avoiding Bike Theft



PSU TRANSPORTATION & PARKING SERVICES
www.transportation.pdx.edu



Portland State Transportation and Parking Services (TAPS) distributes Bike Rider's Kits to students and employees during orientation events and regularly at the Bike Hub and TAPS office location

Theft prevention

- Portland State should evaluate the feasibility of establishing more robust theft prevention and bicycle tracking procedures, possibly to include bicycle registration with Transportation and Parking Services (TAPS) and the Campus Public Safety Office (CPSO) as well as more expanded enforcement.

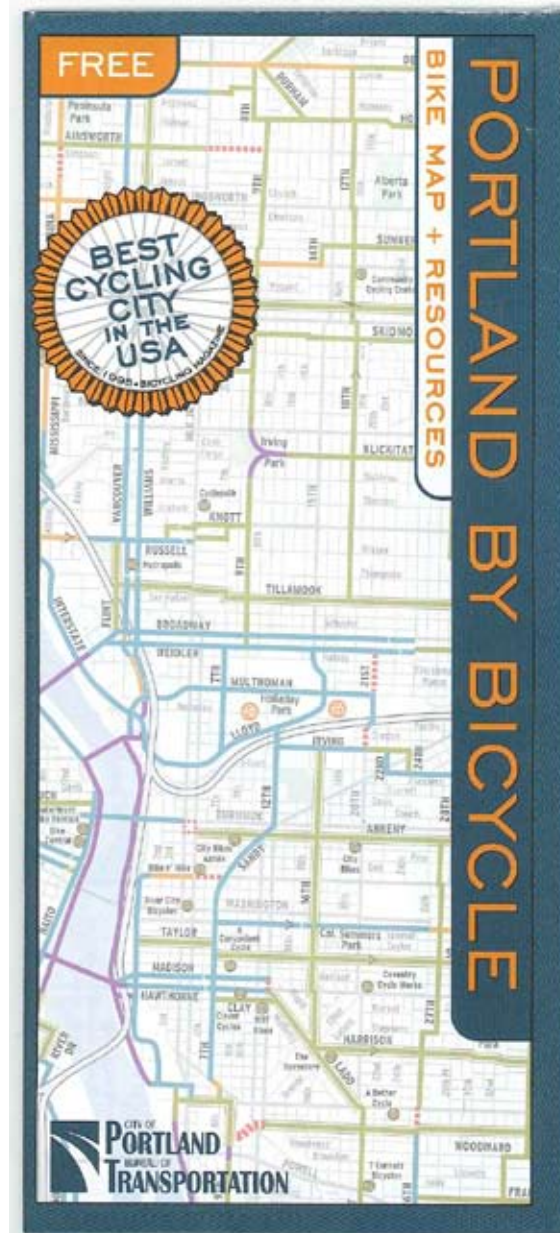
Bicycle training and education

- An expanded catalog of workshops offered by the Bike Hub would help encourage beginning bicycle riders to gain familiarity with maintenance and commuting techniques.
- More information about route selection should be made available across campus, possibly through the introduction of campus kiosks and other wayfinding tools.
- Existing academic courses in bicycle and pedestrian facility planning and engineering could be supplemented with maintenance and commuting classes; such classes could be compiled into a bicycle coursework track or curriculum.

Campus bicycle safety awareness

- Programs to educate both the bicycle-riding and non-riding campus population in safe and responsible bicycle, automobile, and pedestrian practices will help foster a more commuter-friendly environment; bicycle use laws, road sharing techniques, and conflict avoidance practices should be addressed.

Portland By Bicycle Maps Distributed by the Portland Bureau of Transportation



- Brown bag-type events targeting a range of audiences could offer the opportunity to raise cycling awareness and provide instruction and education.
- New students and employees can be targeted for transportation safety education during orientation programs.

Community involvement and outreach

- Expand Portland State's presence at key city-wide bicycle events such as Sunday Parkways, bicycle festivals, and major organized rides such as Bridge Pedal.
- Explore opportunities for Portland State to become involved with programs, such as those administered by the Bicycle Transportation Alliance (BTA), which would help build stronger ties with many city, community, and non-profit organizations while providing civic-engagement experience for students.

Incentive programs

- Explore options to incentivize bicycle commuting for employees and students through direct payments or benefits at the Bike Hub.
- Basic programs such as bicycle breakfasts could be expanded in scope and modified to include more opportunities for bicycle riders to convene and gather informational material provided by the University and City.



In late summer 2010 TriMet opened the Bike & Ride facility at the Sunset Transit center, removing 8 car parking spots to provide 74 bike spaces available to registered users for a small fee. Image source: Oregonlive.com.

6. SUPPORT AND ENCOURAGE CITY, TRIMET, METRO, AND STATE BICYCLING INITIATIVES

Many of the bicycle projects and programs Portland State hopes to initiate can't succeed without the cooperation and support of various partnering government agencies. Many of the most effective and broad-reaching access, facility, and encouragement objectives will be best met through collaboration among various partner organizations.

- Work with the City of Portland to implement the *University District Transportation Improvements Inventory*, the City's *Bicycle Master Plan for 2030*, and other access and circulation improvements in the Portland State area.
- Explore a partnership opportunity with the City on a bike sharing program.
- Continue to work with TriMet in support of bicycles-on-transit initiatives, the construction of bicycle parking near campus-area transit stops (the Harrison Street Bicycle Garage being an example), and Bike & Ride locations throughout the TriMet network.
- Seek out grant funding and support from agencies, including Metro and the State of Oregon, for bicycle facilities and innovative pilot projects.

background information

BICYCLE RFID PILOT PROJECT PROPOSAL

Portland State has been exploring several projects that would allow more detailed monitoring of daily bicycle use. In October 2010, TAPS applied for \$150,000 in funding through the Metro Regional Travel Options grant program in order to pursue an RFID (Radio Frequency Identification) tracking and data collection program. This technology would allow RFID tagged bicycles to be tracked as they pass various checkpoints on campus. The resulting data could provide a detailed catalog of daily route choices by the participants; it could also be used to regulate bicycle incentive programs. Although the grant proposal was not selected for funding, it is an example of the type of pilot programs the University is pursuing as a means of improving data collection and incentivizing bicycle use.

7. CONTINUE AND EXPAND SURVEY AND DATA COLLECTION EFFORTS TO IDENTIFY PROGRAM AND FACILITY SUCCESSES AND DEFICIENCIES

Annual spring bicycle parking inventory

- Permanently implement quarterly inventories beginning from fall 2010.
- Expand the scope of collected data to include bicycle parking characteristics and more qualitative catalogs of facilities.
- Develop a method to more comprehensively track bicycle parking installation patterns and subsequent shifts in use.

Annual spring Bicycle Transportation Survey

- Ensure that primary data pertaining to perceptions and mode choice are retained in a longitudinally consistent manner in order to ease year-to-year analyses.
- As new facilities and programs come online, revise the survey to include perceptions and use-related questions.
- Explore opportunities to solicit more detailed and insightful data from the “Interested but Concerned” demographic, a key target audience for bicycle facility and program improvements designed to increase bicycle mode share.

Other data collection methods

- Evaluate the effectiveness of transportation options education and marketing to students and employees.
- Collect more data on bicycle use, ownership, and parking habits among University Housing residents.
- Collaborate among various PSU institutions, such as the Oregon Transportation Research and Education Consortium (OTREC), the Initiative for Bicycle and Pedestrian Innovation (IPBI), and the Center for Transportation Studies (CTS), the College of Urban and Public Affairs, the School of Engineering and Computer Science, and others to engage students and employees in bicycle-related data collection and research.
- Continue to develop systems for conducting bicycle counts and evaluating use patterns of existing and new facilities.



Promoting bicycle use as a viable transportation mode for the Portland State community is complementary of a range of University goals. Efforts to promote the sustainable growth of the school and foster university community involvement within the city are supported by the encouragement of bicycle use.

A growing student and employee population and substantial planned increases in the number of on-campus residents will present unique challenges to accessibility and mobility to and within the University District. Negative environmental impacts, as well as sheer space limitations, are compelling the University to promote non-automotive means of travel; bicycling is not only a valuable stand-alone mode but is also highly complementary of walking and transit for daily campus access.

Encouraging thousands of daily commuters to continue or begin using a bicycle to get to, from, and around campus will require a range of programs and initiatives carried out across the university and in collaboration with regional partners. This *Bicycle Transportation Plan* outlines many of the conditions currently influencing bicycle use and identifies projects that will allow Portland State to expand on its many successful programs. The Plan highlights areas for potential improvement and points to the University departments and partner agencies that would be involved in the process.

Doubling bicycle use within the University community in the next 20 years will entail not only continuing to attract dedicated riders but also providing the facilities and resources necessary to encourage people new to bicycle riding to make it their primary or secondary means of travel. Enhanced bicycle networks, convenient bicycle parking and end-of-trip facilities, and incentive programs will be major factors affecting Portland State's success in attracting new riders. Many University departments, including TAPS, FAP, Housing, and Human Resources, will be involved in achieving the ambitious goals outlined in this plan.

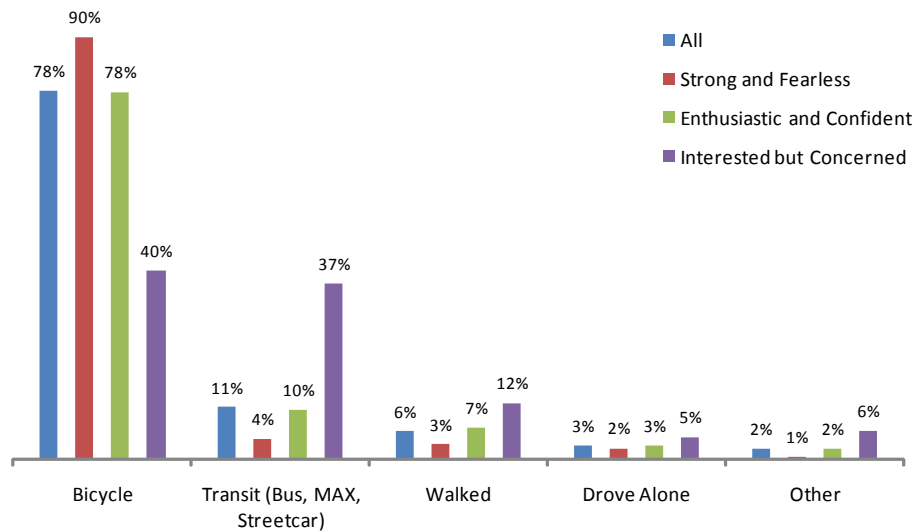
While certain mode split, parking capacity, and encouragement program goals are specifically defined here, there is no terminus for overall bicycle improvements at Portland State. Even broader goals of greenhouse gas emission reductions and less reliance upon automobiles will be tenets of the University that go beyond the strategies outlined here. Bicycle use will continue to grow in prominence as the University seeks to continue to grow in ever-more sustainable ways.

Appendix A: Spring 2010 Bicycle Transportation Survey Responses

For two weeks in May 2010, PSU made available an online survey to students, employees, and others who frequent the University District. The Spring 2010 survey was sent via email to the 600 PSU Bike Hub members at the time. Additionally, during the bicycle parking inventory on May 18-19, 2010, roughly 1100 flyers, listing a URL for the bicycle survey, were attached to

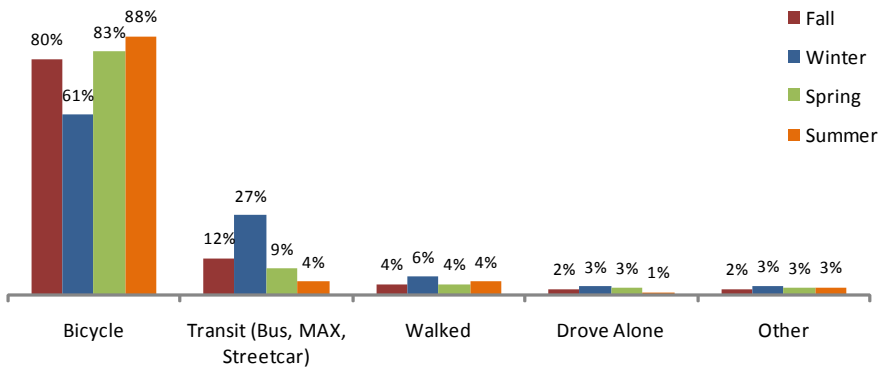
bicycles parked around campus. Flyers were also posted around many of the campus-area bicycle parking locations. The survey was open online from May 17-30, 2010 and during that period 326 people submitted responses. For questions asking about mode choice for each day, the respondents were instructed to list the

method they used to get to and from campus for each day in the previous week, Saturday through Sunday. Weather during the weeks of May 10-24, 2010, which were the instructed travel mode response days, was in the high 60s through 70s with intermittent clouds and occasional light rain.



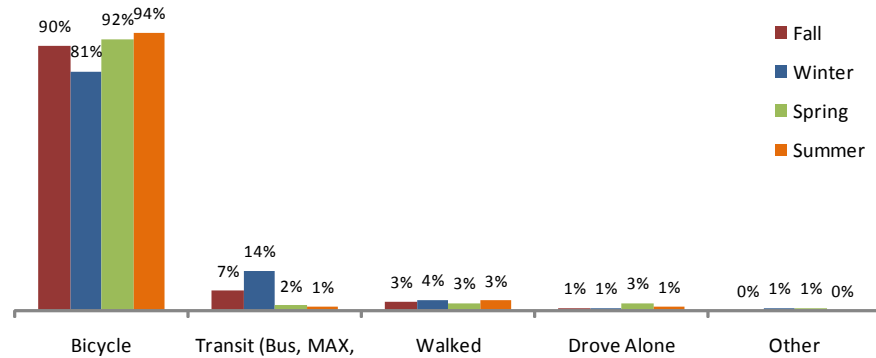
Mode Split of Trips to Campus - Subdivided by Comfort Level

Developing strategies to target the “Interested but Concerned” demographic would entail shifting them primarily from transit as an alternative mode. Driving alone is encouragingly low among all groups. The somewhat higher share of walking among “Interested but Concerned” respondents hints that they have relatively shorter commute distances than many other respondents. The average travel distance for a Portland State transit user is roughly 5.5 miles; this may be a distance too far for many infrequent riders to consider using a bicycle more regularly. However, there is likely a sizable share of frequent transit users who live within 1-3 miles of campus, a very suitable distance for more regular bicycle use.



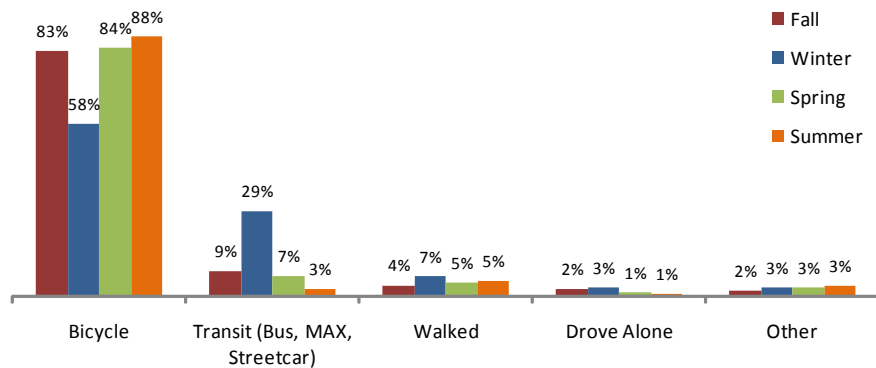
Primary Mode Split by Term - All Respondents

As expected, bicycle use peaks in the spring and summer terms and declines notably in winter. Cold, wet, and dark riding conditions surely account for the majority of this shift. Transit use spikes in the winter as some riders shift mode; automobile use remains very low throughout the year.

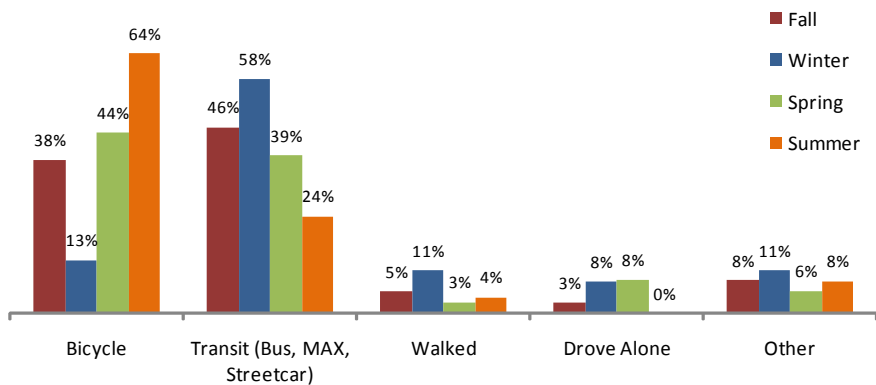


Primary Mode Split by Term - *Strong and Fearless*

Primary bicycle use by riders who identify as “Strong and Fearless” remains above 80% throughout all seasons. While there is a small shift during winter, overall weather conditions do not seem to have a significant effect on these riders’ habits.

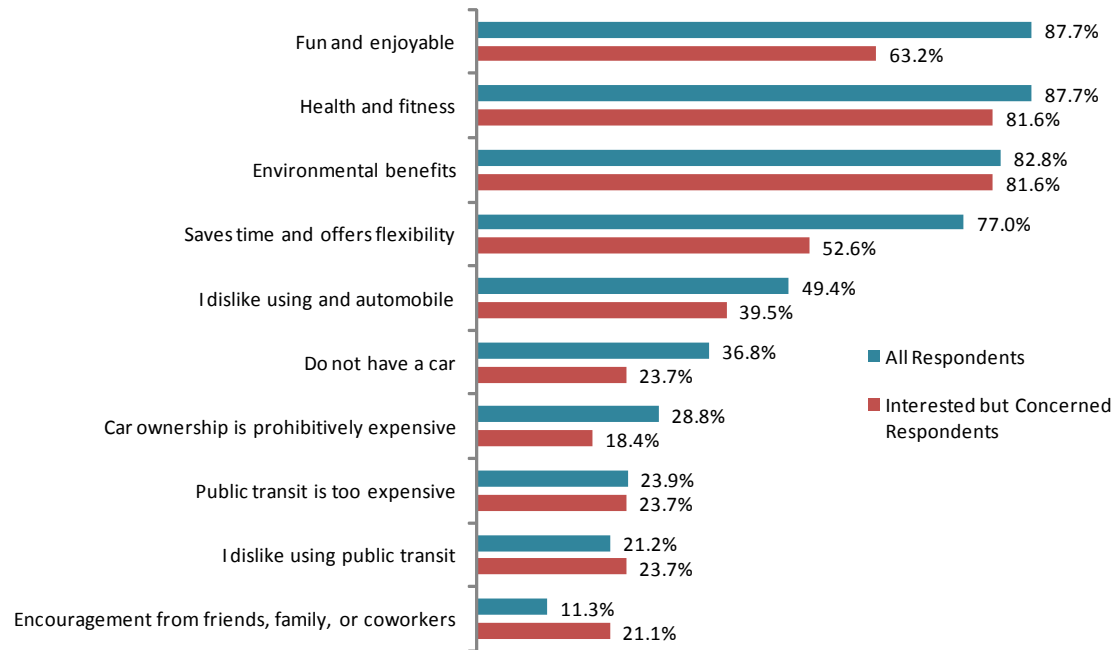


Primary Mode Split by Term - *Enthusiastic and Confident*



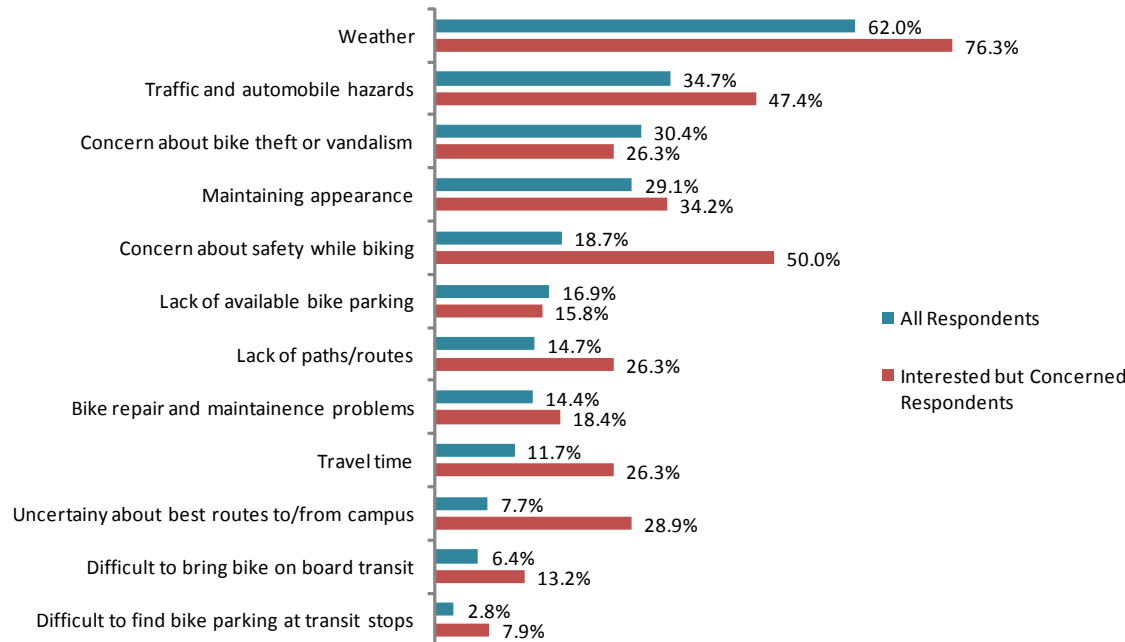
Primary Mode Split by Term - *Interested but Concerned*

Seasonal considerations affect all riders but most dramatically impact the mode choice of “Interested but Concerned” riders. Additional training, outfitting, and preparation for inclement weather may increase winter riding somewhat, but is also undoubtedly a factor that no amount of encouragement can completely overcome.



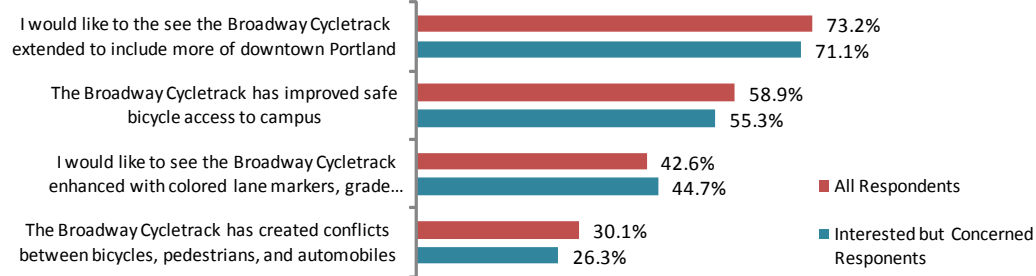
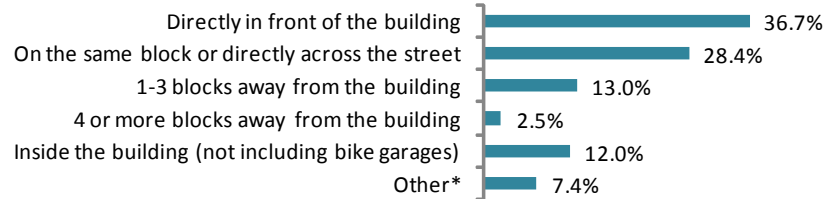
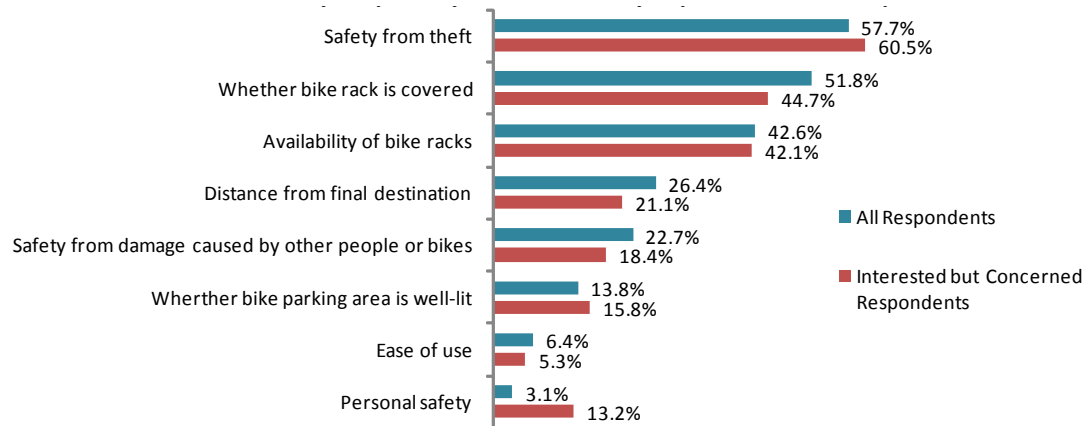
What are the most important reasons you bike commute to PSU?

Overall, respondents were largely in agreement that “fun and enjoyment,” “health and fitness,” and “environmental benefits” were among their primary reasons for bicycling. These are key factors that may be applicable when trying to promote bicycle use to a larger audience of potential riders. Restrictions such as lacking access to a car, the prohibitive expense of car and transit use, and a dislike for transit were less common responses, suggesting that positively reinforcing factors play a larger role in motivating bicycle users. That “Interested but Concerned” riders cite enjoyment and time savings as relatively less important and encouragement as more important could suggest further strategies for attracting new riders.



What are the primary challenges you’ve encountered with bicycle commuting to PSU?

Respondents’ primary concerns, other than weather, reinforce the view that improved routes and reduced automobile conflicts, more secured bicycle parking, and expanded end-of-trip facilities such as showers and lockers could mitigate some of the less attractive aspects of cycling. Overall, bicyclists are more concerned with the security of bicycle parking and protection from the elements than they are with the proximity of parking to their destination. Data from the 2009 Student Transportation Survey shows that the average bicycling student spends 6.3 hours on campus. This somewhat blurs the usage distinctions between short-term parking and long-term, secure locations. Easily accessible and convenient garages and bicycle rooms could be ideal for people wishing to store their bicycle for hours at a time in a covered and theft-protected location.



What are your primary concerns when you park a bike on campus?

Safety concerns are on the forefront of “Interested but Concerned” riders’ minds, suggesting that secure garages and bicycle rooms could attract more such riders.

Where do you usually park your bike related to the building(s) you access most often?

Despite anecdotal complaints of bicycle parking commonly being over-capacity on campus, 77.1% of respondents park very close by. A few outlier locations (along the Shattuck-Lincoln core, the Urban Plaza, and the Fourth Avenue Building) likely account for the majority of capacity concerns.

Favorability of Services and Routes (percent of respondents agreeing with each statement)

Responses concerning the Bike Hub were largely favorable. However, since Hub members were a primary target population for the survey, responses can naturally be expected to reflect the respondents greater familiarity with Hub services and programs.

Broadway Cycletrack User Perceptions (percentage of respondent agreeing with each statement)

Appendix B: Spring 2010 Bicycle Transportation Survey Questionnaire

PSU 2010 Bicycle Survey

If you bicycle to the PSU campus, or use PSU bicycle facilities, we want your feedback! Please complete this voluntary survey to help us learn more about bike riders' choices and preferences. The survey will take about 5 minutes to complete. Your responses to survey questions will be kept confidential, but will be combined with other students' responses for analysis. Completing this survey acts as your consent to participate. Please complete the survey only once.

If you choose to include your contact information at the end of this survey, you will be entered in a raffle to win a \$50 gift certificate to the PSU Bike Hub!

If you have any questions about this survey, or how the results will be used, please contact Ben Weber (bweber@pdx.edu), Emily Lieb (elieb@pdx.edu) or Rani Boyle (iboyle@pdx.edu) at 503-725-9545. If you have questions regarding your rights as a research subject, please contact the Human Subjects Research Review Committee (HSRRC) at 503-725-4288.

1) How did you learn about the PSU Bicycle Survey? (Select one)

- Flyer attached to bike on a public rack
- Flyer attached to bike in a bike garage
- Flyer or Poster elsewhere
- Word of mouth
- Website
- Email
- Other (please specify)

If you selected other, please specify _____

2) Please select the option that best describes your level of experience as a bike commuter:

- Interested but Concerned - I feel uncomfortable around fast-moving traffic and where there are few bike routes. I would ride more often if auto traffic posed less of a hazard and bike routes were more prevalent.
- Enthusiastic and Confident - I am comfortable on busy streets with bike lanes. I ride frequently and in most weather conditions.
- Strong and Fearless - I will ride anywhere and in any weather condition. I ride confidently on roads without bike lanes and may even prefer such routes.
- Other (please specify)

If you selected other, please specify _____

3) What are the most important reasons you choose to bike commute to PSU? (Select all that apply)

- Saves time and offers flexibility
- Bicycling is fun and enjoyable
- Health and fitness
- Environmental benefits
- Encouragement from friends/coworkers
- Car ownership is prohibitively expensive
- I dislike using an automobile
- Do not have a car
- Public transit use is too expensive
- Other (please specify)

If you selected other, please specify _____

4) What would encourage you to bike more often, or improve your biking experience? (Select all that apply)

- More information/education about bicycling
- Individualized route planning and/or advice
- More bike lanes/routes to PSU
- Safer bike routes to PSU
- Bike repair classes
- On-campus professional bike repair
- Bike safety classes
- More convenient bike parking
- More covered bike parking
- More secure indoor bike parking
- Bicycle encouragement programs
- Locker and shower facilities
- A bicycle buddy to help me feel more confident about biking
- Better weather
- Nothing would encourage me to bike more
- Nothing would improve my biking experience
- Other (please specify)

If you selected other, please specify _____

5) What are the primary challenges you've encountered with biking to campus? (Select all that apply)

- Weather
- Maintaining appearance
- Concern about safety while biking
- Traffic and automobile hazards
- Travel time
- Lack of bike paths/routes
- Uncertainty about best route to/from campus
- Concern about bike theft or vandalism
- Bike repair and maintenance problems
- Lack of available bike parking
- Difficult to find bike parking at transit stops
- Difficult to bring bike on board transit
- Other (please specify)

If you selected other, please specify _____

On each day of LAST WEEK how did you travel to PSU? [If you used more than one mode, mark the one by which you traveled the farthest]

6) MONDAY

- Bicycled
- Walked
- Rode the Bus or MAX
- Rode the Portland Streetcar
- Drove Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Was Dropped Off
- Did not come to PSU this day
- Other (please specify)

If you selected other, please specify _____

7) TUESDAY

- Bicycled Walked Rode the Bus or MAX Rode the Portland Streetcar Drove Alone Carpool (two or more persons)
- Motorcycle/Scooter Was Dropped Off Did not come to PSU this day Other (please specify)

If you selected other, please specify _____

8) WEDNESDAY

- Bicycled Walked Rode the Bus or MAX Rode the Portland Streetcar Drove Alone Carpool (two or more persons)
- Motorcycle/Scooter Was Dropped Off Did not come to PSU this day Other (please specify)

If you selected other, please specify _____

9) THURSDAY

- Bicycled Walked Rode the Bus or MAX Rode the Portland Streetcar Drove Alone Carpool (two or more persons)
- Motorcycle/Scooter Was Dropped Off Did not come to PSU this day Other (please specify)

If you selected other, please specify _____

10) FRIDAY

- Bicycled Walked Rode the Bus or MAX Rode the Portland Streetcar Drove Alone Carpool (two or more persons)
- Motorcycle/Scooter Was Dropped Off Did not come to PSU this day Other (please specify)

If you selected other, please specify _____

11) SATURDAY

- Bicycled
- Walked
- Rode the Bus or MAX
- Rode the Portland Streetcar
- Drove Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Was Dropped Off
- Did not come to PSU this day
- Other (please specify)

If you selected other, please specify _____

12) SUNDAY

- Bicycled
- Walked
- Rode the Bus or MAX
- Rode the Portland Streetcar
- Drove Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Was Dropped Off
- Did not come to PSU this day
- Other (please specify)

If you selected other, please specify _____

During each TERM how do you most frequently travel to PSU? [If you used more than one mode, mark the one by which you TYPICALLY traveled the farthest]

13) FALL TERM

- Bicycle
- Walking
- Riding the Bus or MAX
- Riding the Portland Streetcar
- Driving Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Dropped Off
- Have not come to PSU this term
- Other (please specify)

If you selected other, please specify _____

14) WINTER TERM

- Bicycle
- Walking
- Riding the Bus or MAX
- Riding the Portland Streetcar
- Driving Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Dropped Off
- Have not come to PSU this term
- Other (please specify)

If you selected other, please specify _____

15) SPRING TERM

- Bicycle
- Walking
- Riding the Bus or MAX
- Riding the Portland Streetcar
- Driving Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Dropped Off
- Have not come to PSU this term
- Other (please specify)

If you selected other, please specify _____

16) SUMMER TERM

- Bicycle
- Walking
- Riding the Bus or MAX
- Riding the Portland Streetcar
- Driving Alone
- Carpool (two or more persons)
- Motorcycle/Scooter
- Dropped Off
- Have not come to PSU this term
- Other (please specify)

If you selected other, please specify _____

17) On average how often do you take your bicycle aboard a Bus or MAX for all or part of your trip?

- Frequently (once or more per week)
- Occasionally (1-4 times per month)
- Seldom (less than once per month)
- Never

18) What are your primary concerns when you park your bike on campus? (Select all that apply)

- Distance to final destination
- Availability of bike racks
- Ease of use
- Safety from damage caused by other people or bikes
- Safety from theft
- Personal safety
- Whether bike rack is covered
- Whether bike parking area is well-lit
- None of the above
- Other (please specify)

If you selected other, please specify _____

19) Where is the location you usually park your bike relative to the location of the PSU building(s) you visit most often?

- Directly in front of the building entrance
- On the same block or directly across the street from the building
- 1-3 blocks away from the building
- 4 or more blocks away from the building
- Inside a building (not including bike garages)
- Other (please specify)

If you selected other, please specify _____

20) If all bike parking spaces at your desired location are occupied, how do you usually go about finding an alternative spot?

- Lock up to a tree, bench, street sign, or other non-bike rack nearby
- Lock up to an already at-capacity rack (for example, locking a third bike to a rack with two bikes present)
- Seek the closest available empty bike parking spot
- Go to another preferred location, which may be somewhat farther away
- I have never had to find a location alternative
- Other (please specify)

If you selected other, please specify _____

21) Please identify and describe any locations on campus where you have experienced or noticed bike parking difficulties or hazards:

22) Have any of the following items been stolen from you while at PSU? (Select all that apply)

- Bike Bike parts (seat, wheel, etc.) Bike accessories (helmet, lights, reflectors, etc.)
- No, I haven't had a problem with bike-related theft at PSU Other (please specify)

If you selected other, please specify _____

23) If you have had anything stolen please describe the location and time of day the incident occurred, along with any other relevant details.

24) Please indicate your level of agreement or disagreement with the following statements about bicycle facilities

	Agree	Neutral / no opinion	Disagree	Not applicable
The Broadway Cycletrack has improved safe bicycle access to the PSU campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Broadway Cycletrack has created conflicts between bicycles, pedestrians, and automobiles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like to see the Broadway Cycletrack enhanced with colored lane markers, grade separation, and/or physical barriers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like to see the Broadway Cycletrack extended to include more of downtown Portland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I adjust my cycling route in order to use bicycle-friendly facilities (bike trails, bike lanes, bike boulevards, and cycletracks)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More bicycle-friendly facilities leading to and from campus would help encourage beginning cyclists to ride more frequently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have found the new PSU Bike Hub to be a helpful resource for repairs, workshops, and purchases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bike Hub services and outreach events are effective at encouraging beginning bike riders to ride more often	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25) What services, amenities, and workshops would you like to see offered by the PSU Bike Hub? [250 character limit]

26) Please provide any other suggestions or comments regarding bike commuting to and from PSU.

27) Which best describes you?

- Undergraduate Student (PSU) Graduate Student (PSU) Faculty (PSU) Staff (PSU) Staff of PSU tenant (eg. USGS, PacifiCorp, etc)
 City of Portland employee Visitor to PSU Other (please specify)

If you selected other, please specific _____

28) What is your age? _____

29) What is your gender?

- Female Male Other Decline to respond

30) Please provide your contact information in order to be eligible to win the raffle. [You will receive no solicitations from having responded to this survey]

Name _____

Address Line 1 _____

Address Line 2 _____

City _____

State _____

Zip Code (5 Digit) _____

Join the Walk and Bike Challenge 2010! Log your walk of bike trips and get a chance to win great weekly prizes. Be sure to join the "Portland State University" team. You will be redirected in five seconds.

Thank you for participating!

Appendix C: Fall 2010 University Bicycle Count Inventory

Block	Location	# Racks	Capacity	9/27/2010 12:40-1:40pm 80, sunny		9/28/2010 1:45-2:45PM 75, partly cloudy		Average Rack Occupancy	Average Area Occupancy (including non-rack)
				Rack	Non-Rack	Rack	Non-Rack		
Academic and Student Recreation Center	total	45	90	68	2	83	10	83.9%	90.6%
	North	16	32	32	2	32	4	100.0%	109.4%
	East	8	16	8	0	15	6	71.9%	90.6%
	South	8	16	-	0	14	0	87.5%	N/A
	West	13	26	28	0	22	0	96.2%	96.2%
Art Building	total	13	26	8	3	13	0	40.4%	46.2%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	7	14	8	3	12	0	71.4%	82.1%
	Covered Stairwell	6	12	0	0	1	0	4.2%	4.2%
Blackstone / Montgomery / Simon Benson	total	17	34	20	0	28	0	70.6%	70.6%
	North	17	34	20	0	28	0	70.6%	70.6%
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	0	0	N/A	0	N/A	0	N/A	N/A
Blumel / St. Helen's	total	10	20	5	0	5	0	25.0%	25.0%
	North	4	8	2	0	1	0	18.8%	18.8%
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South (not counting garage)	6	12	3	0	4	0	29.2%	29.2%
	West	0	0	N/A	0	N/A	0	N/A	N/A
Broadway Hall	total	36	72	14	0	12	0	18.1%	18.1%
	North	7	14	3	0	1	0	14.3%	14.3%
	East	9	18	1	0	4	0	13.9%	13.9%
	South	8	16	7	0	6	0	40.6%	40.6%
	West	12	24	3	0	1	0	8.3%	8.3%
Clay St. Building	total	5	10	7	5	4	4	55.0%	100.0%
	North	0	0	N/A	1	N/A	0	N/A	N/A
	East	2	4	4	3	3	4	87.5%	175.0%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	3	6	3	1	1	0	33.3%	41.7%
Cramer Hall	total	78	156	154	7	156	1	99.4%	101.9%
	North	31	62	58	2	59	0	94.4%	96.0%
	East	2	4	4	2	4	1	100.0%	137.5%
	South	15	30	32	1	34	0	110.0%	111.7%
	West	30	60	60	2	59	0	99.2%	100.8%
Education & Business Building	total	40	80	55	1	55	0	68.8%	69.4%
	North	13	26	21	0	21	0	80.8%	80.8%
	East	12	24	16	0	16	0	66.7%	66.7%
	South	5	10	4	1	5	0	45.0%	50.0%
	West	10	20	14	0	13	0	67.5%	67.5%
East Hall (Hot Lips, Cheerful Tortoise, etc)	total	11	22	7	0	12	0	43.2%	43.2%
	North	6	12	5	0	7	0	50.0%	50.0%
	East	1	2	1	0	2	0	75.0%	75.0%
	South	2	4	1	0	3	0	50.0%	50.0%
	West	2	4	0	0	0	0	0.0%	0.0%

Fall 2010 University Bicycle Count Inventory

East Hall (Hot Lips, Cheerful Tortoise, etc)	total	11	22	7	0	12	0	43.2%	43.2%
	North	6	12	5	0	7	0	50.0%	50.0%
	East	1	2	1	0	2	0	75.0%	75.0%
	South	2	4	1	0	3	0	50.0%	50.0%
	West	2	4	0	0	0	0	0.0%	0.0%
Engineering Building	total	11	22	21	0	20	0	93.2%	93.2%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South	7 ^A	14 ^A	N/A	0	N/A	0	N/A	N/A
	West	11	22	21	0	20	0	93.2%	93.2%
Fourth Ave. Building / City Development Center	total (not including garage)	38	76	51	0	59	1	72.4%	73.0%
	North	7	14	7	0	11	0	64.3%	64.3%
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South	31	62	44	0	48	0	74.2%	74.2%
	West	0	0	N/A	0	N/A	1	N/A	N/A
	Loading Dock Garage	27	34	43	0	55	0	144.1%	144.1%
Harder House / XSB / Parkway	total	5	10	3	2	6	3	45.0%	70.0%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	2	4	1	0	3	3	50.0%	87.5%
	South	1	2	0	0	1	0	N/A	25.0%
	West	2	4	2	2	2	0	50.0%	75.0%
Helen Gordon	total	5	10	6	0	4	1	50.0%	55.0%
	North	1	2	1	0	0	0	25.0%	25.0%
	East	4	8	5	0	4	1	56.3%	62.5%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	0	0	N/A	0	N/A	0	N/A	N/A
Hoffman / Epler / King Albert	total	33	66	17	0	15	1	24.2%	25.0%
	North	21	42	5	0	5	0	11.9%	11.9%
	East	12	24	12	0	10	1	45.8%	47.9%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	0	0	N/A	0	N/A	0	N/A	N/A
Ione Plaza	total	17	42	16	0	24	2	47.6%	50.0%
	North	4	14	2	0	7	0	32.1%	32.1%
	East	6	12	7	0	7	2	58.3%	66.7%
	South	4	10	4	0	6	0	50.0%	50.0%
	West	3	6	3	0	4	0	58.3%	58.3%
Lincoln Hall*	total	25	50	44	0	52	0	96.0%	96.0%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	1	2	1	0	2	0	75.0%	75.0%
	South	24	48	43	0	50	0	96.9%	96.9%
	West	0	0	N/A	0	N/A	0	N/A	N/A
Market Center Building	total	8	32	18	0	21	0	60.9%	60.9%
	Parking Garage (north entrance)	4	24	18	0	20	0	79.2%	79.2%
	Elevated parking deck	4	8	0	0	1	0	6.3%	6.3%
Market Square Building	total	11	40	33	5	31	4	80.0%	91.3%
	North	6	12	11	0	11	0	91.7%	91.7%
	East	1	2	2	2	2	4	100.0%	250.0%
	South (inside garage)	3	24	20	3	16	0	75.0%	81.3%
	South	1	2	0	0	2	0	N/A	50.0%
Millar Library	total	46	92	41	0	50	0	49.5%	49.5%
	North	20	40	4	0	19	0	28.8%	28.8%
	East (covered on both wings)*	14	28	21	0	13	0	60.7%	60.7%
	East (Park Blocks sidewalk)	10	20	16	0	18	0	85.0%	85.0%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	2	4	N/A	0	N/A	0	N/A	N/A

Fall 2010 University Bicycle Count Inventory

Montgomery Bike Garage	total	5	10	6	0	7	0	65.0%	0.0%
	South (un-enclosed)	5	10	6	0	7	0	65.0%	0.0%
Native American Center	total	5	10	0	0	1	0	5.0%	5.0%
	North	2	4	0	0	1	0	12.5%	12.5%
	East	3	6	0	0	0	0	0.0%	0.0%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	0	0	N/A	0	N/A	0	N/A	N/A
Neuberger Hall	total	53	106	97	4	111	6	98.1%	102.8%
	North	22	44	48	4	48	6	109.1%	120.5%
	East	5	10	10	0	12	0	110.0%	110.0%
	South	21	42	31	0	40	0	84.5%	84.5%
	West	5	10	8	0	11	0	95.0%	95.0%
Ondine / CECS / Fifth Ave. Building	total	9	18	14	3	13	0	75.0%	83.3%
	North	5	10	8	1	9	0	85.0%	90.0%
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South	0	0	N/A	2	N/A	0	N/A	N/A
	West	4	8	6	0	4	0	62.5%	62.5%
Park Plaza Apts. / Research Greenhouse	total	3	6	4	0	0	0	33.3%	33.3%
	North	1	2	0	0	0	0	0.0%	0.0%
	East	2	4	4	0	0	0	50.0%	50.0%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	0	0	N/A	0	N/A	0	N/A	N/A
Parking Structure 1	total	1	2	0	0	2	1	50.0%	75.0%
	North	1	2	0	0	2	0	50.0%	50.0%
	West	0	0	N/A		N/A	1	N/A	N/A
Parking Structure 2 / University Services Building / Koinonia House	total	11	22	9	0	9	1	40.9%	43.2%
	North	1	2	N/A	0	2	1	N/A	N/A
	East	1	2	1	0	2	0	75.0%	75.0%
	South	2	4	6	0	1	0	87.5%	87.5%
	West	7	14	2	0	4	0	21.4%	21.4%
Peter Stott Center	total	33	66	14	0	12	0	19.7%	19.7%
	North*	18	36	10	0	6	0	22.2%	22.2%
	East	15	30	4	0	6	0	16.7%	16.7%
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	0	0	N/A	0	N/A	0	N/A	N/A
Science Building 1 / Stratford Hall	total	34	68	27	0	30	0	41.9%	41.9%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	4	8	7	0	8	0	93.8%	93.8%
	South	23	46	13	0	15	0	30.4%	30.4%
	West	7	14	7	0	7	0	50.0%	50.0%
Science Building 2 (building under construction)	total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Science & Education Center	total	5	10	1	0	2	0	15.0%	15.0%
	North	3	6	0	0	1	0	8.3%	8.3%
	East	0	0	N/A	0	N/A	0	N/A	N/A
	South	0	0	N/A	0	N/A	0	N/A	N/A
	West	2	4	1	0	1	0	25.0%	25.0%
Shattuck Hall / CPSO	total	31	62	24	0	24	1	38.7%	39.5%
	North	15	30	15	0	13	0	46.7%	46.7%
	East	2	4	0	0	1	0	12.5%	12.5%
	South	0	0	0	0	0	1	N/A	N/A
	West	14	28	9	0	10	0	33.9%	33.9%

Fall 2010 University Bicycle Count Inventory

Smith Memorial Student Union	total	38	76	83	3	86	8	111.2%	118.4%
	North	19	38	46	0	45	1	119.7%	121.1%
	East	4	8	7	0	8	2	93.8%	106.3%
	South	12	24	24	3	26	2	104.2%	114.6%
	West	3	6	6	0	7	3	108.3%	133.3%
Unitus Building	total	9	24	1	1	1	1	4.2%	8.3%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	8	16	1	1	N/A	1	N/A	N/A
	South	1	8	0	0	1	0	6.3%	6.3%
	West	0	0	N/A	0	N/A	0	N/A	N/A
University Center Building	total	12	24	14	1	17	1	64.6%	68.8%
	North	0	0	N/A	0	N/A	0	N/A	N/A
	East	1	2	1	1	2	1	75.0%	125.0%
	South	9	18	13	0	13	0	72.2%	72.2%
	West	2	4	0	0	2	0	25.0%	25.0%
University Place	total	2	4	0	0	2	0	25.0%	25.0%
Urban Center	total	43	86	69	2	81	16	87.2%	97.7%
	North	4	8	6	2	9	4	93.8%	131.3%
	Behind 6th Ave Bus Stop*	5	10	7	0	9	0	80.0%	80.0%
	South Entrance Plaza	4	8	-	0	4	0	50.0%	N/A
	Bookstore	17	34	32	0	33	12	95.6%	113.2%
	Pizzicato	6	12	10	0	12	0	91.7%	91.7%
	Seattle's Best Coffee	7	14	14	0	14	0	100.0%	100.0%
	CAMPUS SHORT-TERM TOTAL	775	1578	994	39	1103	62	66.4%	69.6%
Harrison Bike Garage*	total		86	31	N/A	36	N/A	39.0%	
Montgomery Bike Garage	total	60	77	10	N/A	12	N/A	14.3%	
Non-PSU Locations									
Cyan PDX	total	8	16	N/A	0	N/A	0	N/A	
	North	6	12	N/A	0	N/A	0	N/A	
	West	2	4	N/A	0	N/A	0	N/A	
Hotel Modera	total	3	6	N/A	0	N/A	0	N/A	
	Café	2	4	N/A	0	N/A	0	N/A	
	Nel Centro	1	2	N/A	0	N/A	0	N/A	
St. Mary's School	total	4	8	N/A	0	N/A	0	N/A	

Appendix D: University District Transportation Improvements Inventory



TRANSPORTATION IMPROVEMENT INVENTORY

A Summary of Recommended University District Improvements

12/10/10

The University District is a hub of bicycle and pedestrian activity; however, a number of right-of-way improvements are recommended in order to make traveling by a non-motorized mode safer, more pleasant, and more accessible for people with disabilities. The PSU Transportation Improvement Inventory consists of a list of improvements that would further facilitate bicycle and pedestrian connectivity within the district. This summary document is accompanied by a map showing the locations of proposed corridor and intersection improvements and a matrix presenting more detailed recommendations.

1. Broadway Cycle Track & Pedestrian Improvements

The Broadway Cycle Track was installed as a pilot project in August 2009 and currently stretches along the right-hand (west) side of Broadway from Clay Street to Jackson Street. Improvements are needed to make the facility permanent and to increase clarity for drivers, pedestrians and cyclists. A variety of additional improvements to the pedestrian environment are also warranted.

Improvements:

- **ENHANCED STREET TREATMENTS:** Install grade separation (continuous through intersections) to distinguish cycle track area from both the street and the sidewalk, and add on-street markings and signage to reduce bicycle/pedestrian conflicts.
- **SIGNALIZATION/SIGNAGE:** Improve signalization of all intersections, including the addition of bike signal heads, and add signage to improve clarity about who has the right-of-way.
- **CURB EXTENSIONS/SIDEWALKS:** Install curb bulb-outs to all intersections along the east side of Broadway to increase safety for all modes.

Relevant Plans:

The PSU Framework Plan calls for sidewalks to be widened along both sides of Broadway, new street trees to be planted, and intersections to be improved with curb bulb-outs and visually distinctive paving treatments.

2. 4TH Avenue Bicycle & Streetscape Improvements

The 4th Avenue corridor has a high volume of vehicle traffic and presents several opportunities to improve the safety of all modes of travel. These improvements will be increasingly important as more new development occurs along the street.

Improvements:

- **BICYCLE CONNECTIVITY:** Install sharrows in all three traffic lanes, and improve bicycle connectivity over the I-405 overpass.
- **PEDESTRIAN CROSSINGS:** Install or improve curb bulb-outs, curb cuts, and crosswalks.
- **PEDESTRIAN ENVIRONMENT:** Install furnishings, pedestrian-scale lighting, and bioswales on both sides of 4th.

Relevant Plans:

The Portland Bicycle Plan for 2030 calls for a separated in-roadway bike lane along 4th from SW Lincoln to NW Glisan, connecting to a bike boulevard from NW Glisan to NW Station Way.

3. Montgomery Green Street

Montgomery Street currently consists of low-traffic segments with vehicle access interspersed with segments that have bicycle/pedestrian or pedestrian access only. The Montgomery Green Street Plan (MGSP) outlines a vision for Montgomery to serve as a green street and as a primary east-west pedestrian connector through campus. It is recommended that something along the lines of the vision articulated in the MGSP be implemented, and that a few additional improvements be made for bicycle connectivity.

Improvements:

- **REDUCE VEHICLE ACCESS AND WIDEN SIDEWALKS:** Reconfigure right-of-way on vehicle-access blocks to a narrow, curbside roadway with a single, one-way traffic lane, and reduce on-street parking on some blocks to allow for a widening of the sidewalk on both sides of the street.
- **PEDESTRIAN CROSSINGS:** Install or improve curb bulb-outs, curb cuts, and crosswalks.
- **PEDESTRIAN ENVIRONMENT:** Install furnishings, pedestrian-scale lighting, and bioswales along Montgomery.
- **BICYCLE CONNECTIVITY:** Add curb cuts through pedestrian blocks, and two-way bicycle facilities on streets with vehicle access.

Relevant Plans:

The Montgomery Green Street Plan (MGSP) calls for: (1) widening the sidewalk to allow for a generous pedestrian zone, cafe and park seating, moveable planters, street lighting, and bike parking; (2) narrowing the travel lane to a single, curbside, eastbound lane flanked by flexible parking spaces on the north side; and (3) installing a 5' wide stormwater planter with pedestrian boardwalks.

4. Mill Street Bicycle Connections

SW Mill Street varies in configuration from block to block, including several blocks that have pedestrian/bicycle access only and three blocks that include a streetcar alignment. Transitions between the vehicle, pedestrian, and streetcar zones create conflicts for bicycles traveling westward on Mill between SW 4th and 10th. Improvements are recommended to ensure safe bicycle travel through the corridor. These improvements will be well coupled with improvements to west-to-east bike connections on Montgomery Street.

Improvements:

- **BICYCLE CONNECTIONS:** Facilitate bicycle connections through the Park Blocks by installing curb cuts along Broadway and Park (west) and changes to the design of the streetcar station area to mitigate conflicts between pedestrians waiting for the streetcar and bike riders traveling through.

5. Isolated Improvements

A number of intersections and segments do not meet current standards for pedestrian safety and accessibility, or they create unique problems for cyclists.

Improvements:

- **PEDESTRIAN CROSSINGS:** Add or improve crosswalks and curb cuts at designated locations (6th & Jackson, Park & Market, Park & College, 12th & Mill).
- **BICYCLE CONNECTIONS:** Add sharrows to all lanes on 6th Ave. and improve bicycle connections at designated locations (6th & Jackson, Park & Market, 12th & Montgomery).

Relevant Plans:

There are a number of smaller, more isolated improvements needed throughout the district. These include pedestrian improvements at intersections and minor improvements to bicycle connections at intersections and along corridors.

Project	Location	Existing Condition/Problem	Proposed Improvement
BROADWAY CYCLE TRACK & PEDESTRIAN IMPROVEMENTS	Broadway from Market to Jackson (5 blocks)	Cycle track is unfamiliar to people and can be difficult to distinguish from the rest of the street. Conflicts include (1) pedestrians stand in the cycle track while waiting to cross Broadway, (2) cars and trucks park in the cycle track while loading/unloading	Elevate the grade of the cycle track, including the shy zone, so it is at a grade halfway between the street and the sidewalk. This grade should remain continuous through all intersections, with pedestrian ramps allowing for wheelchair accessibility over the cycle track. Move parking signage from sidewalk to cycle track's shy zone. Add 'wait here' curb markings/signage to prevent pedestrians from standing in the cycle track while waiting to cross Broadway. Improve signalization at all intersections by adding bike headway signal.
	Broadway from Market to Jackson (5 blocks including intersections at Market & Jackson)	The pedestrian environment is unattractive, and pedestrians must cross two lanes of traffic, with parking on both sides, and the cycle track on the west side. The intersections of Jackson, College, and Market are signalized, while Hall, Harrison, Montgomery, and Mill are not fully signalized.	Add curb bulb-outs to all intersections on the east side of the street, and improve signalization (see below).
	Intersections at Mill, Montgomery, Harrison and Hall (4 intersections)	Westbound blinking yellow lights at Mill, Montgomery, and Hall are confusing to drivers, and left turns are difficult due to heavy pedestrian traffic crossing Broadway when southbound vehicles on Broadway have a red light. The Harrison St. intersection, which is not signalized, has similar safety issues.	Change westbound signals to a blinking yellow turn signal with signage stating to yield to pedestrians. Note: At Harrison St., turn signal would replace a stop sign.
	Broadway & College (intersection)	The cycle track is not visible to vehicles turning right from Broadway into Shattuck Parking Lot.	Add 'yield to bikes' signage for vehicles turning right from Broadway.
	Broadway & Jackson (intersection)	Right vehicle lane lacks any signage indicating that vehicles turning right off Broadway need to yield to cyclists in the cycle track. Curb ramps other than one at NE corner of intersection do not meet current standards.	Add 'yield to bikes' signage for vehicles turning right from Broadway. Install green paint designating the bike path through the intersection as the cycle track transitions into a regular bike lane. Redo curb cuts at NW, SW and SE corners to current standards.

Project	Location	Existing Condition/Problem	Proposed Improvement
MONTGOMERY GREEN STREET	4th to 5th (1 block)	One lane of eastbound traffic for vehicles, two-way streetcar lane on south side, and parking along the north side of the street. The current streetcar alignment along this block is temporary. When the Oregon Sustainability Center is developed on the adjacent block, the streetcar tracks will be removed.	Redevelop street as part of Oregon Sustainability Center redevelopment in a similar manner as proposed in the MGSP), including a curbless street with flexible parking zone; a stormwater spine with pedestrian boardwalks on the south side of the street; pedestrian/ADA features including tactile warning strips; and ornamental features (lighting, art, furnishings) and landscaping (including bioswales).
	6th to Broadway (1 block)	Two-way traffic with parking (including a substantial amount of motorcycle parking) on both sides of the street.	Redesign street so it is one-way eastbound for vehicles but two-way for bicyclists. Remove parking on north side of street. Expand sidewalk zone and add stormwater spine with pedestrian boardwalks, ADA/pedestrian facilities, ornamental features, and landscaping as called for in the MGSP.
	Park-W & Montgomery (intersection)	It is unclear whether pedestrians have the right-of-way crossing Park Ave. (west) and crossing Montgomery St., and where the crossings should be made. It is unclear whether bicyclists traveling west on Montgomery St. need to yield to vehicles.	Improve intersection for pedestrians and bicyclists by (1) adding a stop sign and 'watch for bicyclists' sign on Park Ave., (2) adding crosswalks on north and west sides of intersection, and (3) reconfigure the south and east sides of intersection to be curbless, so they can accommodate a wide range of bicycle and pedestrian crossings.
	Park-W to 10th	One lane of westbound traffic with parking on both sides of the street. Bicyclists traveling eastbound use sidewalk or westbound travel lane.	Remove parking on south side of street and add eastbound (contra-flow) cycle track in its place.
	Montgomery & 10th (intersection)	Pedestrian crossing is unsafe due to lack of crosswalk and visibility to drivers.	Add crosswalk across Montgomery on the east side of intersection and pedestrian signs in advance of crossing.
	Montgomery at 12th Ave	Curb cuts on east side of 12th Ave. are not logically aligned with proper paths of eastbound and westbound bicycle travel. There is no signal or signage for bicyclists traveling westbound. It is unclear that bicyclists are allowed to travel east.	Install curb cuts and signage to accommodate bicyclists traveling east and west through the intersection. Add a signal for bicyclists traveling westbound. Add signs for vehicles traveling eastbound on Montgomery and turning left on 12th Ave. to yield to oncoming bicyclists.

Project	Location	Existing Condition/Problem	Proposed Improvement
4TH AVENUE BICYCLE & STREETScape IMPROVEMENTS	I-405 Overpass to Market (7+ blocks)	Street lacks bicycle facilities, despite being 3+ lanes wide and serving as a common bicycle route to and from campus. Bicyclists traveling north on 4th Ave. from areas south of I-405 end up in the center lane of traffic due to the off-ramp travel lanes entering the roadway.	Widen bike lane through I-405 overpass and extend to Lincoln St. Add signage at east and west sides of 4th Ave., and at Lincoln St., that indicates bicyclists merging with vehicles. Add sharrow markings in all lanes beginning at Lincoln St. for at least two blocks and signage on both sides of 4th Ave. indicating that bicyclists share the roadway.
	Lincoln to Market (7 blocks)	Pedestrian environment is unattractive, and pedestrians must cross three lanes of traffic. The intersections of Lincoln, Harrison, and Market are signalized, while College, Hall, Montgomery, and Mill are non-signalized. The intersection of College has been redone to include curb bulb-outs on both sides of 4th, two crosswalks, and bioswales on the east side of 4th.	Add curb bulb-outs, bioswales, and striped crosswalks to the intersections at Hall, Montgomery, and Mill, similar to the treatment applied to the intersection of College. Add pedestrian-scale lighting, landscaping and furnishings.
	4th & Lincoln (intersection)	Crosswalks are present on the west and north sides of the intersection, but missing on the east and south sides of the intersection.	Add signalized crossings and marked crosswalks to east and south sides of intersection.

Project	Location	Existing Condition/Problem	Proposed Improvement
MILL STREET BICYCLE CONNECTIONS	Mill & Broadway (intersection)	Bicyclists turning left on Broadway cross the streetcar tracks at a dangerous angle. Bicyclists traveling west on Mill must use the same curb cut as the streetcar, which places them close to the tracks, and it is unclear that bicyclists are allowed to travel west.	Add bike box on Mill St. in right travel lane and use paint to show the correct angle for bicyclists to travel when crossing streetcar tracks. Add sign for westbound traffic stating that bikes are allowed to travel west. Expand curb cut used by streetcars and bikes traveling west on Mill to allow for a wider space between streetcars and bicyclists.
	Park-E to Park-W (1 block)	Bicyclists must use the streetcar lane or travel through the streetcar stop's waiting area.	Move streetcar furnishings forward (south) and mark area behind furnishings as a westbound bike lane.
	Mill & Park-W (Intersection)	Bicyclists must use the curb cut for the streetcar or for pedestrians. Both options are unsafe and out of the way for bicyclists traveling westbound.	Create curbless area from streetcar lane to pedestrian crossing at NE corner of intersection. Add 'watch for bicyclist' sign at location of stop sign on Park Ave.

Project	Location	Existing Condition/Problem	Proposed Improvement
ISOLATED IMPROVEMENTS	6th Avenue Overpass (one-way, north)	Bicycle lane is narrow and ends at the south end of the I-405 crossing, requiring bicyclists to merge into what becomes a center lane.	Widen bike lane and extend to Jackson St. PBOT is considering reconfiguring the on-ramp to I-26. If this occurs, it may include re-striping and would be an appropriate time to widen and extend the bike lane to the intersection of Jackson St.
	6th & Jackson (intersection)	Left turns onto Jackson St. are difficult for bicyclists because the bike lane ends abruptly. Vehicles exiting I-405 and traveling on 6th Ave. frequently do not stop for pedestrians crossing 6th.	Widen pedestrian island in the middle of 6th Ave. to include enough space for a bicycle refuge so bicyclists turning left on Jackson may pull into the island before crossing 6th Ave. Change pedestrian crossing sign to a bicycle/pedestrian crossing sign. Add in-street crosswalk markings. Remove pedestrian barrier south of intersection on east side of 6th Ave.
	6th Ave. from Jackson to Market (6 blocks)	Bicyclists use all non-transit lanes (ranging from 1-3 lanes) and often need to change lanes in fast moving traffic.	Add sharrow markings in non-transit lanes to indicate that cyclists may be in all lanes, and vehicles should safely share lanes with cyclists.
	Park-W & Market (intersection)	Curb ramps at SW and SE corners of intersection do not meet current standards. Lack of crossing on west side of intersection is unsafe due to the perception that vehicles frequently do not stop for pedestrians.	Redo curb cuts at SW and SE corners to current standards. Add crosswalk to west side of intersection.
	Park-E & Market (intersection)	Curb cut heading north on Park Ave. at Market is not aligned with Park Ave. requiring an unsafe path for bicyclists.	Add bike crossing treatment that includes curb cut aligned with Park Ave. heading north and bike crossing signage on Market St.
	Park & College (intersection)	Curb ramps on north side of College do not meet current standards and crossing locations are unclear. A marked crosswalk is located in the center of the block.	Redevelop curb cuts on north side of College to accommodate service vehicles, bicyclists, and pedestrians, and mark crosswalks at these locations. Remove crosswalk in center of block.
	Mill & 12th (intersection)	Crosswalk across 12th Ave is aligned with the vehicle entrance to PSU Parking Structure 3, leading to conflicts between pedestrians and vehicles.	Move crosswalk and flashing pedestrian signal south so it is aligned with south side of Mill St.

Appendix E: Guiding Plans in the Portland Area

Portland State University District Framework Plan

The *University District Framework Plan* outlines campus growth and development over a multi-decade time horizon. While the *Framework Plan*'s proposals for bicycle projects are general in nature, it does acknowledge the importance of this transportation mode and the need for focused attention to SW Broadway, SW 4th Avenue, connections to the OHSU campus, and eastward networks through the Halprin blocks. Some of these improvements are reflected in PSU's *Transportation Improvements Inventory* while others guide a more comprehensive evaluation of the bicycle (and overall transportation) network around the University District.



Goals of the Portland State Climate Action Plan 2010

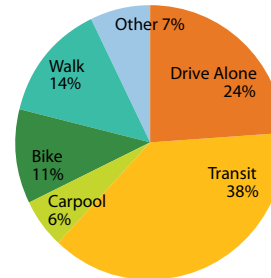
In 2007 PSU joined the American College & University President's Climate Commitment (ACUPCC) as a means of putting higher-education institutions at the forefront of climate change mitigation and prevention. The University's *Climate Action Plan*,

signed in May 2010, proposes ambitious carbon-reduction goals and sweeping changes to numerous campus procedures and policies. Bicycling features prominently as an emissions-free, healthy, and sustainable transportation mode supportive of these efforts. Specific targets and programs include the following:

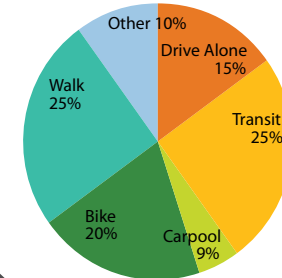
- Workshops such as *Bike Commuting for Women* and *Bike Commuting during Winter Conditions*.
- Community-building programs such as *Breakfast for Bikers* and *Community Coffee Rides*.
- Participate in promotional events sponsored by community organizations, including the Bike Commute Challenge sponsored by the Bicycle Transportation Alliance (BTA).

- Partner with TriMet and the City in providing improved bicycle parking, routes, and campus-area facilities.
- Develop a bicycle parking plan that formalizes the annual evaluation of parking demand and corresponding installation of new racks.
- Develop a bicycle theft prevention strategy
- Partner with the City to facilitate the implementation of the newly adopted *Portland Bicycle Plan for 2030*.
- Increase the number of bicycle parking spaces in covered and secure areas on campus.
- Work with the City to enhance bicycle and pedestrian connections along the I-405 corridor.
- Continue to work with the New Student Programs to develop an information campaign for newly admitted students, encouraging them to consider transportation when making their housing choices; furthermore, promote the development of housing options on and around campus that are supportive of regular, convenient bicycle use.

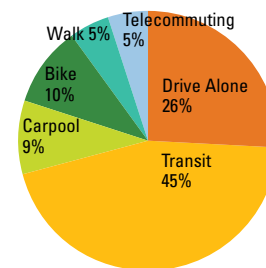
PSU Student Mode Split 2009



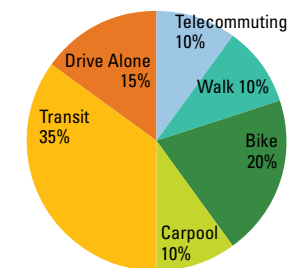
PSU Student Mode Split 2030



PSU Staff Mode Split 2008



PSU Staff Mode Split 2030



Mode split goals from the *Portland State Climate Action Plan 2010* call for significant increases in the share of people bicycling to campus. Source: PSU Climate Action Plan 2010, p. 50 and 52.

Portland Bicycle Plan for 2030

The *Plan for 2030*, updated in 2010 from its last version in 1996, is the principle guiding plan for bicycle infrastructure, facilities, and encouragement throughout the city. It outlines \$600M of projects over the next 20 years and aims to continue Portland's pursuit of world-class bicycle amenities and use. Portland State will play an important role as the City aspires to increase area bicycle mode share and engage regional partners. According to the *Plan for 2030* text, "The key principles laid out in the Portland Bicycle Plan for 2030 are:

- Attract new riders: Plan and design for people who are not yet riding by developing safe and comfortable low-stress bikeways (such as bicycle boulevards and trails) that reduce conflicts between people riding bicycles and people driving.
- Strengthen bicycle policies: Adopt policy changes outlined in the Plan, including a new bicycle transportation policy of making bicycling more attractive than driving for short trips.
- Form a denser bikeway network: Expand the network of bikeways in Portland to achieve a fine-grained system that offers riders an array of route choices.
- Increase bicycle parking: Implement measures to satisfy the growing demand for bike parking.
- Expand programs to support bicycling: Expand established programs, and develop new programs, to encourage and support bicycling.
- Increase funding for bicycle facilities: Pursue multiple strategies to increase funding for bicycle facilities and other green transportation modes."

Below is an outline of sections of the *Bicycle Plan for 2030* relevant to Portland State efforts.

- P64: Facility Design – Guidelines to direct design and engineering of bikeways and parking facilities given a ranging set of parameters. A set of these recommendations deal with the interactions between bicycles and transit vehicles and lines, which feature prominently on and around the PSU campus.
- P70: Bicycle Parking – Existing city code does not require significant long-term bicycle parking capacity at most locations. The Bicycle Master Plan recommends amending the code to require more parking capacity at most new and renovated buildings, particularly residential units. Short term parking in public ROWs is provided by the City and construction/renovation projects of a certain value are required to provide short term parking upon completion of construction
- P74: Bicycles and other transportation modes – Accommodating bicycles at transit facilities and aboard vehicles increases mobility options and extends the practical range of bicycles for daily use. With PSU serving as a major transit hub the integration of bicycle amenities will be of prime importance.

- P76-78: Bike Sharing – Collaborative efforts between city and institutions such as PSU.
- P89: Central City Bicycling – Efforts to capitalize on high bike-commute rate and growing amenities (housing, businesses, retail, etc) in the Central City.
 - 12-16 mph speeds are bicycle-friendly and thus don't always require bicycle-specific amenities. However, cautious cyclists will likely want separate bicycle routes.
- P94: Services and Trip Planning – Maps, route planning, and info about incentive programs.
 - Related to PSU TAPS desk and Bike Hub services
 - City bike fleet – PSU bicycle fleet
- P96: Bike Commute Challenge – BTA-organized event/competition between businesses, schools, and institutions.
- P97: Awareness and Outreach – PBOT and other agencies engage in education, training, and outreach throughout. Often demand exceeds capacity of staff.
- P103: Road Safety – Speed limits, etc. State legislation may allow local cities and municipalities to establish own speed limits on local roads (conducive to Neighborhood Greenways) and thru Main Street, Regional Center, and Town Center designations.
- P109: Wayfinding – City recommends improved signage and additional information kiosks at major destinations, such as PSU.
- P113-132: Implementation – Outlines a practical and measured approach to developing new bikeways, improving existing bikeways, raising the visibility of cycling, and undertaking innovative pilot projects. Explore the possibility of amending the *City of Portland Transportation System Plan* to include bicycle classifications, pursue funding strategies, and promote programs that raise awareness and provide cycling incentives, and target underserved areas for immediate bikeway improvements. Implementation strategies also include the development of evaluation criteria, equity analyses, and a phased approach to planning and construction.

Metro Regional Transportation Plan for 2035

Metro, the Portland-area metropolitan planning organization, addresses bicycle transportation in its Regional Transportation Plan (RTP). While the report does not outline specific improvements, it does clarify the level of support for cycling that can be expected from this important governing body.

- “The RTP elevates the importance of and need to support bicycle travel to support regional goals for mobility, the economy, the environment, public health, transportation and land use”. (p. 2-63)
 1. Build an interconnected network of bicycle facilities that provides seamless access to 2040 target areas
 - On- and off-street bikeways that connect to central city, regional centers, town centers, and other 2040 Target Areas
 - Network of arterial, low-volume, off-street, and public transit
 2. Improve bike-transit connections: effectively expand access geography through multimodal networks; help solve many last-mile problems.
 3. Build a green ribbon of bicycle parkways as part of the region’s integrated mobility strategy: green treatments and high-amenity parkways with both intra- and inter-urban and recreational connections.

Portland Plan for 2030

The City of Portland is in the midst of an update to its comprehensive plan. When the 2030 Plan is complete it will guide a range of transportation choices. A primary plan direction, promoting active and green transportation, outlines the following steps:

- Increase from 26% to 90% the number of Portlanders living in 20-minute neighborhoods, areas where walking and biking allow people to conveniently meet their daily needs.
- Promote bicycling and alternative modes in order to reduce from 16 to 11 the daily driving mileage of the average Portlander
- Boost from 27% to 70% the percentage of residents who bike, walk, take transit, or telecommute to work or school

City of Portland and Multnomah County Climate Action Plan 2009

Among its many emissions-reduction goals, this plan proposes that by 2030, 80% of Multnomah County residents should be able to conveniently and safely walk or bicycle to meet their daily, non-work/school commute needs. Similarly ambitious goals to reduce vehicle miles traveled will promote bicycling as a viable mode for nearly all short to medium distance trips.

APPENDIX F: City of Portland Zoning Code Guidelines for Bicycle Infrastructure

City of Portland Title 33, the Planning and Zoning Code

Portland’s zoning code addresses a range of bicycle parking requirements in sections 33.266.200-220. Newly constructed building and those undergoing renovation are subject to these dictates. Short- and long-term bicycle parking requirements for university institutions are far-reaching; a selection of the requirements follows:

- Short-term parking must be within 50 feet of a building entrance or along a primary bicycle parking location adjacent to a pedestrian access route
- Long-term parking need not be on-site but must meet certain proximity, accessibility, and security requirements, including mandates for at least 50% covered parking
- One long-term bicycle parking space per 8 residents in dormitory locations
- A minimum of two spaces of both short- and long-term bicycle parking, with increasing minimums as building floor space increases, for non-residential campus structures

