



Campus Bicycle Master Plan



September 2015

Acknowledgements

Development of this plan was a collaborative process led by students, faculty and staff. The effort was guided by the Bicycle Infrastructure Improvements Committee, the Office of Capital Planning and Space Management, and Parking and Transportation Services.

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The Georgia Tech Bicycle Campus Master Plan is developed with a focus on creating a safe, healthy and positive campus biking environment. It is also focused on establishing Georgia Tech as a national leader in higher education bicycle planning, design and culture.

Georgia Tech is already a nationally recognized leader when it comes to supporting bicycling at higher education institutions. The Institute was designated a Silver-Level Bicycle Friendly University by the League of American Bicyclists in 2012. Since the designation, Georgia Tech has continued to focus on ways to encourage more students, faculty, staff and visitors to arrive to and on campus by bike. **The goals and recommendations in this plan are developed to position Georgia Tech to reach even higher and achieve Gold or Platinum designation.**

Proposed infrastructure improvements surrounding campus will improve bike access and help remove barriers, such as major roadway crossings. On-campus infrastructure improvements are focused on improving safety at intersections and access to campus destinations. With improved infrastructure around and on-campus, it is anticipated that the number of people biking on campus will grow, increasing demand for support facilities like bike parking and bike repair services among others. Enhanced education, encouragement and enforcement efforts are needed to complement the infrastructure improvements and help create a safe and positive cycling culture on campus. Combined with re-introducing bike share on campus, biking will become more accessible and convenient to a wider-range of the campus community. The program recommendations in this plan focus on ways to support these anticipated needs.

Lastly, this plan is aligned with the Georgia Tech Strategic Vision and Plan, *Designing the Future*, as well as other campus planning efforts. When implemented, this plan will help Georgia Tech achieve its core goals and mission and position the University to be a national leader in campus bicycle culture, education, research and innovation.

Table 1. Projected Campus Growth and Bicycle Commute Rates

Year	Total Population	Bicycle Commuters			
		8.2%	10.0%	15.0%	20.0%
2012	28,077	2,302	2,808	4,212	5,615
2015	31,544	2,587	3,154	4,732	6,309
2025	34,943	2,865	3,494	5,241	6,989
2035	38,416	3,150	3,842	5,762	7,683
% increase over 10 yrs	11%	35%	103%	170%	
% increase over 20 yrs	22%	49%	123%	197%	

1. 2012 Bicycle Commute Rate based on 2012 Parking and Transportation Department Campus Commute Survey

2. Campus population growth projections from Office of Institutional Research and Planning

Source: Capital Planning and Space Management Department; Office of Institutional Research and Planning; Parking and Transportation Services.

Executive Summary

Vision for Cycling on Campus

Georgia Tech will define the bicycle-friendly university of the 21st century. As a result, we will be leaders in setting policy, developing programs, and increasing infrastructure to support and safely accommodate bicycling to, from, and on the Atlanta campus. “How does Georgia Tech bike?” will be a common question in research, business, the media, and government.



Key Actions

Through discussion with students, faculty, staff and community partners, several key themes emerged. These key themes will guide the vision and help the University achieve its goals established as part of the plan.

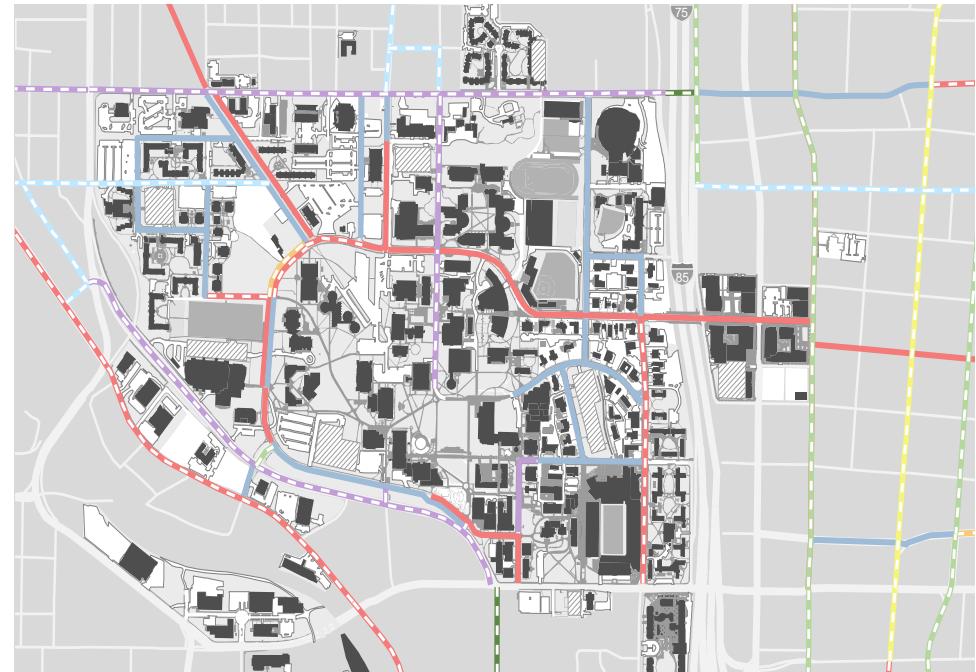
Make Biking More Visible on Campus

Bicycling is increasingly visible on campus, particularly with on-street bikeways being installed on and around campus. In order to encourage more people to bike, the support infrastructure needs to make biking a convenient and safe choice to get to and around campus. Strategies such as hiring a full-time bike coordinator for campus, creating a bike center with a bike shop in the campus core and significantly expanding bike parking areas can help support the desired increase in the number of people biking on campus.



Improve Access to Campus

The number one reason the campus community does not ride a bike to campus is that they do not feel safe riding with traffic. Creating dedicated bikeways from adjacent neighborhoods will help remove this real and perceived barrier to biking at Georgia Tech. The Institute should work with the key community partners, including the City of Atlanta, Midtown Alliance and the PATH Foundation among others, to enhance the bike routes to campus.



Develop and Support Bike Culture

The Bicycle Infrastructure Improvement Committee (BIIC), student groups, faculty and staff and volunteers have created a strong and supportive bike culture on campus. Coordinating events during Bike Month, participating with the Institute's student orientation program (FASET), organizing the Ride with the President and Starter Bikes are just some of the ways groups on campus have educated and encouraged people to ride on campus. These efforts need to continue and expand in order to meet the needs of a growing bike culture on campus.



Establish Dedicated Funding

Securing funding for bicycle infrastructure improvements and programs on campus will be a key factor in achieving the goals for this Plan. The current funding options have limits to the amount of money that can be dedicated to bicycle investments. The funding strategy for this Plan is organized to pull from several funding sources. Establishing dedicated and consistent funding sources from all of the available resources identified will help the Institute make consistent progress towards achieving the goals of this Plan.



Identify and Clarify Partner Roles

Student groups, campus departments and community organizations have all played an important and significant role in supporting biking on campus. As the areas around Georgia Tech and the Institute grow, increasing collaboration will be needed both on and off campus. The Implementation Chapter identifies the primary groups that have been involved with supporting biking on campus and how they can continue to help Georgia Tech achieve the goals for this Plan.



Key Goals and Infrastructure Recommendations

The recommendations for this Plan are organized into six chapters. The chapters cover infrastructure, policy and implementation needs necessary to achieve the bicycle goals for the Institute over the next 20 years. The key goals and infrastructure and program recommendations are summarized on the following three pages.

Key Goals

Achieving Gold or Platinum Bicycle Friendly University (BFU) designation is a key goal for Georgia Tech (currently designated a Silver BFU).

The goals for this master plan are organized according to the Five E's of a Bicycle Friendly University: **Engineering, Education, Encouragement, Enforcement, and Evaluation.** A summary of the Five E's and the goals and objectives for this plan is provided in the *Bicycle Friendly University* chapter of this plan.

This approach aligns this master plan with national standards and best practices, as well as positions Georgia Tech for its next Bicycle Friendly University application. By working towards achieving these goals, the Institute will become a leader in higher education campus bicycling and, more importantly, improve the quality of life on campus.

- Engineering:** Provide and promote safe and accessible routes and accommodations for biking as a daily form of physical activity, such that 20% of all trips to campus are by bicycle by 2035.
- Education:** Implement comprehensive education programs targeted at students, faculty, and staff.
- Encouragement:** Implement comprehensive encouragement programs targeted at students, faculty, and staff.
- Enforcement:** Maintain positive enforcement program for safe walking and bicycling behaviors, and increase positive enforcement during periods of peak public awareness.
- Evaluation and Planning:** Monitor implementation of the Georgia Tech Bicycle Master Plan.

Table 2. Goal Metrics for Biking at Georgia Tech

Year	Bicycle Mode Share Goal	Bicycle Parking Spaces	Crash Goal	New Bicycle Registration Target
2012 (current)	8.20%	2,224	43	277
2015	10%	4,802	< 15	400
2025	15%	7,203	< 15	600
2035	20%	9,604	< 10	800

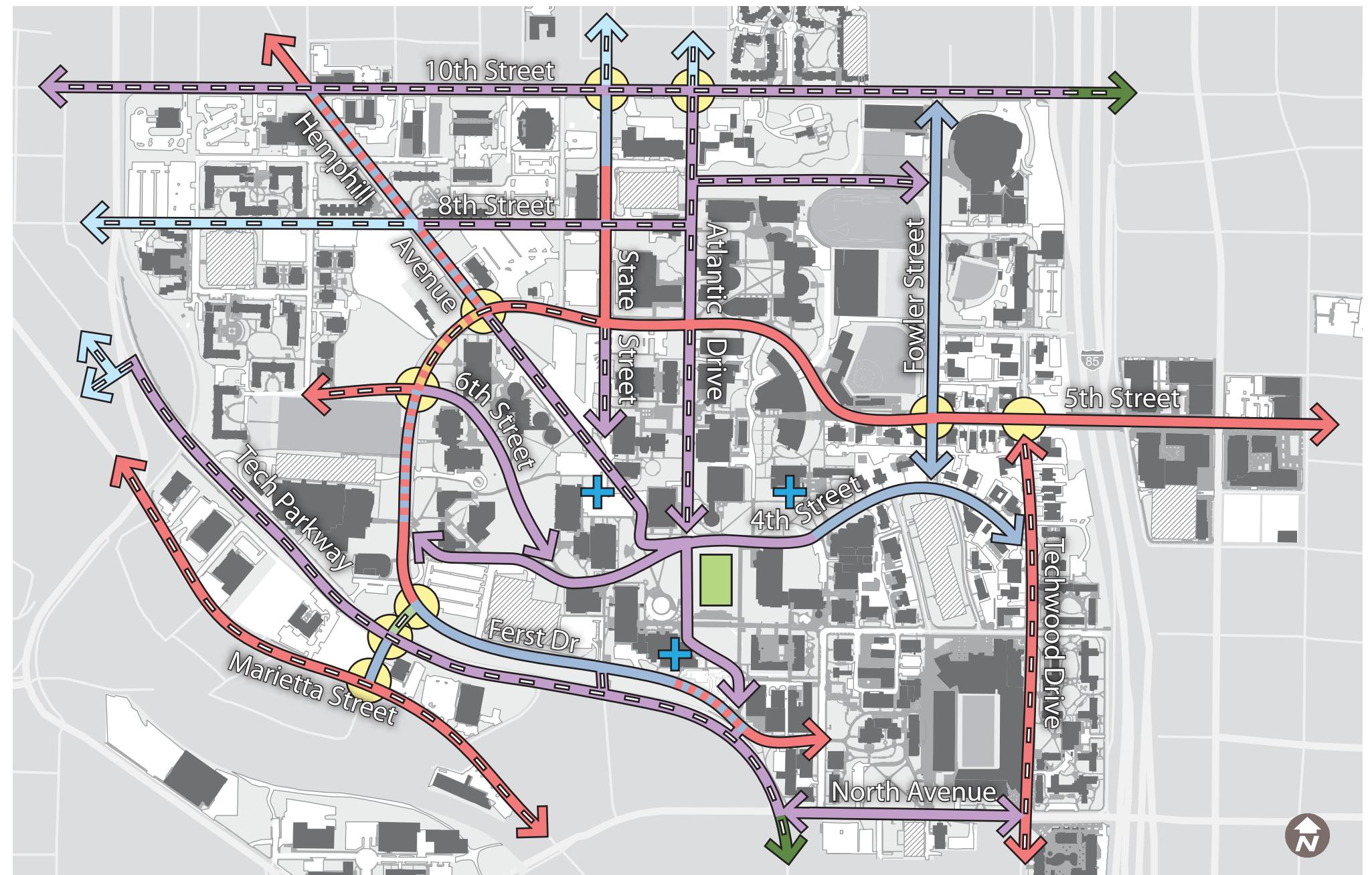


Figure 1. Georgia Tech Strategic Bikeway Corridors

Proposed Bikeways

- Bike Boulevard
- Bike Lane
- Parking-Side Buffered Bike Lane, Bike Lane
- Protected Cycle Track
- Raised Cycle Track
- Multi-Use Path

Proposed Spot Improvements

- High Priority Intersection improvements
- Tech Green improvements
- Potential Bike Center location

Existing Bikeways

- Shared Lane Markings
- Bike Lane
- Downhill Shared Lane Marking, Uphill Bike Lane
- Multi-Use Path

Bike Parking Strategy

To meet the university's goal to achieve a 20% bike commute mode share goal by 2035, continued, consistent and strategic expansion of bike parking infrastructure is needed over the next twenty years.

Based on analysis of current bike parking capacity, the campus is currently not meeting current demand for bike parking. The current rack capacity is 2,224 spaces. With a current commute rate of 8.2%, the number of bicycle commuters is approximately 2,337 each day. This rate means that just the number of commuters is already exceeding the available rack capacity on campus.

Field surveys and observations confirm this gap and the need for increased bike parking on campus. In many areas during peak periods, racks are full and bikes are locked to railings and other street furniture. The situation is the same with campus housing secure parking areas, or SPAs. All of the SPAs on campus appear to be fully utilized.

The bike parking plans are developed to help the Institute meet its 20% bicycle commute mode share for campus. Without adequate bike parking, the projected number of bicyclists on campus each day will not be able to park their bikes on campus.

Based on the campus goal of 20% bicycle commute mode share by 2035 (or 7,683 bicycle commuters), it is estimated that Georgia Tech will need 9,604 bike parking spaces. This need equates to 7,380 new spaces on campus, or 369 spaces per year for the next twenty years.

The number of bike parking spaces needed is estimated by using an 80% rack utilization goal. This goal is a best practice goal for peak period bike parking and ensures there is a perception of bike parking availability. Additionally, rack capacity issues, such as abandoned bikes on racks which accumulate over the course of a semester, can be accommodated.

The bike parking implementation strategy includes identification of high demand, high capacity bike parking locations (see map to the right) and a mix of bike parking types. In areas such as campus housing, secure, long-term bike parking will be needed to meet the needs of campus residents. In areas with administrative, research and classroom buildings, short-term bike parking will be the primary bike parking type needed.

More detailed information about bike parking recommendations can be found in the *Support Facilities* chapter of this plan.

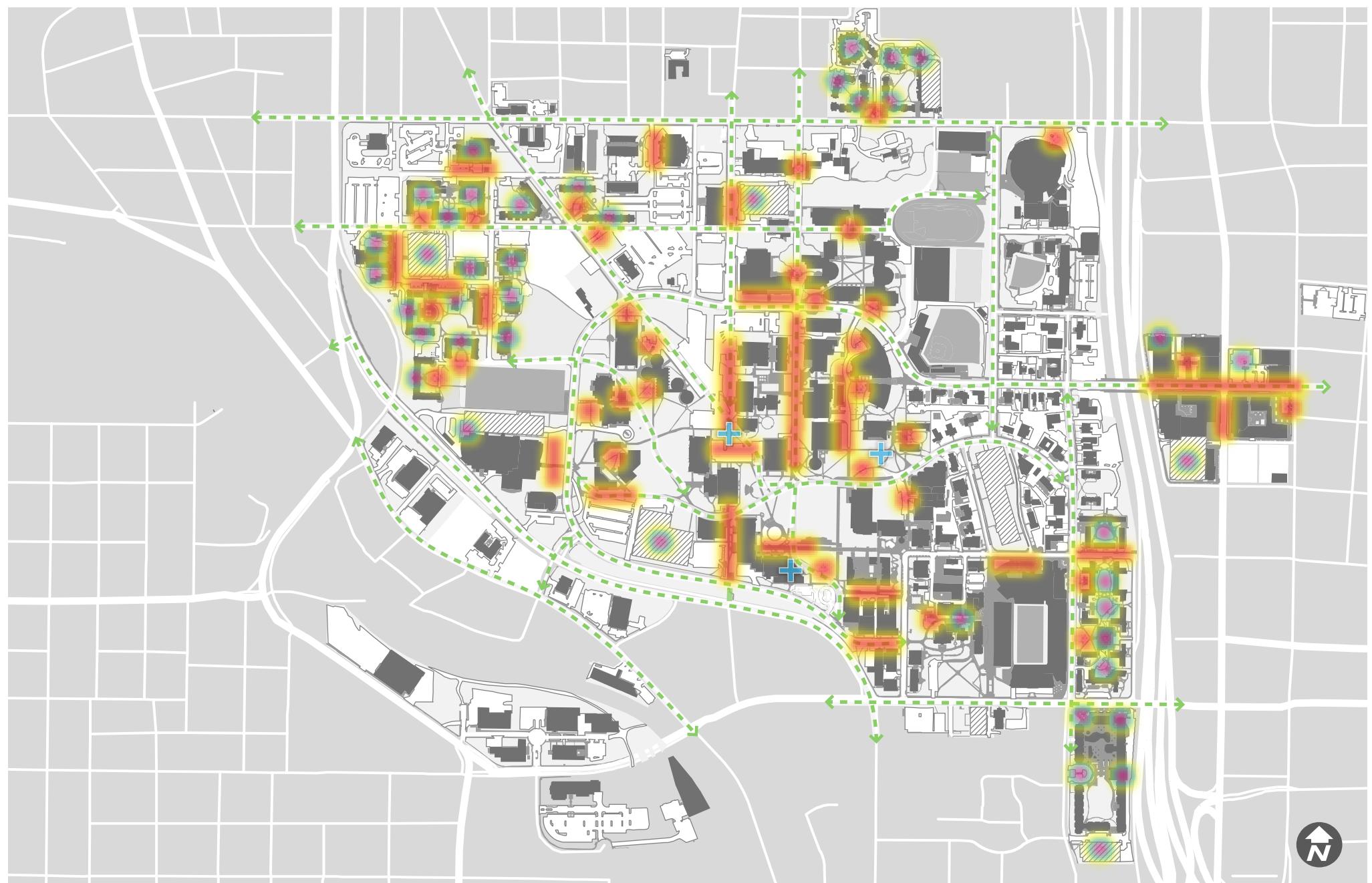


Figure 2. High Demand Bike Parking Locations

- High demand for short term bike parking
- High demand for long term secure bike parking

- Potential bike center locations
- Strategic Corridors

High Demand Long-term Bike Parking Areas

Primary Focus

- Secure parking areas
 - Integrate parking within buildings
 - Integrate parking into nearby parking garages
 - Stand alone bike parking structures

High Demand Short-Term Bike Parking Areas

Primary Focus

- Short-term bike parking with convenient proximity to building entrances or major destinations

Key Program Recommendations

The programs recommendations cover four for the Five Es of the Bicycle Friendly University (BFU) principles. They are focused on promoting and supporting the bicycling culture on campus. The recommended programs are summarized below and described in more detail in the *Education, Encouragement, and Enforcement Programs and Evaluation* chapters of this plan.

The success of programs on campus at Georgia Tech was a key reason the Institute was able to achieve Silver BFU designation. They will continue to play a significant role as the Georgia Tech works towards achieving Gold or Platinum BFU designation.

Education

- Maintain Bike GT website
- Create Mobility Ambassadors Program
- Enhanced/Expanded FASET Bicycle/Pedestrian Campus Orientation
- Bicycle Classes and Clubs
- Integrate Bicycling into the Classroom

Encouragement

- Commuter Benefit Program
- Create Bike Shop on Campus
- Continue Starter Bikes
- Helmet/Light/Lock Raffles
- Expanded Smart Park Options
- Bike Buddy / Bike Mentor Program
- Bike Week

Enforcement

- Confiscation Policy
- Bike Registration
- Targeted enforcement

Evaluation

- Continuing Annual Commuter Survey
- Conducting Counts and Inventory Data Collection
- Developing Annual Campus Bike Report
- Re-Applying for Bicycle Friendly University Designation

Summary of Input From Campus Community

To develop the recommendations for this plan and understand the bicycle needs on campus, stakeholder group interviews were conducted. Five group meetings were held over the course of the project charrette that was held on April 16 and April 17, 2014.

The focus of each group discussion varied based on the stakeholders' connections to bicycling in Atlanta and on the Georgia Tech campus. The groups included:

- Stakeholder Meeting 1 - Housing/Programs/Transportation/Safety
- Stakeholder Meeting 2 - "Public Works"/Long-Range Planning
- Stakeholder Meeting 3 - Students/Student Services
- Stakeholder Meeting 4 - Faculty/Staff/Communications
- Community Stakeholder Meeting - Community Groups Outside of Campus Community

Table 3. Stakeholder Meetings Common Themes

Theme	Summary
Expand Programmatic Efforts	Programmatic efforts ranging from education/Public Service Announcements aimed at bicyclists, pedestrians, and drivers to additional enforcement efforts to help develop safe, educated travelers. Education efforts targeted at developing courteous and lawful bicyclists would be highly effective with a captive population such as the Institute.
Increase Bicycle Parking	Increase the overall amount and type (short- and long-term) of bike parking available to accommodate a growing desire to bicycle to campus and the need to park bikes safely and securely.
Build Staff and Infrastructure Capacity	Identify a staff person to serve as Georgia Tech Bicycle Coordinator in a full-time role, with a sufficient budget to make visible changes on campus. Provide a facility to house a campus bike shop in a visible location on campus where bicycle information and resources can also be easily located and accessed.
Improve Access to Campus	Access to campus from certain parts of town (west of campus, Atlantic Station, etc.) and along certain roadways (10th Street) is difficult with the current facilities and roadway configurations. Coordinating with the City of Atlanta, Midtown Alliance, and GDOT on implementing the Cycle Atlanta plans will be important to improving access to campus.

Bicycle Friendly University: Goals and Objectives

Overview

The goals and objectives for this master plan are organized according to the Five E's of a Bicycle Friendly University: **Engineering, Education, Encouragement, Enforcement, and Evaluation**. A summary of the Five E's is provided on the subsequent pages of this chapter. This organization aligns this master plan with national standards and best practices, as well as positions Georgia Tech for its next Bicycle Friendly University application. By working towards achieving these goals and objectives, Georgia Tech can position the University to achieve one of the two highest possible designations - Platinum or Gold.

Bicycle Friendly University

The Bicycle Friendly University (BFU) program is a national initiative intended to encourage higher education institutions across the country to improve the bicycling environment on their campus and recognize communities who are successfully doing this. The program provides colleges and universities with resources related to bicycle planning and also generates positive media attention at the national and local level for those that earn a designation.

The BFU program is administered by the League of American Bicyclists, a national bicycling advocacy organization based in Washington, D.C. Applications for the BFU are submitted annually, and successful applicants are granted one of four award levels, which include Bronze, Silver, Gold, and Platinum.

Georgia Tech is currently designated as a Silver-Level BFU, which was granted in 2012. **One of the key goals for this master plan is for the University to reach Gold or Platinum within the next five years.**

Georgia Tech must re-apply for designation by 2016 to maintain its BFU designation.

To achieve the next level, Georgia Tech will need to address each of the Five E's, which provide a framework to assess progress towards a comprehensive cycling culture on campus.

Figure 3. Levels of Bicycle Friendly University Designation

Highest Level

Platinum

GT Goal

Gold

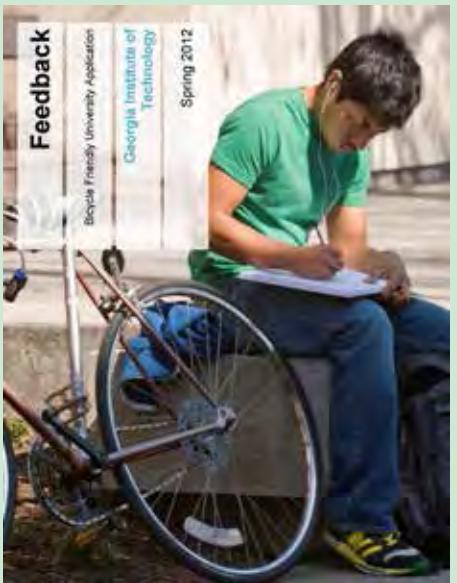
Current GT
Designation

Silver

Lowest Level

Bronze

Bicycle Friendly University Application Feedback

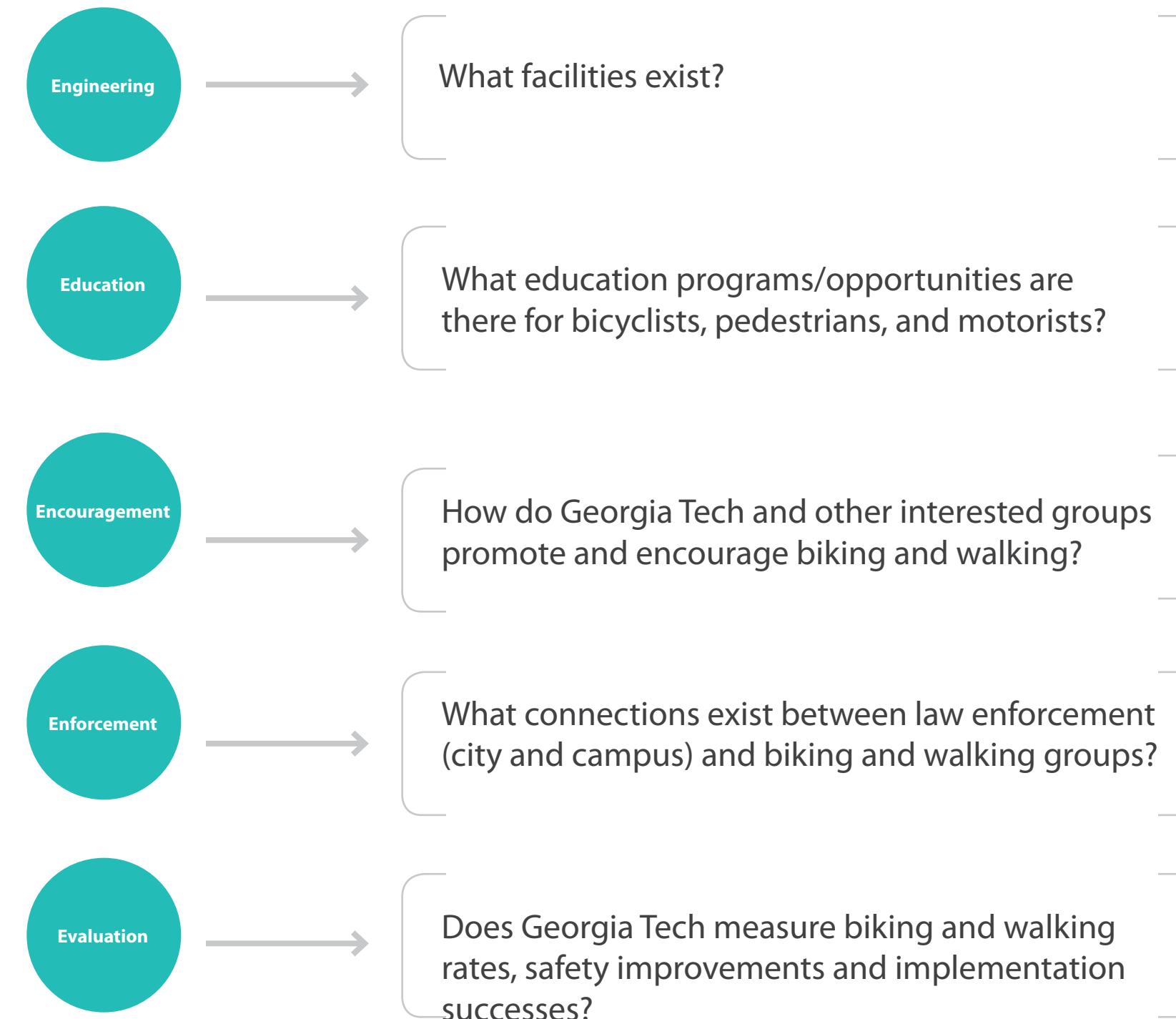


When Georgia Tech applied for Bicycle Friendly University status, it received a designation of Silver. As part of the designation, each applicant receives a feedback report. The report includes notes about why the University received the level that it did as well as recommendations on how the University can work towards the next level.

The feedback report noted several successes at Georgia Tech. These include:

- Successful anti-theft campaign (including discounts on u-locks and lock giveaways)
 - Subsidized and frequent bike education and maintenance classes
 - President-led rides
 - Commuter challenges and breakfasts
 - Bike clubs
 - Bike center
 - Bike Week
 - Bike co-op
 - viaCycle (student designed and managed pilot bike share program)
 - Starter Bikes
- These successes should be carried forward and serve as a platform to support more and better biking on campus.
- The feedback report also noted the most significant measures Georgia Tech should take to improve cycling on campus. Most of these are already accomplished or are being accomplished, such as development of this plan. By achieving these and other recommendations, Georgia Tech will be well-positioned to reach Gold or Platinum-Level designation next.
- **Expanding the bicycle program coordinator's time devoted to the bike program would help in scaling up your BFU efforts.** Dedication to this full-time position demonstrates your institution's efforts towards bicycling and provides the resources necessary to move projects forward.
 - **Continue to expand the bike network and increase network connectivity through the use of bike lanes, bike tracks, shared lane arrows, signed routes, and bicycle cut-throughs.** Work with the City and the surrounding neighborhoods to ensure that the campus is safely accessible by bike.
 - **Consider creating a campus bike plan that will guide future plans with a long-term physical and programmatic vision for your campus.** Develop a clear vision statement and set ambitious but attainable targets. The over-arching goal should be to increase the percentage of trips made by bicycle on campus. Ensure that there is dedicated funding for the implementation of the bicycle master plan.
 - **Expand the bike program.**
 - **Establish a formal incentive program for those who bike commute.** This should include such benefits as cash incentives, Guaranteed Ride Home, Zipcar discounts, free bus passes for inclement weather days, and coupons for local bike shops.

Figure 4. Bicycle Friendly University (BFU) Five E's



Goals for Biking at Georgia Tech

Georgia Tech has established three specific goal targets related to bicycle mode share, safety, and bicycle registration. These goals establish performance measures to strive for and provide a way to track progress toward the vision for bicycling on campus.

In addition to these performance-based goals, Georgia Tech has established a set of goals and objectives using the Five E's framework. These goals and objectives will guide the University towards becoming a leader in higher education campus bicycling and, more importantly, improve the quality of life on campus.

Table 4. Goal Metrics for Biking at Georgia Tech

Year	Bicycle Mode Share Goal	Crash Goal	New Bicycle Registration Target
2012 (current)	8.20%	43	277
2015	11%	< 15	400
2025	15%	< 15	600
2035	20%	< 10	800

Engineering

Goal: Provide and promote safe and accessible routes and accommodations for biking as a daily form of physical activity, such that 20% of all trips to campus are by bicycle by 2035.

Objectives

- Provide bicycle facilities and accommodations on campus that minimize conflict between bicyclists and pedestrians through appropriate facility selection and design.
- Develop and install consistent campus bikeway signage to increase awareness of bicyclists on campus and help people riding navigate campus.
- Provide convenient, covered, and secure bicycle parking at focal points on campus such as parking garages, residence halls, instructional buildings, and major campus employment centers.
- Provide appropriate bicycle racks throughout campus.
- Identify and eliminate major hazards and barriers to bicycling, such as bicycle access across Northside Drive.

Education

Goal: Implement comprehensive education programs targeted at students, faculty, and staff.

Objectives

- Educate students, faculty, and staff on bicycle safety issues during orientation classes.
- Provide bikeway route maps both online and in hard copy form.
- Coordinate with nearby agencies and groups on annual bicycle events such as "Bike to Work Day", "Bike to School Day", and bicycle safety courses.
- Promote safe bicycling through the use of encouragement, incentives, and bicycle-friendly programs.

Encouragement

Goal: Implement comprehensive encouragement programs targeted at students, faculty, and staff.

Objectives

- Encourage non-motorized transportation with programs that target pedestrians, bicyclists, motorists, and public transit users.
- Encourage student body to use a bicycle for daily travel to campus instead of driving.
- Provide incentives and support facilities for individuals that commute by bicycle.
- Promote walking and bicycling through Georgia Tech sponsored events.

Enforcement

Goal: Maintain positive enforcement program for safe walking and bicycling behaviors, and increase positive enforcement during periods of peak public awareness.

Objectives

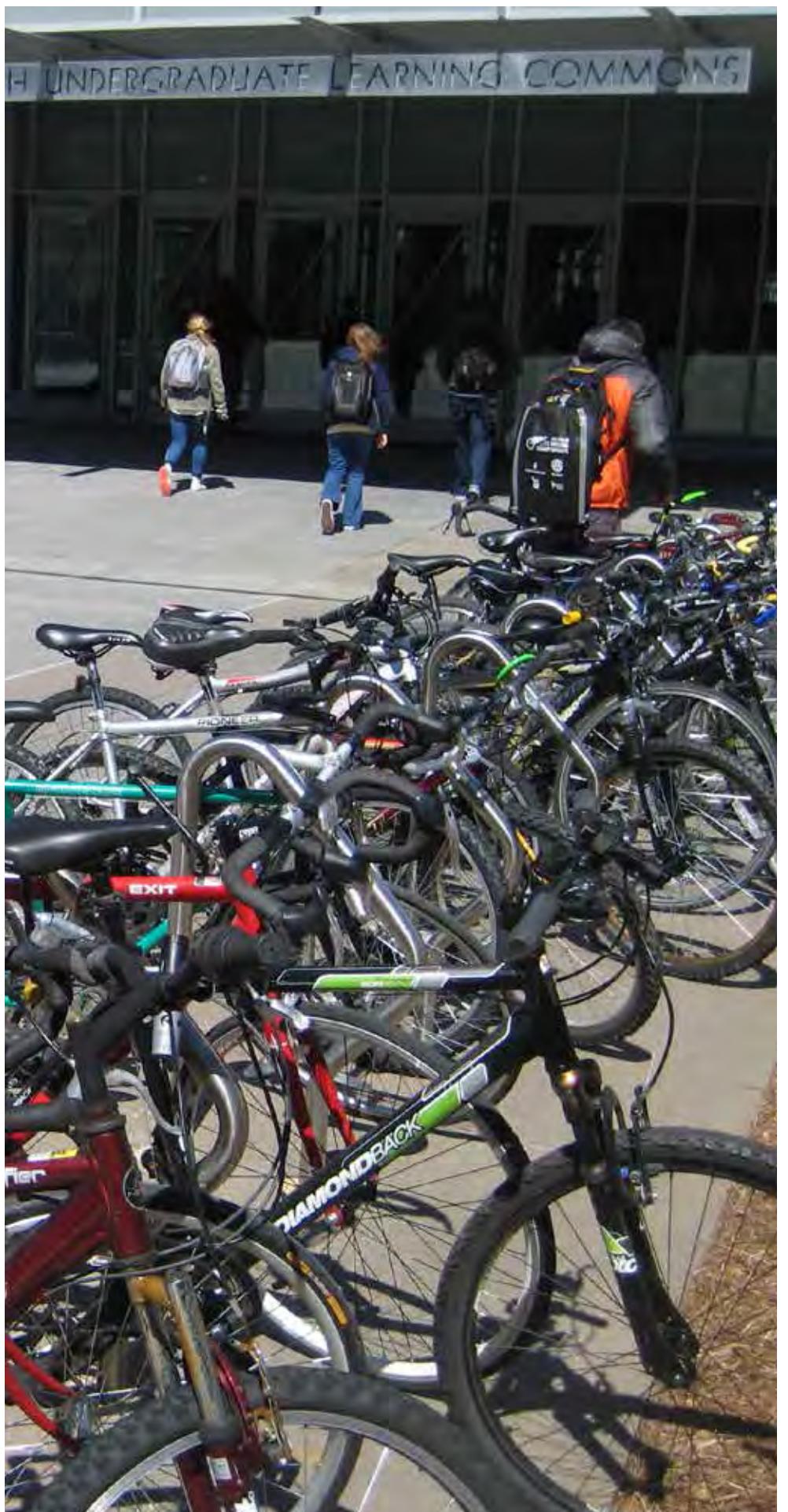
- Reduce negligent behavior among drivers, bicyclists, and pedestrians through enforcement.
- Encourage bicyclists to report all crashes to Georgia Tech Police Department so that crashes are accurately recorded into a crash database for future analysis and monitoring.
- Encourage bicyclists to report stolen and vandalized bikes to Georgia Tech Police Department.
- Reduce the number of bicycle thefts on campus.
- Encourage students to register bicycles to aid in returning recovered bicycles if stolen.

Evaluation and Planning

Goal: Monitor implementation of the Georgia Tech Bicycle Master Plan.

Objectives

- Create a sustainable, dedicated source of bikeway and walkway funding within the annual budget.
- Avoid missed opportunities by ensuring all campus construction projects incorporate bikeways and other bike infrastructure as recommended in the Bicycle Master Plan.
- Implement less-complicated and inexpensive projects first for efficiency.
- Institutionalize non-motorized transportation in all campus transportation planning, design, and construction activities.
- Track the success of the Bicycle Master Plan as a percent completed of the total recommended improvements.
- Track Georgia Tech mode share trends through expanded annual bicycle counts and commuter surveys.
- Continue to monitor bicycle parking demand, and increase parking supply with temporary or permanent facilities as needed.
- Monitor bicycle crash data to reduce bicycle crash rates.
- Produce an annual bicycling report card identifying non-motorized trends and accomplishments.
- Apply for Bicycle Friendly University "Gold" or "Platinum" status in 2016.



Needs Analysis

Overview

Biking as a means to get to and around campus has grown considerably in recent years. Much of the growth is tied to cost savings, convenience, environmental considerations, health, and other quality of life benefits that biking can provide. The needs analysis provides a snapshot of trends, needs, and opportunities related to biking on campus.

Campus Context

Georgia Tech is an urban campus in the heart of Atlanta. Located just west of Midtown Atlanta, the campus is well connected to the nearby neighborhoods and the Atlanta region via interstates, regional transit services, and a well-connected street network.

The scale and density of campus is ideal for biking, at approximately one mile from one side of campus to the other. Many of the surrounding neighborhoods where the Georgia Tech community lives are within a 15 to 30 minute bike ride.

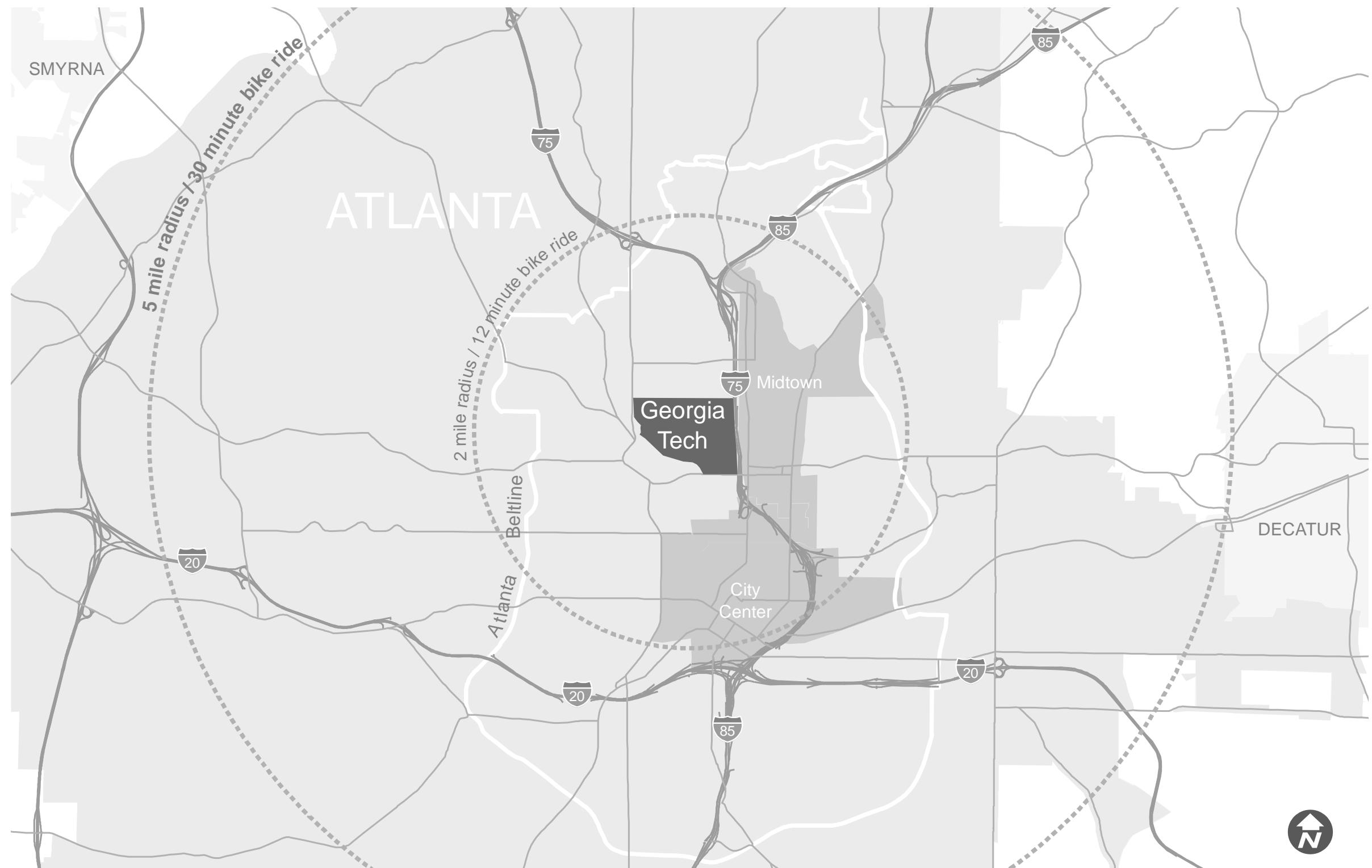


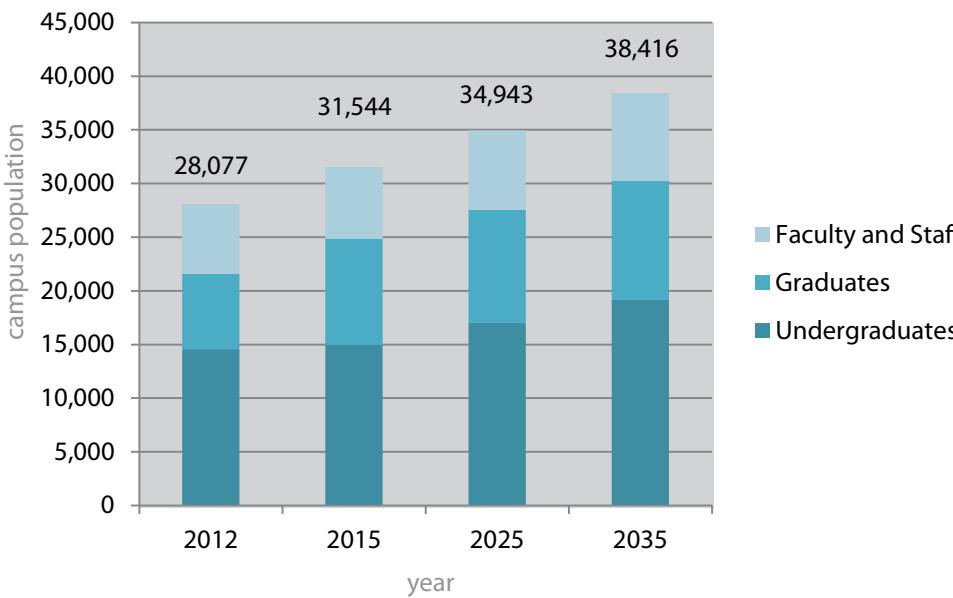
Figure 5. Campus Context

Campus Growth

The campus population has increased consistently over the years. From 1997 to 2012, the campus has grown at an annual rate of 722 people per year (students, faculty, and staff). In 2012, the total campus population was 28,077, and by 2035, it is projected to be 38,416.

At current bicycle commute rates, the estimated number of people biking to campus is 2,302. If the Institute reaches its goal of 20% bike commute rate by 2035, that will translate to 7,683 people commuting by bike on any given day. Presented another way, the increase represents a 197% increase in the number of bicyclists commuting to campus. The recommendations for this Plan are developed to help Georgia Tech meet this demand.

Figure 6. Projected Campus Population Growth



1. Campus population growth projections from Office of Institutional Research and Planning.
2. The 2035 planning horizon aligns with the Georgia Tech Strategic Plan, *Designing the Future: A Strategic Vision and Plan*.

Source: Capital Planning and Space Management Department; Office of Institutional Research and Planning

Table 7. Projected Campus Growth and Bicycle Commute Rates

Year	Total Population	Bicycle Commuters			
		8.2%	10.0%	15.0%	20.0%
2012	28,077	2,302	2,808	4,212	5,615
2015	31,544	2,587	3,154	4,732	6,309
2025	34,943	2,865	3,494	5,241	6,989
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% increase over 10 yrs		11%	35%	103%	170%
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1. 2012 Bicycle Commute Rate based on 2012 Parking and Transportation Department Campus Commute Survey

2. Campus population growth projections from Office of Institutional Research and Planning.

Source: Capital Planning and Space Management Department; Office of Institutional Research and Planning; Parking and Transportation Services.

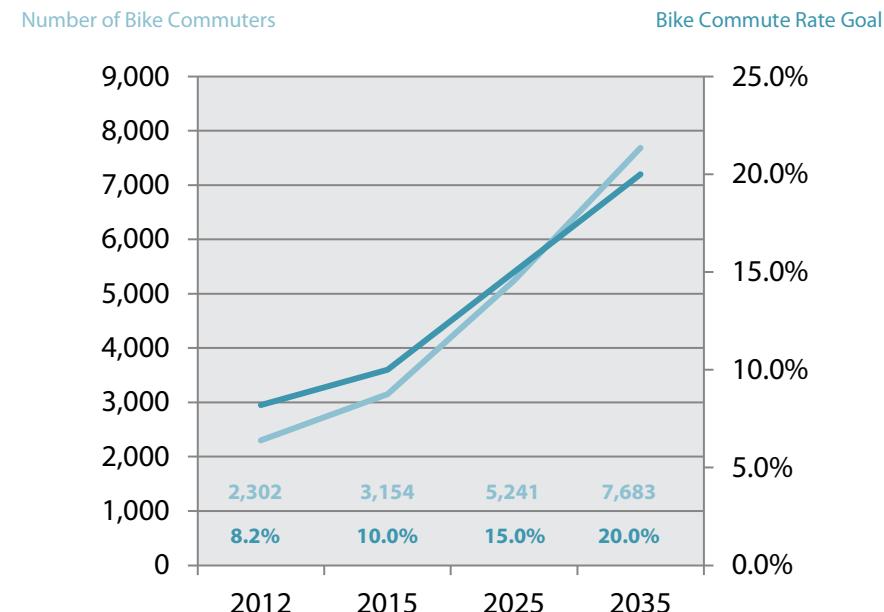
Awards and Interest

Bicycling and the efforts by groups on campus to encourage and support cycling on campus have generated recognition both on and off campus. Recognition started on campus and has grown to include regional and national recognition.

In 2011, the Bicycle Infrastructure Improvement Committee (BIIC) was recognized as the Environmental Initiative of the Year by the Georgia Tech Student Government Association. In 2012, Georgia Tech was awarded the Partner of the Year award by the Atlanta Bicycle Coalition, which is the Atlanta region's primary bike advocacy organization.

The same year, Georgia Tech applied for and received a Silver-Level Bicycle Friendly University (BFU) designation by the League of the American Bicyclists. The BFU program is a nationally-recognized program that recognizes institutions of higher education for promoting and providing a more bikeable campus for students, staff, and visitors.

Figure 7. Campus Bicycle Commute Rate Goal



1. 2012 Bicycle Commute Rate based on 2012 Parking and Transportation Department Campus Commute Survey

Source: Capital Planning and Space Management Department; Office of Institutional Research and Planning; Parking and Transportation Services.

Table 8. Awards and Recognition

Year	Recognition
2011	Environmental Initiative of the Year - Bicycle Infrastructure Improvement Committee
2012	Atlanta Bicycle Coalition Partner of the Year - Georgia Tech
2012	Bicycle Friendly University - Georgia Tech (Silver-Level Designation)

Existing Bikeways

On-campus, Georgia Tech has a complete network of bikeways along the major roadways, and the off-road pathways may be used by bicyclists too. The primary gaps in the bikeway network are around the edges of campus and along routes from adjacent neighborhoods to campus.

Existing On-Street Campus Bikeways

On-street, on-campus bikeways include a combination of shared lane markings and bike lanes. Ferst Drive/5th Street has a dedicated bike lane for almost the entire length of the street. Where roadways have lower volumes or constrained rights-of-way, the Institute has applied shared lane markings (sharrows).

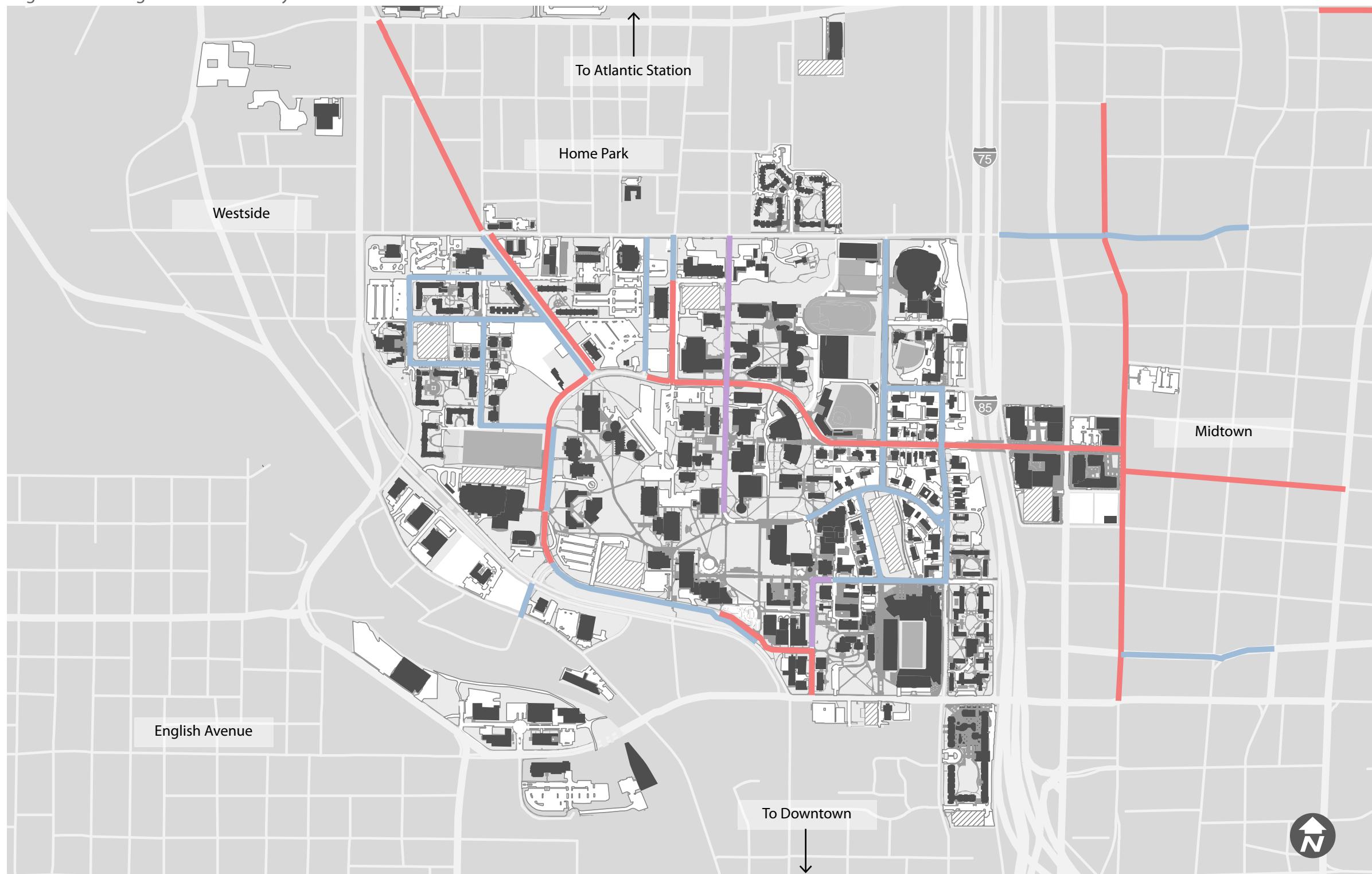
Additionally, Georgia Tech has mixed shared lane markings and bike lanes along the same street, such as along Hemphill Avenue. This strategy allows uphill cyclists to use a dedicated bike lane while downhill cyclists share a lane with vehicles, as they are typically traveling close to the same speed as vehicles.

Table 9. Existing On-Street Bikeways in 2014

Type	Length (in miles)
Multi-Use Paths	0.6
Bike Lane (both sides)	1.7
Shared Lane Markings	3.2

Note: Does not include off-road pathways, which bicyclists may use.

Figure 8. Existing On-Street Bikeways



Existing Bikeways

- Shared Lane Marking
- Bike Lane
- Multi-Use Path

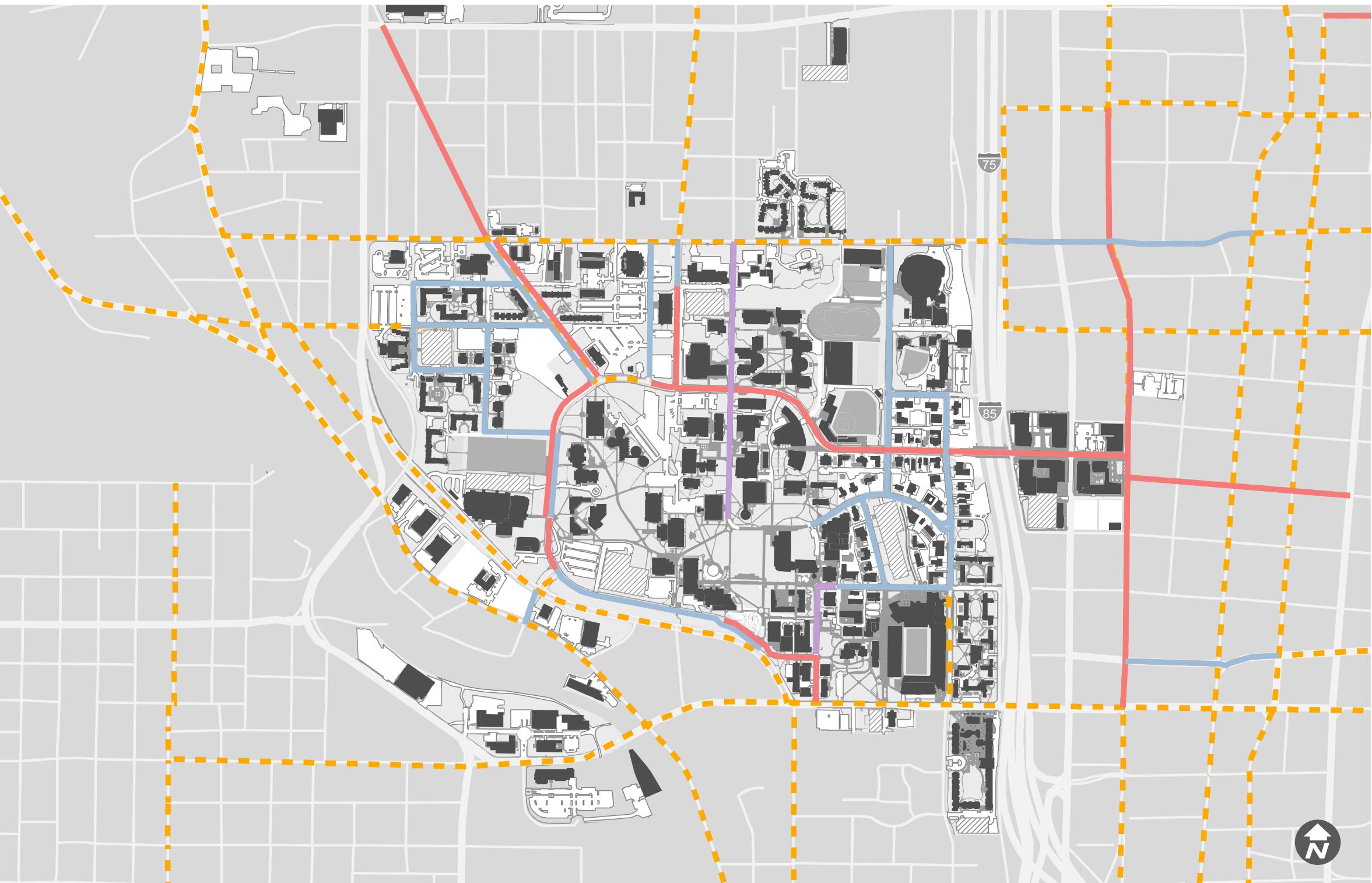
Figure 10. Existing On-Street Bikeway Gaps

Existing Gaps

Many of the gaps have already been identified for improvements by the City of Atlanta as part of the Cycle Atlanta: Phase 1.0 Study. The majority of the gaps are associated with the north, west, and south edges of campus.

Currently, North Avenue, 10th Street, Tech Parkway, and Northside Drive have no dedicated bicycle facilities. Additionally, many of the intersections associated with these streets around the edge of campus can be difficult and uncomfortable to navigate by bike. For more about what the City of Atlanta and other community partners are planning, see the Priority Projects chapter of this Plan.

Another gap worth noting is the needed connection between Georgia Tech and Atlantic Station. The Home Park neighborhood and Atlantic Station are places of residence and shopping areas popular with students, faculty, and staff.



On-Street Bikeway Gaps

Identified Gaps

Existing Bikeways

- Shared Lane Marking
- Bike Lane
- Multi-Use Path

Safety and Security

Bicycling on campus should be a safe and convenient travel option, and at the end of a trip, bicyclists should feel comfortable that their bike is secure. Under the new bicycle policy for campus, bicyclists have a responsibility to ride safely on campus and secure their bike at the end of a trip.

With this policy, Georgia Tech Police Department (GTPD), Parking and Transportation Services (PTS), Capital Planning and Space Management (CPSM), and the BIIC have a shared responsibility to educate, encourage, and enforce safe riding behavior on campus.

While Georgia Tech has a bicycle registration program, the number of students registering has varied over the years. Outreach for bike registration has historically been done through campus events, such as Earth Day, or programs, such as FASET. Bike registration helps GTPD contact a bike's owner if it has been stolen and recovered and/or confiscated by GTPD.

For a time, bike theft was an issue and increased steadily from 2007 to 2010. However since 2011, the U-Lock Program, which includes signs at bike racks and lock giveaways, has helped encourage more secure bike locking. The result has been a reduction in reported bike thefts since 2010.

Bicycle crashes also happen from time to time on campus. Crashes have occurred on pathways, at transitions from pathways to on-street routes, and on streets, particularly at intersections. Several intersections have been identified as having particular safety issues. These intersections are addressed as part of the Priority Intersections chapter of this Plan.

Table 11. Annual Bike Registrations at Georgia Tech

Year	Bike Registrations
2010	126
2011	71
2012	277

Source: BIIC White Paper

Table 12. Annual Bike Thefts

Year	Bike Thefts
2007	29
2009	64
2010	101
2011	58
2012	43

Source: BIIC White Paper

Table 13. Annual Bicycle Crashes (reported to GTPD)

Year	Crashes
2011	28
2012	25

Source: BIIC White Paper



Georgia Tech's U-Lock campaign and bike registration program have helped reduce bicycle thefts and curb abandonment of bicycles.

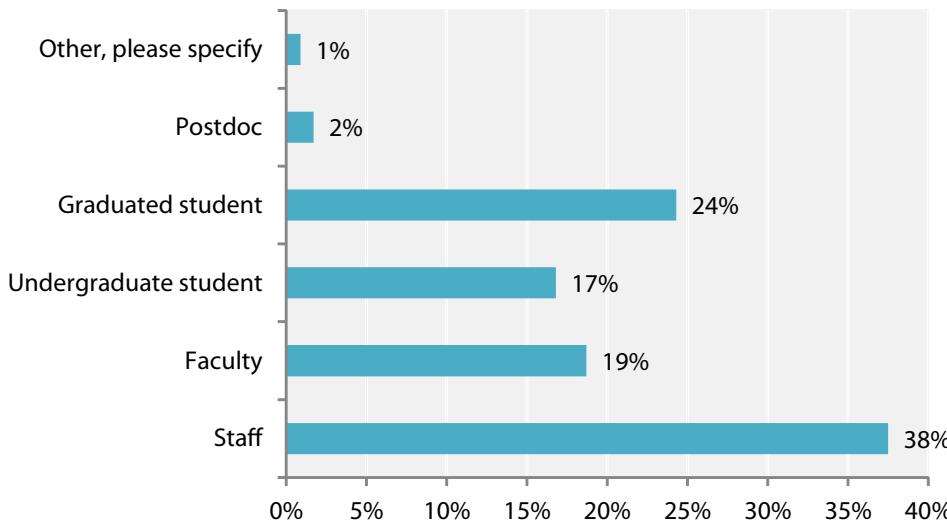
Commuter Survey

The Bicycle Infrastructure Improvement Committee (BIIC) and Parking and Transportation Services have conducted regular commuter surveys on campus to identify current travel choices as well as preferences and needs for bicycling. The charts and figures provide a summary of commute surveys done over the past two years. Both surveys include students as well as faculty and staff.

Based on the surveys, several key trends emerged:

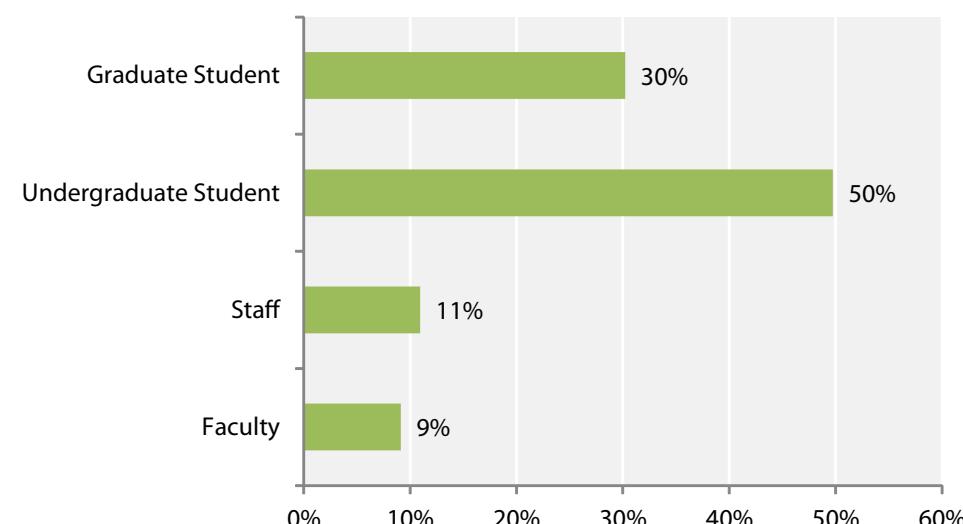
- Cycling has increased in recent years and the **current rate is around 8.2%**
- **33% of the campus population commutes to campus by walking, biking, or transit**
- **The percent of commuters who would bike if feasible has stayed consistent at 17%, which is almost as high as the commute goal of 20% for Georgia Tech.**
- Although **5th Street is the most popular access point to campus**, bike commuters are accessing campus from every major entrance point. If bicycle access can be improved at major access points, cycling rates will likely increase at these entrances.
- **The number one reason for not cycling to campus is feeling unsafe in traffic.** If infrastructure is constructed on and off campus to make cycling safer and more comfortable, a significant barrier to cycling can be removed.
- **There is significant interest in on-street bike infrastructure improvements** as well as support infrastructure, such as bicycle parking, and programs, such as commuter reward programs.

Figure 11. 2012 Parking and Transportation Services Office Commute Survey - Respondents Campus Affiliation



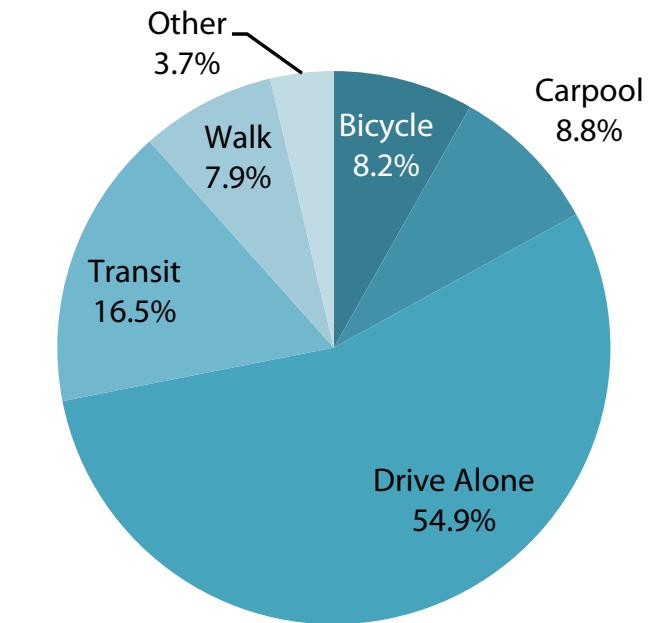
Source: Georgia Tech Parking and Transportation Services Office Commute Survey 2012

Figure 12. Bicycle Infrastructure Improvement Committee Survey - Respondents Campus Affiliation



Source: Georgia Tech Bicycle Infrastructure Improvement Committee

Figure 13. 2012 Campus Mode Share



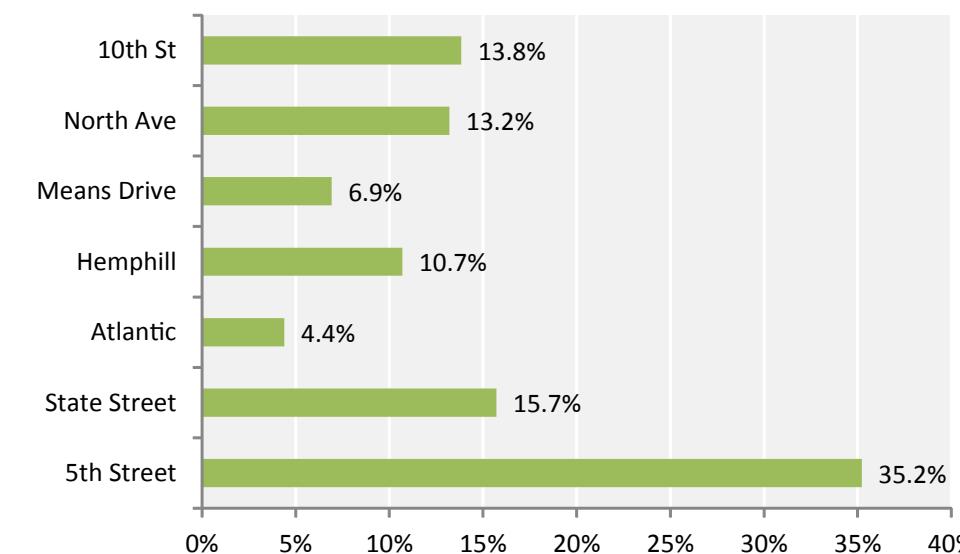
Source: Georgia Tech Parking and Transportation Services Office Commute Survey 2012

Table 14. Bicycle Commute Rates and Interest

Year	% of campus who commute primarily by bike	% of commuters who commute occasionally by bicycle	% of commuters who bicycle on a seasonal basis	% of commuters who would bike if feasible
2000	5%	-	-	-
2011	5.70%	5.60%	9.90%	17.80%
2012	8.20%	3.70%	7.30%	17.40%

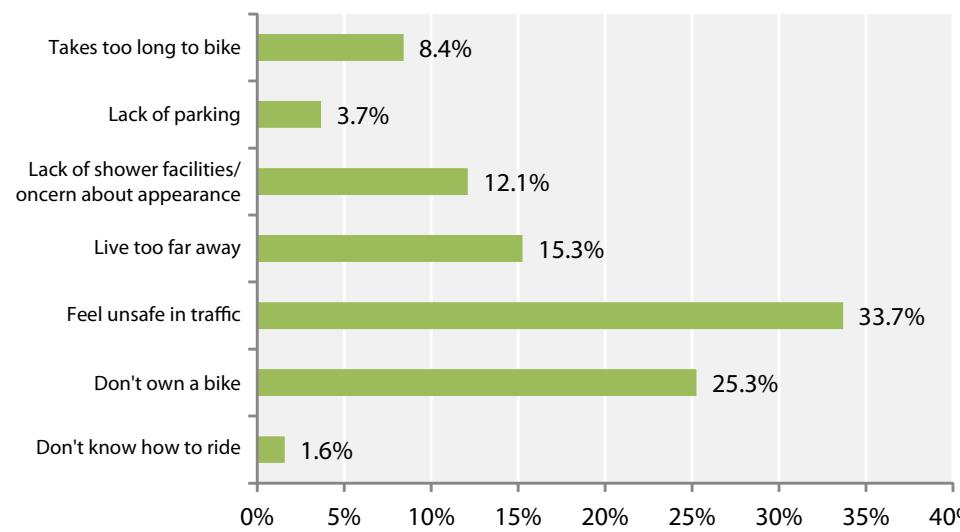
Source: Georgia Tech Parking and Transportation Services Office Commute Surveys; BIIC Bicycle Commuter Survey

Figure 14. Which street do you use to access campus by bike most regularly?



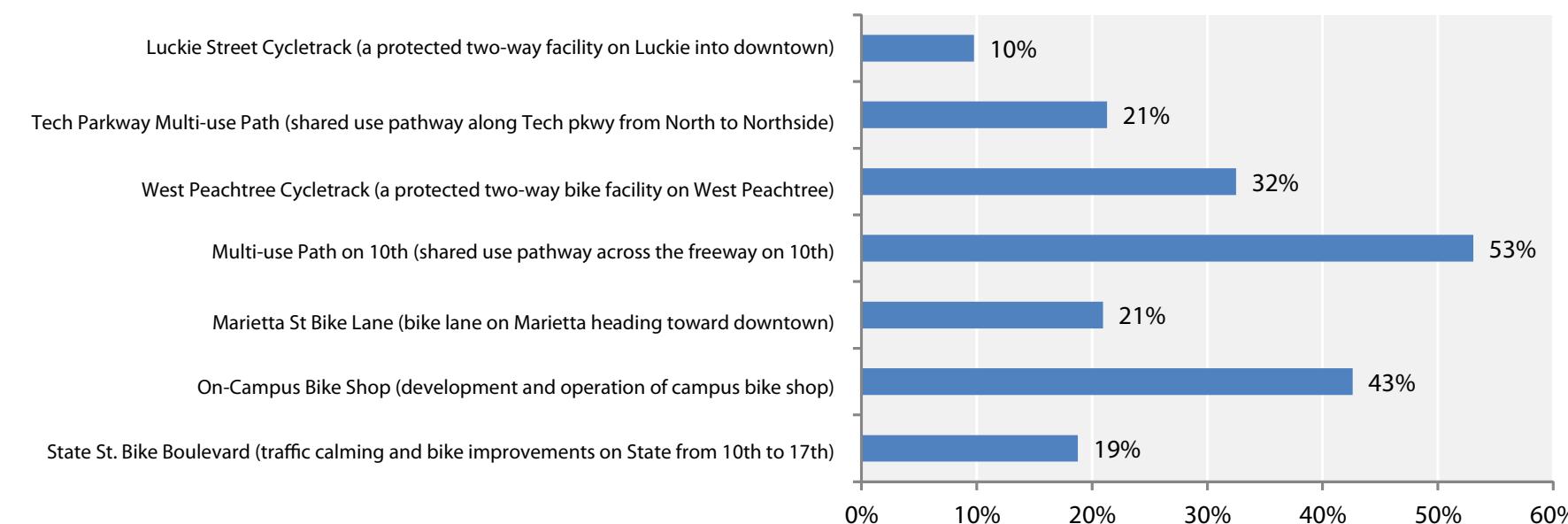
Source: Georgia Tech BIIC Survey

Figure 15. What one factor is most responsible for you choosing not to bike to campus?



Source: Georgia Tech BIIC Survey

Figure 16. Which of the following large projects would you most like to see implemented?



Source: Georgia Tech BIIC Survey

Top Access Point to Campus: 5th Street

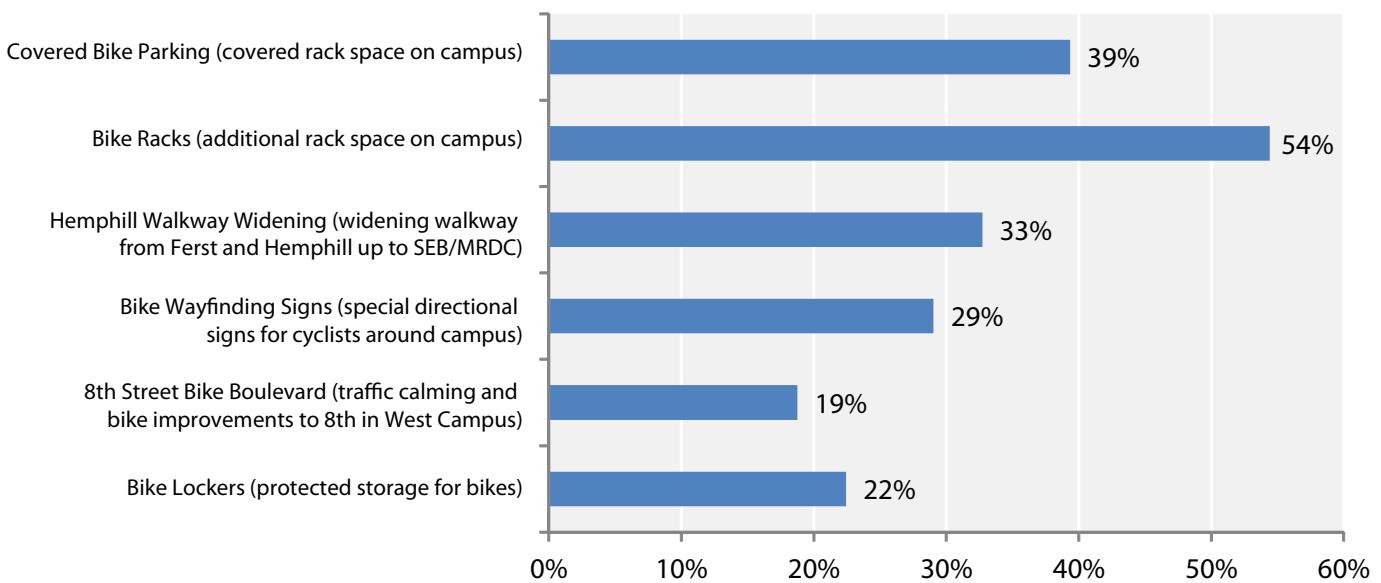
Top Reason to why not ride to campus: Feel unsafe in traffic

Most Desired Large Project: Multi-use path on 10th Street

Most Desired Small Project: Bike racks

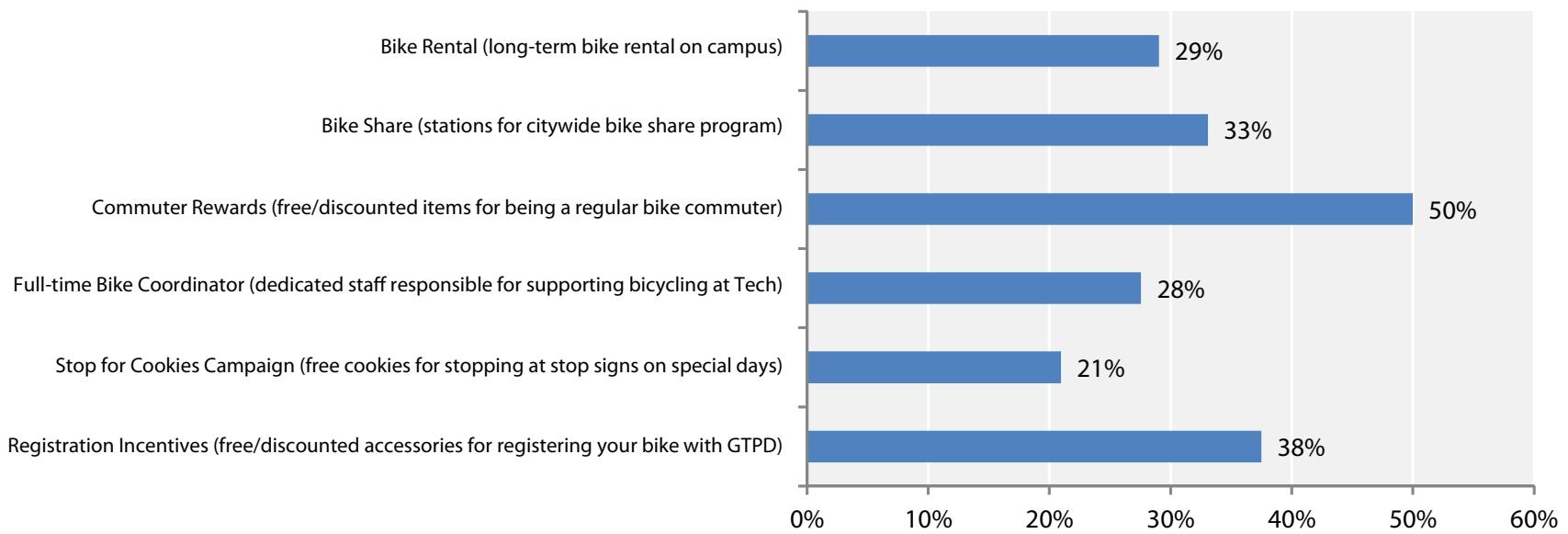
Most Desired Program: Commuter rewards

Figure 18. Which of the following small projects would you most like to see implemented?



Source: Georgia Tech BIIC Survey

Figure 17. Which of the following programs would you most like to see implemented on campus?



Source: Georgia Tech BIIC Survey

Where are people riding?

The Cycle Atlanta smartphone app team, which is supported by the Digital Media program within the School of Literature, Media, and Communication and the School of Civil and Environmental Engineering, analyzed route data and other information about how people are commuting to and from Georgia Tech's campus. The analysis was conducted by Rohit Ammanamanchi, undergraduate in Civil Engineering, with guidance by Dr. Kari Watkins, P.E. and Dr. Chris Le Dantec.

The Cycle Atlanta app was originally developed in partnership with the City of Atlanta and the Atlanta Regional Commission to support development of the Cycle Atlanta: Phase 1.0 Study. Through data collected by the app, researchers at Georgia Tech were able to collect route information as well as demographic and trip information. The resulting data from cyclists can be used to identify where people are starting and ending their trips, where they are riding during their trips, and many other important pieces of information that can help researchers understand where people are riding, who is riding, and why they are riding.

For the Georgia Tech Campus Bicycle Master Plan, the data was used to analyze where people are accessing campus, where they are going or starting rides when on campus, and which neighborhoods app users are riding to and from campus.

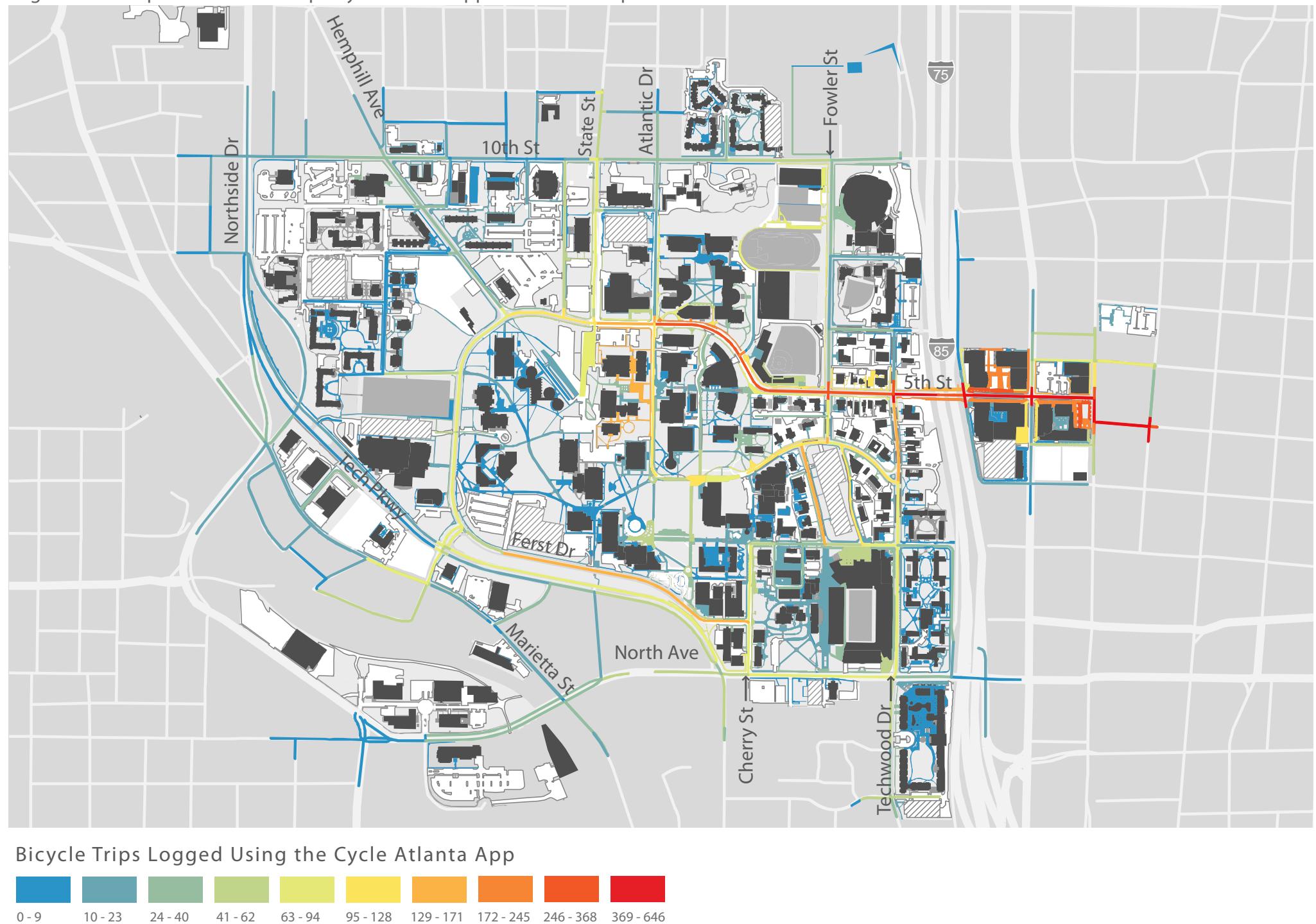
Going forward, the data from the Cycle Atlanta app can be used to evaluate changes in campus riding behaviors over time as new infrastructure and connections to campus are made. For more on how this effort can be carried forward, please see the Evaluation chapter of this Plan.

Route Choice

The Cycle Atlanta app data indicates that the majority of cyclists are accessing Georgia Tech from Midtown by using the 5th Street bridge. Ferst Drive, Atlantic Drive, State Street, and 4th Street are popular route choices on campus.

Access from the north and west of campus is still hampered by infrastructure barriers, such as major intersections and streets that do not have dedicated space for cyclists. Access from the east is funneled through 5th Street because the 10th Street bridge and North Avenue bridge are currently difficult and unaccommodating for cyclists to navigate, and 5th Street has bicycle lanes. Bridge enhancements or new bridges over the interstate could enhance Georgia Tech's connection to Midtown.

Figure 19. Campus Route Heat Map - Cycle Atlanta App Routes on Campus



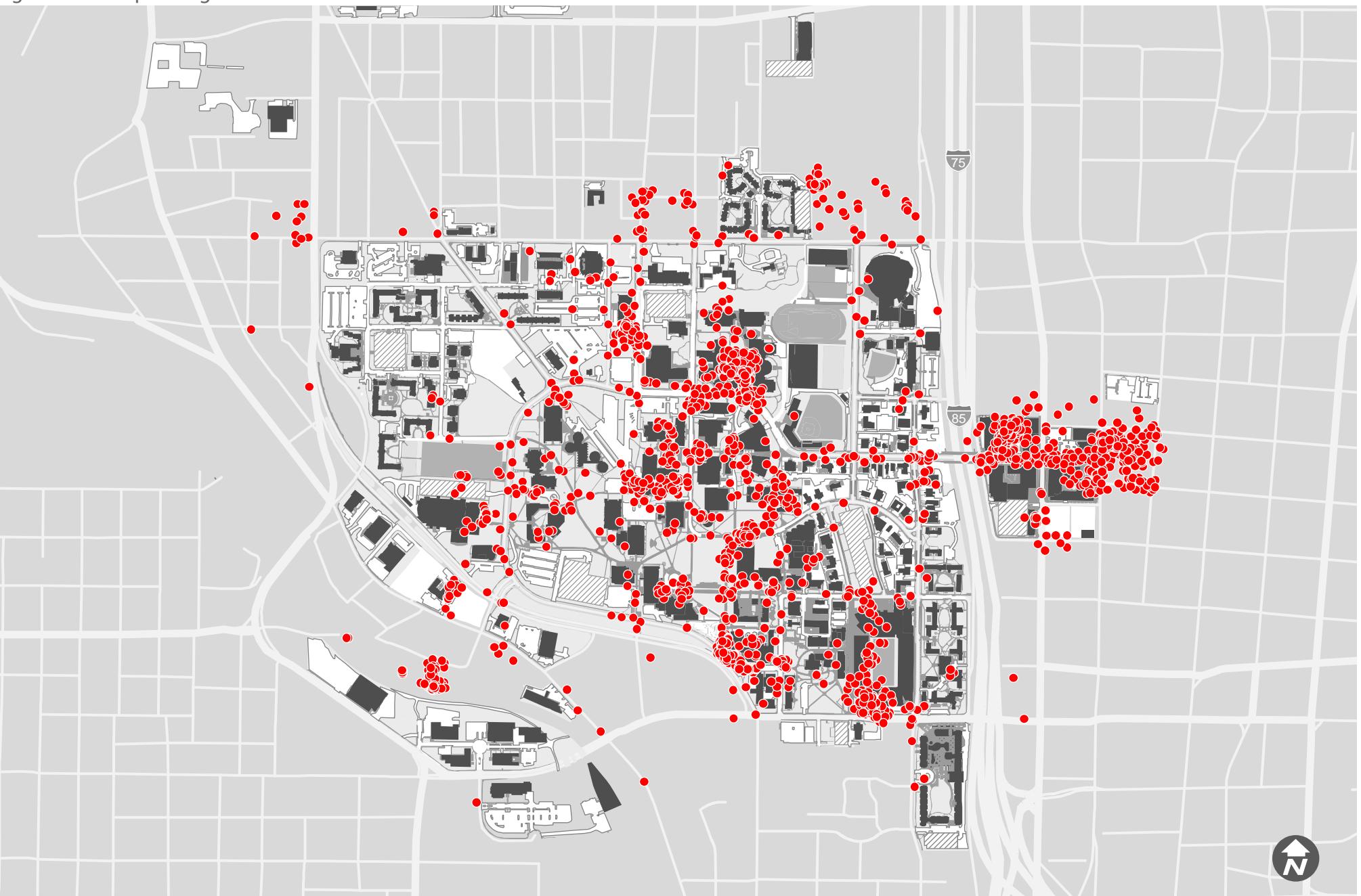
Campus Origins and Destinations

Cycle Atlanta app data was also used to identify major trip origins and destinations (O/D) on campus. O/D clusters include:

- Tech Square
- Clough Commons
- Bioscience and Bioengineering buildings near First Drive and Atlantic Drive
- Buildings off of State Street and Atlantic
- Areas near Bobby Dodd Stadium
- Buildings near Cherry Street and First Drive

It should be noted that O/Ds are low around student housing even though field observations and interviews suggest otherwise. This is likely a result of convenience and knowledge of the app. Students on campus may be unlikely to record short trips between buildings, particularly if they aren't commute-related, which was the focus of the app. New and revolving groups of students may not know about the app, which was first introduced and advertised in 2012.

Figure 20. Campus Origins and Destinations

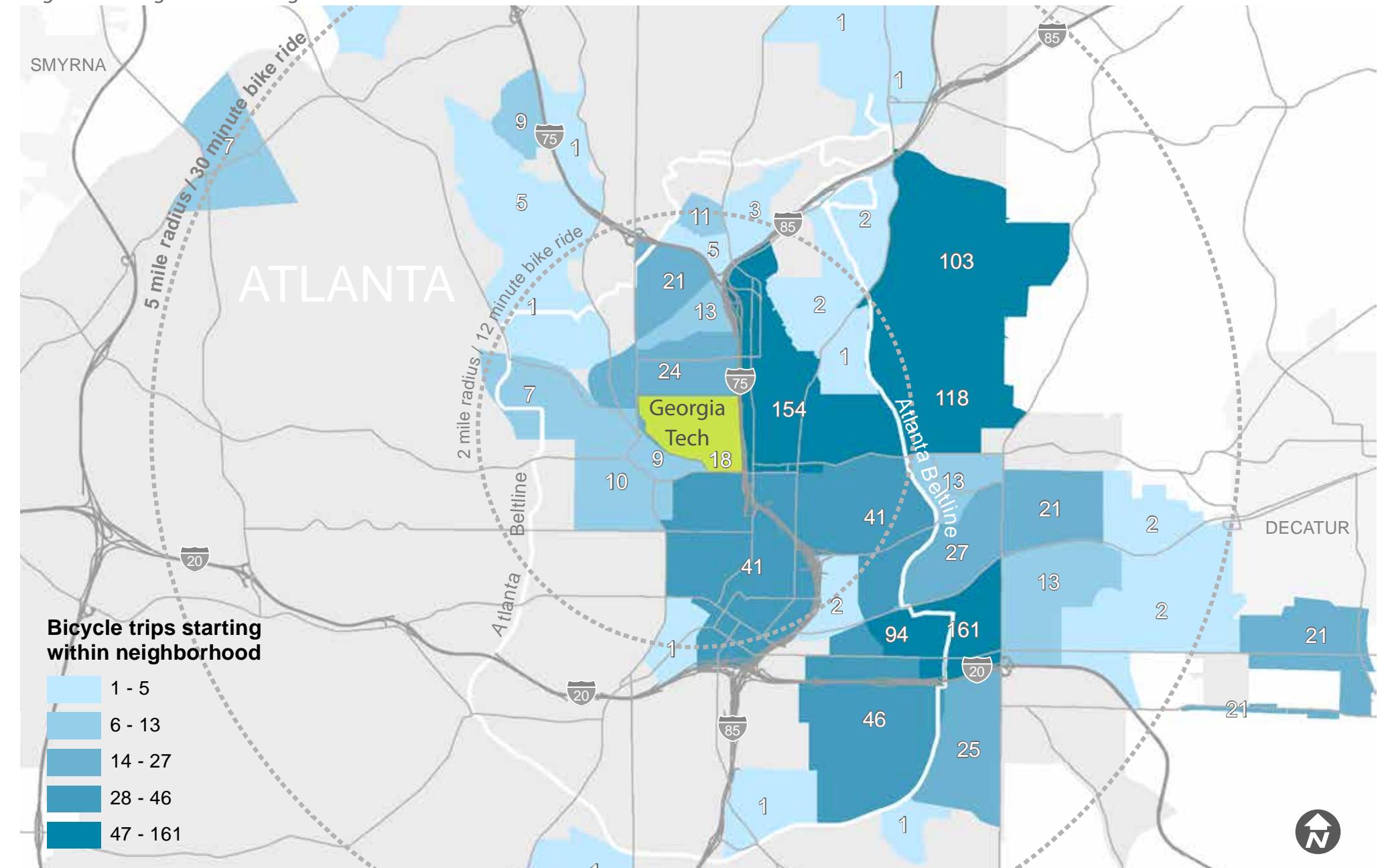


Source: Georgia Tech Cycle Atlanta Team

Neighborhood Origins

The majority of Cycle Atlanta-recorded trips to campus are originating from neighborhoods east of campus. Most of these neighborhoods are within a 15 to 30 minute bike ride, which is a feasible and comfortable commute distance. Even though there are significant barriers to campus from the west, some commutes are originating from these areas. As new bikeways are constructed around the north, west, and south areas of campus, these areas will likely see increases in trips to campus. There has been a significant increase in multi-family residential units built within biking distance, and many students and faculty live in these areas.

Figure 21. Neighborhood Origins

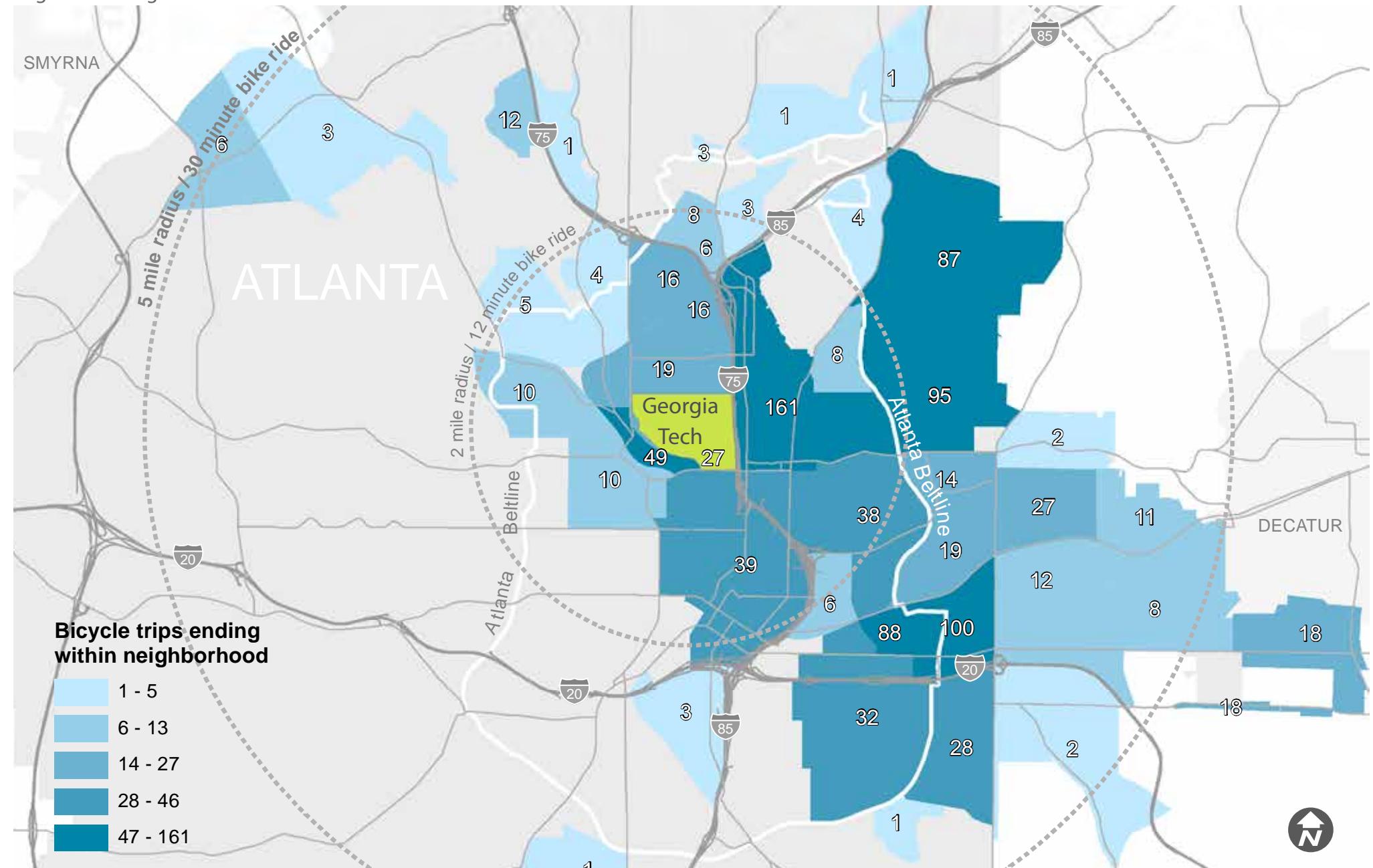


Source: Georgia Tech Cycle Atlanta Team

Neighborhood Destinations

The Neighborhood Destinations map looks very similar to the Neighborhood Origins map. This is likely a function of how app users recorded their trips. A majority of app users record their commute trips more frequently than other bike trips. The same conclusions apply to destinations. Many of the area destinations from campus are east of campus and are within a 15 to 30 minute bike ride from campus. As connections to areas west, north, and south are enhanced, the campus community will have easier access to areas such as Howell Mill Road and Marietta Street.

Figure 22. Neighborhood Destinations



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Bike Parking Demand

Bicycle parking is a growing concern on campus and a key factor in whether people choose to bike to and around campus. Having access to convenient bike parking, close to campus destinations, increases the attractiveness of biking. For those living on campus, having a secure place to store a bike enhances the option of living on campus without a car.

Based on analysis of current bike parking capacity, the campus is currently not meeting current demand for bike parking. The current rack capacity is 2,224 spaces. With a current commute rate of 8.2%, the number of bicycle commuters is approximately 2,300 each day. This rate means that just the number of current bicycle commuters is already exceeding the available rack capacity on campus.

Additionally, a bicycle parking best practice is to plan for 80% rack utilization for peak periods. The reason for this goal is to ensure there is not a perception of no bike parking. When racks are full or perceived as full, bicyclists will start locking their bikes to rails or street furniture, which can block access to buildings or walkways. The current 80% rack utilization is 1,779. **This fact equates to a bike parking space gap of 1,096 bike parking spaces**, or approximately 548 bike racks (assuming two bikes per rack), needed in order to meet current demand.

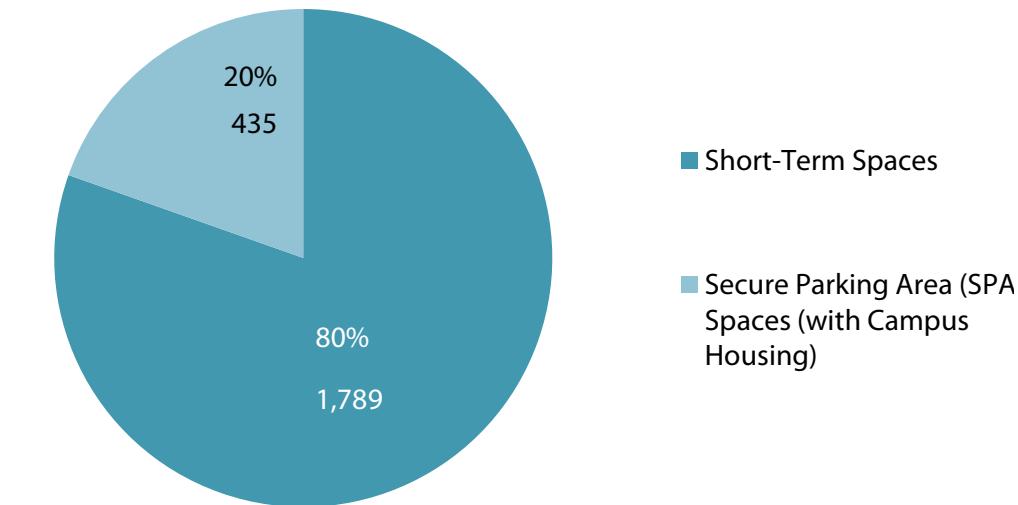
From 2012 to 2014, approximately 156 racks (two bikes per rack) have been added per year. At this current pace of implementation and no growth in commute rate or campus population growth, it will take four years to meet current demand. **A significant increase in rack installation is needed to meet current demand and future growth on campus and increasing rates of cycling on campus.**

Field surveys and observations confirm this gap and the need for increased bike parking on campus. In many areas during peak periods, racks are full and bikes are locked to railings and other furniture. The situation is the same with campus housing secure parking areas, or SPAs. All of the SPAs on campus appear to be fully utilized.

Table 15. Bicycle Needs Analysis

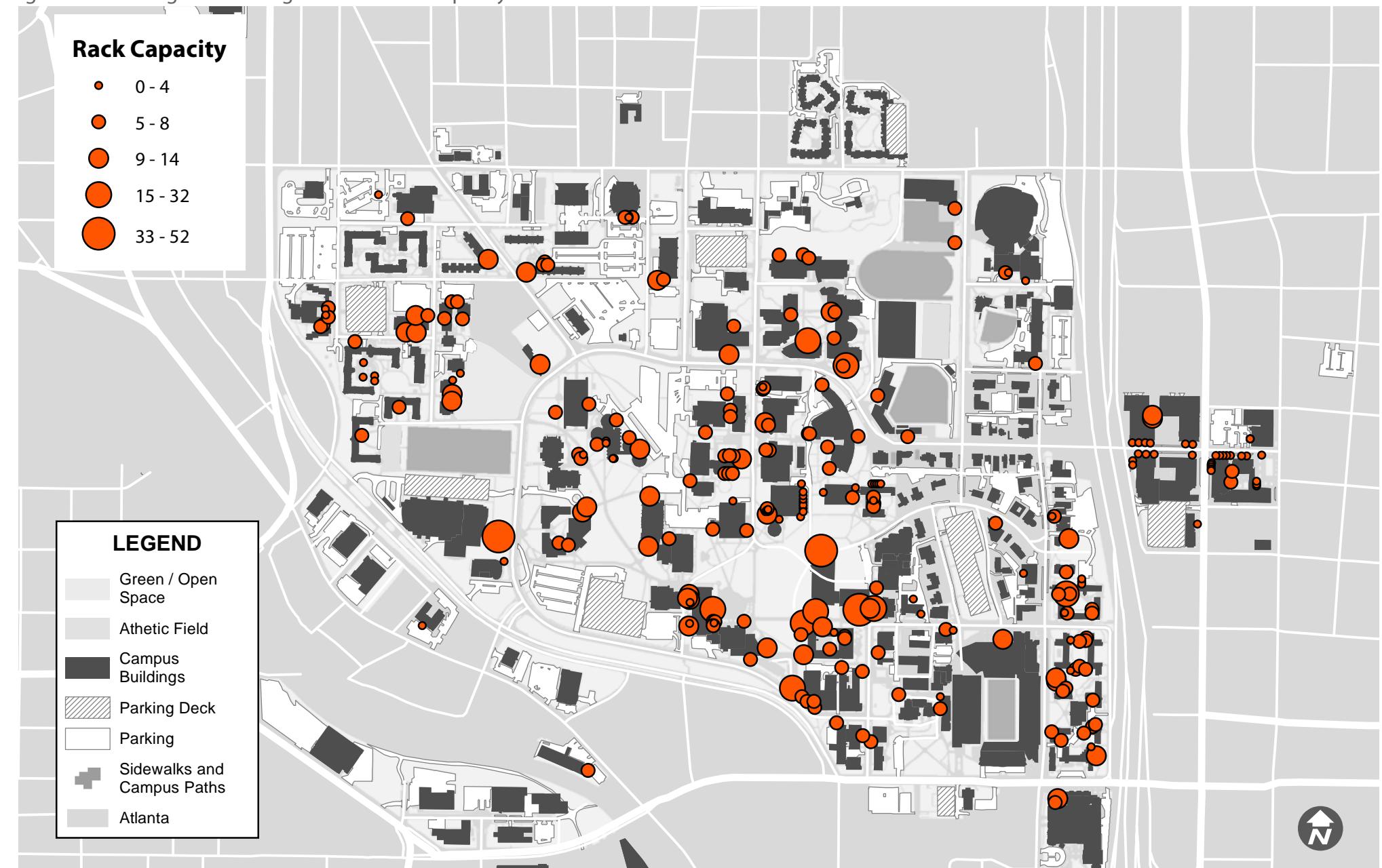
Note	Data
Current Commuter rate (8.2%); 2012	2,300
Current bike space rack capacity	2,224
80% bike parking utilization of current rack capacity	1,779
80% bike parking utilization to meet current 8.2% commute rate	2,875
Current bike parking space gap	1,096
or	
Current bike rack gap (two bikes per rack)	548
Average racks per year installed between 2012 and 2014	156

Figure 23. Short-Term vs. Secure Bike Parking on Campus



Source: Georgia Tech Center For GIS; Field Survey

Figure 24. Existing Bike Parking Locations and Capacity



Source: Georgia Tech Center for GIS; Field Surveys

Summary of Input from Meetings

As part of the Existing Conditions Analysis and Project Charrette, various groups who work on or pass through campus were asked to participate in smaller group settings where more thorough discussions related to biking on campus could be conducted.

The participants in the interviews were divided into five similar groups with the purpose of focusing the conversation on their shared issues, concerns, and desires for campus cycling. All stakeholder interviews were conducted on April 16 and April 17 2014 as part of the Project Charrette. All meetings were held in the Campus Recreation Center conference room 231.

The focus of each group discussion varied based on the stakeholders' connections to bicycling in Atlanta and on the Georgia Tech campus. A summary for each group discussion is provided, as well as a summary of emergent themes identified throughout the charrette and across all groups.

Each group summary is a collection of the comments made by interviewees, organized by theme.

- Stakeholder Meeting 1 - Housing/Programs/Transportation/Safety
- Stakeholder Meeting 2 - "Public Works"/Long-Range Planning
- Stakeholder Meeting 3 - Students/Student Services
- Stakeholder Meeting 4 - Faculty/Staff/Communications
- Community Stakeholder Meeting - Community Groups Outside of Campus Community

Table 16. Stakeholder Meeting Common Themes

Theme	Summary
Expand Programmatic Efforts	Programmatic efforts ranging from education/Public Service Announcements aimed at bicyclists, pedestrians, and drivers to additional enforcement efforts to help develop safe, educated travelers. Education efforts targeted at developing courteous and lawful bicyclists would be highly effective with a captive population such as the Institute.
Increase Bicycle Parking	Increase the overall amount and type (short- and long-term) of bike parking available to accommodate a growing desire to bicycle to campus and the need to park bikes safely and securely.
Build Staff and Infrastructure Capacity	Identify a staff person to serve as Georgia Tech Bicycle Coordinator in a full-time role, with a sufficient budget to make visible changes on campus. Provide a facility to house a campus bike shop in a visible location on campus where bicycle information and resources can also be easily located and accessed.
Improve Access to Campus	Access to campus from certain parts of town (west of campus, Atlantic Station, etc.) and along certain roadways (10th Street) is difficult with the current facilities and roadway configurations. Coordinating with the City of Atlanta, Midtown Alliance, and GDOT on implementing the Cycle Atlanta plans will be important to improving access to campus.

Stakeholder Meeting 1 Summary

Housing/Programs/Transportation/Safety Comments

Bike Parking

- More covered and/or interior bike parking is needed all over campus to reach the goal of 20%, especially on east campus which currently has none.
- Secure, long-term bike storage is needed, but need to assess best approach (e.g., centralized bike corral, within existing vehicle parking garages, resident halls, Greek zone, etc.).
- More bike racks need to be installed in reasonably accessible areas all around campus, especially in proximity to classroom buildings.

Funding/Administration

- Consider creating a mandatory bike registration fee to fund bike infrastructure improvements.
 - Student fees and transportation fees are capped; need to find a way to get some of the money.
- Work with independently or privately-owned Greek organizations to fund bike parking on their property.

Education/Enforcement

- Need to continue and strengthen education efforts for all roadway users, including drivers.
 - The police have been trying to educate the campus community, including motorists and bicyclists, on proper rules and writing tickets for blowing through stop signs.
- Parking enforcement does currently happen.
 - Parking staff tags inappropriately parked vehicles.
 - Housing staff impounds bikes inappropriately locked to handrails, trees, etc.).
- Dismount zone? How do you enforce it? How do you educate? Tech Square may be a location for a slow-down period/dismount zone.
- Add bike paths going to the nine apartment complexes.

Stakeholder Meeting 2 Summary

"Public Works"/Long-Range Planning Comments

Facilities / Implementation

- Delineate where bicycles can move quickly through campus and where bicycles can be used.
- Facilities, Operations, and Maintenance painted some of the sharrows and deals with the crosswalks. They have standard details/materials, but not sure where they're spelled out.
 - Facilities, Operations, and Maintenance identifies need to be consistent. Establish a good standard for sharrows. Need to be robust. Thick block.
 - Nervous about where some of the sharrows have been placed in relation to parallel parked cars.
- Most of the time, the City will let Georgia Tech do what they need to do on city-owned roadways, as long as it is communicated appropriately.
- Best approach is to coordinate with City. It depends on who acts as liaison with City. Office of Real Estate does that frequently (as a formal communication). Those in Facilities, Operations, and Maintenance have informal channels that can be used.
- Initial sharrows just done. Time to back up and coordinate with city.
- Add disclaimer about checking current codes/policies/regulations before implementing.
- Using textured surfaces to slow riders is interesting. What would those textures look like? Avoid trip hazards. Avoid kids re-directing bikes out onto grass.
- Do some tasteful markings in brick or overlay.
- Have a runnel [narrow, grooved track installed on stairway that allows bicyclists to roll bikes up and down stairs] on campus that fire marshal disallowed in the center of an exterior stair at Stamps Field.

Education / Enforcement

- Add education component about courtesy to encourage bicyclists to acknowledge when passing.
- Bicycle Infrastructure Improvement Committee just developed confiscation policy that should be in place soon. Shares responsibility between parking/police/facilities. [Note policy was adopted October 2014]
- What about dismount zones? In between classes, you have such a large population of students, someone is going to get hurt. Do education and encouragement around this issue.

Funding

- From a maintenance standpoint, no funding provided.
- Budget - Capital Planning asks for new money for bike racks each year. They committed \$50K to new bike racks for each year. Large projects have bike racks/parking programmed in.

Stakeholder Meeting 3 Summary

Students/Student Services Comments

Education / Encouragement

- From the programming side, things done well.
 - Starter Bikes serves a particular purpose and serves it well. Problem is recruiting volunteers. Added capacity to store abandoned bicycles, to refurbish & reclaim bikes. Generate their own funding through sales of refurbished bikes. Not well located.
- Education is a big challenge. Have some resources to either train League Cycling Instructors or maybe offer a shorter course than the one offered by Atlanta Bicycle Coalition (maybe a couple of hours) early in fall.
- Provide more or enhanced information to new students/faculty/staff. Have most of the materials.
- Encouragement – really Bike Week is the only activity.
- Doing tabling (Bike Week, Earth Day, etc.). Did one for Safety Week this year. We could table more.
- Did STOP for Cookies campaign. Gave away cookies if vehicle stopped at STOP signs. Worked very well.
- Carrot approach will work better vs. stick restrictions.
- Bicycle Infrastructure Improvement Committee would love to do a helmet raffle (again) to people who registered bikes.
- Programming Campus Recreation Center (1) GT Cycling Club (one of 40 sport clubs) would love to have lockers for their bikes. (2) Outdoor program has mountain biking program. Teach mountain biking, have small shop to do repairs. Do maintenance classes to teach students how to repair bikes, allow students to use facilities.

Bike Parking

- Need for long-term bike storage. Even just covered racks/corrals/lockers. Many of the residence halls have some secure indoor bike parking.
- Bicycle Infrastructure Improvement Committee has received complaints from building managers about bringing bikes into buildings.
- We know that students have higher propensity to use closer parking, but some would use or desire enhance bike parking areas.

Staffing / Facility Needs / Roles

- Bicycle Infrastructure Improvement Committee helped bring together Facilities/Parking and Transportation/ Capital Planning to facilitate communication over bikes.
- Big needs – having a campus bike shop. Scale, staffing not addressed yet.
- Need a dedicated staff person to do regular work and then engage students at special times.
- Sounds like an auxiliary service, revenue coming in, debt collection, etc.
- Several years ago Campus Recreation Center was approached to do a full-time staff position. Proposed budget was too large.
- Previous talks with Student Government about a partial position. There would need to be significant, dedicated funding for that position from the administration. There might be ways to fund it in part.
- Need a full-time position, \$500K budget, and 5,000 sq ft to set the bar for a bike program.
- Clough Commons has become the new center of campus. That seems like the opportunity. Perhaps in a renovated student center. Would have to talk about how we fund it (won't be self-sustaining).

Staffing / Facility Needs / Roles

- Bicycle Infrastructure Improvement Committee would like to see a set of recommendations, budget, etc. to commit to if what we want is to be Gold/Platinum. This is the message that the administration needs.
- Is this long-term vision? 1-3 years, 4-10 years. Yes - Getting a sense of institutional capacity is important.

Stakeholder Meeting 4 Summary

Faculty/Staff/Communications Comments

Education / Encouragement

- There are limited options for being a one-day driver. When you choose biking, you're biking.
- More Smart Park locations? \$25 enrollment, \$6/day after that. Only 3 decks (at edges of campus).
- Develop incentive program, maybe buy annual pass, and get kickback if you don't use it every day
- At UGA, you get 2-free day passes with registration in commute program.
- Students would also love a commute program option.
- In the campus commute survey, 5.5% people said they bike. Most respondents were faculty/staff.
- As staff who teaches, an on-site pick-up/drop-off for dry cleaning (proposed) would be great.
- Need education for new riders who might not be comfortable with riding in the road.
- Need classes on bike riding attire, how to dress appropriately, how to clean up at destination.
- The various rides over the years with the President have been very popular.
- ABC has been providing service for mentoring, bicycle buddy program. Maybe have GT version.
- Create those connections for commuters. Biking Neighbor Program.
 - May make sense to do it by department.

Using the Classroom

- Professor Kari Watkins will be teaching graduate level Complete Streets course. Already existing undergrad multi-modal class. Last year hit up several people for projects. Good idea to coordinate more strongly with Master Planning process.
- Professor Chris Le Dantec uses Cycle Atlanta data in visualization exercises. Knowing what kind of things GT would like to see would be useful.
- Finding ways to use the data as a model would be great. Say if 8th Street connection opened, what would that look like?
- Difficulty: balancing between classroom exercise vs. research. And there is some work that students can accomplish.
- It would be nice to maintain a list of 20 things that could be done.
- In city planning program, student did a bike master plan.

Engineering

- Howell Mill Avenue does not feel safe (big issue now).
- Having more showers would be great. Most buildings going that way for LEED.
- It is strange to go through the center of campus on a bike. Getting from CRC to the Student Center continuing east. No clear pathway.
- Home Park and Atlantic Station's ability to connect to downtown goes through campus.
- Need kind of a cross, bicycle feeder route that does not put bicyclists in contact with pedestrians.
- Part of the difficulty is how Ferst Center/Student Center come together. There is a wedge. And there is the hill. And if you don't go through there, you have to go around.
- There are many locations on campus that need curb cuts.
- You can't have all the E-W bike traffic on Ferst. Need a route through campus.
- On North, you see a lot of students going east on sidewalk. Maybe coming off of Cherry/Tech Parkway.

Community Stakeholder Meeting Summary

Community Groups Outside of Campus Community Comments

Community Groups: ASAP+ (Atlantic Station);, PATH Foundation, City of Atlanta, Coca-Cola, Midtown Alliance, Home Park Neighborhood Association

Atlantic Station Access

- Atlantic Drive doesn't go as far north. Existing mock design for State and 16th to allow bikes through.
- From campus, State Street is the most logical access to Atlantic Station.
- Maybe use Atlantic with cut-over to State near signal south of 16th (need to check hills on Atlantic).
- The Atlantic corridor is also the straightest path/connection south to Tech Parkway.
- Atlantic is going to be the most developed N/S spine/corridor.
- Some E-W streets are not paved in Home Park.

10th Street

- Still supportive of 10th Street as E-W connection from the Engineering Biosystems Building Phase I and supporting sector plan. 10th street bridge needs more funding.
- Internally, established a 60-foot setback.

Midtown

- 12th Street would have sharrows, take you into Piedmont Park. Make 12th street 2-way.
- 8th Street, ideally make it 2-way all the way with sharrows. Not very wide.

Staffing / Facility Needs / Roles

- PATH wants to help fund/construct (maybe just support). Try and line up area north of Tech Parkway.
- Tech is supportive of taking western most lanes of Tech Parkway for bikes/peds. Tech analyzing parking impacts.
- Question – how do you cross Northside Drive? Option A - at-grade at Hampton to Marietta. Option B – crossing using 8th Street. Questions about safety/security and access to GT.

Westside Access / Facilities

- City hope is to extend connection between Tech/Coke/downtown/upper west side.
- With 8th Street connection, GT plans creating a connection to basketball arena (in EBB plans).
- This is not a bicycle-heavy part of our campus. So this is not a high priority at the moment for Tech.
- Hemphill Avenue from 10th Street to 14th Street is getting bike lanes. City/GDOT working on Hemphill/14th/ Northside intersection.
- Priority for city is to make sure bikes can get to 14th heading west.
- City long-term plan is to connect Ethel through to Brady. Much better alternative to 14th.
- Bike share won't be a success if people don't have places to ride. We need quick solutions to build infrastructure.

East Side Access

- Is the 3rd Street tunnel an option? One of the long-term plans is to open it but control it. Swipe Buzz card perhaps. Not the greatest area on the east side of the connector.
- If they were a plan to develop the east side of the connector, then the Institute would reconsider opening the tunnel access.

Priority Projects

Overview

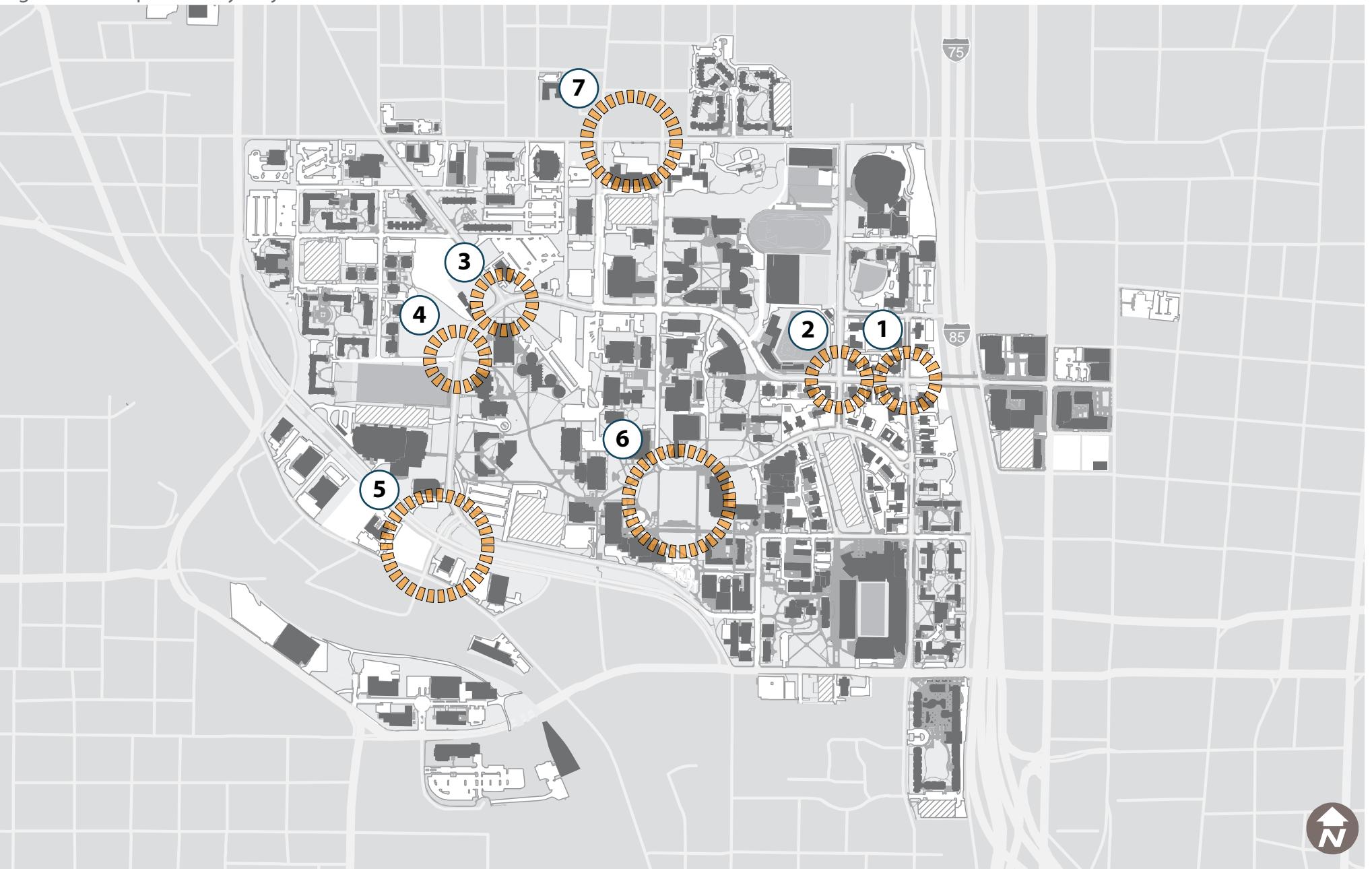
Several key intersections on campus were identified for safety improvements. Field observations and interviews with campus stakeholders were used to identify conflict points and potential design strategies. The concepts presented for these projects can be implemented as stand alone projects or can be incorporated into larger campus improvement projects. The concepts are intended to provide potential design solutions as opportunities for projects arise.

- 1** 5th Street at Techwood Drive
- 2** Ferst Drive/5th Street at Fowler Street
- 3** Hemphill Avenue at Ferst Drive
- 4** Ferst at 6th Street
- 5** Means Street at Tech Parkway
- 6** Tech Green
- 7** 10th Street at Atlantic Drive and State Street

Additionally, the City of Atlanta recently went through a planning process to develop a comprehensive bikeway network in the core of the city. That planning process identified several bikeway projects around the edges of campus that improve connectivity Georgia Tech.

A summary of the on- and off-campus priority projects is provided on the subsequent pages.

Figure 25. Campus Priority Projects



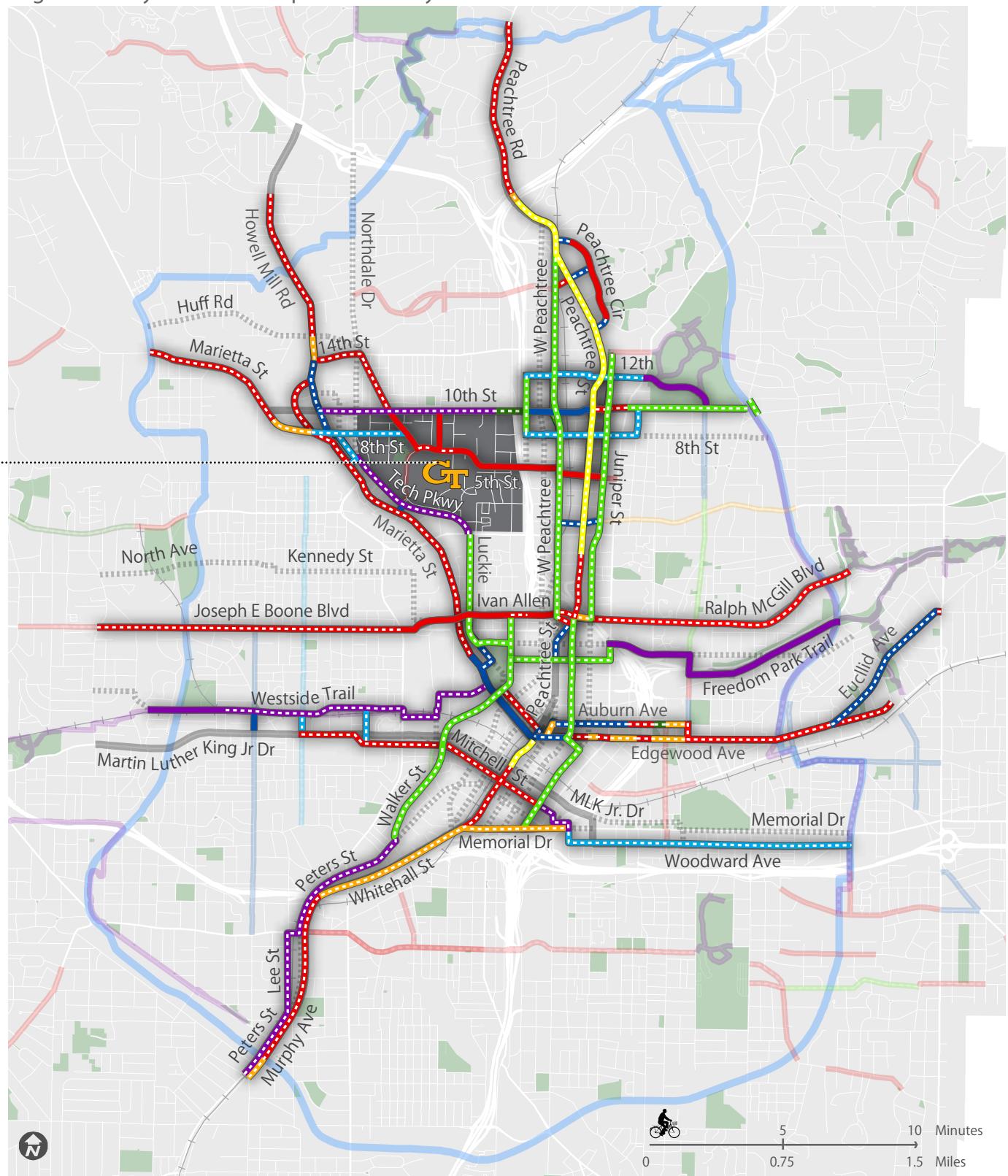
Off-Campus Projects

The City of Atlanta, as part of the Cycle Atlanta: Phase 1.0 Study, identified several projects that can improve access to or around the Georgia Tech campus. The study is part of the City's larger effort to create a complete and connected network of high-quality bikeways in the core of the city.

The focus of the study is on five priority bicycle corridors that connect from the Atlanta BeltLine into Midtown and Downtown. Design schematics, network recommendations, intersection concepts for high priority intersections, and cost estimates were developed as part of the Plan. Table 14, next page, provides a summary of the Cycle Atlanta projects that specifically impact Georgia Tech.

Georgia Tech Campus

Figure 26. City of Atlanta Proposed Bikeway Network



Existing Bike Facilities

- Core Study Corridor
- Alternative Study Corridor
- Atlanta Beltline Corridor

Proposed Bike Facilities

- Shared Lane Marking
- Bike Lane
- Multi-Use Path
- Alternative Facility Options

Source: Cycle Atlanta: Phase 1.0 Study

Table 17. Cycle Atlanta: Phase 1.0 Study - Proposed Projects Near Georgia Tech

ID	Facility Type	Street	To	From	Cross Section(s)	Cost	Cycle Atlanta Page #	Coordination Partners
Corridor B								
1013	Raised Cycle Track	10th Street	Williams Street	Fowler Street		n/a		City of Atlanta; Midtown Alliance
5020	Bike Lane-Buffered Bike Lane	West Marietta Street	Marietta Boulevard	Marietta Street	B1, B2, B3	\$238,234	53	City of Atlanta
5021	Bike Boulevard	8th Street	Brady Avenue	Northside Drive	B4	\$1,925	53,	City of Atlanta
5022	Bike Boulevard	8th Street	Northside Drive	Hemphill	B5	\$137,754	54	City of Atlanta
5023	Multi-Use Path	10th Street	Howell Mill Road	Northside Drive	B23	\$350,900	54	City of Atlanta; PATH Foundation
5024	Multi-Use Path	10th Street	Northside Drive	Fowler Street	B7	\$674,685	58	City of Atlanta; PATH Foundation
5025	Bike Lane	Ferst Drive	Hemphill Avenue	Atlantic Drive	B6, B8	\$13,503	58	Georgia Tech; City of Atlanta
Intersection Concept	Intersection	Northside Drive at 8th Street and Tech Parkway					55-57	City of Atlanta; GDOT
Intersection Concept	Intersection	Williams Street at 10th Street and 8th Street					60-62	City of Atlanta; GDOT; PATH Foundation
Corridor E								
5081	Bike Lane	Marietta Street	Howell Mill Road	Baker Street	E6, E7, E8, E11, E12, E14, E15	\$274,960	101, 103, 104, 105	City of Atlanta
5082	Shared Lane Marking	Hampton Street and 3rd Street	Marietta Street	8th Street	E21, E22	\$4,129	101	City of Atlanta
5083	Multi-Use Path	Tech Parkway	Northside Drive	North Avenue	E10	\$147,131	103	City of Atlanta; PATH Foundation
5084	Cycle Track	Luckie Street	North Avenue	Baker Street	E13, E16	\$448,080	104,105	City of Atlanta; PATH Foundation
Intersection Concept	Intersection	Luckie Street at North Avenue/ Tech Parkway and Pine Street					106-108	City of Atlanta; PATH Foundation

Source: Cycle Atlanta: Phase 1.0 Study

5th Street at Techwood Drive

Project Need

The Ferst Drive/5th Street corridor is currently the primary access point to campus by bike. The presence of a bike lane on the 5th Street bridge over I-75/85 is a key reason for the bike route's popularity.

The 5th Street bridge acts as a funnel for traffic between Midtown and Georgia Tech. As a result, many drivers and many bicyclists seek to make a turning movement at the intersection with Techwood Drive, which increases the potential for conflict.

Conditions can be especially challenging for westbound bicyclists because high motor vehicle volumes can make merging into the left turn lane difficult, and drivers turning right sometimes partially block the bike lane and/or fail to yield to bicyclists traveling straight.

Tech Trolley stops at the eastern leg of the intersection add additional complexity to the area immediately adjacent to the intersection, since the trolleys must cross over the bike lane to load and unload passengers.

Proposed Improvements

Use pavement markings and signage to highlight potential conflicts, enhance visibility, and improve safety for all modes. Supplement infrastructure improvements with targeted enforcement.

Near-Term Improvements

- Add enhanced signage at approach to intersections for bicyclists and drivers.
- Targeted enforcement with a focus on driver and cyclist communication (signaling), yielding behavior, and bike lane encroachment.

Long-Term Improvements

- Install pavement markings through the intersection and at trolley stops to give bicyclists guidance on proper positioning and to remind drivers of turning vehicles to yield to bikes.
- Install bicycle forward stop bars and green bike lane approaches on 5th Street to increase visibility of the bike lane and bicyclists.
- Adjust the location of the crosswalk on the northern leg of the intersection to create space for a two-stage turn box for bicyclists turning south onto the proposed bike lane on Techwood Drive.

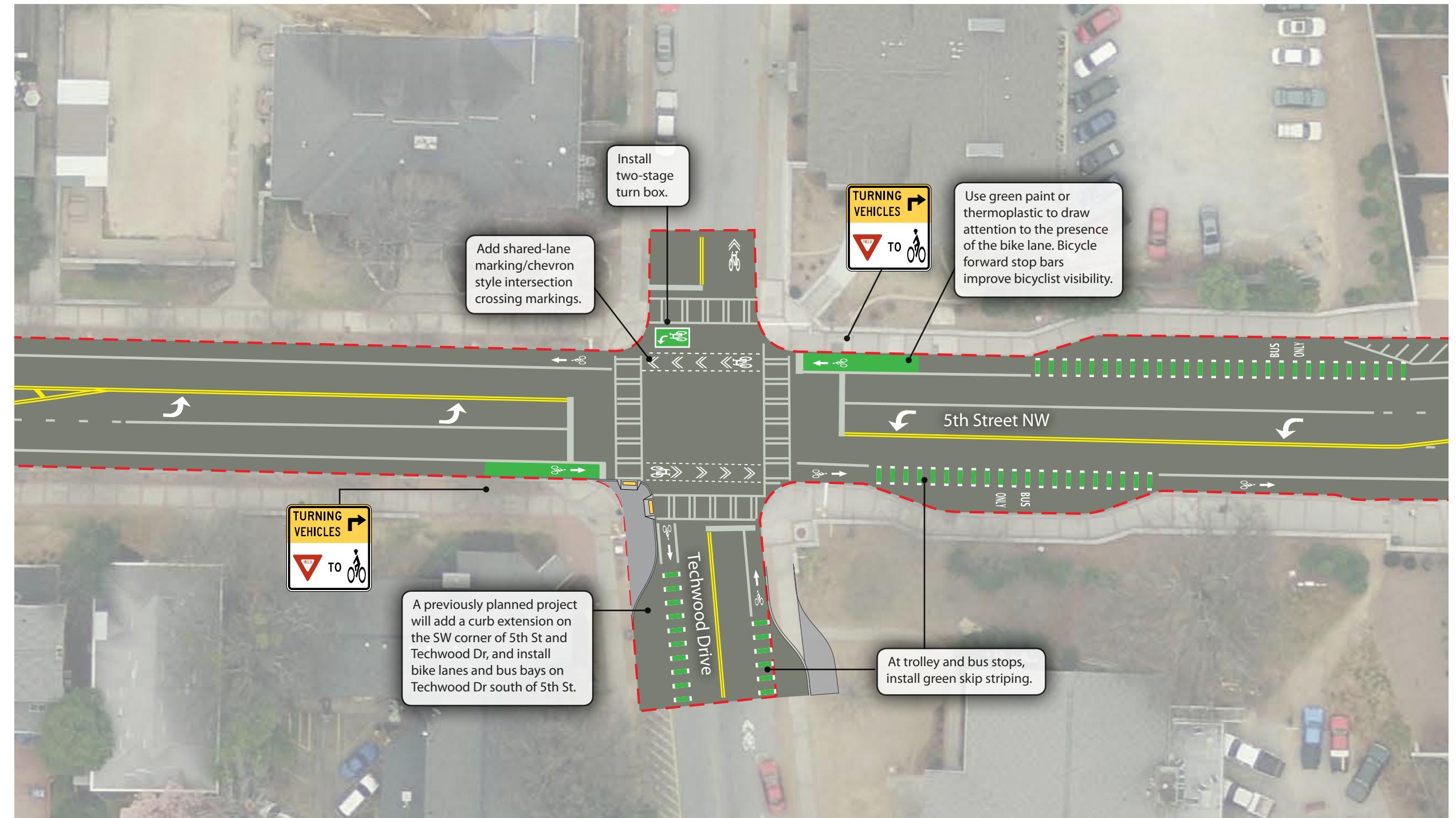


Existing Conditions

5th Street at Techwood Drive

Key Recommendations

- Maintain existing lane widths: 5' bike lanes and 10' motor vehicle travel and center turn lanes.
- Pull motor vehicle lane stop bars back to create a forward stop bar for bicyclists using the bike lane.
- Create space for a two-stage left turn box at the NE corner by shifting the existing crosswalk slightly north.
- Use green paint, thermoplastic, or other colored pavement treatment 50 feet in advance of the intersection to reinforce the fact that the bike lane is intended for the exclusive use of bicyclists.
- At trolley and bus bays, use green skip striping to indicate a conflict zone.
- Install chevron-style pavement markings through the intersection.
- Add "Turning Vehicles Yield to Bikes" (MUTCD R10-15 variant) signage at Ferst Drive and 5th Street approaches.



Proposed

Existing Curb Line

Ferst Drive/5th Street at Fowler Street

Project Need

Bicycle volumes on the Ferst Drive/5th Street corridor are currently higher than any other route on Georgia Tech's Campus.

At Ferst Drive/5th Street, issues include right-turning vehicles impeding westbound cyclists in the bike lane and bicyclists making dangerous high speed passes near right-turning vehicles due to the downhill between Techwood Drive and Fowler Street along 5th Street .

Proposed Improvements

Use pavement markings and signage to highlight potential conflicts, enhance visibility, and improve safety for all modes. Supplement design improvements with targeted enforcement.

Near-Term Improvements

- Add enhanced signage at approach to intersections for bicyclists and drivers.
- Targeted enforcement with a focus on unsafe passing and turning behavior for people biking and driving.

Long-Term Improvements

- Install intersection, driveway, and trolley stop crossing markings that guide bicyclists through the intersection and remind drivers of turning vehicles to yield to bicyclists.
- Add bicycle forward stop bars and green bike lane approaches on Ferst Drive/5th Street to increase visibility of bicyclists.

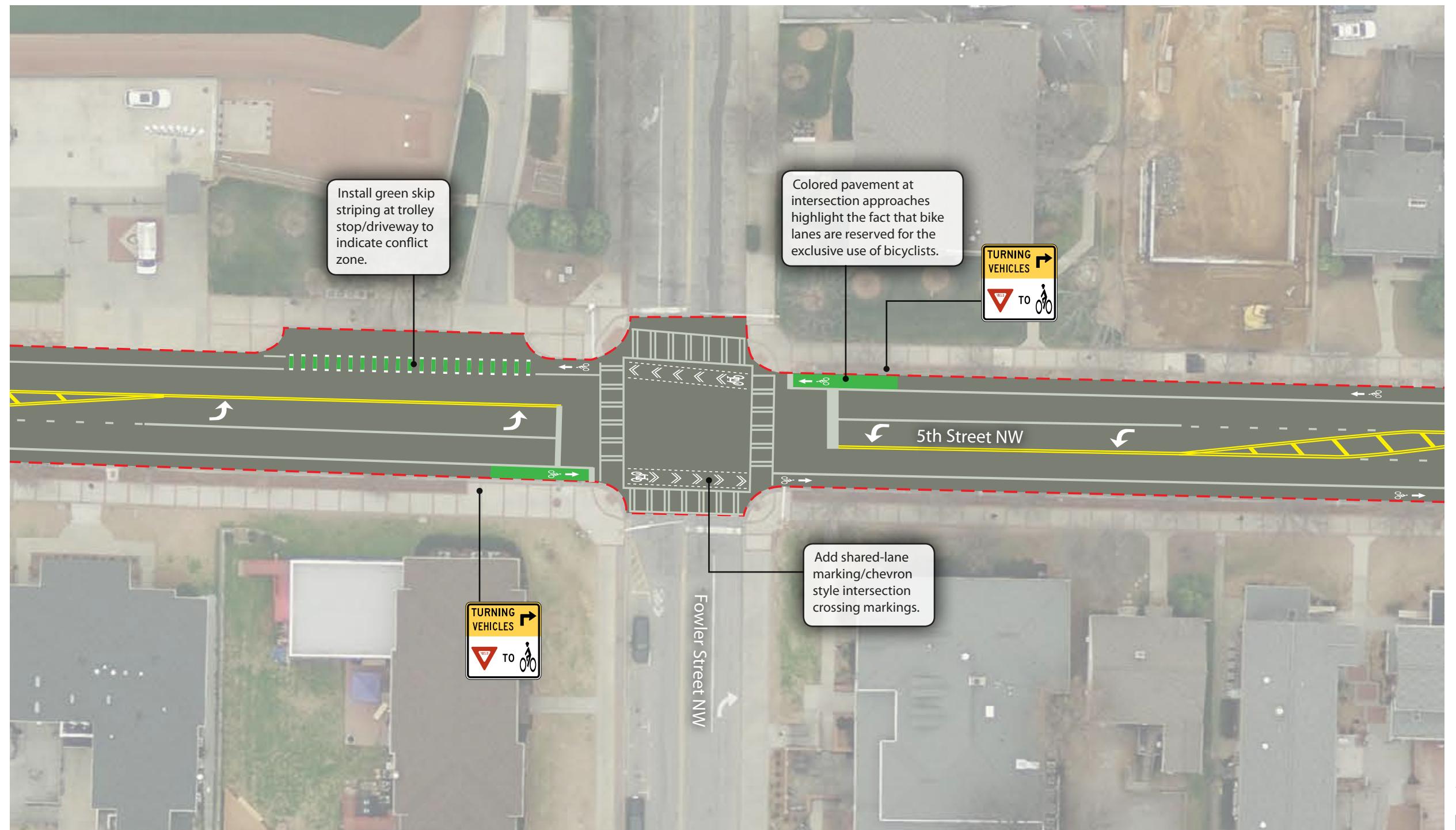


Existing Conditions

Ferst Drive/5th Street at Fowler Street

Key Recommendations

- Maintain existing lane widths: 5' bike lanes and 10' motor vehicle travel and center turn lanes.
- Pull motor vehicle lane stop bars back to create a forward stop bar for bicyclists using the bike lane.
- Use green paint, thermoplastic, or other colored pavement treatment 50 feet in advance of the intersection to reinforce the fact that the bike lane is intended for the exclusive use of bicyclists.
- At the driveway/trolley stop, use green skip-striping to indicate a conflict zone.
- Install chevron-style pavement markings through the intersection.
- Add "Turning Vehicles Yield to Bikes" (MUTCD R10-15 variant) signage at Ferst Drive and 5th Street approaches.



Proposed

[dashed red box] Existing Curb Line

Hemphill Avenue at Ferst Drive

Project Need

Hemphill Avenue is a primary entrance to campus from neighborhoods north and west of campus. It also connects campus housing in the northwest portion of campus to the core of campus. Ferst Drive is the primary campus roadway and a major transit route on campus.

Currently, the intersection is difficult to navigate by bike, particularly when trying to make left turns. The traffic islands and slip lanes pose additional crossing challenges for pedestrians and some of the ramps are not ADA accessible. Additionally, bicyclists using the pathway are approaching the intersection at a high rate of speed because the pathway is downhill as you approach the intersection. Many bicyclists are exiting the pathway and passing through the intersection without yielding and taking dangerous lines through the intersection which poses safety issues for bicyclists, motorists, and pedestrians.

Long-term plans for campus have identified the pathway from the intersection to the Student Center to be a significant bicycle and pedestrian pathway. Improvements are needed at the intersection to accommodate the anticipated increase in pedestrian and bicycle use as well as bus and trolley stops.

Proposed Improvements

The proposed improvements include a phased approach to intersection enhancements.

Near-term improvements include striping and pavement marking modifications, the removal of the median island on Ferst Drive to make room for continuous, dedicated bike lanes, and the construction of an eastbound bus pull-out area on Ferst Drive.

Medium-term improvements include the removal of the slip lanes and channelizing right-turn islands, the construction of a larger, planted center median island on Hemphill, installation of bicycle ramps at the south leg of the intersection, intersection crossing marking for bicyclists, and the realignment of crosswalks in preparation for the proposed Hemphill pathway.

Long-term improvements include adding a traffic signal, installing bike boxes to facilitate left turns by people riding bikes, and the completion of the Hemphill path corridor per the Engineered Biosystems Building (EBB) and South-Central Campus Sector Plans.

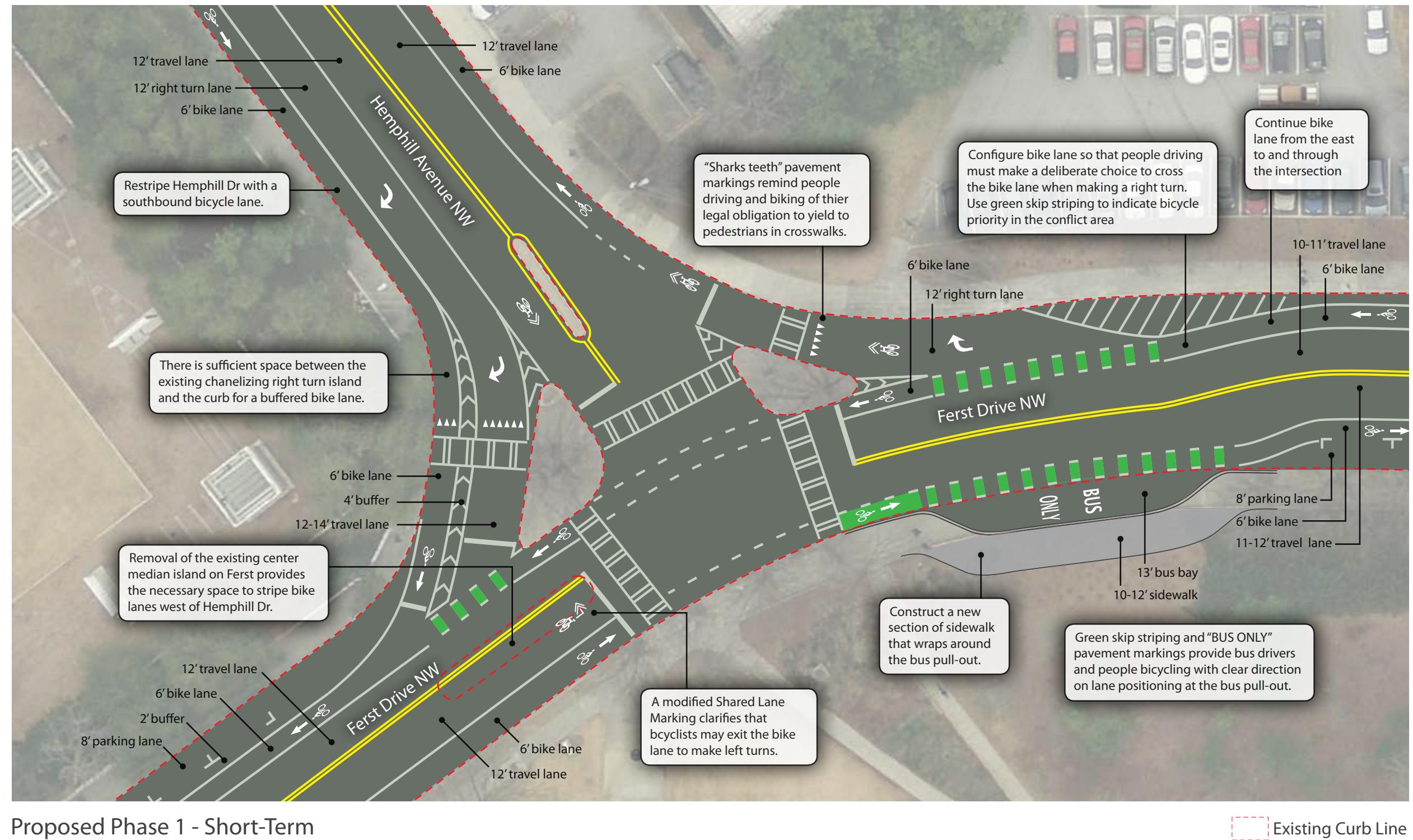


Existing Conditions

Hemphill at Ferst: Phase 1

Key Recommendations

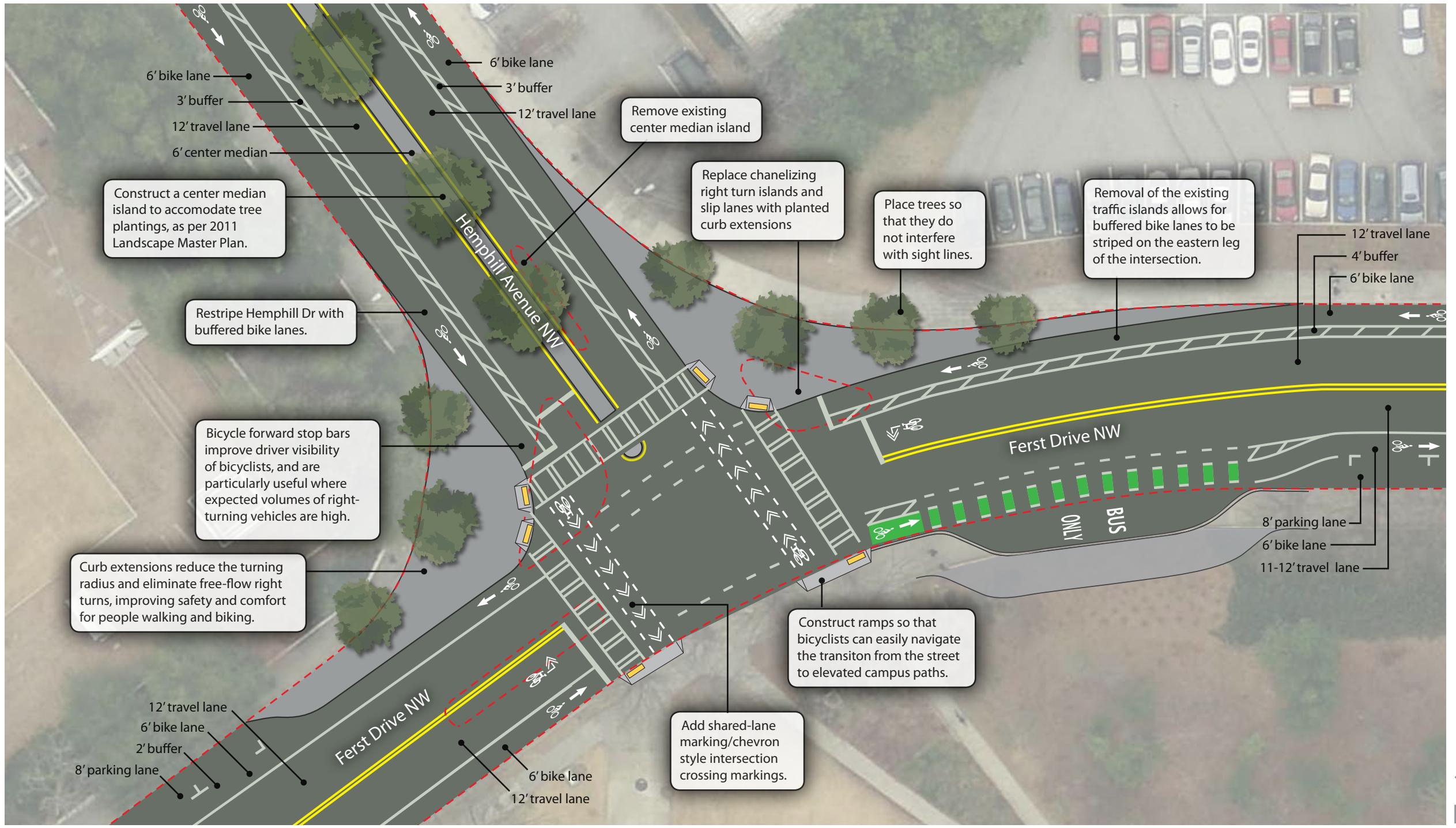
- Remove center median island on Ferst Drive to make room for dedicated, continuous bike lanes.
- Construct a bus pullout on Ferst Drive east of Hemphill Avenue to reduce conflicts between bicyclists and buses.
- Restripe Hemphill Avenue with a southbound bike lane that continues through the channelized right turn lane.



Hemphill at Ferst: Phase 2

Notes

- Remove traffic islands and slip lanes; extend curb to create true "T" intersection.
- As per 2011 Landscape Master Plan, replace existing center median island on Hemphill Dr with a six foot median to accomodate a divided parkway design that incorporates trees down the center of the street.
- Restripe Hemphill Dr with buffered bike lanes in each direction.
- Restripe east leg of intersection (Ferst Drive).
- Construct wide ramps at the southwestern leg of the intersection so that bicyclists can easily access existing paths.
- Adjust crosswalks so that they align with future Hemphill path.



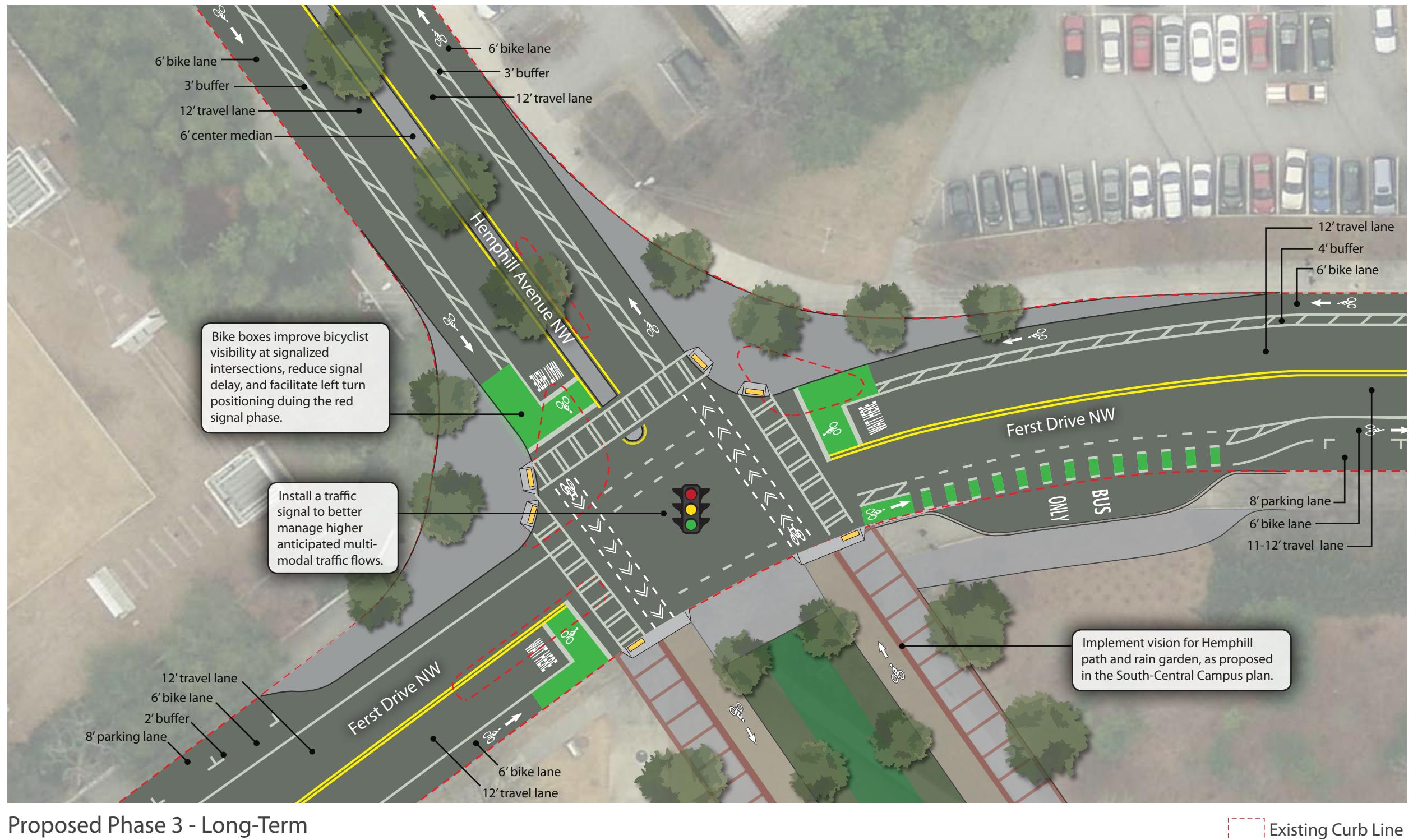
Proposed Phase 2 - Medium-Term

Existing Curb Line

Hemphill at Ferst: Phase 3

Key Recommendations

- Install traffic signal to better manage anticipated increases in multi-modal traffic flows.
- Install bike boxes to improve safety and operations at each roadway leg of the intersection.
- Implement the South-Central Campus Plan's vision for Hemphill path.



Ferst Drive at 6th Street

Project Need

The Ferst Drive/6th Street intersection is a popular route between campus housing on the western edge of campus and the core of campus. Currently, 6th Street is one-way, and bicyclists are riding in both directions, often times against oncoming vehicles.

Additionally, bicyclists traveling westbound from the campus pathway to 6th Street approach the intersection on a downhill slope. The increase in speed down the hill and lack of design features to slow bicyclists means that many students are passing through the intersection at a high rate of speed, often without yielding or slowing for vehicles traveling along Ferst Drive. This situation has resulted in several crashes and frequent near-misses.

Proposed Improvements

As part of a Transportation Enhancements grant, 6th Street will be re-designed in 2015 to include a contra-flow bike lane, and expanded sidewalks while preserving the existing one-way, westbound travel lane.

Proposed intersection improvements include enhanced pedestrian crossings, enhanced bicycle lanes along Ferst Drive, narrowing of the pathway on the eastern edge of the intersection, and pavement markings and pathway texture changes to encourage westbound bicyclists using the pathway to slow down when approaching the intersection with Ferst Drive.

Near-Term Improvements

- Update signage to clarify user responsibilities at crossing.
- Target enforcement at intersections for bicyclists and motorists.
- 6th Street streetscape improvements.

Long-Term Improvements

- Ferst Drive at 6th Street intersection re-striping.
- Pathway improvements to slow cyclists approaching Ferst Drive.

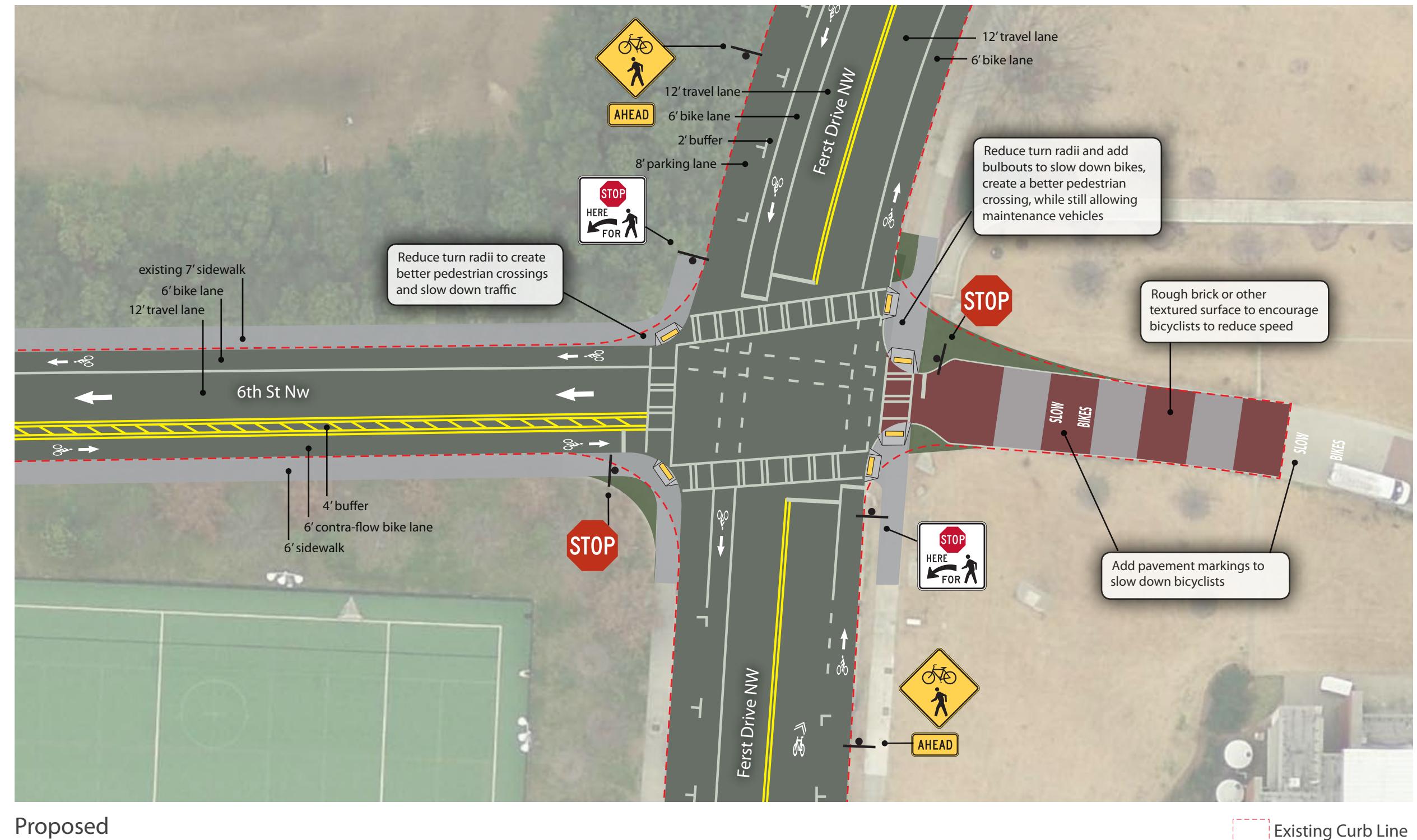


Existing Conditions

Ferst Drive at 6th Street

Key Recommendations

- Update signage at and ahead of crossing to clarify user responsibilities.
- Enhance pathway approach to intersection with textured pavement, narrowing of pathway entrance to intersection and pavement markings to encourage cyclists to slow down as they approach the intersection.
- Preserve emergency and maintenance vehicle access to pathway.
- Add downhill buffered bike lane on Ferst Drive to better position cyclists through the intersection.
- 6th Street Streetscape project will include wider sidewalks, removal of on-street parking, west-bound bike lanes and contra-flow bike lane.



Proposed

Existing Curb Line

Means Street at Tech Parkway

Project Need

With proposed bike lanes along Marietta Street and the conversion of Tech Parkway to include a multi-use path, Means Street will become a major bike entrance to campus. Currently, Means Street has shared lane markings from Marietta Street to Ferst Drive.

Improvements will need to be made to the intersections at Marietta Street, Tech Parkway, and Ferst Drive to create a safe transition to campus. Signal timing, dedicated space for bicyclists and pedestrians, and managing turning movements at intersections will be important to create safe intersection crossings for all users.

Proposed Improvements

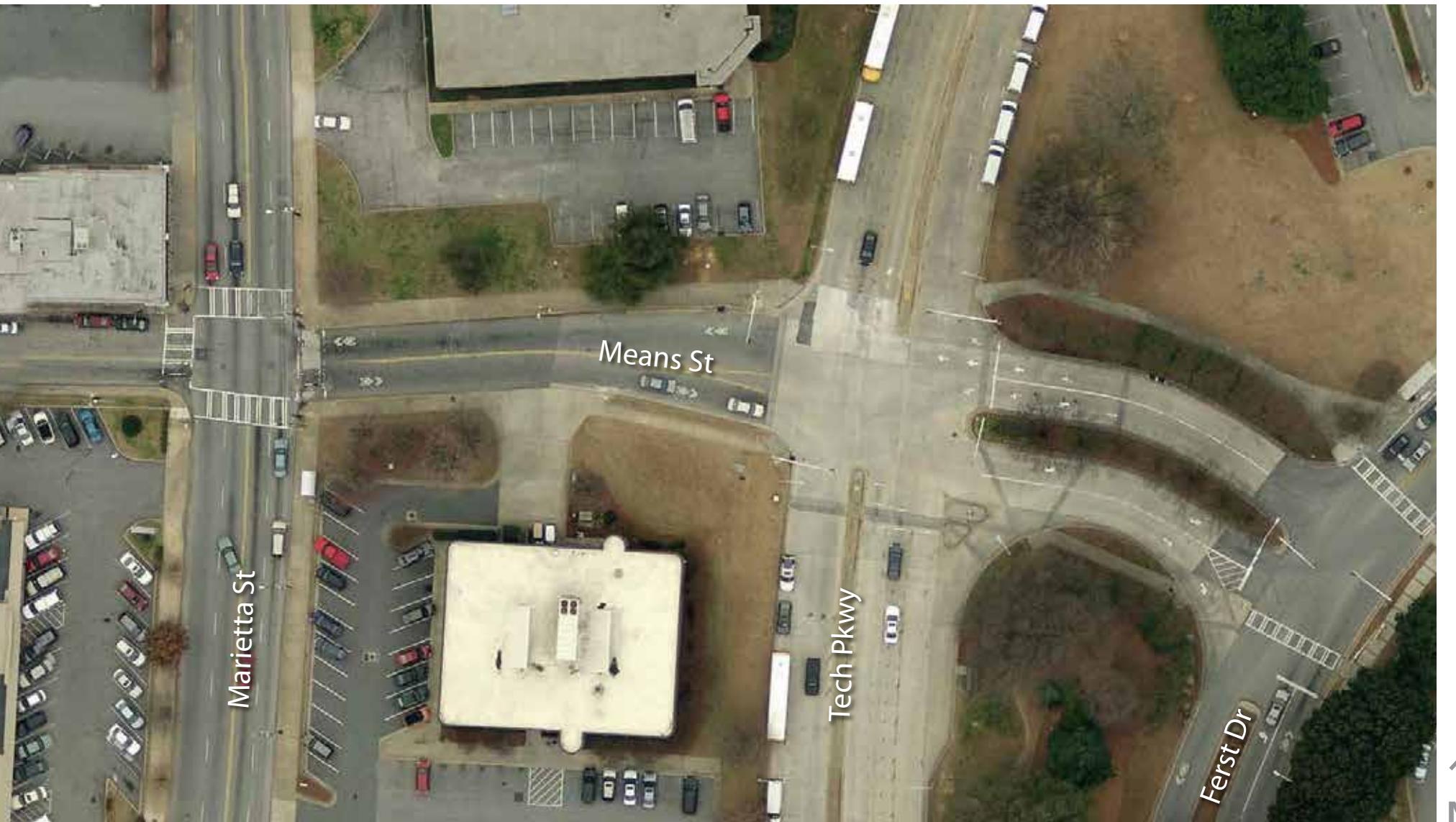
Dedicated space for cyclists, re-configured travel lanes, and signal improvements are all proposed for Means Street. The intent is to provide an easy transition from Marietta Street and Tech Parkway into campus. Additional intersection analysis will be needed, particularly with the Tech Parkway conversion, in order to identify intersection designs that work for all users, including bicyclists, pedestrians, drivers, and larger vehicles, such as buses.

Near-Term Improvements

- Implement Tech Parkway conversion from four lanes to two lanes with multi-use path.

Long-Term Improvements

- Implement Marietta Street bikeway improvements.
- Implement intersection improvements at Ferst Drive and Means Street.

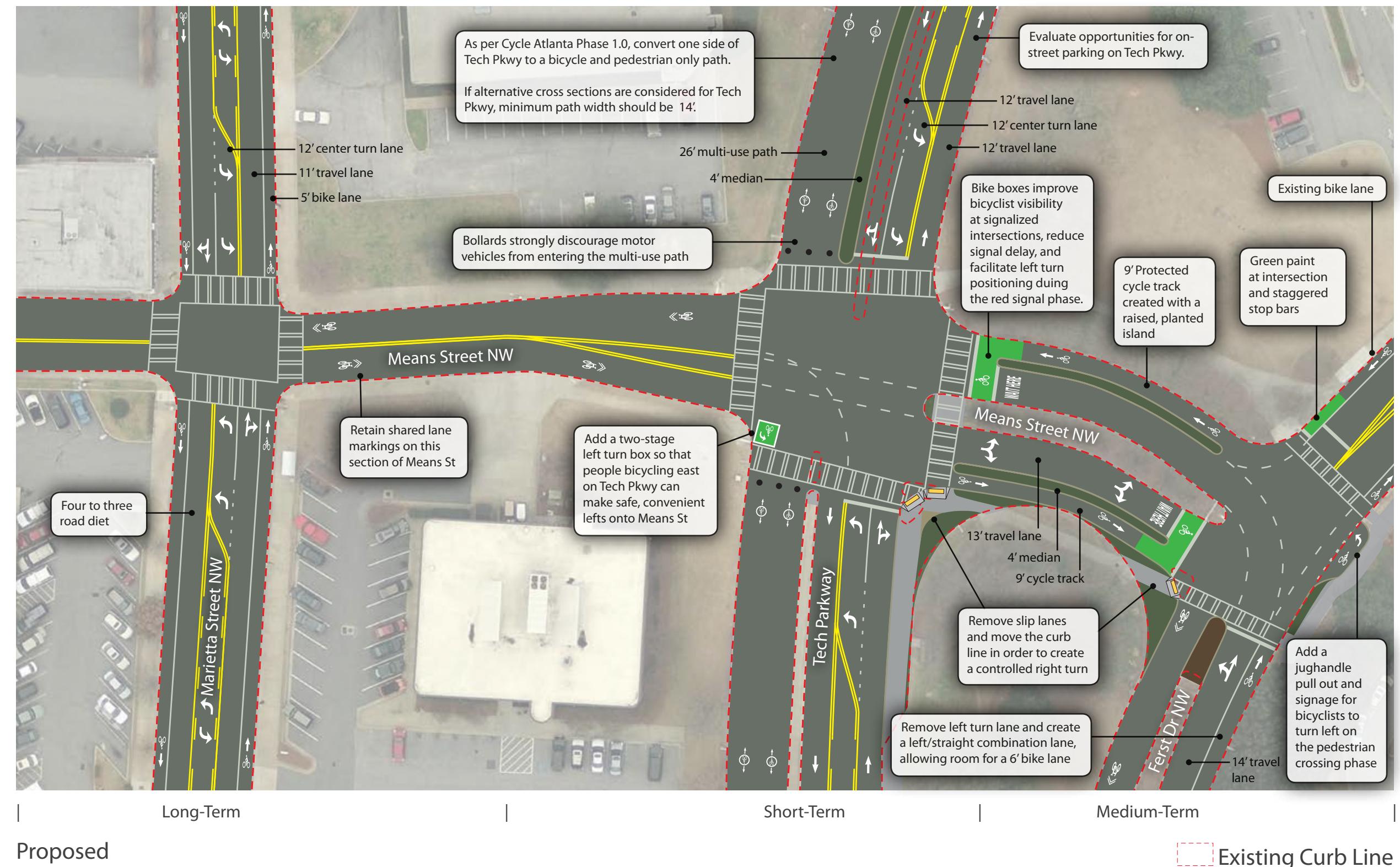


Existing Conditions

Means Street

Key Recommendations

- Short-Term** - Convert south/west side of Tech Parkway to multi-use path. Convert north/east side of Tech Parkway to two-way traffic.
- Medium-Term** - Add intersection improvements at Means Street at Ferst Drive.
- Long-Term** - Work with City of Atlanta to re-stripe Marietta Street to include bike lanes.



Tech Green

Project Need

Tech Green is a major destination on campus and many popular routes pass through Tech Green. Clough Commons and the Student Center anchor the square and are major generators of bicycle and pedestrian traffic.

Particularly between classes, high pedestrian volumes and bicycle volumes have created conflicts and safety issues at pathway intersections. Additionally, Tech Green is situated at a low point on campus and many of the pathways are downhill to the area, which increases the speed that bicyclists approach the pathway intersections around the Green.

Proposed Improvements

The proposed design changes for Tech Green are meant to manage bicycle volumes around the edges of this area and alleviate bicycle conflicts at key pathway intersections. Design treatments at pathway intersections and approaches at intersections are meant to slow bicyclists with visual and physical cues to reduce one's speed.

The proposed bike station, expanded bicycle parking, and bike shop are meant to improve access to buildings in the campus core, increase visibility of biking on campus, expand bicycle resources, and overall make bicycling to the campus core a convenient travel option.

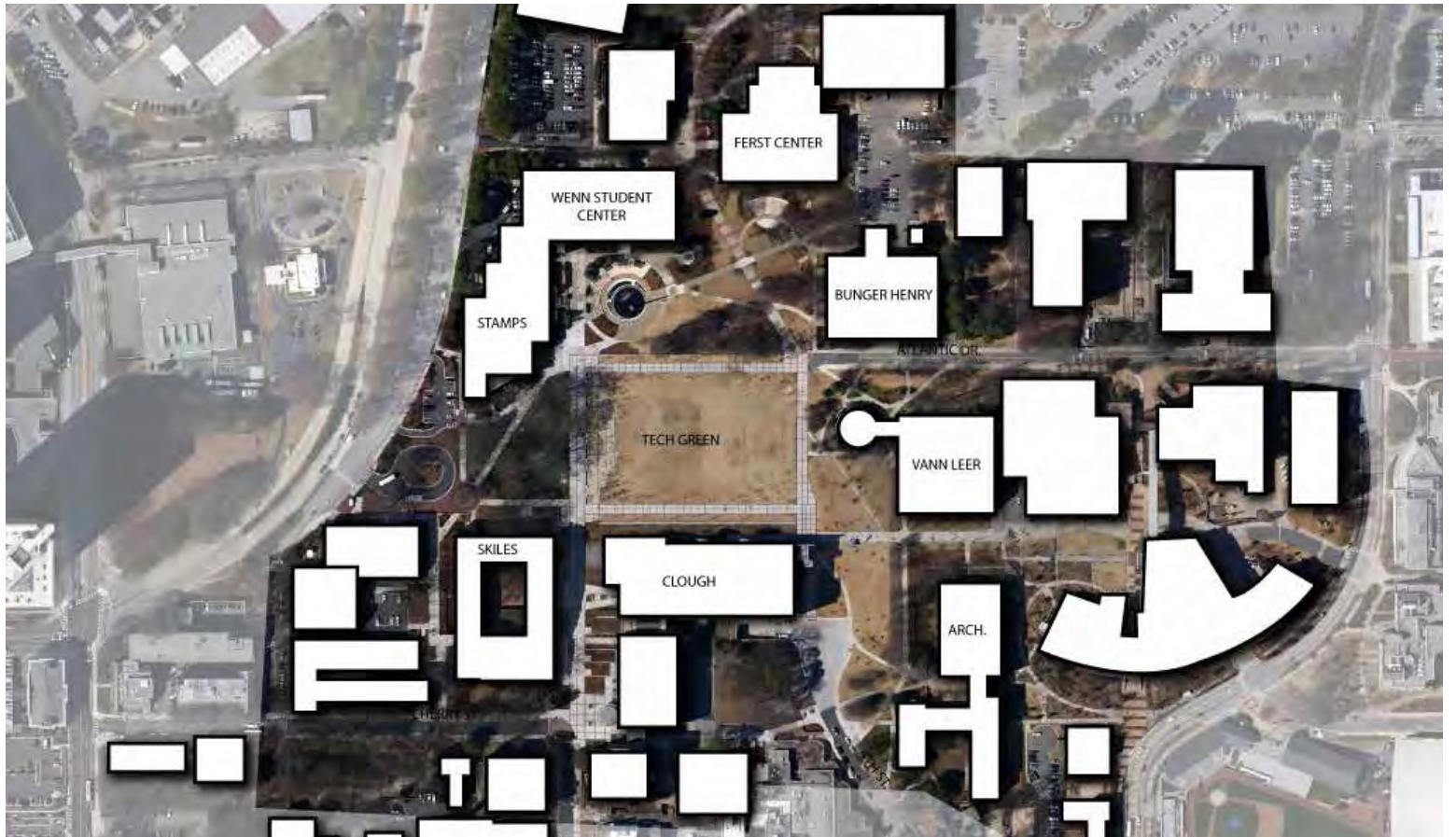
Targeted enforcement and education campaigns at the beginning of semesters or at strategic times of the year are proposed. These efforts are meant to promote a safe environment and biking culture on campus.

Near-Term Improvements

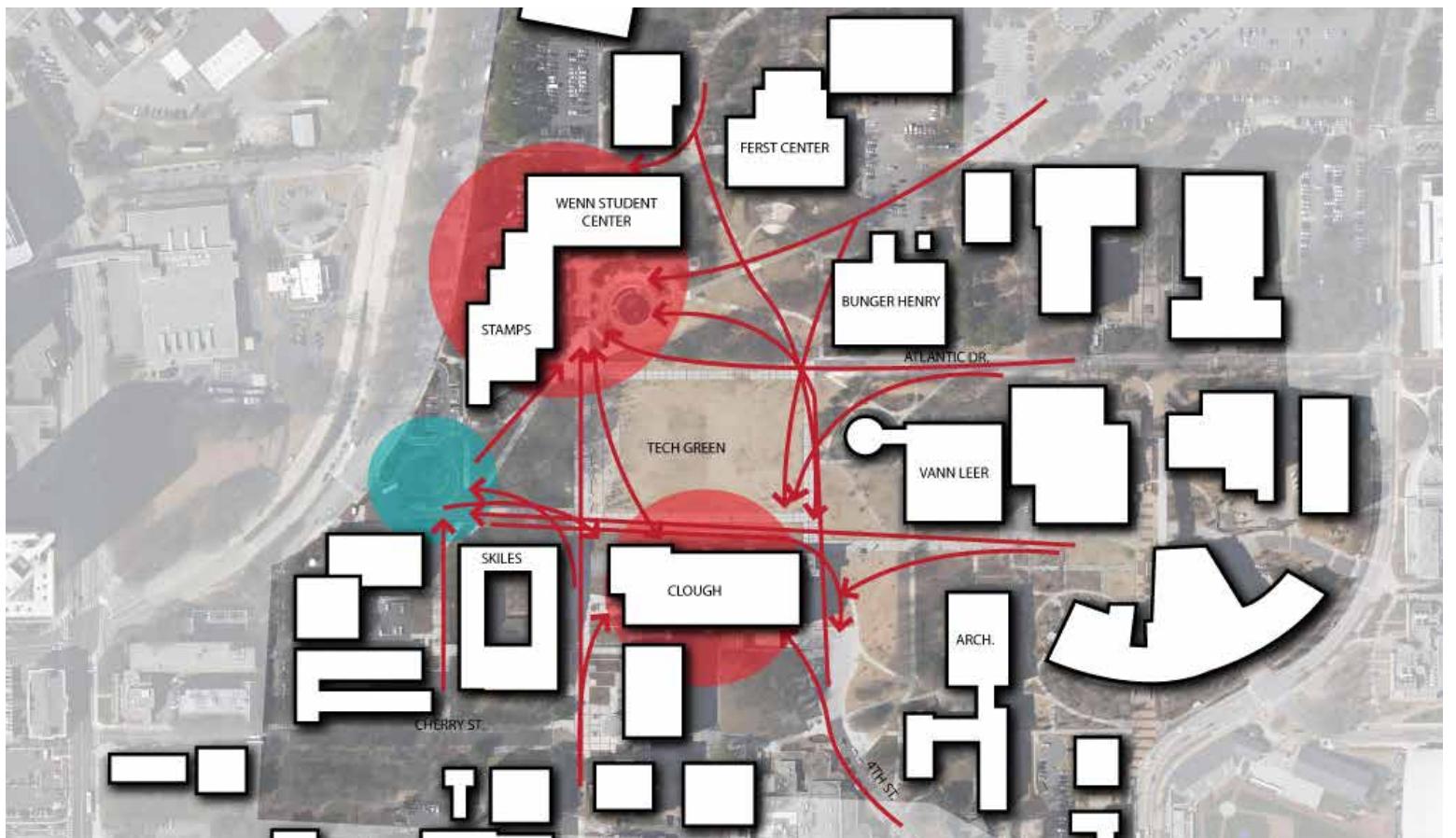
- Targeted enforcement at edges of Tech Green to encourage bicyclists to ride slowly through the area.
- Remove bicycle parking on the south side of Clough Commons to reduce bicycle traffic between the Student Center, the south entrance to Clough Commons, and the stairs to the Library. Relocate bicycle parking to the north side of Clough Commons.
- Locate "bicycle parking grove" north of Clough Commons.

Long-Term Improvements

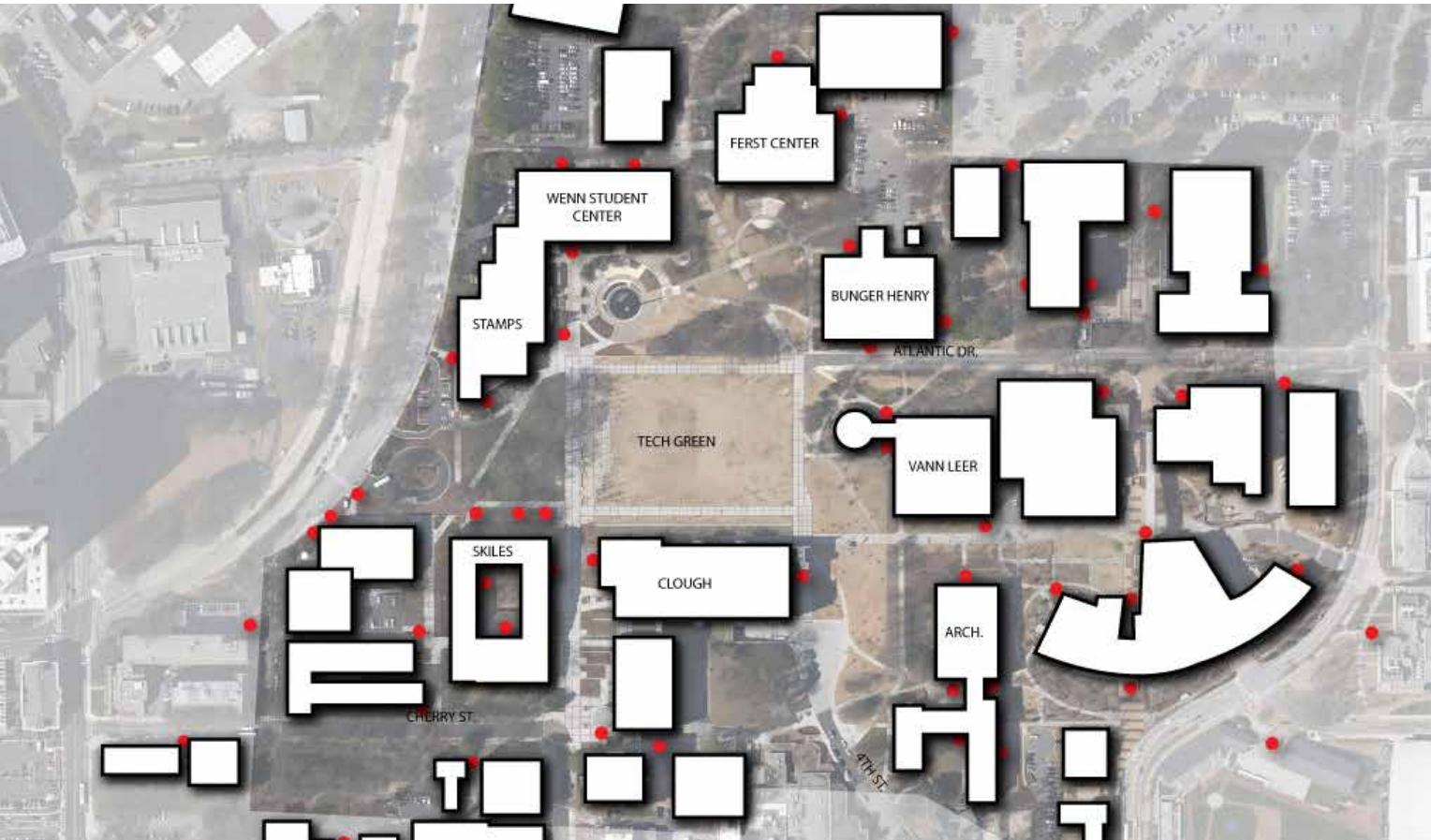
- Add Secure Parking Area (SPA) to lawn between Clough Commons and College of Architecture.
- Potentially add bike station with bike shop to lawn between Clough Commons and College of Architecture.



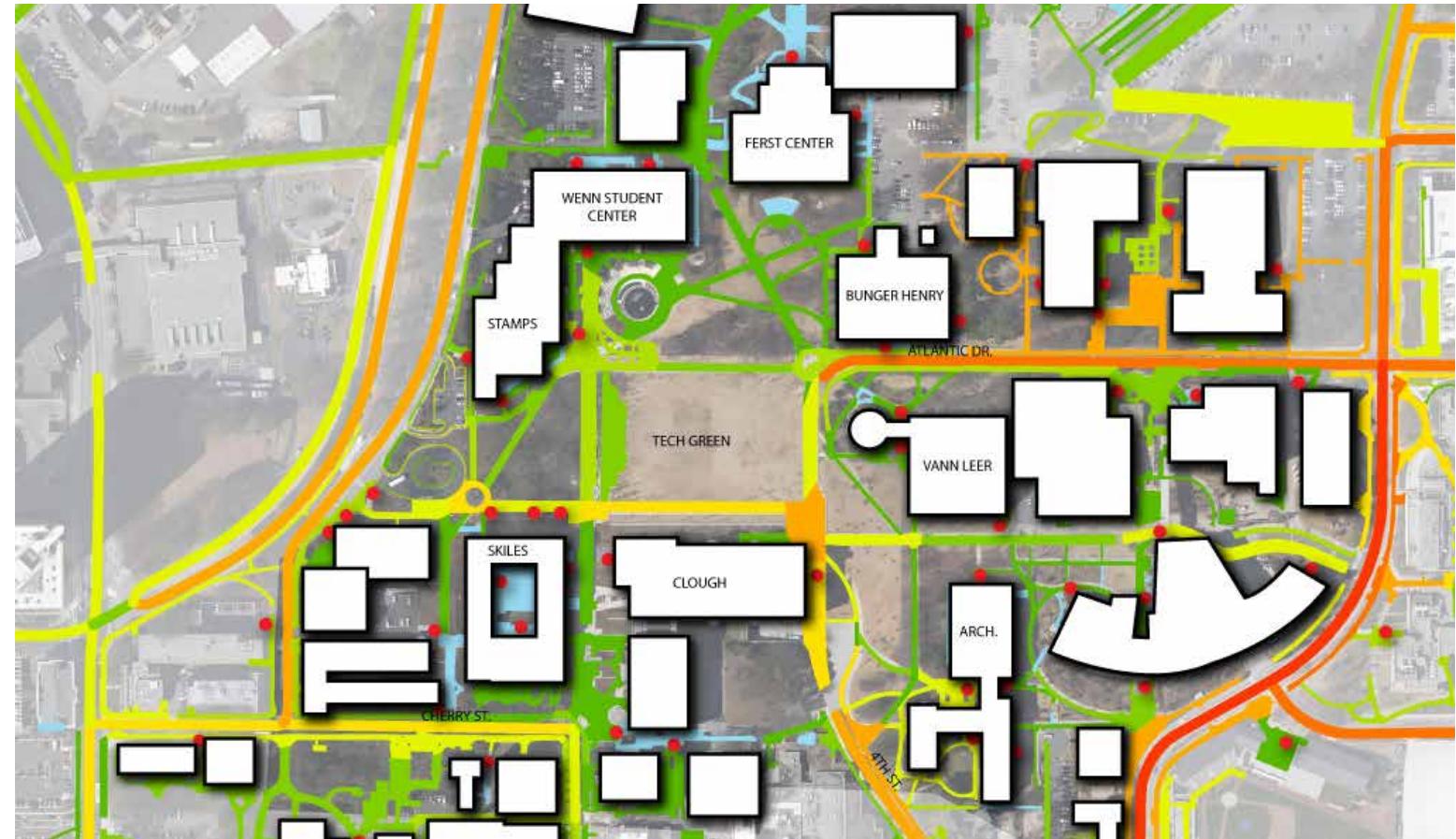
Existing Conditions



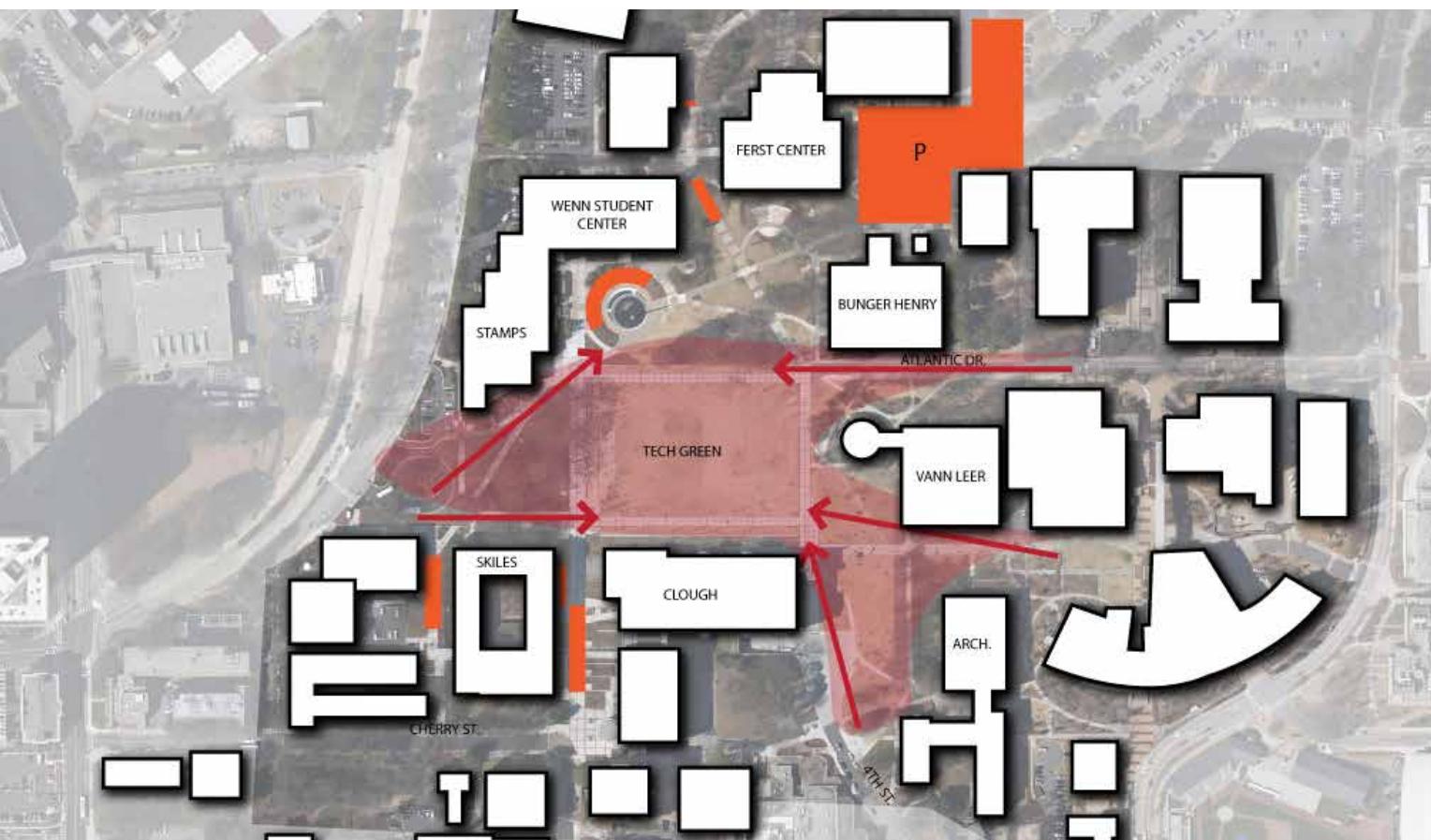
Major Routes and Destinations



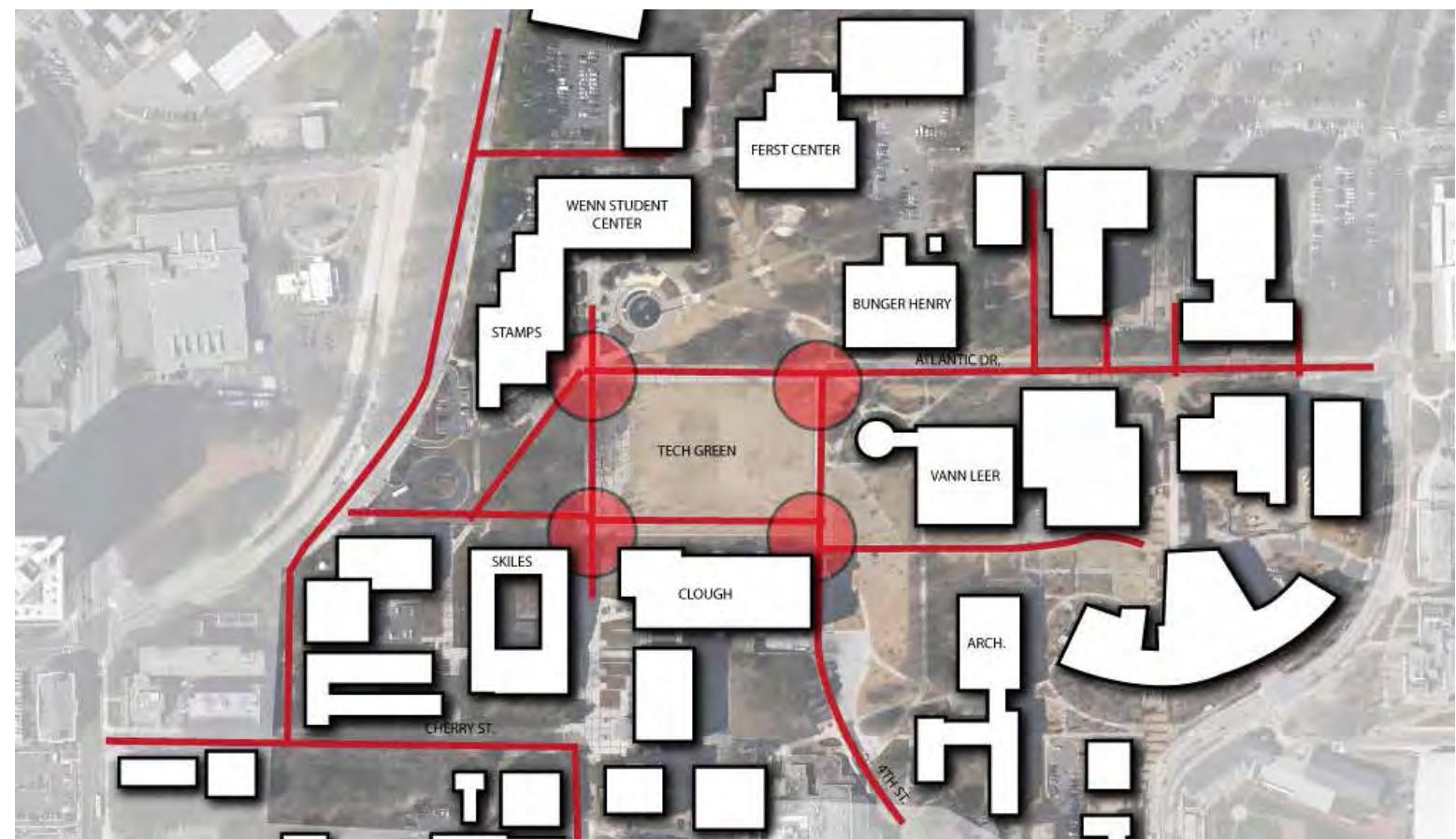
Existing Bike Rack Locations



Bike Rack Locations with CycleAtlanta App Route Heat Map



Physical Barriers

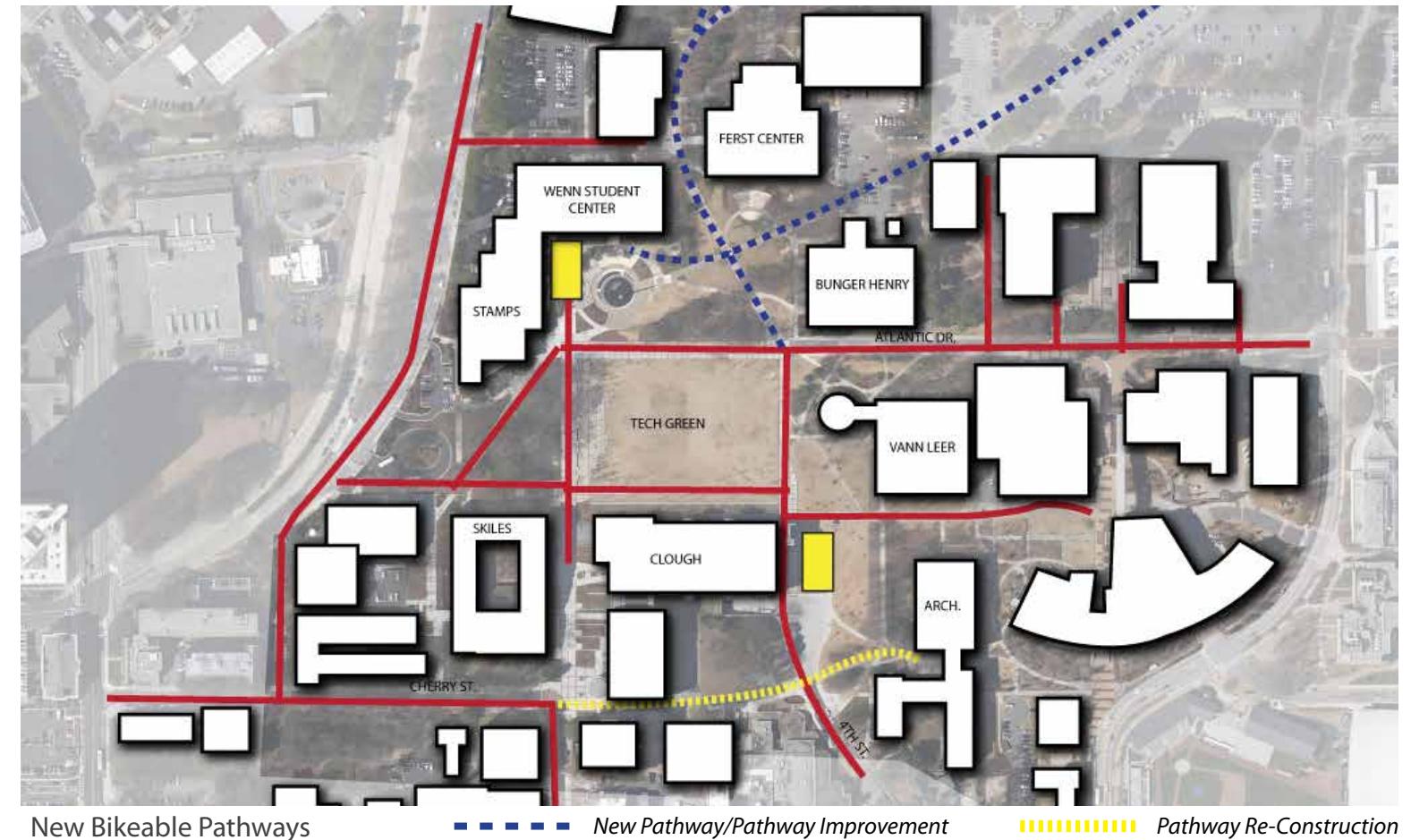


Major Routes and Destinations



Key Recommendations

- New pathway between Student Center and Ferst Center for the Arts can help connect students down the hill to Tech Green.
- New pathway that aligns with Hemphill Avenue can help cyclists connect the campus core from the northwest.



New Bikeable Pathways

New Pathway/Pathway Improvement

Pathway Re-Construction

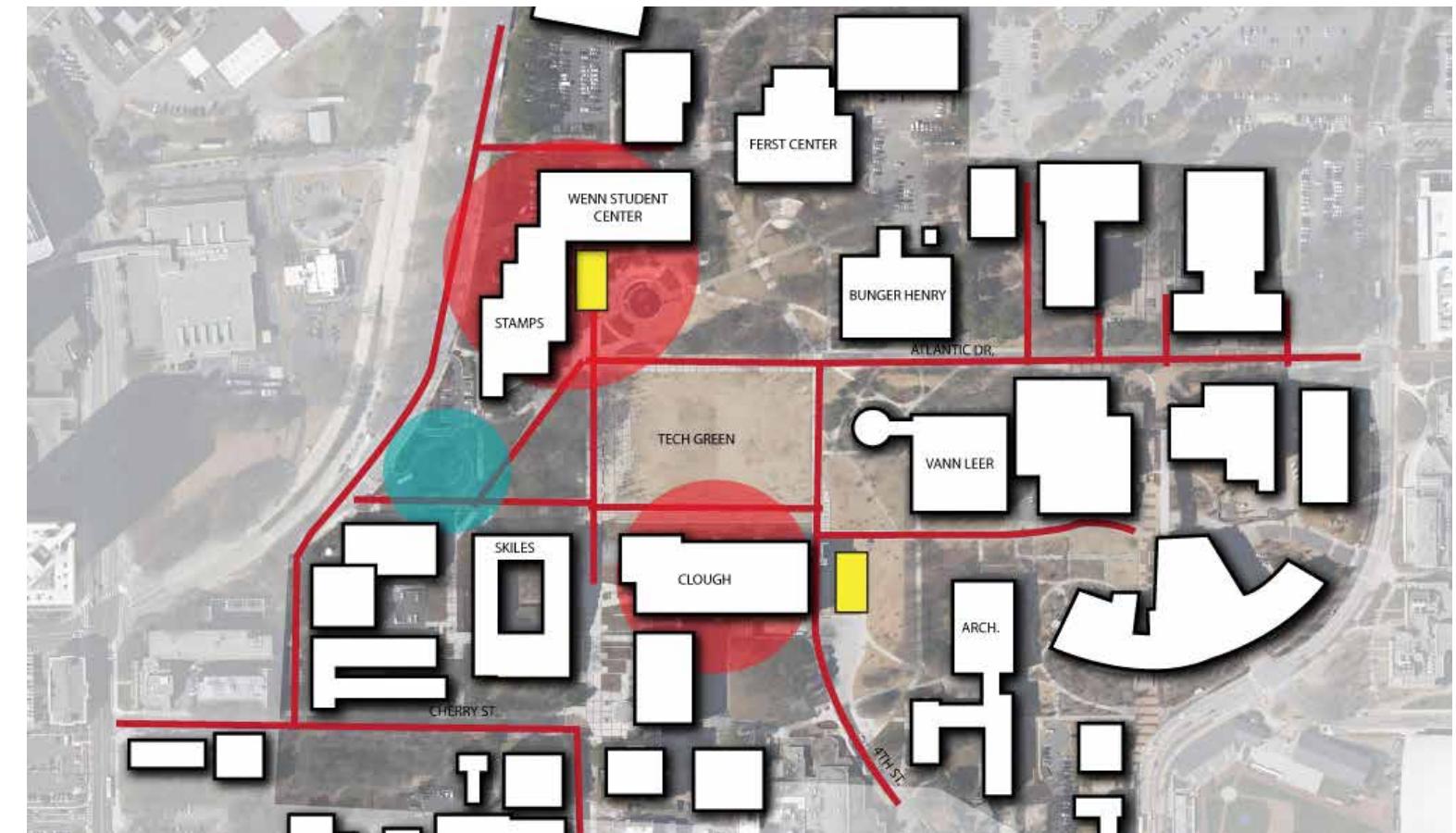


New pathways will increase bike access to the campus core.

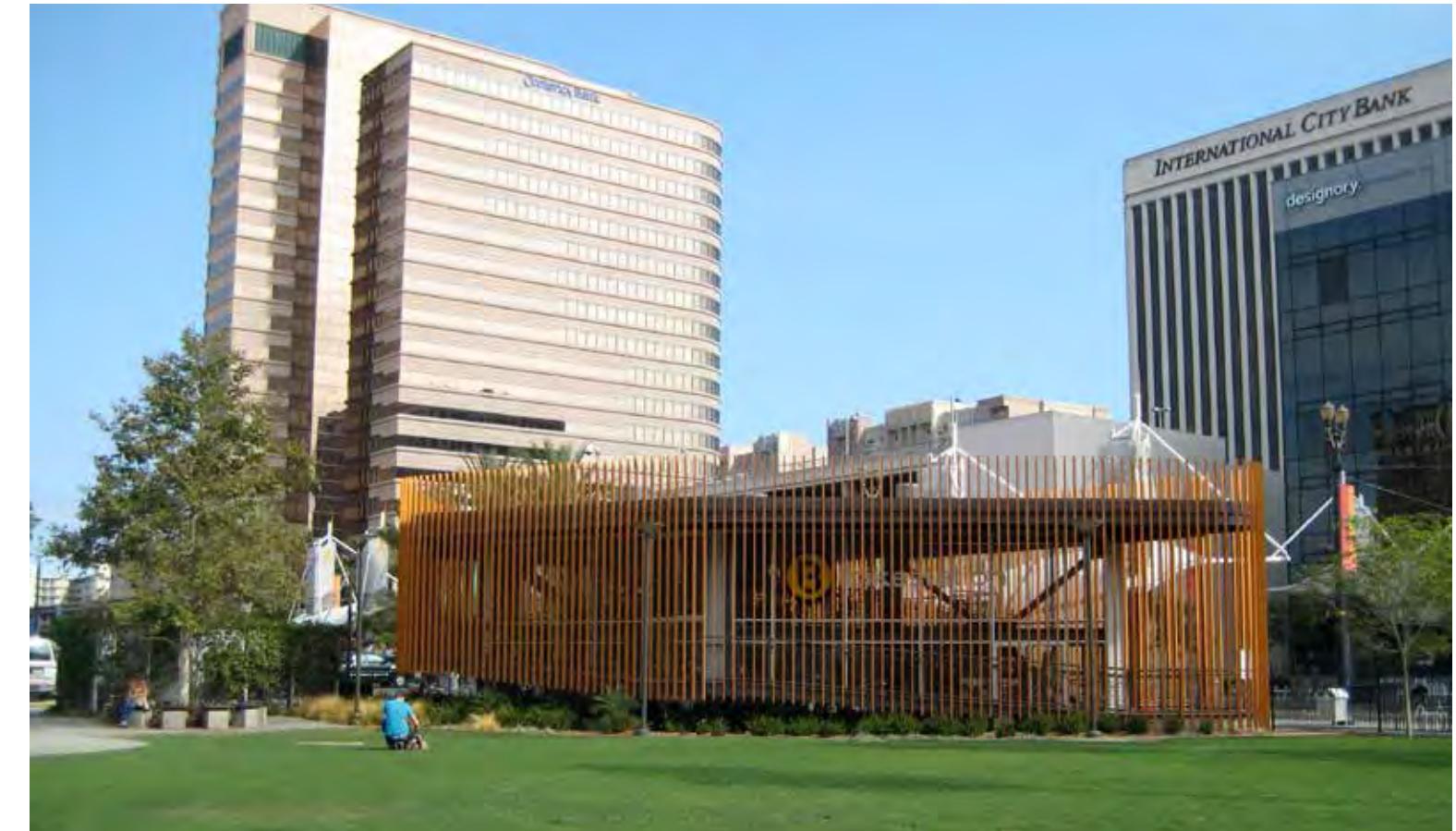


Key Recommendations

- Add more bike parking to north edge of Clough Commons.
- Potentially add bike station at north side of Clough Commons.
- Potentially add bike shop to student center. Include shop as part of student center renovation or new construction.
- Remove bike parking on south side of Clough Commons to reduce bicycle traffic along southern edge of Tech Green.



Potential Locations for Bike Station and Bike Shop

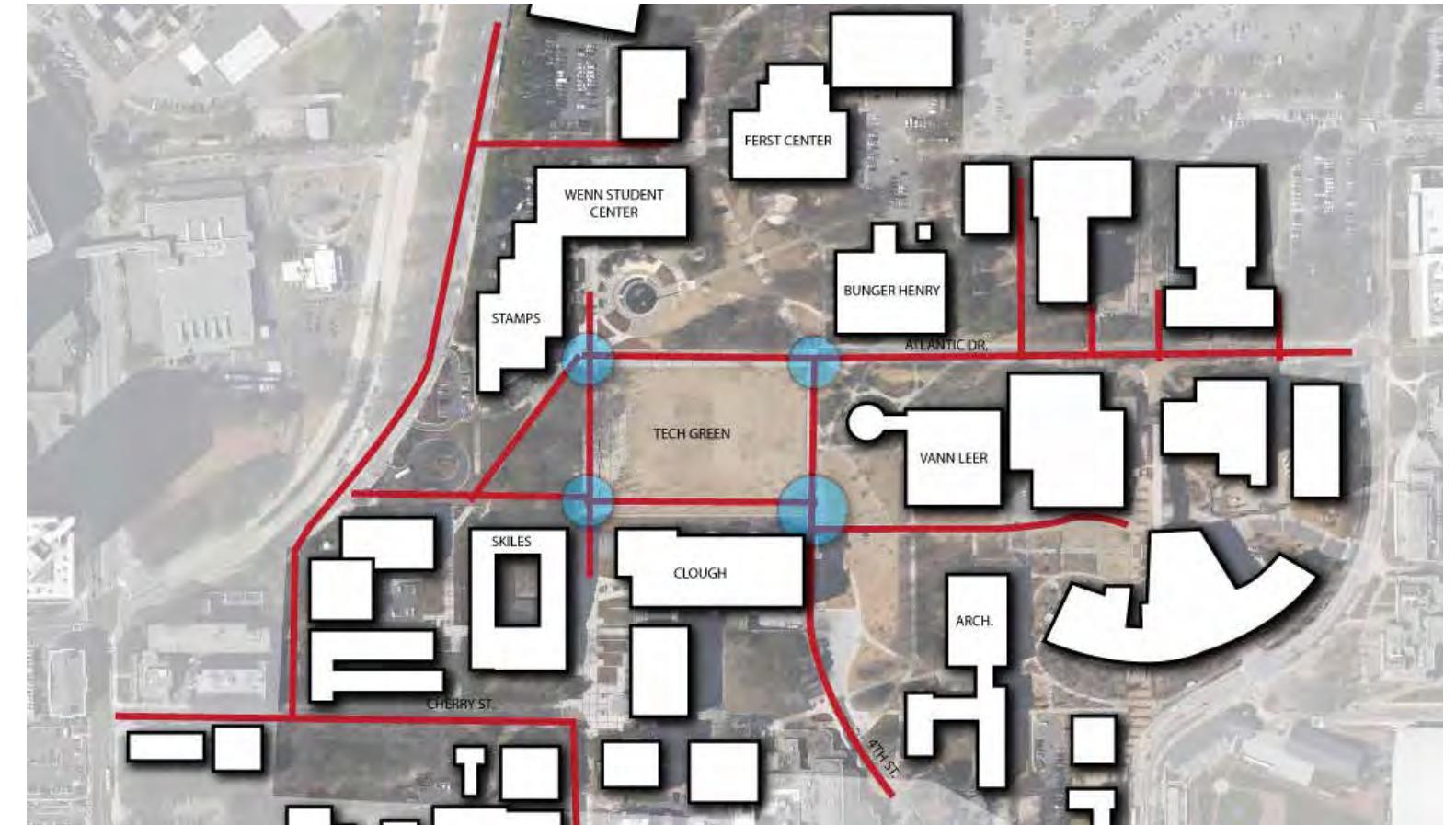


Standalone bike station. Integrate with architecture and landscape.

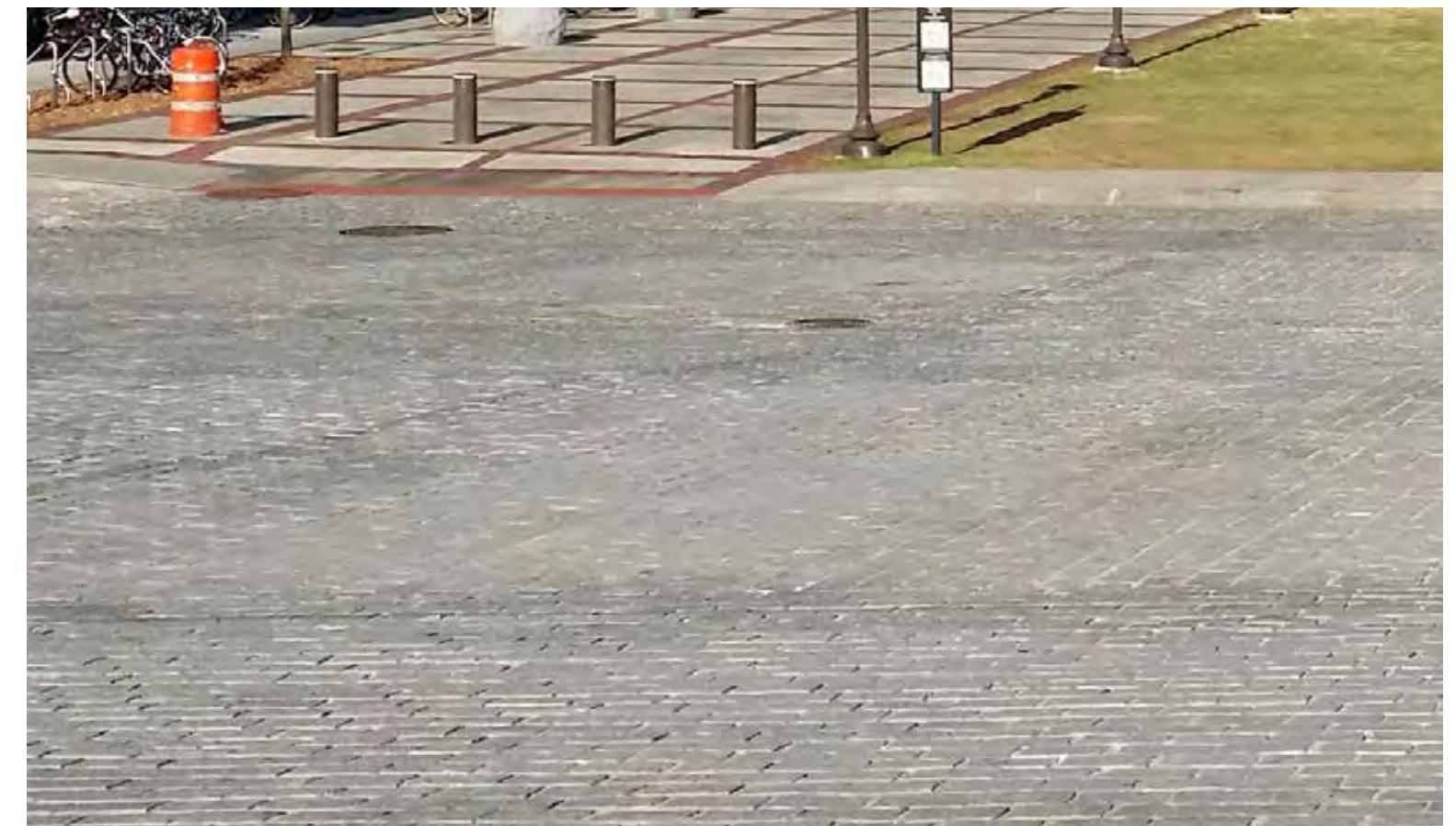


Key Recommendations

- Redesign intersections at four corners of Tech Green with textured pavement, such as cobbles, and other visual design elements to encourage cyclists to slow through intersections.
- Conduct targeted enforcement at intersections at four corners of Tech Green to promote safe cycling behaviors.



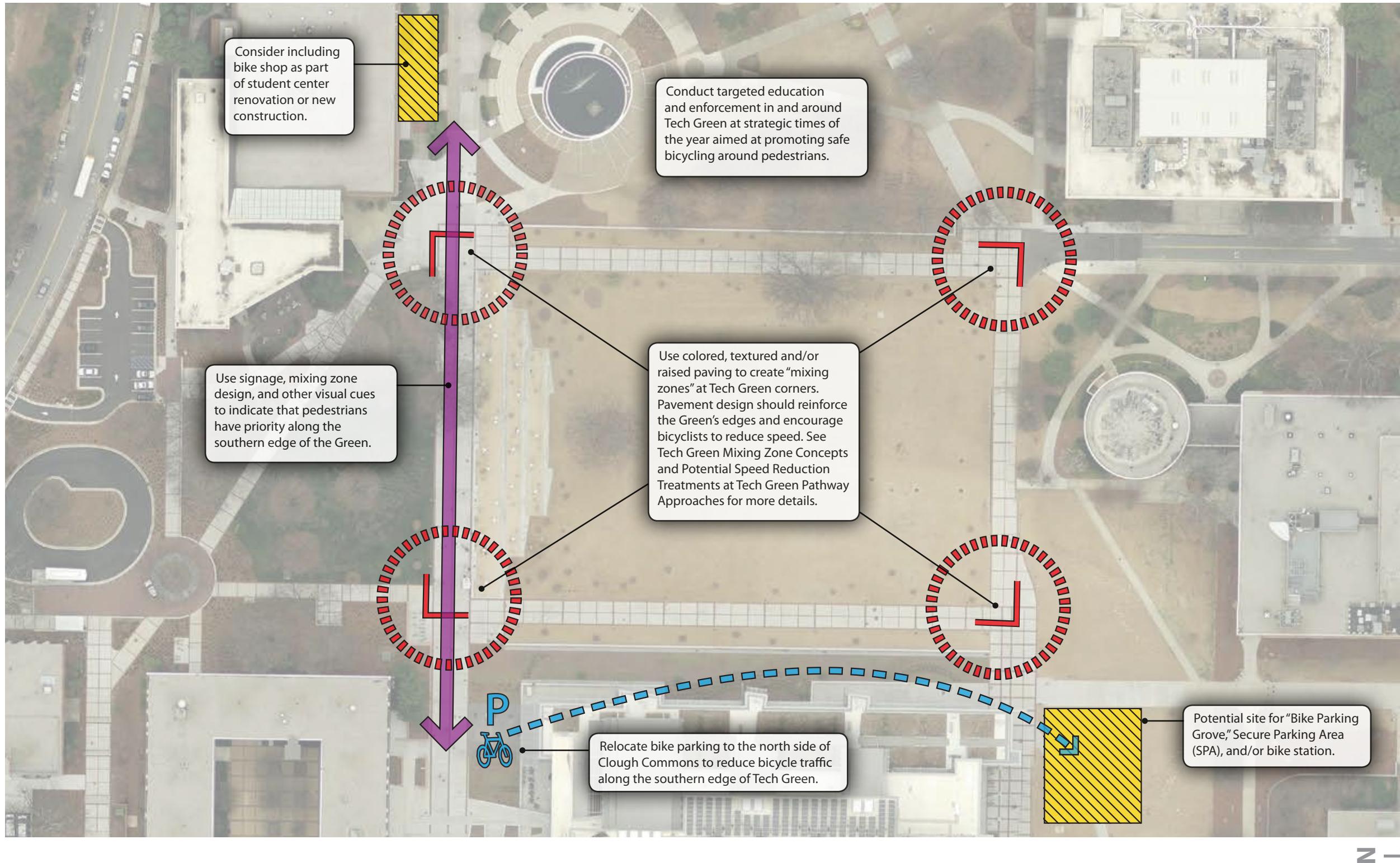
Traffic Calming Intersections



Design treatments, such as cobbles, at intersections should create safe mixing zones and slow bicycle traffic.



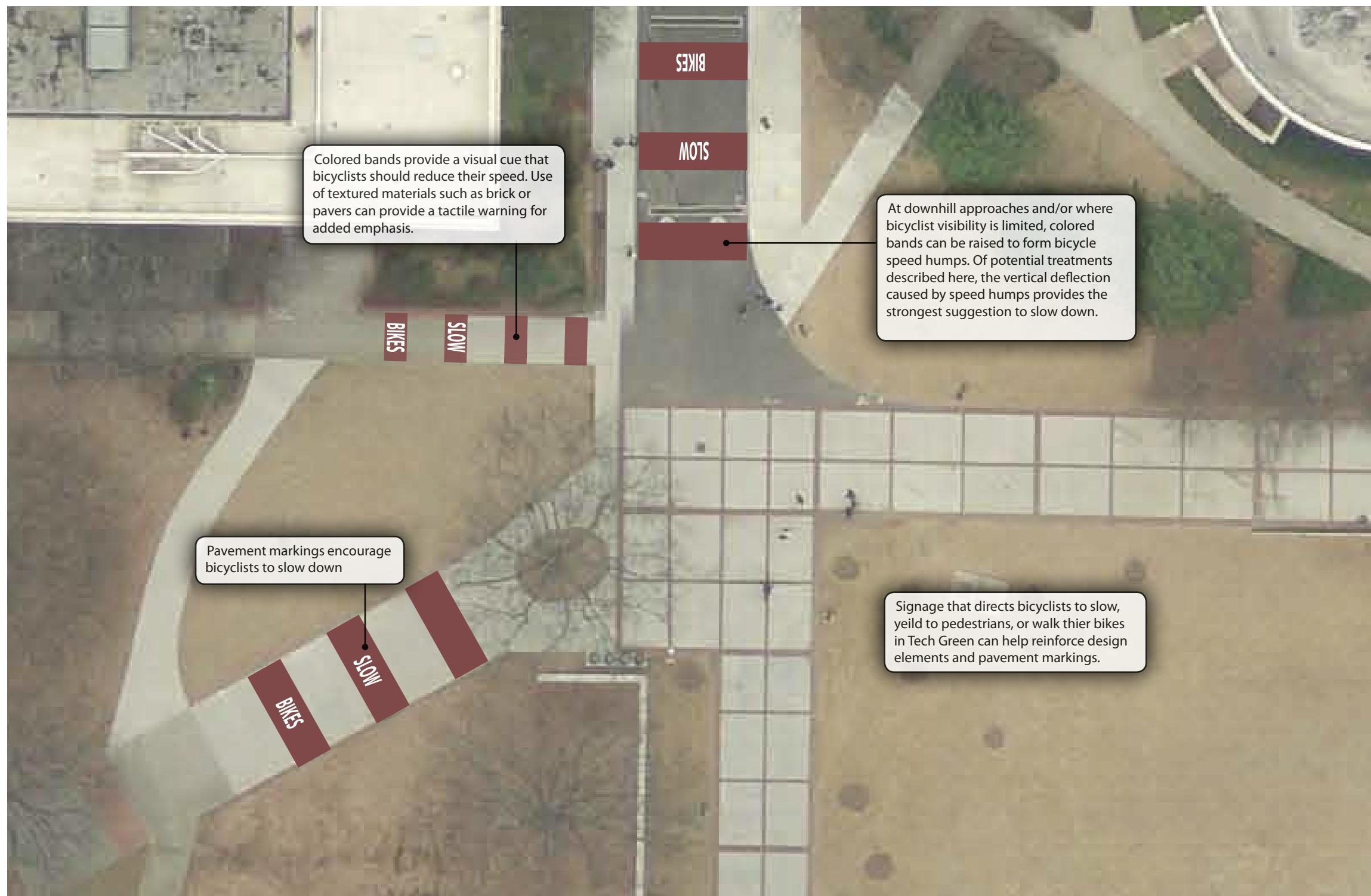
Tech Green: Overview



N →

Tech Green Mixing Zone and Speed Reduction Concept Designs

NW corner shown as example



Short Term Preferred Alternative: Use alternating bands of textured brick and pavement markings to encourage bicyclists to slow down

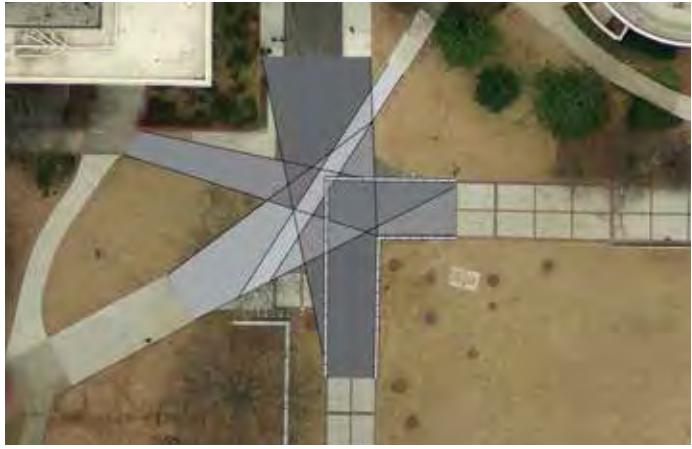
Mixing Zone Concepts Studied



Mixing Zone Concept: Traditional Brick



Mixing Zone Concept: Jagged Edges



Mixing Zone Concept: Desire Lines

10th Street at Atlantic Drive and State Street

Project Need

Many students live in Home Park and use State Street to access campus. The route between Georgia Tech and Atlantic Station is direct. However, it is not signed or marked as a bike route. There is no designated bike route through Home Park that goes from 10th Street to 17th Street.

At the intersection of 16th Street and State Street, through traffic for vehicles is blocked with median islands and right in/right out access from 16th Street and State Street. The intersection could be redesigned to allow pedestrians and bicyclists to travel straight along State Street from 16th Street to 17th Street.

Proposed Improvements

Wayfinding signage, spot intersection improvements, and shared lane markings can help bicyclists navigate the corridor and encourage its use. The shared lane markings can also increase bicyclist visibility and driver awareness of bicyclists.

Bicycle boulevard improvements can enhance the transition and route navigation from Atlantic Drive and State Street on campus to the State Street corridor through Home Park. The Atlantic Drive route from campus should travel north one block from 10th Street, take a left at Home Park Avenue, and travel one block to State Street.

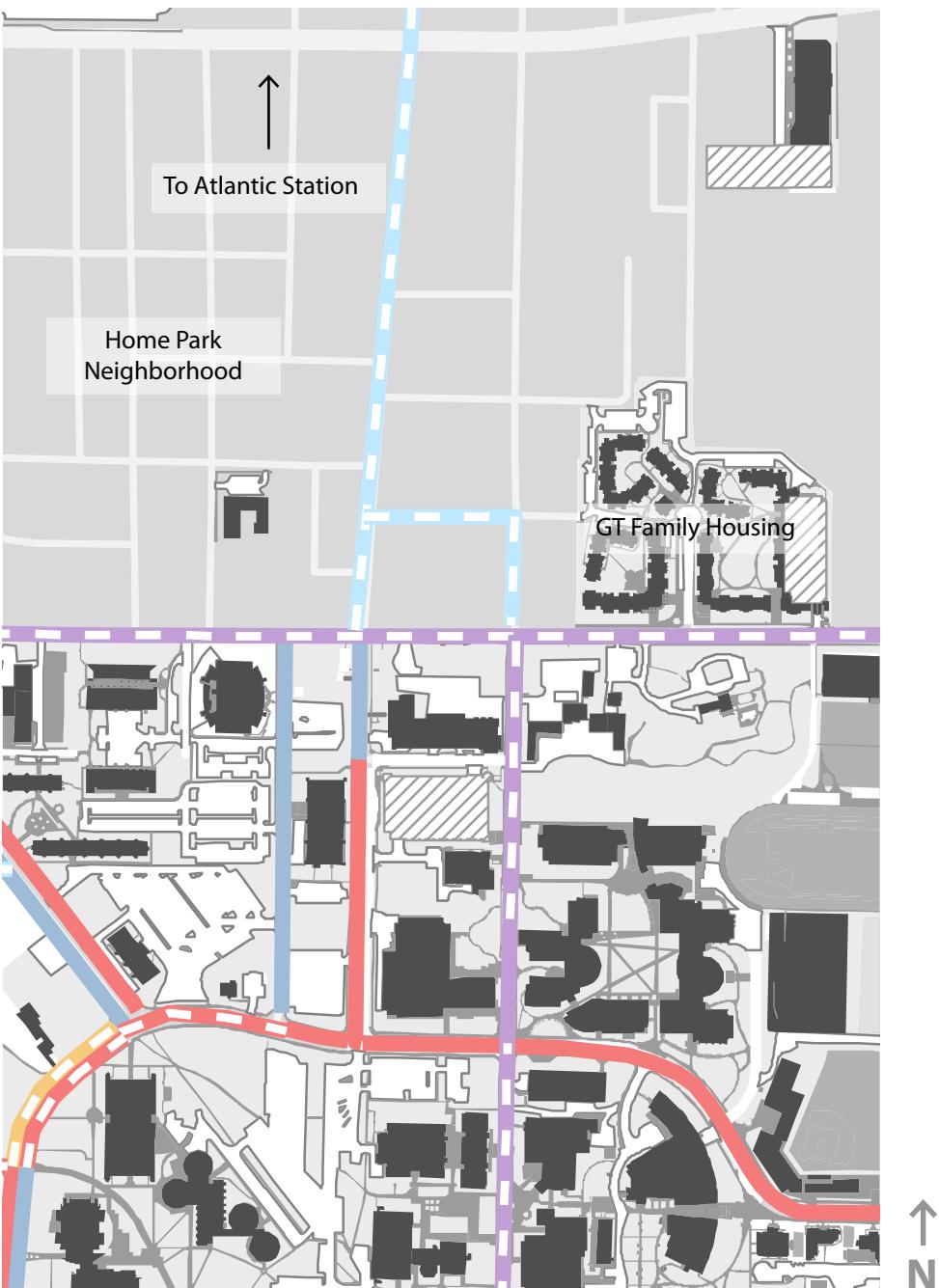
Using this route will give bicyclists route options to use Atlantic Drive or State Street to cross 10th Street. This route design also provides a bicycle connection to the Family Housing entrance from Home Park Avenue.

Near-Term Improvements

- Wayfinding signage along State Street, Home Park Avenue, and Atlantic Drive to emphasize bicycle boulevard route from Georgia Tech and Atlantic Station.
- Apply shared lane markings, including directional shared lane markings, to encourage bicyclists to use this route. They will also increase driver awareness of bicyclists along this route.
- Speed humps/tables as traffic calming elements.

Long-Term Improvements

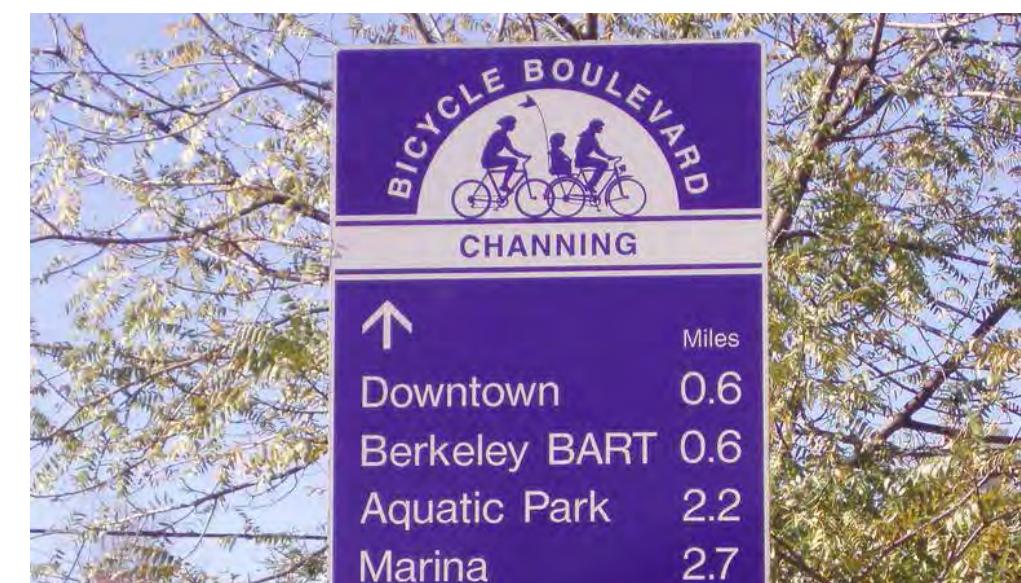
- Intersection improvements at 16th Street and State Street, 10th Street and State Street, and 10th Street and Atlantic Drive.



Speed humps encourage drivers to reduce speeds.



Directional shared lane markings can help navigate the route.



Bike boulevard signs can help with route branding and wayfinding.

10th Street at Atlantic Drive and State Street

Notes

- **Short-Term** - The City of Atlanta, in coordination with Home Park Neighborhood Association and Atlantic Station to implement bicycle boulevard connections along State St, Atlantic Dr, and Home Park Ave
- **Medium-Term** - Georgia Tech implements vision for 10th St shared use path in coordination with Engineered Biosystems Sector Conceptual Design.



Proposed

Existing Curb Line

Bikeway Network and Strategic Corridors

Overview

The bikeway recommendations in this chapter are presented in two complementary manners.

- **On-Street Bikeway Network** recommendations highlight the proposed facility types.
- **Strategic Bikeway Corridors** provide more detailed design considerations along each of the major bikeway routes on campus.

Figure 27. On-Street Bikeway Network

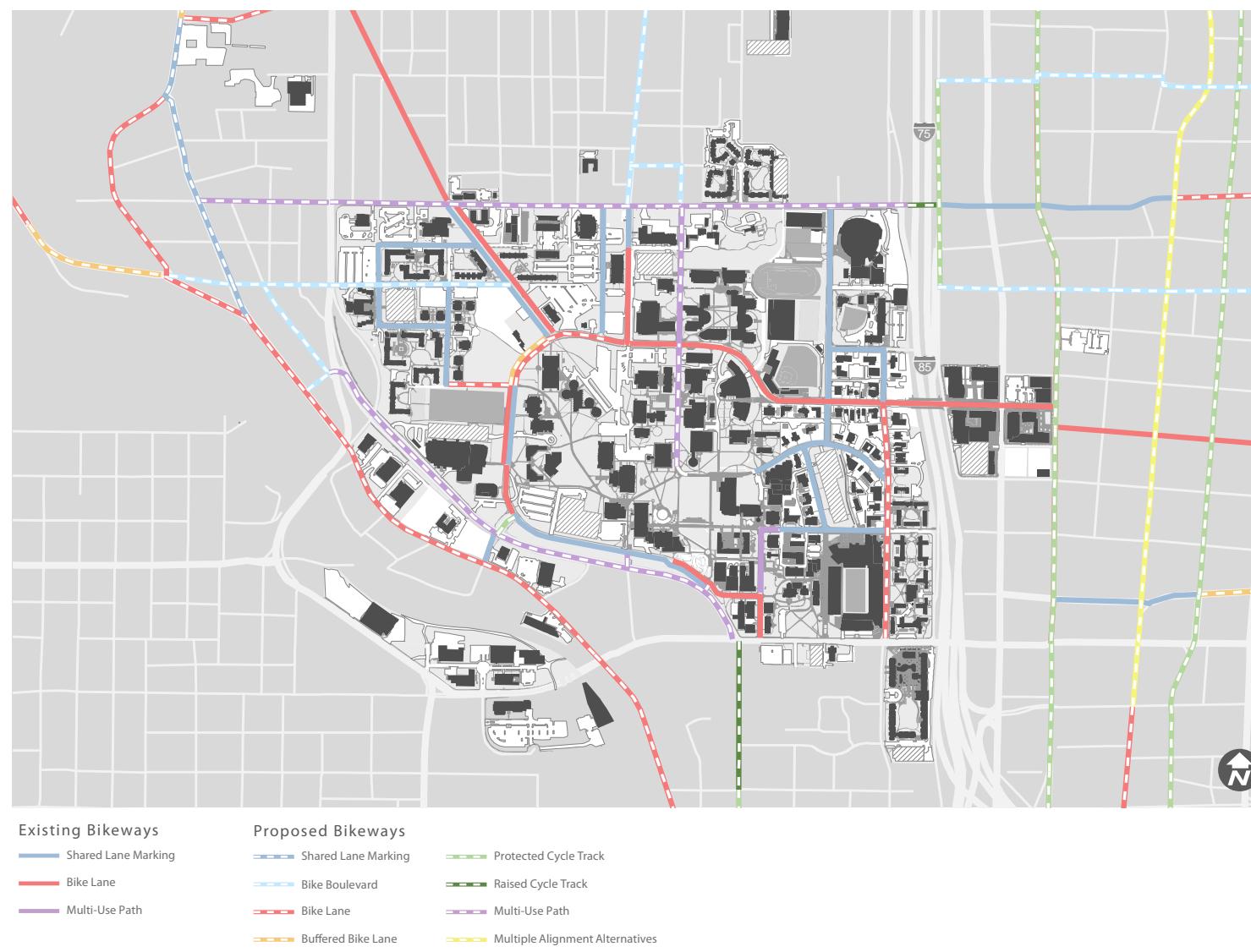


Figure 28. Strategic Bikeway Corridors

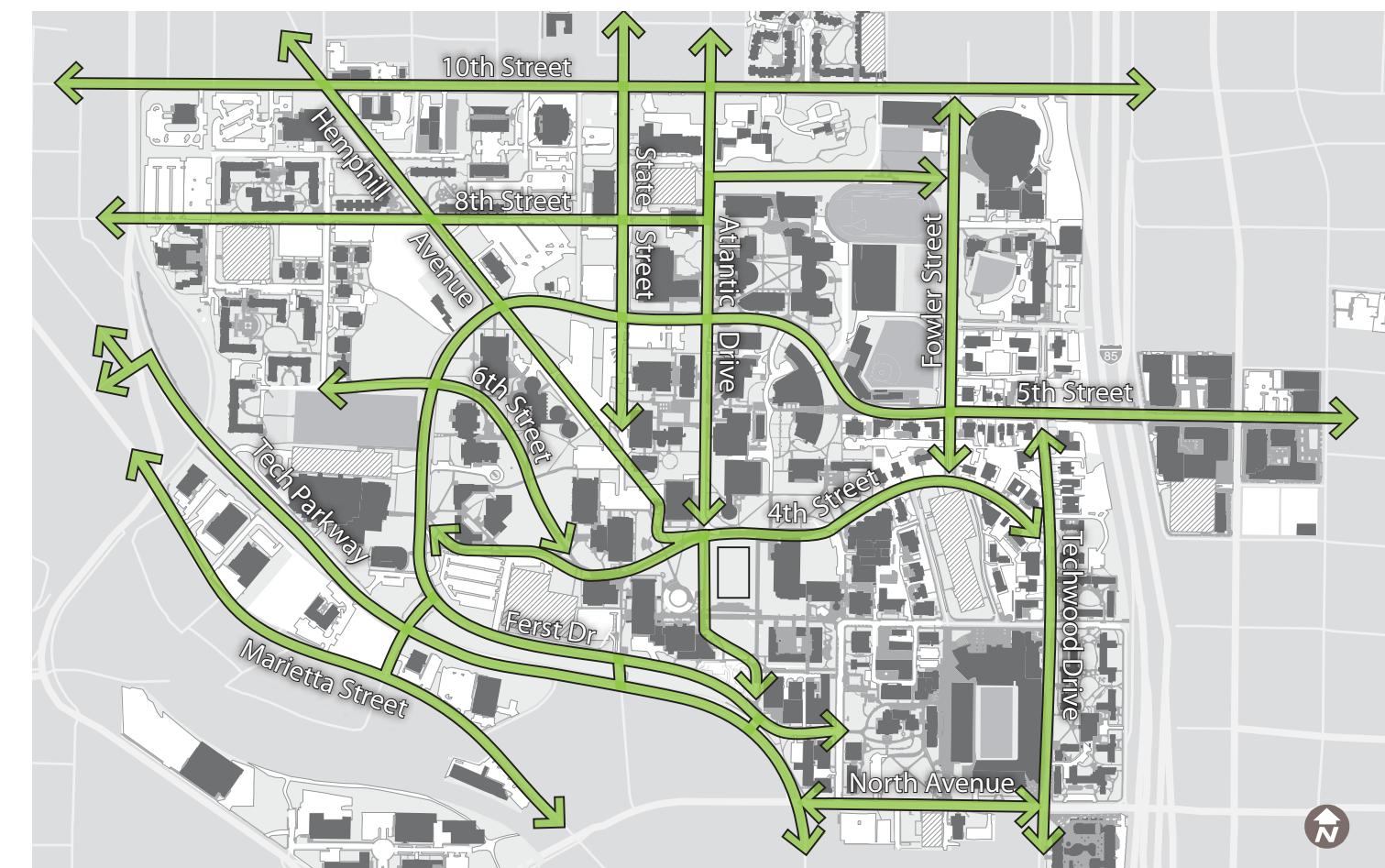


Table 18. On-Street Bikeway Types

On-Street Bikeway Network

The proposed bikeway network illustrates the bikeway network on and adjacent to the campus. Off-campus, the bikeway network recommendations are identified in the Cycle Atlanta: Phase 1.0 Study, which is the City of Atlanta's plan for bikeways in the core of the city. These projects either impact the edges of campus or provide key routes through adjacent neighborhoods to campus. These projects should be coordinated with the City of Atlanta or other community groups. For more on these projects, see the Priority Projects chapter of this plan.

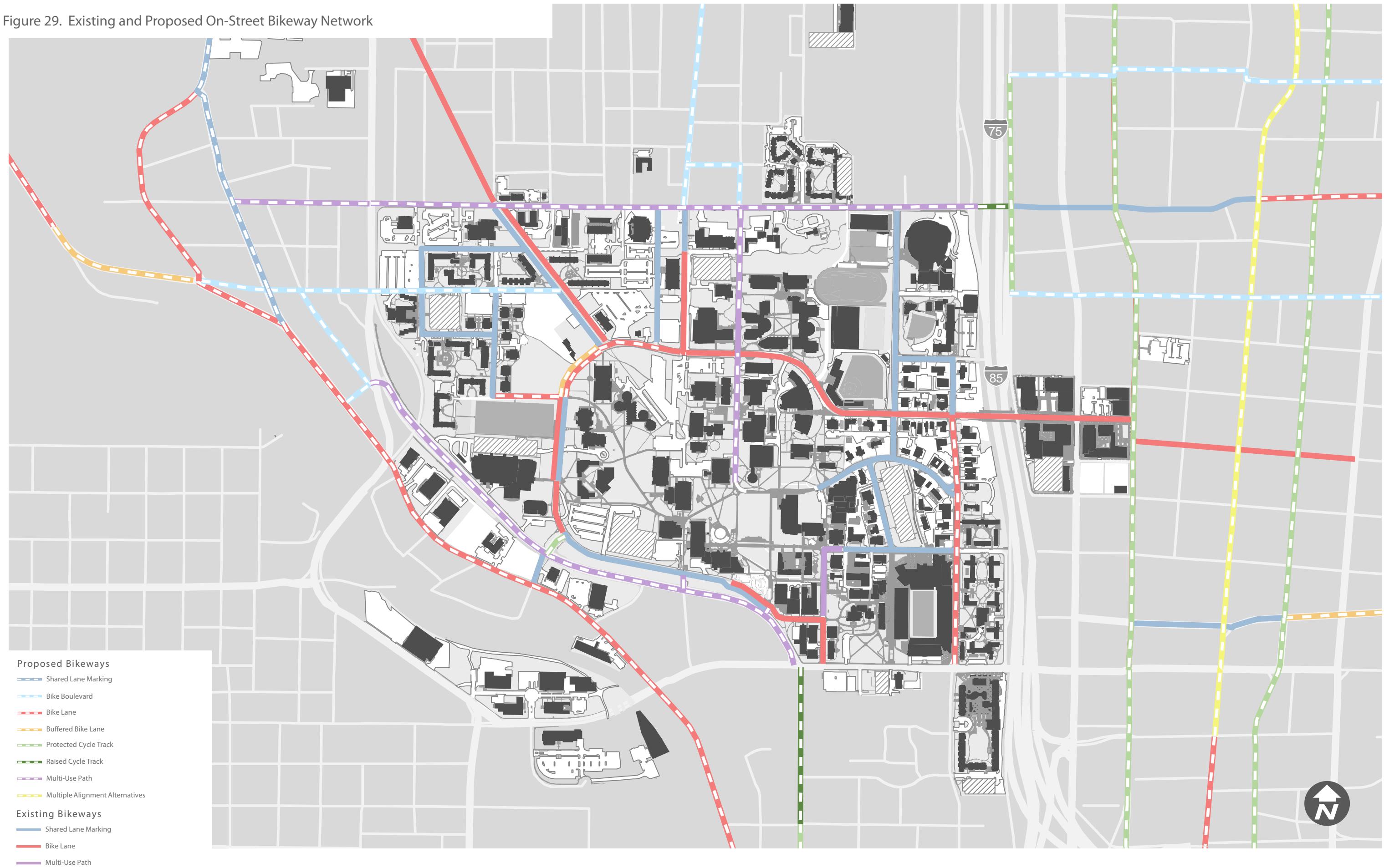
On campus, the proposed bikeway network improvements are recommended to increase the bikeway network connectivity and safety. Many of these projects can be coordinated as part of repaving and restriping projects, larger streetscape improvements or standalone projects.

On-campus projects include:

- Bike Lane and Buffered Bike Lane - Ferst Drive from 6th Street to Hemphill Avenue
- Bike Lanes - Ferst Drive from Hemphill Avenue to Dalney Street
- Contra-Flow Bike Lane - 6th Street from McMillian Street to Ferst Drive
- Shared Lane Markings and Protected Cycle Track - Means Street from Marietta Street to Ferst Drive (in coordination with Tech Parkway conversion)

Shared Lane Marking	Bike Boulevard
	
Bike Lane	Buffered Bike Lane
	
Contra-Flow Bike Lane	Protected Cycle Track
	
Raised Cycle Track	Multi-Use Path
	

Figure 29. Existing and Proposed On-Street Bikeway Network



Strategic Bikeway Corridors

The strategic bikeway corridors include both on-street bikeways and pathways and generally align with the campus corridors identified in the Georgia Tech Landscape Master Plan. The strategic corridors for this plan denote the desired bikeway network for campus and the major bike routes on campus. The general form and connectivity of this network should be preserved, expanded, or completed as campus redevelopment projects are undertaken. Specific notes about each strategic corridor and design considerations are summarized on the subsequent pages.

- | | |
|----------------------------|-----------------------------------|
| (1) 10th Street | (7) Fowler Street |
| (2) 8th Street | (8) Hemphill Avenue |
| (3) 6th Street | (9) North Avenue |
| (4) 4th Street | (10) State Street |
| (5) Atlantic Drive | (11) Tech Parkway |
| (6) Ferst Drive-5th Street | (12) Techwood Drive |
| | (13) Marietta Street-Means Street |

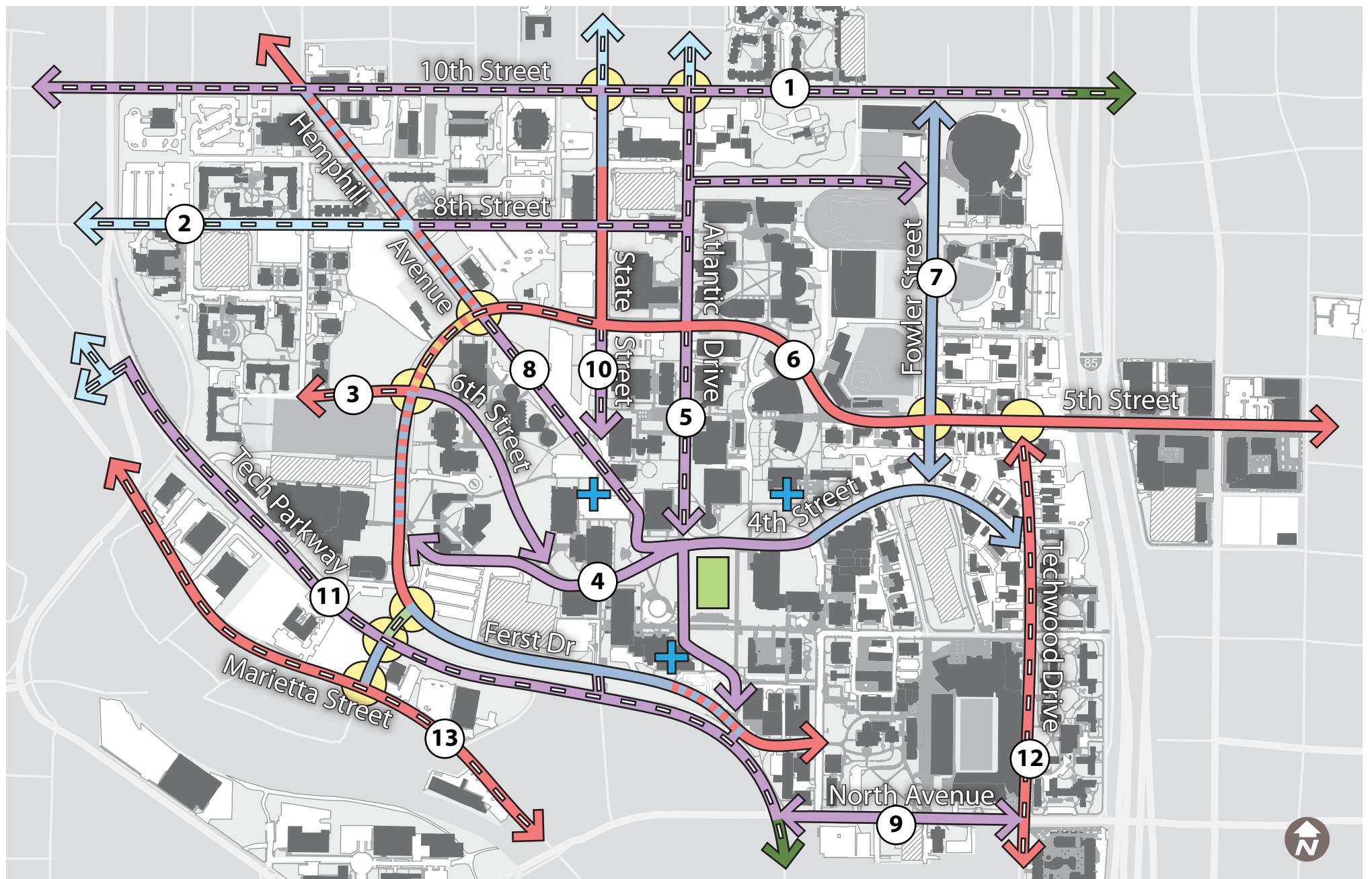


Figure 30. Georgia Tech Strategic Bikeway Corridors

Proposed Bikeways

- Bike Boulevard
- Bike Lane
- Parking-Side Buffered Bike Lane, Bike Lane
- Protected Cycle Track
- Raised Cycle Track
- Multi-Use Path

Proposed Spot Improvements

- High Priority Intersection improvements
- Tech Green improvements
- Potential Bike Center location

Existing Bikeways

- Shared Lane Markings
- Bike Lane
- Downhill Shared Lane Marking, Uphill Bike Lane
- Multi-Use Path

10th Street Bikeway Corridor

Corridor Overview

The corridor connects areas along the Howell Mill/Marietta Road corridor to Georgia Tech, Home Park, and Midtown. Creating a multi-use path along the south side of 10th Street will make the entire north edge of campus bikeable. Currently, there are not bikeways along this corridor.

Design Considerations

- Convert existing sidewalk to multi-use path from Howell Mill Road to Williams Street along south side of 10th Street.
- Manage multi-use transitions at intersection crossings and driveway entrances.
- Provide wayfinding at intersections with other strategic corridors or off-campus, on-street bikeways.
- Reference Engineered Biosystems Building Sector Plan for 10th Street design concepts between Greenfield Street and the retaining wall at the president's house.
- Plant trees in planting strip between roadway and sidepath to improve facility comfort and aesthetics.
- Study retaining wall adjacent to President's House (across from Holly Street and Family Housing). Currently, the retaining wall restricts expansion of existing sidewalk to accommodate width of a multi-use path.
- Provide multi-use path or raised cycle track across south side of bridge over I-75/I-85. See Williams Street Cycle Track and Corridor B concepts in the *Cycle Atlanta: Phase 1.0 Study* for potential design options.

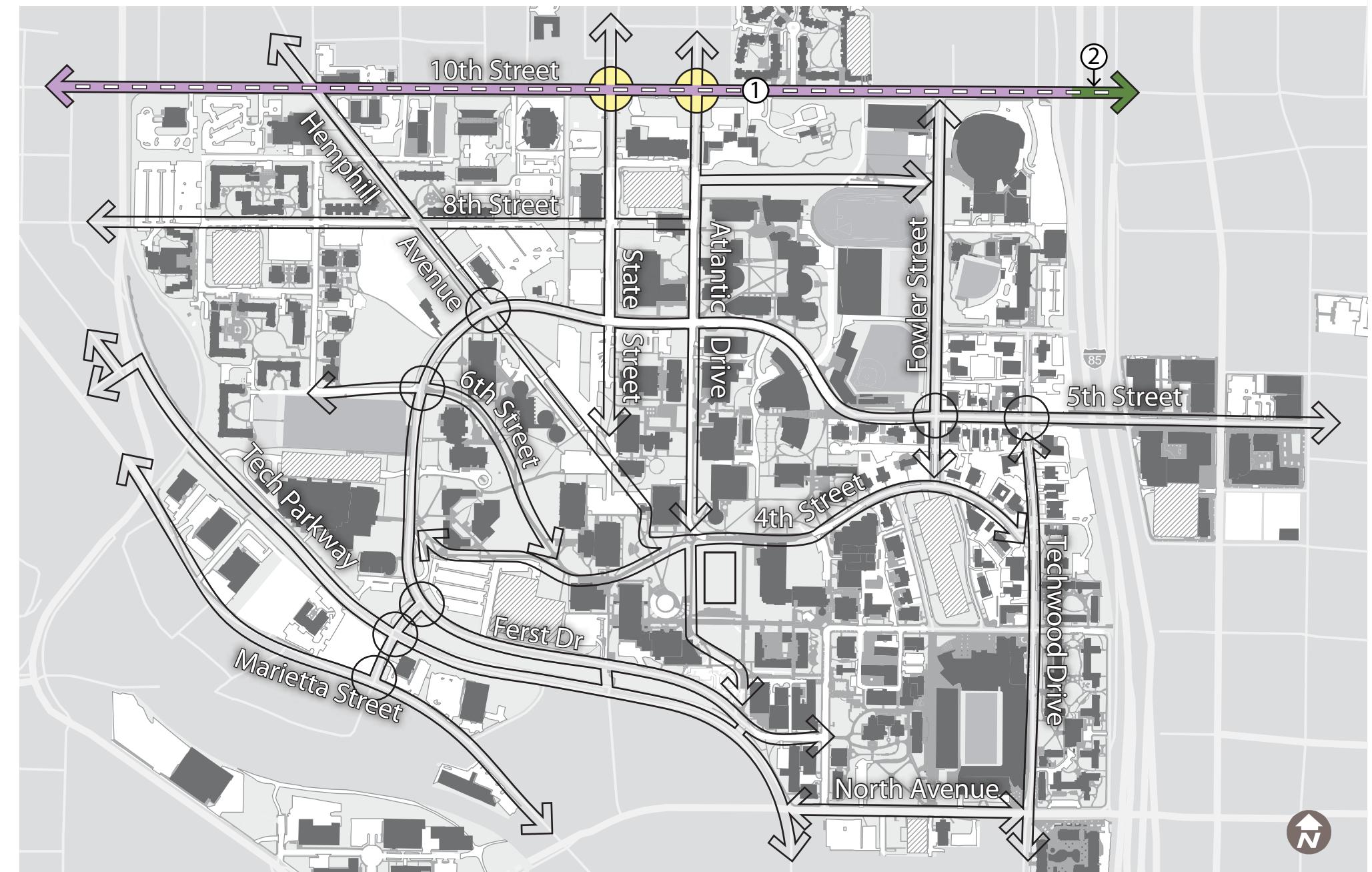


Figure 31. 10th Street Bikeway Corridor

Section Concepts

①



Sidepath

②



Raised Cycle Track

Proposed Spot Improvements



High Priority
Intersection improvements

Proposed Bikeways

- Raised Cycle Track:** Represented by a green dashed line.
- Multi-Use Path:** Represented by a purple dashed line.

8th Street Bikeway Corridor

Corridor Overview

This corridor will connect campus housing in the northwest corner of campus to the Hemphill Avenue corridor, State Street corridor, Atlantic Drive corridor, and Fowler Street corridor. It will provide a continuous east-west route for the northern portion of campus and provide an alternative route option to 10th Street or Ferst Drive. If a connection at 8th Street and Northside Drive is made to campus, as proposed in the City of Atlanta's Cycle Atlanta Phase 1.0 plan, a low-stress bicycle and pedestrian access point can be made to campus, providing convenient access to campus from the Howell Mill/Marietta Street corridor and access from campus to apartments, shopping, and dining destinations along the same corridor.

Design Considerations

- Coordinate 8th Street at Northside Drive connection with City of Atlanta and GDOT. See Cycle Atlanta: Phase 1.0 Study for additional design notes.
- Coordinate corridor development with Engineering Biosystems Building Sector Plan.
- Create intersection plan at 8th Street and Hemphill Avenue to facilitate safe and intuitive transition from 8th Street, Hemphill Avenue bikeways, and the pathway through Eco Commons.

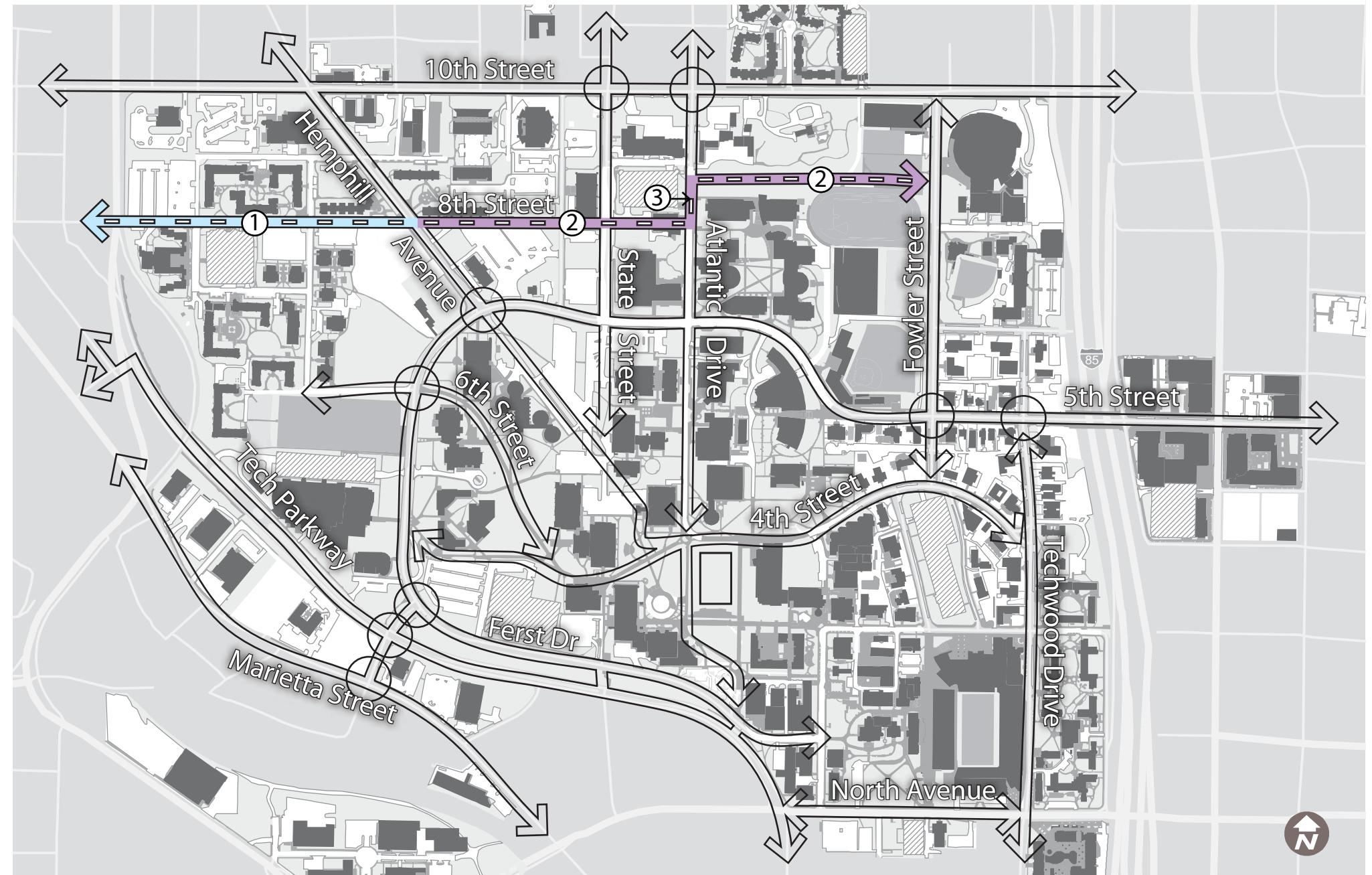
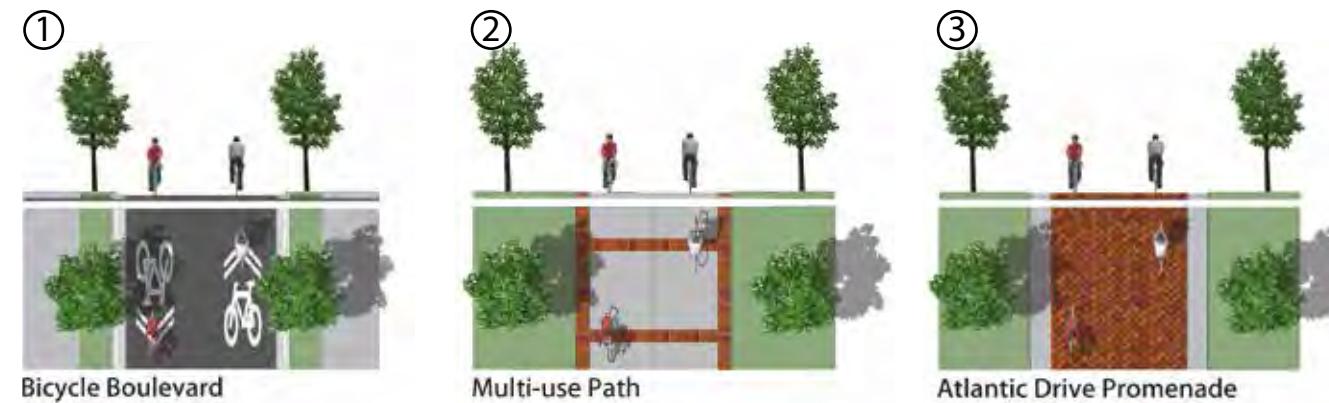


Figure 32. 8th Street Bikeway Corridor

Section Concepts



6th Street Bikeway Corridor

Corridor Overview

This corridor will be the primary bike route from residence halls on west campus to the Student Center and Tech Green. The corridor will include a contra-flow bike lane along 6th Street from McMillian Street to Ferst Drive and a pathway route from Ferst Drive to the Student Center.

Design Considerations

- Implement 6th Street streetscape from McMillian Street to Ferst Drive to install contra-flow bike lane.
- Implement intersection improvements at 6th Street and Ferst Drive to improve safety for all users. See *Priority Projects* chapter for more details.
- Preserve access for emergency and maintenance vehicles from Ferst Drive to 6th Street pathway.

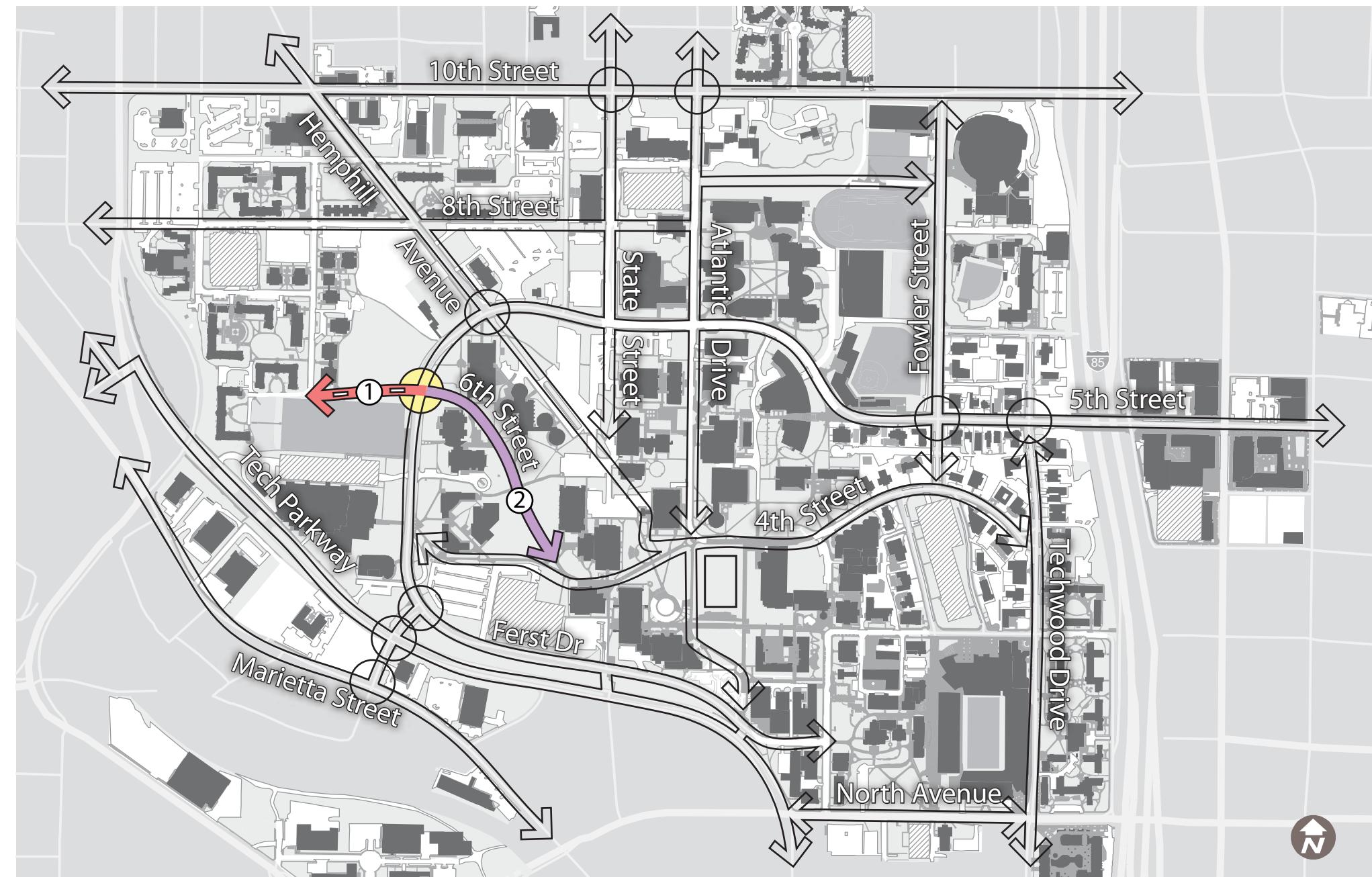


Figure 33. 6th Street Bikeway Corridor

Proposed Bikeways

Bike Lane

Proposed Spot Improvements

High Priority
Intersection improvements

Existing Bikeways

Multi-Use Path

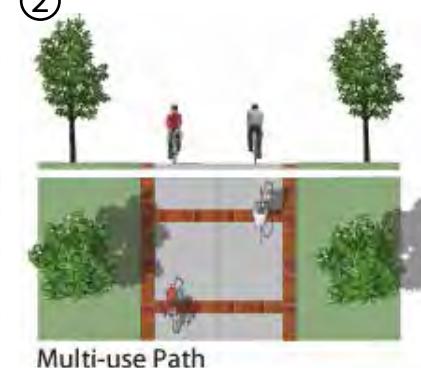
Section Concepts

①



Bike Lane / Contra-Flow Bike Lane

②



Multi-use Path

4th Street Bikeway Corridor

Corridor Overview

This corridor will be the primary bike route from the Campus Recreation Center (CRC) to Tech Green and Techwood Drive. Currently, this route is already a popular route for bicyclists on campus; however, the transition from Tech Green to the Ferst Center for the Arts is difficult due to a significant change in topography and narrow pathways. The pathway along the northern edge of Tech Parkway is a conflict point for bicyclists and pedestrians. Corridor improvements should address these conflict points.

Design Considerations

- Improve corridor transition from Ferst Center for the Arts and Tech Green.
- Coordinate pathway improvements with changes to Ferst Center for the Arts and Student Center.
- Create bicycle and pedestrian mixing zones at intersection of 4th Street corridor with Hemphill Avenue and Atlantic Drive corridors.
- Consider building a new structure that would accommodate a Bike Center

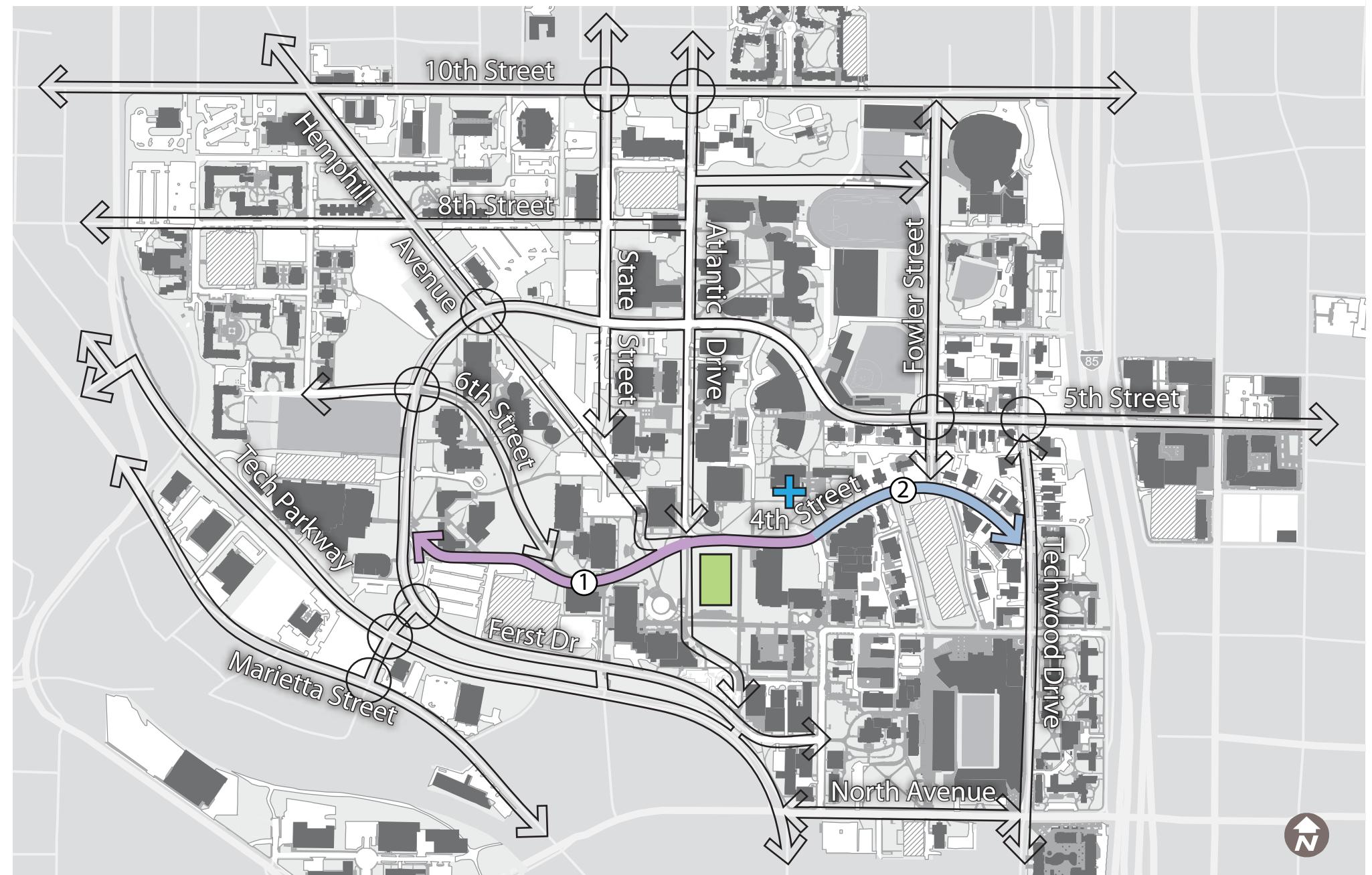
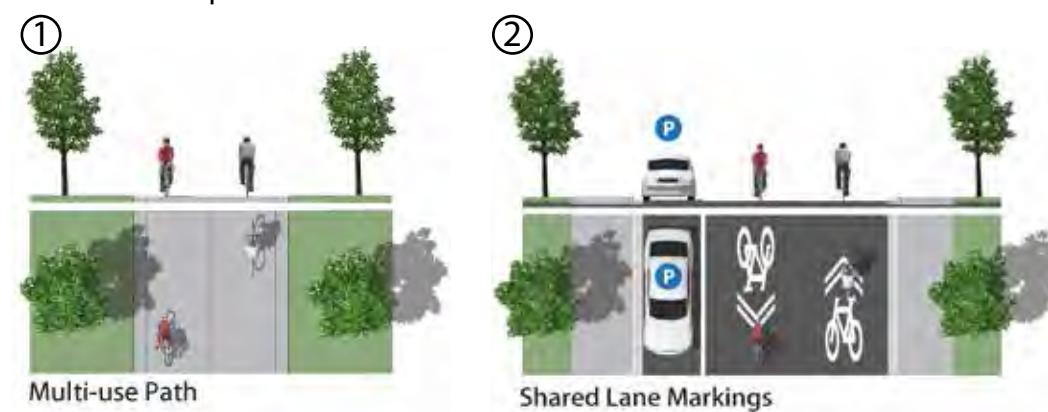


Figure 34. 4th Street Bikeway Corridor

Section Concepts



Proposed Spot Improvements

Tech Green improvements

Potential Bike Center location

Existing Bikeways

Shared Lane Markings

Multi-Use Path

Atlantic Drive

Corridor Overview

This corridor connects the Home Park neighborhood to campus, the Engineering Biosystems Building sector, and Tech Green. The corridor will include conversion of Atlantic Drive from the 10th Street corridor to Tech Green to a bicycle and pedestrian promenade. This corridor also aligns with the bicycle boulevard proposed to connect Georgia Tech to Home Park and Atlantic Station and provides the most direct bike route from Family Housing to the core of campus.

Design Considerations

- Implementation of street to promenade conversion of Atlantic Drive from Ferst Drive to Tech Green.
- Coordinate bicycle boulevard development at 10th Street and Atlantic Drive with Home Park, City of Atlanta, and Atlantic Station.
- Create mixing zone and safety improvements at intersection of Atlantic Drive and Tech Green.

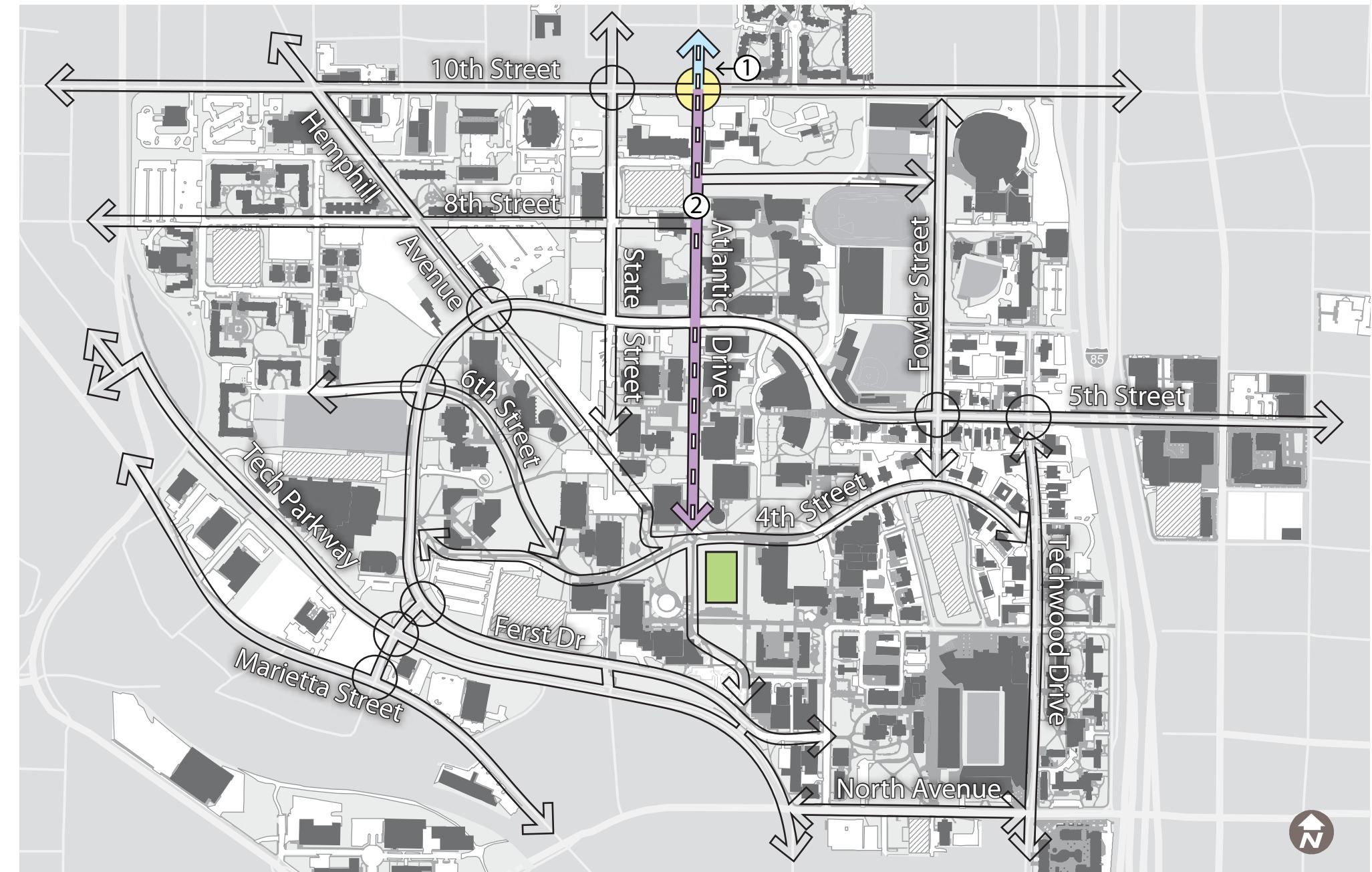


Figure 35. Atlantic Drive Bikeway Corridor

Section Concepts

①



Bicycle Boulevard with on-street parking

②



Atlantic Drive Promenade

Proposed Bikeways

- Bike Boulevard (represented by a blue dashed line)
- Multi-Use Path (represented by a purple dashed line)

Proposed Spot Improvements

- High Priority Intersection improvements (yellow circle)
- Tech Green improvements (green square)

Existing Bikeways

- Multi-Use Path (purple solid line)

Ferst Drive-5th Street

Corridor Overview

This corridor is the primary on-street bike route on campus and connects to almost every strategic corridor on campus. Four priority projects are located along this corridor, including at Techwood Drive, Fowler Street, Hemphill Avenue, and 6th Street. See the Priority Projects chapter for more details.

Design Considerations

- Coordinate on-street bikeway improvements at 5th Street and Techwood Drive. See pages 30-31 for more details.
- Coordinate on-street bikeway improvements at 5th Street and Fowler Street. See pages 32-33 for more details.
- Coordinate on-street bikeway improvements at Hemphill Avenue and Ferst Drive. See pages 34-37 for more details.
- Coordinate on-street bikeway improvements at 6th Street and Ferst Drive. See pages 38-39 for more details.
- Coordinate on-street bikeway improvements at Means Street and Ferst Drive. See pages 40-41 for more details.

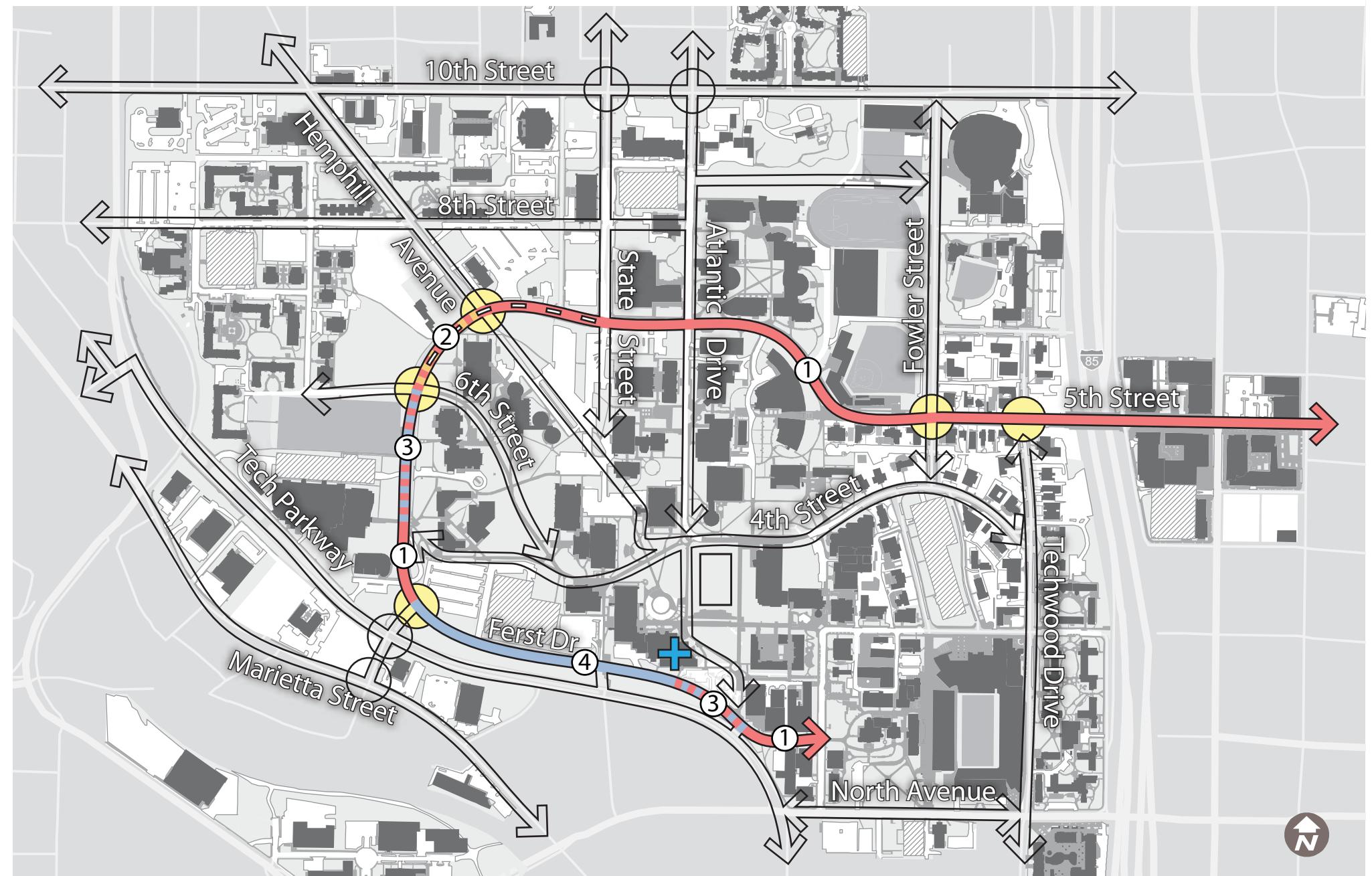


Figure 36. Ferst Drive-5th Street Bikeway Corridor

Section Concepts



Bike Lanes



Parking-side Buffered Bike Lane / Bike Lane



Bike Lane / Shared Lane Markings



Shared Lane Markings

Proposed Bikeways

- Bike Lane
- Parking-Side Buffered Bike Lane, Bike Lane

Proposed Spot Improvements

- High Priority Intersection improvements
- Potential Bike Center location

Existing Bikeways

- Shared Lane Markings
- Bike Lane
- Downhill Shared Lane Marking, Uphill Bike Lane

Fowler Street

Corridor Overview

This corridor connects the 10th Street and 8th Street corridors to sports facilities along Fowler Street, Ferst Drive, 4th Street, and the Greek Housing sector of campus.

Design Considerations

- Enhance the intersection of Fowler Street and Ferst Drive. See pages 32-33 for more details.

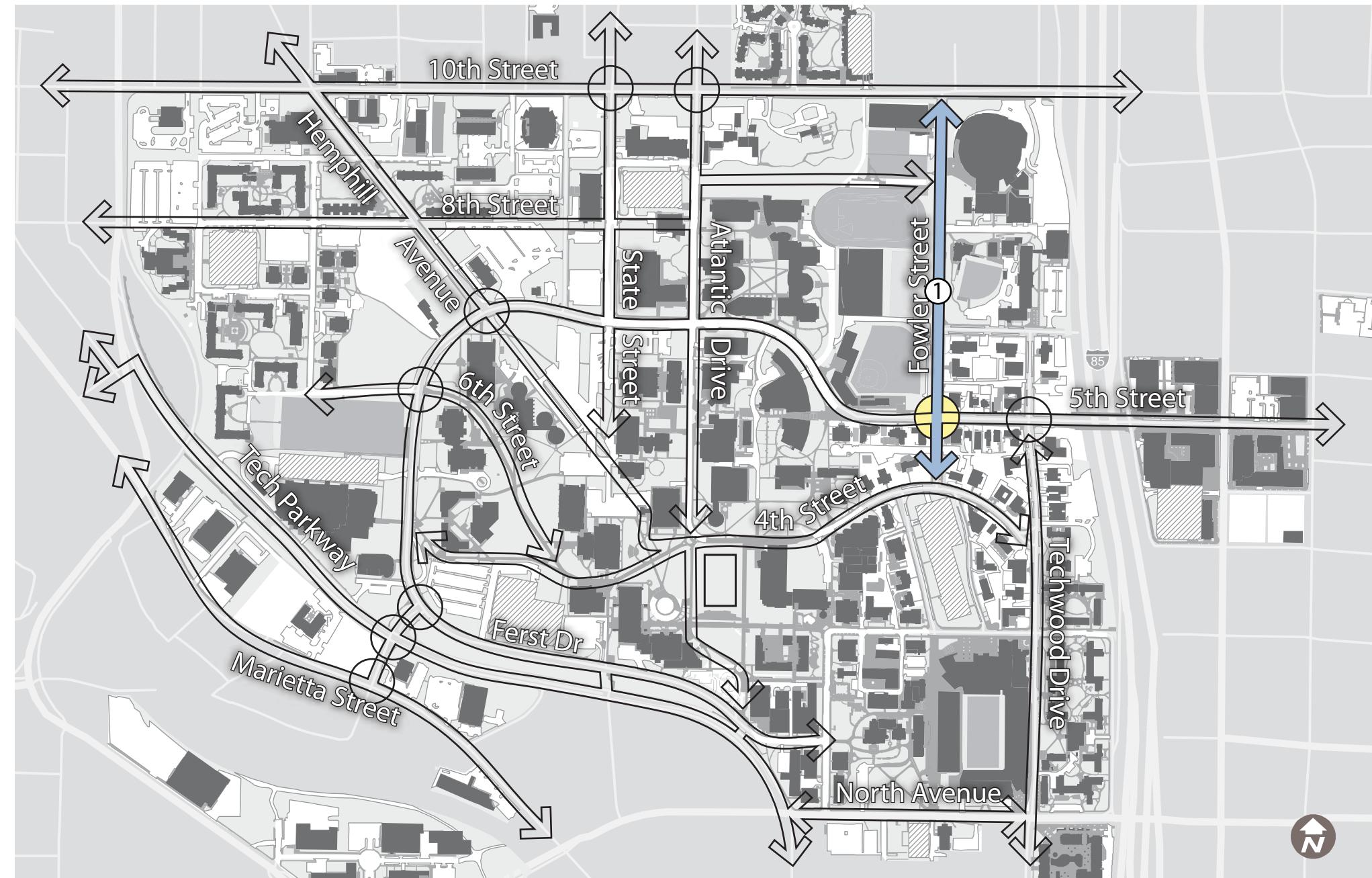


Figure 37. Fowler Street Bikeway Corridor

Proposed Spot Improvements

High Priority
Intersection improvements

Existing Bikeways

Shared Lane Markings

Section Concept



Shared Lane Markings

Hemphill Avenue

Corridor Overview

This corridor connects Home Park and areas northwest of campus to the core of campus. Priority projects include Hemphill Avenue at Ferst Drive and enhancement of the pathway from Ferst Drive to Tech Green as part of the Georgia Tech *South-Central Sector Plan*. This corridor also provides a route through Tech Green to the transit hub near the Student Center and Ferst Drive.

Design Considerations

- Implement intersection improvements at Hemphill Avenue and Ferst Drive. See pages 34-37 for more details.
- Coordinate pathway improvements from Ferst Drive to Tech Green as part of *EBB/South-Central Sector Plan* implementation.
- Align pathway with proposed transit hub near Ferst Center for the Arts and Tech Green.
- Create mixing zone and safety improvements at intersection of corridor at Tech Green. See pages 42-45 for more details.

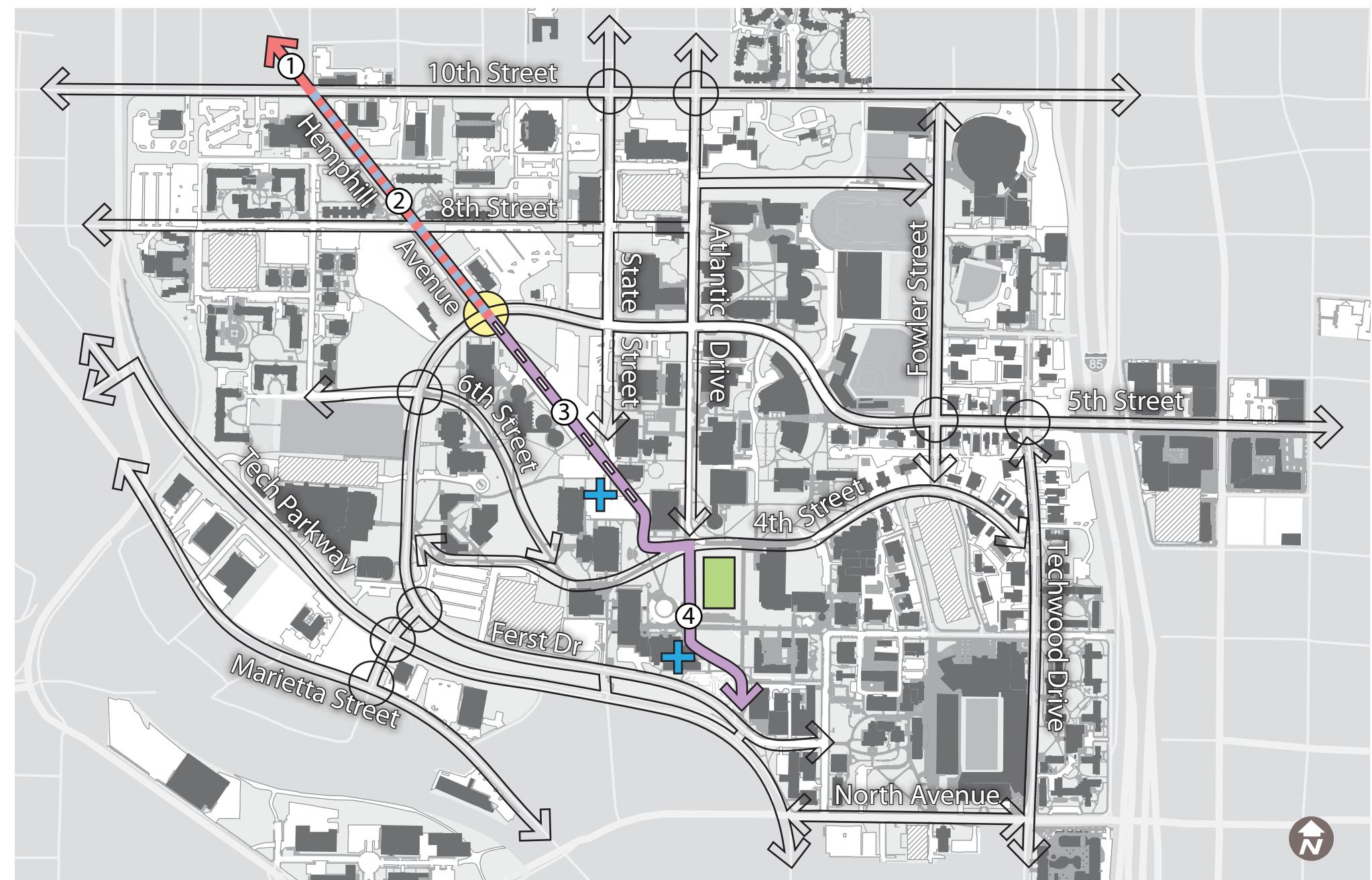
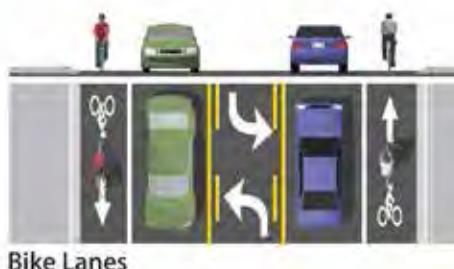


Figure 38. Hemphill Avenue Bikeway Corridor

Section Concepts

①



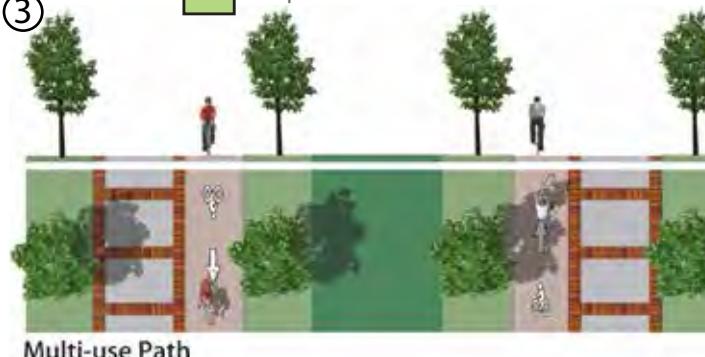
Bike Lanes

②



Bike Lane / Shared Lane Markings

③



Multi-use Path

④



Multi-use Path

Proposed Bikeways

Multi-Use Path

Proposed Spot Improvements

High Priority
Intersection
improvements

Potential Bike
Center location

Tech Green
improvements

Existing Bikeways

Bike Lane

Downhill Shared Lane
Marking, Uphill Bike Lane

Multi-Use Path

North Avenue

Corridor Overview

This corridor connects the North Avenue Apartments with Techwood Drive, the southern edge of campus, and the Tech Parkway corridor

Design Considerations

- Add signage and wayfinding along North Avenue pathway (north side of street) to note slow zone for bicycles.
- Consider intersection improvements at Techwood Drive and North Avenue for bicycle use of intersection and transition from North Avenue Apartments to campus.

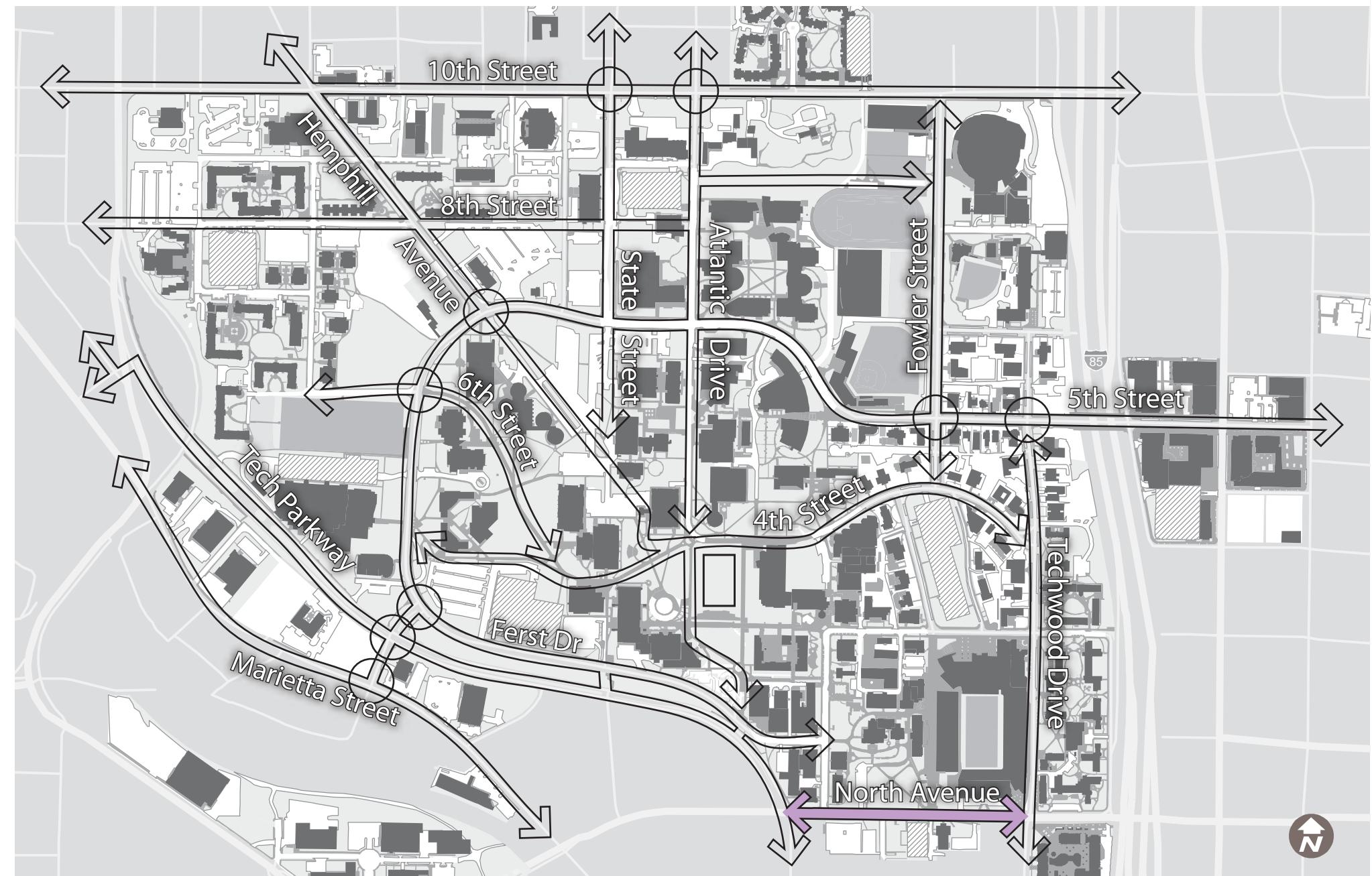


Figure 39. North Avenue Bikeway Corridor

Section Concept



State Street

Corridor Overview

This corridor connects the Home Park neighborhood to campus, the Engineering Biosystems Building sector, and Tech Green. The corridor will include on-campus, on-street bikeways from 10th Street to Ferst Drive as well as a new pathway from Ferst Drive to Tech Green, which will be part of South-Central Sector Plan implementation. This corridor also aligns with the bicycle boulevard proposed to connect Georgia Tech to Home Park and Atlantic Station.

Design Considerations

- Coordinate bicycle boulevard development at 10th Street and State Street. See *Priority Projects* chapter for more details.
- Coordinate pathway development for corridor as part of South-Central Sector Plan implementation.

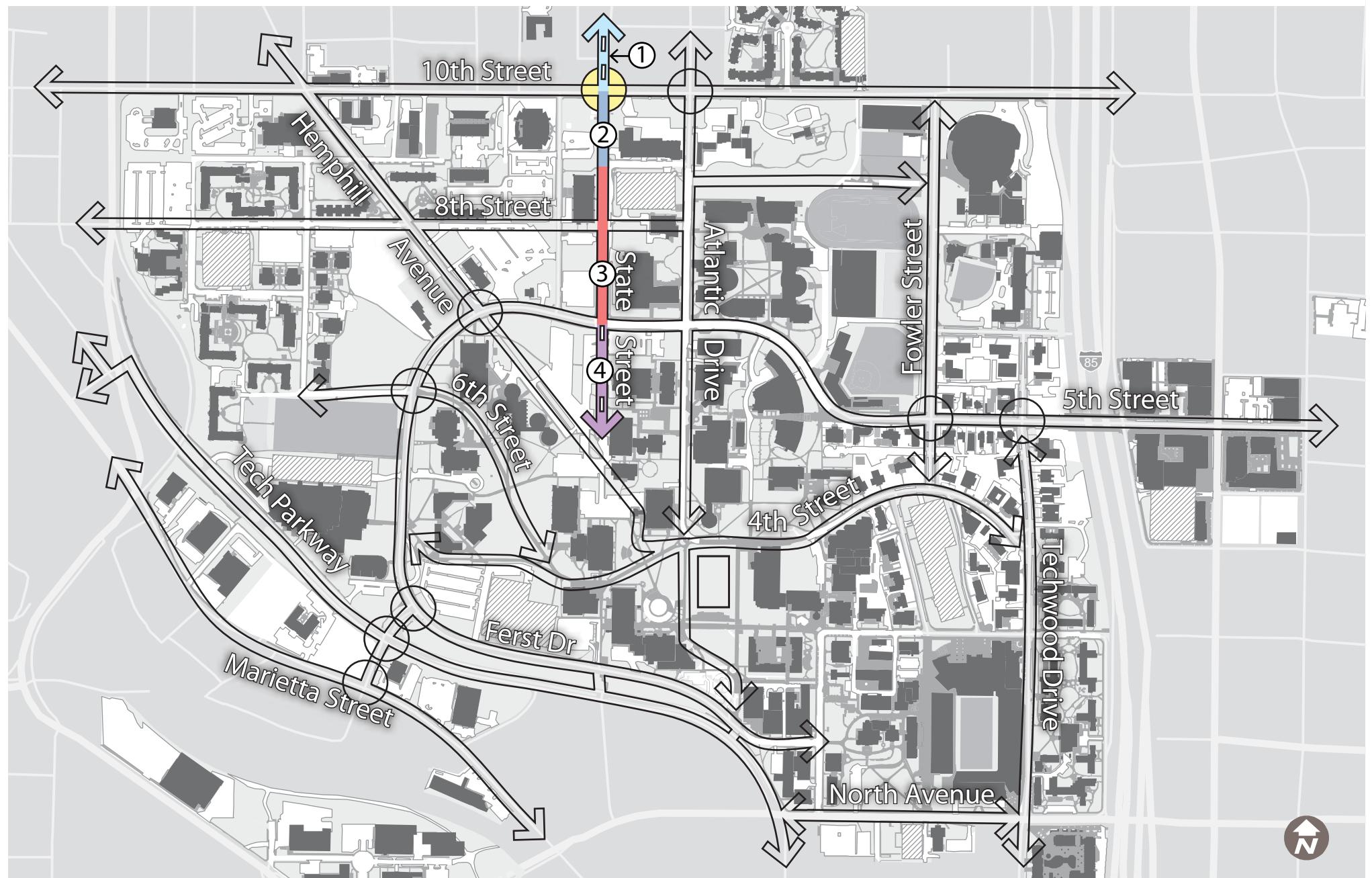


Figure 40. State Street Bikeway Corridor

Proposed Bikeways

- Bike Boulevard
- Multi-Use Path

Proposed Spot Improvements

- High Priority Intersection improvements

Existing Bikeways

- Shared Lane Markings
- Bike Lane

Section Concepts

①



Bicycle Boulevard with on-street parking

②



Shared Lane Markings with on-street parking

③



Bike Lanes with Center Median

④



Multi-use Path

Tech Parkway

Corridor Overview

This corridor connects the Howell Mill Road/Marietta Street corridor to the Means Street entrance to campus and to areas south of campus, such as Centennial Olympic Park. Conversion of Tech Parkway to include a multi-use path will provide a bicycle route along the west and southern edges of campus and improve connectivity to campus from areas west and south of campus. See the *Cycle Atlanta: Phase 1.0 Study* and the *Priority Project* chapter of this plan for more details.

Design Considerations

- Preserve access to Campus Recreation Center (CRC).
- Manage parking availability with Tech Parkway conversion plans.
- Create safe intersection crossing for bicyclists and pedestrians at Tech Parkway and Northside Drive. See *Priority Projects* chapter for more details.
- Create safe intersection crossing for bicyclists and pedestrians at Tech Parkway, North Avenue, and Luckie Street. See *Cycle Atlanta: Phase 1.0 Study* for more details.
- Coordinate Tech Parkway multi-use trail with proposed Luckie Street cycle track. See *Priority Projects* chapter for more details.
- Study providing additional connections to campus from Tech Parkway to Ferst Drive, such as at the Student Center or the Transit Hub between Ferst Drive and Tech Green.

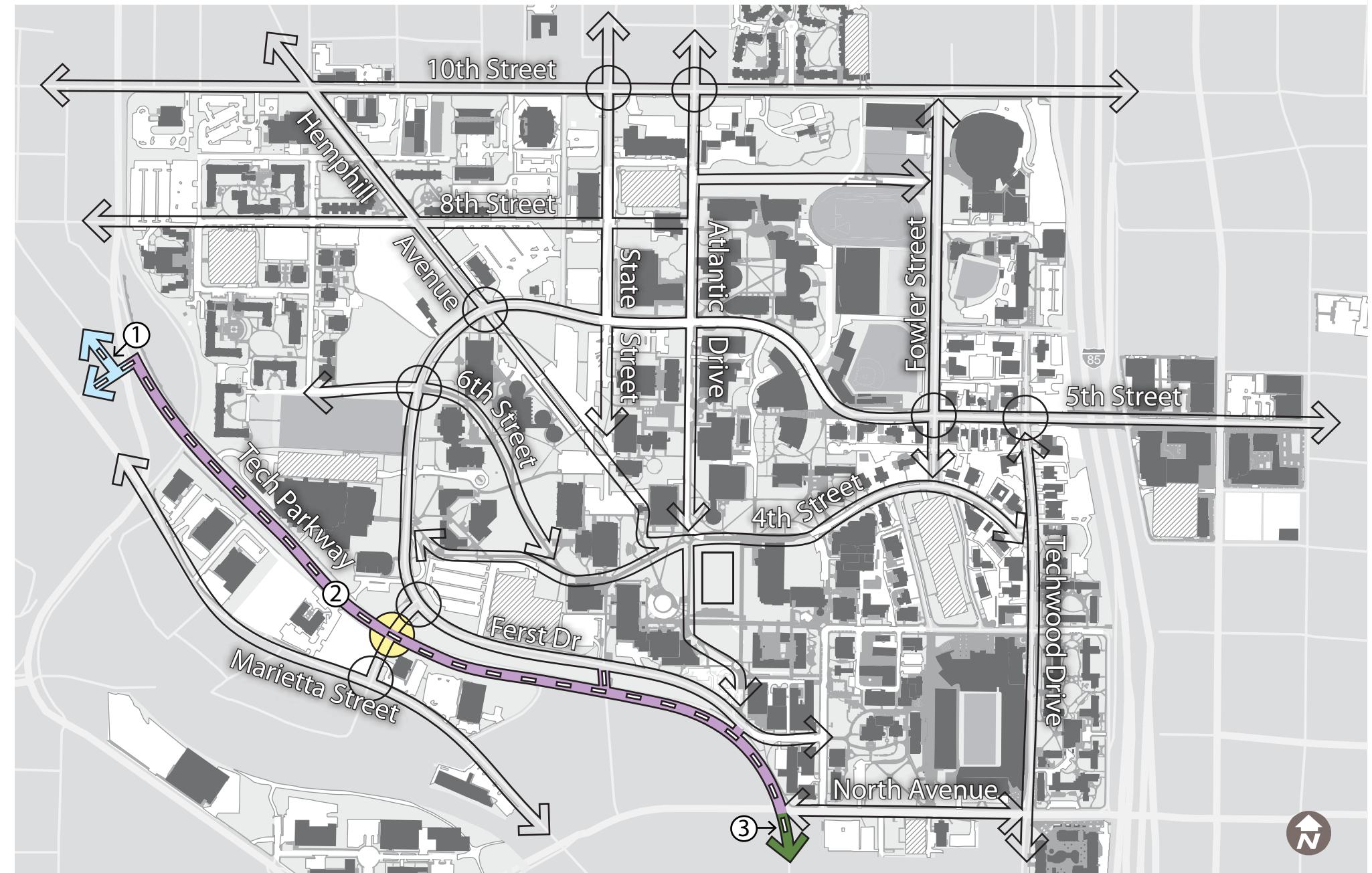


Figure 41. Tech Parkway Bikeway Corridor

Section Concepts

①



Bicycle Boulevard with on-street parking

②



Roadway to Multi-Use Path Conversion

③



Raised Cycle Track

Proposed Spot Improvements



High Priority
Intersection improvements

Proposed Bikeways



Bike Boulevard



Raised Cycle Track



Multi-Use Path

Techwood Drive

Corridor Overview

This corridor connects the North Avenue Apartments, East Campus Housing, and Greek Housing sector. The corridor includes bike lanes along Techwood Drive from North Avenue to 5th Street.

Design Considerations

- Implement intersection safety improvements for bicyclists at Techwood Drive and 5th Street. See *Priority Projects* chapter for more details.

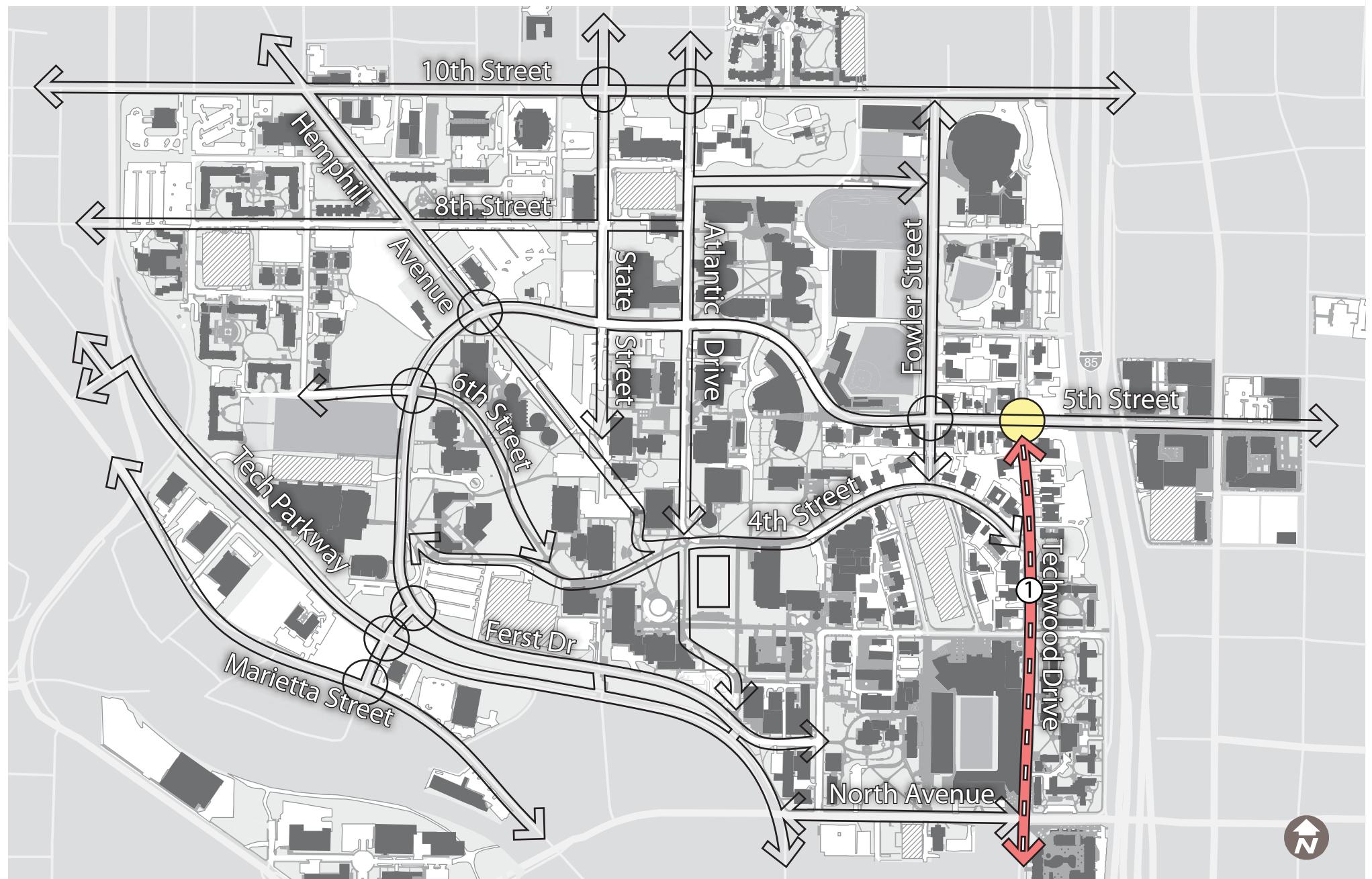


Figure 42. Techwood Drive Bikeway Corridor

Section Concept

①



Bike Lanes

Proposed Bikeways



Bike Lane

Proposed Spot Improvements



High Priority
Intersection improvements

Marietta Street - Means Street

Corridor Overview

The Marietta Street corridor connects Georgia Tech to Downtown Atlanta and the Howell Mill Road Corridor. Currently, the only access point from Marietta Street to campus is via Means Street to Ferst Drive.

In the *Cycle Atlanta: Phase 1.0 Study*, recommendations for Marietta Street include reconfiguring the street to include bike lanes. Recommendations from the plan also include an enhanced connection along Means Street between Marietta Street and Ferst Drive.

Design Considerations

- Work with City of Atlanta to create bike lanes along Marietta Street.
- See *Priority Projects* chapter for Means Street concept and how Marietta Street, Tech Parkway and Ferst Drive could look with bikeways improvements.
- Means Street should be a bicycle gateway to campus from areas west, north and south of campus.

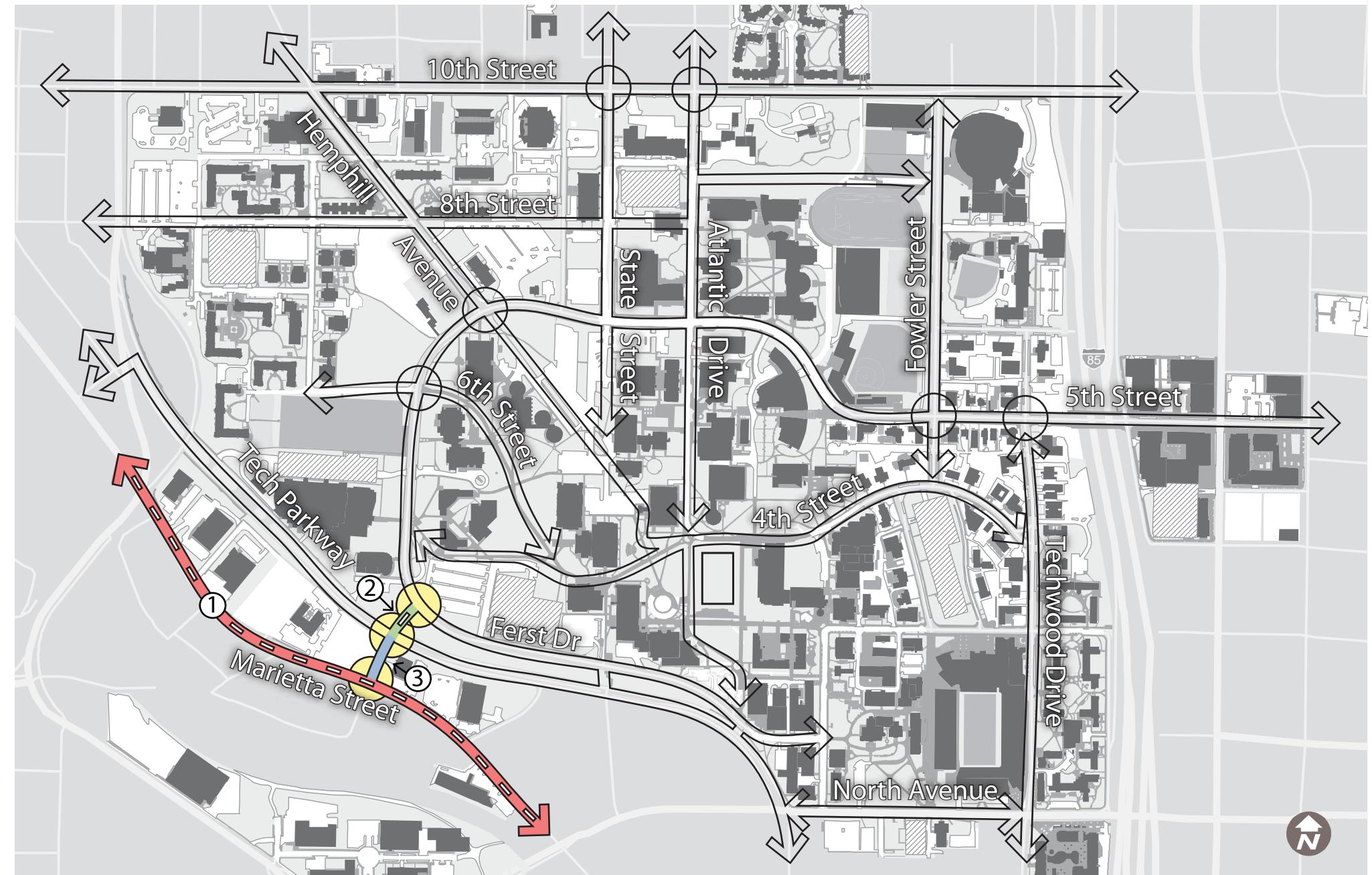


Figure 43. Marietta Street-Means Street Bikeway Corridor

Proposed Bikeways

- Bike Lane:** Red dashed line
- Protected Cycle Track:** Green dashed line

Proposed Spot Improvements

- High Priority Intersection Improvements:** Yellow circle with number 1, 2, or 3.

Existing Bikeways

- Shared Lane Markings:** Blue line

Section Concepts

①



Bike Lanes

②



Protected Cycle Tracks

③



Shared Lane Markings

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Support Facilities

Overview

The journey is not complete when a person riding a bicycle reaches their destination. Without safe, accessible, and convenient bicycle parking and other support services, people are less likely to choose to ride a bicycle. Changing rooms, showers, secure bicycle rooms, lockers, and self-repair services or spaces for minor maintenance are part of a bicycle-friendly community / university.

This chapter examines the best practices and strategies for providing support facilities on the Georgia Tech campus.

Key themes are:

- There is significant demand for bicycle parking on campus.
- Georgia Tech will need to make a significant investment in bicycle parking to meet the stated goal of a 20% bicycle commute mode share for campus.
- Bicycle parking studies should be conducted on an annual basis to assess utilization and unmet demand.
- Support facilities need to make bicycling a convenient choice to get to and around campus.
- Bicycle share should be coordinated with a city-wide bicycle system.



Short-Term Bike and Secure Bike Parking (see pg. 78 and 80)



Bike Center (see pg. 82)



Bike Share (see pg. 83)



End-of -Trip Facilities (see pg. 84)

Bike Parking Projections

The bike parking plans are developed to help the Institute meet its 20% bicycle commute mode share for campus. Without adequate bike parking, the projected number of bicyclists on campus each day will not be able to park their bikes on campus.

As shown in the Needs Analysis, the campus is already under-served for bike parking. Through field observations, the result of this deficiency is bicycles being locked to railings or other campus features when racks are full.

The bike parking projections for this plan are meant to be a guide post for planning. Annual bicycle parking studies should be conducted to assess utilization and unmet demand. Bicycle parking studies should include audits of individual buildings to determine compliance with short and long term bicycle parking requirements outlined in Table 17 (see page 74).

The projections are organized by different bike commute rates and projected campus population growth by 2035 to provide a flexible framework to guide bike parking implementation over the next twenty years. The projections range from 8.2% bike commute rate (keeping the current bike commute rate but increasing the number of bicycle commuters as the campus population increases) to the 20% bike commute rate goal (increase the bike commute rate and campus population).

Based on the campus goal of 20% bicycle commute mode share by 2035 (or 7,683 bicycle commuters), it is estimated that Georgia Tech will need 9,604 bike parking spaces. This need equates to 7,380 new spaces on campus, or 369 spaces per year for the next twenty years.

The projected number of bike parking spaces assumes an 80% rack utilization at peak bike parking period. This goal is a bike parking best practice and helps ensure there is a perception of bike parking availability. Rack capacity issues, such as abandoned bikes on racks which accumulate over the course of a semester, can also be accommodated using this rack utilization goal.

For more information on how this new bike parking can be distributed on campus, see the High Demand Bike Parking Locations and Bike Parking Programming Guidelines sections on the following pages.

Table 19. 2035 Bike Parking Scenarios Projections

Commute Rate Goal	Projected Campus Population in 2035 ¹	Projected Number of Bike Commuters in 2035 ²	Existing Bike Parking Spaces	New Bike Parking Spaces in 2035 ³	Total Bike Parking Spaces in 2035 (Existing + New)	Number of Spaces Needed Per Year to Meet Commute Rate Goal By 2035 ⁴
8.20%	38,416	3,150	2,224	1,714	3,938	86
10%	38,416	3,842	2,224	2,578	4,802	129
15%	38,416	5,762	2,224	4,979	7,203	249
20%	38,416	7,683	2,224	7,380	9,604	369

Projected Bike Parking Spaces need to meet 20% bicycle commute mode share goal on campus by 2035

1. Based on campus population projects for students, faculty and staff.
2. Projected number of bike commuters in 2035 is generated by multiplying the commute rate by the projected campus population in 2035
3. The number of new bike parking spaces is generated using the following formula: (Projected Number of Bike Commuters in 2035 x 10 / 8) - Existing Bike Parking Spaces; 80% rack utilization is a best practice goal for peak period bike parking. This goal ensures there is a perception of bike parking availability and rack capacity issues, such as abandoned bikes on racks which accumulate over the course of a semester, can be accommodated.
4. Year one for implementation is assumed to be 2015; Implementation time frame is twenty years.

High Demand Bike Parking Locations

While bike parking locations should be evenly distributed around campus, the capacity at each location will need to be different depending on demand. To help guide the allocation of bike parking in areas with significant demand for bike parking, the High Demand Bike Parking Location map was developed.

The map highlights areas within certain zones that need careful attention and more study to identify strategies to accommodate high-capacity bike parking locations. The locations were identified using several criteria, including:

- Proximity to strategic bikeway corridors
- Building type (i.e. academic, housing, administrative)
- Building size
- Building access points
- Existing bike parking demand
- Field observations

Given the significant demand for bike parking in these areas, special attention and design strategies, such as those found on pages 78 to 84 of this chapter, should be considered. Additionally, any high capacity bike parking locations should be integrated with the landscape and architecture on campus.

In residential areas of campus or areas with high concentrations of faculty and staff, high capacity bike parking locations should include a significant long-term, secure bike parking component. In areas on campus with significant short-term bike parking demand, such as around Tech Green, the bike parking strategy should primarily focus on short-term bike parking.

It is also important to note that the highest demand on campus is within the South Central and East Central sectors of campus, with particularly high demand around Tech Green, the Student Center, and Clough Commons. This area will require special consideration and additional focus to accommodate the projected bike parking demand.

Because of the concentration of bike parking demand around Tech Green, this area has been identified as a priority area for a bike center. Potential locations for a bike center are noted on the High Demand Bike Parking Locations map. More detailed design guidance for bike centers can be found on pg. 82 of this chapter.

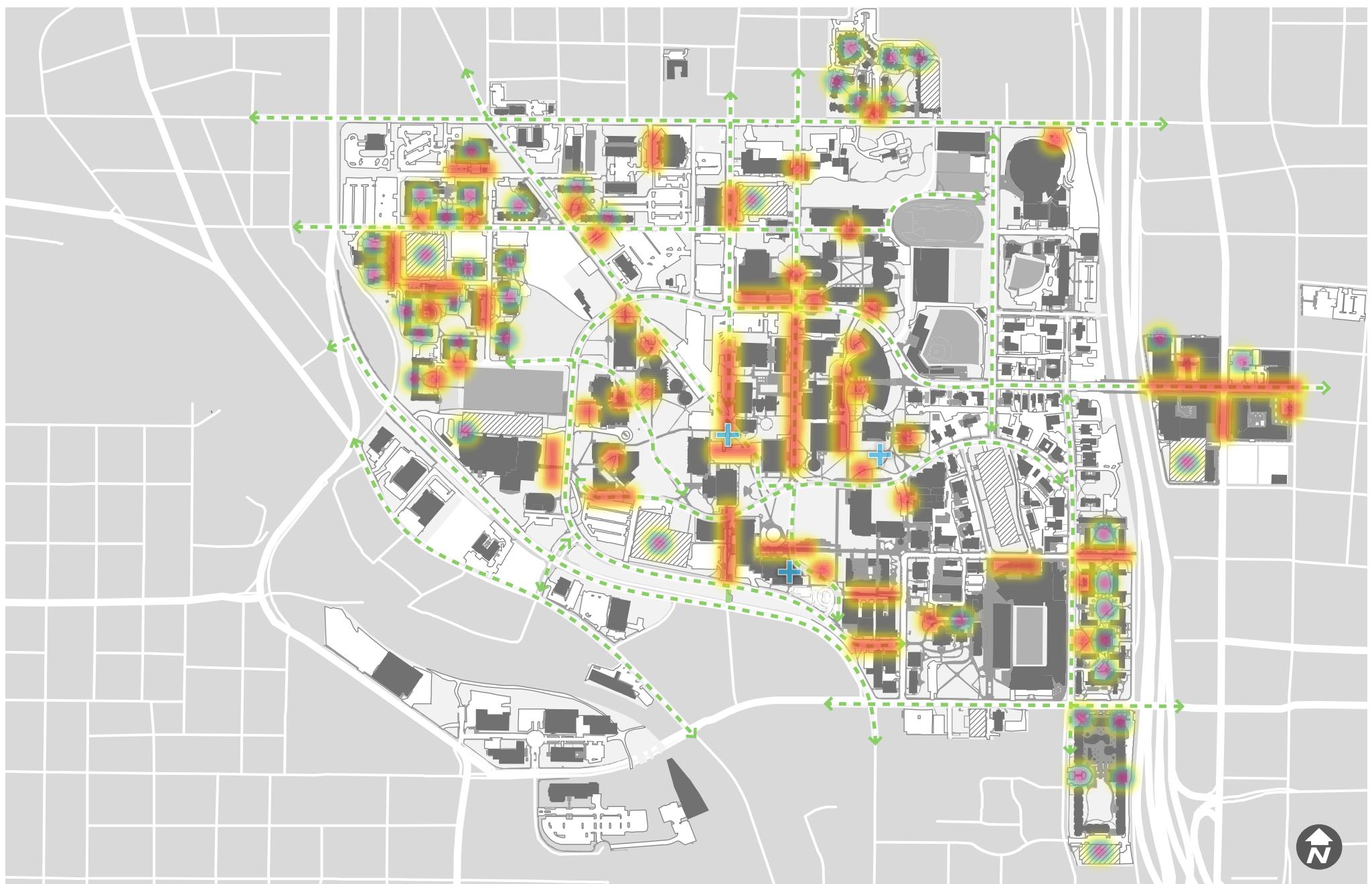


Figure 44. High Demand Bike Parking Locations

- High demand for short term bike parking
- High demand for long term secure bike parking

- Potential bike center locations
- Strategic Corridors

High Demand Long-term Bike Parking Areas

- Secure parking areas
 - Integrate parking within buildings
 - Integrate parking into nearby parking garages
 - Stand alone bike parking structures

High Demand Short-Term Bike Parking Areas

- Short-term bike parking with convenient proximity to building entrances or major destinations

Bike Parking Programming Guidelines

To help allocate new bike parking on campus, the *Bike Parking Requirements by Building Type or Activity Type* table has been adapted for Georgia Tech. The table can be used to program bike parking into and around new buildings as they are developed. It can also be used to identify how to allocate the projected bike parking within bike parking sector.

The standards for bike parking in the Bike Parking Requirements by Building or Activity Type table are adapted from the *Bicycle Parking Guidelines, 2nd Edition* (2010), which is a publication of the Association of Pedestrian and Bicycle Professionals (APBP). The standards were developed based on surveys and best practices from around the United States. These standards are from tables intended for communities and campuses that are densely developed, are more urbanized and which have high bicycle use.

Table 20. Bike Parking Requirements by Building Type or Activity Type

Building Type/Activity Type	Long-Term Bike Parking Requirement	Short-Term Bike Parking Requirement
Residential		
Residence Halls	0.5 spaces for each resident	0.10 spaces for each resident
Civic		
Non-Assembly Cultural (e.g. libraries)	1.5 spaces for each 10 employees	1 space for each 8,000 s.f. of floor area
Assembly (e.g. stadiums or theaters)	1.5 spaces for each 20 employees	Space for 5% of maximum expected daily attendance
Education (e.g. higher education buildings at colleges and universities)	1.5 spaces for each 10 employees plus 1.5 spaces for each 10 students of planned capacity; or 1 space for each 20,000 s.f. of floor area, whichever is greater	1.5 spaces for each 10 students of planned capacity
Commercial		
General Retail	1 space for each 10,000 s.f. of floor area	1 space for each 5,000 s.f. of floor area
Retail, food sales and groceries	1 space for each 10,000 s.f. of floor area	1 space for each 2,000 s.f. of floor area
Office	1 space for each 10,000 s.f. of floor area	1 space for each 20,000 s.f. of floor area
Off-Street Parking Lots and Garages that are publicly accessible	1 space for each 20 automobile spaces	1 space for each 10 automobile spaces
On-Street Bicycle Coral	n/a	12 spaces for each converted on-street parking space

Source: Bicycle Parking Guidelines, 2nd Edition (2010). Association of Pedestrian and Bicycle Professionals (APBP)



Long-Term Bike Parking

Description

- Controlled access for safety and security
 - Integrated into interior rooms of buildings
 - Integrated into parking garages
 - Stand-alone bike parking structures

Additional Design Guidance

For additional design guidance, see Secure Parking Areas section of this chapter on page 80.

Short-Term Bike Parking

Description

- Areas with frequent turnover and parking for short periods of time
 - Sidewalk parking
 - On-street parking
 - Covered parking

Additional Design Guidance

For additional design guidance, see Short-Term Parking section of this chapter on page 78.

Bike Parking Programming Calculation Example

The bike parking programming calculation examples below are show how the bike requirements in the *Bike Parking Requirements by Building Type or Activity Type* table on the previous page can be applied to buildings on campus. These calculations can be done with existing buildings or new building design to identify bike parking needs.

Scenario A

Building Type	Residential; Residence Hall
Building Program	
Number of Residents	1,000
Long-Term Bike Parking Requirement	0.5 spaces for each resident
Long-Term Bike Parking Calculation	500
Short-Term Bike Parking Requirement	0.1 spaces for each resident
Short-Term Bike Parking Calculation	100
Total Spaces	
Total Bike Parking Calculation	600

Scenario B

Building Type	Civic; Education
Building Program	
Square Feet of Floor Area	200,000
Planning Student Capacity	2,400
Planned Faculty and Staff	140
Long-Term Bike Parking Requirement	1.5 spaces for each 10 employees plus 1.5 spaces for each 10 students of planned capacity
Long-Term Bike Parking Calculation	381
Short-Term Bike Parking Requirement	1.5 spaces for each 10 students of planned capacity
Short-Term Bike Parking Calculation	360
Total Spaces	
Total Bike Parking Calculation	741
	or
	370

Short-Term Parking

Short-term parking is any parking (sheltered or non-sheltered) provided for a brief (two to three hour) time period. This is the most common type of bike parking found on the Georgia Tech campus.

Larger universities, such as the University of British Columbia, University of California Davis, and Stanford University, typically find that their students are most likely to ride between campus destinations, and thus will be more likely to want plentiful short-term parking placed near destinations. Mode share studies completed by Stanford during 2011 confirmed that the majority of undergraduates and graduates follow this travel pattern.



Sidewalk Parking



Sheltered Parking



On-Street Bike Corral



Temporary (Event) Parking

Strategy

Universities across the United States have seen an increase in the number of bicycle commuters, leading to a struggle for the university to provide appropriate bicycle parking at desired destinations. Georgia Tech is no different and will have to be aggressive in siting and installing short-term bike parking throughout campus to meet the current and future demand.

Studies have shown that for short-term bike parking:

- Covered parking is preferred and increases use for current cyclists.
- Covered/open racks should be placed in closer proximity to building entrance than secured/pay parking spaces.
- Free bicycle parking is utilized at a higher rate as the parking moves closer to building entrance points.

Siting Guidelines

Key considerations when siting short-term bicycle parking include:

- Close to destinations - 50 feet maximum distance from entrance
- Located along the "desire line" from adjacent bikeways
- Weather protected by siting racks under existing structures or installing free-standing structures when possible
- 36 inches (minimum)/48 inches (recommended) for bicycle rack spacing between racks/obstacles
- Provide a clear aisle of 48 inches (minimum)/60 inches (recommended) between rack aisles to provide ease of ingress/egress

Materials and Maintenance

Use of proper anchors will prevent vandalism and theft. Racks and anchors should be regularly inspected for damage.

Additional References and Guidelines

Additional design guidance can be found using the following resources:

- AASHTO. Guide for the Development of Bicycle Facilities. 2012
- APBP. Bicycle Parking Guide 2nd Edition. 2010

Figure 45. Bicycle Rack Design Guidance

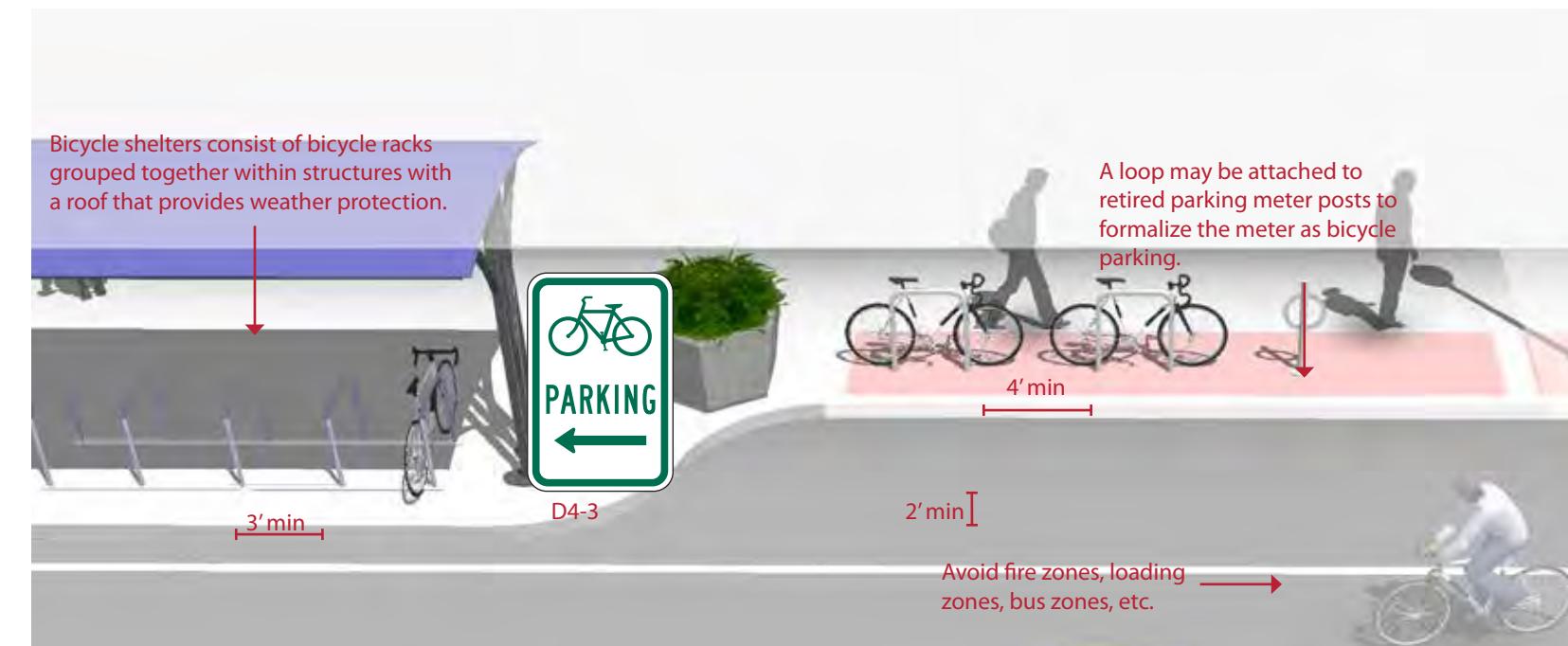
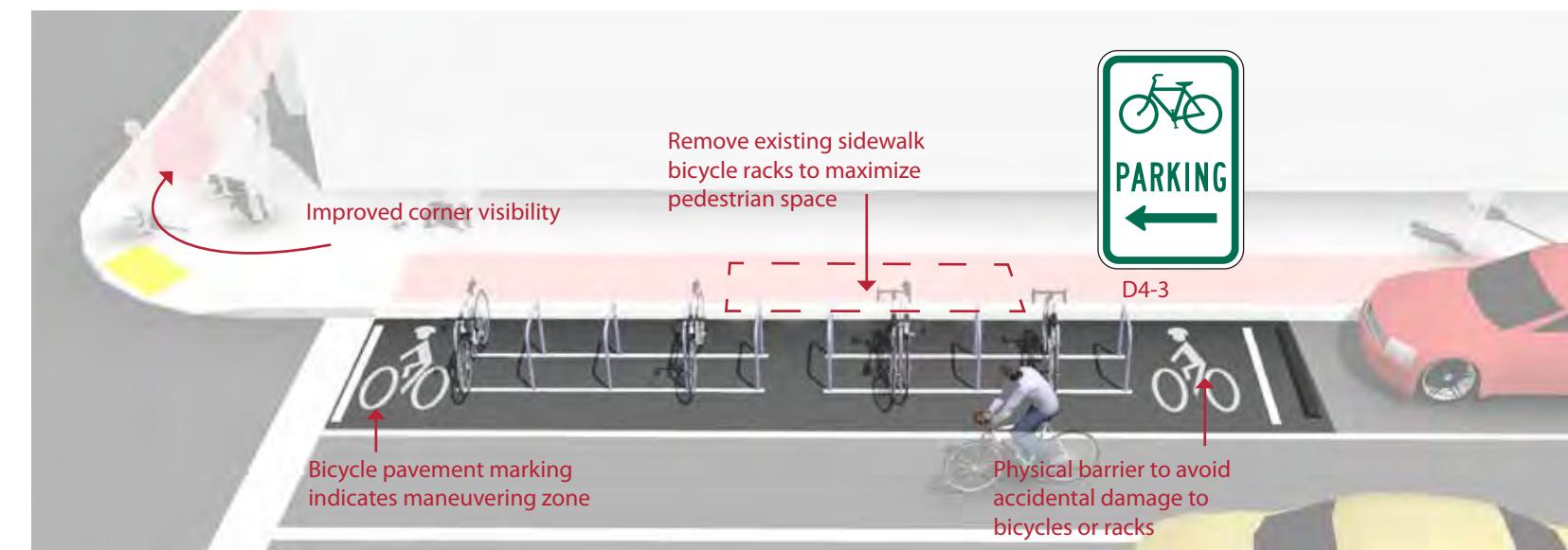


Figure 46. On-Street Bicycle Corral Design Guidance



Secure Parking Areas (SPAs)

Secure Parking Areas (SPAs) are long-term bicycle parking areas designed for commuters to provide a safe and secure location to leave a bicycle throughout the day. A SPA is a semi-enclosed space that offers a higher level of security than ordinary bike racks. Accessible via key-card, combination locks, or keys, SPAs provide high-capacity parking for 10 to 100 or more bicycles. Increased security measures create an additional transportation option for those whose biggest concern is theft and vulnerability.

Secure bicycle parking facilities are free-standing buildings or enclosed areas within a larger structure (for example, an enclosed portion of a parking garage or a room in an existing building with exterior access). SPAs are ideal for university staff, students, and faculty who will be working/attending class in one sector of campus, with little time-sensitive, cross-campus travel required.

Stand-alone SPAs have been discussed in the past at Georgia Tech but never pursued. There is more room on west campus for locating a SPA compared to east campus which has land use and historic constraints. In addition, the aesthetic of the spaces on east campus is important to recognize and maintain.

Currently, Georgia Tech has 17 such facilities (primarily located in housing), with a variety of racks utilized in each SPA.



SPA in Structured Parking Deck (example image)



SPA at Georgia Tech North Avenue Apartments



SPA in Building (example image)



Signage at Georgia Tech Campus Housing SPA

Strategy

In developing and establishing SPAs on campus, Georgia Tech should identify existing locations/sectors of campus that would benefit from SPAs.

Potential sites include:

- Tech Green
- Tech Square
- Department of Biomedical Engineering
- Klaus Advanced Computing Building
- College of Architecture
- School of Physics / Department of Civil & Environmental Engineering
- Campus Recreation Center
- Campus Housing
- Identify opportunities in new construction to add SPAs to buildings/parking decks

Long-term secure bike parking is more costly than short-term parking, but, unlike bike racks, it can generate revenue through registration and user fees. Using Institute funds for bicycle infrastructure and support facilities may require consensus building among the various Institute departments. However, as shown in the Bike Parking Projection section of this chapter, bicycle parking investments are fiscally attractive when compared to funds spent on other commute modes.

Siting Guidelines

Key considerations when siting/developing SPAs:

- Provide appropriate wayfinding signage to guide bicyclists to the long-term parking
- Provide both double-height racks and single racks to maintain accessibility for all users
- Price appropriately in comparison with nearby vehicle parking
- Where possible, site in conjunction with lockers and showers for bicyclists' use

Additional Considerations

Long-term parking facilities are more expensive to provide than short-term facilities but are also significantly more secure. They should be provided in locations where automobile parking is longer than two hours, such as commuter lots or parking garages. Bike SPAs are ideal for transit hubs or wherever large numbers of people might arrive by bicycle and need a secure place to park while away.

Materials and Maintenance

Regularly inspect the functioning of moving parts and enclosures. Change keys and access codes periodically to prevent access to unapproved users.

Additional References and Guidelines

Additional design guidance can be found using the following resources:

- AASHTO. Guide for the Development of Bicycle Facilities. 2012.
- APBP. Bicycle Parking Guide 2nd Edition. 2010.

Double-height racks help take advantage of the vertical space and further maximize the parking capacity.

In a space that would have been used for seven cars, a Bike SPA can comfortably park 80 bikes with room for future expansion.



Figure 47. Secure Parking Areas (SPA) Design Guidance

Bike Center

A bike center would serve as a hub for the bicycle community and bicycle-related activities for the Georgia Tech campus. The bike center would provide an opportunity to establish a bike shop on campus, providing the option to offer bicycle repair and advice. This is important given the lack of nearby bicycle shops to campus. The bike center can also provide a location for bicycle maintenance and education classes for the campus community. Potential programmed elements of the Bike Center include:

- Professional bike repair
- Self-service bike repair
- Shop to sell refurbished bikes from Starter Bikes
- Bike parts and accessories
- Bicycle-related classes (maintenance, on-road riding, winter riding, etc)

In siting the bike center, Georgia Tech should consider:

- Visibility to the campus community
- Access to/from identified bikeways
- Access to delivery vehicles
- Appropriate amount of space (classroom, showroom, and shop) for all programmed elements

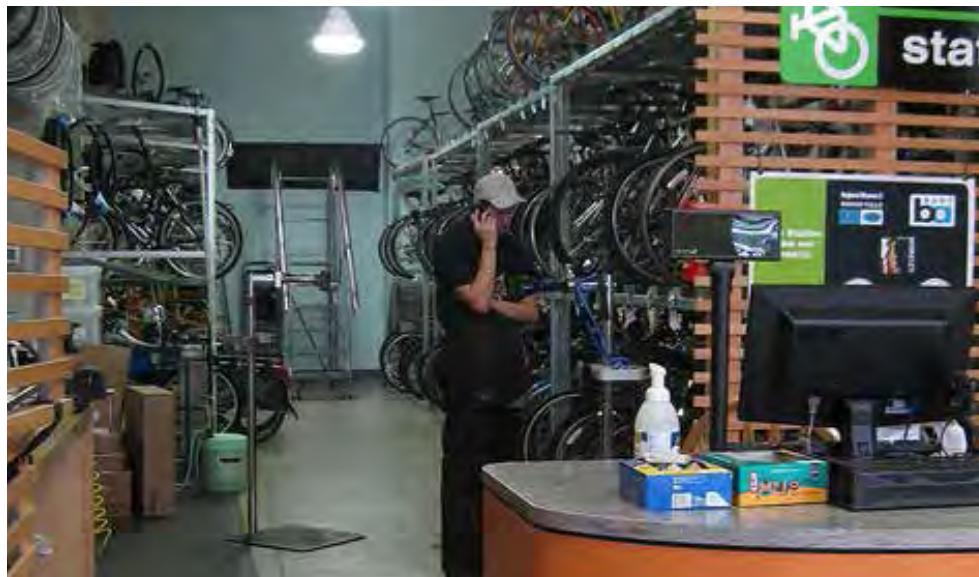
In looking at Georgia Tech, the natural location for a bike center is near/adjacent to Tech Green. Given the uses of the buildings surrounding Tech Green (particularly the Student Center and Clough) and the central location, finding a sufficient space for developing a bike center near Tech Green should be a campus priority. A bike station could be developed as a stand alone structure or integrated into a building, such as the Student Center as part of a renovation.



Bike station integrated into a storefront



Standalone bike station



Bike station with repair and bike valet services.



Self-service, secure bike parking

Bike Share

Campuses provide the perfect demographic for bike share. Campuses typically:

- Have low car ownership (compared to the surrounding community)
- Are open/supportive of multi-modal transportation
- Seek affordability
- Have difficulty supplying/pricing vehicle parking appropriately

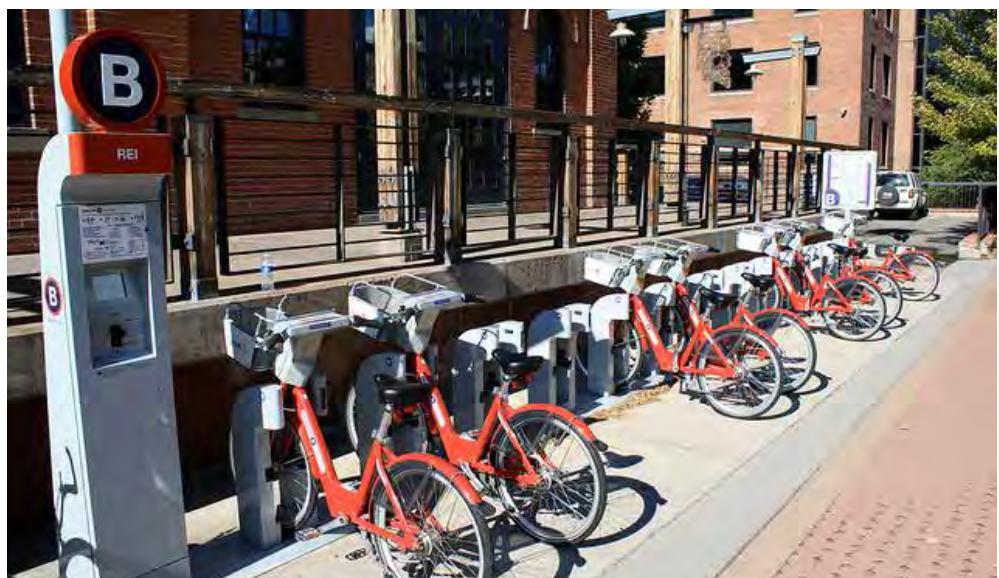
Georgia Tech is well-placed to successfully utilize a bike share system as Atlanta moves forward with plans for development and implementation of bike share. Placing bike share docks at key origins and destinations on campus (such as housing, Clough, CRC, larger academic buildings, etc.) can serve to reduce the number of abandoned bikes and personal bikes on campus by providing an alternative to the personal bike. The system can also serve as a form of public transit on campus.

The Cycle Atlanta smartphone app data provides some initial ideas for bike share stations including:

- Student Center
- Clough Commons
- Department of Civil and Environmental Engineering
- Tech Square
- Transit Hub at Ferst Drive and Aerospace Systems Design Laboratory
- Campus Recreation Center
- College of Architecture
- Biotech Quad
- Georgia Tech Research Institute
- Campus Housing Sectors
- Dining services at campus housing
- Bobby Dodd Stadium



Bike share station adjacent to transit station



Bike share station adjacent to building

Case Study

Boston Hubway System and Harvard University

Harvard University has worked with the Boston Hubway bike share system to bring bike share to their campus. Employees, students and visitors have used the bike share system to access campus from other areas of the city.

In 2013, employees were the overwhelming beneficiaries of the system on campus. Employees took 55,129 trips and rode an impressive 58,635 miles in 2013. Students took 1,318 trips and rode 1,401 miles in 2013.

The significant difference is likely attributed to the distance from where campus employees live relative to students (more likely to use their own bike to get to campus) and use of transit (the campus is well served by transit stations with bike share stations). The numbers show that bike share can impact travel patterns and reduce vehicle trips on campus.



Boston Hubway Station at Harvard Square

End-of-Trip Facilities

For those biking longer distances to campus, having end-of-trip facilities that support riding can encourage more bicyclists to ride more often. This is particularly true during warmer months.

Additionally, having access to tools and bike pumps allows bike riders on campus to fix unexpected mechanical issues or reinflate tires with air. Support facilities such as showers and fix-it stands can enhance convenience for bicycle commuters and those riding on campus.

Currently, showers are available for bicycle commuters in the Campus Recreation Center (CRC) for members of the facility and in the Clough Commons for anyone. While the shower locations in the CRC are obvious, few people are aware the Clough Commons has men's and women's showers on the lower level in the restrooms. Greater signage and available information would make the Georgia Tech community more aware of these showers.

As Georgia Tech moves forward, the provision and location of shower (and locker) facilities should be a careful consideration in new and retrofitted buildings. Any new Secure Parking Areas that are developed should (ideally) have a shower and locker facility nearby, either in the same building or an adjacent building.

Additionally, fix-it stations can be added to areas around campus. Ideal locations include:

- Adjacent to bike racks
- Adjacent or within Secure Parking Areas
- Tech Green
- Campus Recreation Center
- Campus Housing
- Tech Square



Fix-it Station adjacent to bike parking



Shower facilities



Fix-it Station

Education, Encouragement, and Enforcement Programs

Overview

Universities across the country have developed procedures and programs that aim to promote bicycling, walking, and transit trips to campus while reducing single occupancy vehicle (SOV) use. These activities are typically undertaken with some combination of the following principles in mind:

- Promote sustainability by reducing carbon footprint of commuting to campus
- Save money by shifting commuters to non-SOV modes and reducing the need for parking
- Provide incentives for using alternative modes of transportation
- Provide affordable transportation options to the campus community
- Create a greater quality of life for the campus community
- Establish the Institute as a national leader

Programs and strategies for accomplishing the above principles can be grouped into several of the five E's identified by the League of American Bicyclists.

Figure 48. Programs Overview



Educational strategies are extremely effective in improving the walking and cycling environment while promoting non-motorized transportation. Georgia Tech has the potential to build on its solid foundation of supporting multi-modal transportation and to become a model walking and bicycling campus. This section identifies strategic opportunities for providing education and educational materials to the campus community.

If you build a facility, people will use it; however, if you build the facility and tell people about it, they will embrace it. This section identifies encouragement strategies for Georgia Tech and other partners to promote bicycling as a viable transportation option. The recommendations are based both on findings of previous tasks plus experience gained in communities around the region and the United States.

This section identifies enforcement strategies that have proven effective at creating greater compliance to the "rules of the road" and also foster greater mutual respect toward sharing the road among all transportation users.

Programs Coordination

Programs coordination is an important part of creating a robust bike culture on campus. Three key elements will help with programs coordination going forward. They include:

- Bicycle Use Policy
- Bicycle Infrastructure Improvement Committee
- Establish a Programs Coordinator Position

Bicycle Use Policy

After three years of development, Georgia Tech adopted a comprehensive bicycle use policy. The policy covers a range of topics intended to promote safe bicycle use on campus, including storage and operation.

The policy sections include:

- Bicycle Registration
- Bicycle Parking
- Bicycle Use
- Procedures Related to Removal of Bicycles
- Responsibilities with Regard to Bicycles in Violation
- Enforcement
- Recommended Safe Practices

The policy covers the expectations for use of a bicycle on campus, including securing and registering bicycles, penalties for violating the campus policy for bicycles, and procedures for administering the policy on campus.

Bicycle Infrastructure Coordinating Committee (BIIC)

The BIIC has served to bring together various departments, student groups, and interested campus community members on campus to facilitate communications regarding bicycles. The BIIC is unique in that it is the only committee on campus chaired by a student. BIIC meetings have served as a collaborative environment for bicycle discussions. Moving forward, the BIIC will coordinate with the Bike Programs Coordinator to identify, develop, and implement programmatic elements to move the Georgia Tech community forward on supporting biking and bicycling issues.



Bicycle Infrastructure Improvement Committee (BIIC) Meeting

Establish a Programs Coordinator Position

A number of universities around the country staff a part- or full-time Bicycle Program Coordinator position. To take full advantage of current bicycle planning and safety efforts and to assist with implementation of Institute bicycling programs, Georgia Tech should prioritize creating and staffing an ongoing bicycle position that could also be expanded to encompass pedestrian issues (i.e., a Bicycle and Pedestrian Coordinator). In addition to supporting existing programs, such as provision of bike parking and education activities, job duties may include the following:

- Monitoring facility planning, design, and construction that impacts bicycling
- Staffing bicycle advisory committee meetings
- Implementing Bicycle Master Plan projects and programs as well as seeking funding sources to do so
- Identifying new projects and programs that would improve the Institute's bicycling environment and improve safety for bicyclists, pedestrians, and motorists
- Evaluating projects and programs
- Coordinating bicycle counts

Currently, the responsibility for bicycle issues and programs is shared between Parking and Transportation, Capital Planning, the BIIC (which includes student organization representatives and faculty and staff from campus departments), Environmental Health and Safety, and the Campus Recreation Center (CRC). A bicycle coordinator position integrated within the Parking and Transportation Department would create a contact person to centralize bicycle issues and also empower the position to work closely with other departments.

The following is a brief list of anticipated benefits associated with having a dedicated bicycle coordinator:

- Single point of contact to assume responsibility for implementing bicycle projects, programs, and events
- Improved coordination of bicycle issues on capital projects
- Increased bicycle mode share
- Reduced motor vehicle parking demand by attracting vehicle commuters to bicycling modes; this has two primary benefits:
 - Saves the Institute from adding additional parking capacity at high cost
 - Allows the Institute to allocate land to purposes other than vehicle parking
- Commitment to sustainability and reducing the Institute's carbon footprint
- Campus appreciation for having someone dedicated to bicycling issues
- Institute would be seen as a regional leader by dedicating the resources to this position

The Bicycle Coordinator would coordinate with the BIIC and be the official Institute staff person for that committee.



Education

Equally as important as providing bicycle and pedestrian infrastructure is ensuring that users are familiar with the treatments and know how to use them. This section presents recommended bicycle, pedestrian, and motorist education programs.

The recommended strategies are:

- Maintain Bike GT website
- Create Mobility Ambassadors Program
- Enhanced/Expanded FASET Bicycle/Pedestrian Campus Orientation
- Bicycle Classes and Clubs
- Integrate Bicycling into the Classroom

Maintain Bike GT Website

The Bike GT website is maintained by the Bicycle Infrastructure Improvement Committee and is a central resource for bike-related information on campus. The BIIC should continue to update the website with information about upcoming events, on-going programs, and other bicycle-related information that can encourage and support more biking on campus



Create Mobility Ambassadors Program

Mobility ambassadors can disseminate bicycling and walking information to their peers and other campus users related to safety and campus rules, upcoming events, and other mobility programs and opportunities. They can also distribute promotional items such as buttons, magnets, or stickers. Mobility ambassadors can be volunteers or paid campus representatives, and should be trained on campus bicycle rules, safety, local bicycling resources, and successful outreach techniques. Volunteers or staff can be roving campus ambassadors, or they can reach out to students at events or at a table during a designated time.

For example, Stanford University establishes a campus safety station every Friday at White Plaza from 11 a.m. - 2 p.m. (weather permitting). Activities include:

- Bike registration (required by California law)
- Free bike safety check-up
- Access to tire pump and simple tools
- Learn how to lock your bike up properly to avoid bike theft
- Free headlights for freshman and new transfer students

Familiarization and Adaptation to the Surroundings and Environments of Tech (FASET)

Georgia Tech should work with FASET and other beginning of year activities to increase the availability of information on biking on campus and in Atlanta. A bicycle/pedestrian campus orientation session during FASET for all incoming students at the beginning of each school year can introduce bicycling and walking on/around campus to freshmen and transfer students. A variety of outreach methods and materials can address important topics such as rights and responsibilities, how to ride appropriately around pedestrians, when and where not to bicycle on campus, proper security measures, etc.



Bicycle Classes and Clubs

Bicycle riding is a healthy and fun activity that is enjoyed by people of all ages. From the first time you ride a tricycle at age two or three, there is nothing quite like the freedom that you get from riding a bike. However, regardless of age, proper bicycle safety is very important. This is very true for college students, who may not have ridden a bicycle in many years.

The Campus Recreation Center offers or hosts several bicycle related programs, including mountain biking trips, bicycle maintenance classes, and the Georgia Tech Cycling Club. These programs support the bicycle culture on campus and encourage students to ride bikes for health and recreation. These programs should continue to support the desired growth in campus bicycling.

Georgia Tech should expand and publicize the classes offered by the CRC to reach a larger portion of the campus community. At a minimum, curriculum should cover:

- Parts of a bicycle
- How a bike works
- Flat tire fixing
- Rules of the road
- Right of way
- Road positioning
- On-bike skills lessons (braking, turning, steering)
- On-bike community ride
- Campus routes



Integrate Bicycling into Classroom

With a leading reputation in education, numerous opportunities exist to integrate bicycle planning and design exercises drawn from the needs of the Institute, into the curriculum in health, engineering, and architecture. Georgia Tech should continue to capitalize on the educational opportunities available to really turn the campus into a "bike lab".



Encouragement

Similar to education programs, encouragement programs provide incentives and benefits to the public to try bicycling and walking.

This section identifies encouragement strategies for Georgia Tech and other partners to promote bicycling as a viable transportation option. The recommendations are based both on findings of previous tasks plus experience gained in communities around the region and the United States.

The recommended strategies are:

- Commuter Benefit Program
- Create Bike Shop on Campus
- Continue Starter Bikes
- Helmet/Light/Lock Raffles
- Expanded Smart Park Options
- Bike Buddy / Bike Mentor Program
- Bike Week

Commuter Benefit Program

Commuter Benefits are a federally approved employer-provided incentive for employees to save money on their transit, vanpool, and parking expenses. Many universities also extend the program to their student body. Commuter benefits encourage people to walk, bike, rideshare, and take transit to work. This helps relieve traffic congestion and improve air quality, making Atlanta a better place to live.

Effective January 1, 2013, the IRS pre-tax deduction limit is \$245/month for transit and vanpool expenses and \$245/month for parking expenses. \$20/month may be offered as a subsidy to employees who commute via bicycle.

Program Case Studies

Stanford University

Stanford University has established the Stanford University Commute Club. By not purchasing a Stanford parking permit and joining the Stanford University Commute Club, members help reduce emissions, minimize the number of vehicles traveling to and from campus, and benefit financially by not driving alone. Rewards can reach up to \$300 (\$25/month) a year in Clean Air Cash or Carpool Credit.



Stanford University

Oregon Health & Science University

Oregon Health & Science University (OHSU) provides an incentive for employees who choose to bike to work for at least two miles of their trip. Bicyclists are reimbursed for their commute with one of three incentives for each 30 trips biked. Members of the parking program are refunded one month's parking. Members of the transit pass program receive \$35 (in addition to the overall subsidy on their passes). Bicyclists who are members of neither program receive \$50.

Create Bike Shop on Campus

Establishing a bike shop in the center of campus will highlight bicycling as a viable mode of transportation to and at Georgia Tech. It also provides the opportunity for daily education and encouragement through its very presence, serving as a visual cue that bicycling is encouraged and supported by the university and the community.

Support Enhancements to Starter Bikes Program

Starter Bikes has been a successful, student-led initiative on campus. With support from the Campus Recreation Center, the BIIC, other groups on campus, and student volunteers, Starter Bikes provides many benefits to campus, including:

- Recycling abandoned bicycles
- Providing bicycles for students at an affordable price
- Coordination with Georgia Tech Police Department to register bicycles
- Serving as an on-campus resource for students to repair their own bikes or have a volunteer mechanic repair their bike

Going forward, Starter Bikes can continue to be a standalone operation or be merged with the bike shop on campus. At a minimum, the function of recycling abandoned bikes and providing affordable bikes should be preserved as part of the program.

Additionally, Starter Bikes needs more space that is easily accessible and more visible. Currently, the program is in the parking deck at the CRC. To enhance visibility of the organization and its capacity, it needs new space on campus and, ideally, in a more centralized and visible area.



Helmet/Light/Lock Raffles

The BIIC has done helmet raffles (for those who register their bikes) and bike accessory giveaways (during Bike Week) for those who visit their table and sign up. Providing a small budget to enhance the opportunities for such raffles and giveaways creates multiple chances for encouragement and education activities.

Expanded Smart Park Options

While biking to Georgia Tech works on many days, some days require that individuals drive. Currently, Georgia Tech operates the Smart Park program. SmartPark offers flexibility for students and employees who occasionally drive to campus. It is a pay-as-you-go program that costs \$25 to join each year. The program allows parking in one of three campus lots - Technology Square Parking Deck (E81), Visitor Parking Area 3, and North Deck (W23) - from 5:30 a.m. to midnight daily. The rate is \$6 per use (effective August 15, 2013) and is automatically debited from each member's BuzzCard account.

While this works for some commuters, the available parking lot locations make it difficult for others. Expanding the number of lots available, or making available a one-day parking pass as an active member of the Commuter Benefit Program, will provide greater flexibility (and rewards) for those who bike frequently.

At Stanford University, Commute Club members have the option of buying up to eight monthly parking scratchers (prices vary depending on lot location).

Bike Buddy/Bike Mentor Program

Many communities (but few campuses and universities) offer a bike buddy program. By connecting new cyclists with experienced riders and reviewing safety tips and riding together, Rambling Wreck Bike Buddies will alleviate any fear or nervousness and give new riders the confidence they need to feel great on the road!

An experienced Bike Buddy commuter will show partners:

- The safest and fastest commute routes
- The best commuter clothing and gear to use
- How to patch a flat and perform light repairs
- Provide the motivation to bicycle rather than drive
- Have fun and make new friends

Bike Week

Bike Week has served as a significant education and encouragement series of events on campus. Led by the BIIC, events have included a Ride with the President, safety product giveaways, bike scavenger hunts, and other events to promote bike riding on campus.



Enforcement

Enforcing traffic laws related to bicycling and walking helps to promote a safer environment for all road users. This section presents recommended campus-wide bicycle and pedestrian enforcement programs.

The recommended strategies are:

- Confiscation Policy
- Bike Registration
- Targeted enforcement

Confiscation Policy

Abandoned bikes on campus, particularly those bikes locked to bicycle racks, can make it very difficult for existing bicycle users to find available places to lock their bikes at destinations. Georgia Tech should expand the existing confiscation policy, identifying high-priority rack locations (CRC, Clough, etc) and conducting more frequent sweeps (once a quarter), tagging abandoned bikes, and then removing them for Starter Bikes. Confiscation should be done in accordance with the Bicycle Policy for Georgia Tech, which outlines the process and responsible departments for administering and enforcing the confiscation policy.

Bike Registration

Bike registration with the Georgia Tech Police Department (GTPD) enables the GTPD to identify a bike and contact the owner in the event that the bicycle is recovered after being lost or stolen. Registering bikes also helps GTPD and other departments manage abandoned bikes on campus.

Starter Bikes partners with GTPD to register recycled bikes. The collaboration has been a successful program to recycle abandoned bikes and support bike registration on campus.

The bike registration program is voluntary and should continue to be voluntary. Doing so will encourage even those without a registered bike to ride to campus, which includes visitors. Bike registration should be promoted through events and orientations on campus.



Targeted Enforcement

Targeted enforcement is one way to publicize bicycle and pedestrian laws in a highly visible and public manner. Examples of directed enforcement actions include: intersection patrols; handing out informational sheets to motorists, bicyclists, and pedestrians; and enforcing speed limits and right-of-way.

The GTPD currently undertakes many of these steps on campus and should continue to do so throughout the summer and school year. Targeted enforcement should be done in coordination with the start of semesters or at specific locations known to have safety issues. Regular enforcement, particularly at known safety issue locations, can help encourage safe riding behavior on campus and help prevent crashes.

Several areas on campus are ideal for targeted enforcement. They include the Priority Project areas (see Priority Projects chapter for more detail) and popular destinations on campus.

Potential targeted enforcement locations include:

- Tech Square
- Tech Green
- 5th Street at Techwood Drive
- 5th Street at Fowler Street
- Ferst at Atlantic Drive
- Ferst Drive at State Street
- Ferst Drive at Hemphill Avenue
- Ferst Drive at 6th Street
- Ferst Drive at Means Street

Evaluation

Overview

Monitoring and evaluating the trends in bicycle activity is important to understanding what strategies have been effective at increasing biking rates and safety efforts. It also enables Georgia Tech to report progress against bicycle goals. Progress reporting will continue to spread awareness of issues, encourage ongoing community buy-in, and communicate successes to the public.

This chapter provides a framework to monitor and evaluate bicycle success on campus by:

- Continuing Annual Commuter Survey
- Conducting Counts and Inventory Data Collection
- Developing Annual Campus Bike Report
- Re-Applying for Bicycle Friendly University Designation

Annual Commuter Survey

The annual Georgia Tech commuter survey is administered by the Parking and Transportation Department and provides significant information about transportation choices, behavior, and preferences on campus. The survey should continue to help Georgia Tech track trends related to bicycle commute rates, attitudes about bicycling to campus, and changing needs on campus.

Counts and Inventory Data Collection

Bicycle counts act as a mechanism for tracking trends over time and for evaluating the impact of bicycle and pedestrian projects, policies, and programs. Regular count locations should be established to identify trends at specific locations on campus over time. Additionally, before and after counts should be done before and after new projects are completed to analyze the impact the project is having on campus.

Georgia Tech should use a variety of methods to collect a comprehensive data set. Strategies for data collection should include:

- Manual counts
- Field surveys of bicycle riders (often done in coordination with manual counts)
- Automated counts
- Cycle Atlanta app
- Bike rack inventories
- Bike rack utilization studies

Annual Campus Bike Report

A campus bike report will provide an annual snapshot of relevant bicycling metrics to track the efforts of the Institute and the BIIC. Results from bicycle counts, user surveys, and collision reports should be included in the report card as well as recently completed improvement projects and programs. The report card should compare the changes and accomplishments from year to year, which will help focus the following year's improvements and goals.

Re-Apply for Bicycle Friendly University Designation

When the Institute is ready, the BIIC or PTS should lead an effort to re-apply for Bicycle Friendly University (BFU). The institute's current Silver BFU designation expires in August 2016. A goal of this Plan is for Georgia Tech to achieve Gold or Platinum designation. The Institute has already accomplished many of the steps outlined in their feedback report for their BFU Silver designation. When the Institute feels it has made significant process, it should re-apply and use data from this report and ongoing data collection efforts to document all the Institute has accomplished since it last applied.



Manual count along a pathway

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Implementation

Overview

The implementation of this Plan will require a concerted, collaborative effort of project partners. Some proposed priority projects will require significant funds, while other policy and program recommendations are inexpensive means to create a bike-friendly campus.

This chapter provides a framework to coordinate implementation by defining the responsibilities of those involved on and off campus, and details a funding strategy and an implementation matrix to move the recommendations of this Plan forward.

Roles and Responsibilities

For the purpose of this Plan, the responsible entities that will implement this Plan have been organized into three groups. They are:

- Campus Departments
- Student Groups
- Community Groups

Each department or group will play an important role in Georgia Tech reaching its goals of becoming a Gold or Platinum Bicycle Friendly University.

Figure 49. Campus Partners for Campus Bicycle Plan Implementation

Campus Departments

- Parking and Transportation
- GT Police
- Facilities – Design and Construction
- Facilities – Operations and Maintenance
- Environmental Health and Safety
- Institute Communications
- Capital Planning and Space Management
- Campus Recreation Center

Student Groups

- Bicycle Infrastructure Improvement Committee (BIIC)
- Student Government
- Starter Bikes

Community Organizations

- City of Atlanta
- Midtown Alliance
- PATH Foundation
- Atlanta Regional Commission
- Atlanta Bicycle Coalition

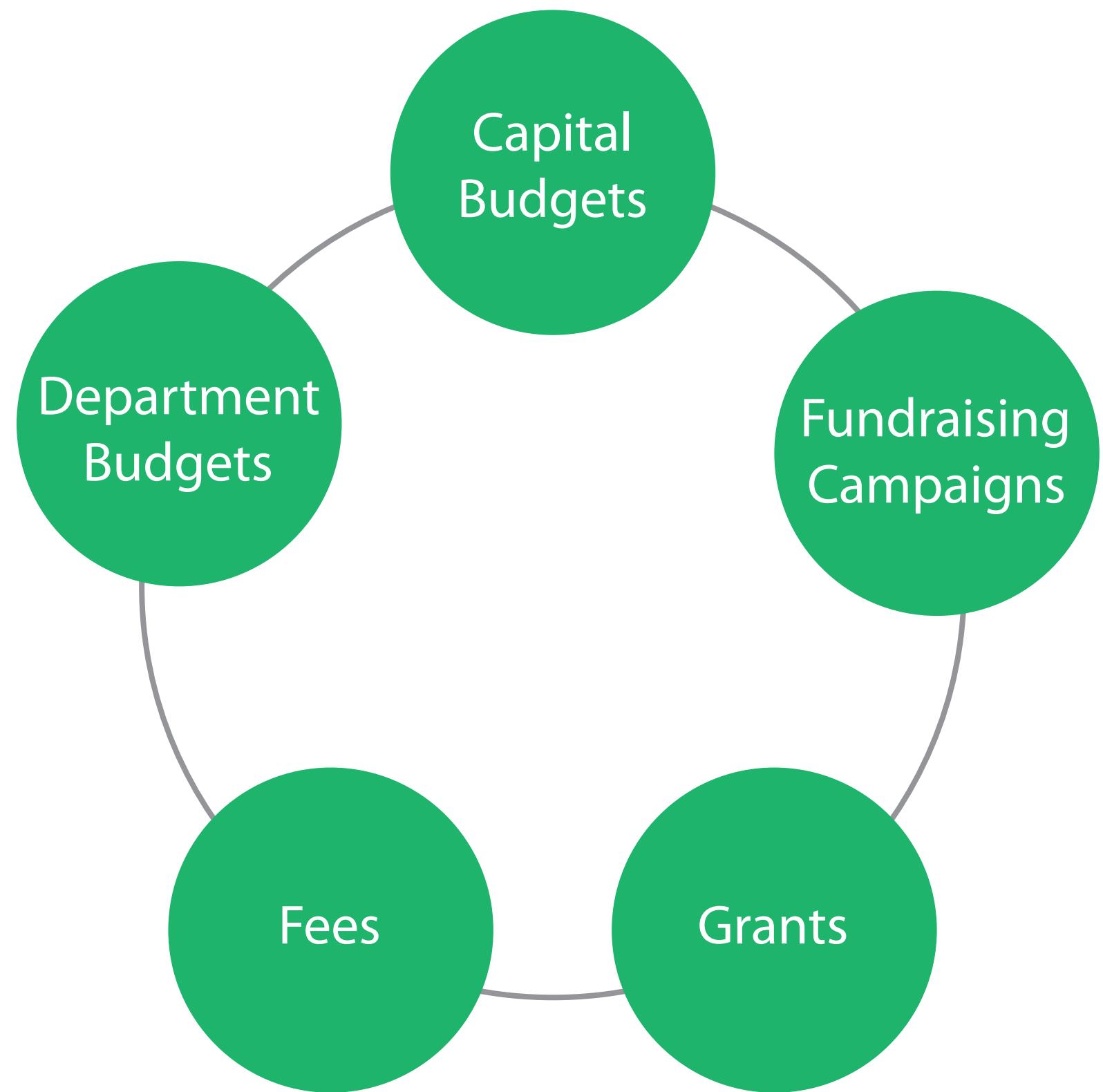
Figure 50. Funding Strategy

Funding Strategy

In order for the Institute to achieve the goals of this Plan, Georgia Tech will need to fund improvements from a variety of sources and partners. The institute will need to be opportunistic and

Five primary sources make up the core funding strategy for this Plan. They are:

- **Capital Budgets** - The Institute can use the concepts and policies presented in this Plan to implement this Plan through regularly scheduled capital projects, such as streetscape projects, street resurfacing or new building construction.
- **Department Budgets** - Departments like Police and Housing can use their maintenance resources and staff to support programs and bike infrastructure maintenance.
- **Fees** - Student fees and parking fees provide an opportunity to generate revenue to fund infrastructure projects, such as bicycle parking; and programs, such as commuter reward incentive program.
- **Grants** - Competitive grants through public agencies or through private or non-profit foundations can generate additional resources for projects and programs.
- **Fundraising Campaigns** - Fundraising through Institute groups, student organizations or even crowd-funding can help generate additional resources for projects and programs.



Implementation Matrix

The Implementation Matrix is a work plan to guide implementation of the recommendations of this Plan. The Matrix is organized into four categories:

- Priority Projects
- Support Facilities
- Programs
- Evaluation

Table 21. Implementation Matrix

Action Item	Reference Chapter	Lead Party	Supporting Party	Timeline
Priority Projects				
Off-campus (Cycle Atlanta projects)				
Corridor B: raised cycle track - 10th St to Williams St to Fowler St	Priority Projects Pg. 33	Capital Planning and Space Management	Parking and Transportation; City of Atlanta; Midtown Alliance	Long-Term (5+ years)
Corridor B: bike lane/buffered bike lane - West Marietta St to Marietta Blvd to Marietta St	Priority Projects Pg. 33	City of Atlanta	Capital Planning and Space Management; Parking and Transportation	Medium-Term (2-5 years)
Corridor B: bike boulevard - 8th St from Brady Ave to Northside Dr	Priority Projects Pg. 33	City of Atlanta	Capital Planning and Space Management; Parking and Transportation	Medium-Term (2-5 years)
Corridor B: bike boulevard - 8th St from Northside Dr to Hemphill Ave	Priority Projects Pg. 33	Capital Planning and Space Management	Parking and Transportation; City of Atlanta; Georgia Department of Transportation	Medium-Term (2-5 years)
Corridor B: multi-use path - 10th St from Howell Mill Rd to Northside Dr	Priority Projects Pg. 33	City of Atlanta	Capital Planning and Space Management; Parking and Transportation	Long-Term (5+ years)
Corridor B: multi-use path - 10th St from Northside Dr to Fowler St	Priority Projects Pg. 33	Capital Planning and Space Management	Parking and Transportation; City of Atlanta; Georgia Department of Transportation	Medium-Term (2-5 years)
Corridor B: bike lane - Ferst Dr from Hemphill Ave to Atlantic Dr	Priority Projects Pg. 33	Capital Planning and Space Management	Parking and Transportation; City of Atlanta	Medium-Term (2-5 years)
Corridor B: intersection - Northside Dr at 8th St and Tech Parkway	Priority Projects Pg. 33	Capital Planning and Space Management	Parking and Transportation; City of Atlanta; Georgia Department of Transportation; PATH Foundation	Medium-Term (2-5 years)
Corridor B: intersection - Williams St at 10th St and 8th St	Priority Projects Pg. 33	Midtown Alliance	Capital Planning and Space Management; Parking and Transportation; City of Atlanta	Medium-Term (2-5 years)
Corridor E: bike lane - Marietta St from Howell Mill Rd to Baker St	Priority Projects Pg. 33	City of Atlanta	Capital Planning and Space Management; Parking and Transportation; Coca-Cola	Medium-Term (2-5 years)
Corridor E: shared lane marking - Hampton St and 3rd St from Marietta St to 8th St	Priority Projects Pg. 33	City of Atlanta	Capital Planning and Space Management; Parking and Transportation; PATH Foundation	Short-Term (1-2 years)
Corridor E: multi-use path - Tech Parkway from Northside Dr to North Ave	Priority Projects Pg. 33	Capital Planning and Space Management	Parking and Transportation; PATH Foundation; City of Atlanta	Short-Term (1-2 years)
Corridor E: cycle track - Luckie St from North Ave to Baker St	Priority Projects Pg. 33	PATH Foundation	Capital Planning and Space Management; Parking and Transportation; City of Atlanta; Coca-Cola	Short-Term (1-2 years)
Corridor E: intersection - Luckie St at North Ave/ Tech Parkway and Pine St	Priority Projects Pg. 33	PATH Foundation	Capital Planning and Space Management; Parking and Transportation; City of Atlanta; Coca-Cola	Short-Term (1-2 years)

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Action Item	Reference Chapter	Lead Party	Supporting Party	Timeline
On-campus				
Ferst Drive/5th Street at Fowler and Techwood	<i>Priority Projects</i> Pg. 34	Capital Planning and Space Management	Parking and Transportation; City of Atlanta	Short-Term (1-2 years)
Ferst Drive at 6th Street	<i>Priority Projects</i> Pg. 42	Capital Planning and Space Management	Parking and Transportation; Georgia Department of Transportation	Short to Medium-Term (1-5 years)
Hemphill Avenue at Ferst Drive	<i>Priority Projects</i> Pg. 38	Capital Planning and Space Management	Parking and Transportation; City of Atlanta	Short to Medium-Term (1-5 years)
Tech Green	<i>Priority Projects</i> Pg. 46	Capital Planning and Space Management	Parking and Transportation	Medium-Term (2-5 years)
Means Street at Tech Parkway	<i>Priority Projects</i> Pg. 44	Capital Planning and Space Management	Parking and Transportation; City of Atlanta; PATH Foundation	Short to Medium-Term (1-5 years)
10th Street at Atlantic Drive and State Street	<i>Priority Projects</i> Pg. 53	Capital Planning and Space Management	Parking and Transportation; City of Atlanta; Home Park Neighborhood	Short to Medium-Term (1-5 years)
Support Facilities				
Short-Term Bike Parking	<i>Support Facilities</i> Pg. 78	Capital Planning and Space Management	Parking and Transportation; Department of Housing; Facilities Management	On-going
Secure Parking Areas (SPAs)	<i>Support Facilities</i> Pg. 80	Capital Planning and Space Management	Parking and Transportation; Department of Housing; Facilities Management	On-going
Bike Center	<i>Support Facilities</i> Pg. 82	Capital Planning and Space Management	Parking and Transportation; Department of Housing; Facilities Management	Medium-Term (2-5 years)
Bike Share	<i>Support Facilities</i> Pg. 83	Capital Planning and Space Management	Parking and Transportation; Department of Housing; Facilities Management	Short to Medium-Term (1-5 years)
End-of-Trip Facilities	<i>Support Facilities</i> Pg. 84	Capital Planning and Space Management	Parking and Transportation; Department of Housing; Facilities Management	On-going
Programs Coordination				
BIIC	<i>Education, Encouragement and Enforcement Programs</i> Pg. 86	Bicycle Infrastructure Improvement Committee	Capital Planning and Space Management; Parking and Transportation; Department of Housing; Facilities Management; Campus Services; Student Government	On-going
Programs Coordinator	<i>Education, Encouragement and Enforcement Programs</i> Pg. 87	Parking and Transportation	Facilities Management	Short to Medium-Term (1-5 years)
Bicycle Use Policy	<i>Education, Encouragement and Enforcement Programs</i> Pg. 86	Capital Planning and Space Management;	Police Department	On-going
Education				
Maintain Bike GT Website	<i>Education, Encouragement and Enforcement Programs</i> Pg. 88	Bicycle Infrastructure Improvement Committee	Student Volunteers; Institute Communications	On-going
Create Mobility Ambassadors Program	<i>Education, Encouragement and Enforcement Programs</i> Pg. 88	Bicycle Infrastructure Improvement Committee	Campus Services; College departments	Short-Term (1-2 years)
Enhanced/Expanded FASET Bicycle/Pedestrian Campus Orientation	<i>Education, Encouragement and Enforcement Programs</i> Pg. 89	Police Department	Bicycle Infrastructure Improvement Committee	On-going
Bicycle Classes and Clubs	<i>Education, Encouragement and Enforcement Programs</i> Pg. 89	Bicycle Infrastructure Improvement Committee	Campus Recreation Center	On-going
Integrate Bicycling into the Classroom	<i>Education, Encouragement and Enforcement Programs</i> Pg. 89	Bicycle Infrastructure Improvement Committee	College departments and professors; Environmental Health and Safety Office	On-going

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Action Item	Reference Chapter	Lead Party	Supporting Party	Timeline
Encouragement				
Commuter Benefit Program	<i>Education, Encouragement and Enforcement Programs</i> Pg. 90	Parking and Transportation	Bicycle Infrastructure Improvement Committee; Campus Services; Office of Human Resources	Short-Term (1-2 years)
Create Bike Shop on Campus	<i>Education, Encouragement and Enforcement Programs</i> Pg. 91	Bicycle Infrastructure Improvement Committee	Starter Bikes; Capital Planning and Space Management	Medium-Term (2-5 years)
Continue Starter Bikes	<i>Education, Encouragement and Enforcement Programs</i> Pg. 91	Starter Bikes	Bicycle Infrastructure Improvement Committee; Campus Recreation Center	On-going
Helmet/Light/Lock Raffles	<i>Education, Encouragement and Enforcement Programs</i> Pg. 91	Bicycle Infrastructure Improvement Committee	Campus Recreation Center; Campus Services	On-going
Expanded Smart Park Options	<i>Education, Encouragement and Enforcement Programs</i> Pg. 91	Parking and Transportation	Bicycle Infrastructure Improvement Committee	Short to Medium-Term (1-5 years)
Bike Buddy/Bike Mentor Program	<i>Education, Encouragement and Enforcement Programs</i> Pg. 91	Bicycle Infrastructure Improvement Committee	Campus Services; Departments and Colleges	Short to Medium-Term (1-5 years)
Bike Week	<i>Education, Encouragement and Enforcement Programs</i> Pg. 91	Bicycle Infrastructure Improvement Committee	Campus Services; Departments and Colleges	On-going
Enforcement				
Confiscation Policy	<i>Education, Encouragement and Enforcement Programs</i> Pg. 92	Police Department	Bicycle Infrastructure Improvement Committee; Capital Planning and Space Management; Parking and Transportation; Department of Housing; Facilities Management	On-going
Bike Registration	<i>Education, Encouragement and Enforcement Programs</i> Pg. 92	Police Department	Bicycle Infrastructure Improvement Committee; Capital Planning and Space Management; Parking and Transportation; Department of Housing; Facilities Management	On-going
Targeted Enforcement	<i>Education, Encouragement and Enforcement Programs</i> Pg. 92	Police Department	Bicycle Infrastructure Improvement Committee; Capital Planning and Space Management; Parking and Transportation; Department of Housing; Facilities Management	On-going
Evaluation				
Continue Annual Commuter Survey	<i>Evaluation</i> Pg. 93	Parking and Transportation	Office of Strategic Consulting	On-going
Conduct Counts and Inventory Data Collection	<i>Evaluation</i> Pg. 93	Bicycle Infrastructure Improvement Committee	Capital Planning and Space Management; Parking and Transportation	On-going
Develop Annual Campus Bike Report	<i>Evaluation</i> Pg. 93	Bicycle Infrastructure Improvement Committee	Capital Planning and Space Management; Parking and Transportation	On-going
Re-apply for Bicycle Friendly University Designation	<i>Evaluation</i> Pg. 93	Bicycle Infrastructure Improvement Committee; Parking and Transportation	Capital Planning and Space Management; Parking and Transportation	Short-Term (1-2 years)

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Appendix: 20% Bike Mode Share Bike Parking Scenario

Overview

To illustrate how bike parking could be distributed on campus, a more detailed bike parking scenario was developed. This scenario assumes Georgia Tech achieves a 20% bicycle commute mode share goal in 2035.

The campus was divided into bike parking sectors for planning purposes. The sector boundaries were developed specifically for this plan and are based on current sector plans and clusters of similar building uses. As building renovations and new buildings are constructed, the number of bike racks needed in each sector may need to be adjusted.

- 1** NW Housing Sector
- 2** EBB Sector
- 3** Athletics Sector
- 4** Tech Square Sector
- 5** Greek Housing Sector
- 6** East Campus Housing Sector
- 7** The Hill/Administration/Stadium Sector
- 8** East Central Sector
- 9** South Central Sector
- 10** Campus Recreation Center Sector
- 11** Marietta Sector
- 12** North Avenue Research Area
- 13** Graduate Housing Sector

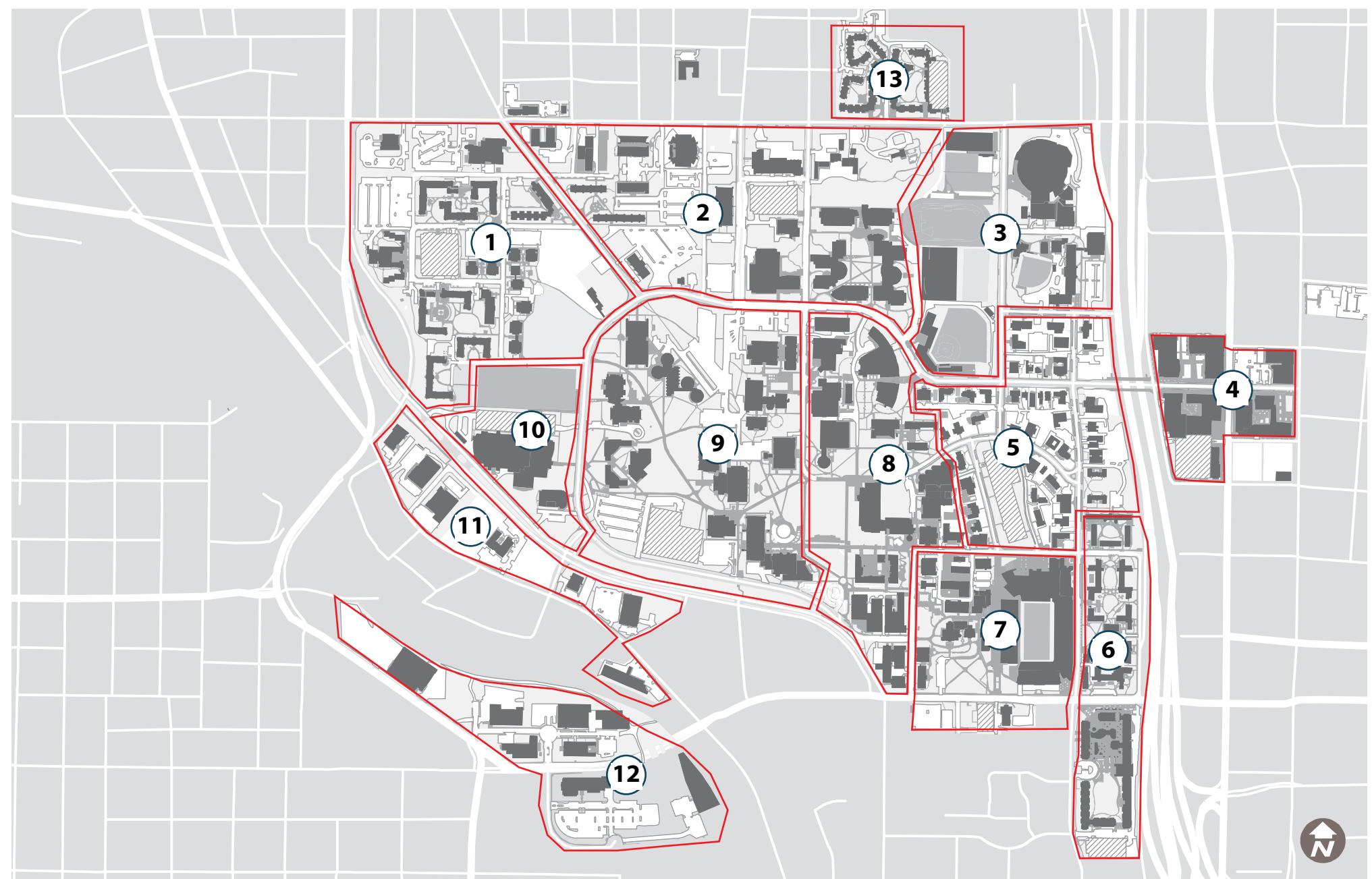


Figure 51. Bike Parking Planning Sectors

Current and Projected Bike Parking Capacity by Sector

On campus, not all areas are experiencing the same level of bike parking demand and this trend will continue as Georgia Tech continues to grow.

The *Current and Projected Bike Parking Capacity by Sector* map helps illustrate the differences between each sector. The map can also help the institute prioritize areas on campus with the greatest need. The numbers shown correspond with the existing and projected bike parking figures found in the Bike Parking Projection Table on the next page.

Sectors with significant demand and the greatest discrepancies between current and projected bike parking needs are:

- NW Housing Sector
- EBB Sector
- Tech Square Sector
- East Campus Housing Sector
- East Central Sector
- South Central Sector

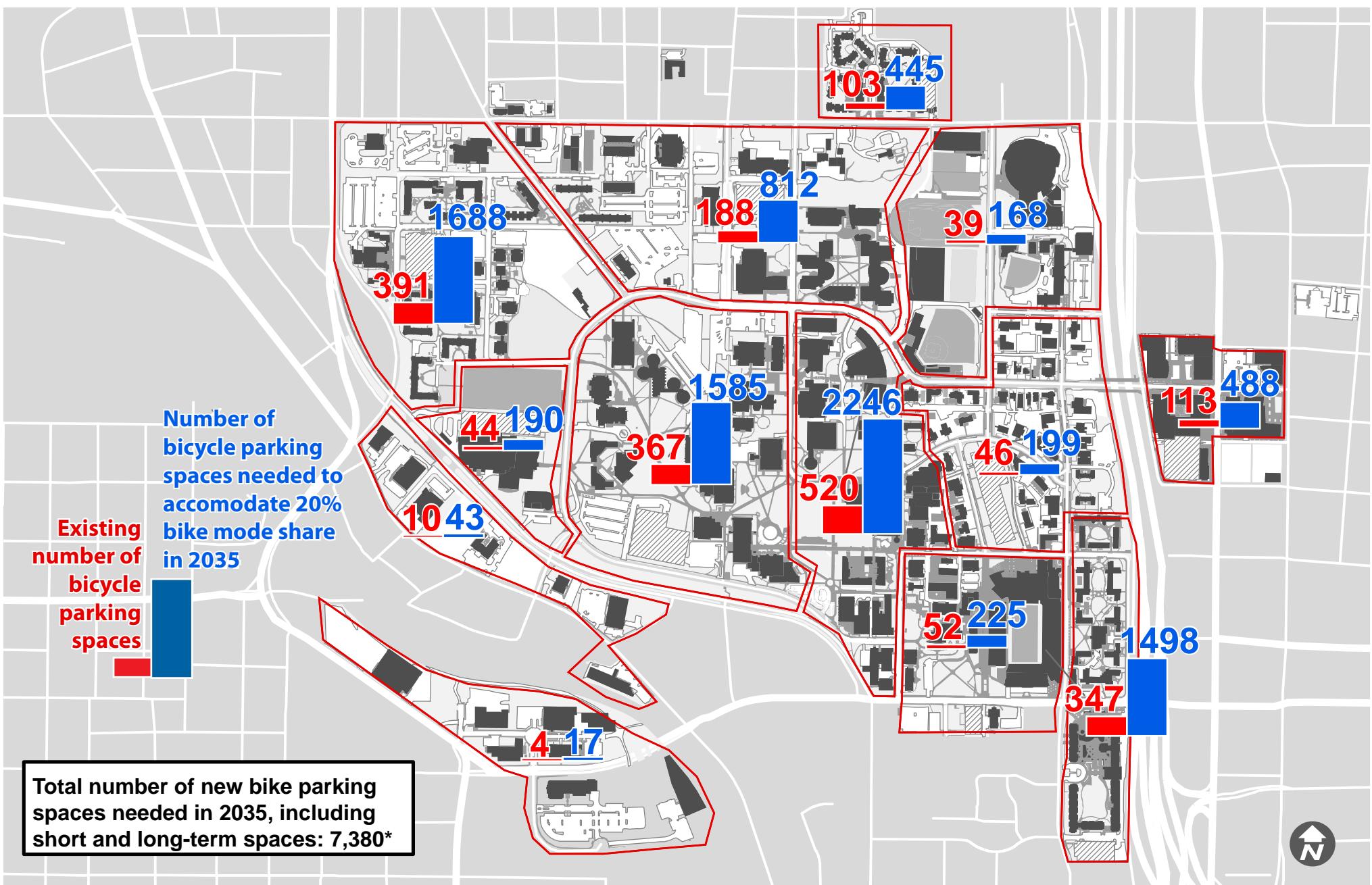


Figure 52. Current and Projected Bike Parking Capacity by Sector

Table 22. Current and Projected Bike Parking Capacity By Sector

Sector Name	Sector Number	Existing Spaces	% of total campus spaces	New Spaces by 2035	Total Spaces (Existing and New) by 2035
NW Housing Sector	1	391	18%	1,297	1,688
EBB Sector	2	188	8%	624	812
Athletics Sector	3	39	2%	129	168
Tech Square Sector	4	113	5%	375	488
Greek Housing Sector	5	46	2%	153	199
East Campus Housing Sector	6	347	16%	1,151	1,498
Administration/Stadium Sector	7	52	2%	173	225
East Central Sector	8	520	23%	1,726	2,246
South Central Sector	9	367	17%	1,218	1,585
Campus Recreation Center Sector	10	44	2%	146	190
Marietta Sector	11	10	0%	33	43
North Avenue Research Area	12	4	0%	13	17
Graduate Housing Sector	13	103	5%	342	445
	Total	2,224	100%	7,380	9,604

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