BIKE PARKING PLAN

Bike Parking Master Plan Update
Office of University Planning
2018

WORK GROUP

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CONTENTS

2014 ORIGINAL BPMP

One of the most common obstacles for cyclists is the lack of bicycle parking at their destination. Adequate bicycle parking encourages people to ride, presents a more orderly appearance for buildings, prevents damage to campus infrastructure (e.g. trees and street furniture), and keeps bicycles from falling over and blocking the sidewalk. Most importantly, bicycle parking helps legitimize cycling as a viable transportation mode by providing parking opportunities equal to motorized modes. Therefore, it is the university's ultimate desire to utilize the information in the Bicycle Parking Master Plan to determine size and location of additional bicycle parking areas to meet both short-term and long-term parking needs of campus cyclists.

The goals of this master plan are to:
a. Assess the existing conditions of bicycle parking on campus.

b. Identify bike parking demand/requirements based upon national "best management practices" and defined methodology.

c. Develop a methodology to determine bike parking needs based upon types of users.

d. Identify regions of campus which appear to be deficient in bike parking (based upon the methodology).

e. Establish design standards for bike rack design, and for mass bike parking "hubs" as well as identify specific sites for potential hub locations within districts.

2018 UPDATE

The 2018 Update to the Bike Parking Master Plan (BPMP) seeks to capitalize on the momentum achieved by the 2014 Original BPMP. Since the development and implementation of the plan numerous bike racks and hubs have been installed, reducing the number of bikes chained to other structures. The information that is updated in this 2018 BPMP will be used to determine if Bike Parking is in fact sufficient in areas and to confirm installed loops and hubs.

The goals of this master plan update are to:
a. Assess the existing conditions of bicycle parking on campus and compare them to 2014 as able.

b. Identify bike parking demand/requirements based upon national "best management practices" and defined methodology, while confirming these standards as current.

c. Utilize consistent methodology to determine bike parking needs based upon types of users and to determine stakeholder groups during future design.

d. Identify regions of campus which appear to be deficient in bike parking (based upon the methodology).

e. Confirm design standards for bike rack design, and for mass bike parking "hubs" as well as identify specific sites for potential hub locations within districts.

f. Design primary conceptual designs for sites deemed currently insufficient in bike parking.

2018 UPDATED LANGUAGE

Resident Cyclists
Virginia Tech currently has approximately 9,000 resident students and current Master Planning anticipates 12,000 by 2026. The top priority for these users is long-term bike parking at their residence. Resident halls require bike parking space for overnight storage and protection from inclement weather, and therefore, sheltered bike parking is most suitable for these users. Resident cyclists also have a need for short-term parking as they frequently bike to and from class and extra-curricular activities on campus. A option showing up on some campuses (e.g. Portland State Univ) is a high-density cover bike storage area, a so-called bike garage, which may be another option for the resident hall area.

Commuter Student Cyclists
Virginia Tech currently has approximately 20,000 commuter students who live off campus and current Master Planning anticipates 22,000 by 2026. The vast majority reside in Blacksburg and are in bike commuting distance. The top priority for these users is short-term bike parking adjacent to their classrooms & labs and also near the student centers and dining facilities. This user group's average duration on campus is approximately 4-5 hours. There is also a need for long-term covered bike parking for protection against inclement weather. Some of this need is met in the future Multi-Modal Transit Facility, or by covering racks near academic buildings as funding becomes available. One purpose of this master plan is to determine other opportunities as needed.

Faculty + Staff Cyclists
Virginia Tech has approximately 7,500 faculty and staff who live off campus. Of the 4,000 faculty, the majority reside in Blacksburg and are therefore in bike commuting distance. The vast majority of staff, approximately 3,500, reside outside of Blacksburg and have greater difficulty commuting by bike. The top priority for these local users is short-term bike parking adjacent to their offices. This user group's average duration on campus is 8-9 hours. Current Master planning anticipates another 700 faculty and staff by 2026 specifically for the Blacksburg Campus.

There is also a need for long-term sheltered bike parking for those who are unable or unwilling to park their bike in their office or building for protection against inclement weather. The possibility exists to address this need in future or existing parking garages, the future Multi-Modal Transit Facility, or by covering racks near academic and administrative buildings as funding becomes available. Another option might be bike lockers at large commuter parking areas. There is also the potential for the inclusion of a bike share program with the Town of Blacksburg.

2014 ORIGINAL BPMP

According to university GIS records, which were last updated at the onset of this project in fall 2012, there are 2,209 bicycle racks on campus. Each rack accommodates two bicycles, creating a total of 4,418 bicycle parking spaces. There are three different rack styles on campus: the inverted u-rack, the staple rack, and the triangle rack. The rack found most frequently is the staple rack, which was the campus standard prior to replacing it with the inverted u-rack in 2008. 65% (1,438) of the total racks are staple racks, while 28% (617) of the racks have been updated to inverted u-racks, and 7% (154) are triangle racks. Many of the staple racks are severely damaged. 29% (651) of the total racks are reported to be in poor condition and are in need of replacement.

Priority in this plan is to address areas of campus that are identified to have deficient bike rack quantities; however the long term vision is to replace existing racks as needed to achieve a consistent rack/hub style across campus as identified later in this report. In terms of rack locations, racks have been distributed widely throughout campus and are installed within 50-100 feet from the main entrances of buildings. However, due to the increase in cycling on campus in recent years, there has been a greater demand for additional bicycle parking, especially short-term parking in high-trafficked academic quads and long-term parking in the residential areas. As a result, cyclists locking their bike to trees, railings, and lampposts has become a serious issue.

2018 UPDATE

According to university GIS records, which were last updated at the onset of this project in fall 2017, there are now 2588 bicycle racks on campus (2209 in 2012). Each rack accommodates two bicycles, creating a total of 5038 bicycle parking spaces (4418 in 2012). There are three different rack styles on campus: the inverted u-rack, the staple rack, and the triangle rack. The rack found most frequently is the staple rack, which was the campus standard prior to replacing it with the inverted u-rack in 2008.

In 2012, 65% (1,438) of the total racks were staple racks, at that time 28% (617) of the racks have been updated to inverted u-racks, and 7% (154) are triangle racks. These three types of racks can be divided into two groups: loops (staple and inverted U-loops) and grids (triangle racks). At the time of this report in 2018, 46% (1186) of the total racks were staple racks, at that time 47% (1213) of the racks have been updated to inverted u-racks, and 7% (185) are triangle and other racks. In 2012, 29% (651) of the total racks were reported to be in poor condition and in need of replacement as compared to 12% (302) of the total racks in 2018.

During this time covered bike racks were introduced and been a success. Out of the currently existing racks, these specifically covered racks are 4% (103) while 13% (336) are covered in some manner using the overhang of a building or other means.

Priority in this plan continues to be to address areas of campus that are identified to have deficient

2018 UPDATE

bike rack quantities; however the long term vision is to replace existing racks as needed to achieve a consistent rack/hub style across campus as identified later in this report. In terms of rack locations, racks have been distributed widely throughout campus and are installed within 50-100 feet from the main entrances of buildings. However, due to the increase in cycling on campus in recent years, there has been a greater demand for additional bicycle parking, especially short-term parking in high-trafficked academic quads and long-term parking in the residential areas. As a result, at the time of the original plan in 2014, cyclists locking their bike to trees, railings, and lampposts became a serious issue. This issue persists in 2018 to a much lesser effect in certain areas. These areas will be reviewed for design interventions and updates specifically as well.

Following are some images from the original 2014 Bike Parking Master Plan and current images of these locations in December of 2017. These images compare and contrast work done in several locations and exemplify what was done during the interim. The top images are from before 2013 and the new images below are from December 2017.

Staple Racks at Randolph Hall

These racks needed repair in 2013 and have since been repaired by remounting the staple racks again. Future work could make the staple racks into inverted-U racks.

Staple Racks and new Covering at Squires Hall

However capacity is still the primary concern for many locations. At Squires original staple racks were kept to add to a new inverted-U covered bike rack.

Installed Bike Hub at Pamplin Hall

At Pamplin bikes were commonly chained to everything. The chain handrail was removed and bikes are now parked at a Bike hub, however without the chain handrail new cowpaths have been formed.

Cowgill Hall Racks

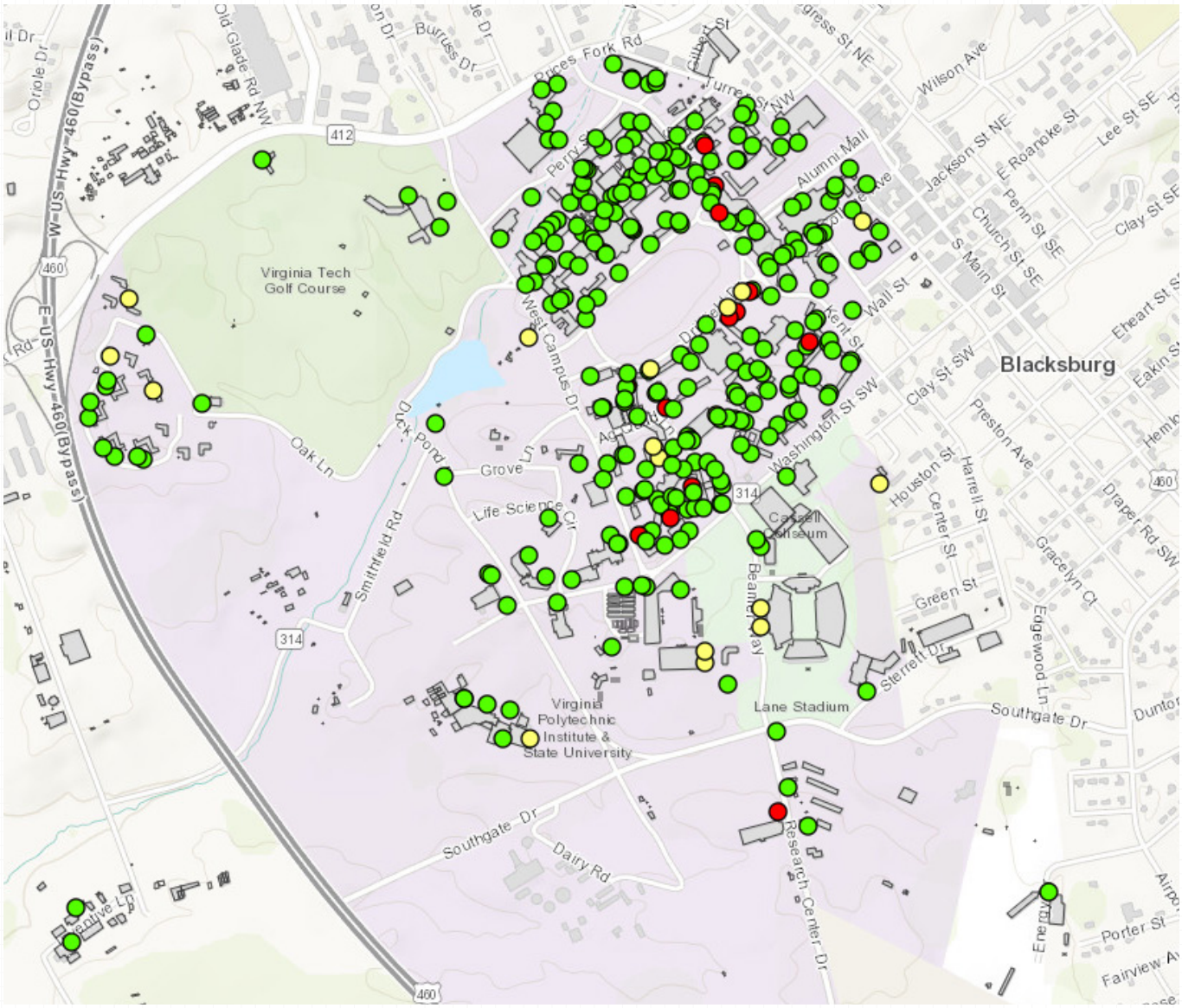
The Cowgill Hall inverted-U racks are a great success at reducing the number of bikes chained to handrails, however they are at capacity again. This causes bikes to still be chained to handrails.

Racks at Owens Hall

These inverted-U loops were moved to other places on campus. However removing all of the racks resulted in the original problem of bikes chained to Hokie Lights.

Covered Rack at Patton Hall

Where covered racks have been implemented they are a success and generate a cycling culture. This example at Patton Hall reinforces the need for more covered racks across campus.



2018 UPDATE

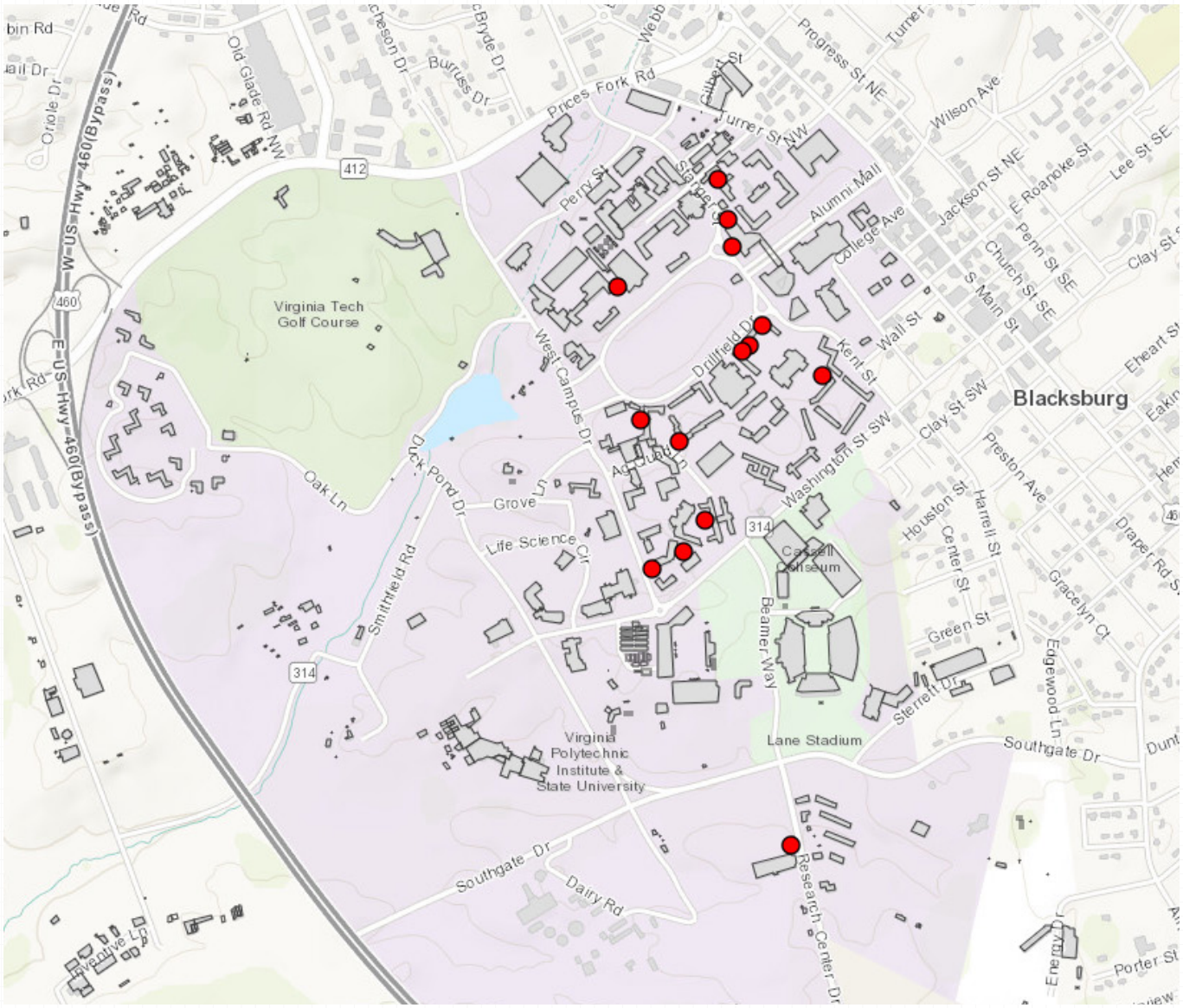
Rack Maintenance Conditions 2017 - All

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

In 2018, 12% (302) of the total racks were reported to be in poor condition and in need of replacement or repair. This map identifies those locations and later work (appendix 4) describes these racks in detail.



2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

In 2018, 12% (302) of the total racks were reported to be in poor condition and in need of replacement or repair. This map identifies those locations and later work describes these racks in detail in Appendix 4.

2018 UPDATED LANGUAGE

A review of national bicycle parking guidelines was conducted to identify best practices to be considered for the university's bicycle parking plan. The national guidelines under review were those developed by the Association of Pedestrian and Bicycle Professionals (APBP) and the US Green Building Council's Leadership in Energy and Environmental Design program (LEED). APBP published comprehensive Bicycle Parking Guidelines in 2002 and 2009. These guidelines have been cited and included in bicycle master plans throughout North America. This document uses the 2015 Essentials of Bike Parking. LEED has been created to act as the preeminent sustainability measurement for building design and construction. Bicycle parking standards for buildings were incorporated into its program in 2009. This document uses the LEED v4 language. The bicycle parking guidelines developed by APBP and LEED include detailed short-term and long-term bicycle parking requirements, specify the recommended number of bicycle spaces by building function and land use, and provide site planning and rack design requirements.

GUIDELINES	LEED	APBP
ORGANIZATION MISSION	LEED is a voluntary, consensus-based, market-driven program created by the US Green Building Council that provides third-party verification of green buildings. From individual buildings and homes to entire neighborhoods and communities, LEED is transforming the way the built environments are designed, constructed, and operated. Comprehensive and flexible, LEED addresses the entire lifecycle of a building.	The APBP is the only professional membership organization for the discipline of pedestrian and bicycle transportation. APBP members include leaders in engineering, planning, landscape architecture, safety, public health, Safe Routes to School, and promotion. The association also welcomes academics, students, and professional advocates. APBP members are dedicated to making bicycling and walking a viable transportation option in the US, Canada, and around the world.

GUIDELINES	LEED	APBP
INTENT OF BICYCLE PARKING STANDARDS	LEED has published bicycle parking standards in the LEED ND v4 Green Building Rating System. The organization's intent to include bicycle parking in its rating system "To promote bicycling and transportation efficiency and reduce vehicle distance traveled. To improve public health by encouraging utilitarian and recreational physical activity". The LEED bicycle parking standards are also intended to give additional opportunities to obtain green building credits.	APBP states that bicycle parking is a critical strategy for promoting bicycling. Convenient, easily used, and secure bicycle parking encourages people to replace some of their car trips with bicycle trips and helps legitimize cycling as a transportation mode by providing parking opportunities equal to motorized modes. APBP encourages communities and professionals to use this document to make informed decisions about planning excellent spaces and facilities to park bicycles.

GUIDELINES	LEED	APBP
SITE PLANNING	Since the last Bike Parking Master plan, LEED has changed the distance from functional entries from 200 feet to 100 feet. "Short-term bicycle storage must be within 100ft (30 meters) walking distance of any main entrance. Long-term bicycle storage must be within 100 feet (30 meters) walking distance of any functional entry. It must be accessible to all building users."	Bicycle parking be placed within 50 feet, preferably, or no more than 120 feet from the building entrance; otherwise cyclists may lock to other street furniture or trees; be visible from the destination; located in a high-traffic area with passive surveillance or eyes on the street; located within the 'desire line' from adjacent bikeways-the path that cyclists are most likely to travel, and weather protected when possible.

GUIDELINES	LEED	APBP
BUILDING OCCUPANCY TO PARKING SPACE RATIO	Non-residential other than retail: "Provide short-term bicycle storage for at least 2.5% of peak visitors, but no fewer than four storage spaces per building. Provide long-term bicycle storage for at least 5% of all regular building occupants, but no fewer than four storage spaces per building in addition to the short-term bicycle storage spaces. Provide at least one on-site shower with changing facility for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter." Multi-unit residential buildings: "Provide short-term bicycle storage for at least 2.5% of all peak visitors, but no fewer than four storage spaces per building. Provide long-term bicycle storage for at least 30% of all regular building occupants, but no less than one storage space per residential unit."	College and Universities: 1 space for each 10 students of planned capacity. Office: 1 space for each 20,000 square feet of floor area. Retail: 1 space for each 2,000 square feet of floor area. Civic/Library: 1 space for 8,000 square feet of floor area. Assembly (Stadium): Spaces for 5% of maximum expected daily attendance. Minimum requirement is 2 spaces for each of these building uses.

GUIDELINES	LEED	APBP
RACK RECOMMENDATIONS	No recommendations.	A successful bicycle rack design provides proper support so that the user can lock and unlock their bicycle and load and remove cargo without the bicycle flopping over due to the front wheel turning. Above all, bicycle racks must provide a way to lock the bike with a U-lock because cable locks and chains are easily cut. APBP recommends selecting a bicycle rack that supports the bicycle in at least two places to prevent the bike from falling over, allows locking of the frame and one or both wheels with a U-lock, is securely anchored to the ground, allows front-in and back-in parking, and resists cutting, rusting, and bending or deformation. The following racks meet all of the design criteria: inverted u-rack, inverted u-rack series, and the post and ring rack.

GUIDELINES	LEED	APBP
LONG TERM PARKING	Non-residential other than retail: "Long-term bicycle storage must be within 100 feet (30 meters) walking distance of any functional entry. It must be accessible to all building users." "Provide long-term bicycle storage for at least 5% of all regular building occupants, but no fewer than four storage spaces per building in addition to the short-term bicycle storage spaces." Multi-Unit Residential Buildings: "Provide long-term bicycle storage for at least 30% of all regular building occupants, but no less than one storage space per residential unit."	While short term parking is designed for convenience and ease of use, long term parking is designed for security and weather protection. Long term parking should have easy access via effective guide signage, controlled access such as leased or on-demand lockers and keycard/ code access garage cage or bicycle room, higher security from controlled access to cages rooms and lockers, safeguards for users such as effective lighting and visible surveillance cameras or security guards, weather protection such as a free standing shelter or indoor cage or room, and lockers and showers for longer commutes or inclement climates.

GUIDELINES	LEED	APBP
CORRAL RECOMMENDATIONS	No recommendations.	APBP also provides requirements for a rack area or “bicycle parking lot” where more than one rack is installed. Aisles separate the racks. The aisle is measured from tip to tip of bike tires across the space between racks. The minimum separation between aisles should be 48 inches. This provides enough space for one person to walk one bike. In high traffic areas where many users park or retrieve bikes at the same time, such as a college classroom, the recommended minimum aisle width is 72 inches. 72 inches (six feet) of depth should be allowed for each row of parked bicycles. Conventional upright bicycles are just less than 72 inches long and can easily be accommodated in that space. Consider typical bikes to be 6’ by 2’ in size.

2018 UPDATED LANGUAGE

APBP defines, in their Bicycle Parking Guideline, how to program and distribute bicycle parking for a large building with several user groups. In some cases a small cluster of buildings may share a set of desire lines and may be able to be analyzed as a single large building. Virginia Tech uses APBP guidelines by dividing campus into 49 districts to collectively address the parking needs of a cluster of buildings in each district. Shown below is the VT methodology for calculating the projected number of bike loops (which will hold 2 bikes each) by building user groups. There are four User Groups: Office, Class/Lab, Residential, and Dining. The term "station" refers to the number of people a building is intended to serve. This is an integration of both APBP and LEED standards. An example of how to calculate the bike loop numbers is following the methodology. Individual building calculations, using this methodology, can be found in appendix 1; Building Station Data. Residential building calculations for covered bike parking can be found at appendix 2; Residential Building Station Data for Covered Bicycle Parking.

Virginia Tech Bicycle Parking Methodology:

User Groups = Office Stations, Class/Lab Stations, Residential Stations, Dining Seats
Persons = Number of persons in the user group
% Bicycle = % of # persons in the user group expected to arrive by bicycle:
- Office Stations: 5% of peak occupancy (PO) users (peak occupancy: 75%)
- Class/Lab Stations: 10%
- Residential Stations: 20%
- Dining Seats: 10%

Bicycles = Number of bicycles for this user group (= # persons x % bicycle)
Required Loops = Number of needed non-enclosed inverted u-racks (= # bicycles / 2)
Existing Loops = Number of non-enclosed inverted u-racks already installed at the site

Note: Bike racks covers are only required for long-term residential parking (campus residential halls), but are encouraged for all high use areas. For residential bike parking: covered bicycle racks/storage facilities must be provided for 30% of peak occupants.

Example table:

University Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#SHORT TERM LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	100	5% PO	4	2		
Class/Lab Stations	100	10%	10	5		
Residential Stations	100	20%	20	10		
Dining Seats	100	10%	10	5		
TOTAL	400		44	22	20	-2

2018 UPDATED LANGUAGE

The following district map can be used in reference to Appendix one and the counts of necessary loops in each district. Campus was organized into six zones based mainly upon the road network. The six zones (shown on the following page) are: Upper Quad, North Drillfield, South Drillfield, Downtown Campus, West Campus, Athletic. Then 49 districts were identified within the six zones with a goal of linking neighboring buildings and also when possible keeping each district about the same size relative to bike needs. It is the intent of this plan to address parking shortfalls at the individual district level starting with the districts that have the most need that are unmet. This report will continue to use the map from the 2013 Bike Parking Master Plan created by Kathryn Zerngue.

2018 UPDATED LANGUAGE

Recommendations of bicycle racks for Virginia Tech follow the guidelines presented by the Association of Pedestrian and Bicycle Professionals (APBP). APBP states that a successful bicycle rack design provides proper support so that the user can lock and unlock their bicycle and load and remove cargo without the bicycle flopping over due to the front wheel turning. Above all, bicycle racks must provide a way to lock the bike with a U-lock because cable locks and chains are easily cut. Additionally, Virginia Tech wishes the bike rack to have a durable surface that maintain a consistent professional and unobtrusive appearance on campus.

APBP recommends selecting a bicycle rack that meets all of the following criteria:

1. Supports the bicycle in at least two places to prevent the bike from falling over
2. Allows locking of the frame and one or both wheels with a U-lock
3. Is securely anchored to the ground
4. Allows front-in and back-in parking, and resists cutting, rusting, and bending or deformation.

This is an example of installing the inverted-U rack on campus outside of the Graduate Life Center installed since 2013. This rack type meets both the LEED and APBP requirements and is already common on campus.

2018 UPDATED LANGUAGE

The master plan identified two racks which met all of the design criteria: inverted u-rack (sometimes called a "bike loop") and the post and ring rack.

In spring 2013, students, faculty, and staff were surveyed at multiple events hosted by Alternative Transportation and the Environmental Coalition. Participants were asked which rack they preferred: the inverted u-rack or the post and ring rack and whether they preferred a galvanized or bronze finish. 79% of survey respondents preferred the inverted U-rack over the 21% who preferred the post and ring rack. Similarly, 79% preferred the bronze finish over the galvanized finish. Virginia Tech has selected the bronze finish as the preferred color for the recommended inverted u- rack.

The inverted u-rack has many advantages. It is relatively low cost, and efficient in its footprint and does not occupy much space. Aesthetically it is simple and blends into the background of campus and easy to clean debris around its base. It also easily allows locking of bicycle of at least one wheel when properly sited and allows removal of the second wheel as needed. Finally it has a capacity of two bicycles per loop.

Virginia Tech Rack Standard
The inverted u-rack with an architectural bronze powder coat finish is the design standard for bike racks at Virginia Tech. The current rack manufacturer is Renaissance Site Furnishings in Roanoke, VA (model BK-2224). Racks are custom manufactured based on existing needs, and each rack can accommodate 3-9 loops. This model meets all ABPB bicycle rack design requirements.

Small Bike Parking Area Design
Typical design standards for a single bike rack (typically 3-5 loops) have the characteristics listed below. A "small" bike parking area is approximately 30 or less bike loops. A single loop supports securing two bikes with the most common bike placement "centered" on the loop. Each loop is 2' from the next loop with a common configuration being five loops on a "rack". The rack is placed on a hard surface "pad" of concrete, asphalt, or concrete pavers. The pad is, as a minimum, 8' wide (due to the width of most bikes: 5.6') which allows for a bike to be locked to the rack at the front or rear wheels. The pad will have, as a minimum, 3' of hard surface on both ends of the last loop of the rack. Additionally, a hard surface approach to the pad is encouraged with at least 3' on both sides. This is often accomplished by placing the pad directly adjacent to a sidewalk or plaza surface.

Large Bike Parking "Hub" Designs
Below are the characteristics of a generic mass bike parking hub to be used when 30 or more bike loops (60 bikes) are installed at a single site.

Lighting: Efforts will be made to incorporate existing lighting. When unavailable, standard Hokie Lights will be used at the same interval as used for sidewalks (80' intervals).

Landscaping: Shade trees and shrubs are needed to

screen and shelter the bikes. Tree planters around the perimeter and within bike loop aisles should be based on rack/ slab layout- generally about 1 tree per (3) 5-loop rack run (about 38' o.c.).

Surface Treatment: Bike loops should be secured into concrete. Concrete pavers or stamped concrete should be used to break up the monolithic appearance of the surface particularly in the bike loop aisles. Curbing is encourages around landscaping to discourage pedestrians and cyclists cutting through turf and planted areas.

Trash Receptacles: at least one receptacle should be located at the site and it should be a dual recycle/ trash unit.

Additional Amenities: (if funding is available):
Blue Light Phone
Covered Shelter
Bike Fix-It Station

Bike Rack Cover: Cover over the bike racks should be considered for resident hall areas and for racks & hubs in predominantly faculty & staff office areas. The cover should blend into the architectural fabric of campus and be visually unobtrusive. The cover does not need to include side or end panels.

2018 UPDATED LANGUAGE

Main Campus Bike Parking Funding & District Prioritization

The implementation plan for bike parking is predicated on the identification of a viable funding source for alternative transportation. Assuming this funding source is identified, then a phased approach to increasing bike parking will be implemented by Parking & Transportation with the support of the Office of University Planning. The intent will be to incrementally increase bike parking starting with prioritizing the districts of campus with both high use and significant deficiencies. The rate at which new hubs are added to campus will be based upon the availability of funds and the overall need.

The Office of University Planning will work with Parking & Transportation to: a) identify the location, b) design the hubs, and c) prepare a construction cost estimate. Parking & Transportation will identify funding for the hub and provide administrative oversight for the construction. New buildings being constructed on campus will also provide bike parking infrastructure in accordance with the methodology in this plan. The bike parking at new building site will be funded with the capital project funds.

Long-Term Residential Bike Parking Funding & District Prioritization

Similar to the strategy for short-term parking, long-term bike parking will be installed as funding becomes available. When a funding source is identified, long-term parking will be prioritized based on high use and significant deficiencies. Districts with residential buildings will take precedence over other districts for prioritization. The university will continue to follow the LEED standard for sheltered bicycle parking near residential halls. As residential buildings are remodeled or newly constructed, sheltered bicycle parking will be provided for 30% of peak occupants. The Office of University Planning will work with both Student Affairs and Parking & Transportation to design the hubs and prepare a construction cost estimate. Student Affairs will locate funding for the hub and provide administrative oversight for the construction.

Highly Prioritized Districts

Please see Appendix 3 for further information on designs for prioritized districts. Districts were prioritized on a combination of need through the methodology found in Appendix 1, along with site surveys of loops used.

District 10: (Multi-Use) Squires Student Center, Newman Library, Graduate Life Center, University Bookstore (short 75 loops)
District 20: (Academic) Derring Hall, Hahn Hall North Wing, Hahn Hall South Wing, Pamplin Hall, Robeson Hall (short 85 loops)
District 26: (Residential) Payne Hall, New Res Hall, O'Shaughnessy Hall, Lee Hall, Pritchard Hall, Peddrew-Yates Hall (short 30 loops)

2013 + 2018 Sources

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2018 UPDATED LANGUAGE

BUILDING STATION DATA

Shown below are the station and loop data for the six major zones and their respective districts (which total 49). This section also identifies any shortfalls in the number of loops and/or any excess capacity based upon current conditions and existing number of loops.

Upper Quad Zone

DISTRICT 1

North End Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	300	5% PO	11	5.5	6	+0.5

DISTRICT 2

Surge Space Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	41	5% PO	2	1		
Class/Lab Stations	1,114	10%	111	55.5		
TOTAL	1,155		113	56.5	59	+2.5

District 1&2 Totals: Required Loops: 62 / Existing Loops: 65 / Excess: 3

DISTRICT 4

Military Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	39	5% PO	2	1		
Class/Lab Stations	160	10%	16	8		
TOTAL	199		18	9	11	+2

Power House Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	11	5% PO	1	0.5	0	-0.5

District 4 Totals: Required Loops: 9.5 / Existing Loops: 11 / Excess: 1.5

DISTRICT 5

Femoyer Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	152	5% PO	6	3		
Class/Lab Stations	63	10%	6	3		
TOTAL	215		12	6	5	-1

Art & Design Learning Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	7	5% PO	1	0.5		
Class/Lab Stations	124	10%	12	6		
TOTAL	131		13	6.5	0	-6.5

Major Williams Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	197	5% PO	7	3.5		
Class/Lab Stations	339	10%	34	17		
TOTAL	536		41	20.5	15	-5.5

Liberal Arts Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	33	5% PO	1	0.5		
Class/Lab Stations	121	10%	12	6		
TOTAL	154		13	6.5	0	-6.5

Shanks Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	144	5% PO	5	2.5		
Class/Lab Stations	195	10%	20	10		
TOTAL	339		25	12.5	33	+20.5

District 5 Totals: Required Loops: 52 / Existing Loops: 53 / Excess: 1

DISTRICT 6

Moss Center for the Arts Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	60	5% PO	2	1	12	+11

District 6 Totals: Required Loops: 1 / Existing Loops: 12 / Excess: 11

DISTRICT 7

New Cadet Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	539	20%	108	54	14	-40

Lane Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	95	5% PO	4	2		
Class/Lab Stations	60	10%	9	4.5		
TOTAL	155		13	6.5	49	+42.5

Pearson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	548	20%	110	55	13	-42

District 7 Totals: Required Loops: 69 / Existing Loops: 19 / Shortage: 39.5

DISTRICT 8

Torgersen Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	234	5% PO	9	4.5		
Class/Lab Stations	938	10%	94	47		
TOTAL	1,172		103	51.5	76	+24.5

District 8 Totals: Required Loops: 51.5 / Existing Loops: 69 / Excess: 24.5

Downtown Campus Zone

DISTRICT 9

Henderson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	43	5% PO	2	1		
Class/Lab Stations	313	10%	31	15.5		
TOTAL	356		33	16.5	14	-2.5

Theater 101 Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	80	5% PO	3	1.5	6	+4.5

District 9 Totals: Required Loops: 18 / Existing Loops: 20 / Excess: 2

DISTRICT 10

Squires Student Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	85	5% PO	3	1.5		
Class/Lab Stations	1606	10%	161	80.5		
Dining Seats	246	10%	25	12.5		
TOTAL	1937		189	94.5	55	-39.5

Newman Library & University Bookstore Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	93	5% PO	4	2		
Class/Lab Stations	834	10%	83	42		
TOTAL	927		87	44	72	+28

Graduate Life Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	71	5% PO	3	1.5		
Class/Lab Stations	951	10%	95	47.5		
Dinning Seats	350	10%	35	17.5		
Residential Stations	218	20%	44	22		
TOTAL	1590		177	88.5	25	-63.5

District 10 Totals: Required Loops: 227 / Existing Loops: 152 / Shortage: 75

DISTRICT 11

Architecture Annex & Media Annex Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations AA	34	5% PO	1	0.5		
Office Stations MA	19	5% PO	1	0.5		
Class/Lab Stations	242	10%	24	12		
TOTAL	276		25	13	13	0

Media Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	39	5% PO	2	1	0	-1

Visual Arts Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	15	5% PO	1	0.5		
Class/Lab Stations	60	10%	6	3		
TOTAL	75		7	3.5	2	-1.5

District 11 Totals: Required Loops: 17.5 / Existing Loops: 15 / Shortage: 2.5

North Drillfield Zone

DISTRICT 13

Perry Street Parking Garage Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	5	5% PO	1	1	3	+2

Goodwin Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	124	5% PO	5	2.5		
Class/Lab Stations	1441	10%	144	72		
TOTAL	1565		149	74.5	60	-14.5

New Classroom Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	17	5% PO	1	0.5		
Class/Lab Stations	1740	10%	174	87		
TOTAL	1757		175	87.5	87	-0.5

District 13 Totals: Required Loops: 163 / Existing Loops: 150 / Shortage: 13

DISTRICT 14

Durham Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	253	5% PO	9	4.5		
Class/Lab Stations	399	10%	40	20		
TOTAL	652		49	24.5	15	-9.5

Whittemore Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	268	5% PO	10	5		
Class/Lab Stations	1,176	10%	118	59		
TOTAL	1,444		128	64	28	-36

District 14 Totals: Required Loops: 88 / Existing Loops: 43 / Shortage: 45

DISTRICT 15

ICTAS (Kelly) Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	124	5% PO	7	3.5		
Class/Lab Stations	134	10%	13	6.5		
TOTAL	258		20	10	12	+2

Lavery Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	11	5% PO	1	1		
Class/Lab Stations	396	10%	40	20		
Dining Seats	833	10%	83	41.5		
TOTAL	1240			62.5	60	-2.5

Randolph Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	228	5% PO	9	4.5		
Class/Lab Stations	1,493	10%	149	74.5		
TOTAL	1,721		158	79	71	-8

Hancock Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	24	5% PO	1	0.5		
Class/Lab Stations	625	10%	63	31.5		
TOTAL	649		64	32	14	-18

District 15 Totals: Required Loops: 183.5 / Existing Loops: 94 / Shortage: 26.5

DISTRICT 16

McBryde Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	321	5% PO	12	6		
Class/Lab Stations	2,451	10%	245	122.5		
TOTAL	2,771		257	128.5	46	-82.5

Holden Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	86	5% PO	3	1.5		
Class/Lab Stations	539	10%	54	27		
TOTAL	625		57	28.5	15	-13.5

Norris Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	97	5% PO	4	2		
Class/Lab Stations	340	10%	34	17		
TOTAL	437		38	19	18	-1

Patton Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	177	5% PO	7	3.5		
Class/Lab Stations	463	10%	46	23		
TOTAL	640		53	26.5	34	+7.5

District 16 Totals: Required Loops: 202.5 / Existing Loops: 113 / Shortage: 89.5

DISTRICT 17

Bishop Favrao Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	15	5% PO	1	0.5		
Class/Lab Stations	342	10%	34	17		
TOTAL	357		35	17.5	0	-17.5

District 17 Totals: Required Loops: 17.5 / Existing Loops: 0 / Shortage: 17.5

DISTRICT 18

Burruss Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	73	5% PO	3	1.5		
Class/Lab Stations	287	10%	29	14.5		
TOTAL	360		32	16	17	+1

Johnson Student Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	2	5% PO	1	0.5		
Class/Lab Stations	199	10%	20	10		
TOTAL	202		21	10.5	24	+13.5

Burchard Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	21	5% PO	1	0.5		
Class/Lab Stations	375	10%	38	19		
TOTAL	396		39	19.5	22	-4.5

Cowgill Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	58	5% PO	2	1		
Class/Lab Stations	782	10%	78	39		
TOTAL	840		80	40	22	-18

District 18 Totals: Required Loops: 86 / Existing Loops: 113 / Shortage: 8

DISTRICT 20

Derring Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	274	5% PO	10	5		
Class/Lab Stations	1010	10%	101	50.5		
TOTAL	1284		111	55.5	34	-21.5

Hahn Hall North Wing Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	7	5% PO	1	1		
Class/Lab Stations	1040	10%	104	52		
TOTAL	1047		105	53	26	-27

Robeson Hall & Hahn Hall South Wing Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	254	5% PO	10	5		
Class/Lab Stations	619	10%	62	31		
TOTAL	873		72	36	17	-19

Pamplin Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	390	5% PO	15	7.5		
Class/Lab Stations	1118	10%	112	56		
TOTAL	1508		127	63.5	46	-17.5

District 20 Totals: Required Loops: 208 / Existing Loops: 123 / Shortage: 85

DISTRICT 21

Williams Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	79	5% PO	3	1.5		
Class/Lab Stations	314	10%	31	15.5		
TOTAL	393		34	17	43	+26

Davidson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	901	10%	90	45	20	-25

District 21 Totals: Required Loops: 62 / Existing Loops: 63 / Excess: 1

South Drillfield Zone

DISTRICT 23

Eggleston Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	424	20%	85	42.5		
Office Stations	62	5% PO	2	1		
Class/Lab Stations	75	10%	8	4		
TOTAL	561		95	47.5	64	+16.5

Owens Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	114	5% PO	4	2		
Dinning Seats	700	10%	70	35		
TOTAL	814		74	37	18	-19

District 23 Totals: Required Loops: 84.5 / Existing Loops: 82 / Shortage: 2.5

DISTRICT 24

Vawter Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	336	20%	67	33.5	31	-2.5

Newman Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	280	20%	56	28	27	-1

Barringer Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	228	20%	46	23	27	+4

Miles Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	230	20%	46	23	14	-9

Johnson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	186	20%	37	18.5	17	-1.5

District 24 Totals: Required Loops: 126 / Existing Loops: 111 / Shortage: 10

DISTRICT 25

War Memorial Gym Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	120	5% PO	5	2.5		
Class/Lab Stations	335	10%	34	17		
Daily Attendance	779	10%	78	39		
TOTAL	1,234		117	58.5	20	-38.5

District 25 Totals: Required Loops: 19.5 / Existing Loops: 20 / Shortage: 38.5

DISTRICT 26

Payne Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	294	20%	59	29.5	22	-7.5

New Resident Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	246	20%	49	24.5	29	+4.5

Peddrew-Yates Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	247	20%	49	24.5	33	+8.5

Pritchard Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	1,060	20%	212	106	81	-25

O'Shaughnessy Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	359	20%	72	36	-	-

Please note that O'Shaughnessy Hall was under renovation at the time of this report.

Lee Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	850	20%	170	85	75	-10

District Totals: Required Loops: 305.5 / Existing Loops: 248 / Shortage: -29.5

O'Shaughnessy 36 loops estimated need

DISTRICT 27

Campbell Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	322	20%	64	32	18	-14

Slusher Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	668	20%	134	67	43	-24

District Totals: Required Loops: 99 / Existing Loops: 61 / Shortage: 38

DISTRICT 28

Dietrick Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	20	5% PO	1	0.5		
Dining Seats	1,381	10%	138	69		
TOTAL	1,401		139	69.5	45	-24.5

District Totals: Required Loops: 69.5 / Existing Loops: 25 / Shortage: 24.5

DISTRICT 29

Ambler-Johnson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	1,255	20%	251	125.5	102	-23.5

Cochrane Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	428	20%	86	43		
Dinning Seats	425	10%	43	21.5		
TOTAL	853		129	64.5	43	-21.5

District Totals: Required Loops: 190 / Existing Loops: 129 / Shortage: 45

DISTRICT 30

Price Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	252	10%	25	12.5		
Office Stations	181	5%PO	7	3.5		
TOTAL	433		32	16	7	-9

Sandy Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	60	10%	6	5		
Office Stations	39	5%PO	1	0.5		
TOTAL	99		7	5.5	-	-

Please note that Sandy Hall was under renovation at the time of this report.

Hutcheson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	391	10%	39	19.5		
Office Stations	229	5%PO	9	4.5		
TOTAL	620		48	24	11	-13

Smyth Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	424	10%	42	21		
Office Stations	162	5%PO	6	3		
TOTAL	586		48	24	24	0

Seitz Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	398	10%	40	20		
Office Stations	81	5%PO	3	1.5		
TOTAL	472		43	21.5	15	-6.5

Agnew Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	28	5%PO	1	0.5	0	-0.5

Saunders Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	321	10%	32	16		
Office Stations	51	5%PO	2	1		
TOTAL	372		34	17	5	-12

District 30 Totals: Required Loops: 108.5 / Existing Loops: 74 / Shortage: 34.5

DISTRICT 31

Fralin Biotechnology Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	284	10%	28	14		
Office Stations	23	5%PO	1	0.5		
TOTAL	307		29	14.5	7	-7.5

Latham Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	43	5%PO	2	1	0	-1

Cheatham Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	451	10%	45	22.5		
Office Stations	290	5%PO	11	5.5		
TOTAL	741		56	28	35	+7

Engel Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	385	10%	39	19.5		
Office Stations	27	5%PO	1	0.5		
TOTAL	412		40	20	14	-6

District 31 Totals: Required Loops: 63.5 / Existing Loops: 56 / Shortage: 7.5

DISTRICT 32

Harper Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	276	20%	55	27.5	27	-0.5

Student Services Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	147	5% PO	6	3	32	+29

New Hall West Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	419	20%	84	42		
Office Stations	78	5%PO	29	14.5		
TOTAL	497		113	56.5	20	-36.5

Smith Career Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	141	5% PO	5	2.5	14	+11.5

District Totals: Required Loops: 89.5 / Existing Loops: 93 / Excess: 3.5

West Campus Zone

DISTRICT 33

Inn at Virginia Tech & Skelton Conference Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	52	5%PO	2	1	12	+11

District Totals: Required Loops: 1 / Existing Loops: 12 / Excess: 11

Visitor & Undergraduate Admissions Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	35	5%PO	2	1	9	+8

District Totals: Required Loops: 2 / Existing Loops: 21 / Excess: 19

DISTRICT 34

Oak Lane Building A. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	7	+3

Oak Lane Building B. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	7	+3

Oak Lane Building C. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	7	+3

Oak Lane Building D. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	7	+3

Oak Lane Building E. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	0	-4

Oak Lane Building F. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	0	-4

Oak Lane Building G. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	7	+3

Oak Lane Building H. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	0	-4

Oak Lane Building I. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	0	-4

Oak Lane Building J. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	0	-4

Oak Lane Building K.L. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	64	20%	13	7	16	+9

Oak Lane Building M.N. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	64	20%	13	7	16	+9

Oak Lane Building O.P. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	64	20%	13	7	16	+9

Oak Lane Building Q.R. Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	64	20%	13	7	16	+9

Sigma Phi Epsilon Fraternity Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	36	20%	7	4	5	+1

District Totals: Required Loops: 72 / Existing Loops: 100 / Excess: 28

DISTRICT 35

Wright House Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	8	5% PO	1	0.5		
Class Stations	25	10%	3	1.5		
TOTAL	33		2	2	4	+2

District Totals: Required Loops: 2 / Existing Loops: 4 / Excess: 2

DISTRICT 37

HABB1 (Human and Agricultural Biosciences Building 1) Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	114	5%PO	5	2.5	21	+18.5

District Totals: Required Loops: 2.5 / Excess: 18.5

DISTRICT 39

Wallace Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	757	10%	76	38		
Office Stations	137	5%PO	5	2.5		
TOTAL	894		81	40.5	8	-32.5

Hilcrest Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	112	20%	22	11		
Class Stations	106	10%	11	5.5		
Office Stations	39	5%PO	1	0.5		
TOTAL	257		34	17	10	-7

Institute for Society, Culture and Environment Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	14	10%	1	0.5		
Office Stations	4	5%PO	1	0.5		
TOTAL	18		2	1	0	-1

District Totals: Required Loops: 58.5 / Existing Loops: 18 / Shortage: 40.5

DISTRICT 40

ICTAS II Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	62	5%PO	2	1	10	+9

Steger Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	230	5%PO	9	4.5	10	+5.5

District Totals: Required Loops: 5.5 / Existing Loops: 20 / Excess: 14.5

DISTRICT 41

Litton-Reaves Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	1,076	10%	108	54		
Office Stations	158	5%PO	6	3		
TOTAL	1,234		114	57	30	-27

Life Sciences I Facility Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	40	10%	4	2		
Office Stations	27	5%PO	1	0.5		
TOTAL	67		5	2.5	4	+1.5

District Totals: Required Loops: 59.5 / Existing Loops: 34 / Shortage: 25.5

DISTRICT 42

Vet-Med Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	651	10%	65	32.5		
Office Stations	210	5%PO	8	4		
TOTAL	861		73	36.5	43	+6.5

District Totals: Required Loops: 36.5 / Existing Loops: 43 / Excess: 6.5

DISTRICT 43

Food Science & Technology Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	144	10%	14	7		
Office Stations	38	5%PO	1	0.5		
TOTAL	182		15	7.5	4	-3.5

Greenhouses Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	60	10%	6	3	4	+1

District Totals: Required Loops: 10.5 / Existing Loops: 8 / Shortage: 3.5

Athletic Zone

DISTRICT 44

McComas Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	90	10%	9	4.5		
Office Stations	75	5%PO	3	1.5		
Daily Attendance	2,645	10%	265	132.5		
TOTAL	2,810		277	138.5	43	-95.5

District Totals: Required Loops: 138.5 / Existing Loops: 43 / Shortage: 95.5

DISTRICT 45

Cassell Coliseum Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	93	5%PO	3	1.5	0	-1.5

Merryman Athletic Facility Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	18	5%PO	1	0.5	15	+14.5

Hahn-Hurst Basketball Facility Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	17	5%PO	1	0.5	5	+4.5

417 Clay Street Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	70	10%	7	3.5		
Office Stations	10	5%PO	1	0.5		
TOTAL	80		8	4	7	+3

District Totals: Required Loops: 6.5 / Existing Loops: 27 / Excess: 20.5

DISTRICT 47

Lane Stadium Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	100	10%	10	5		
Office Stations	32	5%PO	1	0.5		
TOTAL	132		11	5.5	8	+2.5

District Totals: Required Loops: 5.5 / Existing Loops: 8 / Excess: 2.5

DISTRICT 48

Southgate Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	240	5%PO	9	4.5	5	+0.5

Sterrett Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	135	5%PO	5	2.5	0	-2.5

Grounds Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	30	5%PO	1	0.5	0	-0.5

District Totals: Required Loops: 7.5 / Existing Loops: 5 / Shortage: 2.5

DISTRICT 49

Parking Services Office Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	19	5%PO	1	1	4	+3

Environmental, Health & Safety Building Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	29	5%PO	1	1	3	+2

Indoor Tennis Courts Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	5	5%PO	1	1	3	+2

District Totals: Required Loops: 3 / Existing Loops: 10 / Excess: 7

2018 UPDATED LANGUAGE

RESIDENTIAL BUILDING STATION DATA for COVERED BICYCLE PARKING

The following districts require long-term bicycle parking for the residential buildings located within the districts. The university currently follows the LEED standard for covered bicycle parking near residential halls. As residential buildings are remodeled or newly constructed or when funding is available, covered bicycle parking should be provided for 15% of peak occupants.

District 5: Monteith Hall
District 7: Brodie Hall, Rasche Hall
District 10: Graduate Life Center
District 23: Eggleston Hall
District 24: Vawter Hall, Newman Hall, Barringer Hall, Johnson Hall, Miles Hall
District 26: Payne Hall, New Resident Hall, Peddrew-Yates Hall, Pritchard Hall, O'Shaughnessy Hall, Lee Hall
District 27: Campbell Hall, Slusher Hall
District 29: Ambler-Johnson Hall, Cochrane Hall
District 32: Harper Hall, New Hall West
District 34: Oak Lane Buildings: A, B, C, D, E, F, G, H, I, J, KL, MN, OP, QR, Sigma Phi Epsilon
District 39: Hillcrest Hall

STATION DATA

DISTRICT 7

Pearson Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	548	30%	164	82	0	-82

New Cadet Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	539	30%	162	81	0	-81

District Totals: Required Loops: 163 / Existing Loops: 0 / Shortage: -163

DISTRICT 10

Graduate Life Center Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	218	30%	66	33	10	-23

District Totals: Required Loops: 33 / Existing Loops: 10 / Shortage: -23

DISTRICT 26

Payne Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	294	30%	88	44	0	-44

New Resident Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	246	30%	74	37	0	-37

Peddrew-Yates Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	247	30%	74	37	0	-37

Pritchard Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	1,060	30%	318	159	0	-159

O'Shaughnessy Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	359	30%	108	54	0	-54

Lee Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	850	30%	255	128	0	-128

District Totals: Required Loops: 448 / Existing Loops: 0 / Shortage: -448

DISTRICT 27

Campbell Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	322	30%	96	48	11	-37

Slusher Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	668	30%	200	100	0	-100

District Totals: Required Loops: 148 / Existing Loops: 11 / Shortage: -137

DISTRICT 29

Ambler-Johnson Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	1,255	30%	376	188	42	-146

Cochrane Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	428	30%	128	64	14	-50

District Totals: Required Loops: 252 / Existing Loops: 56 / Shortage: -196

DISTRICT 32

Harper Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	276	30%	82	42	6	-36

New Hall West Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	419	30%	126	64	0	-64

District Totals: Required Loops: 106 / Existing Loops: 0 / Shortage: -106

DISTRICT 34

Oak Lane Building A. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building B. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building C. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building D. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building E. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building F. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building G. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building H. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building I. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building J. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

Oak Lane Building K.L. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	64	30%	19	10	0	-10

Oak Lane Building M.N. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	64	30%	19	10	0	-10

Oak Lane Building O.P. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	64	30%	19	10	0	-10

Oak Lane Building Q.R. Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	64	30%	19	10	0	-10

Oak Lane Building: Sigma Phi Epsilon Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	36	30%	10	5	0	-5

District Totals: Required Loops: 106 / Existing Loops: 0 / Shortage: -106

DISTRICT39

Hillcrest Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	112	30%	34	18	0	-18

District Totals: Required Loops: 9 / Existing Loops: 0 / Shortage: -18

DISTRICT 23

Eggleston Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	424	30%	128	64	10	-54

District Totals: Required Loops: 64 / Existing Loops: 10 / Shortage: -54

DISTRICT 24

Vawter Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	336	30%	100	50	12	-38

Newman Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	280	30%	84	42	0	-42

Barringer Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	228	30%	68	34	12	-22

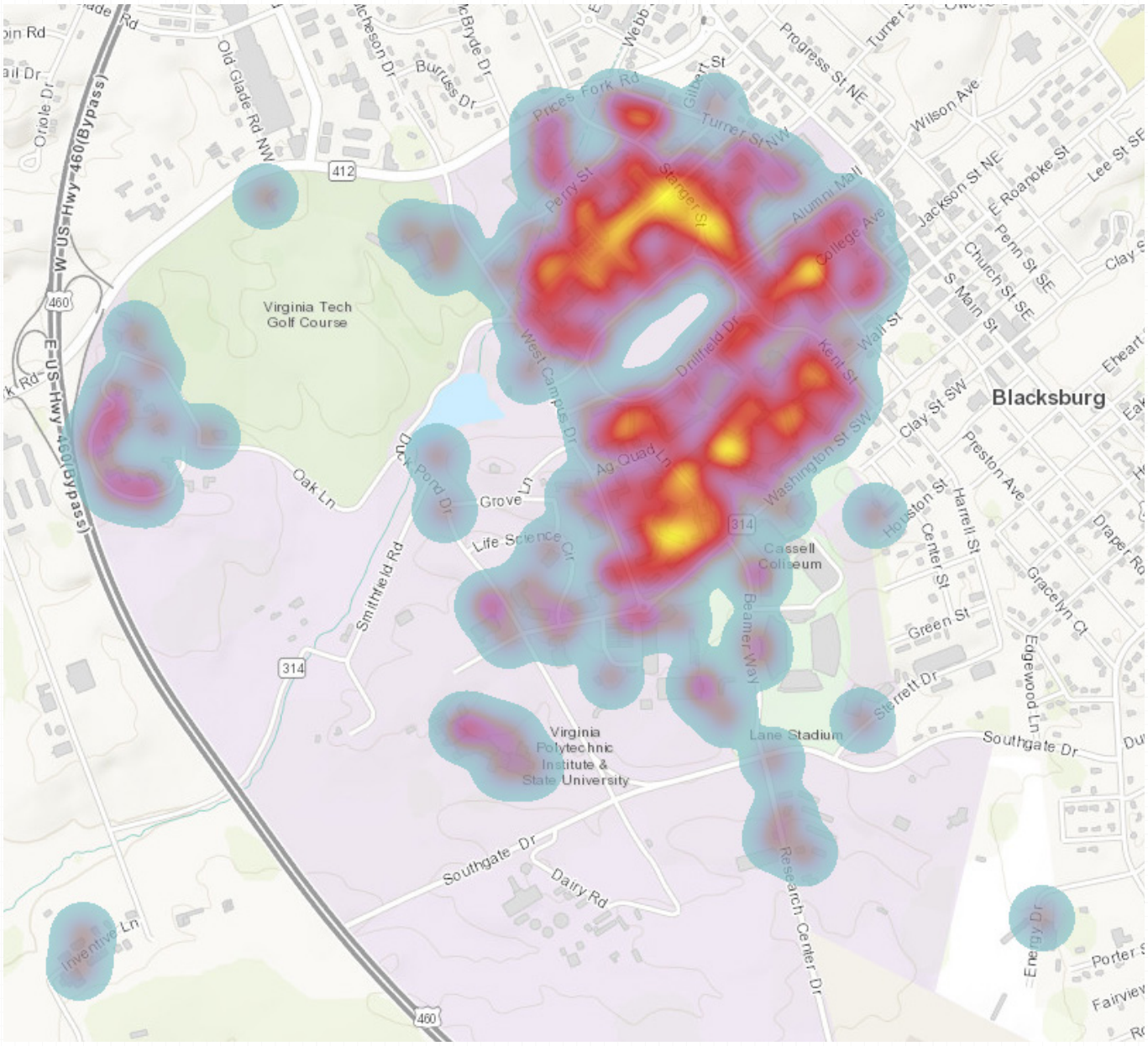
Miles Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	230	30%	69	34.5	0	-34.5

Johnson Hall Bicycle Parking:

USER GROUP	#PERSONS	%SHELTERED BICYCLES	#BICYCLES	#REQUIRED SHELTERED LOOPS	#EXISTING SHELTERED LOOPS	DIFFERENTIAL
Residential Stations	186	30%	56	28	0	-28

District Totals: Required Loops: 190 / Existing Loops: 27 / Shortage: -163



2018 UPDATE

Site Conceptual Design Work Locations

Heat map of the current bike loop locations. This gives a sense of how dense the racks are located and perhaps where to direct maintenance or new installation.

Design List:

Further Detail for Priority Locations:
These are specific improvements that could be taken at each location while taking into account the perceived usage at each site.

District 5:
The proposed Turner Park should have 10 loops along the face of Shanks.

District 7:
Please note that while the loops are at a 39.5 deficit, there are many racks open in the upper quad as whole.

District 10:
Newman Library is at +28, do not remove any as it has high peak usage. Currently in the works is a new Squires hub and GLC hub in design.

District 13:
There are many new buildings planned in this area and needs a new comprehensive bike plan for future work.

District 15:
Lavery has space for a 5 loop rack but this in not of a high priority. If possible more loops should be added to the south entry after Holden Hall renovations.

District 16:
There is need for a new hub at McBryde Hall (needs 85 loops), but with construction at Holden (needs 30 additional ones) wait and see the outcome for a combined hub.

District 17:
Another 10 rack would be recommended, but with proximity to MMTF it is recommended to wait for new designs.

District 18:
There should be another rack in the front of Cowgill. All racks are filled, recommend at least 8 loops.

District 20:
85 loops are needed, however a usage study is needed as the site is anecdotally considered underused. Work is also needed to discourage the cow paths diagonally across the quad.

District 23:
At Owens four-5 loop racks were removed. It is recommended to put back a minimum of 10 loops to old location at the Owens corner. It is now at a 18 loop deficit with bikes chained to Hokie Lights.

District 25:
War Gym is short 38.5 loops. It is recommended to do work in coordination with Drillfield improvements and building renovations.

District 26:
A large hub is planned at Lee Hall in relation to a future fitness park in the quad.

District 28:
Racks are recommended as a part of the new Dietrick Hall and Dietrick lawn renovations.

District 31:
It is recommended to add 7-10 loops between Fralin and Engel on existing concrete. There is also covered loop opportunities between Cheatham and Latham Halls (10 loops).

District 37:
A new mini-master site plan for build out of the cage lot and parking garage is recommended. There is a minimum of 4 loops required per building. Hubs are recommended at garages and student centers.

2018 UPDATE

District 5: Turner Park Proposal

The proposed Turner Park should have 10 loops along the face of Shanks.

Design Specifics

This proposal is based on the work of Bob Massengale and developed jointly. The placement of the loops allows for updates with the design intent while allowing for consistent placement of the loops adjacent to Shanks Hall. The site will go through future iterations, with the bike loops in a consistent locations along the facade of Shanks Hall.

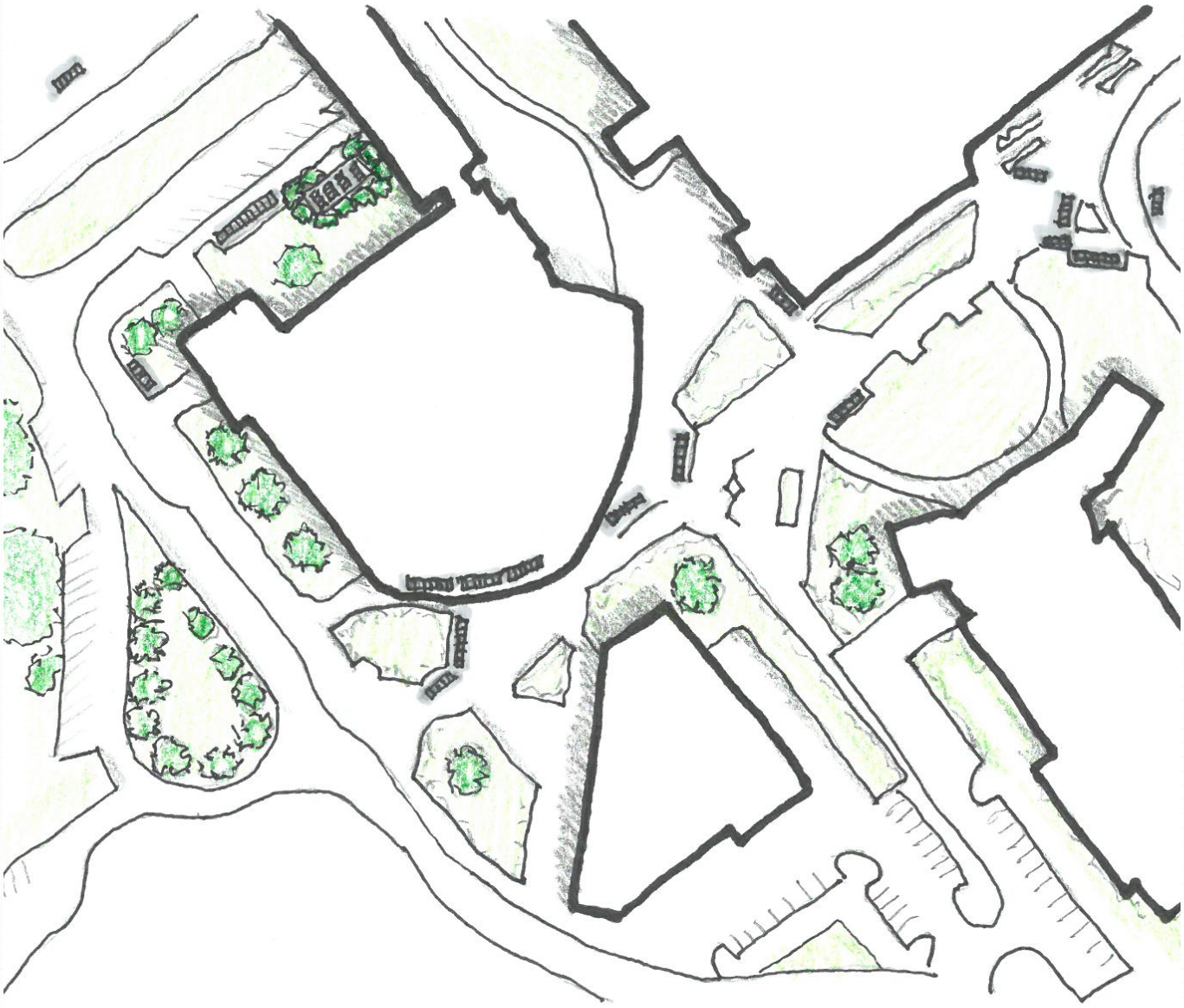
2018 UPDATE

District 7: Upper Quad Design

Please note that while the loops are at a 39.5 deficit, there are many racks open in the upper quad as whole.

Design Specifics

Due to the nature of the Upper Quad, bikes are not used as often, thus having a deficit of this nature is not problematic at this time. Loops could be removed, however loops should be only moved from the outlined locations, up to 10 loops. The drawing above simply identifies which racks could be moved if there were a severe shortage elsewhere.



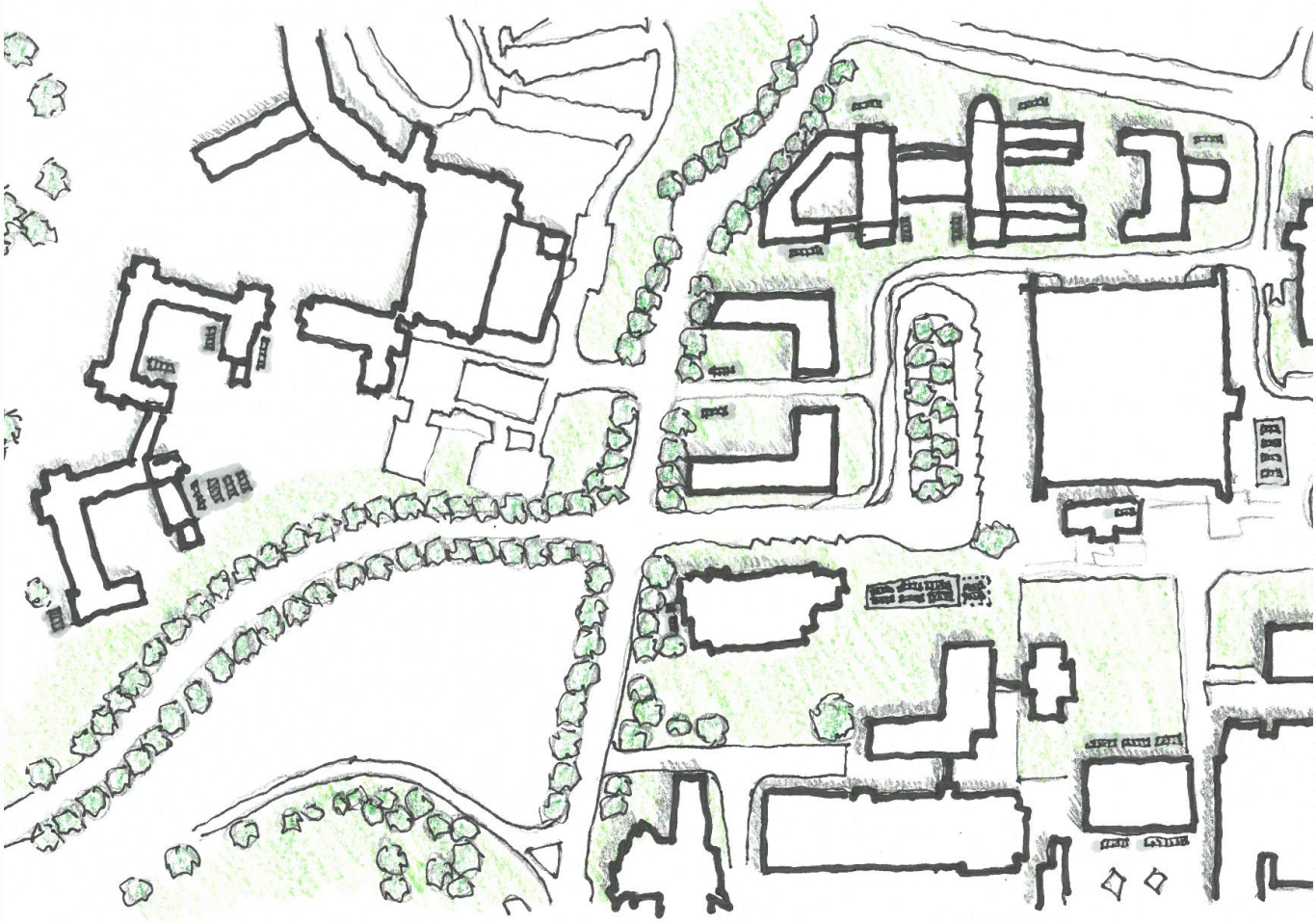
2018 UPDATE

District 10:

Newman Library is at +28, do not remove any as it has high peak usage. Currently in the works is a new Squires hub and GLC hub in design.

Design Specifics

More loops can be added to the south side of the library along the half-height walls between the Library and the Graduate Life Center. There is also the opportunity to add a hub on the north side of the library for future renovations to the Creativity and Innovation District.



2018 UPDATE

District 13:

There are many new buildings planned in this area and needs a new comprehensive bike plan for future work.

Design Specifics

District 13 has much of the short-term building projects. Buildings of this type and scale have 60-80 loops each, which includes the Living Learning Communities. Some capacity is built into the Multi-Modal Transit Facility (MMTF) project, however the bike hub at the New Classroom Building (NCB) will need to be expanded, another hub will need to be built on the east side of the Perry Garage for the other Bus loop of MMTF to meet needs and proximity expectations of ridership. More loops should be installed at the Smart Dining and Hitt Halls, which could be part of the NCB hub. Finally, loops need to be re-installed at Bishop-Favrao Hall.

2018 UPDATE

District 15:

Lavery has space for a 5 loop rack but this in not of a high priority. If possible more loops should be added to the south entry after Holden Hall renovations.

Design Specifics

Lavery is at its expected loop requirements. Review of the space shows that more racks are needed on the south side entry toward McBryde. Loops could be added near Randolph Hall by moving a combination Trash and Recycling can. Further loops would be placed on the north side or installed after the renovation of Holden Hall.

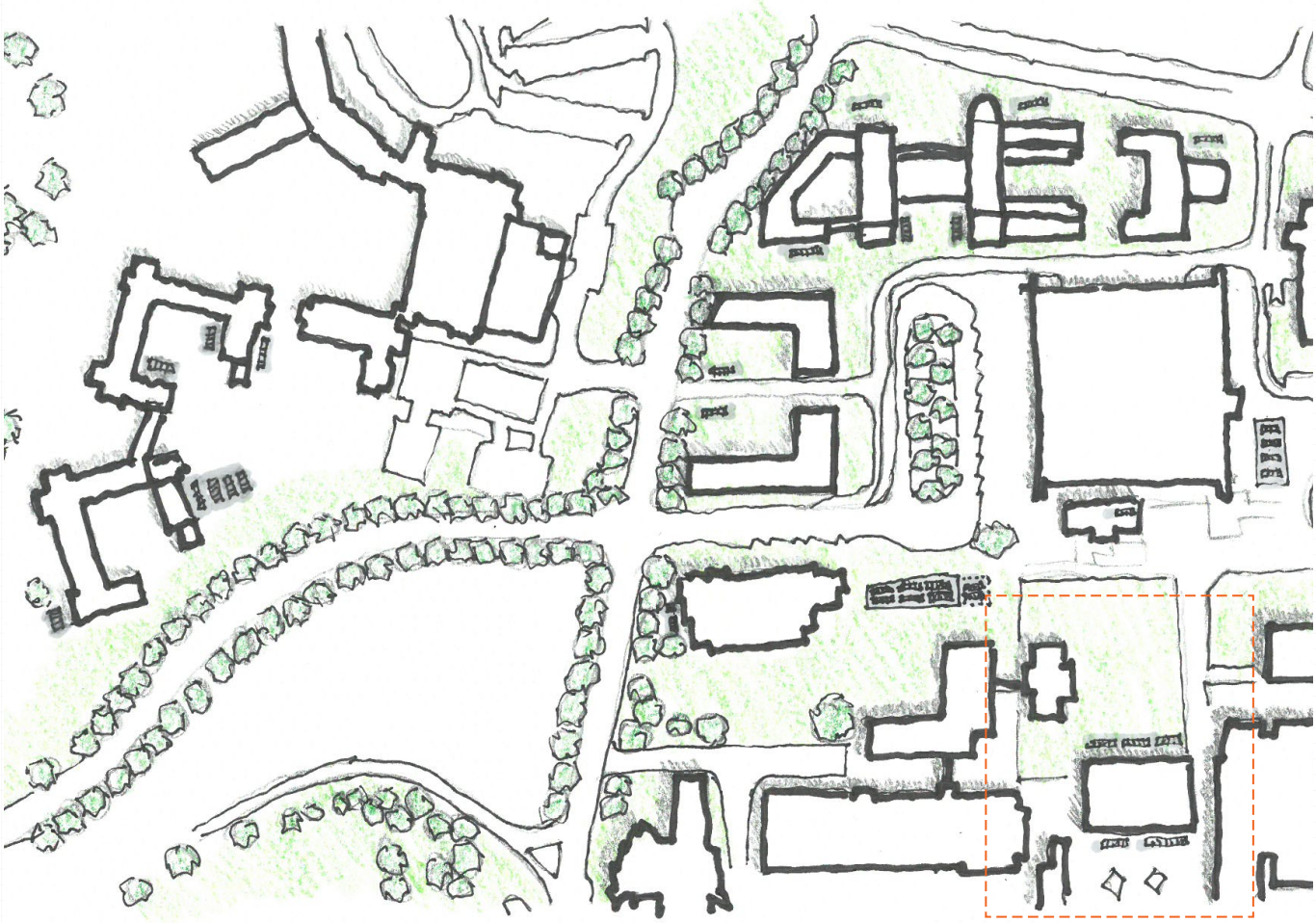
2018 UPDATE

District 16:

There is need for a new hub at McBryde Hall (needs 85 loops), but with construction at Holden (needs 30 additional ones) wait and see the outcome for a combined hub.

Design Specifics

A design would involve a full redesign of the grassed areas in front of McBryde to full integrate into a trailhead design from the Drillfield up the hill to the entry of the main auditorium, McBryde 100. The loops in this area are almost always full. The design here is a placeholder, alternatives could be placed to not remove any existing trees as well.



2018 UPDATE

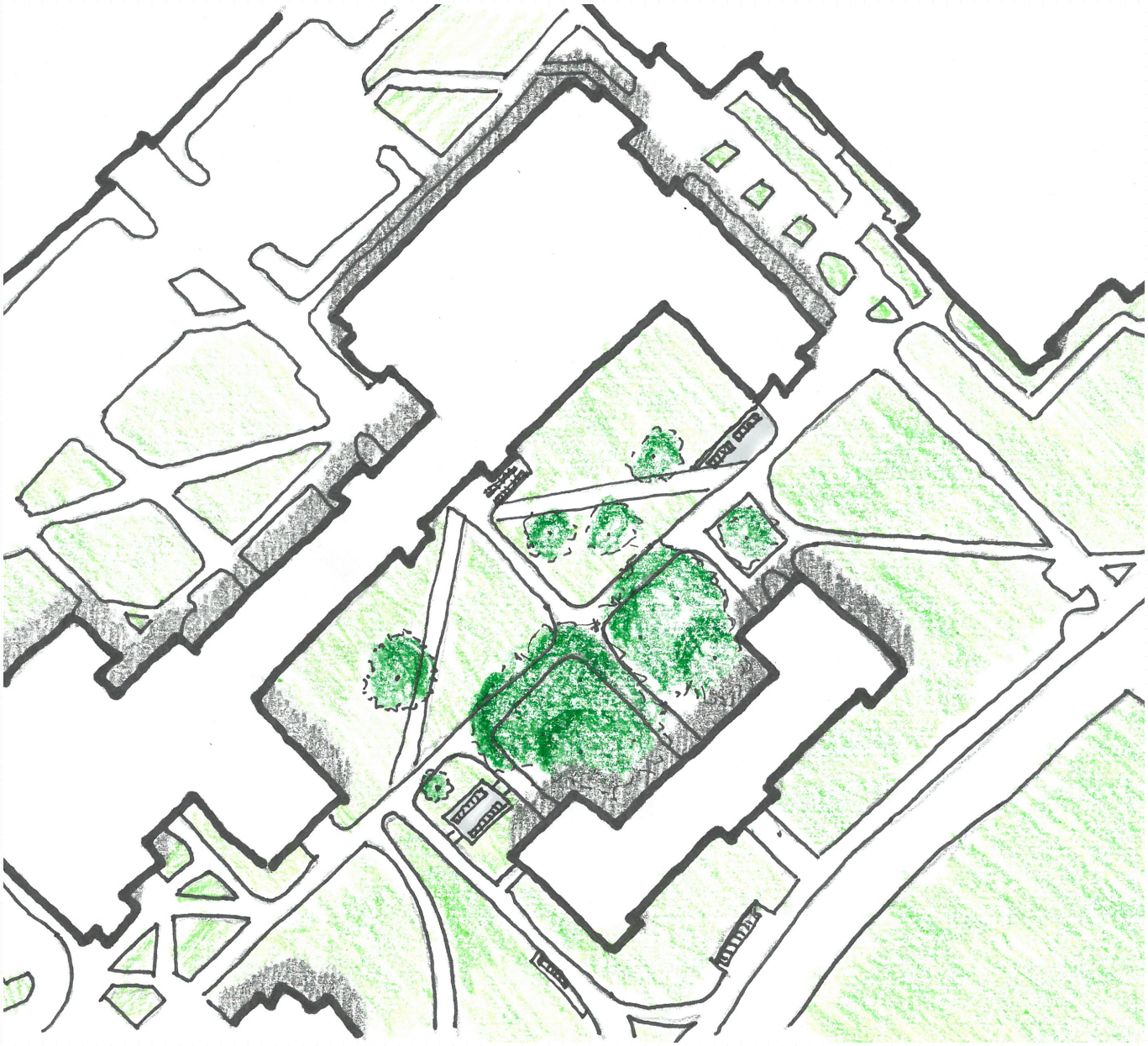
District 17+ 18:

Another 10 rack would be recommended, but with proximity to MMTF wait for designs.

There should be another rack in the front of Cowgill. All racks are filled, recommend at least 8 loops.

Design Specifics

These designs should be done in relation to District 13, especially the racks at Bishop-Favrao due to its proximity to other major projects. This multi-district design shows the relationship between Bishop-Favrao and Cowgill with the Multi-Modal Transit Facility. Much of Cowgill's capacity is on the south side and more loops are needed on the south side on Burchard plaza.



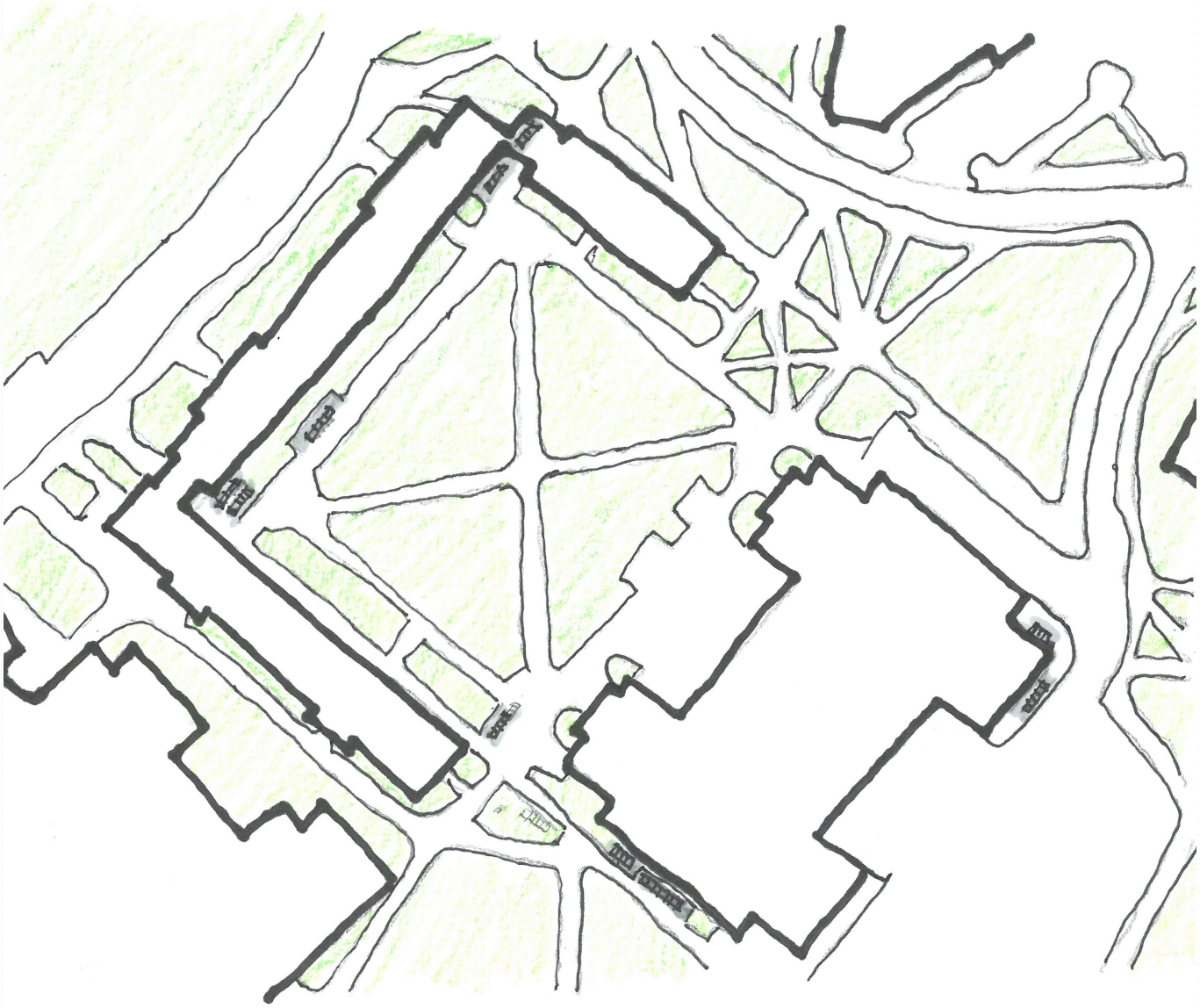
2018 UPDATE

District 20:

85 loops are needed, however a usage study is needed as the site is anecdotally considered underused. Work is also needed to discourage the cow paths diagonally across the quad.

Design Specifics

The density of pedestrians in the quad makes using bikes difficult and commonly used entrances are not near current bike loops. Two locations are proposed: one to the northwest of Williams Hall and another to the northeast of Williams near Pamplin Hall. Other development of the quad suggests paving the current cowpaths that run diagonally to the Pamplin Bridge.



2018 UPDATE

District 23:

At Owens four-5 loop racks were removed. It is recommended to put back a minimum of 10 loops to old location at the Owens corner. It is now at a 18 loop deficit with bikes chained to Hokie Lights.

Design Specifics

New loops should use a distributed model over the four entrances to Owens. First work would be to replace at least 5 of the 20 loops removed from the northwest corner entrance where bikes are now parked to the Hokie Lights. After renovation to Owens more loops ought to be added, totaling for 30 new loops over current numbers.

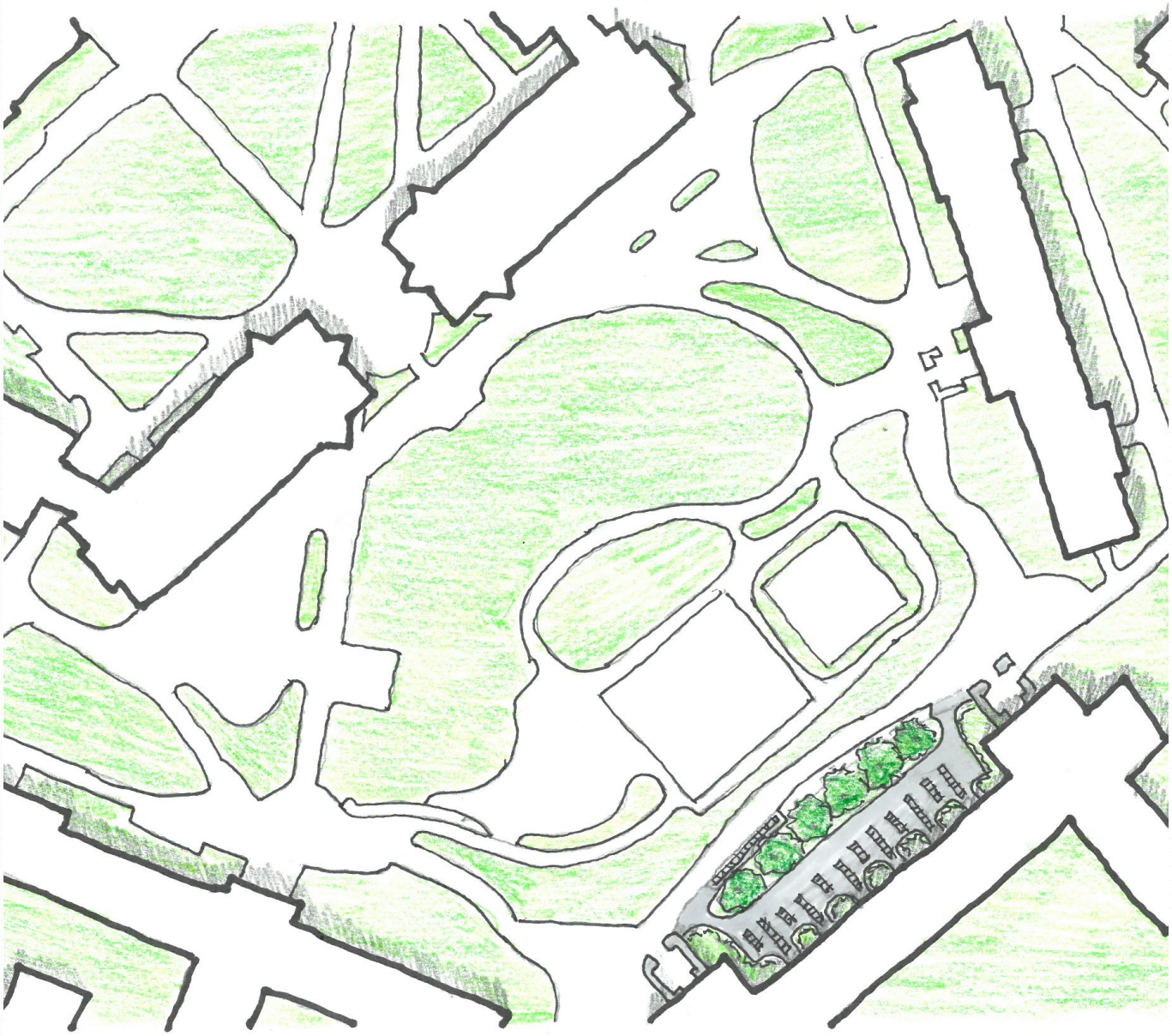
2018 UPDATE

District 25:

War Gym is short 38.5 loops. It is recommended to do work in coordination with Drillfield improvements and current renovation efforts.

Design Specifics

With current renovations to War Memorial Gym, and with review as the design changes, this parking should be added on the south side entrance near Payne Hall as well as screened bike parking along the Drillfield Entrances. All loops removed during renovation should be recovered or new ones installed to add 20 loops to the existing total.



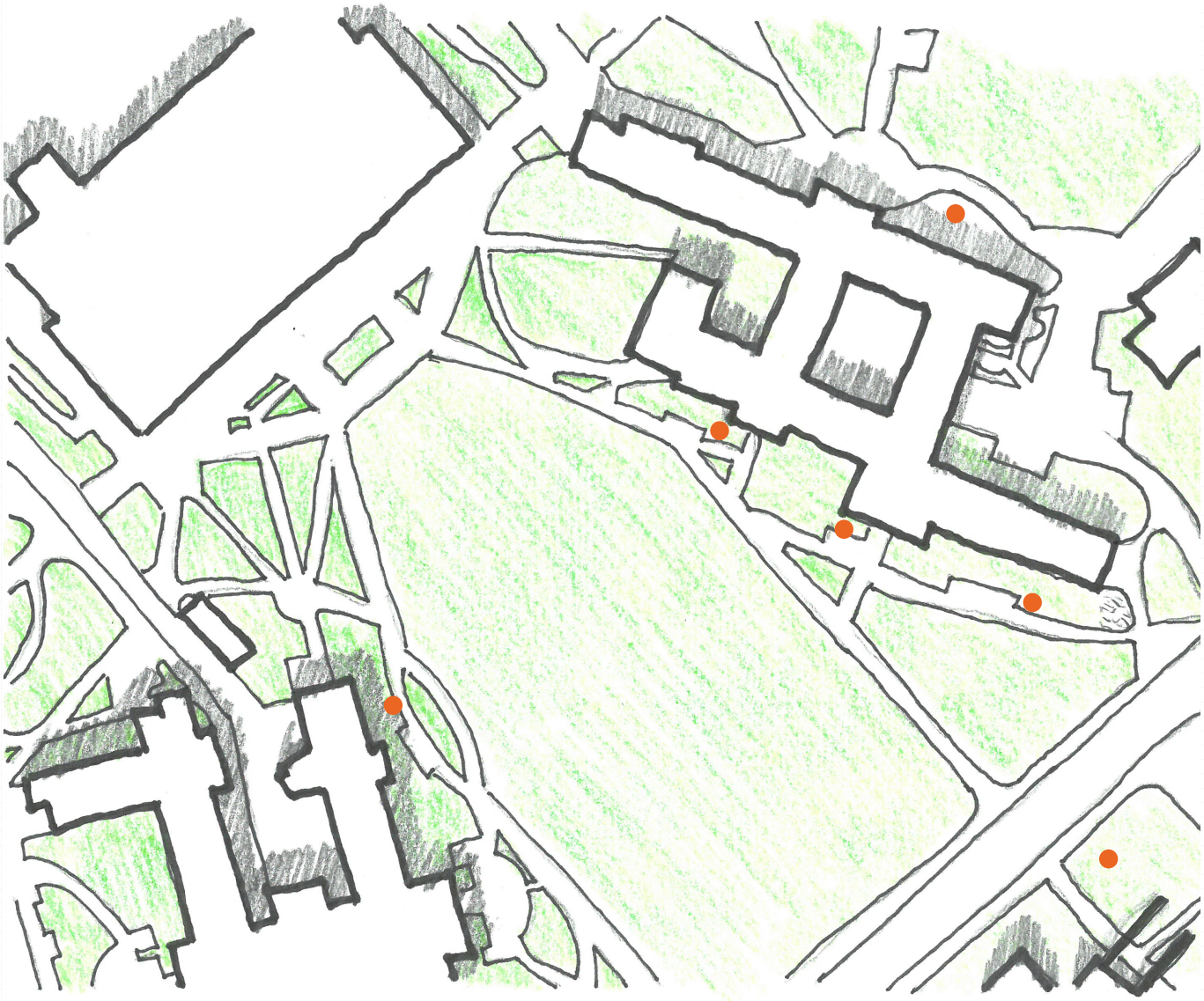
2018 UPDATE

District 26:

A large hub is planned at Lee Hall in relation to a future fitness park in the quad.

Design Specifics

The Lee Hall Hub design is sized for 85 loops. This design takes into account for a possible renovation of the quad as a fitness park and multi-purpose lawn space. The hub takes advantage of an under-utilized space on the north side of Lee Hall, preserving as much of the existing loops as possible. The spacing also allows for racks to be covered in the future .



2018 UPDATE

District 28:

Racks are recommended as a part of the new Dietrick Hall and Dietrick lawn renovations.

Design Specifics

No loops are proposed. A renovation of the front of the lawn and building are currently under development. Existing loops should be salvaged and replaced as necessary, taking into account the new work for the infinite loop and gathering on the lawn. More loops should be added to the Pritchard and Ambler-Johnston sides of the lawn shown with dots.

2018 UPDATE

District 31:

It is recommended to add 7-10 loops between Fralin and Engel on existing concrete. There are also covered loop opportunities between Cheatham and Latham Halls (10 loops).

Design Specifics

At Fralin, the loops should be built out to the west to fill existing concrete. For Cheatham and Latham the loops to the east along the sidewalk should be expanded and screened. Loops could be added beneath the heavy timber portal between Cheatham and Latham. Finally, as triangle racks are replaced they should be put under the Cheatham overhangs.

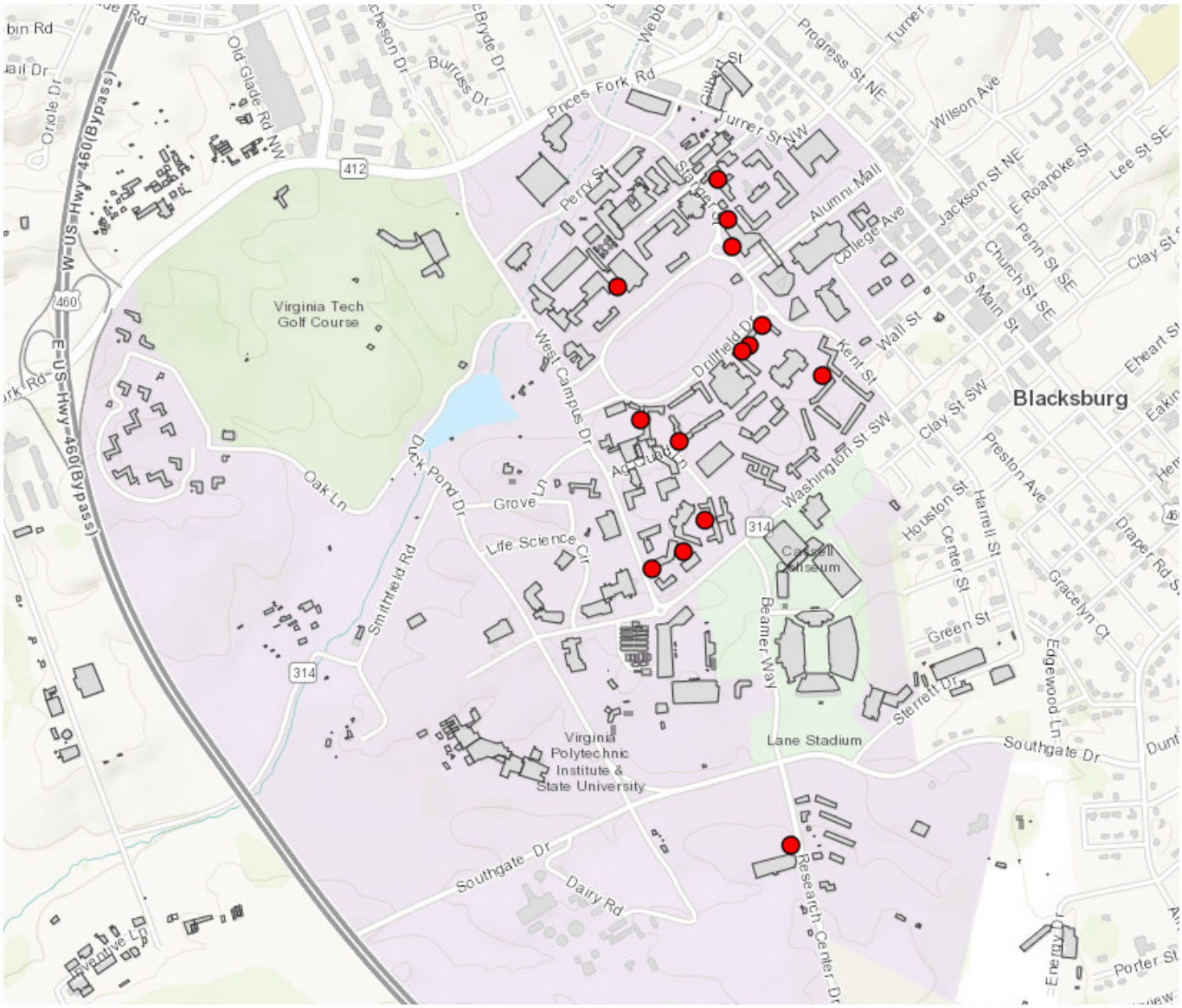
2018 UPDATE

District 37:

A new mini-master site plan for build out of the cage lot and parking garage is recommended. There is a minimum of 4 loops required per building. Hubs are recommended at garages and student centers.

Design Specifics

This is a combination of hub and individual building bike parking design. There are two hubs: 60 loops at the proposed parking garage and 100 loops at the proposed student center. Each building also has 5-8 loops. It is recommended that the paths are done at 5% or less to be an extension of the infinite loop proposed in the 2017 Master Plan.



2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

In 2018, 12% (302) of the total racks were reported to be in poor condition and in need of replacement or repair. This map identifies those locations and later work describes these racks in detail in Appendix 4.

2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

This map shows urgent repair location 1 at the Recreation Sports fields.

Urgent Repair Racks 1

1: These staple racks have 2 of 5 bent down most likely due to a car backing into them. Options are to remove the two racks or remove all and replace with a new inverted-U rack.

2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

This map shows urgent repair locations 2-4 at New Hall West and West Ambler Johnston Hall.

Urgent Repair Racks 2-4

2: Recently replaced 3rack inverted-U. Not an ideal location, otherwise it is functional. No recommended action at this time.

3: One rack is bent on end near the Student Services Building. Two staples removed previously on far end. Recommend removal of single staple.

4: Existing rack appears functional, no recommended action at this time.

2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

This map shows urgent repair locations 5-10 at Hutcheson, Slusher, Eggleston and Newman Halls.

Urgent Repair Racks 5-7

5: Almost all staples are loose, adjacent inverted-U is fine. Recommend cut and repour concrete or replace with new 10 rack inverted-U (2x5 rack).

6: 11 staples at Slusher are in functional repair, most are minimally loose, repair needed in a few years.

7: Half of racks are loose recommend immediate cut and repour concrete or replace with inverted-U rack.

Urgent Repair Racks 8-10

8: One staple is damaged, others are loose. Recommend removal of bent staple and cut and repour concrete on remaining.

9: One staple rack is bent, but functional. One is very loose, recommend cut and repour concrete.

10: All inverted-U racks are functional and in good repair. No action needed.

2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

This map shows urgent repair locations 11-14 at Torgersen, Major Williams and Burruss Halls.

Urgent Repair Racks 1

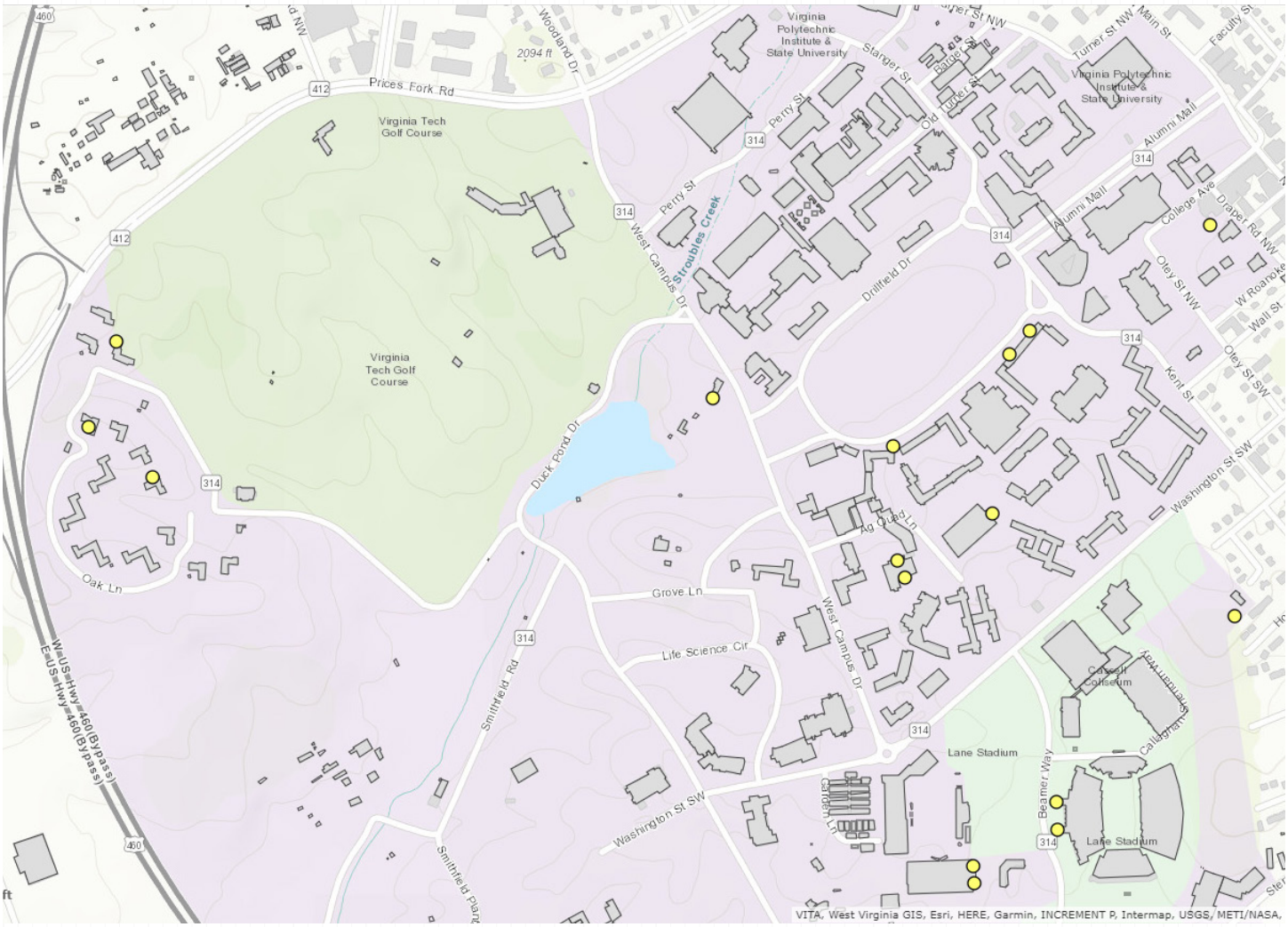
11: Two staple racks are loose, recommend cut and repour concrete.

12: Existing Inverted-U rack was hit by a vehicle and if functional, but recommend replacement with new inverted-U if possible cut to salvage 4 of 5 units.

13: Both sets of 5 staple racks are in good repair. Recommend no action at this time.

Urgent Repair Racks

14: Two of four staples are loose. Recommend cut and repour concrete and remount to vertical.



2018 UPDATE

Rack Maintenance Conditions 2017 - Poor

- <Null>
- Good
- Not Urgent
- Urgent

2018 UPDATE

Rack Maintenance Conditions 2017

In 2018 these racks were listed as in need of non-urgent repair. These locations are recorded, but action will be prioritized on urgent need racks.