Bicycle Master Plan

BUFFALO STATE
The State University of New York

OCTOBER 2014

GObike BUFFALO

alta PLANNING + DESIGN

wendel

This Environmental Benefit Project is undertaken in connection with the settlement of the enforcement action taken by the New York State Department of Environmental Conservation related to Article 19 of the Environmental Conservation Law.

ACKNOWLEDGEMENTS

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Thank you to all those who submitted responses to the online survey. Your valuable input informed many of the recommendations and design solutions in this plan.

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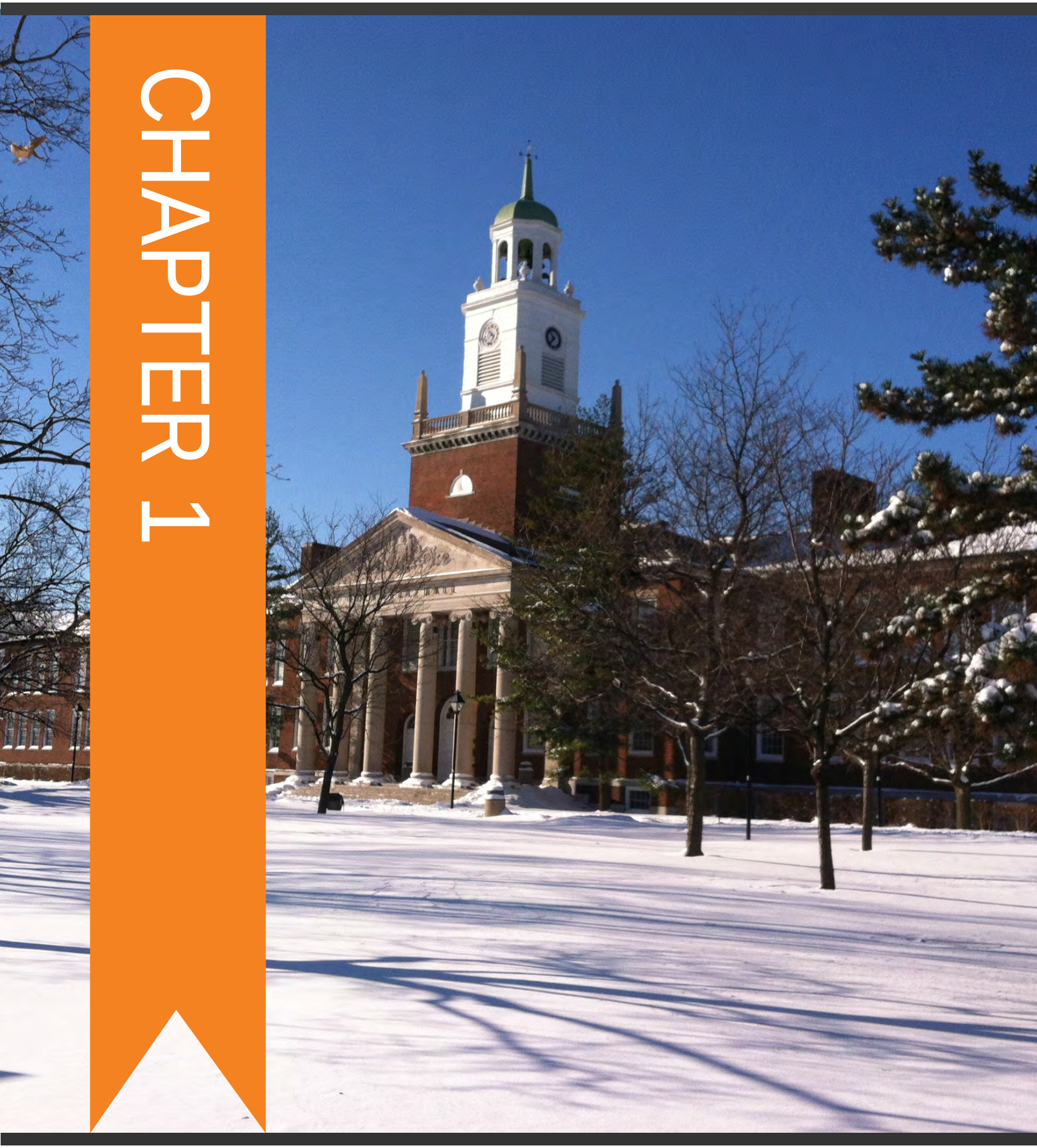


INTRODUCTION

Chapter Contents:

1.1 PROJECT OVERVIEW

SUNY Buffalo State has embarked on a bicycle master plan that will guide the College through the next ten years. This Master Plan will address growth and development in anticipation of a greater level of interest in bicycle mobility by students, faculty, and staff. This Bicycle Master Plan provides guidance for infrastructure, policies to support bicycling, and programs that support and encourage people who are interested in biking for recreation and transportation.

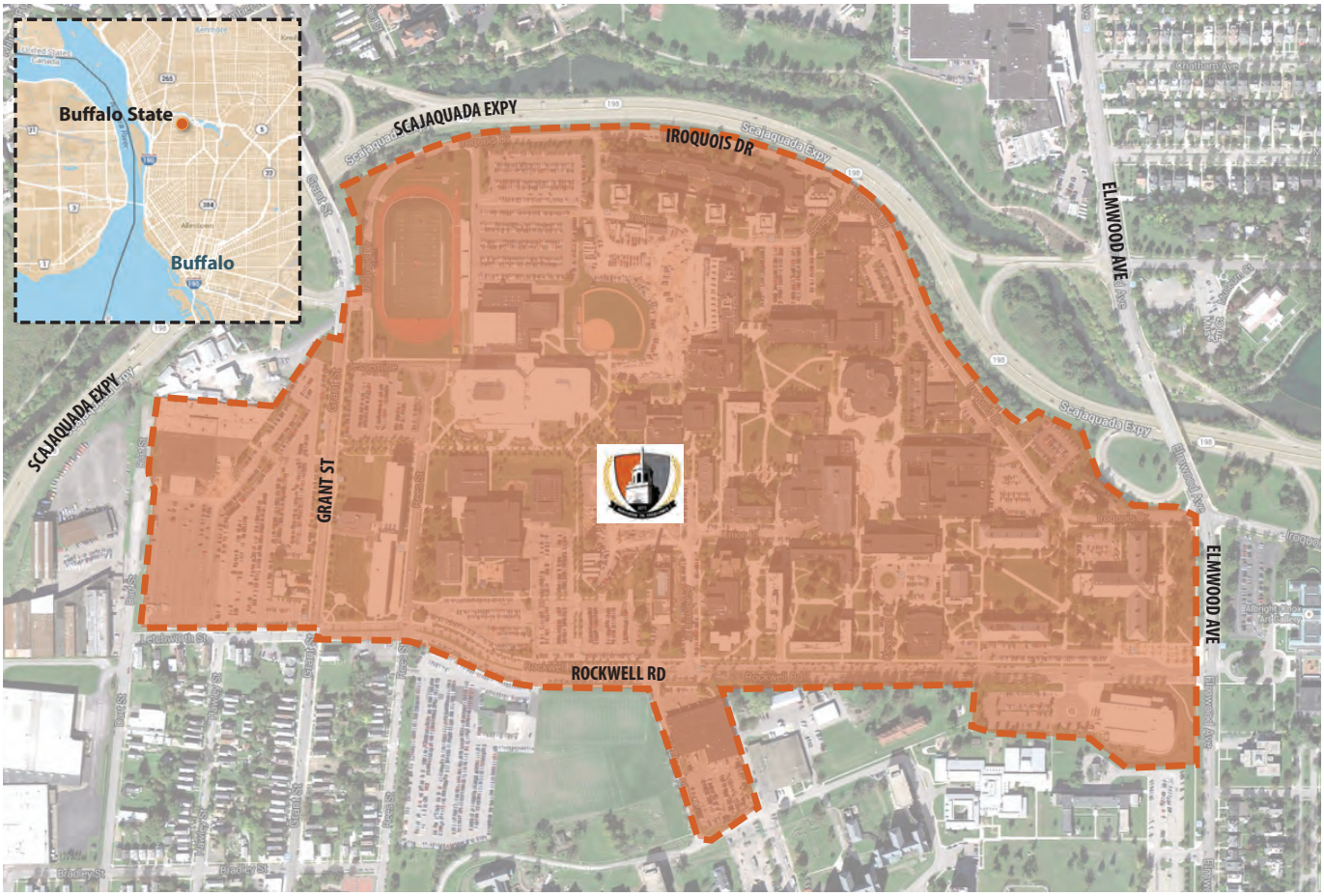
Recent years have seen a general rise in the rate of bicycling in many campuses and cities around the United States. Bicycling is a low-cost travel method which can reduce trip times and provide useful connections to existing transit systems. Nationally and in New York State, many institutions of higher education have promoted and provided facilities, programs, and enforcement to create a bike friendly environment for students, faculty, staff, and visitors.

This Bicycle Master Plan provides SUNY Buffalo State with an assessment of current bicycling conditions, a review of similar campus practices to increase bicycle mode share, and an implementation plan for encouraging bicycling to the College and around the campus. The Plan provides a trail map that will promote a bicycle friendly environment and prepare Buffalo State to apply for the League of American Bicyclists Bicycle Friendly University (BFU) status. The Plan is also being completed shortly before the commencement of the City of Buffalo's Bicycle Facilities Master Plan, which will be completed in 2015.

1.2 STUDY AREA

The Study area for this effort includes the Buffalo State Campus and the areas immediately surrounding the Campus. The majority of the infrastructure and program recommendations are intended for the campus proper, an area defined by Elmwood Ave, the Richardson Olmsted Complex to the south, Grant St. to the west, and the Scajaquada Expressway to the north. Rockwell Rd runs through the south side of the campus, providing the primary east/west corridor for all

modes of traffic, including a NFTA bus route with high ridership. The project team also researched existing conditions and planned bikeway improvements in the neighborhoods to the south and across the Scajaquada Expressway to the north, because many members of the Buffalo State community live in these neighborhoods. Of important note is the fact that Buffalo State experiences a significant amount of winter weather events, which have a pronounced impact on existing and proposed bike facilities. Opportunities to address winter bicycling issues are highlighted throughout the report, and are expanded upon in Appendix B. Additional recommendations are made for consideration by the City of Buffalo in the subsequent city-wide Bike Master plan.



The SUNY Buffalo State study area of the Bicycle Master Plan

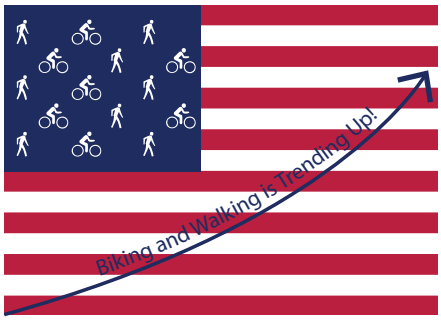
1.3 VISION, GOALS AND OBJECTIVES

The Project Vision Statement and recommended goals and objectives for the Buffalo State Bicycle Master Plan were developed by researching existing national, state, and university goals, policies, and objectives. The Vision Statement will guide the development and implementation of the Buffalo State Bicycle Master Plan. This statement outlines the overall view of bicycling policies, physical network, and culture. This will serve to continue the effort to improve facilities and programming on the campus. Goals and objectives are intended to support Buffalo State's Vision and describe the most important aspects of programs, priorities, and attitudes.

BICYCLE MASTER PLAN VISION

SUNY Buffalo State will strive to create and improve policies, programming, and infrastructure to encourage students, faculty, staff, and visitors to choose bicycling as a mobility choice. Planning and implementation will continue to enhance knowledge, safety, connectivity, and comfort for experienced and inexperienced bicyclists. The College will work with the City, and advocates to create a bicycle friendly environment within and surrounding the campus.

NATIONAL BICYCLE + PEDESTRIAN DOCUMENTATION PROJECT



Bicycle and Pedestrian count standards and forms can be found on the NBPDP website: www.bikepeddocumentation.com

Goals for the Buffalo State Bicycle Master Plan include:

- **Health and Safety** - Provide and promote safe and accessible routes and accommodations for bicycling to promote active transportation.
- **Education and Encouragement** - Implement education and encouragement programs targeted at students, faculty, staff, and visitors to increase the number of bicyclists
- **Enforcement** - Improve enforcement of safe bicycling on campus and bicycle/car interactions on adjacent streets.
- **Implementation** - Create a bicycling network that is integrated into existing and future off-campus facilities. Institutionalize bicycling into all campus planning, design, and construction activities.
- **Evaluation** - Monitor implementation of the Buffalo State Bicycle Master Plan using National Bicycle and Pedestrian Documentation Project standards
- **Sustainability** - Create the environment necessary to make bicycling a viable mode of transportation, so that vehicle trips and resulting carbon emissions are reduced.

One of the primary objectives of this BMP is to guide the campus to becoming a Bicycle Friendly University

Plan objectives are to:

- Provide guidance for a future BFU application for Buffalo State - *Address the 5 E's of the League of American Bicyclists' Bicycle Friendly University (Engineering, Education, Encouragement, Enforcement, Evaluation and Planning) and Incorporate these elements into Plan recommendations.*
- Create a bicycle network - *Identify on- and off-campus improvements that provide connectivity to Buffalo State's campus and accommodate bicycle parking needs.*
- Develop implementation strategies and priorities - *Work with Buffalo State staff and include input from the student population to develop strategies and priorities for implementing future facilities and programs.*
- Provide prioritization for future projects - Develop a project prioritization framework based on the Plan's goals and objectives.

1.4 PLAN AND POLICY REVIEW

Assessing the bicycling environment at SUNY Buffalo State begins with a review of existing plans and policies that relate to campus transportation. This review provides evidence of the level to which bicycling is institutionalized within the college as well as provides a basis for integrating the recommendations of this plan into existing goals and priorities.

The following Buffalo State plans and policies are summarized:

- SUNY Buffalo State Facilities Master Plan Executive Summary
- SUNY Buffalo State Facilities Master Plan Transportation Report
- SUNY Buffalo State Residence Hall Bicycle Policies
- On-campus development projects

Other relevant plans and policies beyond the campus boundaries include:

- New York State Department of Transportation (NYSDOT) Relevant Projects
- Niagara Frontier Transportation Authority (NFTA) Bicycle Policies

The brief summaries below point out the pertinent recommendations and other information necessary to fully understand the context in which the SUNY Buffalo State Bicycle Friendly University planning effort stands.

KEY FINDINGS

Common themes exist among the planning documents summarized. A**ll are forward-looking plans that envision a campus community with less dependence on motor vehicles for transportation.** Policy changes frequently promoted include providing transportation options such as:

- Improved public transit
- More infrastructure for walking and bicycling
- Multi-modal connections to discourage single-occupant vehicles

Providing these sustainable transportation options brings added benefits:

- Promoting more-healthy, active lifestyles;
- Reducing parking demand on campus and potentially freeing up campus space for uses other than motor vehicle parking
- Reducing air pollution and mitigating traffic congestion that impacts the campus and surrounding communities

CAMPUS PLANS AND POLICIES

BUFFALO STATE FACILITIES MASTER PLAN EXECUTIVE SUMMARY (2010)

The Buffalo State Facilities Master Plan sets out a strategy for growth for the period of 2013-2023, which encompasses two full capital cycles. The report is broken up into five sections including:

1. Campus profile
2. Assessment of conditions
3. Analysis of space needs
4. Facilities Master Plan concept alternatives
5. Facilities Master Plan final recommendations

The primary purpose of the master plan is to "assess the needs and identify proposed future capital projects." It also "provides criteria and guidelines for campus facilities development that support the academic mission and strategic vision" for the college. Key goals include the need to 1) renew campus facilities, 2) strengthen the quality of the campus experience, and 3) engage the communities around the campus. Goals 2 and 3—especially goal #3—can be met by becoming a more bicycle-friendly college and by coordinated efforts with the City to provide bike facilities that enhance connectivity to adjacent neighborhoods. The recommendations in the plan to renovate 14 buildings, especially the residence halls and the Student Union, offer prime opportunity to study better end-of-trip facilities (i.e., short- and long-term bicycle parking, showers for bike commuters and related amenities). A new campus life building is another great opportunity and its presence on Rockwell Road could draw more bicyclists to that east-west spine. In addition, the proposed East Parking Garage could have a Secure Parking Area (bike SPA) for bicyclists.

Landscape, Gateway and Path Improvement Recommendations in the Master Plan include:

- Emphasis on the East-West Campus Pedestrian Spine
- Pedestrian bridge connection to the Black Rock Neighborhood across the Scajaquada Expressway
- Improvements to campus open spaces and campus edges to enhance pedestrian circulation

BUFFALO STATE FACILITIES MASTER PLAN TRANSPORTATION REPORT (2010)

The Buffalo State College Facilities Master Plan Transportation Report includes an analysis of existing conditions and series of recommendations related to transportation. Comments include:

- Half of the campus is encircled by the Scajaquada Expressway/SR 198, limiting pedestrian and bike connections to Black Rock and other points north. The interchanges with SR 198 further complicate bicycle and pedestrian access to campus.

- According to the fall 2009 survey, few students, staff and faculty live within walking distance; only 6% of students and 15% of faculty and staff live within 1.5 miles of campus. Combined, this equals roughly 1,000 people as the campus currently hosts 11,654 students and 1,757 faculty and staff.

- Nearly half of students live within a single-seat transit trip to campus.

- Only 1% of those living "within bicycling distance" (typically 1-3 miles; a 1 mile bike commute is typically a 6 minute trip at urban bike speeds) of campus bike to school. 68% of students drive alone to campus, and 11% take the bus.

- Drive-alone rate for those who live beyond 1.5 miles of campus is 87%
- Currently, the school policy generally bans 1st and 2nd year students living on campus from keeping a car unless a justification waiver is obtained; 3rd and 4th year students may have a car on campus.
- The Scajaquada Greenway Trail (Jesse Kregal Pathway) requires access from campus via the Grant Street or Elmwood Avenue bridges, which are not bicycle-friendly.
- The campus offers a relatively complete network of walking paths and crosswalks. Some crosswalk locations need to be improved with markings, signage, or other safety or access upgrades.
- Dining, entertainment, and retail opportunities in the Elmwood Village area are at least ¾ mile from campus. This can be a considerable walk for most (approximately 15 minutes), but only a five-minute bike ride.
- Report indicates that "placement of (bike) racks is generally poor, with no clear pattern observed" and many buildings have racks placed in hard-to-find places or lack bike parking entirely. Most are grid-style, "wheel bender" racks that allow bikes to fall over or be damaged in some way.
- On-site observations at the time of the report found 71 parked bikes on campus
- There are six bus routes that serve campus with two of them running at 10-15 minutes headways during peak periods.
- Report notes that continued development of on-campus housing will boost demand for walking and bicycling facilities
- Recommendation of bike lanes along Rockwell Road but no mention made of the trade-offs necessary as there is no space for standard 5' bike lanes without removing parking, a travel lane or the median.
- Recommendation to use market-based parking rates and "cash out" programs in order to increase demand for alternate modes of transportation. This would complement Buffalo State's broad-based undergraduate transportation fee, which directly funds an NFTA/Metro bus and rail pass.

ON-GOING CAMPUS DEVELOPMENT PROJECTS

There are a number of capital projects on campus which have recently been completed, are currently under construction, or are currently in the final design and bidding stage. Most of these projects will create a more-compact Buffalo State campus and increase demand for walking and bicycling. Some projects, such as the residential tower renovations, will include new bicycle-parking facilities. A portion of the new parking is likely to be covered, offering protection from the elements.

CAPITAL PROJECTS RECENTLY COMPLETED

Technology Building
Project cost: $36.5 million
Construction start: Summer 2011
Construction finish: Summer 2013

Science and Mathematics Complex, Phase 1
Project cost: $52.3 million
Construction start: Summer 2009
Construction finish: Fall 2012

Scajaquada Tower 4 Renovation
Project cost: $7.6 million
Construction start: Spring 2012
Construction finish: Summer 2013

Underground Utility Replacements, Rockwell Quadrangle & Vicinity
Project cost: $10.2 million
Construction start: Spring 2012
Construction finish: Fall 2013

Argo Tea Café
Project cost: $630,000
Construction start: Summer 2013
Construction finish: Spring 2014

CAPITAL PROJECTS IN CONSTRUCTION, SPRING 2014

Science and Mathematics Complex, Phase 2
Project cost: $30.9 million
Construction start: Fall 2013
Construction finish: Fall 2015

Houston Gymnasium Rehabilitation
Project cost: $27 million
Construction start: Fall 2012
Construction finish: Summer 2014

Buckham Hall Rehabilitation for Surge Space: Supporting the Renovation of Caudell Hall
Project cost: $1.6 million
Construction start: Fall 2013
Construction finish: Spring 2014

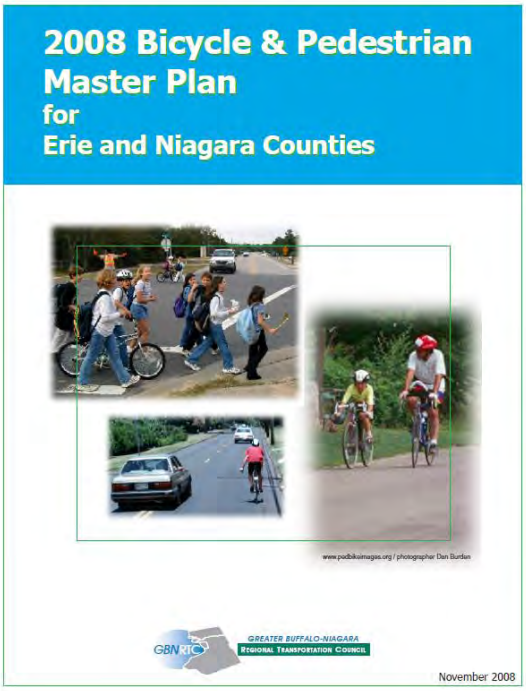
Exterior Signage Replacement
Project cost: $1.1 million
Construction start: Spring 2014
Construction finish: Fall 2014

Caudell Hall Renovation
Project cost: $21.2 million
Construction start: Summer 2014
Construction finish: Spring 2016

CAPITAL PROJECTS IN DESIGN OR BIDDING PHASE,

Press Box
Project cost: $1.9 million
Construction start: Fall 2014
Construction finish: Summer 2015

Upton Hall Renovation, Phase 1
Project cost: $48.3 million
Construction start: To be determined
Construction finish: To be determined



OTHER RELEVANT PLANS & POLICIES

2008 BICYCLE AND PEDESTRIAN MASTER PLAN FOR ERIE AND NIAGARA COUNTIES

The Greater Buffalo-Niagara Regional Transportation Council adopted this master plan in November of 2008. The plan's primary goal was to "make walking and bicycling integral parts of daily life in the region" by recommending projects, programs and policies for a ten-year period. It includes over one hundred actions and recommendations with a time table of expected completion. Sections of the report included chapters on enhanced street design for walking and bicycling, bike parking, transit connections, education and marketing programs, enforcement efforts, crash analysis and an implementation plan. Though not specific to Buffalo State, GBNRTC's plan included a clear recommendation for the development of projects and programs to encourage more bicycling to high school and college/ university campuses in the region.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) RELEVANT PROJECTS

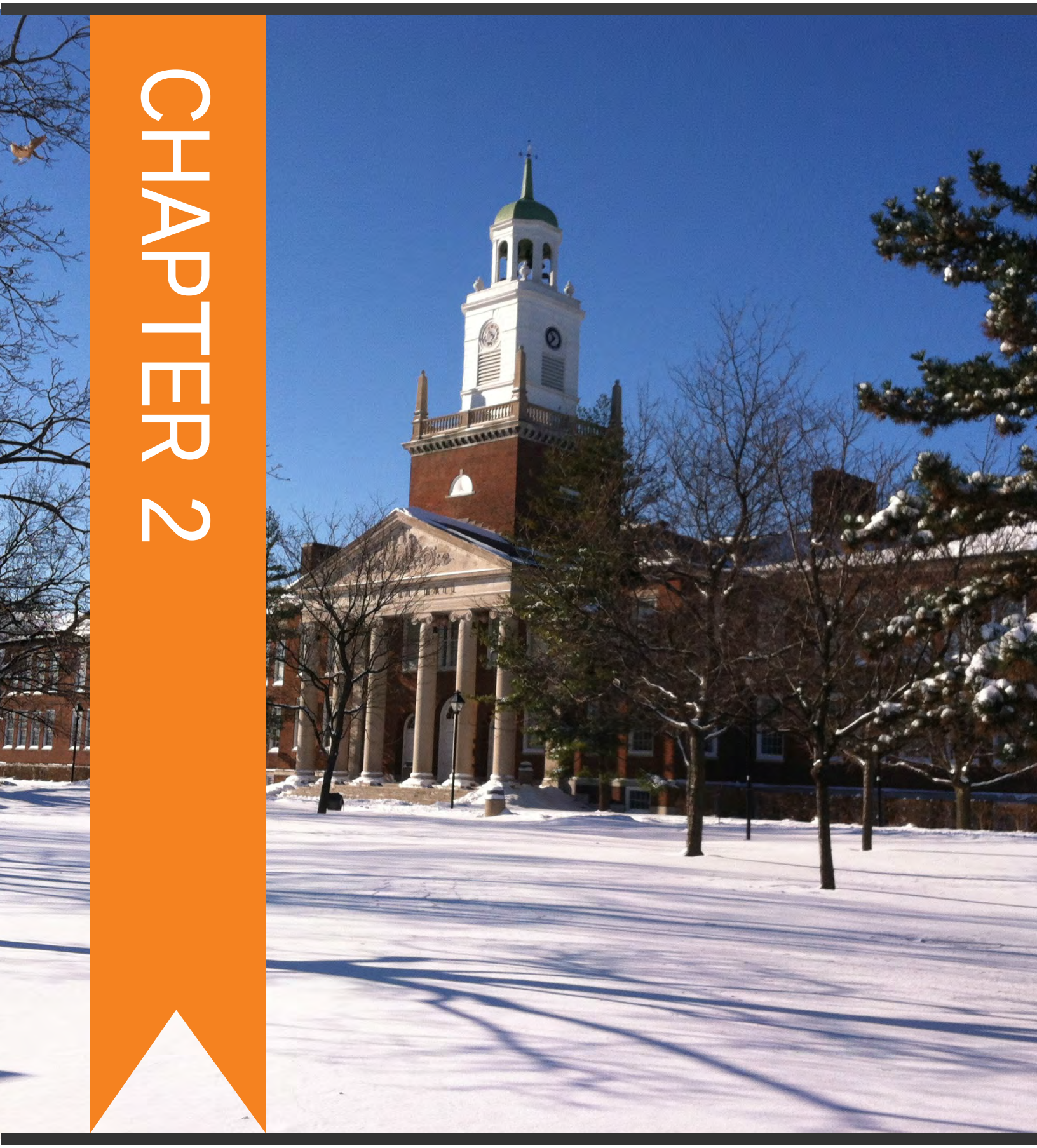
NYSDOT is in the process of developing a long-term plan for redesign of the Scajacquada Expressway. The current preferred plan (Alternative 2A) eliminates nearly all of the free-flowing highway on- and off-ramps from the expressway to the Grant Street and Elmwood Avenue bridges. The would be replaced by signalized intersections, tighter turning radii to slow traffic transitioning from the future parkway to the street grid that lies adjacent to the Buffalo State campus. The future elimination of the on/off ramps would reduce pedestrian and bicycle conflict points to a single intersection per bridge relative to today where walkers and bicyclists encounter multiple conflicts at the on/off ramps. While the design work and community outreach is on-going, the estimate $23m project is intended to begin in 2020 (according to NYSDOT's website).

NIAGARA FRONTIER TRANSPORTATION AUTHORITY (NFTA) BICYCLE POLICIES

NFTA provides bus and rail transit that serves the Buffalo State campus and surrounding area. According to NFTA, in 2013 up to 88% of all buses are equipped with front-mounted racks with the capacity to carry up to two bicycles. The NFTA's goal is to increase that to 100% as older buses without racks are retired and all new models include them.

The NFTA *Bikes on the Rail Program* allows rail users to bring a bike on the Metro Rail at any time, in accordance with the following rules: no bike riding in stations, do not carry bikes up or down stairs, enter the front door of the first rail car and enter the rail car only after all other passengers have boarded or exited. In addition, two bikes are permitted in the area designated for wheelchairs in each rail car. Also, passengers must keep their bikes attended at all times and not block the aisles.

CHAPTER 2



L.A.B. BICYCLE FRIENDLY UNIVERSITY PROGRAM

Chapter Contents:

2.1 WHAT IT MEANS TO BE "BICYCLE FRIENDLY"

Bicycle Friendly designations are awarded to states, communities, businesses, and universities. It is a reflection of a commitment to healthy transportation, safe environments, and efficient transportation choices.

Universities are ideal bicycle friendly environments due to their density of the built environment and population. Riding to and circulating throughout campuses via bicycle is often more efficient than using a personal vehicle. Increased bicycling optimizes limited space, saves the college money spent on parking and healthcare, and provides affordable transportation options for students, faculty, staff and visitors. Some students seek a college with quality bicycle facilities and therefore, a bike friendly environment can become a draw for new students.

Being bicycle friendly is more than quality pathways and bike racks - it is a culture. To foster a culture that supports the integration of bicycling into transportation, the College must also provide end-of-trip facilities, encourage ridership through programming, offer education, and enforce bicycling policy.

The League of American Bicyclists provides a framework for the built environment and culture by focusing on five primary areas: engineering, encouragement, education, enforcement, and evaluation/planning.

Bike facilities and infrastructure improvements, coupled with programs and policies, can promote active bicycle cultures, which serve as the foundation of Bicycle Friendly Universities

2.2 THE 5 E'S

While every campus is different - in context, climate, student composition, and culture - the five E's serve as a standard across all universities to determine and evaluate the level of bicycle friendly status.

These five E's will be used to evaluate Buffalo State and provide recommendations for improving the bicycling conditions on campus and promoting a bike culture.

TABLE 2.1: THE 5 E'S

THE 5 E's	DESCRIPTION
ENGINEERING	The most visible sign of a welcoming place for bicycling is the presence of high-quality and well maintained infrastructure including: • A well-connected bicycling network, within and adjacent to campus • Conventional and protected bike lanes and shared use paths • Policies to ensure connectivity and maintenance of these facilities • Secure, convenient, and readily available bike parking - as well as showers and locker facilities.
EDUCATION	Educating students and staff is key to building a safe and supportive bicycling culture and includes: • Bicycle safety education. confident riding training, and helmet give-aways • Online tips, rules, regulations, and tools (social media too.) • Information about rights and responsibilities for all road users.
ENCOURAGEMENT	A supportive bicycling environment where faculty, staff and students are encouraged to consider riding can be very effective in increasing participation. This can be readily implemented by providing a variety of fun opportunities and incentives to choose biking for transportation trips: • Bike Challenges, National Bike Month, and Bike to Campus Day • Wayfinding tools like producing maps, route finding signage, and mobile apps. • Incentive programs offering prizes or Student Union discounts
ENFORCEMENT	An effective bicycling environment has rules and regulations that are understood and enforced fairly and appropriately and address the safety of all road users and include: • Updated rules and regulations related to riding and parking • Fair and equitable enforcement and trained law enforcement officers • Theft prevention and enforcement
EVALUATION	Evaluation: Measuring and benchmarking is a necessary component of understanding and running a successful bicycling program and includes: • Understanding trips and bicycling participation rates • Evaluating facilities, their performance, and usage • Tracking bike thefts and crashes.

2.3 BECOMING A BICYCLE FRIENDLY UNIVERSITY

The Bicycle Friendly University (BFU) program is part of the Bicycle Friendly America (BFA) program, which is administered by the League of American Bicyclists (LAB), a national bicycling advocacy organization based in Washington, D.C. BFA is a national initiative intended to encourage cities, towns, states, businesses, and colleges and universities across the country to improve their local bicycling environment and to recognize entities that are successfully doing so. The program provides communities and organizations with invaluable resources related to bicycle planning and programming. The LAB also generates positive media attention at the national and local level for those that earn a designation.

Each year, the League assesses all 50 states. Communities, businesses, and universities are assessed through a voluntary application process. All applicants that seek status as a Bicycle Friendly Community, Bicycle Friendly Business, or Bicycle Friendly University receive customized feedback and technical assistance. Applicants may earn one of five levels of recognition: Bronze, Silver, Gold, Platinum and Diamond.

TABLE 2.2: DESIGNATED BF ENTITIES IN THE STATE OF NEW YORK AS OF FEBRUARY 2014

Bicycle Friendly Community	Bicycle Friendly Business	Bicycle Friendly University
New York City (Silver)	Alta Planning + Design (Platinum)	Cornell University (Bronze)
Rochester (Bronze)	GObike Buffalo (Silver)	Rochester Institute of Technology (Bronze)
Buffalo (Bronze)	Random House, Inc, NYC (Bronze)	State University of New York at Buffalo (Bronze)
--	R Community Bikes, Rochester (Bronze)	Alfred University (Bronze)
--	Nelson Nygaard Consulting Associates – NYC (Bronze)	--

2.4 ACHIEVING BICYCLE FRIENDLY UNIVERSITY DESIGNATION

The evaluation criteria for the BFU program is based on five categories, often referred as the "Five E's": Engineering, Education, Encouragement, Enforcement, and Evaluation & Planning. The Engineering category refers to infrastructure-related elements, such as bicycle lanes, bicycle parking, and trails. The other four E's refer to non-infrastructure efforts, such as organized bicycle rides, media campaigns, and safety education. Research has shown that a comprehensive approach to bicycle-friendliness is more effective than a singular approach that would address infrastructure issues only.

The Bicycle Friendly University (BFU) program sets specific criteria for establishing and improving the bicycle-friendliness of campuses. The school must complete a detailed questionnaire developed by the League of American Bicyclists in order to apply for recognition. One opportunity to apply occurs each year with applications generally due in early August.

Submitted applications are reviewed, and Universities are either designated one of four medal categories (Platinum, Gold, Silver, or Bronze), given an honorable mention, or do not receive recognition. The bicycling environments that must be present to receive each designation are outlined below:

TABLE 2.3: BICYCLE FRIENDLY UNIVERSITY SCORES

DESIGNATION	KEY CHARACTERISTICS
Platinum	Campus exemplifies what it means to be a Bicycle Friendly University, with high marks across the board. In short, people are on bikes everywhere. • Campus has a well-connected, comfortable and safe bicycling network • There are excellent bicycle parking facilities • Outstanding bicycle education programs • A supportive police force
Gold	The Campus has a strong bike culture, but may still need to offer more accessibility in the bike network. • Campus has a well-developed bicycle network, but it has some gaps • Programs to encourage more bicycling could be developed further • Bicycling education could be strengthen
Silver	Campus welcomes bicycles, but two or three of the E's are not well developed. • Focus should be placed on what E's are not well developed • Strategies should be devised to ensure progress is being made in all 5 E's categories
Bronze	The bicycling network and supporting programs/policies are generally not well developed, which leads the Campus to feel only modestly welcoming to bicyclists • Steps are being taken in the right direction to address all 5 E's • Only one or two E's are actively being focused on throughout campus • More focus and commitment by the Campus community needs to be taken to elevate and prioritize the viability of bicycling on campus
Honorable Mention	Campus is just beginning to address the needs of bicyclists on campus • There are currently few bicyclists on campus • The majority of students/faculty are not being encouraged to bicycle • More focus and commitment by the Campus community needs to be taken to room for improvement in all 5 E's categories
No Recognition	The needs of bicyclists on campus are not being addressed • There are currently few to no bicyclists on campus • The great majority of students/faculty are not being encouraged to bicycle • Most, if not all, of the 5 E's are not being developed to improve bicycling conditions

2.5 BICYCLE FRIENDLY UNIVERSITY SCORE CARD

By design, the process of filling-out the detailed questionnaires is an educational tool for institutions seeking national designation. The applicant institution not only learns the variety of programmatic, policy, and infrastructure initiatives that contribute to becoming bicycle-friendly, but also learns the areas in which they excel or need improvement.

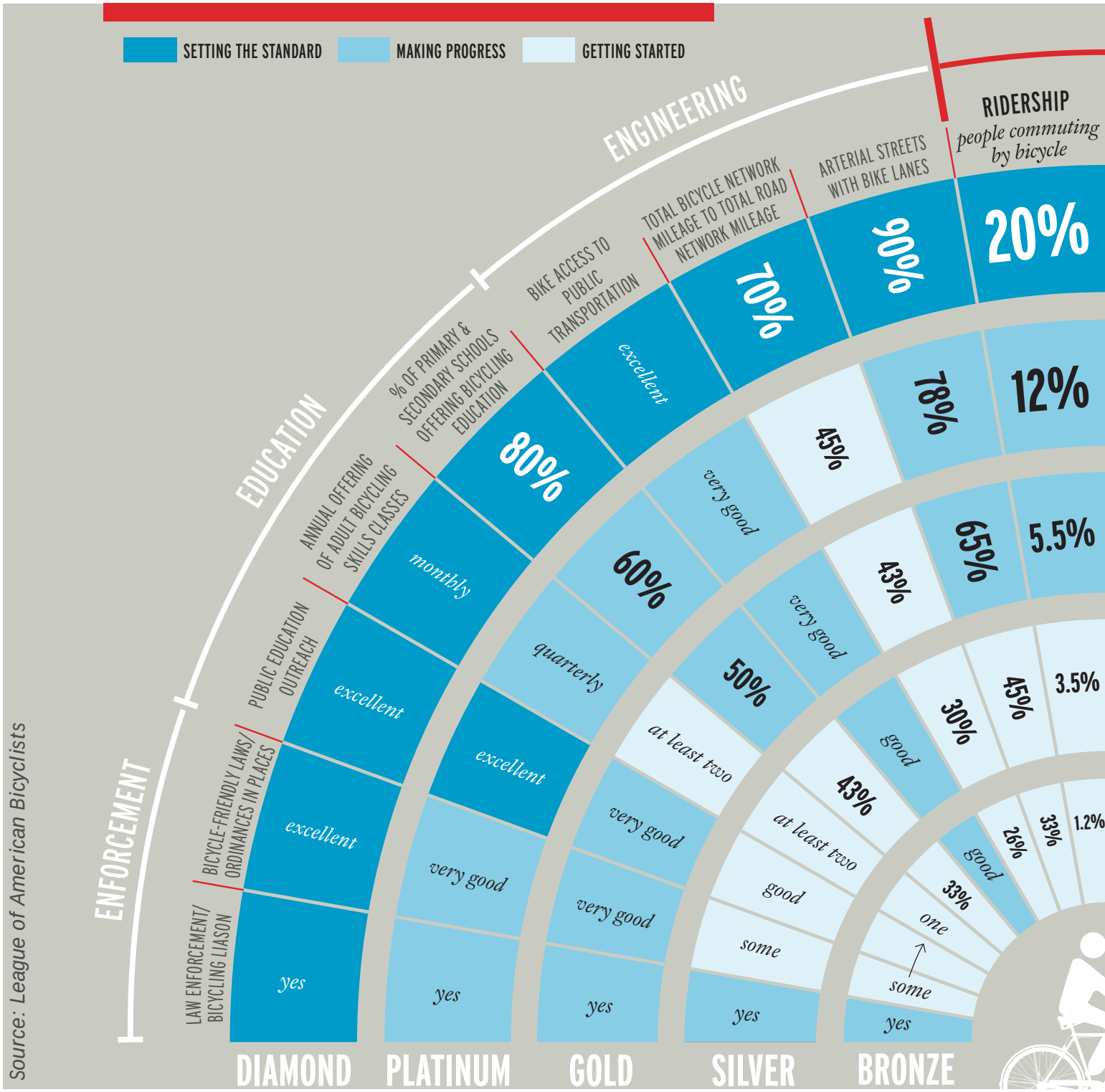
Table 2.4 offers a dashboard assessment of Buffalo State based on key elements of the Bicycle Friendly University designation criteria. Developed by the LAB, the scorecard is not a complete reflection of the criteria weighted within the Bicycle Friendly University application, but rather offers a practical tool for identifying areas in need of improvement in Buffalo State's bicycling environment.

TABLE 2.4: . BICYCLE FRIENDLY UNIVERSITY SCORE CARD FOR SUNY BUFFALO STATE

Bicycle Friendly University Score Card	
Engineering	
Does your campus have a well-connected bicycling network?	0
Is bike parking readily available throughout the campus?	1
Is the college or university easily accessible by bike?	0.5
Evaluation	
Does your school have a current comprehensive bicycle plan?	0.5
Does your college or university have a bicycle program manager?	0
Enforcement	
Do campus safety/law enforcement officers receive training on the rights and responsibilities of all road users?	0
Is there a program on campus to prevent bike theft?	0.5
Education	
Does the school offer bicycle education classes for students and staff?	0
Encouragement	
Is there an active bicycle advocacy group at the college or university?	0
Is there an on-campus bike center for rentals and repairs?	0
Total Score:	**2.5/10**

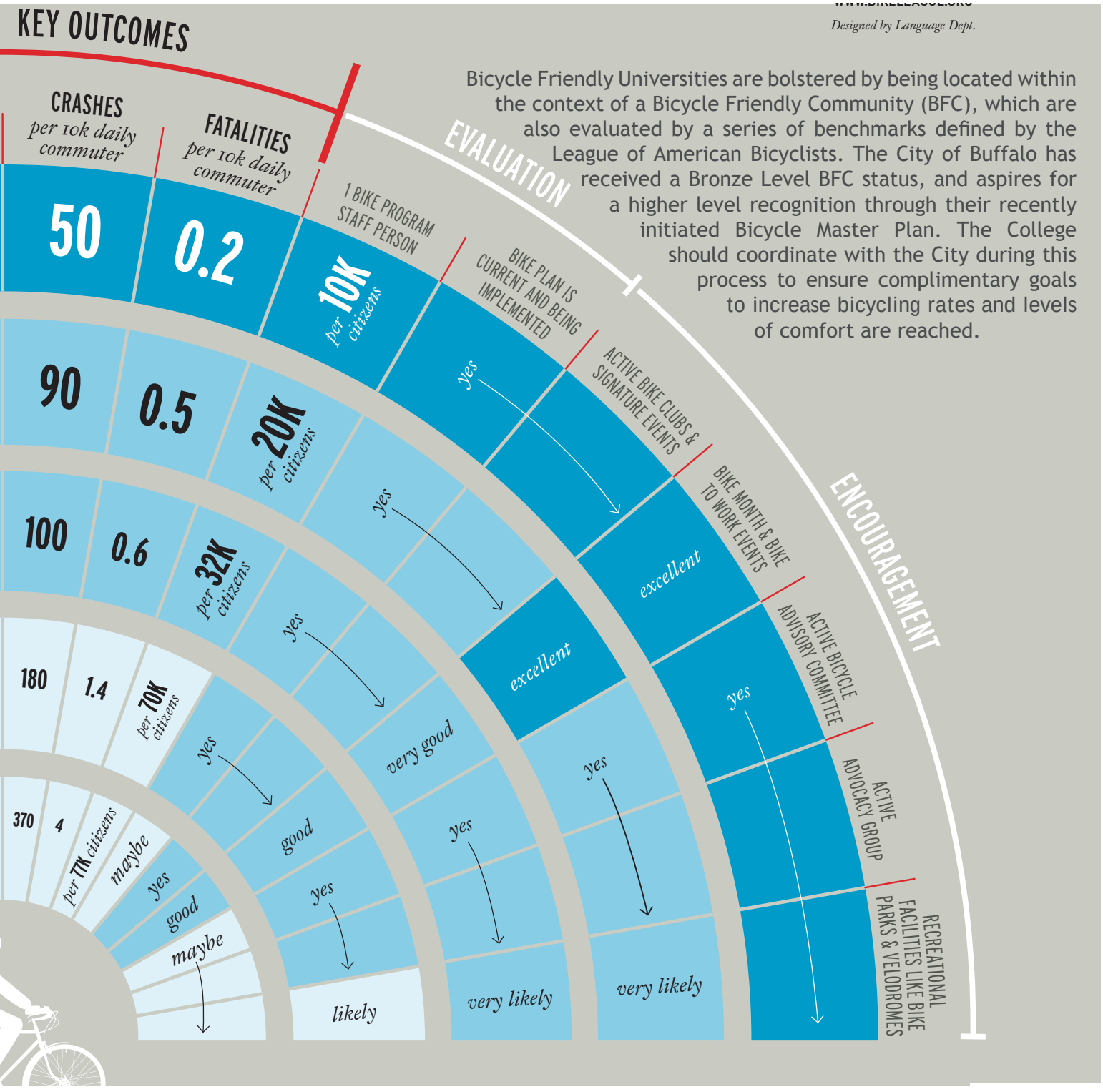
The scorecard reflects progress that the campus has made in providing bicycle parking and is moderately accessible from adjacent neighborhoods. Additionally, credit is given to Buffalo State to beginning the development of this Bicycle Friendly University Planning Study as a comprehensive bicycle plan. Though GObike Buffalo is an important advocacy voice for the community, the BFU program expects schools to have dedicated advocacy groups and other groups similar to the Transportation Committee focused on campus matters and comprised of students, faculty, and staff.

THE BUILDING BLOCKS OF A BICYCLE FRIENDLY COMMUNITY



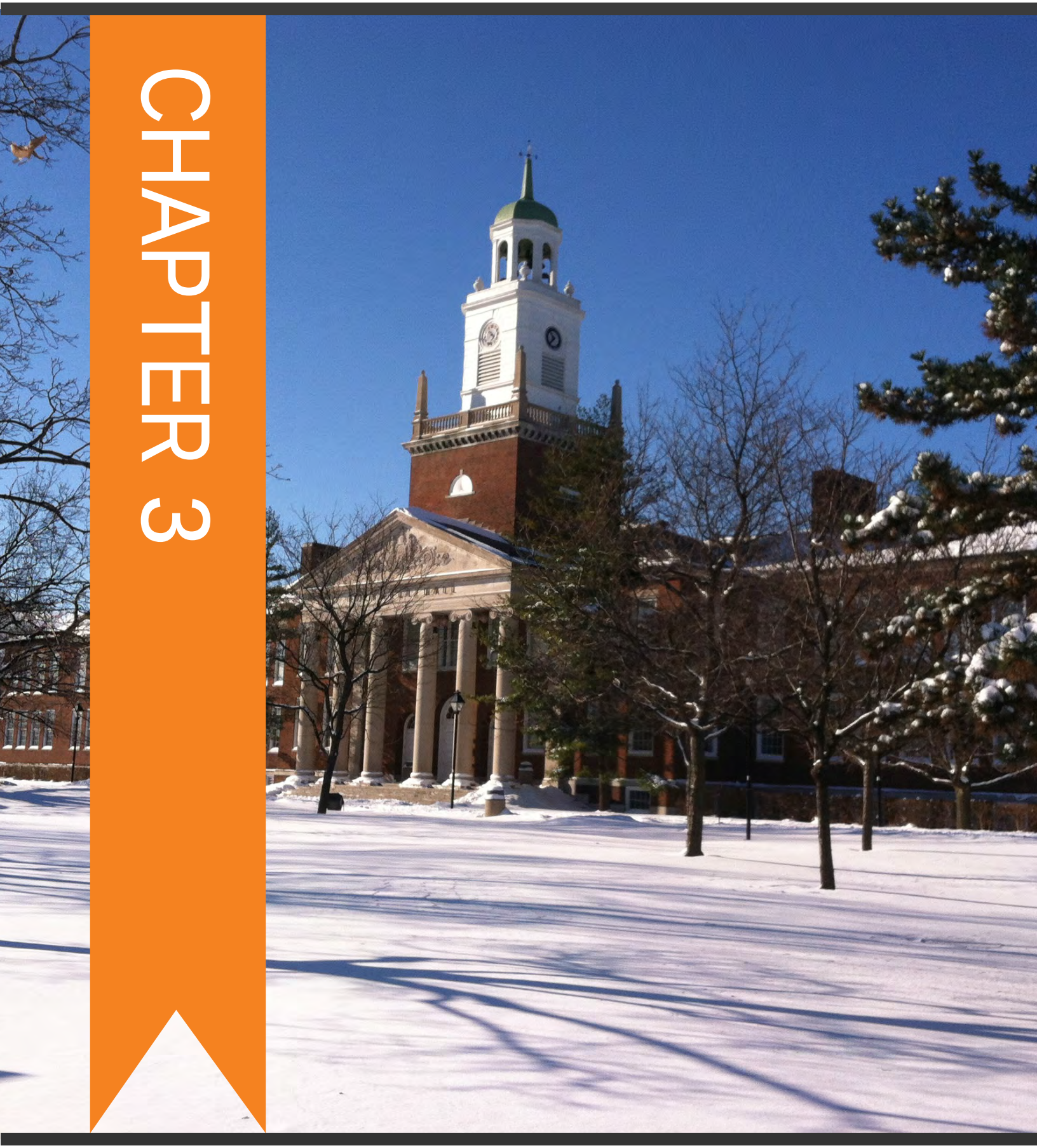
Source: League of American Bicyclists

Based on the BFU scorecard assessment, Buffalo State has room for improvement within each of the "Five E" categories before applying for BFU status. **The College should strive to answer "yes" for roughly half of the score card questions in order to position itself well for designation as a BFU.** Again, the score card above is only a high-level assessment. A far more-detailed questionnaire developed by the LAB will ultimately be required for recognition. The 74-question, on-line form can be found at: http://www.bikeleague.org/content/universities and is included in Appendix C.



Bicycle Friendly Universities are bolstered by being located within the context of a Bicycle Friendly Community (BFC), which are also evaluated by a series of benchmarks defined by the League of American Bicyclists. The City of Buffalo has received a Bronze Level BFC status, and aspires for a higher level recognition through their recently initiated Bicycle Master Plan. The College should coordinate with the City during this process to ensure complimentary goals to increase bicycling rates and levels of comfort are reached.

CHAPTER 3



EXISTING CONDITIONS

Chapter Contents:

3.1 BICYCLE FRIENDLY UNIVERSITY AUDIT

Using the Five E's as a framework, the following is an audit of the current conditions for bicycling in and around the Buffalo State campus. The audit was completed according to the current Bicycle Friendly University (BFU) application and used to assess existing conditions of facilities, planning, policy, and programming. This audit complements the assessments and recommendations in the campus transportation master plan study. Both bicycle parking and the connectivity of the bicycling network are critical to the safety and convenience of bicycling on campus.

3.2 CAMPUS CONTEXT AND PROFILE

Within Buffalo State's campus, bicycle mobility and access is limited. Almost no specifically-designated on- or off-street bike facilities exist. One exception is the recently-installed cycle track along the Elmwood Avenue edge of Buffalo State. The campus has a limited road network, funneling cars to designated parking areas on the edge of the campus. The campus streets do not provide connections through campus. A sidewalk/path network provides internal circulation for pedestrians, whether they live in on-campus housing, parked in a remote parking area, or arrived via transit. Bicycling on narrow sections of the sidewalk/path network can present a hazard for pedestrians and cyclists and limits the speed and efficiency of the bicycle.

BUFFALO STATE RESIDENCE HALL BICYCLE POLICIES

Buffalo State Residence Hall policies do not explicitly address bicycle access, usage, parking, or storage. Bicycle usage and ownership are neither encouraged nor discouraged within campus materials. Current practice allows students to store personal bikes within their campus dorm or apartment. Residence Halls do not provide areas for indoor or covered bicycle storage, though some have bike racks outside. Bicycles parked at outdoor bicycle parking facilities are subject to campus policies that apply to all student possessions. Students are required

to remove their personal belongings at the end of the year. Any unclaimed items are deemed abandoned and are discarded.

There are also no specific policies related to bringing bicycles into academic or campus life buildings. This seems to be informally regulated by people's sense of courtesy, the lack of lobby space in some buildings and fire exiting requirements. Some faculty reportedly bring their bicycles indoors and park them into private office to ensure security and protection from the elements.

The chart below provides a snapshot of the profile of Buffalo State as would be indicated on a League of American Bicyclists BFU application. The Profile covers population, mode share, BFU history, staff, budget, and web presence.

TABLE 3.1: BUFFALO STATE CAMPUS CONTEXT AND PROFILE

BFU AUDIT CATEGORY/QUESTION	STATUS
Setting/Context	Urban, medium city
City Population	261,310
Student Population	11,654
Faculty Staff Population	1,757
Bicycle Mode Share *(The percentage of travelers using a particular type of transportation, in this case bicycles, or number of trips using said type)*	1%
Previous BFU application submission?	No
BFU Status	None
Bicycle Program Manager/Staff	Not At This Time
Bicycle program webpage	Not At This Time
Bicycle Program budget	Not At This Time

3.3A ENGINEERING: INFRASTRUCTURE

A combination of infrastructure improvements and policy measures can improve the conditions for bicycling on campus for both commuters and those who live on campus. Additionally, given the relatively small footprint of the campus, Buffalo State can create opportunities for bicycle commuters to arrive at campus, secure their bike in long-term bicycle parking, and circulate as a pedestrian within campus. In order for this to be a practical solution, bicycling access to and from campus must be improved in tandem (per the following section).

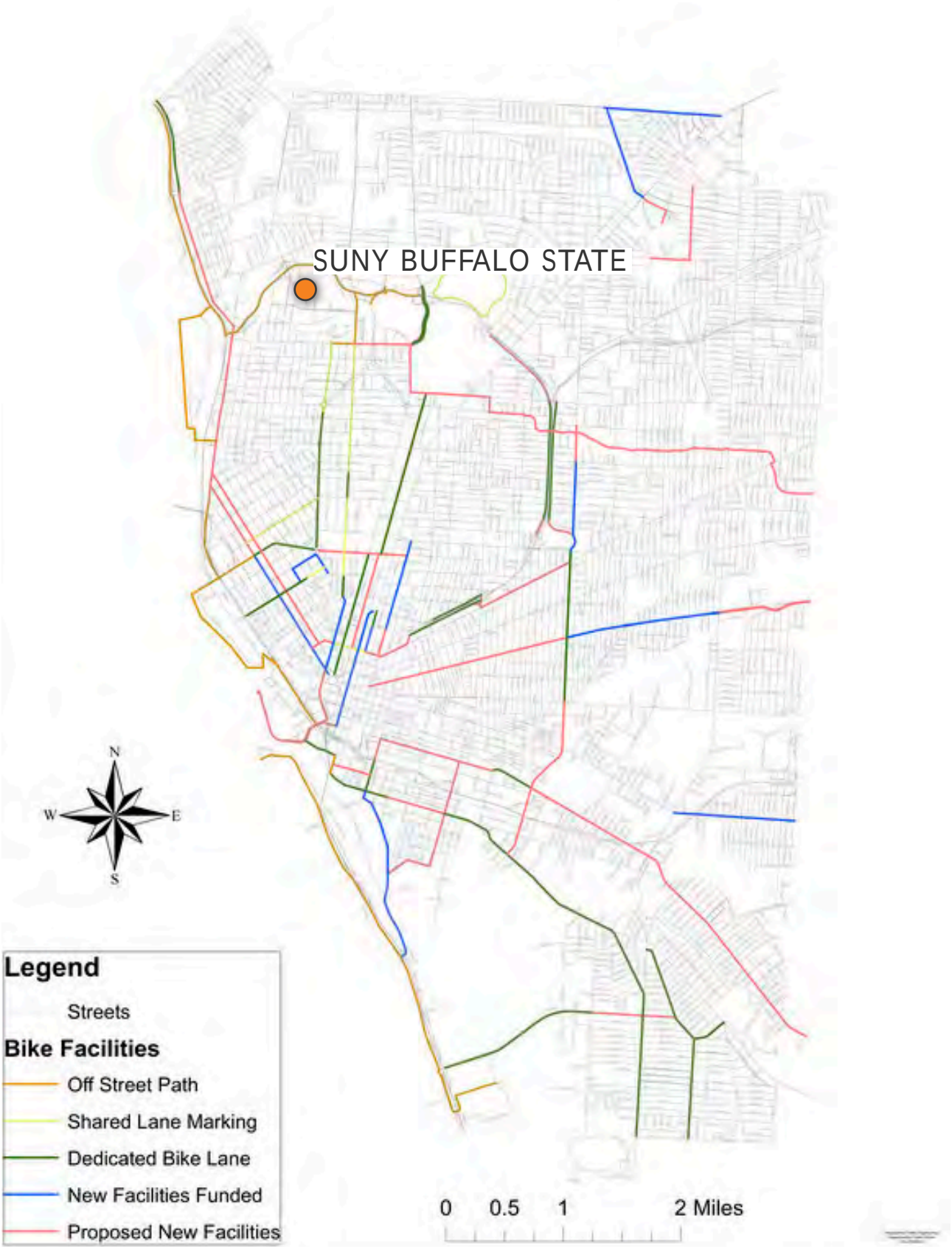
BICYCLE ACCESS TO AND FROM CAMPUS

City-wide, the network of bike lanes and shared use paths has grown from 26 miles in 2009 to 59 miles in 2013. On and off-street bicycle facilities in the vicinity of campus include:

ON-STREET BIKEWAYS

- Richmond Ave bike lanes between Colonial Circle and Symphony Circle (2.4 miles)
- Delaware Avenue bike lanes through Delaware Park (1.1 miles)
- Elmwood Ave shared lane markings ("sharrows") between Summer and W. Delavan (2.4 miles)
- Richmond Ave sharrows between Forest and Colonial Circle (1.0 mile)

FIGURE 3.1: CITY OF BUFFALO BICYCLE INFRASTRUCTURE MAP



Source: GObike Buffalo

- Connecticut St sharrows between Richmond and Niagara (1.4 miles)
- Delaware Park ring road sharrows (1.8 miles)
- Elmwood Ave sharrows between Forest and W. Delavan (0.8 miles)
- Humbolt Parkway bike lanes between E. Delavan and Northampton (2.0 miles)

OFF-STREET PATHS AND CYCLE TRACKS

- Scajaquada /Jesse Kregal Path (2.3 miles)
- Forest Avenue path (0.4 miles)
- Elmwood Avenue path/cycle track (0.7 miles)

FUNDED AND PROPOSED ON- AND OFF-STREET PATHS

- Niagara St between Niagara Square and Porter Ave (2.5 miles)
- Delavan Ave between Jefferson and Delaware (1.3 miles)
- Delaware Ave between Delavan and Forest (0.8 miles)
- Forest Ave between Delaware and Elmwood (1.0 mile)
- Niagara St between Porter Ave and Ontario St (6.4 miles)
- Prospect Ave between Georgia and Niagara (3.3 miles)

Elmwood Avenue Cycle Track from Rockwell Rd provides a key connection for bicyclists

CAMPUS CONNECTION SUMMARY

Despite this growing bikeway network, Buffalo State remains somewhat disconnected from adjacent neighborhoods. The northern half of Buffalo State is bordered by the Scajaquada expressway/SR 198, which significantly limits pedestrian and bicycle access to campus. The 2.3 mile Scajaquada /Jesse Kregal Path is an important transportation and recreation corridor that is proximate but does not connect to the campus. The Grant Street and Elmwood Avenue bridges link to the path but are not comfortable connections for bicyclists because of the lack of wide shoulder, narrow sidewalks, traffic speeds and turning vehicles. It should be noted that the Elmwood Avenue bridge will be replaced by NYSDOT in the coming years, however, and will create a more comfortable connection for bicyclists and pedestrians.

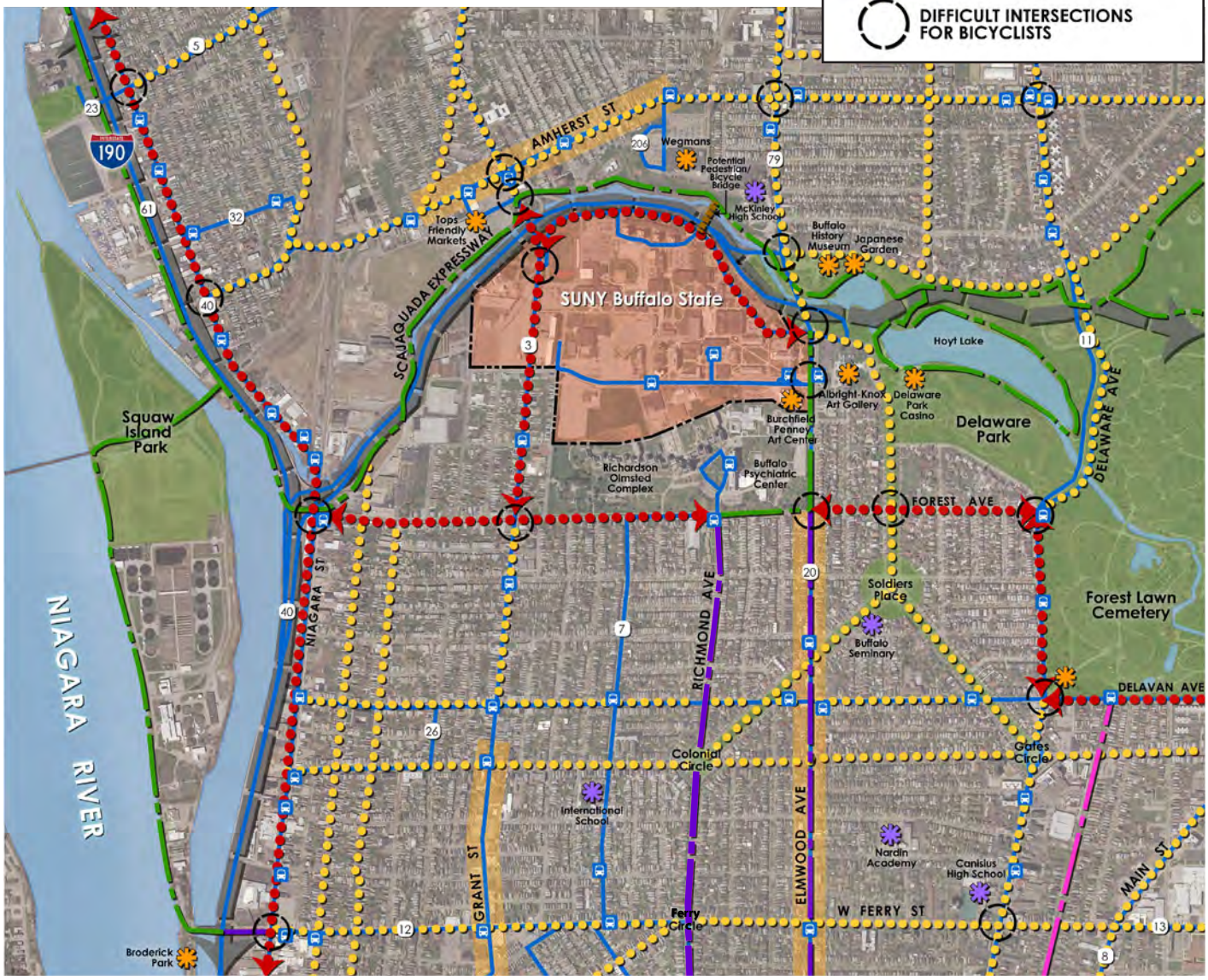
The southern end of campus directly links to a number of neighborhoods, as well as a dense, inter-connected street grid and the historic Olmsted Park and Parkway System. Currently, bike lanes and shared lane markings exist only along Elmwood, Linwood and Richmond avenues, with planned bike facilities along Forest and West Delavan. In the future, there is substantial opportunity to capitalize on this connectivity and to utilize the existing low-speed, low

A connection should be made from the campus to the 2.3 mile Scajaquada /Jesse Kregal Path (Source: S/JK Path Committee)

volume residential streets as enhanced bike routes, sometimes called “bicycle boulevards”.

As shown in Figure 3 below, there are a number of destinations and commercial districts within a relatively-easy ten minute (<2 mile) bike ride from campus. Many of these destinations are beyond a convenient walk, so many students, faculty and staff may be tempted to drive, or not take the trip at all. With appropriate encouragement programs, new on-road and path infrastructure and plentiful bike parking, more people would choose to bike to the area’s many destinations. As this latent demand for local circulation by bike is satisfied, members of the Buffalo State community are likely to feel more comfortable bicycling longer distances as well.

FIGURE 3.2: EXISTING CONDITIONS ASSESSMENT MAP



3.3B ENGINEERING: BICYCLE PARKING INVENTORY

As noted in Section 1.3, the Buffalo State Facilities Master Plan Transportation Report documented poor placement and limited provision of bicycle racks. The report also noted that most racks do not meet national best practices for bicycle parking as defined by the Bicycle Parking Guidelines document from the Association of Pedestrian and Bicycle Professionals. Many of the bike racks used on campus do not support bike frames in two places, which allows bikes to fall over and/or incur damage. Additionally, bike racks are often located in inconvenient places or hidden from view. **Observations of bicycle parking behavior indicate that the existing bicycle parking locations and number of spaces at those locations is not meeting the current demand.**

The image below illustrates bike parking type and placement that meets national best practice standards. A series of inverted "U" bike racks are located proximate to the building's entrances and within plain sight of bicycle and pedestrian traffic.

Bicycle rack selection and siting are considered an important metric for a Bike Friendly University designation. Many colleges and universities in the US have spent considerable resources to provide convenient, plentiful, protected and covered bike parking as a way to promote bicycling on campus.

The inverted U bicycle racks placed outside of the Technology Building adhere to the standards for bicycle parking defined by the Association of Pedestrian and Bicycle Professionals

FIGURE 3.3: BICYCLE PARKING CAPACITY MAP

Legend

Capacity

- 4 - 10
- 4 - 10 (Funded)
- 11 - 17
- 18 - 24

- SAMC
- Technology Building
- R-12 Lot

This map shows the capacity of each bike rack found on campus. The capacity of each rack was determined by the number of slots per rack. However, the actual amount of parking per rack using unconventional means exceeds the listed amount.

Total Bike Racks: 29 (33)
Total Parking Spaces: 303 (327)

Building List

No.	Name	No.	Name
1	Sports Arena	20	South Wing
2	Moore Hall	21	Porter Hall
3	Tower IV	22	Bishop Hall
4	Tower III	23	Neumann Hall
5	Tower II	24	Moot Hall
6	Tower I	25	Cleveland Hall
7	Science & Math Complex (SAMC)	26	Bacon Hall
8	Science Bldg	27	Donald Savage Bldg
9	Upton Hall	28	Ketchum Hall
10	Cassety Hall	29	Rockwell Hall
11	Bulger Comm Ctr	30	Campus House
12	Caudell Hall	31	Burchfield-Penney Art Center
13	Butler Library	32	Clinton Center
14	Campbell Student Union	33	Moore Complex
15	Chase Hall	34	Houston Gym
16	Weigel Health Ctr	35	Buckham Hall (Campus West)
17	Technology Bldg	36	Student Apartment Complex
18	Twin Rise	37	Classroom Bldg
19	North Wing	38	Perry Hall

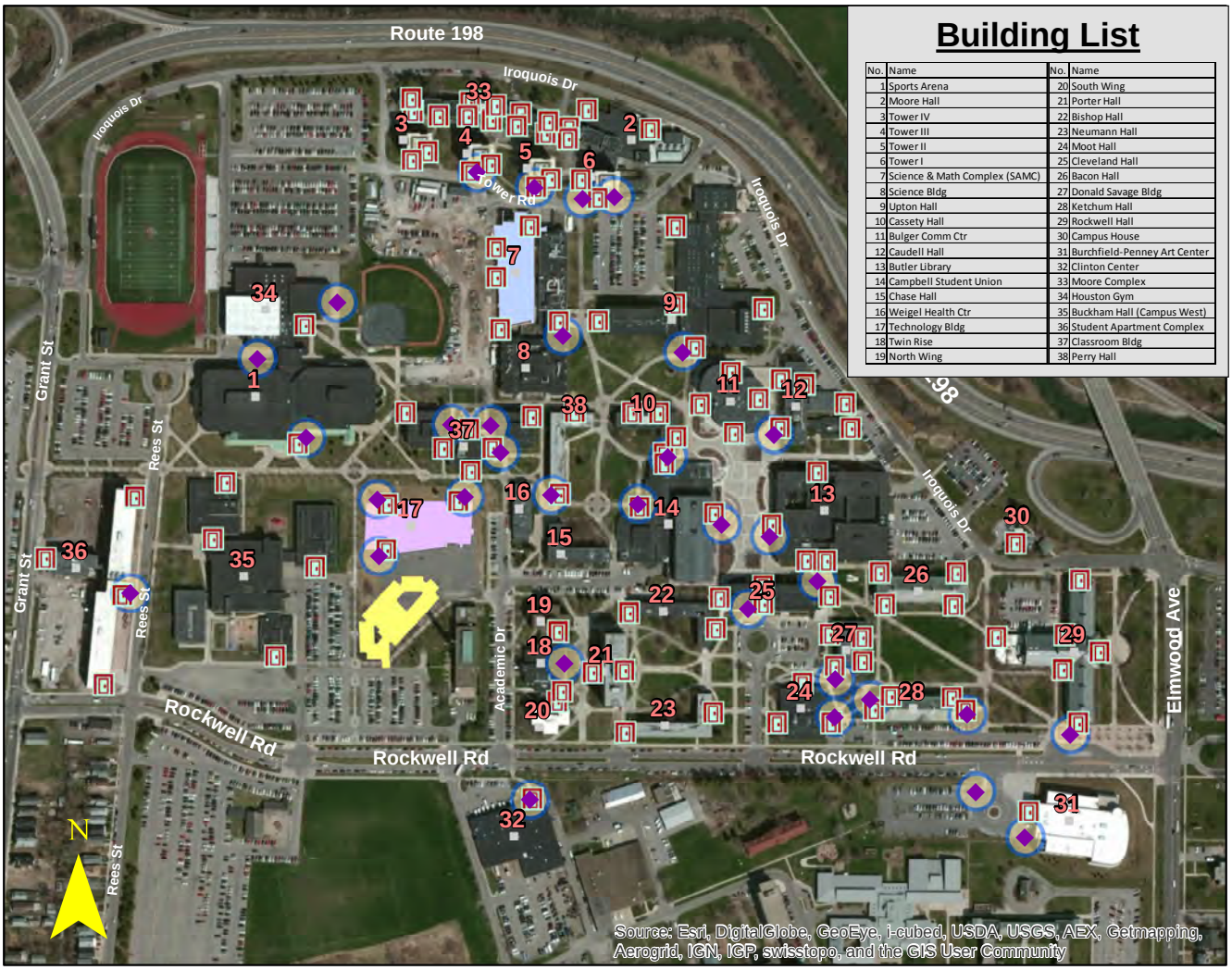
Author: Timothy Tate, Buffalo State (December 2013)

FIGURE 3.4: BICYCLE RACK COVERAGE MAP

Legend

- Bike Racks
- Bldg Entrances
- Bike Rack Radius within 50ft
- SAMC
- Technology Building
- R-12 Lot

This map shows the 50ft radius surrounding each bike rack on campus and their proximity to accessible entrances.



Building List

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17	Technology Bldg	36	Student Apartment Complex
18	Twin Rise	37	Classroom Bldg
19	North Wing	38	Perry Hall

0 250 500 1,000 Feet

Author: Timothy Tate, Buffalo State (December 2013)

Based on the profile questions on the LAB's Bicycle Friendly University application, the following table summarizes the existing engineering elements on the Buffalo State campus.

TABLE 3.2: BFU ENGINEERING REVIEW

BFU AUDIT CATEGORY/QUESTION	STATUS
Policies	Not At This Time
Network Map	Not At This Time
Facility Types/Design Guidelines	Not At This Time
End of Trip Facilities (Parking/Showers)	Houston Gym is equipped with a public shower facility. Bicycle racks are provided throughout the campus, but the rack placement is not systematic and the rack types are not ideal
Can students park/store bikes in dorm room?	Yes
Previous BFU application submission?	No
Transit Integration	88% of Metro Busses are equipped with bike on bus racks, which can accommodate two bikes. Bike are also allowed on Buffalo's Metro Rail

3.3 EDUCATION: RULES, RIGHTS, AND RESPONSIBILITIES

Education is an integral component of creating a bicycle friendly environment. Cultural attitudes of motorists and bicyclists can be modified by providing avenues for learning the rules and responsibilities of how to behave in a multi-modal environment. Teaching students how to perform routine maintenance, change flat tires, properly secure their bike, and laws for operating on roadways can improve personal safety and provide comfort to those who may be interested in bicycling but do not feel prepared and knowledgeable enough to use biking as a means of transportation.

The table below indicates the types of educational programs the League of American Bicyclists evaluates. Currently, Buffalo State does not provide any bicycle-related educational opportunities for students. GObike Buffalo or other local advocacy groups may be an initial source for encouraging students and faculty to become more knowledgeable about the responsibilities of biking.

TABLE 3.3: BFU EDUCATION REVIEW

BFU AUDIT CATEGORY/QUESTION	STATUS
Bicyclist Education	Not At This Time
Motorist Education	Not At This Time
Ticket Diversion	Not At This Time
Safety/Skills/Commuter/Repair Workstations	Not At This Time
Cycling offered in PE	Not At This Time
Planning Department or Engineering Department Transportation Planning Classes	Two current classes within planning department
Leagues Cycling Instructors or Classes	Not At This Time
Active Bicycle Advisory Committee	Not at This Time

3.4 ENCOURAGEMENT: WELCOMING AND CELEBRATING BICYCLING

Encouragement programs are an excellent way to change campus culture, educate motorists and bicyclists, and help interested bicyclists feel comfortable about trying a new mode of travel by participating in large group events or riding with a "buddy." Suggested encouragement programs within the BFU application are found in the table below.

TABLE 3.4: BFU ENCOURAGEMENT REVIEW

BFU AUDIT CATEGORY/QUESTION	STATUS
Events	Not At This Time
Rides	Not At This Time
Buddy Programs	Not At This Time
Bike to Campus Day/Competition	Not At This Time
How is biking promoted?	Not At This Time
Cycling Teams/Clubs/Coops	Not At This Time
Bike share or rental program? On or off campus?	Small bike share program within city
Repair Areas or Services	Nearby bike shop in Elmwood Village

3.5 ENFORCEMENT: ENSURING SAFETY FOR ALL

Enforcement consists of a combination of education and regulation. Those responsible for enforcing the behavior of bicyclists, and the behavior of motorists interacting with bicyclists must be educated on the appropriate local laws and campus rules. Enforcement is also a method for monitoring who on campus has a bike and helping retrieve stolen bicycles by collecting serial number information.

The table below illustrates current enforcement efforts that are part of the BFU audit.

TABLE 3.5: BFU ENFORCEMENT REVIEW

BFU AUDIT CATEGORY/QUESTION	STATUS
Bike Registration	Yes
Bike Locks provided on Lockers	Not At This Time
Security Patrols of Bike Parking	Not At This Time
Stolen or Impounded Recovery System	Yes
Police training for bicycle behavior? Motorist behavior around bicyclists?	Not At This Time
Helmet/Light Enforcement	Not At This Time
Employees/Police on Bikes	Yes

3.6 EVALUATION: PLANNING FOR SUCCESS AND BENCHMARKING ACCOMPLISHMENTS

Creating metrics for evaluating the progress of this plan will be imperative to supporting the success of both campus and Citywide planning and implementation efforts. Evaluation is also key to ensuring plans remain active and integrated into yearly and monthly College budgets and action plans.

Currently Buffalo State does not implement any official monitoring of the bicycling environment. This plan will be the first step in establishing benchmarks and providing a tracking mechanism for incremental changes and success.

TABLE 3.6: BFU EVALUATION REVIEW

BFU AUDIT CATEGORY/QUESTION	STATUS
Last Publication of Bicycle Plan	Not At This Time
Dedicated Funding Source for Implementation	Not At This Time
Tracking	Not At This Time
Crash Data/Incident Data	Not At This Time
Satisfaction survey for bicyclists, yearly?	Not At This Time

3.7 INTERPRETING THE AUDIT

The existing conditions and audit will be the initial benchmark for evaluating implementation and actions for the future state of bicycling on the Buffalo State campus. As the College strengthens its commitment to becoming more bicycle friendly, opportunities will be revealed for tapping into sources within campus and the City to create awareness, fund projects, and realize a vision for a more bicycle friendly environment.

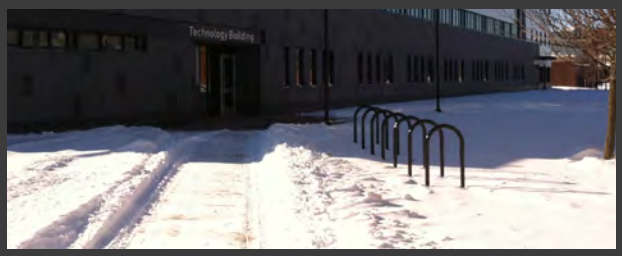
BIKING IN WINTER

Buffalo experiences long winters with heavy snow falls during months when most students are on campus. For bicycling to become a viable mode of transportation at Buffalo State, accommodating bicycles during the winter months needs to become a campus priority. Winter biking maintenance best practices are expanded upon in **Appendix B**, where a further details are provided for maintaining bicycle facilities during winter months

The winter maintenance of bikeways and infrastructure (ie: bike racks) should be a planned, regular activity on campus. Bicycles have different winter needs than motor vehicles—for example, less weight and tire surface area means they are more sensitive to snow and ice—and winter roadway maintenance programs should have specialized practices to respond to these needs.

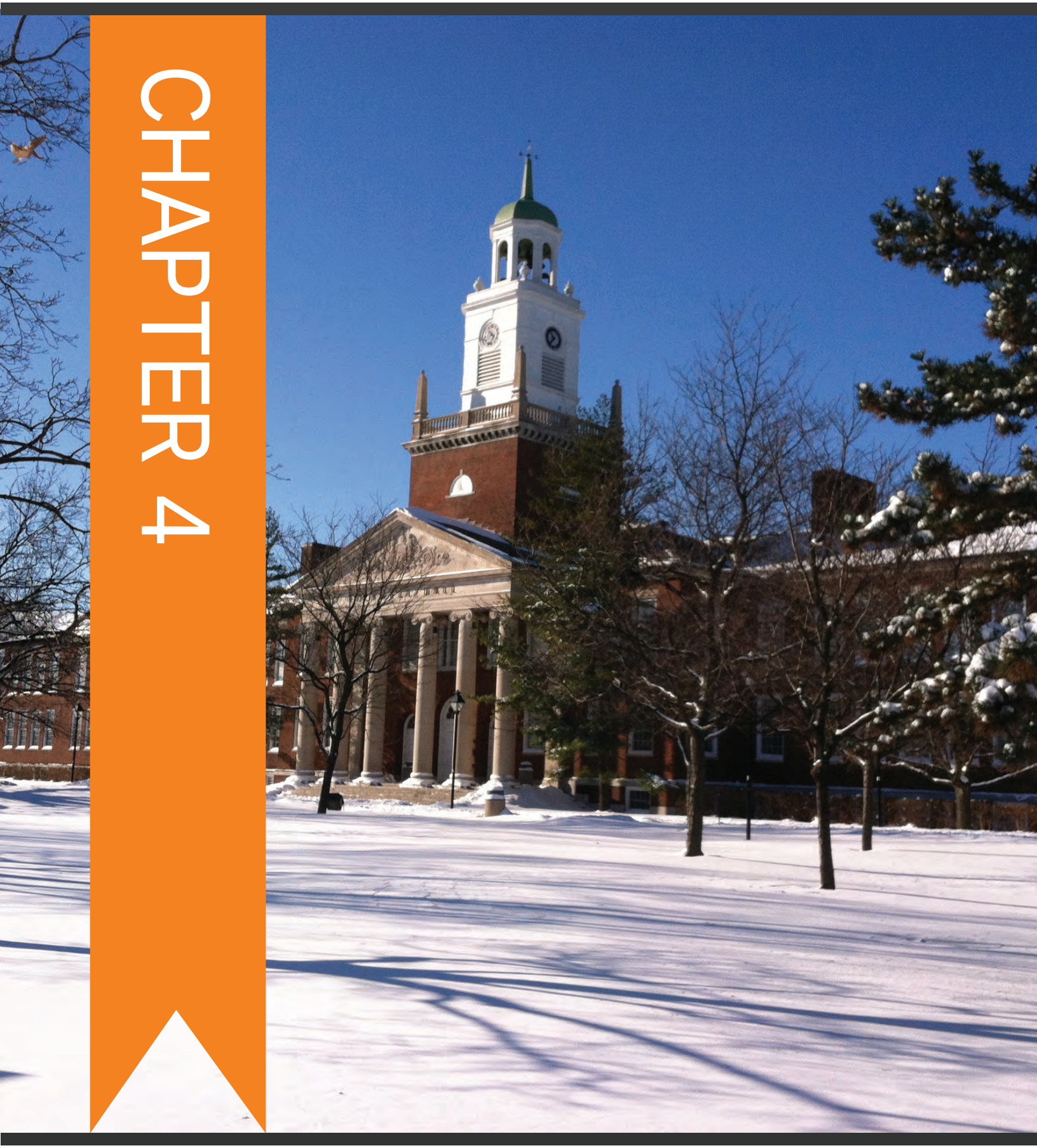
It is the Campus' responsibility to provide safe conditions for bicyclists year round, and the City's responsibility to maintain the Elwood and Grant St cycle tracks. There are different strategies and equipment; however, thoughtful roadway design and a strategic bikeway snow removal and de-icing program that includes snow removal prioritization are key to the safe and comfortable accommodation of bicyclists in the winter.

Bicyclists rely on convenient and accessible parking to park their bikes. The racks pictured at right and below, which have not been cleared of snow, discourage potential bicyclists from riding during the winter.



A heavy snowfall will require the initial removal of snow from the bikeway to restore functionality. A pro-active and reactive de-icing program is also necessary to maintain good bike riding conditions

CHAPTER 4



NEEDS ASSESSMENT

Chapter Contents:

4.1 OVERVIEW

Determining need expands beyond data collection, field documentation, and professional analysis. Gauging need requires gaining input from people who bike, and may be interested in biking in and around SUNY Buffalo State. Those who do not bike often reveal immediate needs that will lead to changes in mode share. The outreach component of the planning process included an online survey which was completed by 150 people. The results and key observations derived from the survey are outlined below, and the results of the survey were used to identify opportunities and constraints to bicycling throughout campus.

4.2 SURVEY RESULTS

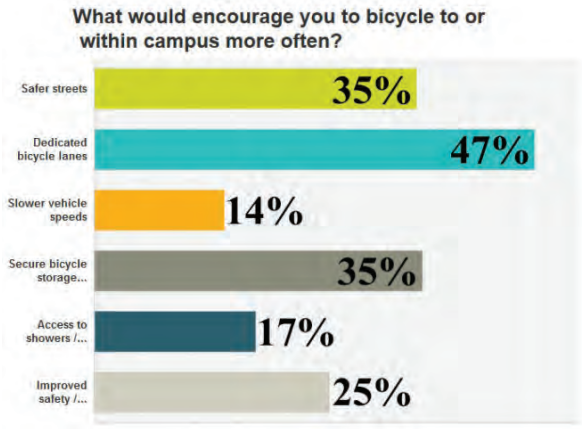
To help the project team understand existing conditions on campus, an online survey was created and distributed among the Buffalo State community. After a two month comment period, 150 people completed the Commuter Survey for SUNY Buffalo State. Of these, 24% were students, while 25% were Faculty and 51% were staff. Only 2% of the participants live on the campus, while the rest commute. Roughly half of the survey participants own a bicycle.

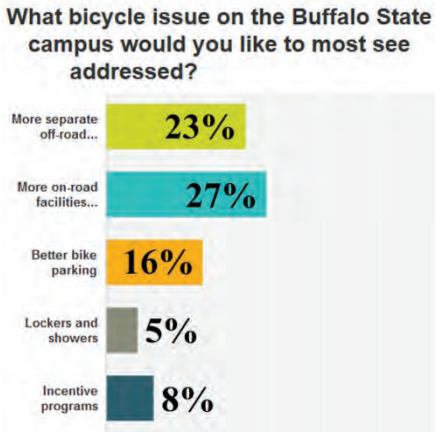
Of the survey participants, 17% have a commute of 10 minutes or less, 43% have a commute of 15 minutes or less and 63% have a commute of 20 minutes or less.

In addition, once on campus, nearly all (97%) of those surveyed said that they currently get around the campus by walking and nearly a third (29%) do so by bicycle. 18% of those surveyed currently commute to and from the campus by bicycle on a daily basis, while 12% do so weekly and another 12% do so monthly. This amounts to 42% of those surveyed regularly commuting to Buffalo State by bicycle.

Of the commuters surveyed, 19% said they commuted by bicycle via Elmwood Avenue, 15% said they commuted by bicycle on Grant Street and 9% said they commuted by bicycle along the Scajaquada bicycle path.

Improvements such as safer streets, dedicated bicycle lanes, separated bicycle paths, slower vehicle speeds, secure and convenient bicycle parking, access





to showers/lockers/changing rooms and bicycle incentive programs all were all supported by survey participants. The most popular improvements that would encourage people to commute by bicycle were dedicated bicycle lanes, safer streets and secure bicycle parking. Likewise the issues that commuters surveyed would most like to see addressed are more on-road bicycle facilities, more separated bicycle paths and more secure bicycle parking.

When it came to encouraging single occupant drivers to switch their modes of commuting, support was shown pretty evenly across the board for; discounted access to Buffalo Carshare, free bicycle access, guaranteed ride home programs, discounted public transit passes, information and improved access to surrounding communities, easy connections for carpooling, incentives for not driving alone, improved public transit shelters, more information on the benefits of walking/bicycling/public transit, secure bicycle parking, access to showers and lockers and other innovative facilities for bicycle commuters.

All told, the survey displays that there is already a very significant amount of SUNY Buffalo State students/faculty/staff commuting by bicycle, that a third to half of commutes are within reasonable bicycling distance of the campus and that these numbers would increase if the identified improvements were implemented for multi-modal commuters.

See Appendix A for complete results of the survey.

27%

of those surveyed

don't feel safe bicycling

27%

of those surveyed

DESIRE MORE

On-Road Facilities

36%

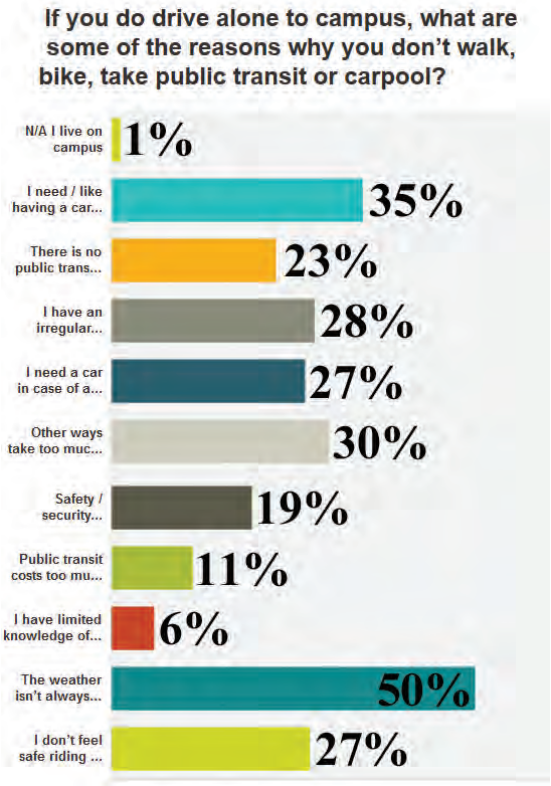
of those surveyed

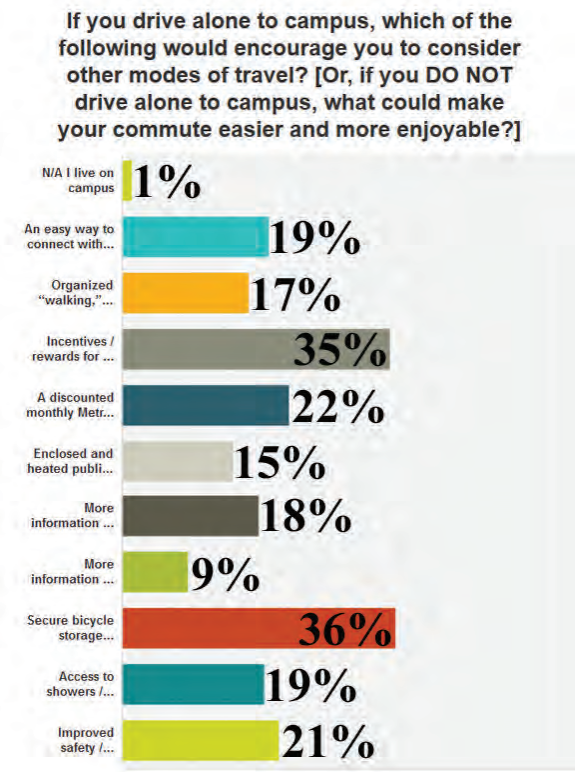
would **BIKE MORE**

& **DRIVE LESS** if

Secure Bike Storage

Was Provided





4.3 OPPORTUNITIES AND CHALLENGES

This section outlines opportunities and challenges to bicycling on Buffalo State's Campus. Input from the public survey, stakeholder engagement, local advocates and site reconnaissance informed the identification of the opportunities and challenges for the campus and surrounding neighborhoods. The map on the following page should be used to determine which areas of the campus are well equipped to accommodate bicycles, and which areas of the campus are in need of the most improvement in order to improve bicycling conditions.

OPPORTUNITIES SUMMARY

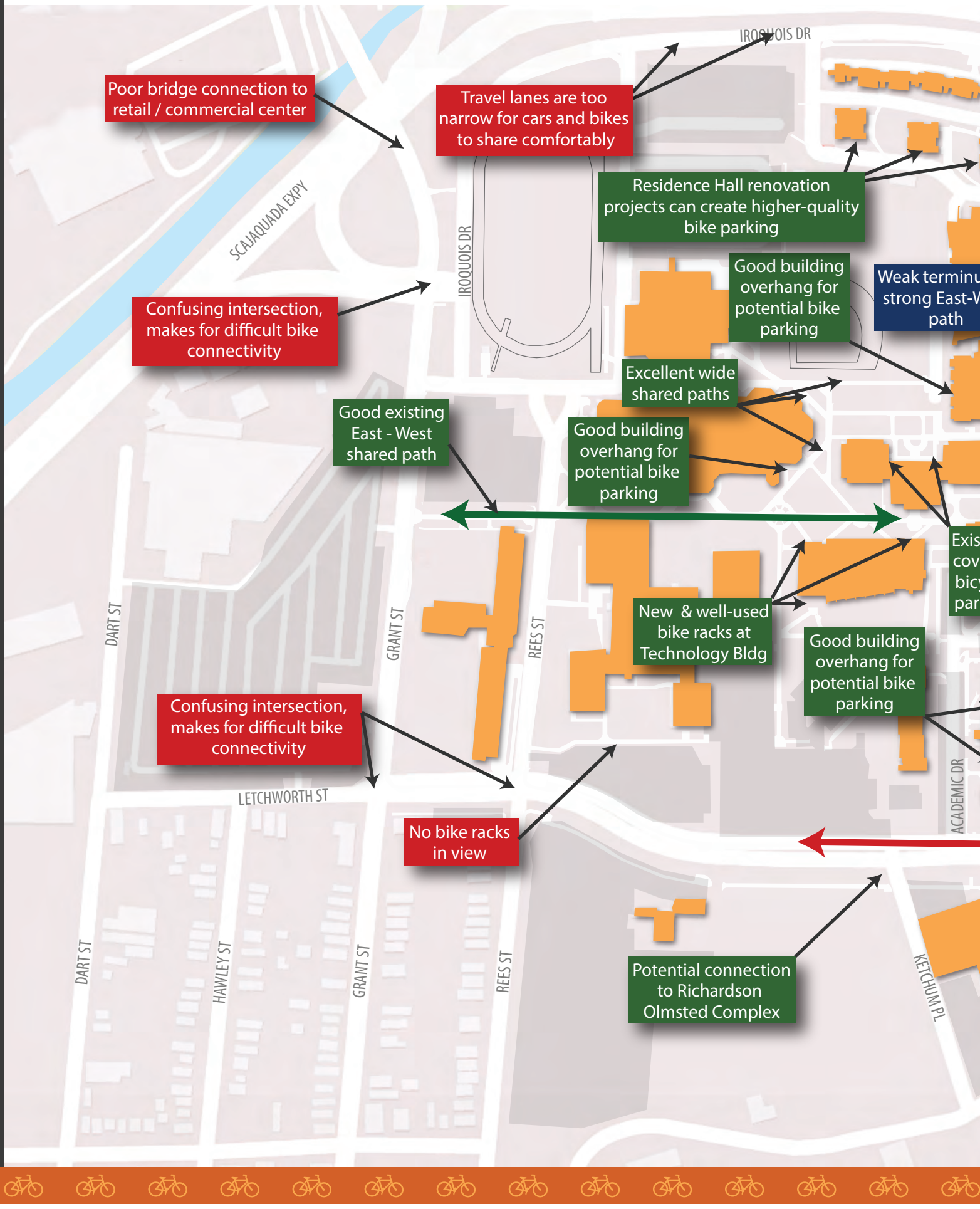
New construction projects on the campus are incorporating bicycle parking, both on the exterior and interior of buildings. Also, recent bike rack installations adhere to industry standards, and more racks should be installed consistent with this design. The campus, boasting many pedestrian paths, has some paths that are wide enough to accommodate both bike and pedestrian traffic simultaneously.

CHALLENGES SUMMARY

The campus is primarily pedestrian oriented and overall lacks dedicated bicycle facilities. Confusing intersection designs and poor connections to surrounding neighborhoods make bicycling in and around campus difficult. Also, many of the bike racks on campus do not adhere to industry standards, and are poorly located causing them to be underutilized.

BUFFALO STATE
The State University of New York

BICYCLE MASTER PLAN
OPPORTUNITIES & CONSTRAINT



alta PLANNING + DESIGN

GObike BUFFALO

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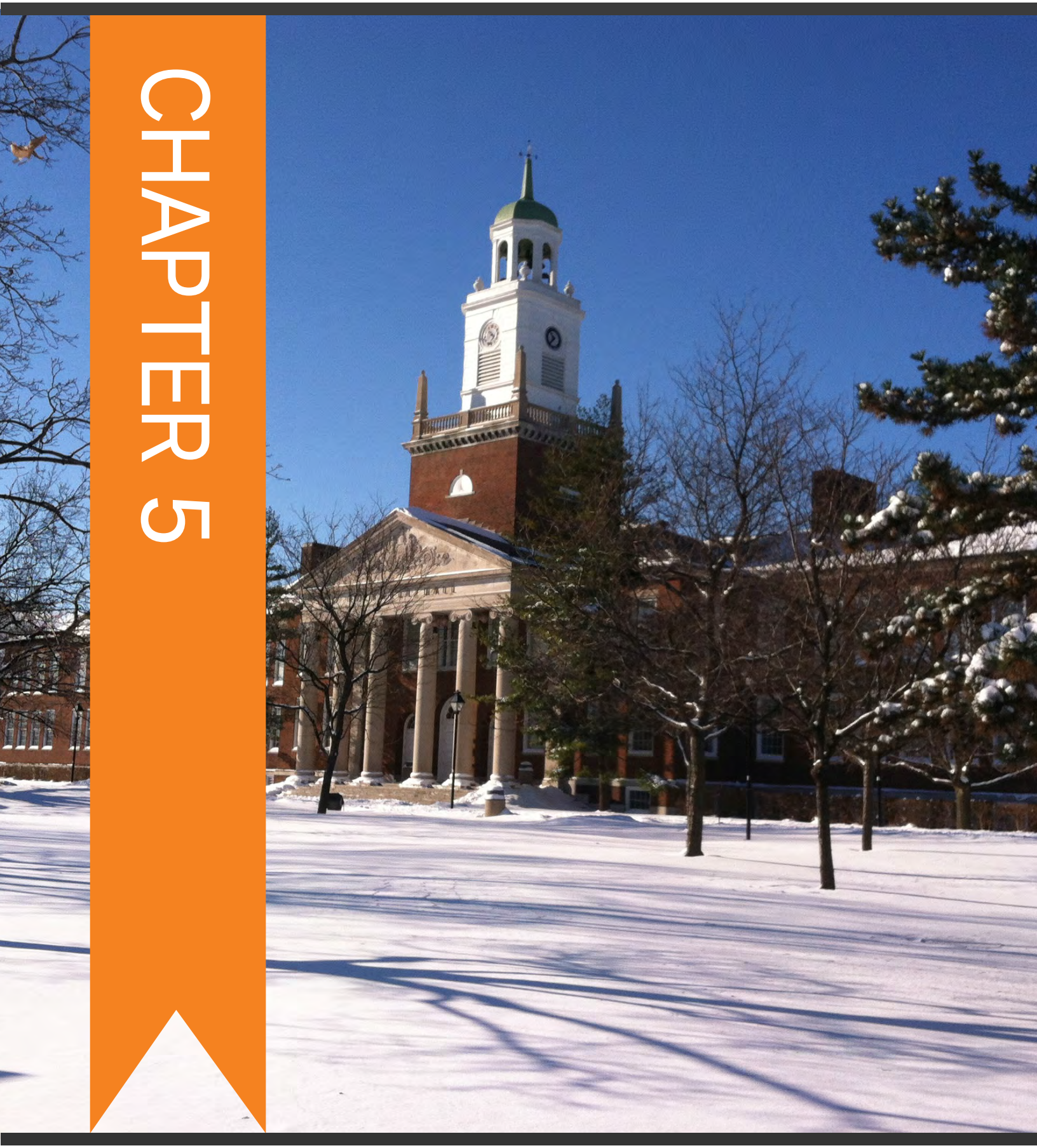
CHAPTER 5



RECOMMENDATIONS

Chapter Contents:

5.1 OVERVIEW

Recommendations and implementation strategies follow a logical process that involves data gathering, analysis, and cross checking. The following steps were followed to arrive upon the recommendations within this plan:

1. Research campus, policies, and bicycle-related recommendations;
2. Observe and analyze bicyclist behavior, circulation patterns, connectivity challenges, and opportunities for improvement;
3. Gather input from the college's Parking and Transportation Committee and the campus community via the on-line survey;
4. Formulate recommendations that will improve bicycling conditions;
5. Vet recommendations for feasibility, and appropriateness, and assign manageable time frames to improvements.

Recommendations within this plan are categorized by three implementation time frames: short, mid and long. Short term strategies should be completed within 1-2 years of the adoption of this plan. Mid-term implementation strategies should be completed within 3-6 years, and long-term projects are typically completed in more than seven years, sometimes ten or more.

Buffalo experiences long winters with heavy snow falls during months when school is in session. For bicycling to become a viable mode of transportation at Buffalo State, accommodating bicycles during the winter months needs to become a campus priority. The winter biking maintenance recommendations in this chapter are expanded upon in Appendix B, where a complete report of best practices is provided that details how to maintain bicycle facilities during the winter.

The recommendations and implementation time frames are defined by the 5 E's. This will allow Buffalo State staff to monitor progress according to the League of American Bicyclists and gauge an appropriate time to apply for Bicycle Friendly University Status. This categorization will also provide a framework for understanding how well-rounded the efforts are according to the League's standards. Network and facility cost-estimates, as well as cost-estimates for programs that support bicycling, are provided at the end of this chapter.

Besides a recently-installed "Share the Road" sign, there are no other bicycle wayfinding or advisory signage on campus.

5.2 ENGINEERING

OVERVIEW

The Buffalo State Campus is currently lacking in dedicated facilities for bicyclists. Much of the central campus consists of a system of pedestrian paths and sidewalks, while the outer campus is composed of large parking lots and roads designed primarily to accommodate motor vehicle traffic. This section proposes creating specific and clear policies that will help to prioritize bicycling as the campus develops, integrating the needs of bicyclists in new construction projects and into long-term planning processes. The purpose of this chapter is also to identify opportunities to improve bicycling conditions throughout the campus by retrofitting existing facilities and proposing new connections.

POLICY

Policy recommendations can be the foundation for many other improvements, including new facilities. Policies set standards and methods that guide the campus' daily operations, design, implementation, and enforcement.

TABLE 5.1: POLICY RECOMMENDATIONS TO BECOME A BICYCLE FRIENDLY UNIVERSITY

POLICY		
Recommendation	Description / Rationale	Implementation Time Frame
Adopt this Bicycle Master Plan	Provides a map for improvements and indicates Buffalo State's commitment to support the implementation of bike facilities in and around campus.	Short
Incorporate recommendations of this plan into other area plans	This will aid in funding and feasibility/design studies for the recommendations.	Ongoing
Assign appropriate staff member to join City's Ped/Bike Advisory Committee	Chaired by Justin Booth, this committee makes recommendations to the City related to pedestrian and bicycle policy and infrastructure projects that may be very relevant to Buffalo State.	Short
Bicycle Transportation Planner/Program Manager Staff	Assign a staff person to monitor this plan and create a transportation planning position and/or bicycle and pedestrian planning position when there is a critical need for a new hire to accommodate the demands of the position.	Short - assign a responsible current staff member Mid - hire a staff member to become the bicycle and pedestrian planner

POLICY		
Recommendation	Description / Rationale	Implementation Time Frame
Establish a Campus Bicycle and Pedestrian Advisory Committee	This group will help staff uphold the recommendations of this plan, advocate for changes at the City level, and make decisions about key projects. The committee can also spearhead the creation of a bike racing team, and create and oversee a student led Bike Maintenance Club. The club should be given a space where they can repair bikes and sell bike supplies (tires/tubes), and hire and pay students to work there using 'work study' funds.	Short - establish the committee Ongoing - implement policy action items
Create and adopt a bicycle parking policy	This policy should reflect a minimum number of parking spaces outside each building, secure parking spaces for every 2 on-campus students, and standards for secure parking in or around new buildings.	Short - adopt a policy Ongoing - implement policy action items
Create and adopt a Winter Bike Facility maintenance policy	This policy should be derived from the Winter Bike Lane Maintenance report included in Appendix B. At a minimum, all exposed bike racks should be maintained during winter months, and bike lanes/cycle tracks/shared-use paths should be cleared of snow and de-iced post weather events.	Short - adopt a policy Ongoing - implement policy action items
Seek representation on the City of Buffalo Bicycle and Pedestrian Advisory Board	This group can help advocate for improvements in and around campus and will be abreast of current planning and implementation efforts citywide.	Short
Reevaluate parking policies and fees	Determine if parking policies and fees can be modified to reduce congestion and offer incentives for using transit and bicycles for commuting.	Mid
Explore a Guaranteed Ride Home policy for those who register their bikes	Offer a limited number of taxi vouchers per semester to individuals who sign up as an alternative commuter (carpool, bicycling, walking, or transit), to provide a guaranteed way to get home should the need arise. A limiting factor in getting more adoption for alternative transportation is the fear that an individual will be stranded on campus should something unforeseen arise; a guaranteed ride home program helps to partially allay these fears. The amount of the benefit could be capped to prevent excessively large taxi fees while helping to provide program participants with peace of mind.	Mid
Establish a budget for bicycle and pedestrian planning, implementation, and programming	Creating a separate budget will allow Buffalo State to fund projects and monitor trends in bicycle related expenditures.	Mid - Long

Gaining the support of local law enforcement and campus safety departments can help to influence safe bicycling and motor vehicle interactions, boosting the level of comfort and confidence of those who wish to bicycle

NETWORK AND FACILITIES

An enhanced network of bikeways and end-of-trip facilities such as bike racks will greatly improve the bicycle friendly status of Buffalo State. The map on the following page illustrates network and facility improvements. The network will include on- and off-road modifications that will improve safety and circulation in and around the campus.

Intersection improvements will be a key component to increasing safety for those accessing campus. While improvements to the roadway may not be funded until the long-term, intersection improvements are critical to the safety of all modes.

Bicycle parking is also a critical component of facility improvement. Currently many of the available bicycle parking options on campus are poorly located or do not comply with minimal acceptable standards.

Short-Term improvements are typical low cost, high impact, high feasibility projects. These can be seen as the "low hanging fruit" that provide momentum for implementing projects with higher capital costs.

Mid-Term improvements may take additional coordination and fund raising, but also will have a high impact on safety and improved circulation.

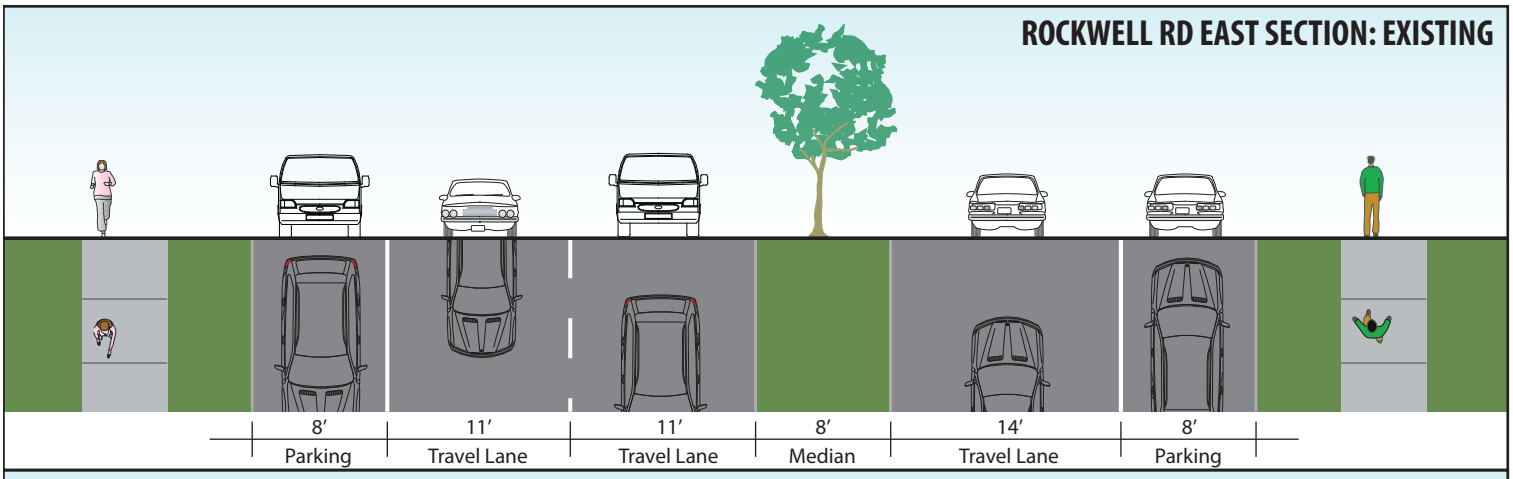
Long-Term projects require in-depth study for feasibility and design. These improvements will be more innovative and provide ideal conditions for bicyclists who may be interested in riding but do not feel safe in the current environment. Note that some long-term projects require coordination with and study of vehicular traffic patterns.

SHORT TERM OPTION HIGHLIGHTS

- Rockwell Road enhanced "sharrows" and bike lanes
- Improved campus bike routes (using wayfinding signage and pathway stencils)

Shared lane markings, and other pavement markings are low cost treatments that make bicycling more comfortable.

ROCKWELL RD EAST SECTION: EXISTING



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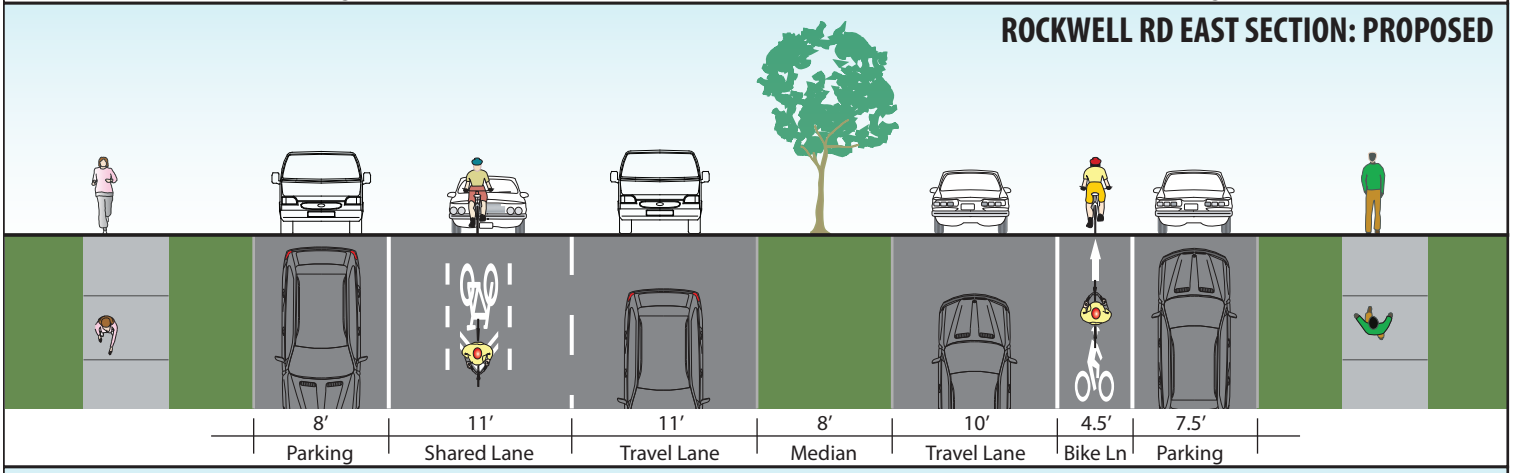

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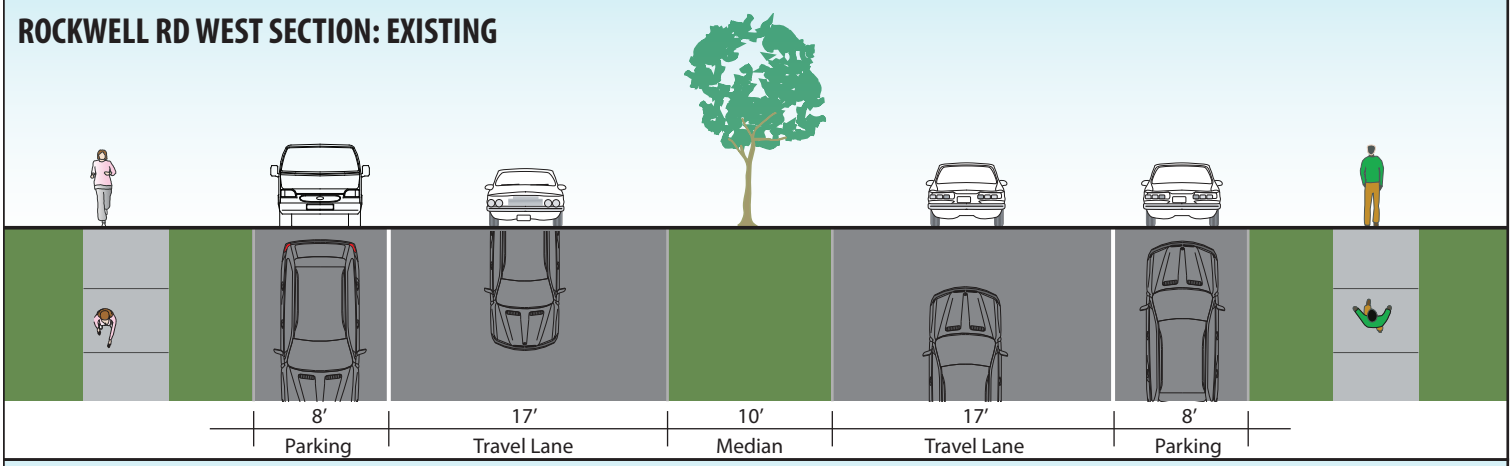

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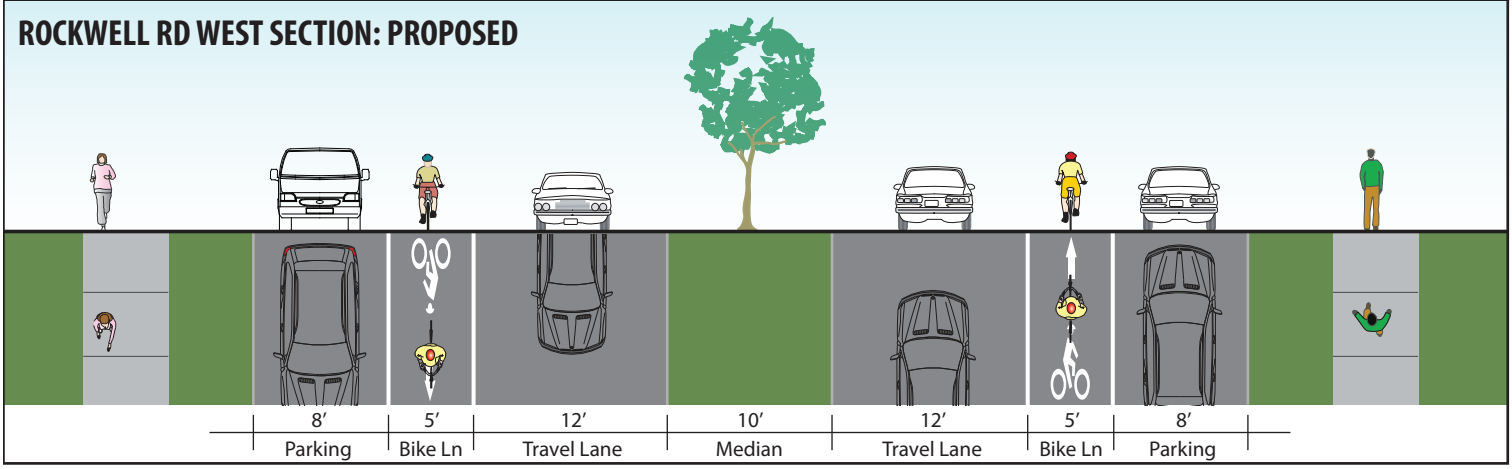


MID-TERM OPTION HIGHLIGHTS

- Intersection enhancements
- Covered bike parking

Covered bike parking is a mid-term infrastructure option that provides students with secure and attractive places to store their bikes, protected from the elements

LONG-TERM OPTION HIGHLIGHTS

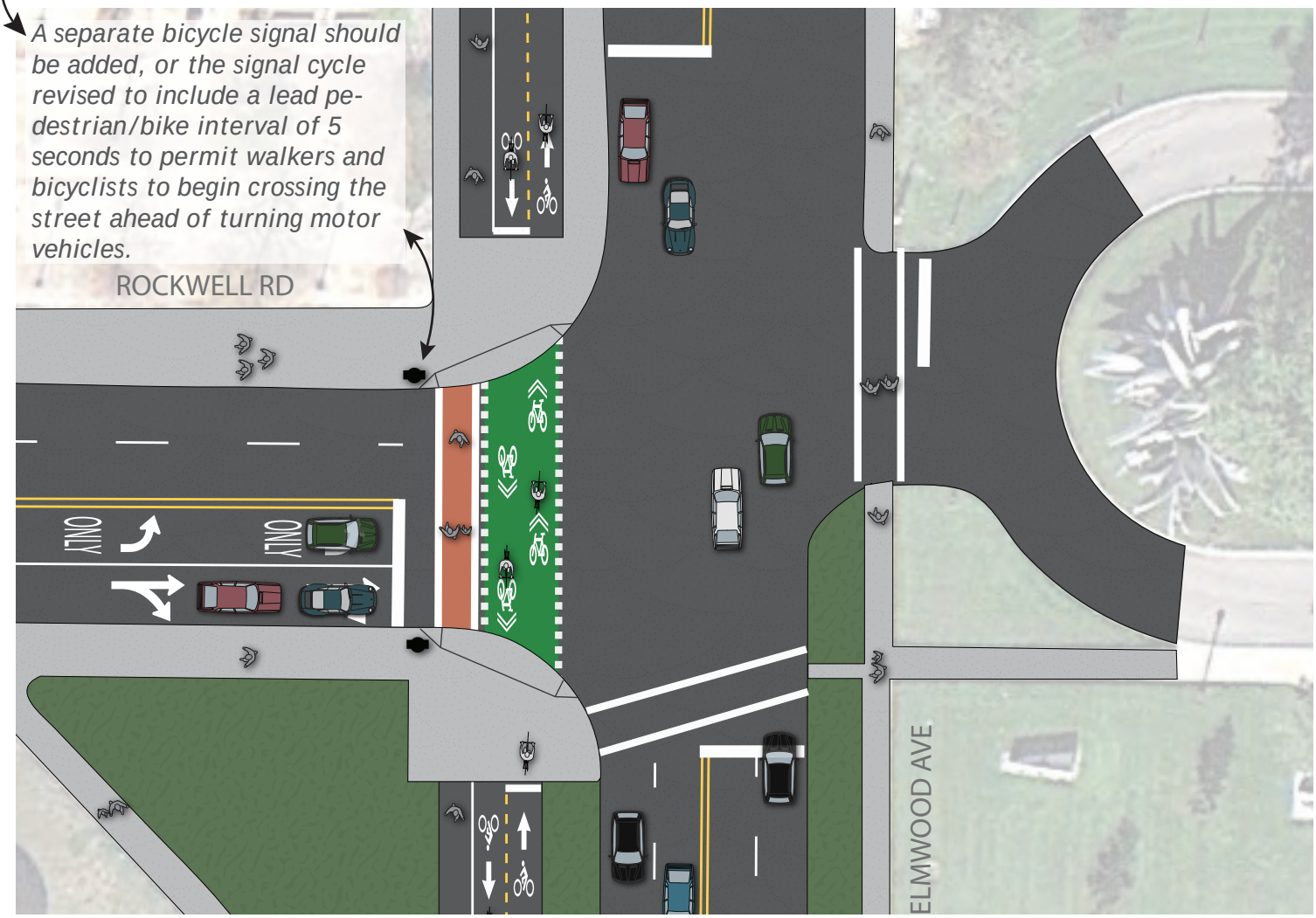
- Iroquois Drive, Grant Street and Elmwood Avenue shared-use path
- Pedestrian/bicycle bridge over the Scajaquada Expressway to Black Rock neighborhood

Shared-use paths are a long-term infrastructure option that can provide a primary non-motorized corridor that benefits both walkers and bicyclists

INTERSECTION IMPROVEMENTS

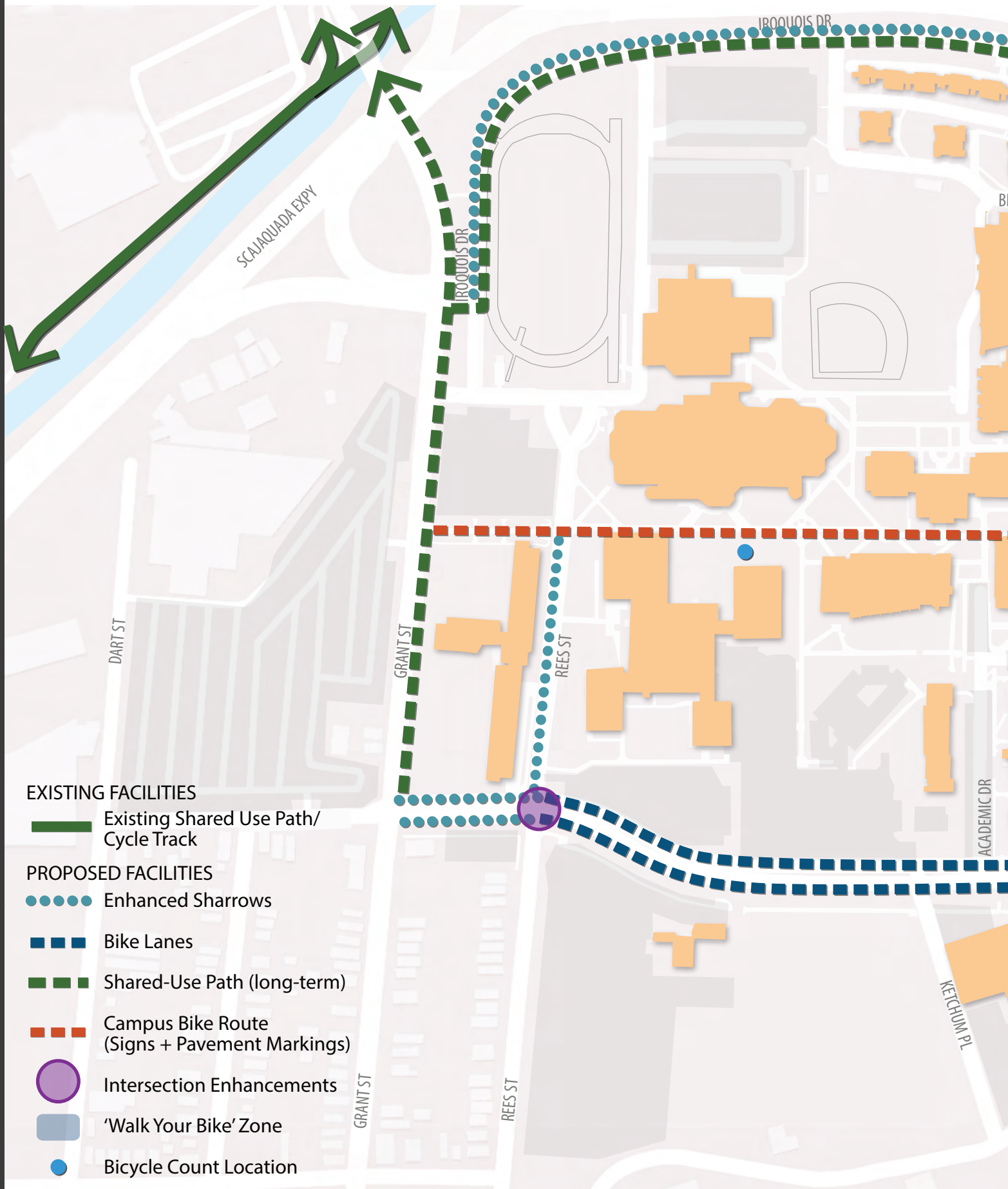
Intersection improvements are imperative to the safety of students and faculty. The first priority in the short term is to upgrade all intersections with high visibility crosswalks. These modifications can be coupled with roadway improvements. Buffalo State should work with the City to understand how on-street bikeways may be prioritized and couple the adjacent intersection improvements with the roadway improvements. If the City will not be making roadway improvements within two years, the college should work with the City to implement pedestrian and bicycle improvements in the short term.

In the mid-term, corner curb radii could be tightened to slow the speed of turning vehicles and bump-outs added to reduce pedestrian and bike crossing distance. Where dedicated bike facilities cross through intersections—such as the Elmwood cycle track crossing at Rockwell—a green "crossbike" should be added to visually denote a conflict zone with the intersection. In addition, no right turn on red signs and enforcement will improve bike crossing. Conflicts between north/south bicyclists and motorists turning left/right onto Rockwell Rd should be reduced.

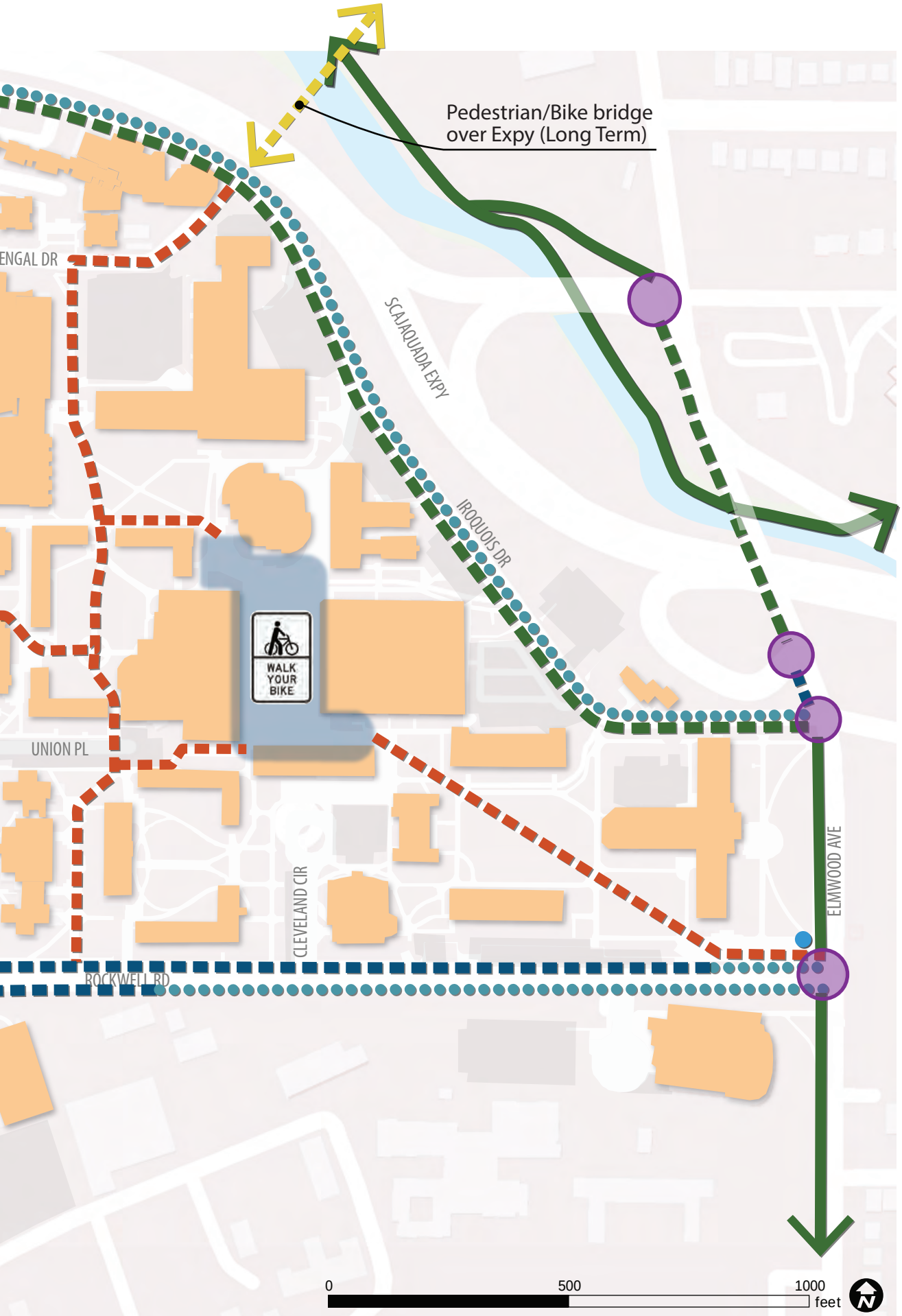


BUFFALO STATE
The State University of New York

BICYCLE MASTER PLAN
FACILITY RECCOMENDATIONS



SUNY BUFFALO STATE



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BICYCLE PARKING IMPROVEMENTS

Bicycle parking on campus should be upgraded in the short term. Several existing racks are not secure, are rusted and do not provide an efficient space to lock a bike. The best example of parking—inverted "U" racks—can be found at all entries to the Technology Building.

Purchasing bicycle parking requires knowing a few basic standards - see the standards below as indicated by Association of Pedestrian and Bicycle Professionals (APBP) guidelines. Barriers to entry in assessing these products are low and provide a branding opportunity through customized colors and logos. Inverted "U" racks are emblematic of good bike parking equipment, as they follow these standards:

- U-lock compatible: parking must enable the user to attach a "u-lock" to the rack and to their bicycle
- Two-Point Locking and Support: u-locks must be able to attach to the rack by passing through the bicycle at two locations (typically the bike's front wheel and bike frame's down tube).
- Secure anchoring to the ground, preferably into a concrete base
- Rust-preventative coating and appropriate tube thickness to prevent cutting. Common metal coating types include: powder coat, thermoplastic, or galvanized steel.
- Weather protected: where budget allows, overhangs to protect bikes from weather are recommended.
- Use existing overhangs to provide covered bike parking areas

The following sections highlight the importance of creating a bike parking design standard, and offer a tiered solution to create better bicycle parking options throughout Buffalo State's Campus.

CREATING A BIKE PARKING DESIGN STANDARD

When choosing bicycle parking solutions, college officials must balance the need for low- to medium- cost solutions with a variety of other considerations such as usability (is the parking solution intuitive?), capacity (number of bicycles per rack/corral), aesthetics, and pedestrian maneuverability.

The Association of Pedestrian and Bicycle Professionals (APBP) created the Bike Parking Guide, now in its 2nd Edition, to help cities and organizations choose bicycle parking and create design standards. Of the racks reviewed in the 2nd Edition guide, only the following meet all of the APBP design criteria:

- Inverted-U Rack
- Post and Ring Rack
- Bicycle Corral (APBP calls this an "Inverted U Series")

Although racks that hold multiple bicycles are more expensive in the short-term, investing in a few low-capacity racks will likely mean the college must purchase more racks in the future. Overcrowded racks accelerate the demand for bicycle parking. Too many bikes attached per rack causes unattractive piles of fallen bicycles and irritation or danger to pedestrians. Diversifying bicycle parking types and providing enough spaces to meet future demand would result in a more sustainable bicycle parking supply.

The bike racks below, in order from top to bottom, show a Inverted-U Rack, a Post and Ring Rack, and a Bicycle Corral. These are the only racks that meet all of the APBP design criteria.

Inverted-U Racks (Type A & B Square on the Bike Rack Placement Map; pg 5-14) provide short term bicycle parking.

Tier 1: Short Term Bicycle Parking
Short-term bike parking should follow the following requirements:

- Rounded "wave" parking is discouraged because round tubing is easy to cut. Wide square Inverted-U designs are preferred.
- Properly anchoring all short-term parking options by using tamper-proof Spike Anchors will ensure that racks cannot be dislodged and stolen or sold for scrap metal.
- Staggering racks helps cyclists easily park or remove their bike.
- Racks should be placed parallel to the sidewalk to maximize pedestrian space.
- Maneuvering space at the edges of racks provides clearance for bicyclists to move bikes.
- Bicycle rack siting should correlate with high-traffic areas and connect destinations throughout campus.

Inverted-U style racks are designed to hold bicycles parallel to the rack. When parked perpendicularly, bikes are more susceptible to falling, which can cause tripping hazards or other mobility issues. To prevent this, the college can produce inexpensive, waterproof stickers for racks that read, "Park parallel to rack". If students or staff incorrectly attach bicycles to parking—by using only cable locks or by locking only one wheel—bicycles are more likely to fall over. Again, inexpensive stickers or posters that read, "Always use a U-lock. Attach U-lock to frame AND wheel" are simple and inexpensive ways to mitigate against these problems. The college should consider painting all new racks the school colors, or having custom racks made with the Bengals mascot to brand the racks.

Covered Short Term Bicycle Parking (Type B Circle on the Bike Rack Placement Map; pg 5-14) provide weather protected longer term bicycle parking

Tier 2: Covered Short Term Bicycle Parking
For an added level of weather protection covered bike racks are recommended at key locations throughout campus, especially near student housing. Typically the inverted-U racks, or other standard racks, can be located under building overhangs, where available, and if not, small canopy structures can be installed.

Tier 3: Indoor Bicycle Parking
Indoor bicycle parking should be as user-friendly and secure as possible. A number of options exist for indoor parking, including the ability to retrofit existing spaces for bicycle storage. About 40% of Buffalo State freshmen students choose to live on campus. Improving bicycle parking locations and improving bicycle parking policy could influence students' decisions to bring bicycles with them to campus, sparking a stronger campus bicycle culture from the first year onward.

Types of indoor facilities:

- Bicycle-friendly housing policy: in-unit storage (already in place)
- Bicycle-friendly housing policy: indoor bike room
- Indoor bike rooms in high traffic campus buildings

Indoor Bike Rooms
Transportation Alternatives, a non-profit advocacy organization, has developed a guide to bike parking. Although geared for a corporate audience, three rules resonate for indoor bike parking:

- Bicycle racks can be installed in almost any space.
- Generally speaking, a space of 14 feet by 6 feet can store up to a dozen bicycles.
- Each bicycle parking space should be accessible to the user without having to move another bicycle. Generally, horizontal parking will require 2 feet by 6 feet per bicycle parking space. For vertical parking, you will need 4 feet by 2 feet and a height of 6 feet for each space. Finally, you should provide for an aisle of at least 5 feet wide to allow room for maneuvering.

Indoor Bike Parking (Type R on the Bike Rack Placement Map; pg 5-14) provides overnight, convenient bicycle parking.

The College should complete an inventory of all relevant buildings to determine where space may be available for indoor bike rooms. Opportunities to include lockers and showers, especially in buildings within the campus core, should be investigated.

Long-Term Bicycle Lockers

Outdoor bicycle lockers are another long-term bicycle parking option, particularly for residential buildings. Bike cages provide fully-enclosed "cage" storage for a single bicycle per locker. Campus systems usually charge per annual rental and are usually operated via a unique key.

The University of Minnesota is one example of a university campus that offers bike locker parking options. Yearly rental is $85 per year ($7 per month) although other schools have lower rates. Minnesota's online locker request form streamlines the ordering process. Bike lockers can be combined with places that already accommodate car parking.

Tier 4: Bicycle SPA (Secure Parking Area)

Recommendations for secure bike parking facility include the installation of bike parking areas that allow for longer-term storage and, ideally, provides some services to bicyclists, such as tools for bicycle maintenance and repair. Called Bike Stations, Bike Depots or Bike SPAs (secure parking areas), the facilities are fully-enclosed structures of various designs. Access is reserved for registered members who are given a key, an unlocking code or swipe card. To provide maximum efficiency, they typically include a mix of inverted U racks surface mounted and stacked racks. Space should be provided for a bike repair/maintenance stand, a bench and potentially lockers. The structures are covered and fully secure with wrought-iron bars or steel mesh. For aesthetic, panels of chain-link fence should be avoided. Lighting will also be necessary to ensure evening use.

Secure Parking Areas (Type S on the Bike Rack Placement Map; pg 5-14) provides students, staff and faculty with long-term secure bicycle parking protected from the elements.

This master plan recommends two locations for Type S facilities, one at the west end of campus, adjacent to the Sports Arena, and the other at the east end of campus. The latter is strategically located to sit adjacent to the primary bus stop at Buffalo State and accessible from the Elmwood Avenue cycle track. The intent of the placement is for students, faculty and staff to park their bikes at the secure/covered parking area, and spend the rest of their day walking on campus. The long-term parking facility will provide both a location to leave a bicycle safely for the day, and to minimize the need for short-term bike parking spots in front of individual buildings throughout campus. Proximate to the bicycle SPA's a publicly accessible bicycle maintenance workstand should be included for those in need of an air pump or tools for minor repairs.

The bicycle parking plan for the campus is displayed on pages 5-15 to 5-16.

TRANSPORTATION INTEGRATION IMPROVEMENTS

Add Bike Racks to 100% of NFTA Bus Routes that service campus
As the College makes strides to become more bike friendly and work with the City to improve contextual facilities, the 100% of the Metro Bus routes that service the campus should be modified to include bicycle racks. This will expand the reach of bicycle riders around campus and provide security by allowing students and faculty to travel with their bikes instead of leaving them locked in another area of campus.

Improve Transit Stops
Transit stops located near the Buffalo State campus should be improved to provide shelters, queuing areas for people with bikes, maps, and benches. These improvements should allow for sufficient space to board and alight as well as provide clearance for pedestrians moving along the sidewalk.

WAYFINDING AND SIGNAGE

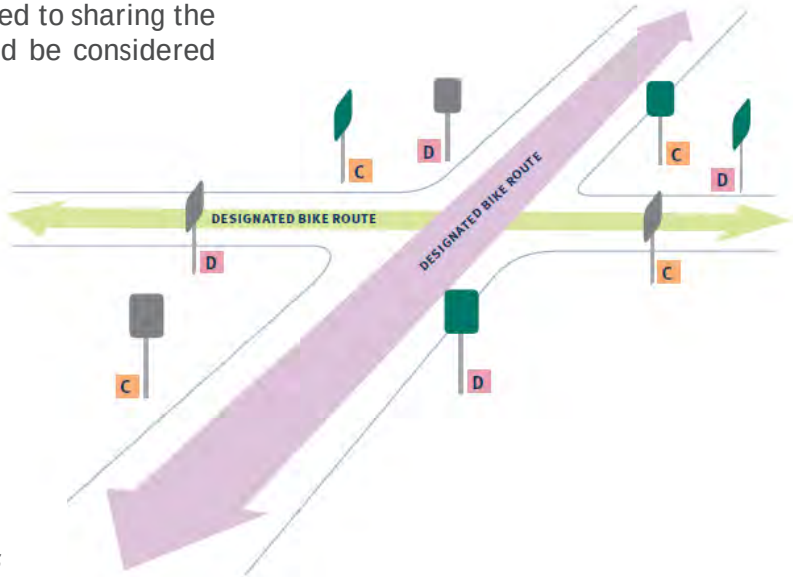
Signage is necessary along routes and intersections in and around campus to guide bicyclists to destinations. In most situations, two wayfinding signs are recommended in each direction at an intersection. These include a decision sign before the turn and a confirmation sign after the turn. In some situations it may also be useful to add turn fingerboards to provide clarity at complex intersections, or waymarkers to highlight routes.

The image to the right displays the typical configuration of wayfinding signs at a decision point. Each direction has a decision sign on the approach and a confirmation sign on the exit. In normal situations the default approach is to use two signs for each leg of an intersection.

In campus environments wayfinding signage and orientation signage helps to lead people to key locations throughout the campus. Orientation signage can include a map of the campus, and have a place marker which indicates where the viewer is located within the system. Key points of interest can be identified too. Currently, the college is installing a system of wayfinding signage that will improve non-motorized circulation throughout the campus.

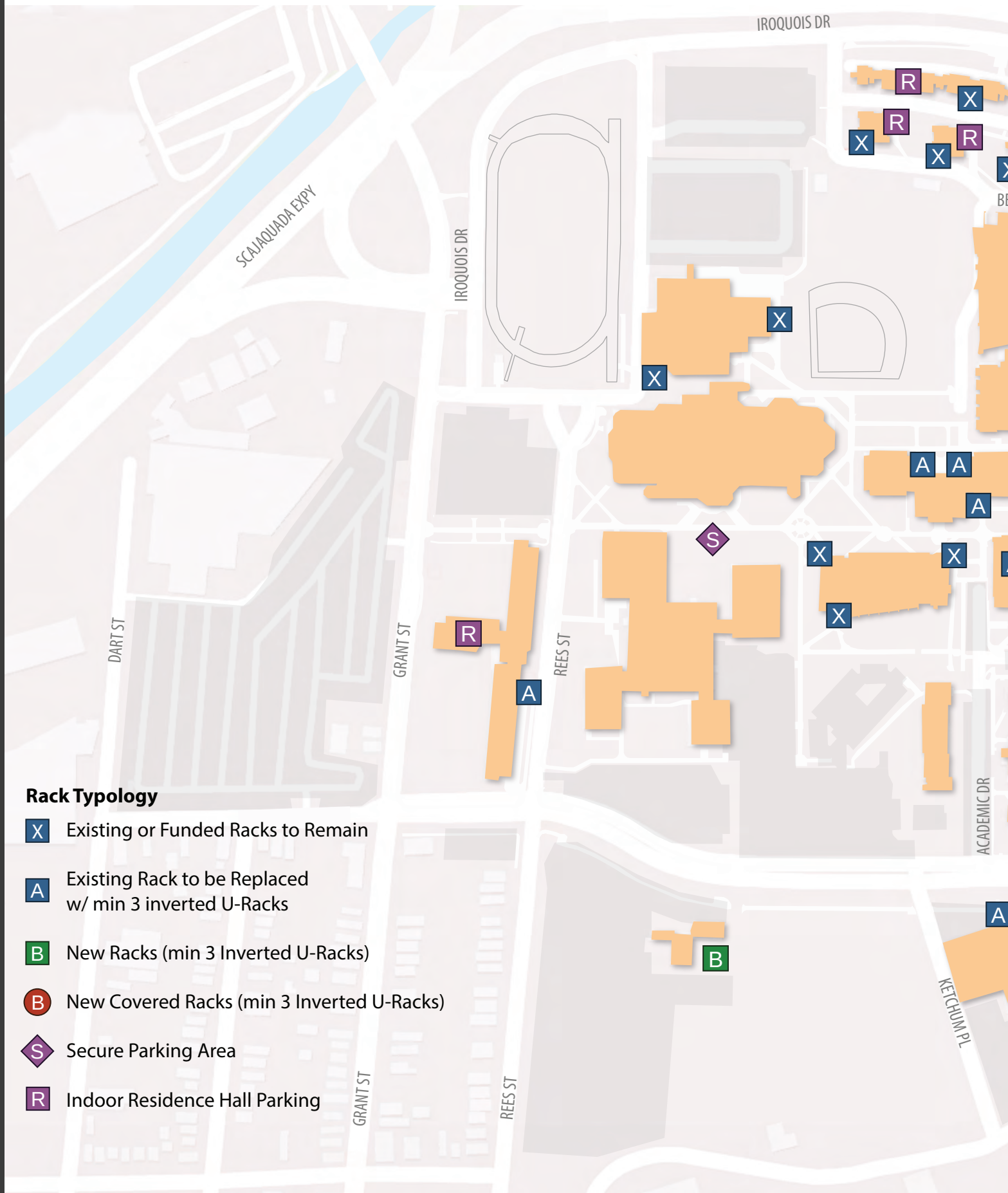
Along the designated bicycle routes, signage related to sharing the path and other courtesy recommendations should be considered as well.

New wayfinding signs were recently installed on campus



BUFFALO STATE
The State University of New York

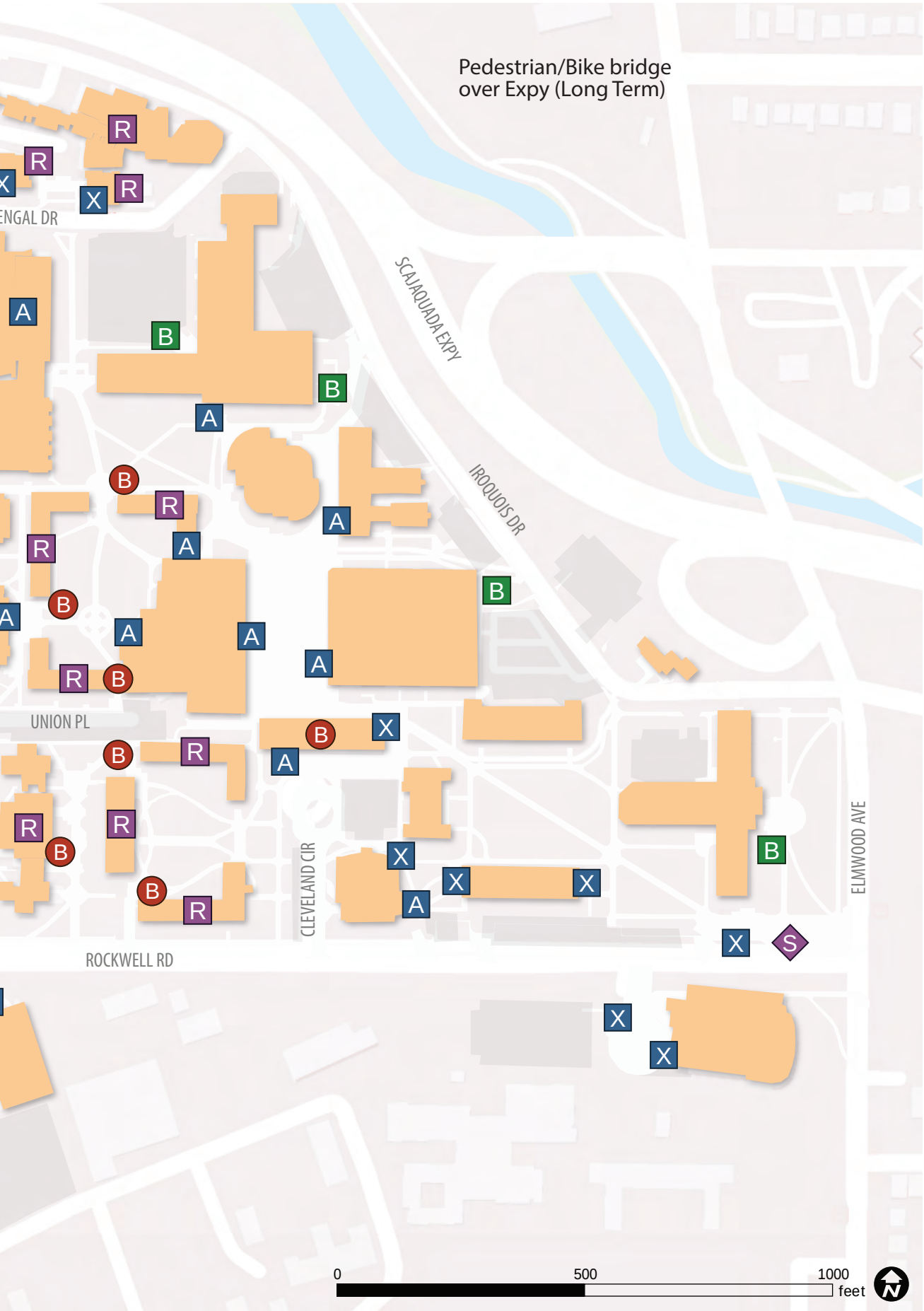
BICYCLE MASTER PLAN
BIKE RACK PLACEMENT RECCOM



Rack Typology

- X — Existing or Funded Racks to Remain
- A — Existing Rack to be Replaced w/ min 3 inverted U-Racks
- B — New Racks (min 3 Inverted U-Racks)
- B — New Covered Racks (min 3 Inverted U-Racks)
- S — Secure Parking Area
- R — Indoor Residence Hall Parking

MENDATIONS


Pedestrian/Bike bridge
over Expy (Long Term)
SCAJAQUADA EXPY
IROQUOIS DR
ELMWOOD AVE
CLEVELAND CIR
UNION PL
ROCKWELL RD
ENGAL DR
0
500
1000
feet

NETWORK AND FACILITY COST ESTIMATES

The charts below provide cost estimate information on the key network and facility recommendations described in this plan.

INFRASTRUCTURE COST ESTIMATES						
Infrastructure Type	Area or Street	Time Frame	Units	Length (lin. ft)	Unit Cost	Cost
Shared Use Path (10' wide)	Grant Street	long term		1300	$100	$130,000
Shared Use Path (10' wide)	Iroquis Drive	long term		4000	$100	$400,000
Enhanced SLMs	Iroquis Drive	short term	32	4000	$300	$9,600
Shared Lane Signage	Iroquis Drive	short term	16		$200	$3,200
Bike Lanes	Rockwell Road	short term		4000	$6	$24,000
Enhanced SLMs	Rockwell Road	short term	20	2400	$300	$6,000
Shared Lane Signage	Rockwell Road	short term	10		$200	$2,000
Enhanced SLMs	Reese Street	short term	6	600	$300	$1,800
Shared Lane Signage	Reese Street	short term	6		$200	$1,200
Intersection (striping and green)	Rockwell/Elmwood	mid term	1	48	$4,000	$4,000
Intersection Bike Signal	Rockwell/Elmwood	mid term	1		$25,000	$25,000
Intersection Curb Cuts (wide)	Rockwell/Elmwood	mid term	2	30	$1,800	$3,600
Intersection (striping and green)	Iroquis/Elmwood	mid term	1	48	$4,000	$4,000
Intersection Bike Signal	Iroquis/Elmwood	mid term	1		$25,000	$25,000
Intersection Curb Cuts (wide)	Iroquis/Elmwood	mid term	2	30	$1,800	$3,600
Campus Bike Routes*	various locations	short term	38	4800	$550	$20,900
					TOTAL	**$663,900**

**Campus bike route includes potential striping, bike stencils and signage (the latter two every 250' and in both directions)*

BICYCLE PARKING COST ESTIMATES					
Bike Parking Type	area or building	time frame	units	unit cost**	cost
Secure parking area structure	east and west ends of campus	long term	2	$100,000	$200,000
Covered bike parking roof structure	various locations	mid term	3	$11,000	$33,000
Inverted U bike racks	24 pods of 5 racks, on average	short term	120	$200	$24,000
Indoor parking improvements	locked doors, racks, signage	mid term	11		Varies
				TOTAL	**$257,000**

***Does not include installation cost*

5.3 PROGRAMMING AND RECOMMENDATIONS FOR EDUCATION, ENCOURAGEMENT, ENFORCEMENT AND EVALUATION

Equally important as providing bicycle and pedestrian infrastructure is ensuring that users are familiar with the treatments and know how to use them. Education programs targeting the College community are recommended to complement existing efforts at the City level. Similar to education programs, encouragement programs provide incentives and benefits to the public to try bicycling as a mode of transportation. Descriptions of the recommendations, and both dollar amount and labor cost-estimates, are provided in the table below.

PROGRAMS				
Recommendation	Description / Rationale	Time Frame	Cost ($)	Cost (labor)
Campus Orientation	Distribution of information to incoming and returning students at the beginning of the year through school information packets, including how to share the road with cars, proper (and legal) roadway crossing behavior, locations of bike parking, instructions on how to properly lock your bicycle, facility improvements, programming events, and applicable policies and rules. This program should be coordinated with GoBike Buffalo who may already have some of this information.	Short	$4,000 to print 30,000 trifold brochures.	20-30 hours staff, student, or consultant time to produce brochures. Assume 2-3 hours for coordinating distribution, if assuming the distribution uses established channels such as orientation packets or displays in university offices.
Bicyclist Education	Initiate campaign for proper locking techniques and proper behavior. Use flyers, videos, and workshops. Add these subjects to freshman/new student orientation, in coordination with GoBike Buffalo who already promote a number of rides in the area.	Short	$4,000 to print 30,000 trifold brochures. Estimate a $1,000 - 1,500 budget for workshop materials such as handouts or small incentives (i.e.- coffee, reflective lights). Workshop curriculum ranges from $0 (volunteer-created or LCI donated time) to $20,000 (custom-made curriculum)	20-30 hours staff, student, or consultant time to produce brochures. 10-20 hours to produce campaign videos. 5-10 hours to plan workshop(s) and/or new student orientation session(s). Assume no cost for using university meeting locations. Assume workshops are taught by volunteers or university staff.
Motorist Education	Initiate education program for all students with vehicles to increase awareness of how to interact with bicyclists. Provide information in dorms, through campus paper and flyers posted around campus, and/or through Public Service Announcements (PSAs).	Short	$400 - $500 to print 1,000 color flyers in 8.5" x 11" format.	10-12 hours staff or student time to research and produce flyers. 2 hours coordination with campus paper. Additional time to post flyers varies according to number posted or distributed to university buildings/residence halls.
Events and Rides	Encourage students to participate in local bicycling events (like the Sky Ride) and create new events to encourage biking in and around campus. New events could include: charity ride, monthly bike commuter appreciation free breakfast, or a bike ride led by the college president. Add additional events each year.	Short	Minimal printing costs associated with flyer printing ($400-$500 for 1,000 copies of 8.5" x 11" color flyers. Organized rides may require permitting- costs vary. Ride participation incentives and logistics (i.e.- food for event, entertainment at start/finish, etc) varies. Students can lower costs by obtaining in-kind donations and by recruiting volunteers.	Student or staff time varies. Assume 5-12 hours to coordinate with student organizations on existing rides. Time to establish a new event varies-- assume at least 15 hours for a basic ride (route planning, outreach/communication, etc) and much more for large-scale charity rides.

PROGRAMS				
Recommendation	Description / Rationale	Time Frame	Cost ($)	Cost (labor)
Bicycle/Pedestrian Transportation Services Website	Expand on the existing bicycle webpage so that it becomes the clearinghouse for all things bicycle on campus. All policy, registration, programming, events, and local bicycle related news should be posted here.	Short	Websites vary from the very basic ($2,000- $5000) to entirely custom-made ($5,000 - $30,000 or more). Adding to the existing website would cost around $2,000.	Ongoing staff time spent updating resources would likely be minimal after the website's or webpage's launch.
Bike registration	Implement or improve registration program.	Short	See column to the right.	20-50 hours staff time for initial start up. Regular hours for ongoing implementation may be needed. Staff coordination with law enforcement, establish registration protocol and forms, publicize program.
Security patrols of bike parking	Add standard for parking checks to the bicycle patrol itinerary.	Short	See column to the right.	10-20 hours for staff coordination with law enforcement, establish registration protocol and forms, publicize program.
Stolen or impounded recovery system	Initiate reporting system and recovery procedures based on updated bicycle registration.	Short	See column to the right.	Time required depends on opportunities for collaboration with campus police. Plan for at least 30-35 start-up hours for initial implementation.
Helmet/Light Giveaways	Provide free or discounted front and rear lights and bike helmets to students, staff and faculty that request them.	Short	$875 - Assume $3.50 per light (likely more expensive than actual cost) and an initial purchase of 500 units through a wholesale supplier. $7,500 - Assume $30 per helmet and an initial purchase of 250 units from a wholesale supplier.	Minimal staff time required to purchase materials. Some research may be required to set discounted pricing system or giveaway system/event(s).
Dedicated funding source for implementation	Segment Facilities and Planning budget to include bicycle infrastructure and programming.	Short	See infrastructure recommendations.	See infrastructure recommendations.
Crash data/incident data	Work with the city to understand how they collect bicycle crash data. Ensure the College monitors crashes within the immediate context of the campus. Implement a program by which this is tracked internally.	Short	See column to the right.	Time required depends on opportunities for collaboration with campus police. Plan for at least 30-35 start-up hours for initial implementation.
Bike to Campus Day/ Competitions	Organize a Bike to Campus Day or Week Competition. Student organizations, years, departments, or classes can sign up as groups to compete in this activity. Student organizations can lead this program. Donations from local bicycle shops can become prizes for participants and winners.	Short	$4,000 - $10,000 for start-up costs: program materials, labor to organize, special events (i.e.- breakfast for cyclists, etc). Materials only (i.e.- incentives and printing) would cost around $500 - $700, per competition.	Staff and student time varies depending on the number of activities organized. Assume increased costs if creating a custom-made ride-tracking website for the competition. A lower-cost program could use Google Forms to track participation or physical copies of ride-tracking spreadsheets.
Seasonal Fun Social Riding Events	Organize seasonal rides to encourage people to bicycle and show school spirit, in coordination with GoBike Buffalo who already organizes rides. Rides could include a tour of the Olmsted parks in the fall foliage season, a 'Dead of Winter' night time ride to show that winter biking is fun, and a ride to the Bisons Baseball Stadium and/or Sabres Hockey Arena to catch a game in the spring.	Short	$400 - $500 for flyer printing. Labor costs are presented in the next column and include time spent organizing rides.	5-12 hours to coordinate with student organizations, per ride. Assume more time if organizing rides without student organization assistance.

PROGRAMS				
Recommendation	Description / Rationale	Time Frame	Cost ($)	Cost (labor)
Financial Incentives	Offer incentives of $50-100 per year for those who do not purchase a parking pass and pledge to walk or bike to campus as their primary means of transportation (can be cash or vouchers for food in the student union).	Short	$50-100 per student	Staff time devoted to distributing incentives, and monitoring the program to ensure students are adhering to their pledge.
Custom Winter Cycling Caps	Order custom winter cycling caps with the school's color and logo, and sell them in the campus bookstore	Short	$6,000 - $12,000. Assume 300 - 600 caps ordered. About $20 per customized cap. Choosing caps that require less customization would lower costs. Selling the caps in the bookstore means proceeds could continue to support bicycling on campus or other initiatives.	Staff or student time is minimal and would be spent designing the caps through a vendor and coordinating with the bookstore.
Bike Library style on-campus Bike Share system	Create a Bike Library Bike Share system. The system should be located proximate to the school's library, and similar to a library's book loaning function, the Bike Library would provide loaner bikes, a lock and key to students who have registered with the system. Bikes can be loaned for different periods of time, from a few hours, to weeks, or for the entire semester/year.	Mid	$3,000 - $7,000	Staff or student time devoted to project start-up would be spent obtaining bicycles and maintenance tools, searching for grant money (if needed), securing a location, and other related tasks. The program requires ongoing support to orchestrate bicycle lending.
Bicycling Curriculum for College Credit	Integrate bicycling into a wide variety of academic programs for credit, including urban studies, marketing and education as part of the curriculum offerings on campus.	Mid	$2,000 - $5,000 for curriculum development, per year. Costs increase, if using curriculum specialists.	Costs vary depending on the number of course materials that require updating. Staff would spend time reviewing existing materials and delivering new curriculum.
Ticket diversion	Initiate Diversion Program whereby students who receive tickets on campus can elect to attend a motorist, bicyclist, and pedestrian safety clinic. Satisfactory participation and learning will be gauged by the instructor who will administer a certificate of completion for use as payment of the fine.	Mid	Costs vary depending on program materials produced: $400 - $1000. Clinics may require hiring a professional instructor ($2000 - $3,000) or they may operate based on volunteer and/or student labor.	Labor includes time spent organizing the session (12-20 hours per semester), as well as leading the regularly-occuring workshops (about 3 hours for set-up, instruction, and debrief/reporting for each workshop).
Positive Enforcement Ticketing	Campus police could conduct "positive enforcement" ticketing which includes speaking to people riding bicycles without helmets or lights about the need for both and handing out coupons for discounts at local bike shops (or, instead of coupons, they could conduct helmet and light giveaways)	Mid	$2,000 for 100 helmets and sets of lights	2 hours of officer time per week for "ticketing"
Safety/skills/commuter/repair workshops	Initiate education programs for proper behavior and care/maintenance. Explore potential of adding a self-serve repair station on campus. Coordinate this recommendation with GoBike Buffalo.	Mid	Many free educational resources exist online ($0). Other curricula may be purchased. Custom-made curricula begins around $2,000 but can increase with additional materials or educational activities. Volunteers may lead on-bike skill sessions ($0) or the university may hire professional instructors. Public repair stands cost about $800 - $1,525 to purchase repair stand. The price does not include installation (bolting into concrete).	Labor includes time to gather resources and select curriculum. Writing an article for the student newspaper about the new self-serve repair station could result in greater awareness and positive publicity.

PROGRAMS				
Recommendation	Description / Rationale	Time Frame	Cost ($)	Cost (labor)
Leagues Cycling Instructors or classes	Partner with local LCIs in the Buffalo area to offer classes through PE or as a part of a ticket diversion program.	Mid	Contact LAB for current rates or contact a Buffalo area LCI to explore the possibility of teaching a course as an in-kind donation.	Staff or student time would be spent coordinating with local LCIs. The efforts can overlap with the ticket diversion program.
Buddy Programs	Initiate a buddy program where interested bicyclists can sign up to partner with a buddy to bike to campus. This can be for commuting or recreation. Provide a page via a new Bicycle Programs website for joining as a buddy ambassador and as a participant looking for a buddy.	Mid	Material production costs are minimal, as are publicity costs. The university can investigate incorporating Google Forms or a similar, free product to help keep costs low.	Estimate 15-20 hours to launch and publicize the program. Such a program requires ongoing monitoring, but an online system can help streamline operations.
Conduct seasonal bicycle counts	Count the presence of bicycles along routes as well as inventory parking demand. This will provide data for supporting the development of new bicycle facilities and help determine parking demand and when additional parking will be needed. Morning and Mid-Day counts should be conducted at the two locations shown on the Facility Accommodation Map.	Mid	National Bike and Pedestrian Documentation Project (NBPDP) provides free training and other materials. An estimated $800 for time spent training staff related to bicycle counts along routes. About $800 to orchestrate data collection using volunteer-collected data. Automated equipment starts around $3,000 per unit, but has many advantages including the possibility of enabling longer count durations.	8-10 hours spent training staff and/or volunteers. NBPDP national count days collect data during the AM and PM peaks (4 hours total, per count location). Time spent creating a report varies depending on the desired level of detail.
Cycling teams/clubs/coops	Add a student group or club for those interested in becoming a cycling "team." This team may meet periodically and discuss relevant news and/or participate in local events together with GoBike Buffalo	Mid	$0 - Minimal costs borne by university.	The program is not likely to require much staff support.
Create a non-motorized transportation report card	Begin monitoring and setting benchmarks for: Trip Demand, Mode Share, A Program Coordinator, and the Bicycle (and Pedestrian) Advisory Committee	Mid - Long	Report card creation: $6,000 for initial production, not including printing costs. Hosting the material online would lower printing costs. Ongoing cost of about $4,000 for staff/contractor time spent compiling report.	See column to the left. Report cards are excellent opportunities to publicize the university's progress. As such, they should include time spent towards publicizing the report outcomes.
Update Bicycle Plan	Update the plan (at least) every ten years.	Long	Varies depending on project scope and whether the effort is produced in-house.	The university can choose to use staff time or consultant time. Either way, the effort must accurately benchmark the program and set future goals.
Satisfaction survey for bicyclists	Initiate best practices for satisfaction survey, semi-annually and yearly.	Long	Start-up costs include $6,000 for survey development and first implementation. Ongoing costs include $2,000 staff or consultant time to create a report based on synthesizing data.	See column to the left. Like report cards, the university should publicize results after reviewing survey results.
Bike Maintenance Club or co-op	The College should donate unused space for the formation of a bike maintenance club or co-op on campus	Long	In-Kind space donation, and $2000 of tools and equipment	2 hours per week or staff/faculty oversight. This could be volunteer time.

5.4 POTENTIAL FUNDING SOURCES

Funding strategies are a primary focus for all new bicycle-related services and facilities on a college campus. Facilities that are lower in cost, need minimal improvements, and can be tied in with other construction projects are easier to implement and should be considered a priority for implementation if they provide logical connections.

Implementing the Buffalo State Plan recommendations will require new sources of funding to be identified and focused on bicycle transportation improvements. Universities typically draw upon the following sources of funding to construct bicycle and pedestrian facilities and supporting infrastructure:

- **Student Fees:** Student fees are one supplemental source of funds. At the beginning of the school term, in conjunction with tuition costs, students pay various mandatory and optional fees. These fees often support many programs run within the college. A mandatory fee could be added to the annual list of student fees (as a reallocation of existing total fees, not an increase) that would provide a stable source of bikeway funding. This type of fee may need the support of the voting/student body in order to be implemented. Even a modest $10 bicycle transportation fee would yield more than $100,000 annually.

- **User Fees:** These can be generated from campus parking costs (permits, daily use, etc.), parking citations, or as a charge to private entities utilizing college facilities. These funds can then be used for construction and maintenance of campus bikeway facilities. Parking permit fees could be increased, with a percentage of the revenue being allocated for bicycle improvements.

- **Campus General Funds:** Once built into the budget, these can become a regular source of funding for bikeways. Allocating a consistent level of annual funding to bikeways, supporting facilities, and programs is the most dependable way to ensure the continued implementation of the Plan.

- **Capital Improvement Funds:** General funds as allocated by the College for Capital Improvements. Buffalo State uses CIP funds to construct new buildings and facilities. These funds can also be used to build bikeway facilities when they are linked to the growth and evolution of the College's future. Construction and expansion of new buildings often impact desired bicycle corridors. Such construction provides an opportunity to implement the bicycle recommendations included in this master plan on a piecemeal basis within individual site designs.

- **Various Grant Funding Sources:** Funds awarded by a variety of sources based on applying for and meeting standards of the grant requirements. Funds are not repaid to the source, but stipulations may exist for how and when to use the money awarded. Grants are a popular source of funding for bicycle facilities and programs. They are available from both public and private funding sources. Grant funding cycles and amounts vary widely by source and may require matching funds. Some grants are designed to foster and support partnerships between city or county governments, non-profit organizations, and local businesses to improve the environment for bicycling in the community. Grants primarily fund the construction or expansion of bicycle facilities such as bike lanes, trails, and paths. The grants committee also considers advocacy projects that promote bicycling as a safe and accessible mode of transportation.

- **Federal and State Funds:** The College should explore the various federal and state funding sources, which are distributed by state transportation agencies (such as NYSDOT) and metropolitan planning organizations (such as GBNRTC). Universities can be eligible for federal transportation funds, but it is recommended that the college partner with the City to demonstrate partnership and improve the chance of success. Doing so will also establish greater continuity between City and College bikeways. Bikeway projects possessing mutual benefits to the City and the College would be likely be strong candidates for federal funding sources, especially map 21 or CMAQ grants.

- **Alumni Donor/Gifts:** Funds from donors may be collected via various campaigns and efforts of the College. Alumni donations and gifts are common sources of funding for universities. While these funds may not be as regularly accessible as those obtained through grants or student fees, they can often be the largest source of funding available to the College. Alumni generosity can be acknowledged through various forms of recognition, including naming rights, plaques, ceremonies, programs and other events. These efforts can be coordinated through the Buffalo State Alumni Association.

5.4 RECOMMENDATIONS SUMMARY

Pursuit of Bicycle Friendly University status requires commitment to improving the bicycling environment on multiple fronts. The fact that the Buffalo State Campus Facilities Master Plan Transportation Report evaluates bicycle parking and provides recommendations that will improve bicyclist access reflects Buffalo State's growing interest in becoming a more bicycle-friendly campus. Though the College's policies do not directly address bicycling usage and needs currently, the limitation on cars for 1st and 2nd year students, the bike-friendly policies of NFTA and the City's on-going efforts to develop a bicycle network are important policy measures that provide a healthy starting point. As Buffalo State makes progress with bicycle-friendly policies and programs, the recommended infrastructure improvements and programs found in this report will take the College one significant step closer to Bicycle Friendly University status. A summary of the overall Master Plan recommendations include:

- Bicycle rack types and locations should be upgraded to meet national best practice standards
- Explore long-term bike parking options (i.e. covered or indoor and secure) to serve residence halls and bicycle commuters
- Improve bicycling access within campus through infrastructure and policy changes, while maintaining a quality environment for pedestrians
- Develop and promote 4 E's programs (encouragement, education, evaluation and enforcement)
- Promotional campaigns geared towards promoting active transportation as a way to improve the overall health of the campus community.
- Partner with the City of Buffalo to encourage continued expansion of the City's bikeway network, prioritizing corridors that link directly to campus, including:
    - Grant Street
    - Elmwood Avenue
    - Forest Avenue
    - Bicycle routes and bicycle boulevard-type designs on neighborhood streets

The recommendations within this plan are meant to become the road map to successfully modifying the policies, programming, and physical environment of Buffalo State to create a place that matches the vision of this Plan. Success will require effort from staff, faculty, students, City of Buffalo, and local citizens to fulfill the vision of a bicycle friendly campus. As all plans should be, this document is considered a workbook. It should be consulted multiple times during the year to ensure implementation is being monitored. It will also likely be adjusted and modified each year as the campus grows, changes, and is affected by the City around it. The development of bicycle facilities on campus should be coordinated with the City, and their on-going Bicycle Master Plan work. While all recommendations may not be implemented exactly as suggested, yearly monitoring with a non-motorized transportation report card will help College planners realign goals, funds, and initiatives to increase the safety and circulation in and around Buffalo State.

As bicycle infrastructure improvements are made outside of campus, Buffalo State should link on-campus facilities to the routes referenced above. Combined, the enhanced bicycle infrastructure will lead to more bicycling, fewer motor vehicle trips and an overall bicycle-friendly environment at Buffalo State.