



Bicycle Parking Study:
Downtown Blacksburg
October 2014



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I. INTRODUCTION

As noted in the Comprehensive Plan, *Blacksburg 2046*, bicycling is a desired alternative transportation method as well as a desired recreational and fitness activity for many Blacksburg residents. While *Blacksburg 2046* addresses the need for additional bicycle routes through planning, bicycle parking must be addressed for destinations throughout Blacksburg. In particular, the downtown area is a priority for an assessment of bicycle parking as it is adjacent to campus and includes many destinations for cyclists. Recognizing the need for this assessment, Town staff completed an inventory of bicycle parking in the downtown area as well as a review of best practices, issues, and opportunities regarding bicycle parking. In addition to addressing cyclists' needs for more bicycle parking in desired locations, the Town would like to eliminate rogue bicycle parking (where bicycles are locked to street furniture elements such as parking meters, benches, and street lamps) and reduce damage to Town property.

The following study includes sections that address what cyclists desire for bicycle parking, best practices, innovative bicycle parking, an inventory of existing parking, existing issues with bicycle parking, and opportunities and implementation steps to expand bicycle parking.

II. WHAT CYCLISTS WANT

The following assumptions are used in order to assess the existing bicycle parking in the downtown area with regards to conditions that create desirable parking for cyclists:

Rack Element:

1. Bike rack supports frame – two points of contact for stability
2. Spaces of adequate width – roll in bicycles without tangling
3. Accommodates various standard locking devices
4. Simple and durable – no moving parts and will not damage bicycles

Locations of the Rack Elements:

5. Safe and easy access – no conflict points with road users or pedestrians
6. Sufficient surrounding space – allow at least a two-foot clearance on all sides for standard bicycles (see best practices below for additional information on other bicycle types)
7. Visible and convenient – close to entrances as to avoid rogue bicycle parking
8. Securely in view – parking is clearly visible to passers-by and windows for security
9. On a level even surface – bicycles are difficult to park and lock on a sloped surface particularly when carrying additional weight (i.e. bags)
10. Affixed to pavement – for security and for ease of access so the rack does not tilt or wobble
11. Adequately lit – for ease of locking as well as security
12. Covered from weather – plan for covering parked bicycles not simply empty racks

The following four examples show bicycle rack types frequently found in the Downtown. According to the 12 previously identified elements, the post type and the inverted U type are the most desirable types of bicycle racks.

Traditional or Comb Type



Wave or Ribbon Type



Post Type



Inverted U Type



III. BEST PRACTICES

In addition to meeting the above standards, best practices can be used to achieve a higher standard for bicycle parking.

Rack Element



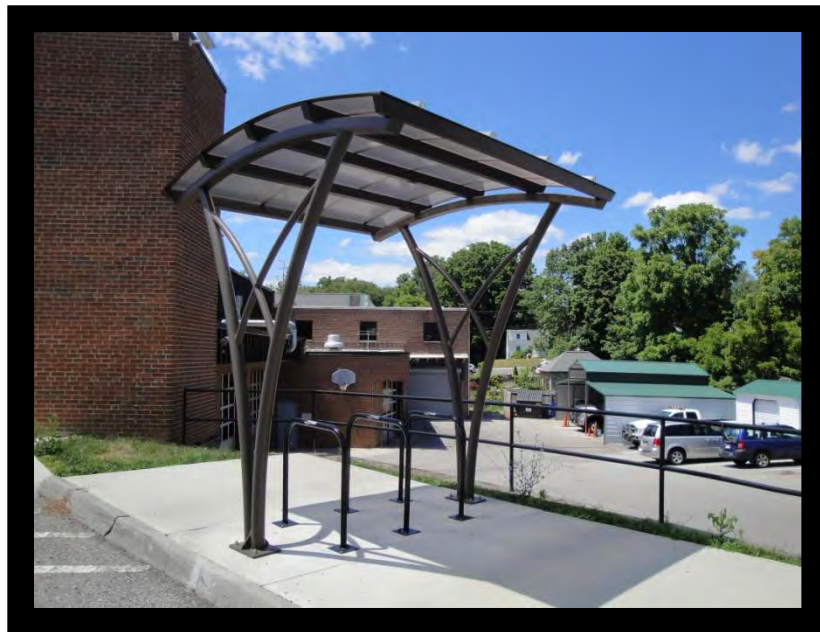
Source: Flickr – raver_mikey

Bicycle lockers as shown above protect bicycles from inclement weather and provide greater security for longer-term parking with additional storage space for helmets or other gear.

The four following examples show variations in covered bicycle parking which protect bicycles from inclement weather for short-term parking.



Source: Flickr – nggalai



Bicycle parking in Town of Blacksburg



Source: Flickr - dennis



Source: Flickr - ladydragonflyherworld

Bicycle racks should accommodate multiple lock types as shown below. Typical bicycle locks allow for a maximum outer diameter of 2 inches for pipe width for the rack element.



Source: Flickr - andikam

Locations of the Rack Elements

The following two examples show on-street bicycle parking which takes advantage of on-street “dead space” utilizing areas outside of the pedestrian and auto travel lanes.



Source: Flickr - 24858199@N00



Source: Flickr - bethness

The next two examples illustrate how vertical bicycle parking can help save space which is vital in the downtown area.

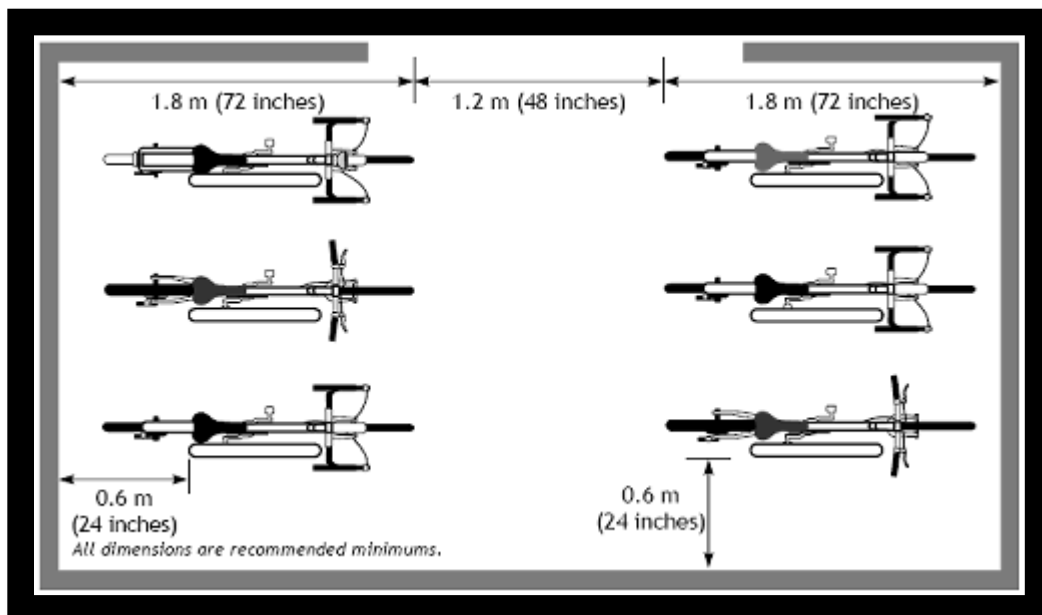


Source: Flickr - nnova



Source: Flickr - kellinahandbasket

The schematic below shows the preferred layout for bicycle parking according to the Association of Pedestrian and Bicycle Professionals as cited by the Federal Highway Administration. In locating bicycle parking, providing adequate space for bicycles of varying size is imperative. The following layout allows for at least 2 feet wide by 6 feet long parking spaces per bicycle and includes space for multiple side-to-side racks spaced at least 2 feet apart.



Source: <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt17.cfm>



Source: Beth Lohman

In addition to accommodating typical bicycles sizes, extra space for unconventional bicycles and bicycles with attachments is effective for areas with high bicycle traffic (i.e. grocery stores). Bicycles with fully loaded panniers (shown above) increase the width of the bicycles while bicycles with tagalongs (shown below) or trailers for children or cargo increase the length of the bicycles. These types of users need additional space which should be considered when orienting and locating the rack elements. Accommodating for this type of bicycle user encourages bicycle use for day-to-day transportation needs.



Source: Beth Lohman

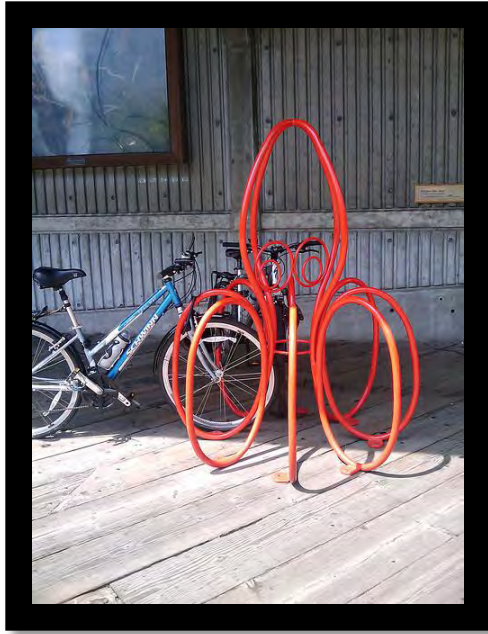
IV. INNOVATIVE BICYCLE PARKING

In addition to best practices, many localities and businesses are creating and installing new innovative forms for bicycle racks and parking. The following photos in this section show examples of innovative bicycle parking. When considering these and other innovative bicycle parking ideas, the Town must carefully consider the previously mentioned 12 elements for functional bicycle parking.

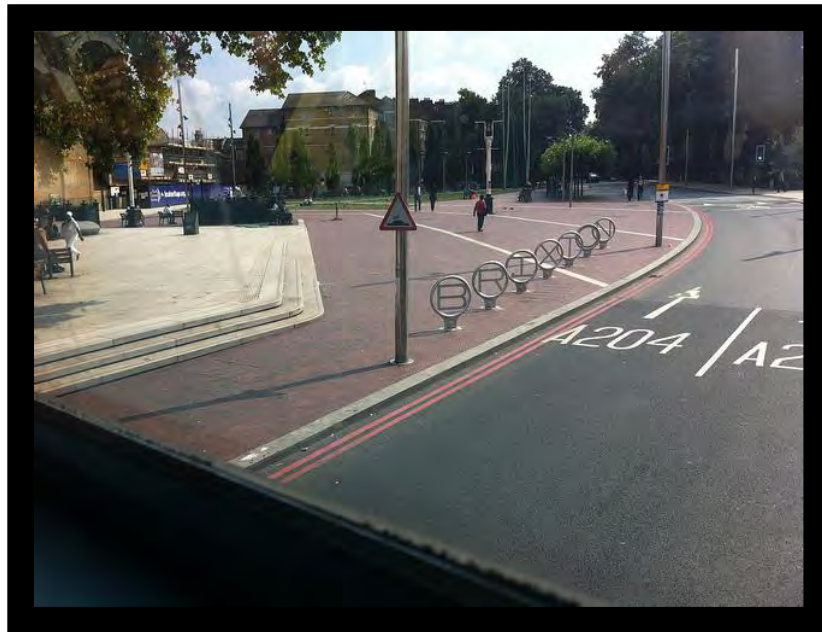
The following four examples of bicycle parking demonstrate the endless potential for bicycle racks as functional public art. In addition to supporting the arts and transportation, innovative bicycle parking can create a unique theme for street furniture and work as an economic development tool to draw attention to nearby destinations.



Source: Flickr - brownpau



Source: Flickr – ikrichter



Source: Flickr - icotns



Source: Flickr – notthe1s

In addition to utilizing on-street “dead space”, the bicycle parking below also protects bicycles and cyclists from on-street traffic. The car outline removes cyclists from the travel lane by requiring cyclists to park bicycles from the pedestrian side. This type of rack element also illustrates the proportionality of bicycle spaces to vehicle spaces. Typically, one vehicle parking space can accommodate 10 parked bicycles.



Source: Flickr - sarahvain

V. INVENTORY

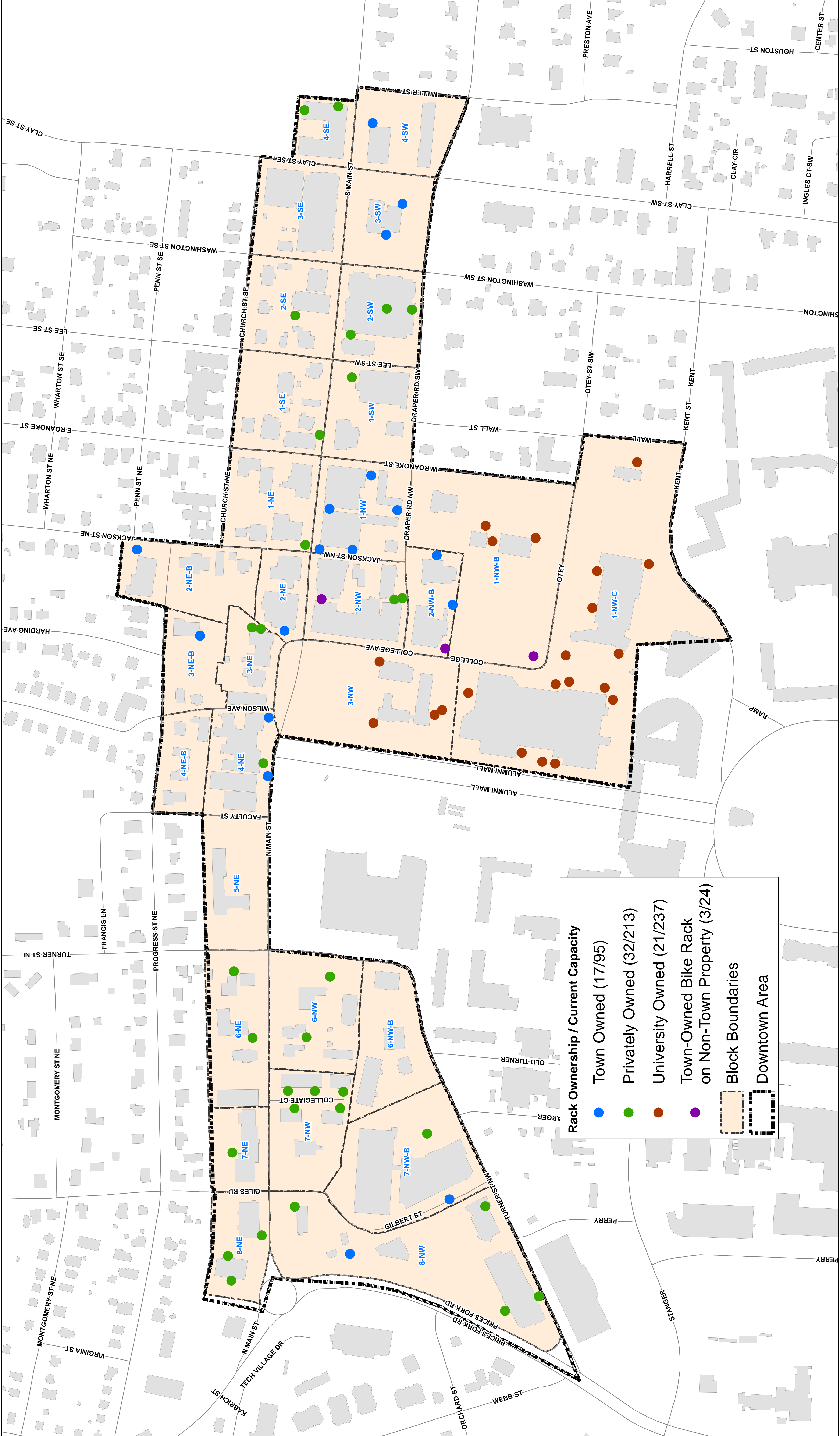
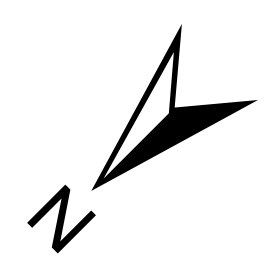
The survey of bicycle racks in the downtown area including the Downtown Commercial Zoning District was conducted June 23-30 with additional photos taken in July, August, and September 2014 as new bicycle racks were installed.

There are 73 bicycle racks located in the downtown area. These 73 racks can accommodate approximately 569 bicycles according to manufacturers' specifications as they are currently installed. Approximately 86 additional bicycles could be accommodated with proper installation. There are four blocks in the downtown area without any bicycle racks.

17 bicycle racks are Town owned and located on Town property accommodating 95 bicycles. 32 bicycle racks are privately owned accommodating 213 bicycles. 21 bicycle racks are owned by Virginia Tech accommodating 237 bicycles. Three bicycle racks are owned by the Town on non-Town property accommodating 24 bicycles.

The following map shows existing bicycle racks and rack capacity in the downtown area. More detailed block by block location maps and photos are attached to this study. A matrix with existing bicycle racks including more detailed location, ownership, type, and capacity follows the map.

Existing Bicycle Racks and Rack Capacity in Downtown



* For a more detailed assessment by block and photos, see Bicycle Parking Study October 2014 Town of Blacksburg, E&G Dept., 10/1/14, No Scale

Existing Bicycle Racks and Rack Capacity in Downtown

| Photo | Location | Town (T), Private (P), University (U), or Town-Owned Bikerack on Non-Town Property (T*) | Property Owner | Type | Total Capacity | Bikes Present when Surveyed | Block | Date |
|-------|---|---|--|-------------|----------------|-----------------------------|--------|--------|
| 1 | Northwest of Post Office | P | United States Post Office | Bollard | 4 | 0 | 1-NE | 25-Jun |
| 2 | Market Square | T | Town of Blacksburg | Wave | 8 | 2 | 1-NW | 25-Jun |
| 3 | Across from Black Hen & Bar Blue | T | Town of Blacksburg | Bollard | 2 | 1 | 1-NW | 25-Jun |
| 4 | Corner of Main and Jackson | T | Town of Blacksburg | Bollard | 4 | 2 | 1-NW | 25-Jun |
| 5 | South of UPS Store | T | Town of Blacksburg | Bollard | 4 | 1 | 1-NW | 25-Jun |
| 6 | East of Farmer's Market | T | Town of Blacksburg | Wave | 5 | 2 | 1-NW | 25-Jun |
| 7 | Arc. Annex (SE) - VT campus | U | Virginia Polytechnic Institute | Inverted U | 10 | 2 | 1-NW-B | 23-Jun |
| 8 | Arc. Annex (east) - VT campus | U | Virginia Polytechnic Institute | Inverted U | 10 | 1 | 1-NW-B | 23-Jun |
| 9 | Arc. Annex (west) - VT campus | U | Virginia Polytechnic Institute | Inverted U | 6 | 0 | 1-NW-B | 23-Jun |
| 11 | Behind University Club - VT campus | U | VPI Bldgs & Land | Inverted U | 5 | 2 | 1-NW-C | 23-Jun |
| 12 | Graduate Life Center (west) - VT campus | U | VPI Bldgs & Land | Inverted U | 20 | 1 | 1-NW-C | 23-Jun |
| 13 | Graduate Life Center (north) - VT campus | U | VPI Bldgs & Land | Inverted U | 6 | 4 | 1-NW-C | 23-Jun |
| 14 | Squires (SW) - VT campus | U | VPI Bldgs & Land | Inverted U | 20 | 5 | 1-NW-C | 23-Jun |
| 15 | Squires (west) - VT campus | U | VPI Bldgs & Land | Inverted U | 10 | 2 | 1-NW-C | 23-Jun |
| 16 | Squires (NW) - VT campus | U | VPI Bldgs & Land | Inverted U | 10 | 8 | 1-NW-C | 23-Jun |
| 17 | Squires (NE) - VT campus | U | VPI Bldgs & Land | Inverted U | 8 | 0 | 1-NW-C | 23-Jun |
| 18 | Squires (east) - VT campus | U | VPI Bldgs & Land | Inverted U | 8 | 1 | 1-NW-C | 23-Jun |
| 19 | Squires (SE) - VT campus | U | VPI Bldgs & Land | Inverted U | 10 | 6 | 1-NW-C | 23-Jun |
| 20 | Squires (south) - VT campus | U | VPI Bldgs & Land | Inverted U | 10 | 2 | 1-NW-C | 23-Jun |
| 20 | Squires Parking Lot (NW) - VT campus | T* | Virginia Polytechnic Institute | Inverted U | 8 | 2 | 1-NW-C | 23-Jun |
| 21 | Graduate Life Center (NE) - VT campus | U | VPI Bldgs & Land | Inverted U | 20 | 5 | 1-NW-C | 23-Jun |
| 22 | Graduate Life Center (SE) - VT campus | U | VPI Bldgs & Land | Inverted U | 10 | 3 | 1-NW-C | 23-Jun |
| 23 | Outside CDAC | P | Town of Blacksburg/Corner Properties LLC | Traditional | 3 | 0 | 1-SE | 25-Jun |
| 24 | Tech Bookstore | P | The Diff Group LLC | Wave | 5 | 2 | 1-SW | 23-Jun |
| 25 | In front of The Cellar | T | Town of Blacksburg | Inverted U | 10 | 4 | 2-NE | 30-Jun |
| 26 | Fire and Rescue Station | T | Town of Blacksburg | Inverted U | 6 | 0 | 2-NE-B | 16-Jul |
| 27 | Next to Bollos | P | The Lester Group | Traditional | 8 | 3 | 2-NW | 25-Jun |
| 28 | Next to Bollos (2) | P | The Lester Group | Traditional | 8 | 0 | 2-NW | 25-Jun |
| 29 | Next to DP Doughs | T* | Downtown Development Co. | Bollard | 4 | 1 | 2-NW | 25-Jun |
| 30 | South of Armory | T | Town of Blacksburg | Inverted U | 2 | 0 | 2-NW-B | 25-Jun |
| 31 | Southwest of Tots | T | Town of Blacksburg | Inverted V | 15 | 0 | 2-NW-B | 25-Jun |
| 32 | Northwest of Tots | T* | Virginia Polytechnic Institute | Inverted U | 12 | 2 | 2-NW-B | 25-Jun |
| 33 | Back of Main Street Inn | P | Main Street Inn Assoc. LLC | Wave | 3 | 1 | 2-SE | 25-Jun |
| 34 | Kent Square Parking Garage Entrance | P | Town Square Parking LLC | Traditional | 7 | 0 | 2-SW | 23-Jun |
| 35 | Between Avail Vapor and Starbucks (alley) | P | Hoge J. Hampton Etal c/o Point West Management Co. | Inverted V | 11 | 0 | 2-SW | 23-Jun |
| 36 | Inside Kent Square Garage | P | Town Square Parking LLC | Wave | 11 | 4 | 2-SW | 23-Jun |
| 37 | The Cellar (SE) | P | Cellar Building LLC c/o Chris N. Kappas | Traditional | 5 | 2 | 3-NE | 30-Jun |
| 38 | The Cellar (SW) | P | Cellar Building LLC c/o Chris N. Kappas | Traditional | 5 | 0 | 3-NE | 30-Jun |

Existing Bicycle Racks and Rack Capacity in Downtown

| Photo | Location | Town (T), Private (P), University (U), or Town-Owned Bikerack on Non-Town Property (T*) | Property Owner | Type | Total Capacity | Bikes Present when Surveyed | Block | Date |
|-------|---------------------------------------|---|---|-------------|----------------|-----------------------------|--------|--------|
| 39 | VT's Play Hard | T | Town of Blacksborg | Traditional | 5 | 0 | 3-NE-B | 30-Jun |
| 40 | Henderson Hall (west) | U | VPI Bldgs & Land | Inverted U | 8 | 2 | 3-NW | 9-Sep |
| 41 | Henderson Hall 2 (west) | U | VPI Bldgs & Land | Inverted U | 18 | 1 | 3-NW | 9-Sep |
| 42 | Henderson Hall 3 (north) | U | VPI Bldgs & Land | Inverted U | 4 | 0 | 3-NW | 9-Sep |
| 43 | Theater 101 | U | VPI Bldgs & Land | Inverted U | 12 | 4 | 3-NW | 9-Sep |
| 44 | Municipal Building (south) | T | Town of Blacksborg | Bollard | 2 | 0 | 3-SW | 23-Jun |
| 45 | Municipal Building (north) | T | Town of Blacksborg | Inverted U | 5 | 0 | 3-SW | 23-Jun |
| 46 | Outside Tabacco Shop | T | Town of Blacksborg | Bollard | 4 | 2 | 4-NE | 30-Jun |
| 47 | Bike Barn | P | Bigfy Real Estate LLC | Traditional | 15 | 1 | 4-NE | 30-Jun |
| 48 | Bike Barn (2) | T | Town of Blacksborg | Bollard | 4 | 2 | 4-NE | 30-Jun |
| 49 | Clay Court 1st Floor Garage (SW) | P | Jackson Square LLC | Traditional | 8 | 6 | 4-SE | 23-Jun |
| 50 | Clay Court 1st Floor Garage (SE) | P | Jackson Square LLC | Traditional | 6 | 0 | 4-SE | 23-Jun |
| 51 | Blacksburg Motor Company | T | Town of Blacksborg | Inverted U | 6 | 0 | 4-SW | 23-Jun |
| 52 | Taco Bell (SW) | P | Tacoma Inc. | Traditional | 5 | 0 | 6-NE | 30-Jun |
| 53 | Shell Station (south) | P | CENX Inc. | Traditional | 9 | 0 | 6-NE | 30-Jun |
| 54 | Union Bank (SW) | P | McDonalds Real Estate Co. c/o Michael K. Grimm | Traditional | 12 | 0 | 6-NW | 30-Jun |
| 55 | Rear of Blacksborg Taphouse | P | Maggard Faulds LLC | Traditional | 3 | 0 | 6-NW | 9-Jul |
| 56 | Back of Tuck Chiropractic | P | Downtown North Associates c/o Bill Ellenbogen | Traditional | 7 | 0 | 7-NE | 30-Jun |
| 57 | Collegiate Court | P | Collegiate Associates LLC | Wave | 3 | 1 | 7-NW | 9-Jul |
| 58 | Collegiate Court (2) | P | Collegiate Associates LLC | Wave | 3 | 1 | 7-NW | 9-Jul |
| 59 | Collegiate Court (3) | P | Collegiate Associates LLC | Wave | 3 | 0 | 7-NW | 9-Jul |
| 60 | Collegiate Court (4) | P | Collegiate Associates LLC | Wave | 3 | 0 | 7-NW | 9-Jul |
| 61 | Collegiate Court (5) | P | Collegiate Associates LLC | Wave | 5 | 0 | 7-NW | 9-Jul |
| 62 | North End Courtyard | P | Turner Street Project LLC | Inverted U | 12 | 0 | 7-NW-B | 30-Jun |
| 63 | Moss Art Gallery | T | Town of Blacksborg | Inverted U | 6 | 0 | 7-NW-B | 30-Jun |
| 64 | Back of Valley Women's Clinic | P | North Main Blacksborg LLC | Traditional | 4 | 0 | 8-NE | 30-Jun |
| 65 | Eats | P | North Main Blacksborg LLC | Traditional | 6 | 0 | 8-NE | 30-Jun |
| 66 | Outside Jiu-Jitsu | P | North Main Plaza LLC | Traditional | 8 | 0 | 8-NE | 30-Jun |
| 67 | Inside Hall of Collegiate Square | P | CS Shopping Center LLC c/o VT Foundation | Traditional | 8 | 0 | 8-NW | 30-Jun |
| 68 | Center for Dance (west) | P | CS Shopping Center LLC c/o VT Foundation | Traditional | 8 | 2 | 8-NW | 30-Jun |
| 69 | Center for Dance (east) | P | CS Shopping Center LLC c/o VT Foundation | Traditional | 7 | 1 | 8-NW | 30-Jun |
| 70 | Odd Fellows Hall (north) | T | Town of Blacksborg | Wave | 7 | 1 | 8-NW | 30-Jun |
| 71 | Wendy's (SE) | P | Boatwright Family LP Etal. c/o Joseph W. Boatwright | Traditional | 8 | 1 | 8-NW | 30-Jun |
| 72 | Squires (NW 2) - VT campus | U | VPI Bldgs & Land | Inverted U | 16 | 11 | 1-NW-C | 9-Sep |
| 73 | Graduate Life Center (NE) - VT campus | U | VPI Bldgs & Land | Inverted U | 16 | 14 | 1-NW-C | 9-Sep |

VI. ISSUES

Placement of bicycle rack elements limits bicycle parking capacity



Bicycle parking in Town of Blacksburg

The bicycle rack element shown above is located too close the fence behind it reducing its capacity.



Bicycle parking in Town of Blacksburg

The bicycle rack element shown above is located too close the wall behind it reducing its capacity. It is not properly secured to the ground and it is not a recommended type of bicycle rack for supporting the frame of a bicycle.



Bicycle parking in Town of Blacksburg

The orientation and location of the bicycle rack element shown above in a planting bed makes it difficult and inconvenient to use as bicycle parking.



Bicycle parking in Town of Blacksburg

The bicycle rack element shown above is oriented so that only one side is functional for bicycle parking.



Bicycle parking in Town of Blacksburg

For the two bicycle rack elements in the example above, the proximity to the sidewalk on the left could create a pedestrian obstruction. Proper bicycle parking using this type of rack uses the post to support the weight of the bicycle. In this instance, proper bicycle parking is perpendicular to the sidewalk creating a sidewalk hazard for pedestrians.

Other issues



Source: Flickr - andikam

The bicycle rack element shown above only supports the wheel of the bicycle which can cause damage to the wheel and is not suitable for secure locking.



Bicycle parking in Town of Blacksburg

Since the bicycle rack element shown above is not affixed to the ground surface, it can move easily and cause damage to bicycles.

Rogue bicycles

As previously mentioned, rogue bicycle parking as shown in the two following photos occurs when bicycles are locked to street furniture such as parking meters, benches, and street lamps or other surfaces not intended for bicycle parking. During the survey week with Virginia Tech in Summer Session, there were 22 rogue bicycles identified. This practice can cause damage to public and private property (including the bicycle) as well as cause a hazard for auto and pedestrian traffic. In addition to prohibiting rogue bicycle parking by ordinance, improving the convenience and safety of legal bicycle parking can diminish this practice.



Rogue bicycle parking in Town of Blacksburg



Rogue bicycle parking in Town of Blacksburg

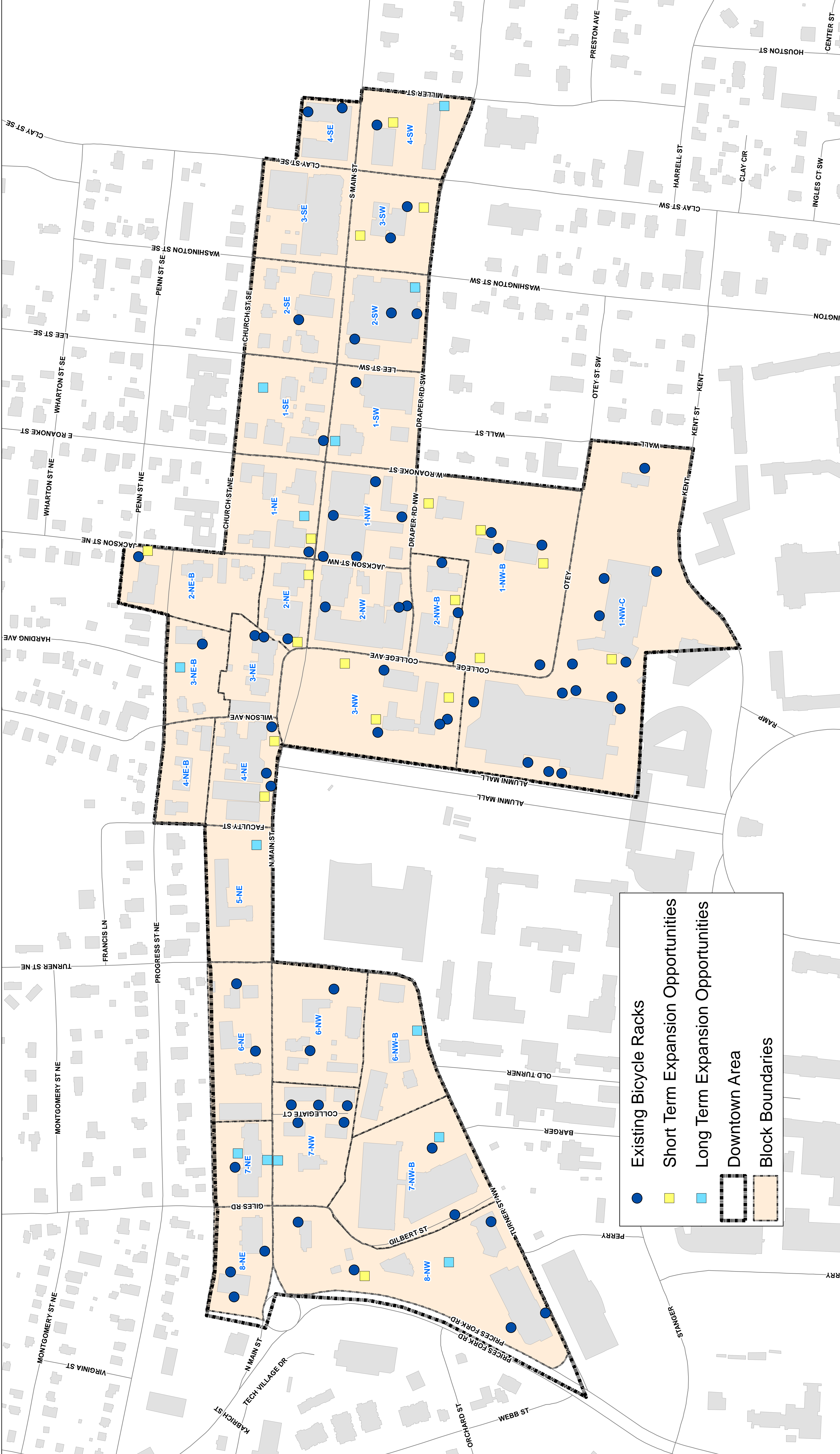
VII. OPPORTUNITIES & IMPLEMENTATION

There are multiple opportunities and implementation steps to expand bicycle parking in the downtown area. As shown throughout the report, improperly installed bicycle rack elements limit bicycle parking. Fixing these racks will allow for approximately 86 additional parking spaces for bicycles with little, if any, additional cost. Installing additional rack elements adjacent to existing parking is another simple method to increase the availability of bicycle parking. When expanding bicycle parking areas, the Town must plan for appropriate spacing and ensure that pedestrian and vehicular routes are not impeded. In addition to installing new rack elements, the Town should also consider replacing inefficient and undesirable rack elements. Since costs for these methods of expansion vary, the Town can implement different options depending upon available funding.

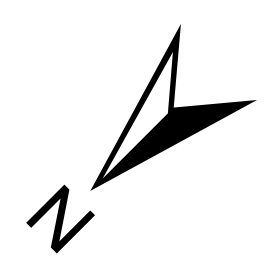
The following map illustrates locations for potential expansion of bicycle parking in the downtown area. A matrix follows the map with more detailed information regarding the potential future locations. Locations were categorized as short term opportunities primarily for two reasons:

1. The need for additional racks was identified by the high concentration of rogue bicycles which indicate a lack of ample and convenient bicycle parking nearby.
2. The areas are located on Town property or adjacent to Town street furniture.

With the inventory of existing bicycle parking, the Town can consider a two-fold strategy: educate the public regarding the locations of parking and amend the Town Code to prohibit rogue bicycle parking. As previously mentioned, rogue bicycle parking can be damaging to existing Town property and may cost more than installing additional bicycle parking. As part of the educational campaign, the Town can promote bicycle travel by supporting the use of bike valet at local events and publicizing information on best practices for bicycle parking.



Existing and Potential Bicycle Rack Locations in Downtown



* For a more detailed assessment by block and photos, see Bicycle Parking Study October 2014
Town of Blacksburg, E&G Dept., 10/1/14, No Scale

Potential Bicycle Rack Locations in Downtown Blacksburg

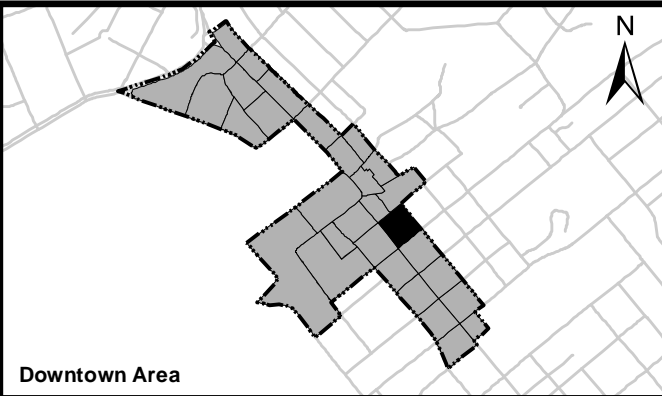
| Photo | Block | Location | Town (T), Private (P), University (U), or Town-Owned Bike Rack on Non-Town Property (T*) | Property Owner | Type | Short Term (S), Long Term (L), or Fix (F) | Notes |
|-------|--------|--|--|---|-------------|---|---|
| 1 | 1-NE | Northwest of Post Office | P | United States Post Office | Bollard | F | Orientation of bollards may create pedestrian obstruction |
| | 1-NE | Northwest of Post Office | P | United States Post Office | | S | |
| | 1-NE | East of Post Office | P | United States Post Office | | L | |
| 5 | 1-NW | South of UPS Store | T | Town of Blacksburg | Bollard | F | Placed too close to wall - should be re-oriented |
| 6 | 1-NW | East of Farmer's Market | T | Town of Blacksburg | Wave | F | Capacity increase to 7 if moved away from railing |
| | 1-NW-B | Arc. Annex (SE) - VT campus | U | Virginia Polytechnic Institute | | S | |
| | 1-NW-B | Arc. Annex (west) - VT campus | U | Virginia Polytechnic Institute | | S | |
| | 1-NW-B | Media Building | U | Virginia Polytechnic Institute | | S | |
| | 1-NW-B | College Avenue (Squires Lot) | U | Virginia Polytechnic Institute | | S | |
| | 1-NW-C | Behind University Club - VT campus | U | VPI Bldgs & Land | Inverted U | F | Capacity increase to 6 if moved away from wall |
| | 1-NW-C | Graduate Life Center (north) - VT campus | U | VPI Bldgs & Land | | S | |
| | 1-SE | Along Church Street | P | First Church of God Trustees | | L | |
| 24 | 1-SW | Tech Bookstore | P | The Diff Group LLC | Wave | F | Only one side is usable (5 bikes would be very tight) |
| | 1-SW | National Bank of Blacksburg | P | National Bank of Blacksburg | | L | |
| | 2-NE | In front of The Cellar | T | Town of Blacksburg | | L | |
| | 2-NE | In front of Wells Fargo | T | Town of Blacksburg | | L | |
| | 2-NE-B | Fire and Rescue Station | T | Town of Blacksburg | | S | |
| 27 | 2-NW | Next to Bollos | P | The Lester Group | Traditional | F | Capacity increase to 15 if re-oriented; incompatible size |
| 28 | 2-NW | Next to Bollos (2) | P | The Lester Group | Traditional | F | Capacity increase to 15 if re-oriented; incompatible size |
| 29 | 2-NW | Next to DP Doughs | T* | Downtown Development Co. | Bollard | F | 2 Bollards: re-orient for better use |
| | 2-NW-B | Southwest of Tots | T | Town of Blacksburg | | S | |
| 34 | 2-SW | Kent Square Parking Garage Entrance | P | Town Square Parking LLC | Traditional | F | Capacity increase to 13 if moved away from wall |
| | 2-SW | Kent Square | P | Kent Square LLC | | L | |
| 37 | 3-NE | The Cellar (SE) | P | Cellar Building LLC c/o Chris N. Kappas | Traditional | F | Capacity increase to 9 if moved away from fence |
| 38 | 3-NE | The Cellar (SW) | P | Cellar Building LLC c/o Chris N. Kappas | Traditional | F | Capacity increase to 9 if re-oriented |
| | 3-NE-B | Progress Street Town Parking Lot | T | Town of Blacksburg | | L | Incorporate new racks into parking deck design plans |
| | 3-NW | Henderson Hall (west) | U | VPI Bldgs & Land | | S | |
| | 3-NW | College Avenue | U | VPI Bldgs & Land | | S | High concentration of rogue bicycles - highest priority |
| 42 | 3-NW | Henderson Hall (north) | U | VPI Bldgs & Land | Inverted U | S | |
| 44 | 3-SW | Municipal Building (south) | T | Town of Blacksburg | Bollard | F | Orientation of bollards may create pedestrian obstruction |
| 45 | 3-SW | Municipal Building (north) | T | Town of Blacksburg | Inverted U | F | Increase capacity to 11 - Move rack off landscaping |
| | 3-SW | Municipal Building (south) | T | Town of Blacksburg | | S | |
| | 3-SW | Municipal Building (north) | T | Town of Blacksburg | | S | |
| | 4-NE | Outside Tabacco Shop | T | Town of Blacksburg | | S | |
| | 4-NE | Bike Barn | T | Town of Blacksburg | | S | |
| | 4-SW | Blacksburg Motor Company | T | Town of Blacksburg | | S | |
| | 4-SW | Corner of Draper and Miller | P | DAC LLC | | L | |
| | 5-NE | Corner of N. Main and Faculty | P | Blacksburg Baptist Church | | L | Plan with redevelopment; currently none on this block |
| 55 | 6-NW | Rear of Blacksburg Taphouse | P | Maggard Faulds LLC | Traditional | F | Capacity increase to 4 if re-oriented |

Potential Bicycle Rack Locations in Downtown Blacksburg

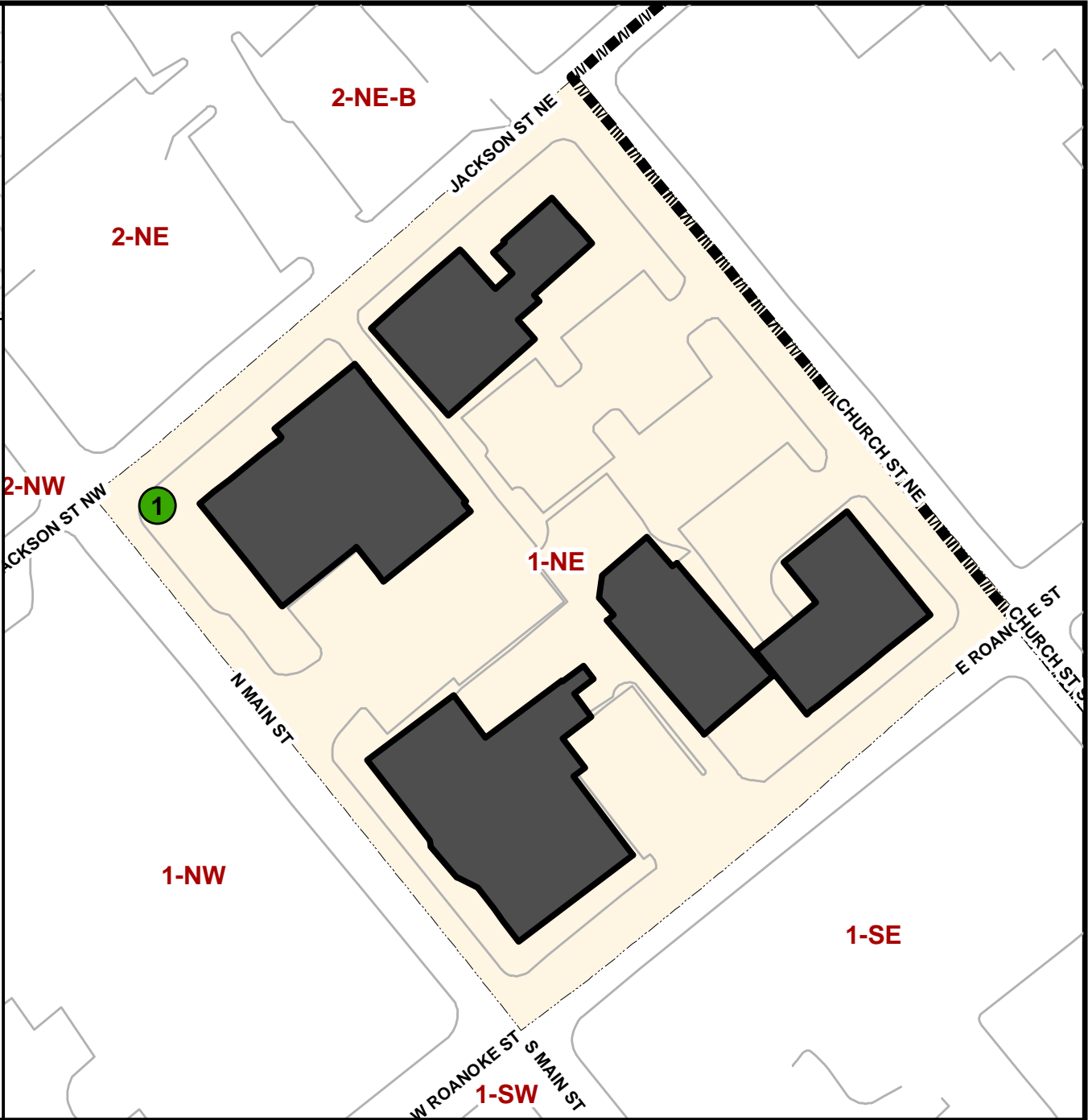
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|-------|--------|----------------------------------|--|---|-------------|---|---|
| | 6-NW-B | Along Turner Street | P | Various owners | | L | |
| 56 | 7-NE | Back of Tuck Chiropractic | P | Downtown North Associates c/o Bill Ellenbogen | Traditional | F | Capacity increase to 15 if moved away from wall |
| | 7-NE | Back of Tuck Chiropractic | P | Downtown North Associates c/o Bill Ellenbogen | | L | |
| | 7-NE | Along N. Main Street | P | Downtown North Associates c/o Bill Ellenbogen | | L | |
| 57 | 7-NW | Collegiate Court | P | Collegiate Associates LLC | Wave | F | Capacity increase to 5 if moved away from wall |
| 58 | 7-NW | Collegiate Court (2) | P | Collegiate Associates LLC | Wave | F | Capacity increase to 5 if moved away from wall |
| 59 | 7-NW | Collegiate Court (3) | P | Collegiate Associates LLC | Wave | F | Capacity increase to 5 if moved away from wall |
| 60 | 7-NW | Collegiate Court (4) | P | Collegiate Associates LLC | Wave | F | Capacity increase to 5 if moved away from wall |
| | 7-NW | Along N. Main Street | P | Charles L. Boatwright Heirs | | L | |
| | 7-NW-B | North End Courtyard | P | Turner Street Project LLC | Inverted U | L | |
| 64 | 8-NE | Back of Valley Women's Clinic | P | North Main Blacksburg LLC | Traditional | F | Capacity increase to 7 if re-oriented |
| 65 | 8-NE | Eats | P | North Main Blacksburg LLC | Traditional | F | Capacity increase to 11 if re-oriented |
| 66 | 8-NE | Outside Jiu-Jitsu | P | North Main Plaza LLC | Traditional | F | Capacity increase to 16 if moved away from wall |
| 67 | 8-NW | Inside Hall of Collegiate Square | P | CS Shopping Center LLC c/o VT Foundation | Traditional | F | Capacity increase to 15 if moved away from wall |
| | 8-NW | Collegiate Square | P | CS Shopping Center LLC c/o VT Foundation | | S | Bicycle racks planned with redevelopment |
| | 8-NW | Odd Fellows Hall (north) | T | Town of Blacksburg | | S | |
| 71 | 8-NW | Wendy's (SE) | P | Boatwright Family LP Etal. c/o Joseph W. Boatwright | Traditional | F | Capacity increase to 15 if moved away from wall |

VIII. ATTACHMENTS

- A. Block by Block Mapping
- B. Photo Inventory of Bicycle Racks






Downtown Area



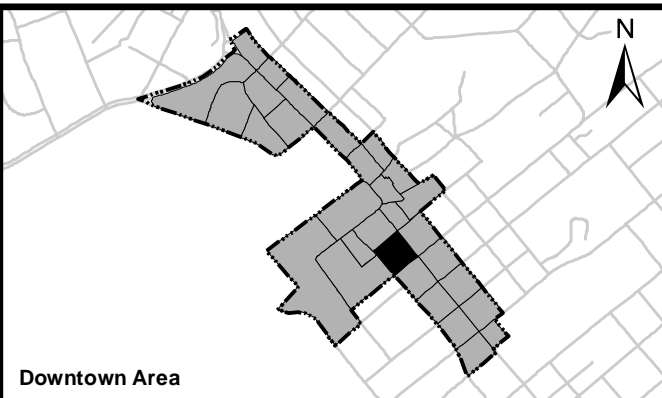
Bicycle Racks:

- 1) Northwest of Post Office

-  Privately Owned
-  Block 1-NE
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14



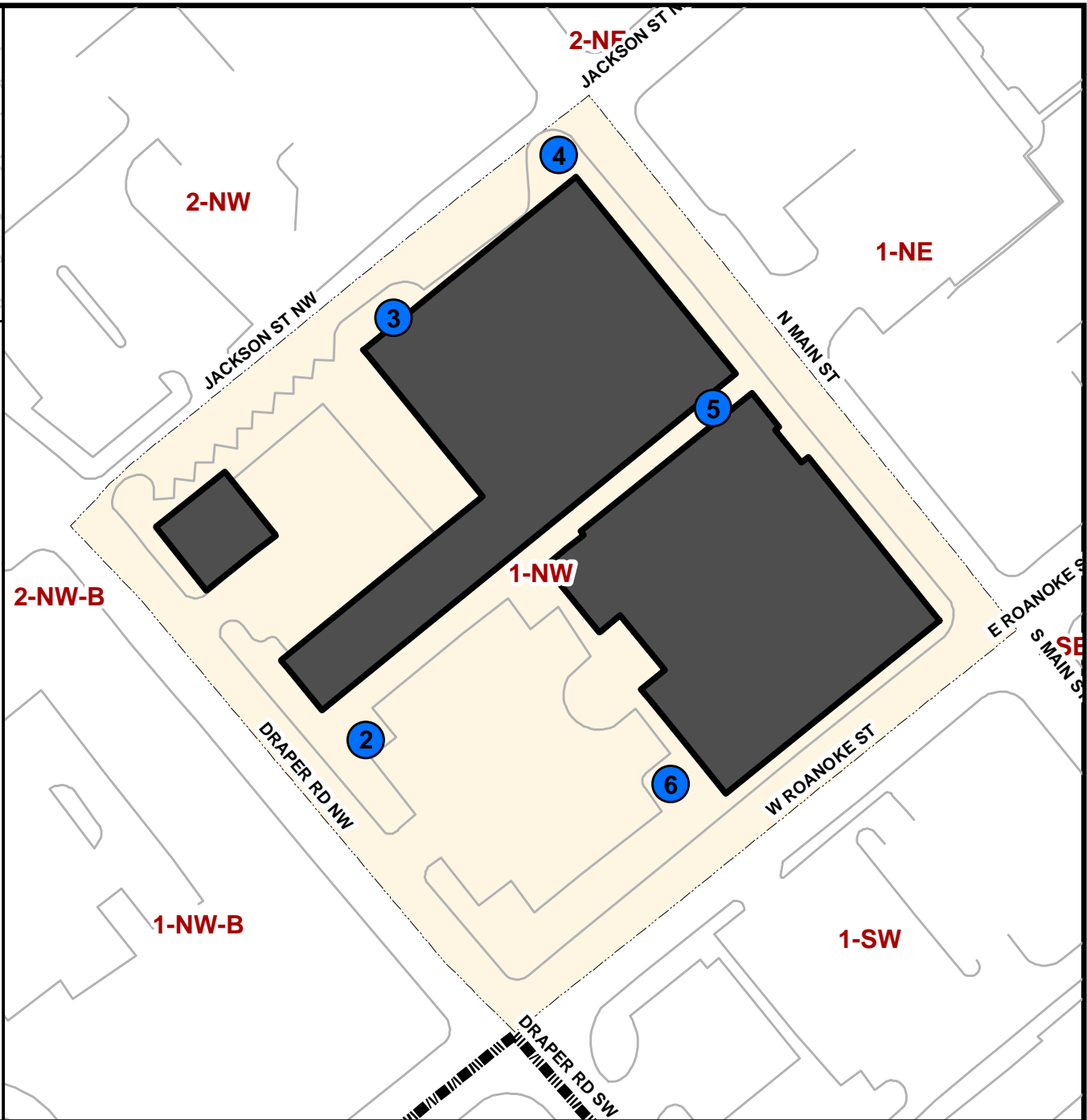


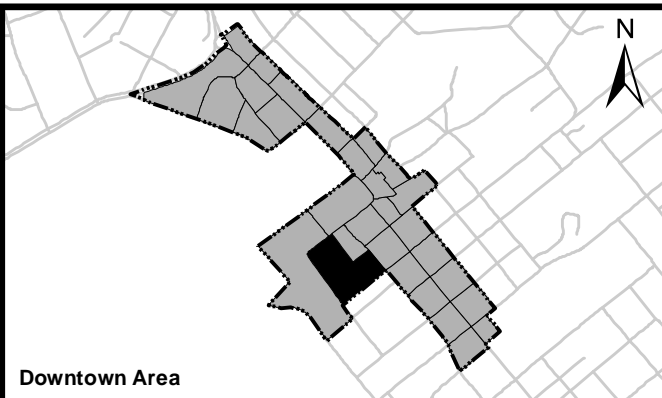
Bicycle Racks:

- 2) Market Square
- 3) Across from Black Hen & Bar Blue
- 4) Corner of Main and Jackson
- 5) South of UPS Store
- 6) East of Farmer's Market

-  Town Owned
-  Block 1-NW
-  Downtown Area





Town of Blacksburg, E&G Dept., 10/1/14



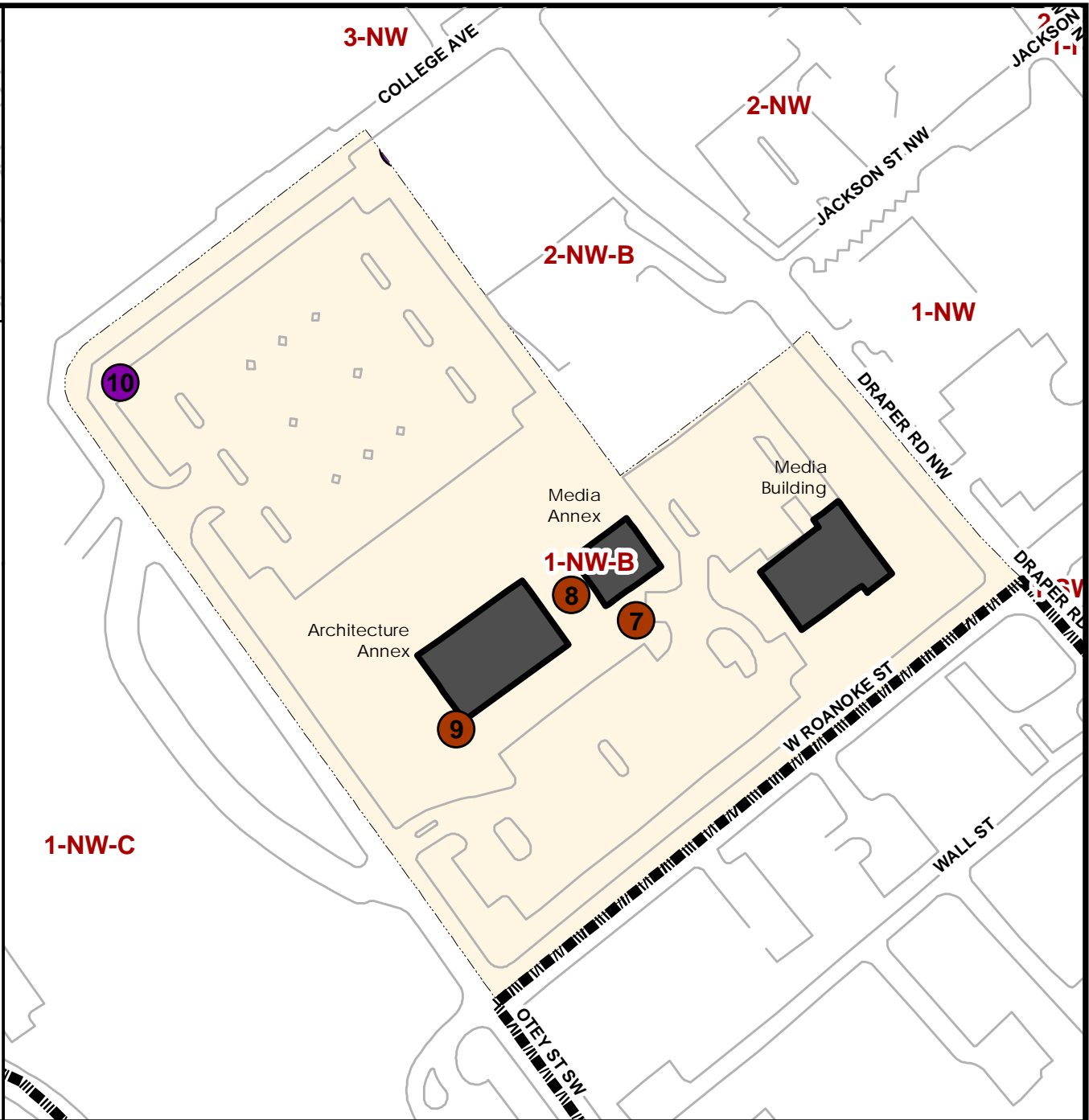


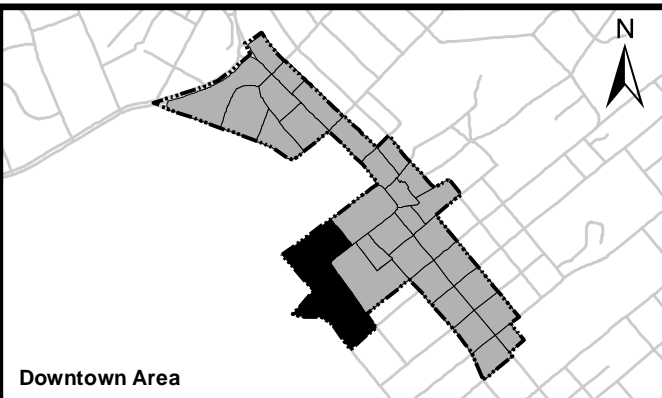
Bicycle Racks:

- 7) Arc. Annex (SE) - VT Campus
- 8) Arc. Annex (east) - VT Campus
- 9) Arc. Annex (west) - VT Campus
- 10) Squires Parking Lot (NW) - VT Campus

-  University Owned
-  Town-Owned Bike Rack on Non-Town Property
-  Block 1-NW-B
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14






Downtown Area

Bicycle Racks:

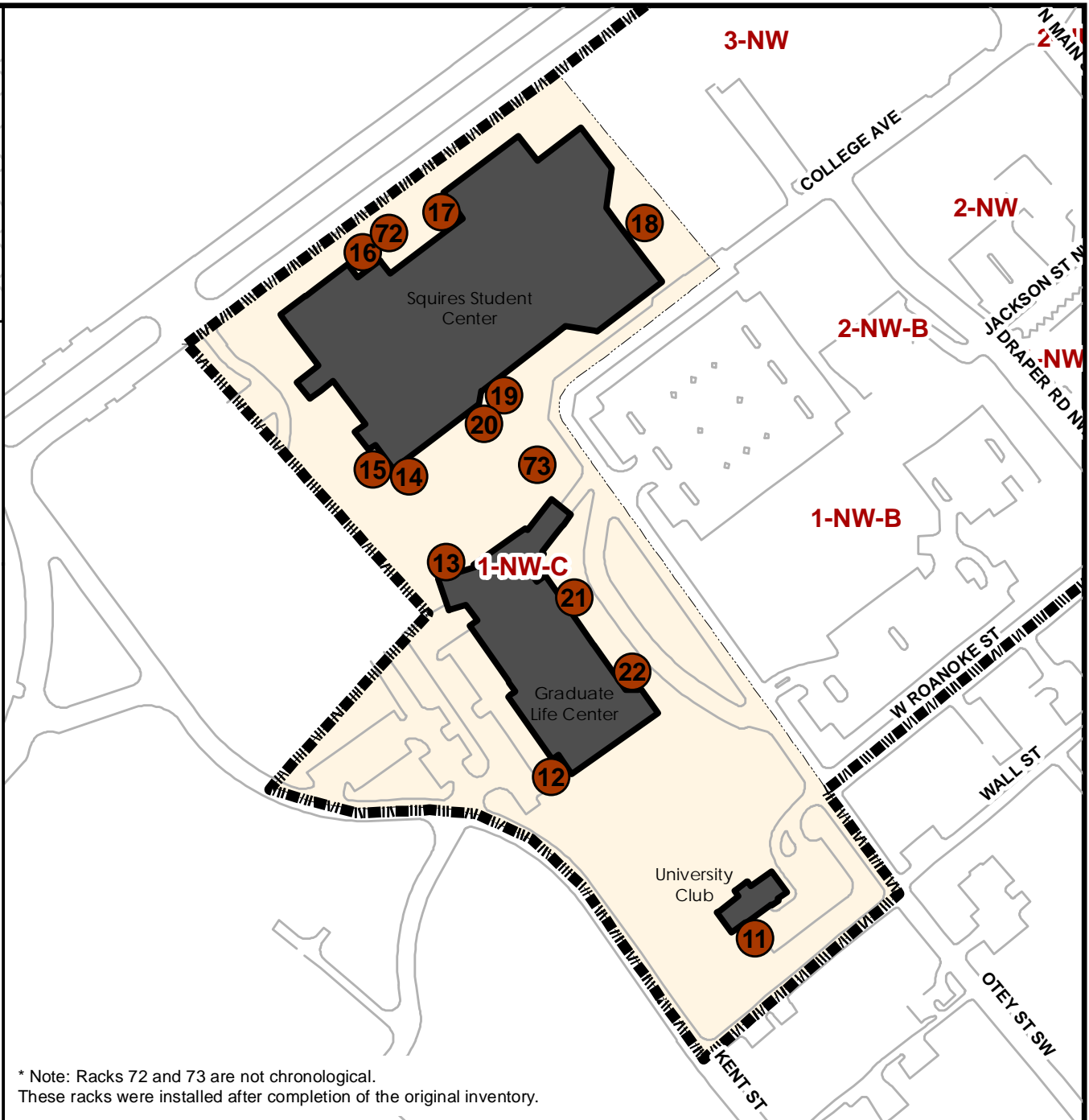
- 11) Behind University Club - VT Campus
- 12) Graduate Life Center (west) - VT Campus
- 13) Graduate Life Center (north) - VT Campus
- 14) Squires (SW) - VT Campus
- 15) Squires (west) - VT Campus
- 16) Squires (NW) - VT Campus
- 17) Squires (NE) - VT Campus
- 18) Squires (east) - VT Campus
- 19) Squires (SE) - VT Campus
- 20) Squires (south) - VT Campus
- 21) Squires Parking Lot (NW) - VT Campus
- 22) Graduate Life Center (NE) - VT Campus
- 23) Graduate Life Center (SE) - VT Campus
- 72) Squires (NW2) - VT Campus
- 73) Graduate Life Center (NE) - VT Campus

 University Owned

 Block 1-NW-C

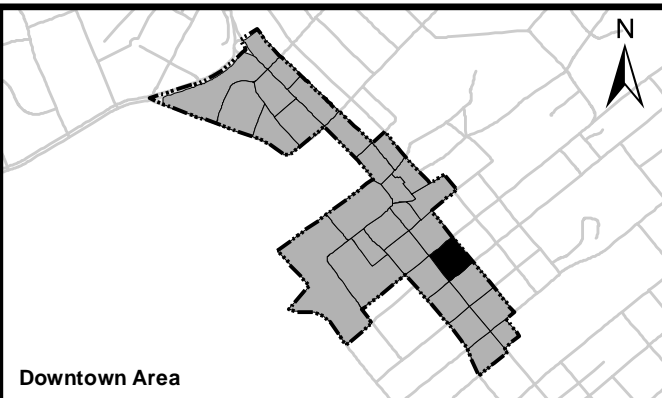
 Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14



* Note: Racks 72 and 73 are not chronological. These racks were installed after completion of the original inventory.








Downtown Area

Bicycle Racks:

23) Outside CDAC

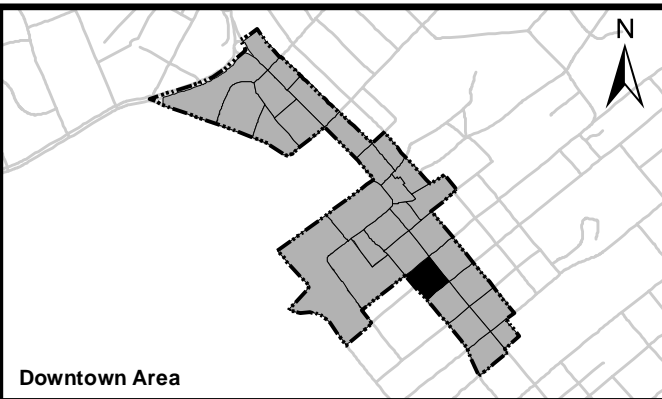
-  Privately Owned
-  Block 1-SE
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14

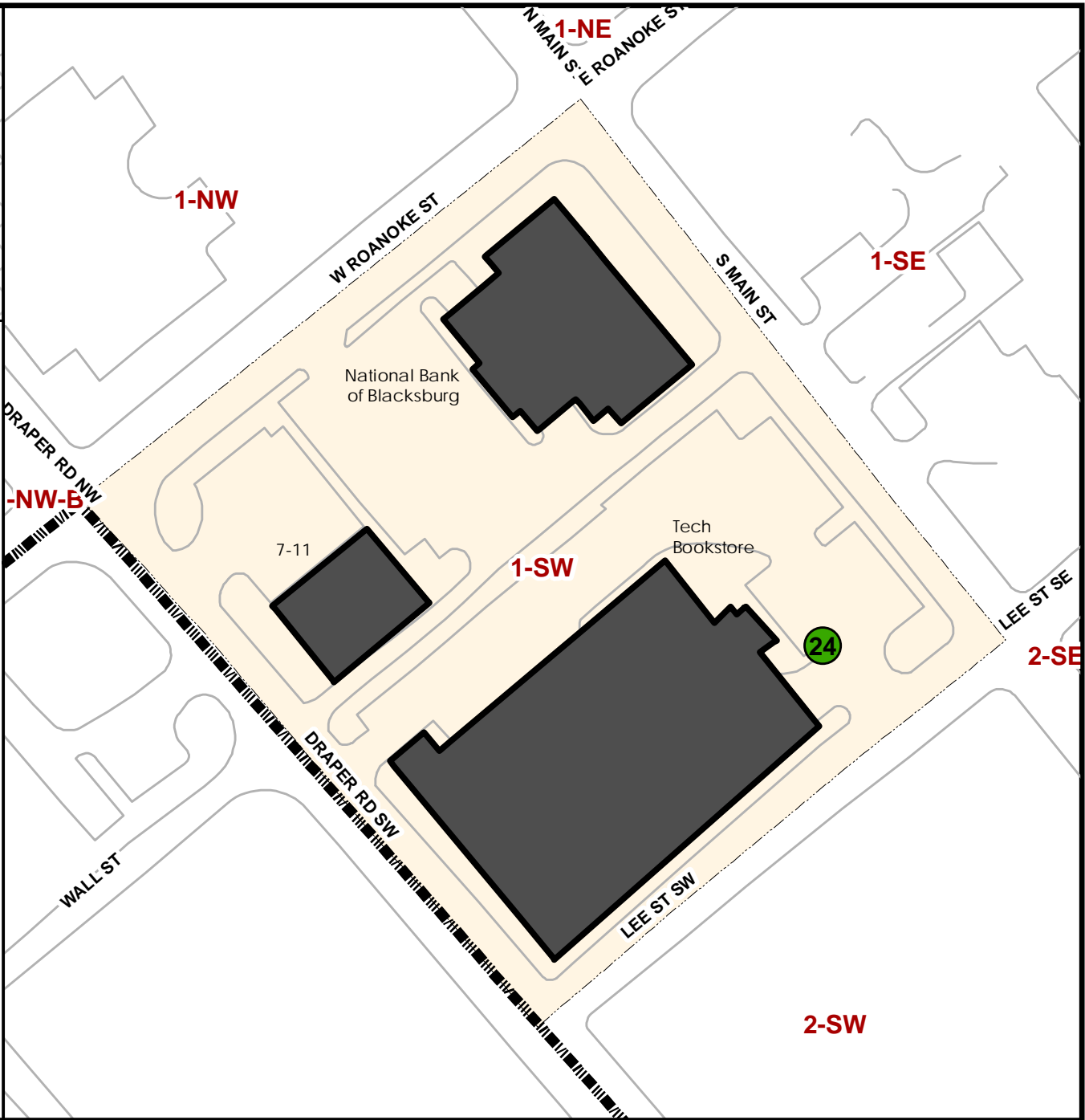


**Downtown
Block 1-SE**








Downtown Area



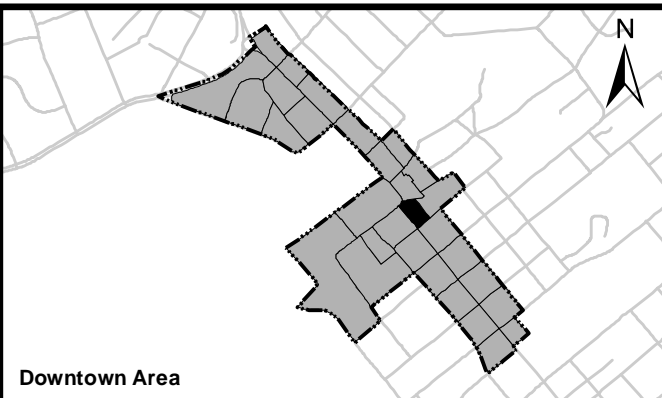
Bicycle Racks:

24) Tech Bookstore

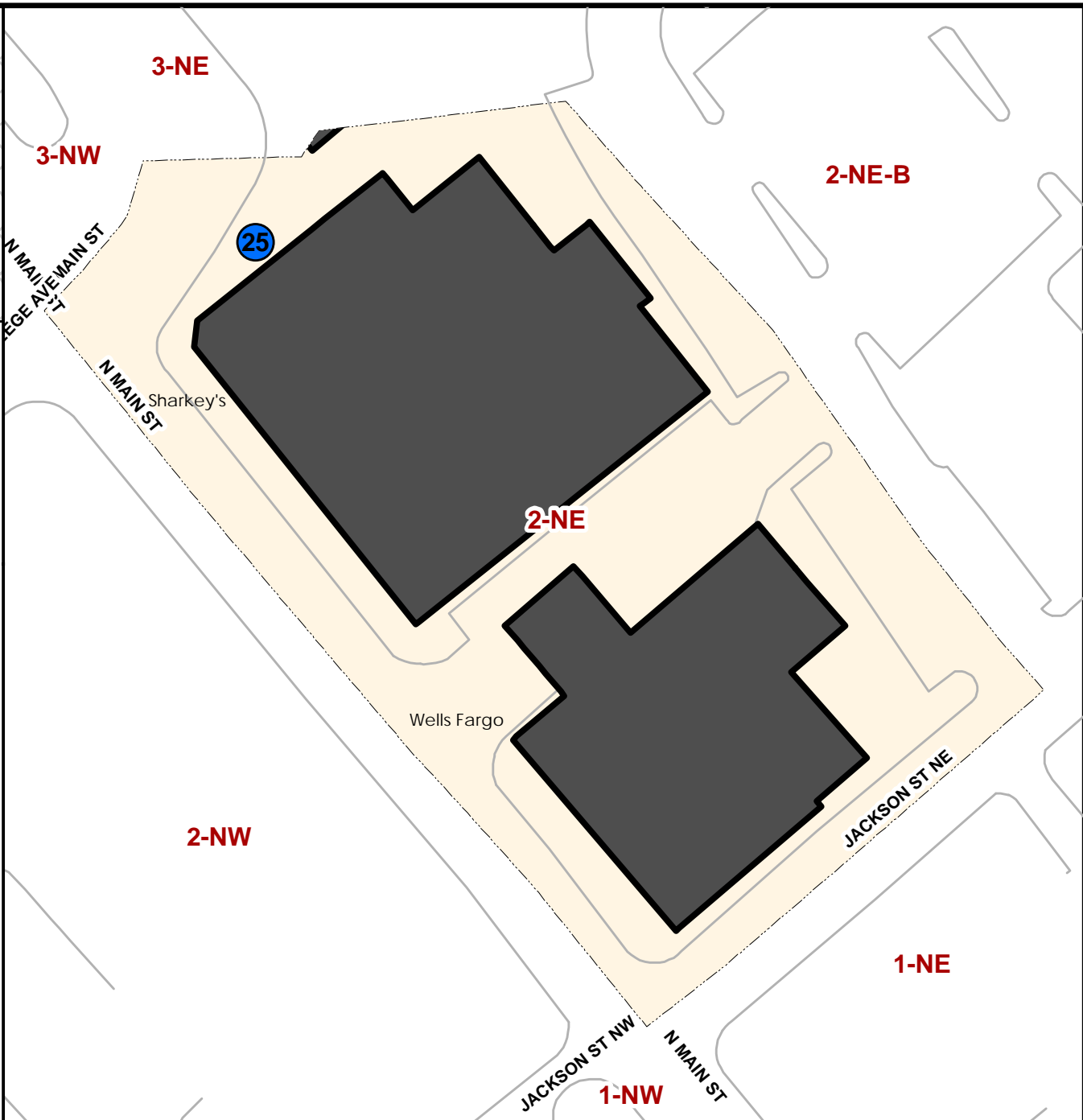
-  Privately Owned
-  Block 1-SW
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14





Downtown Area




Bicycle Racks:

25) In front of The Cellar

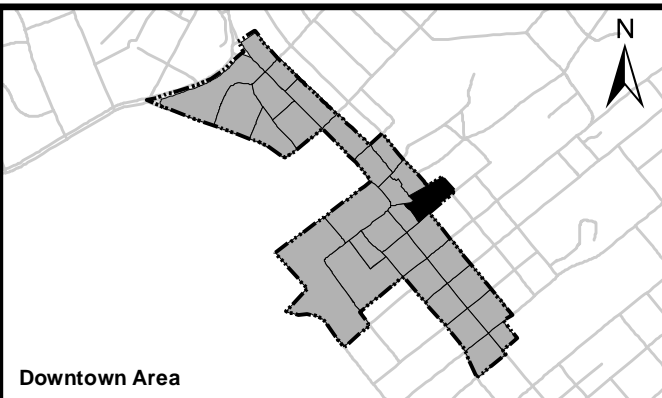
 Town Owned

 Block 2-NE

 Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14



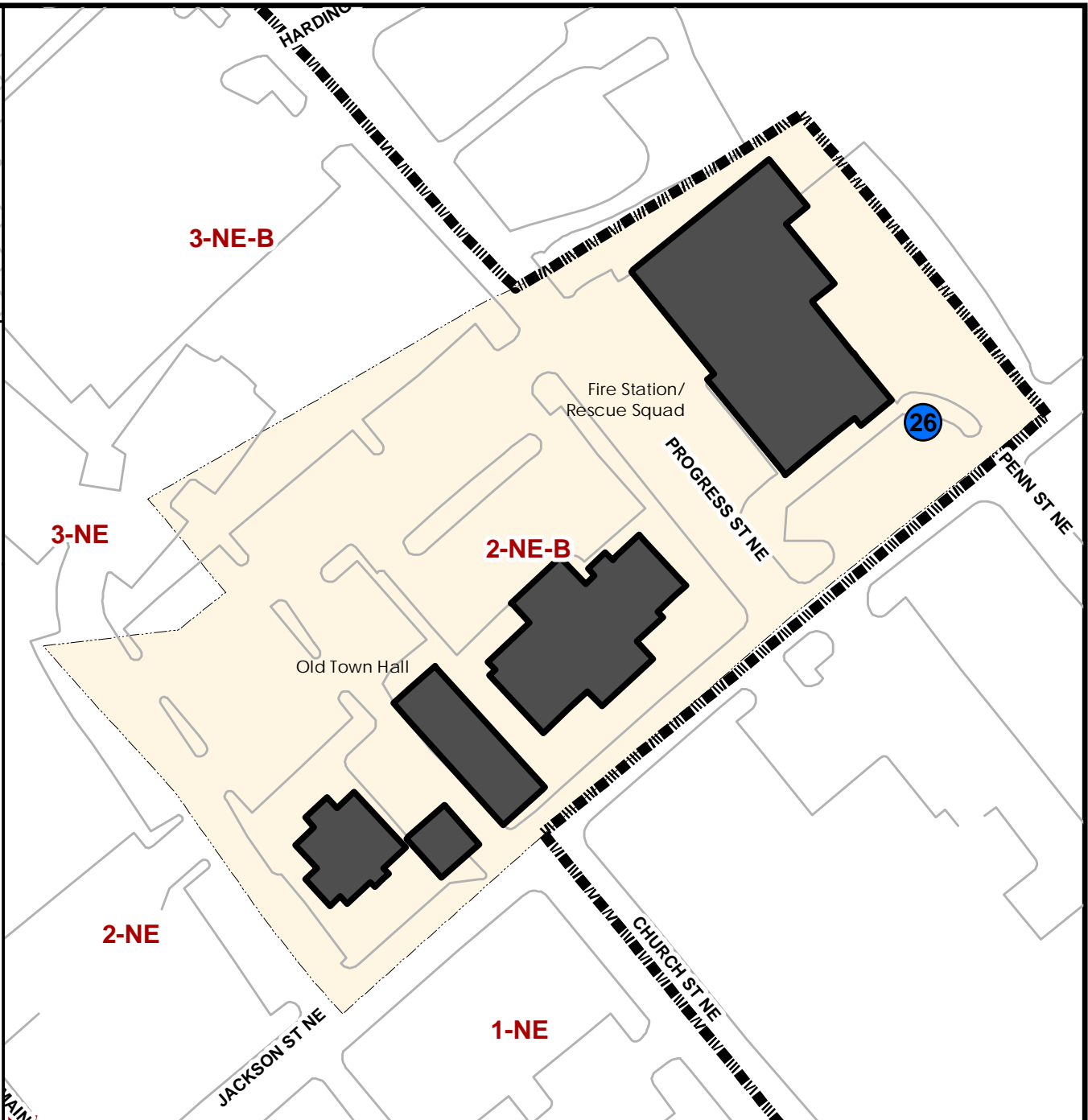


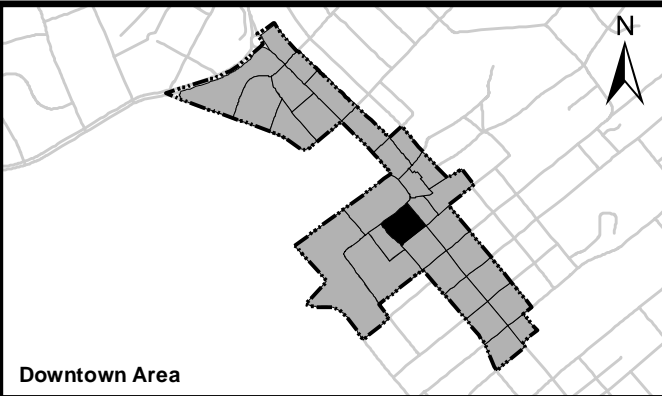
Bicycle Racks:

26) Fire and Rescue Station

-  Town Owned
-  Block 2-NE-B
-  Downtown Area





Town of Blacksburg, E&G Dept., 10/1/14

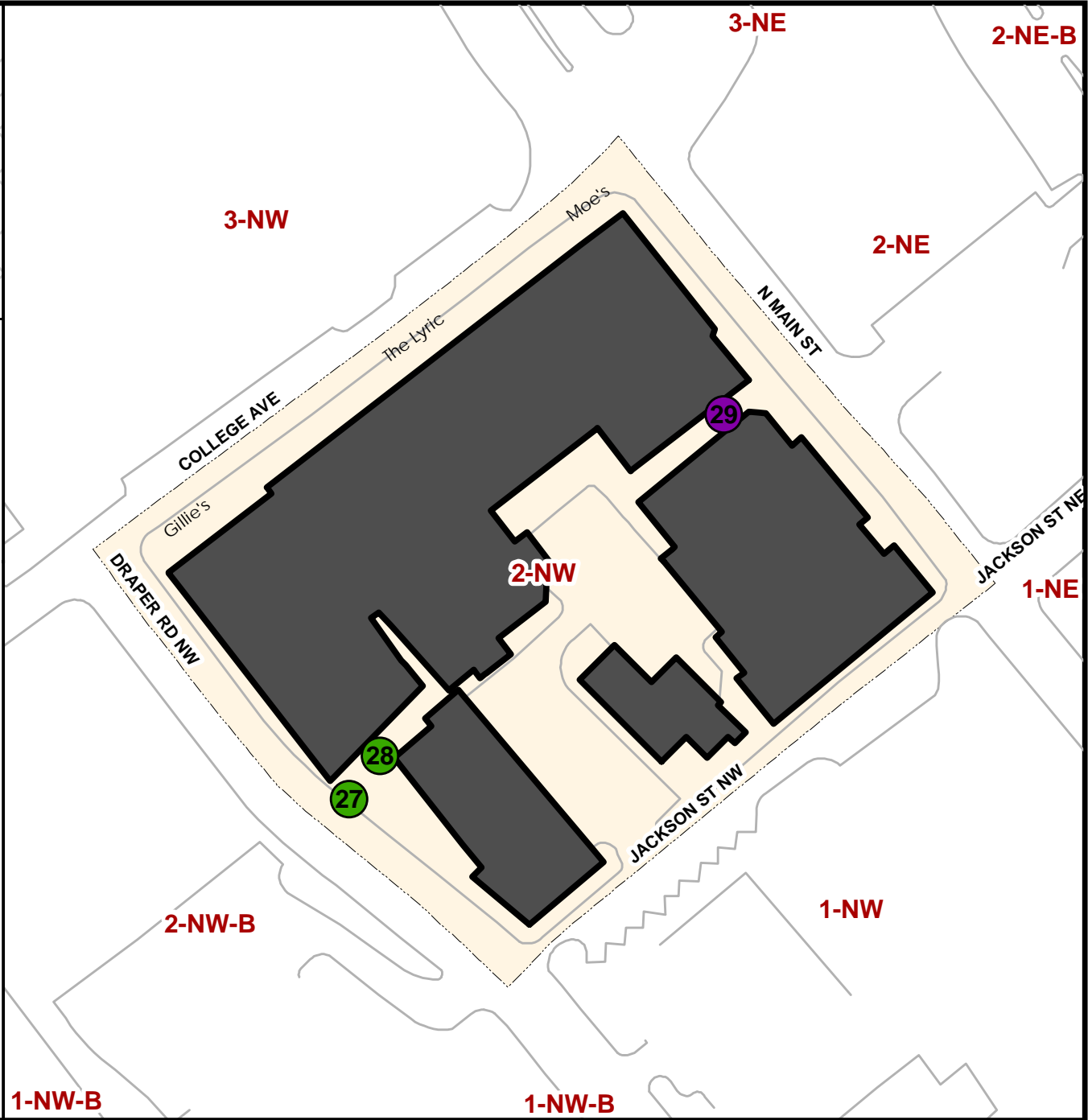




Bicycle Racks:

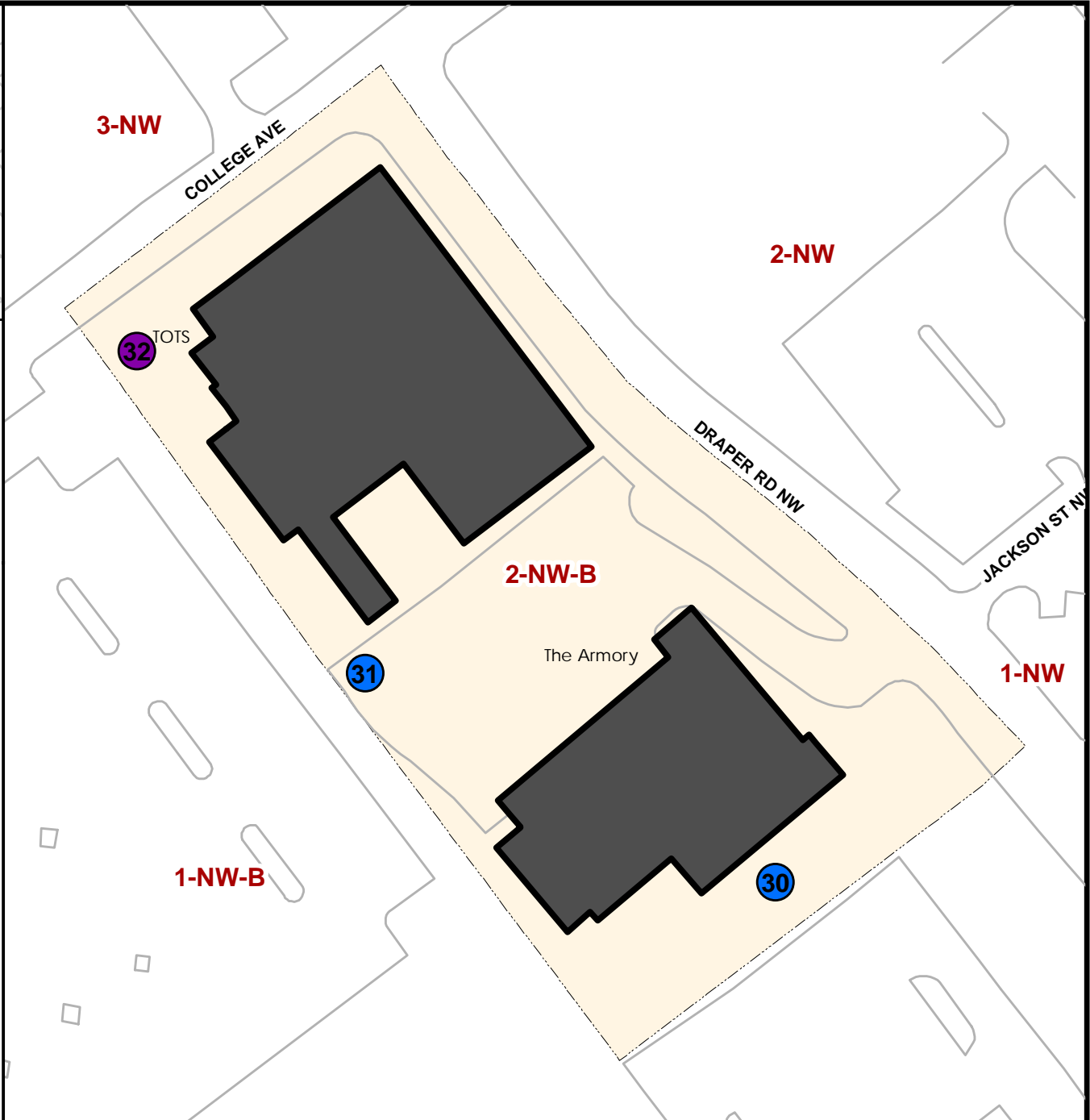
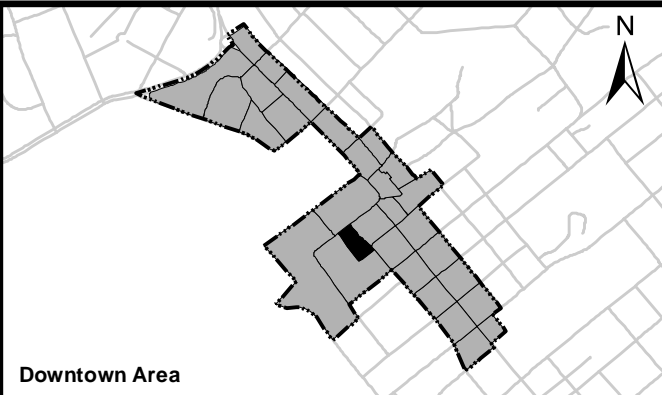
- 27) Next to Bolos
- 28) Next to Bolos (2)
- 29) Next to DP Doughs

-  Privately Owned
-  Town-Owned Bikerack on Non-Town Property
-  Block 2-NW
-  Downtown Area







Town of Blacksburg, E&G Dept., 10/1/14



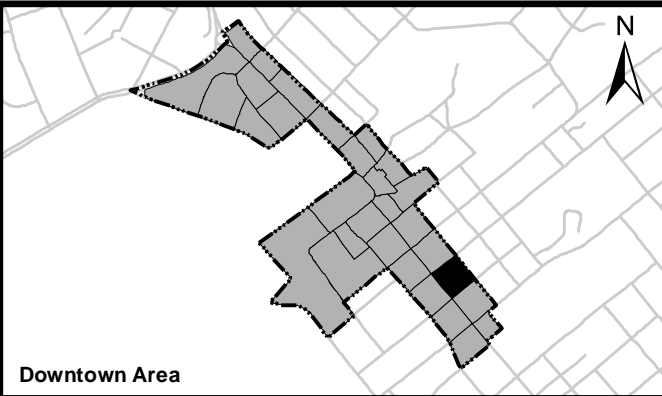


Bicycle Racks:

- 30) South of Armory
- 31) Southwest of Tots
- 32) Northwest of Tots

-  Town Owned
-  Town-Owned Bikerack on Non-Town Property
-  Block 2-NW-B
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14



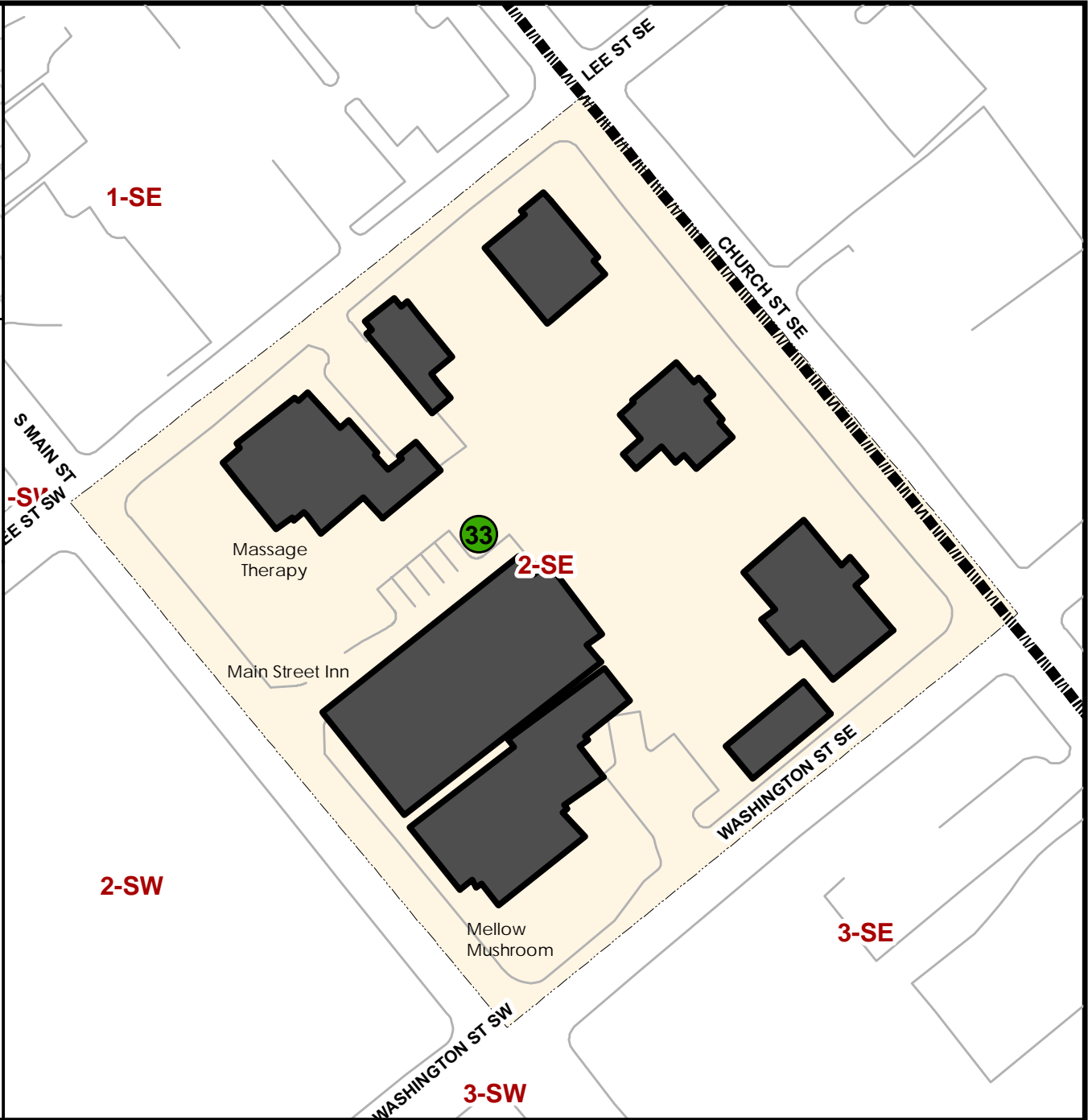
Downtown Area

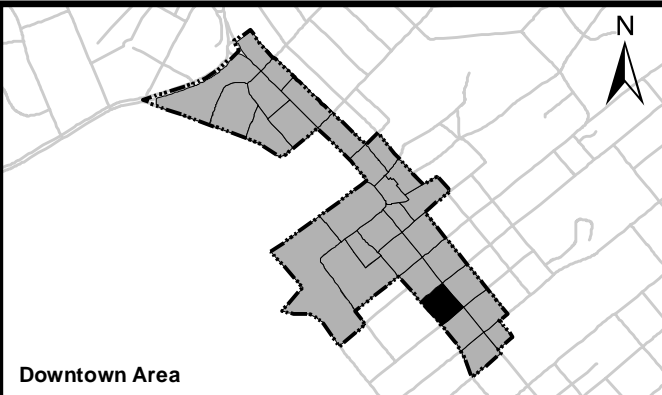
Bicycle Racks:

33) Back of Main Street Inn

-  Privately Owned
-  Block 2-SE
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14



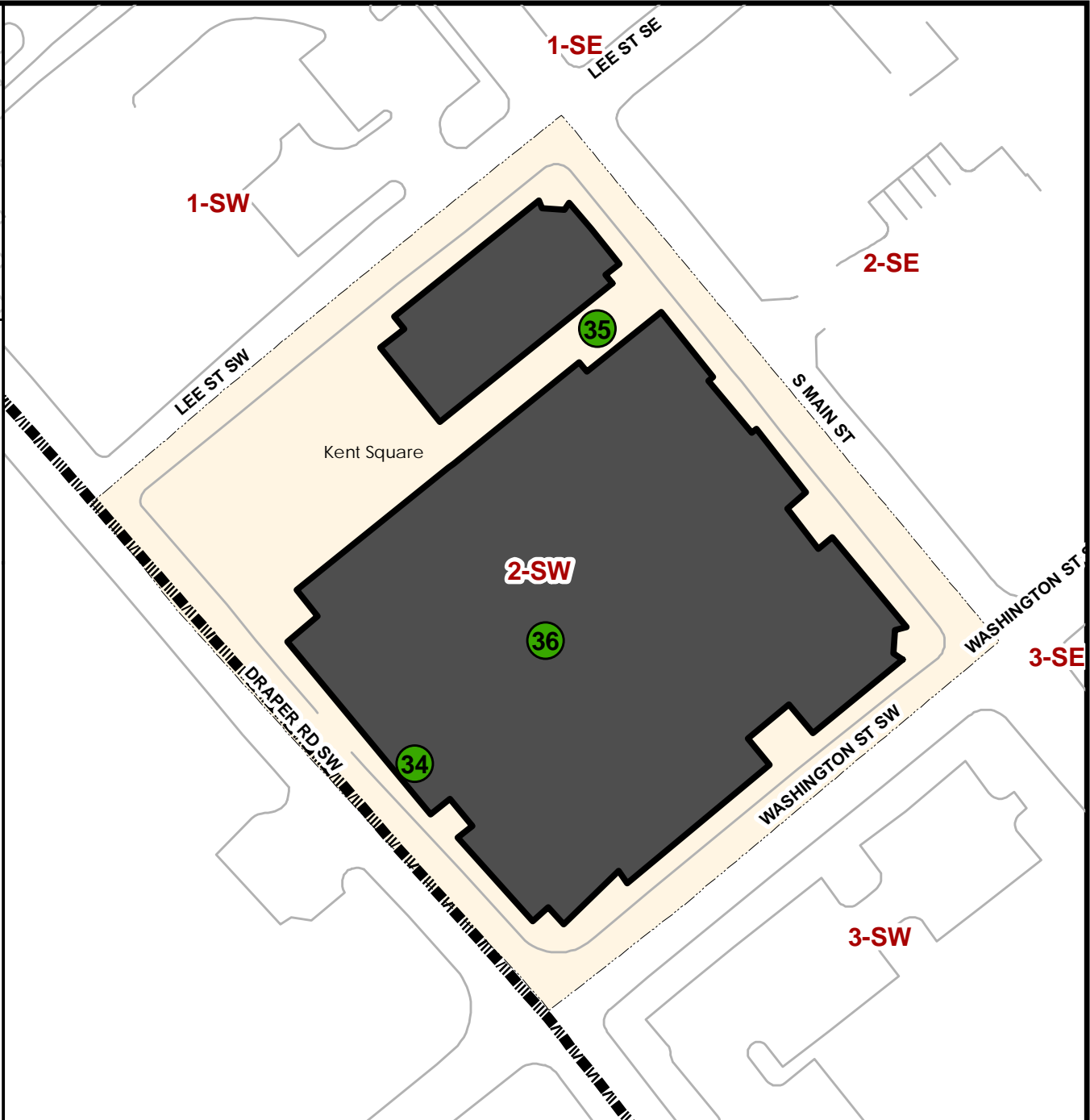


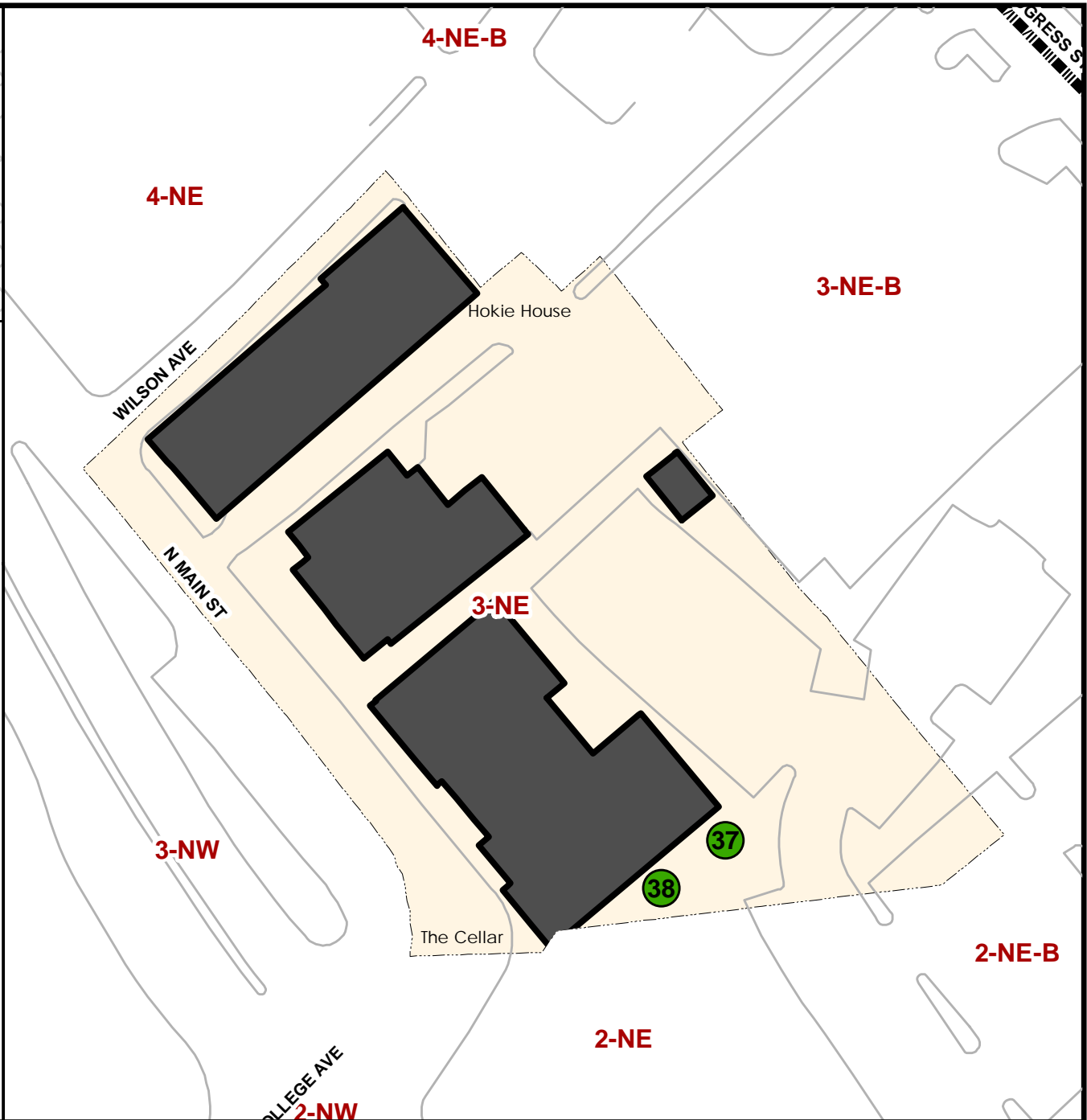
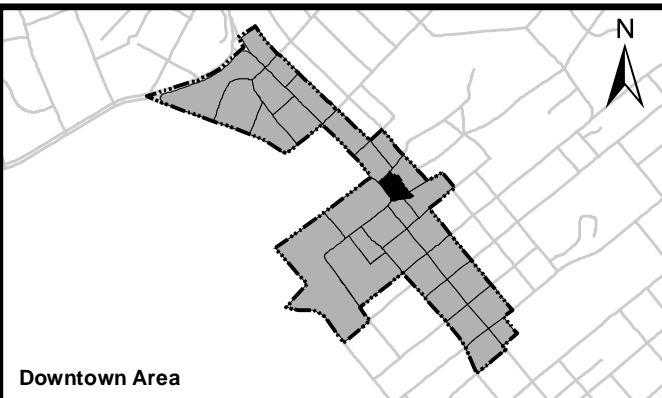
Bicycle Racks:

- 34) Kent Square Parking Garage Entrance
- 35) Between Avail Vapor and Starbucks (alley)
- 36) Inside Kent Square Garage

-  Privately Owned
-  Block 2-SW
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14





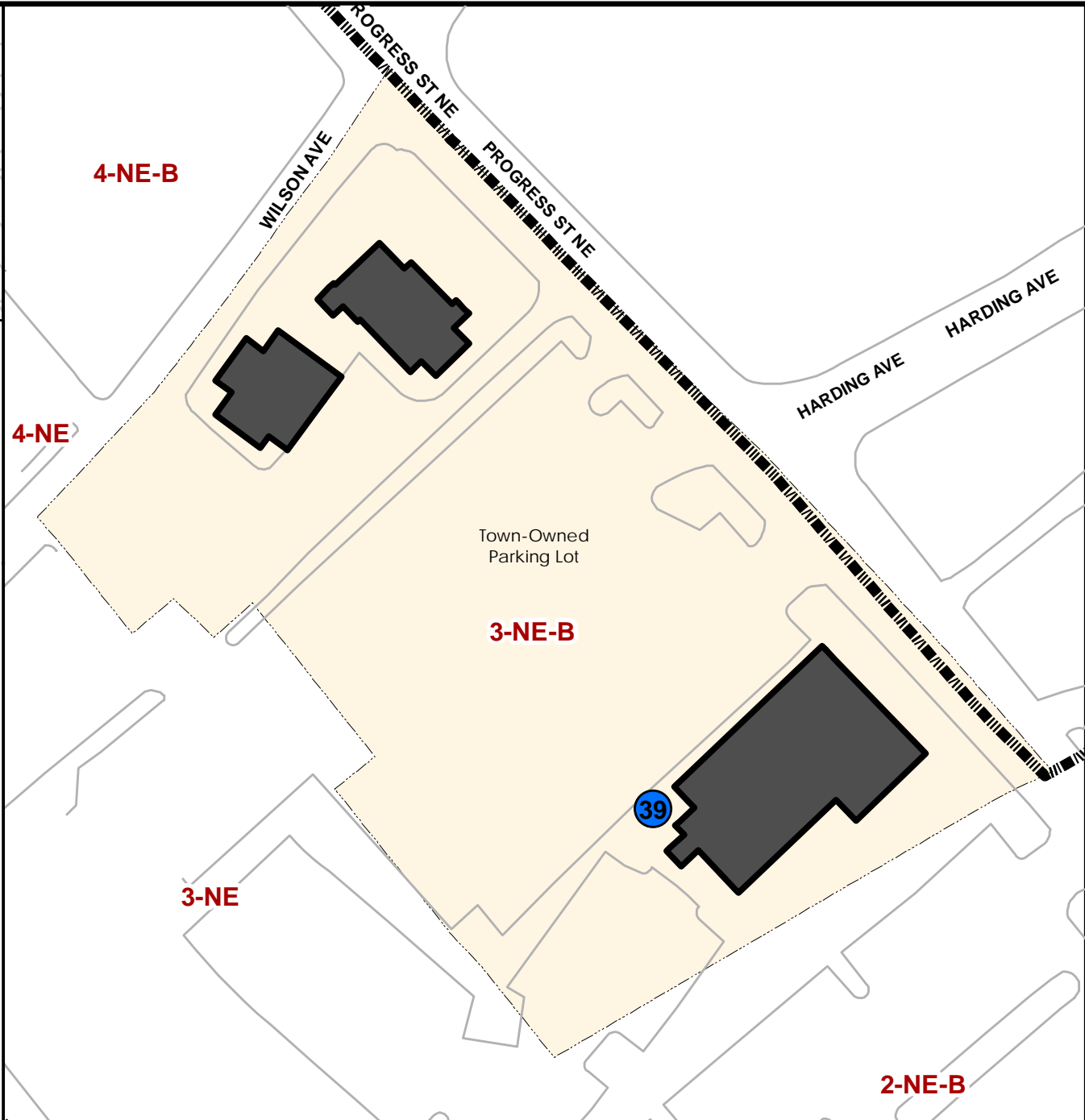
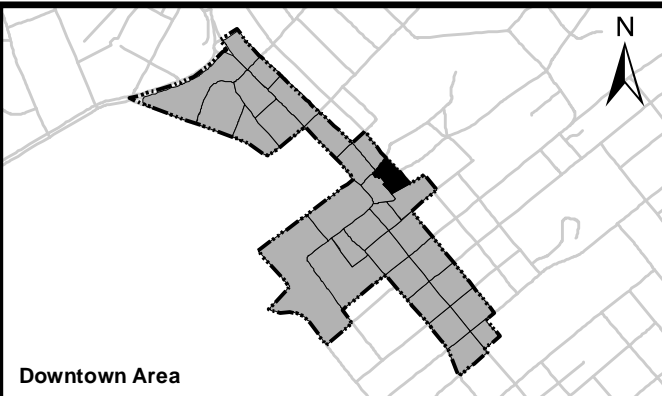
Bicycle Racks:

- 37) The Cellar (SE)
- 38) The Cellar (SW)

-  Privately Owned
-  Block 3-NE
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14





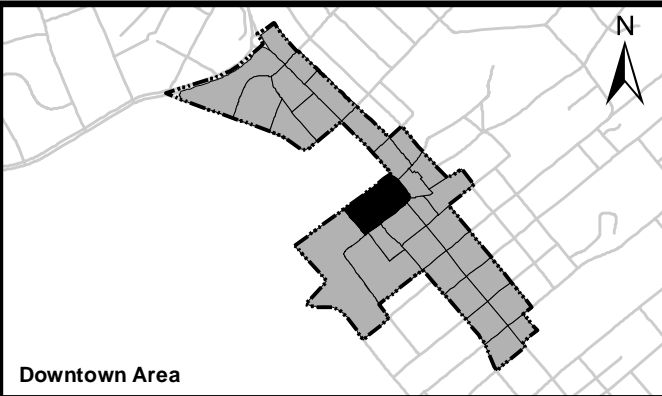
Bicycle Racks:

39) VT's Play Hard

-  Town Owned
-  Block 3-NE-B
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14



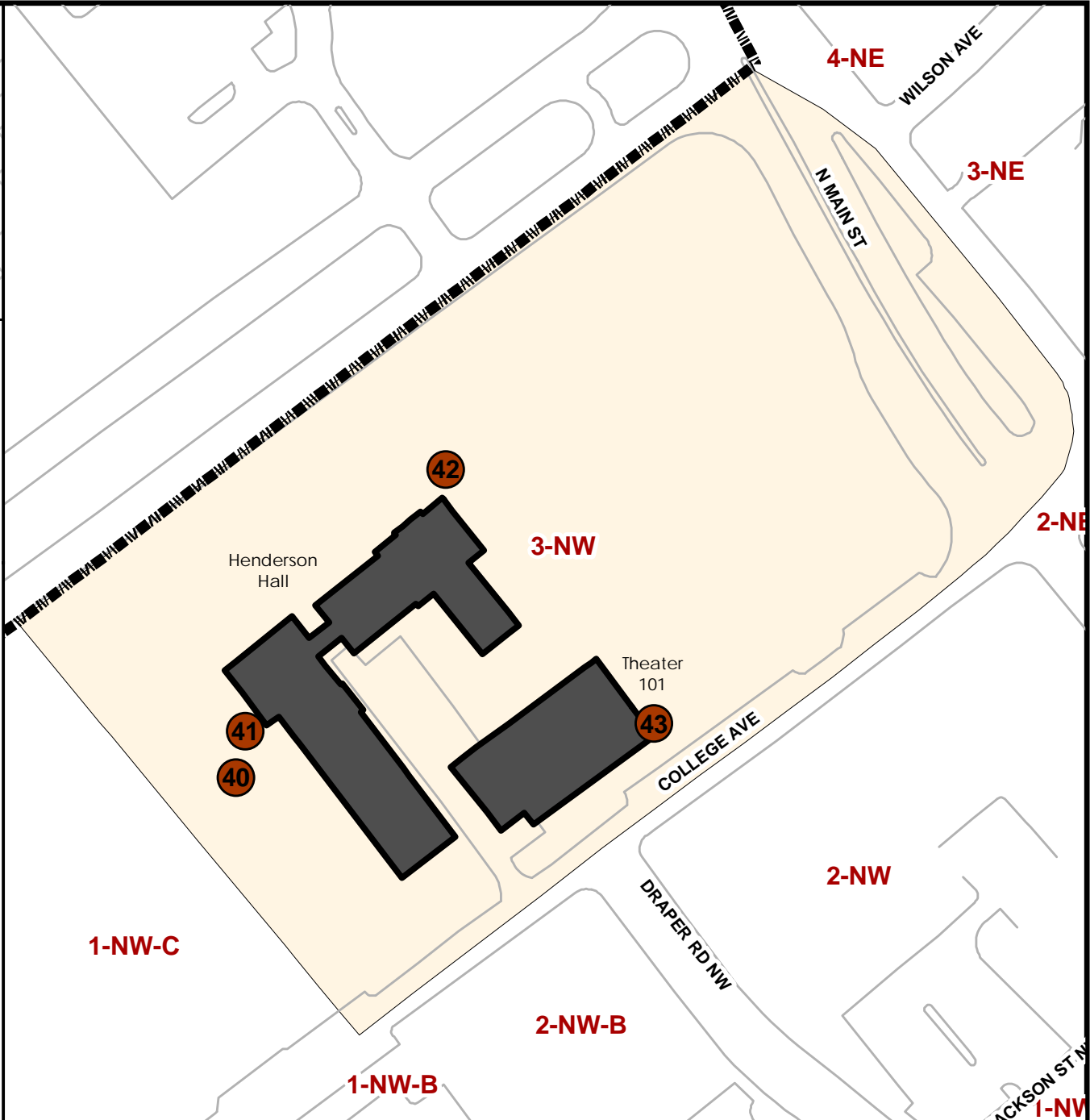


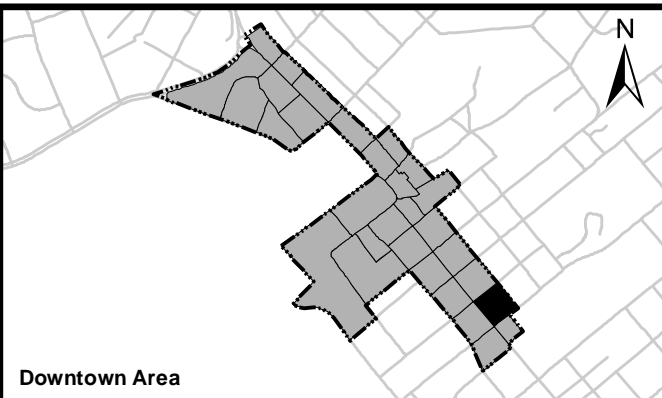
Bicycle Racks:

- 40) Henderson Hall (west)
- 41) Henderson Hall 2 (west)
- 42) Henderson Hall 3 (north)
- 43) Theater 101

-  University Owned
-  Block 3-NW
-  Downtown Area

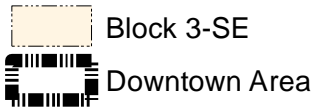
Town of Blacksburg, E&G Dept., 10/1/14



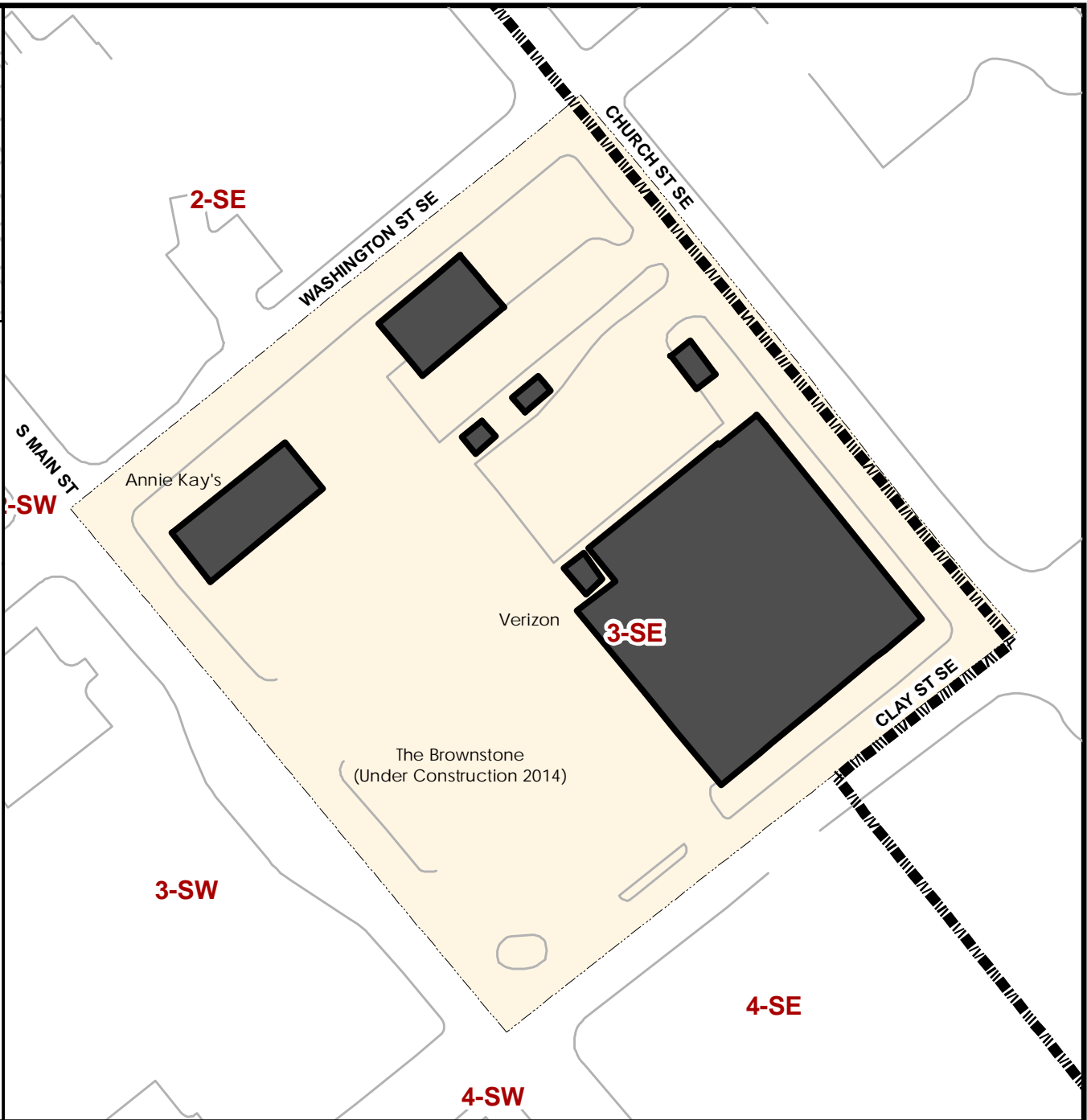


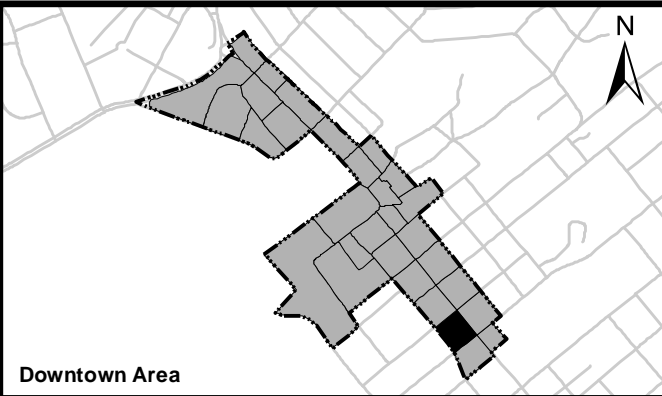
Downtown Area

Bicycle Racks:
No Bicycle Racks



Town of Blacksburg, E&G Dept., 10/1/14








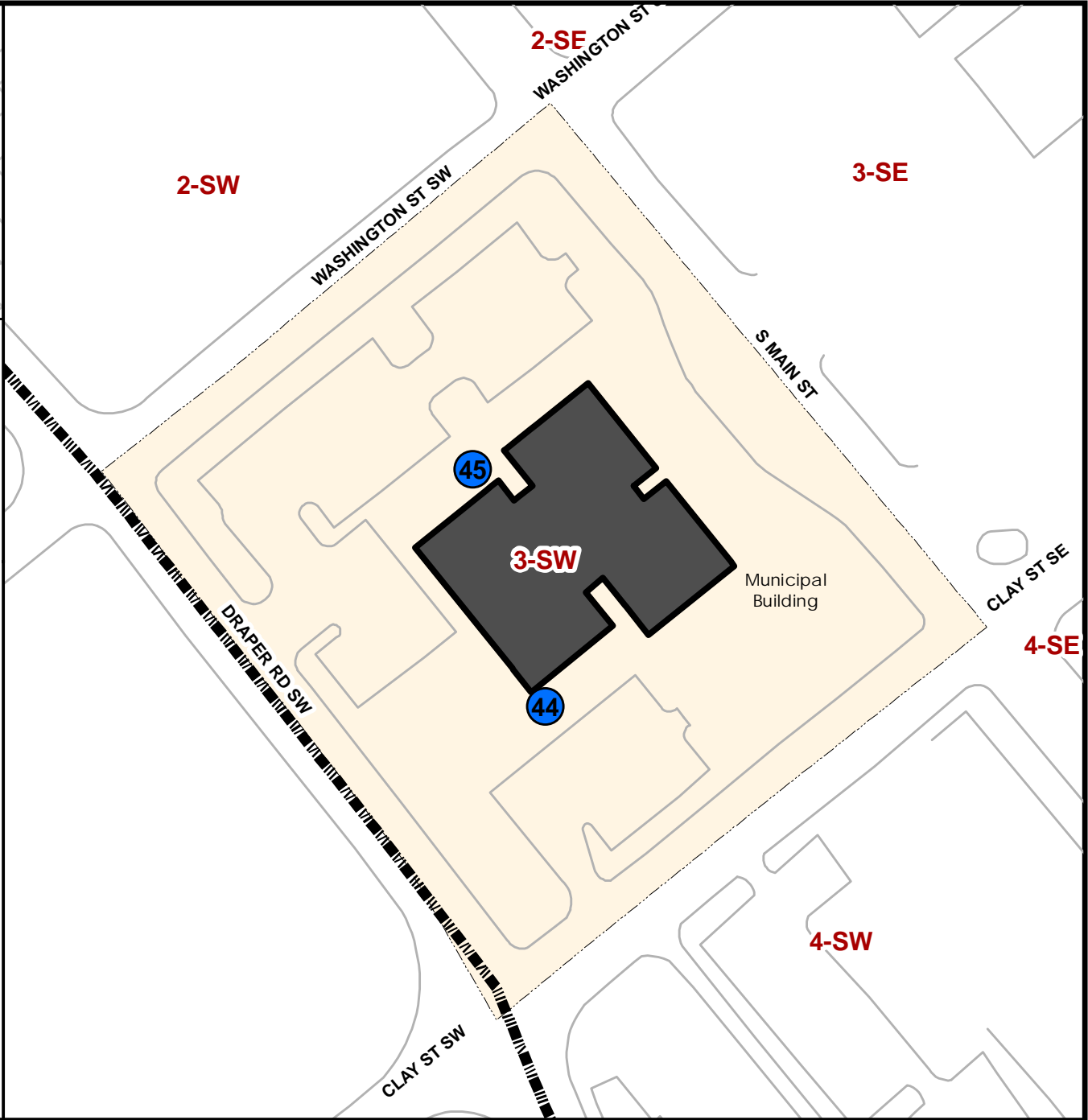
Downtown Area

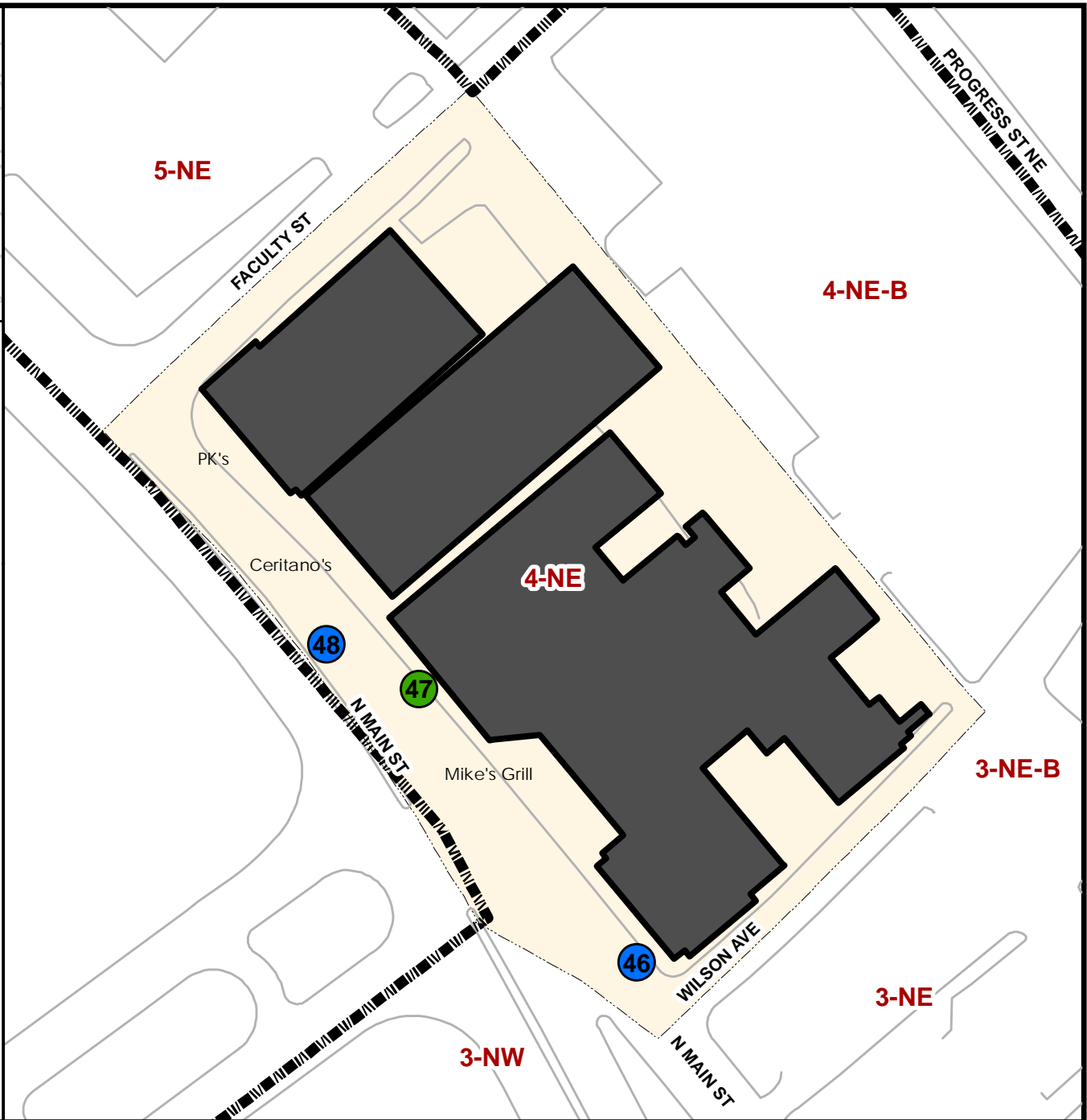
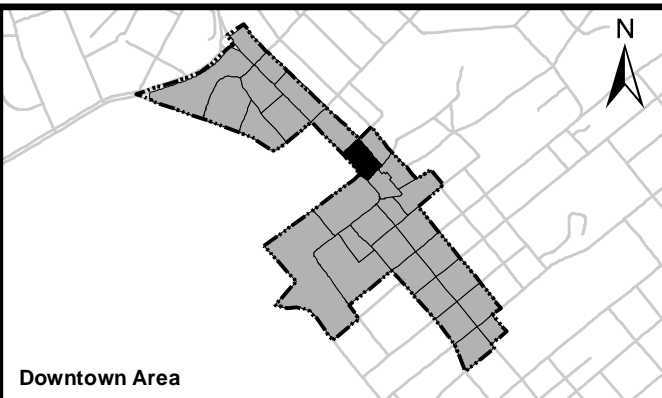
Bicycle Racks:

- 44) Municipal Building (south)
- 45) Municipal Building (north)

-  Town Owned
-  Block 3-SW
-  Downtown Area





Town of Blacksburg, E&G Dept., 10/1/14





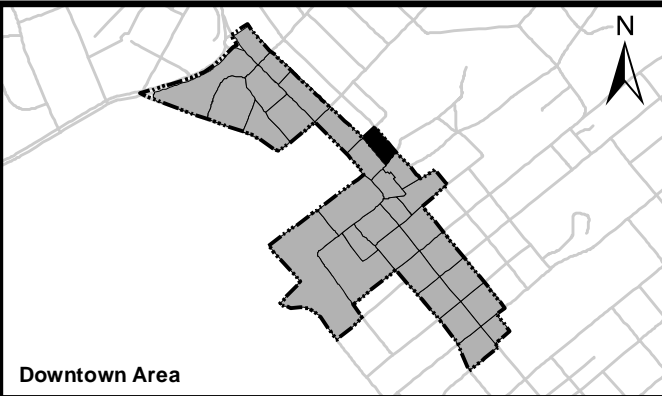
Bicycle Racks:

- 46) Outside Tobacco Shop
- 47) Bike Barn
- 48) Bike Barn (2)

-  Town Owned
-  Privately Owned
-  Block 4-NE
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14







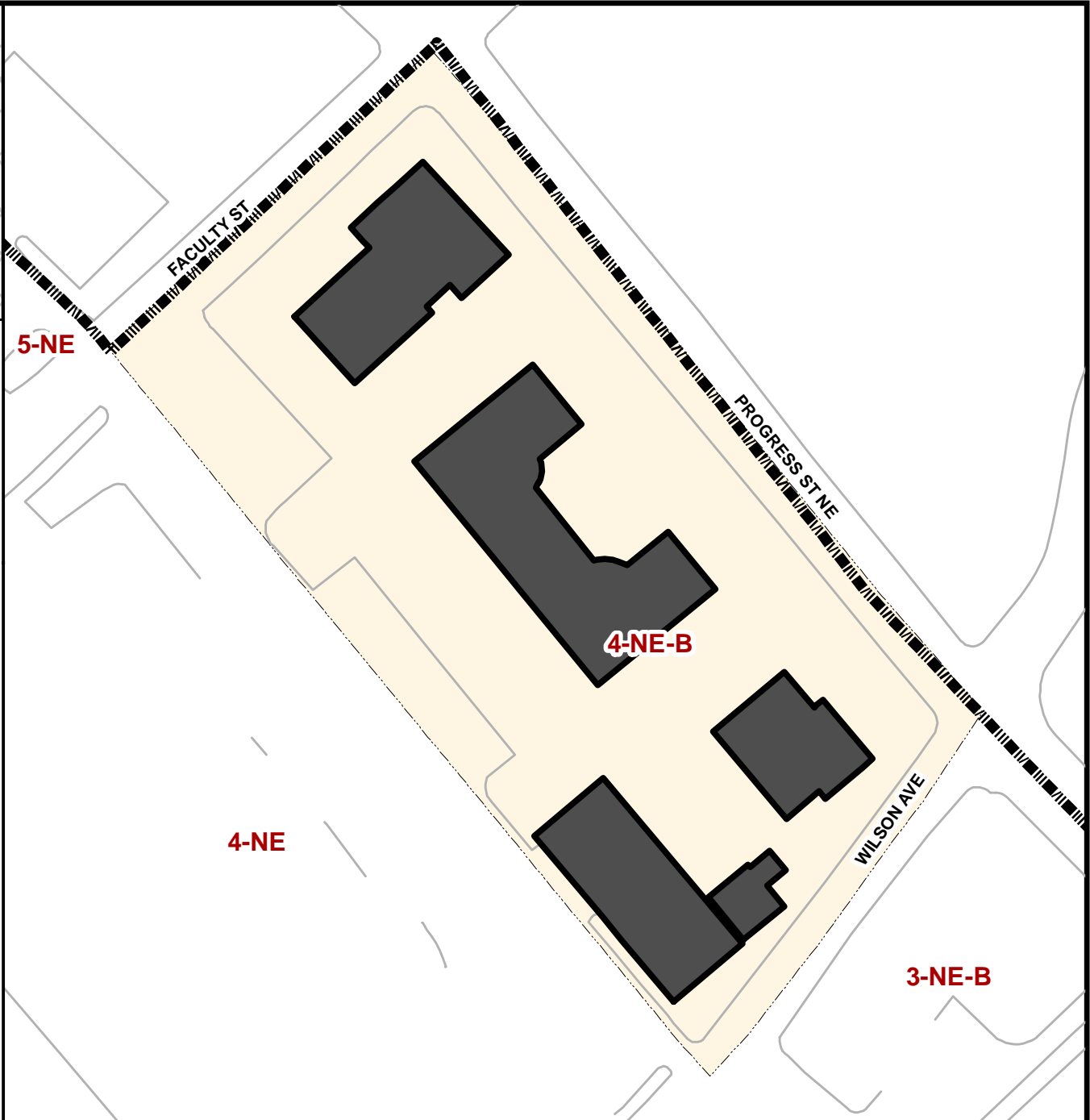
Downtown Area

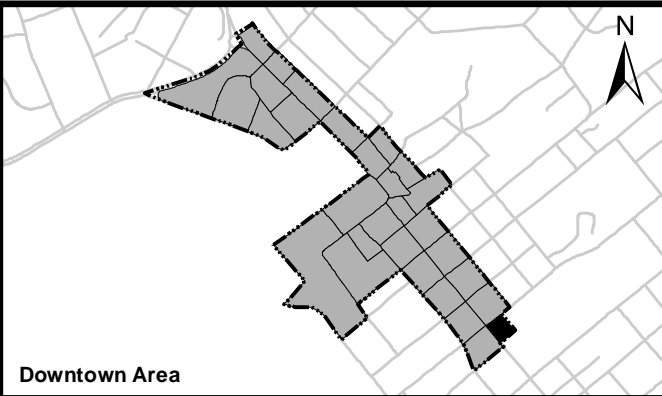
Bicycle Racks:

No Bicycle Racks

-  Block 4-NE-B
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14






Bicycle Racks:

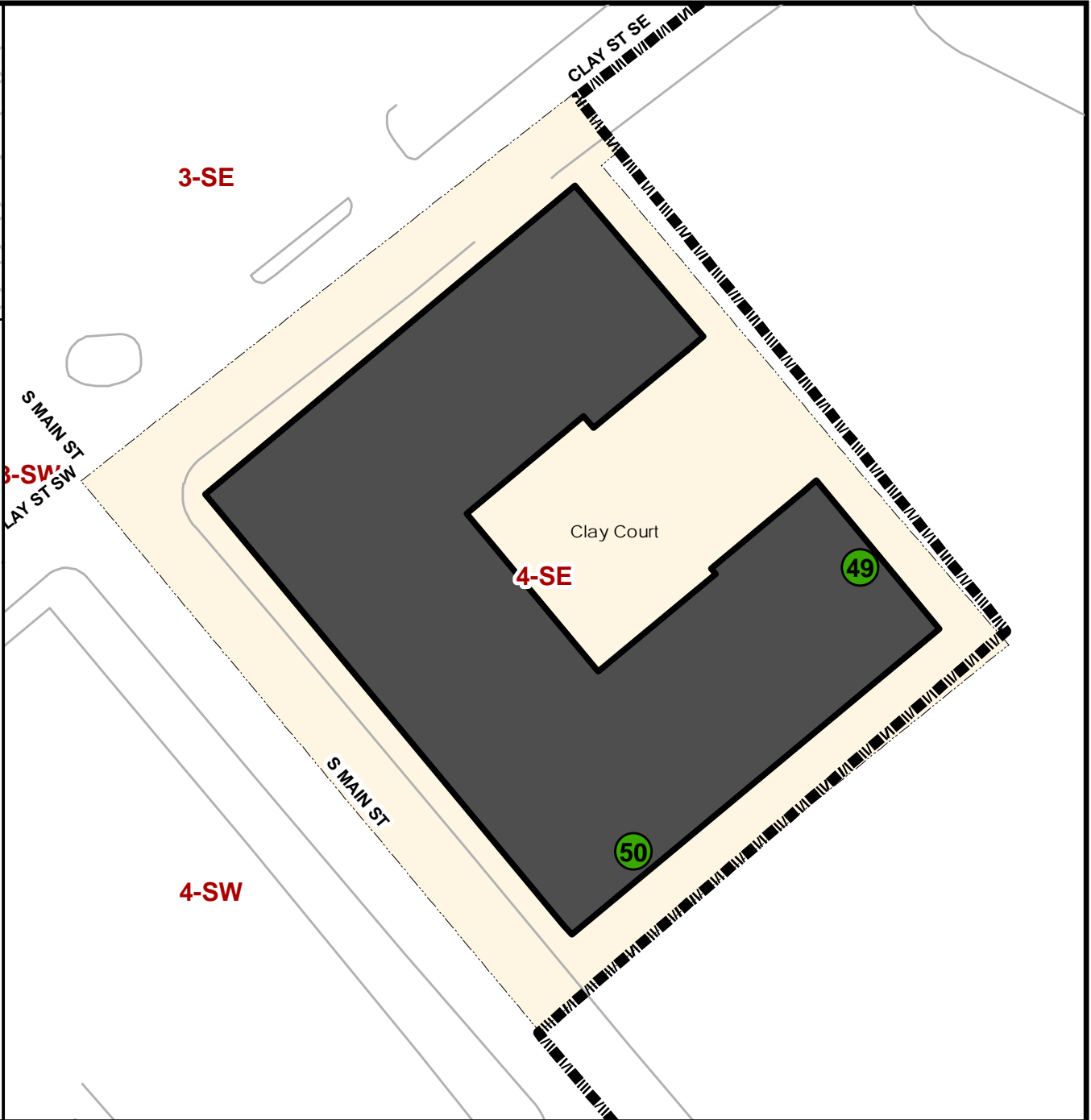
- 49) Clay Court 1st Floor Garage (SW)
- 50) Clay Court 1st Floor Garage (SE)

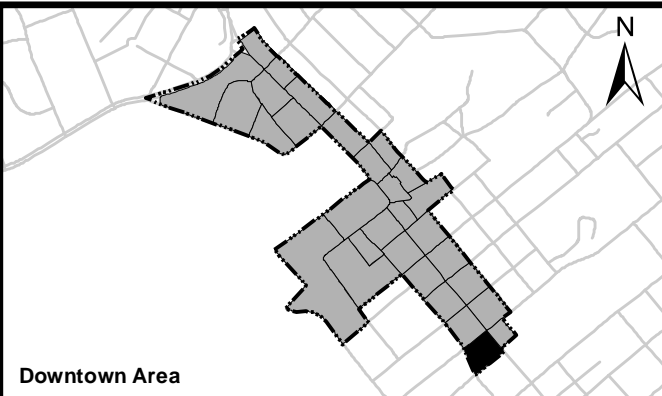
 Privately Owned

 Block 4-SE

 Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14








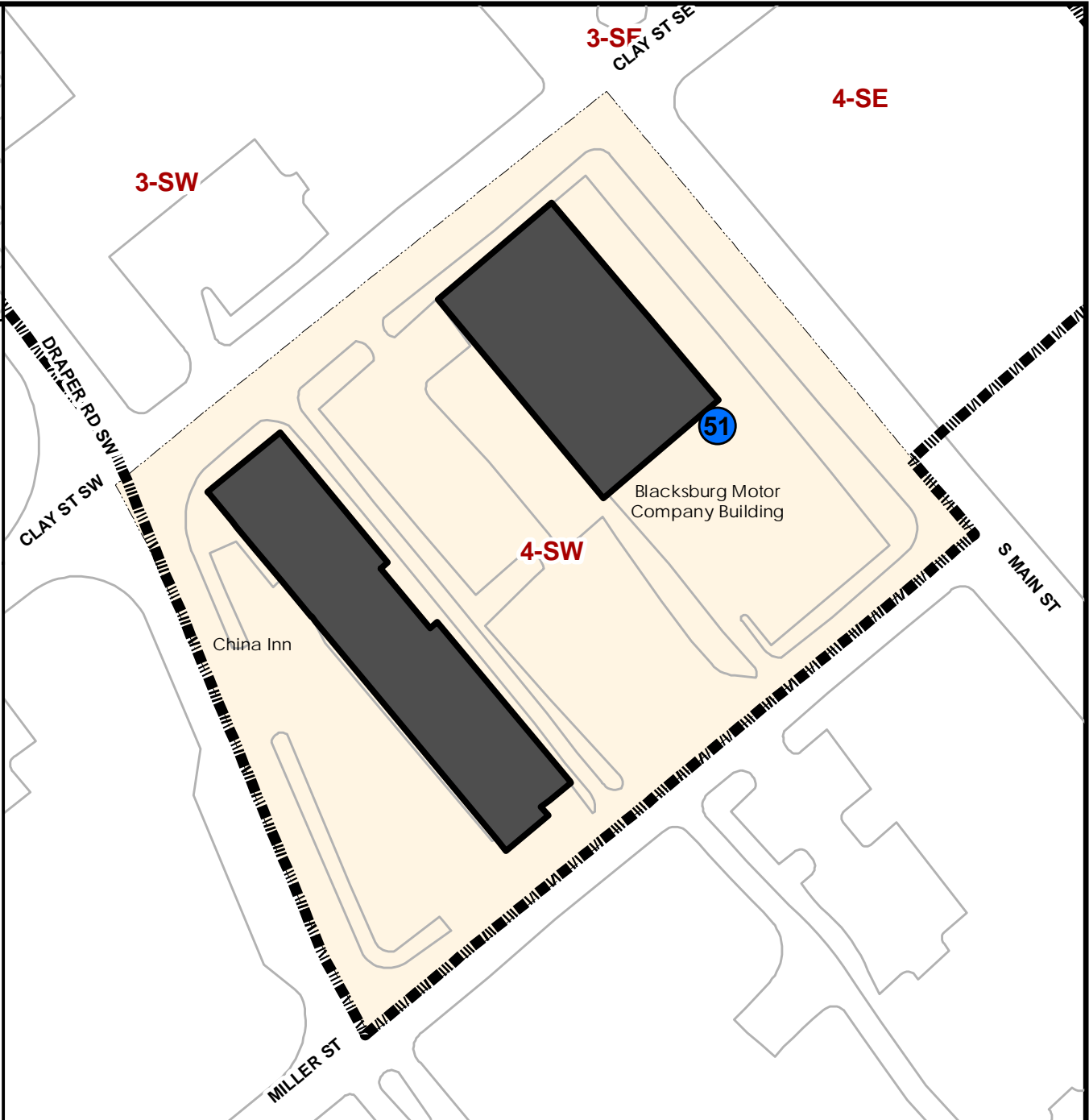
Downtown Area

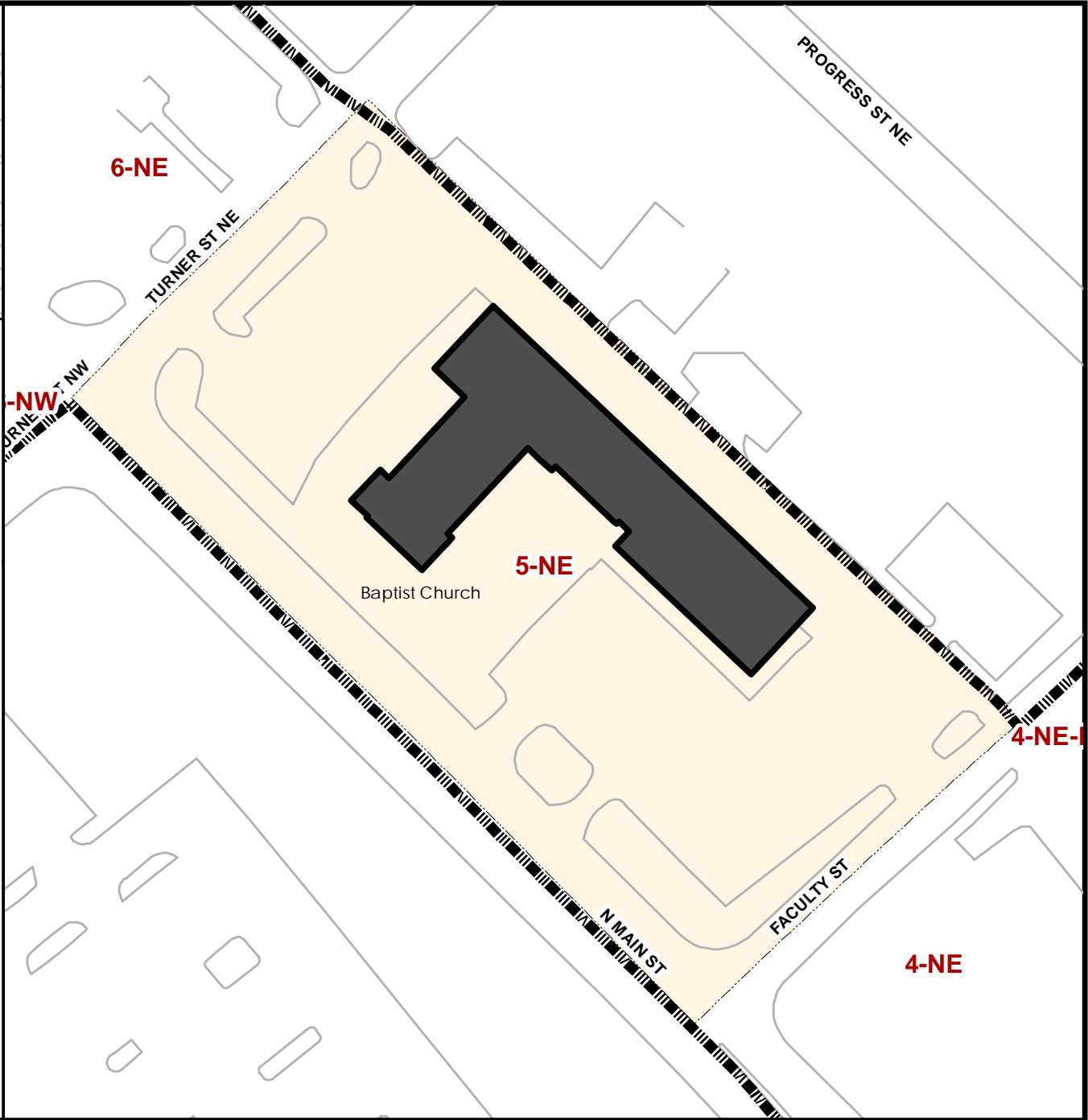
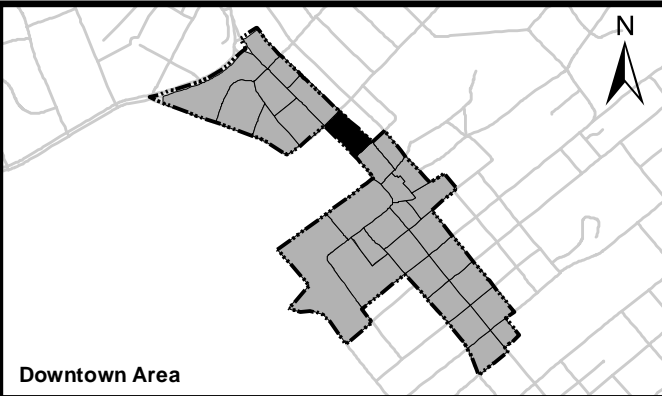
Bicycle Racks:

51) Blacksburg Motor Company

-  Town Owned
-  Block 4-SW
-  Downtown Area



Town of Blacksburg, E&G Dept., 10/1/14



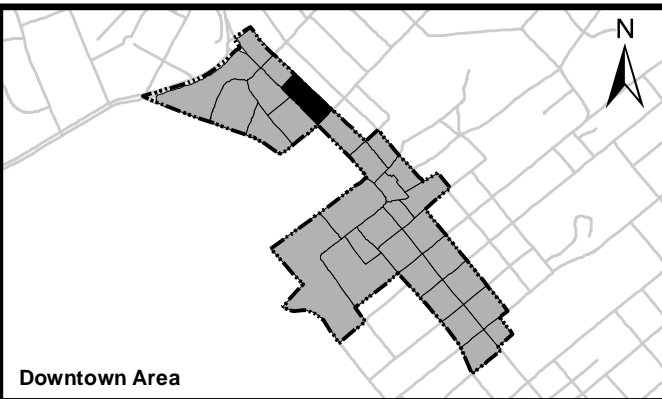


Bicycle Racks:

No Bicycle Racks




-  Block 5-NE
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14



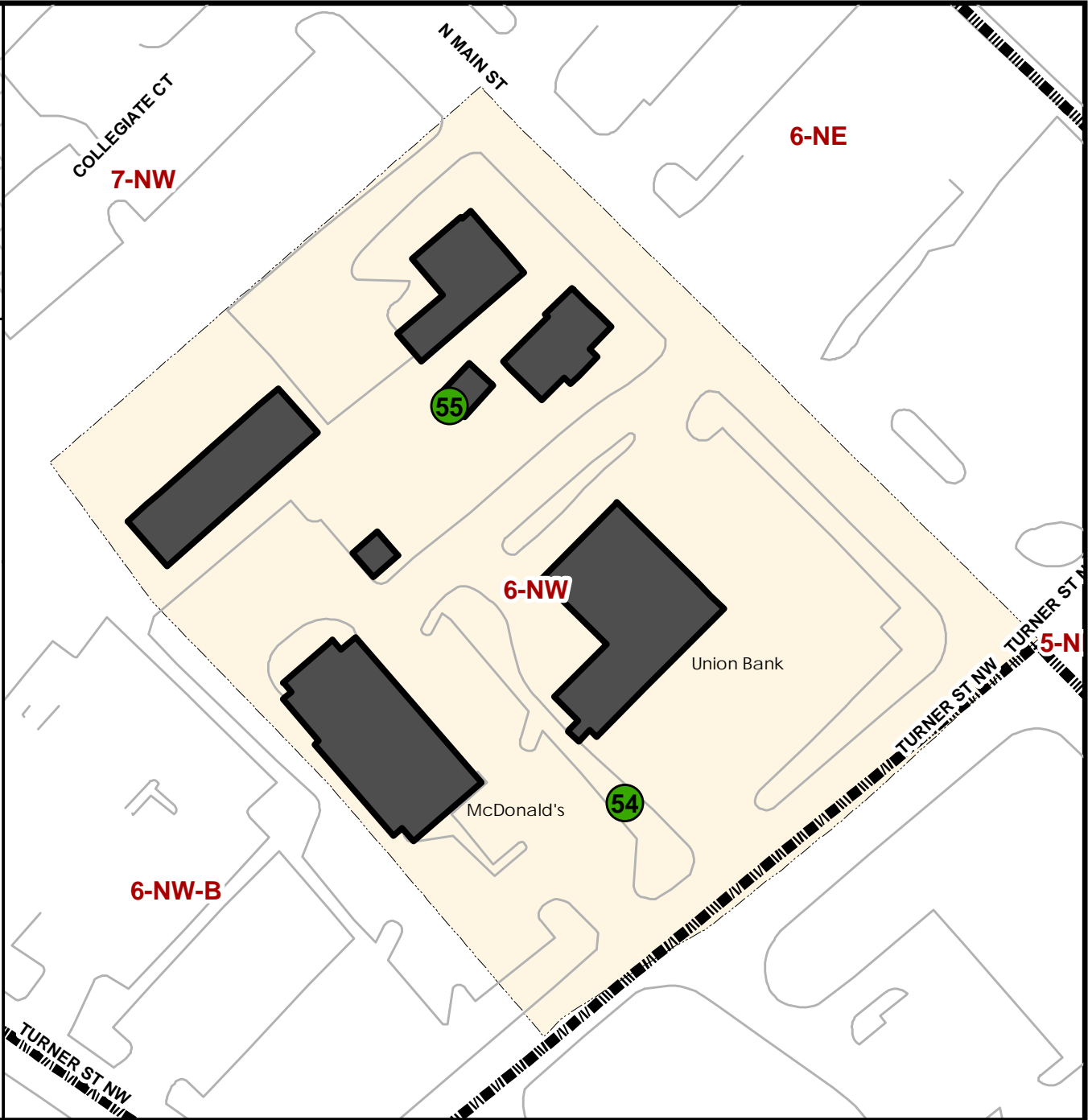
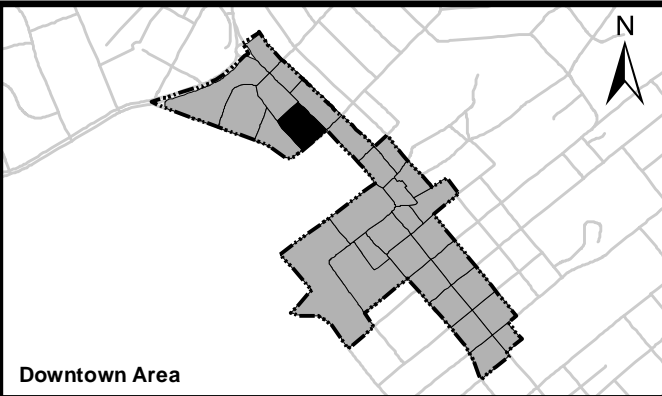
Bicycle Racks:

- 52) Taco Bell (SW)
- 53) Shell Station (south)

-  Privately Owned
-  Block 6-NE
-  Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14





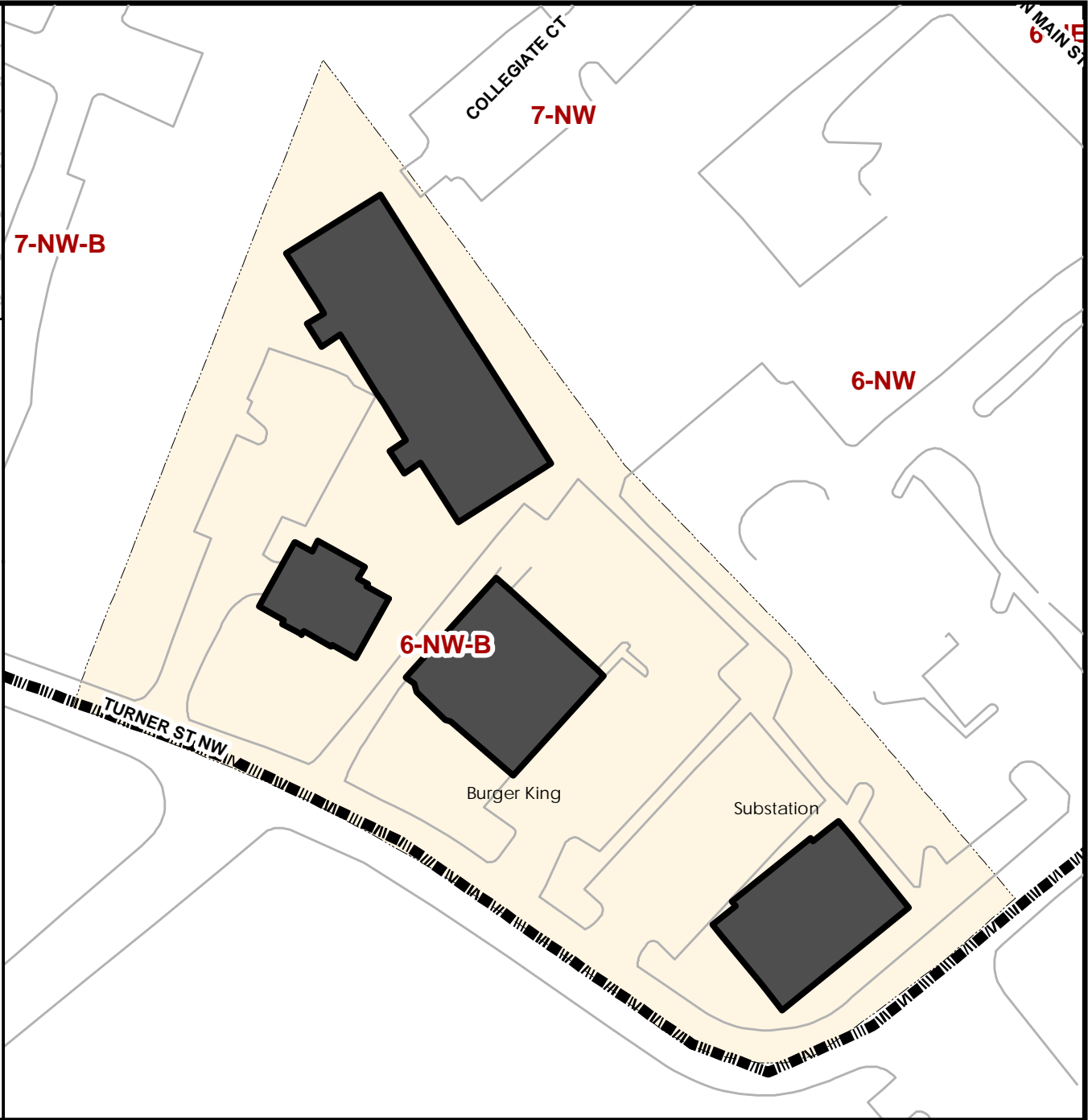
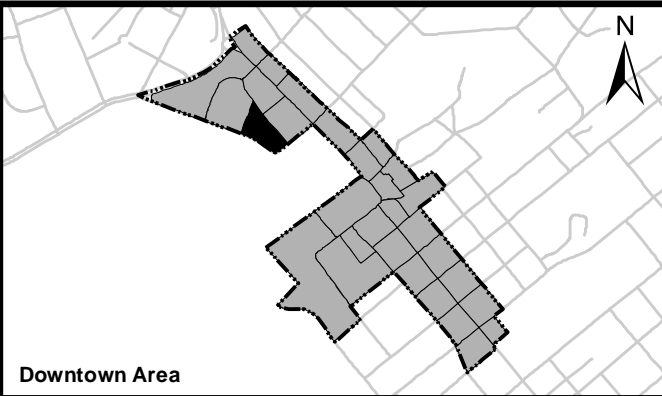
Bicycle Racks:

- 54) Union Bank (SW)
- 55) Rear of Blacksburg Taphouse



-  Privately Owned
-  Block 6-NW
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14

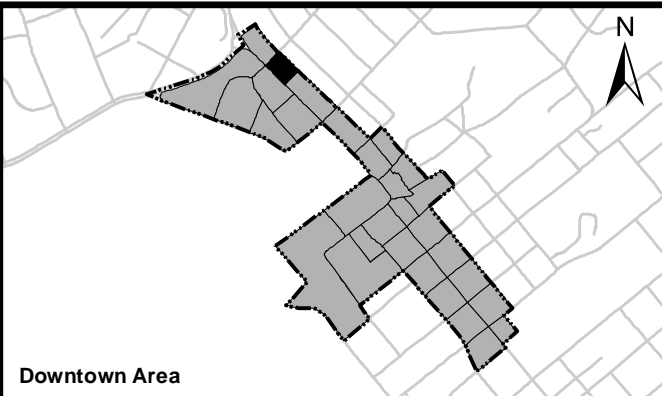




Bicycle Racks:
No Bicycle Racks

-  Block 6-NW-B
-  Downtown Area


Town of Blacksburg, E&G Dept., 10/1/14




Downtown Area

Bicycle Racks:

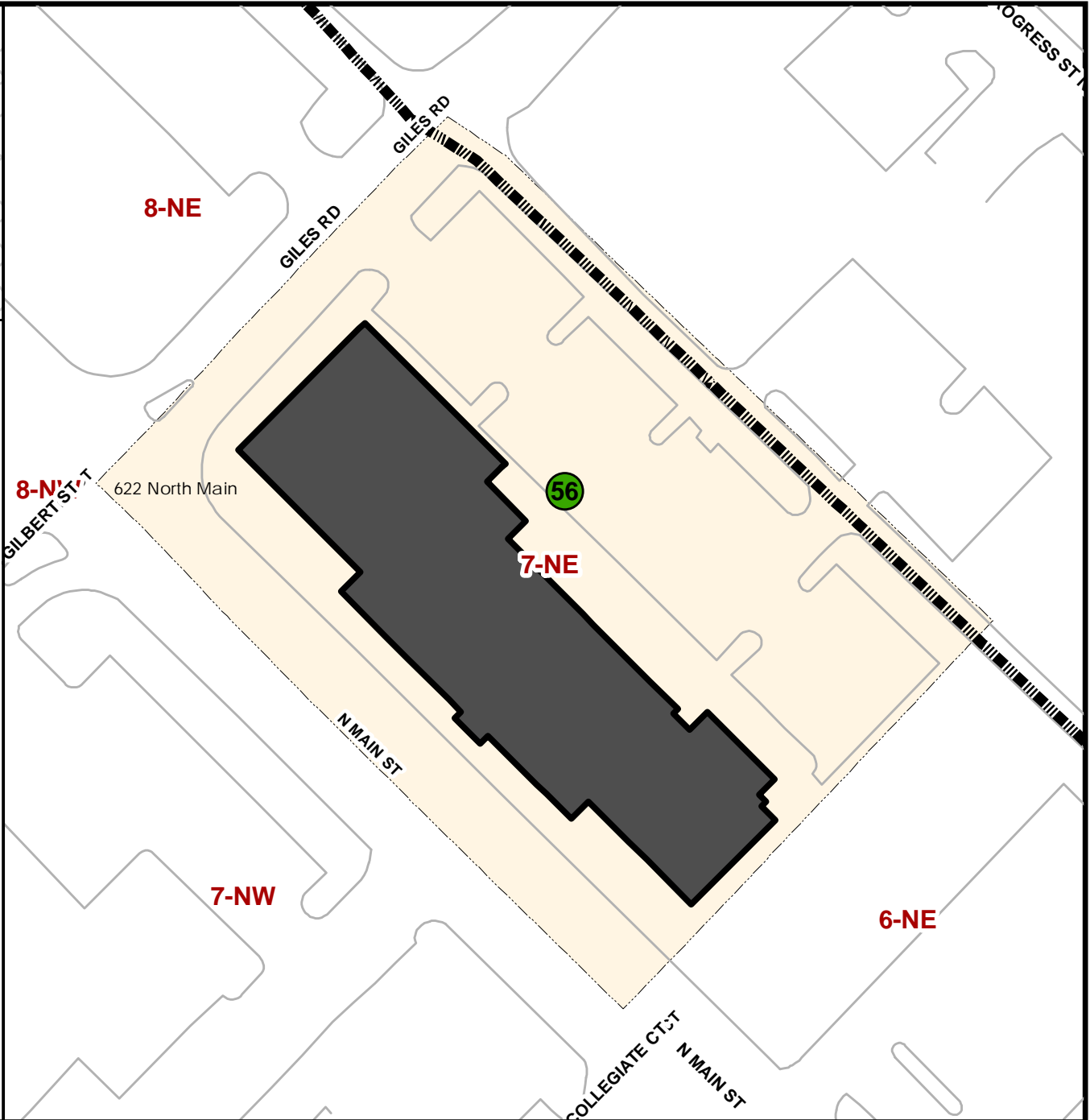
56) Back of Tuck Chiropractic

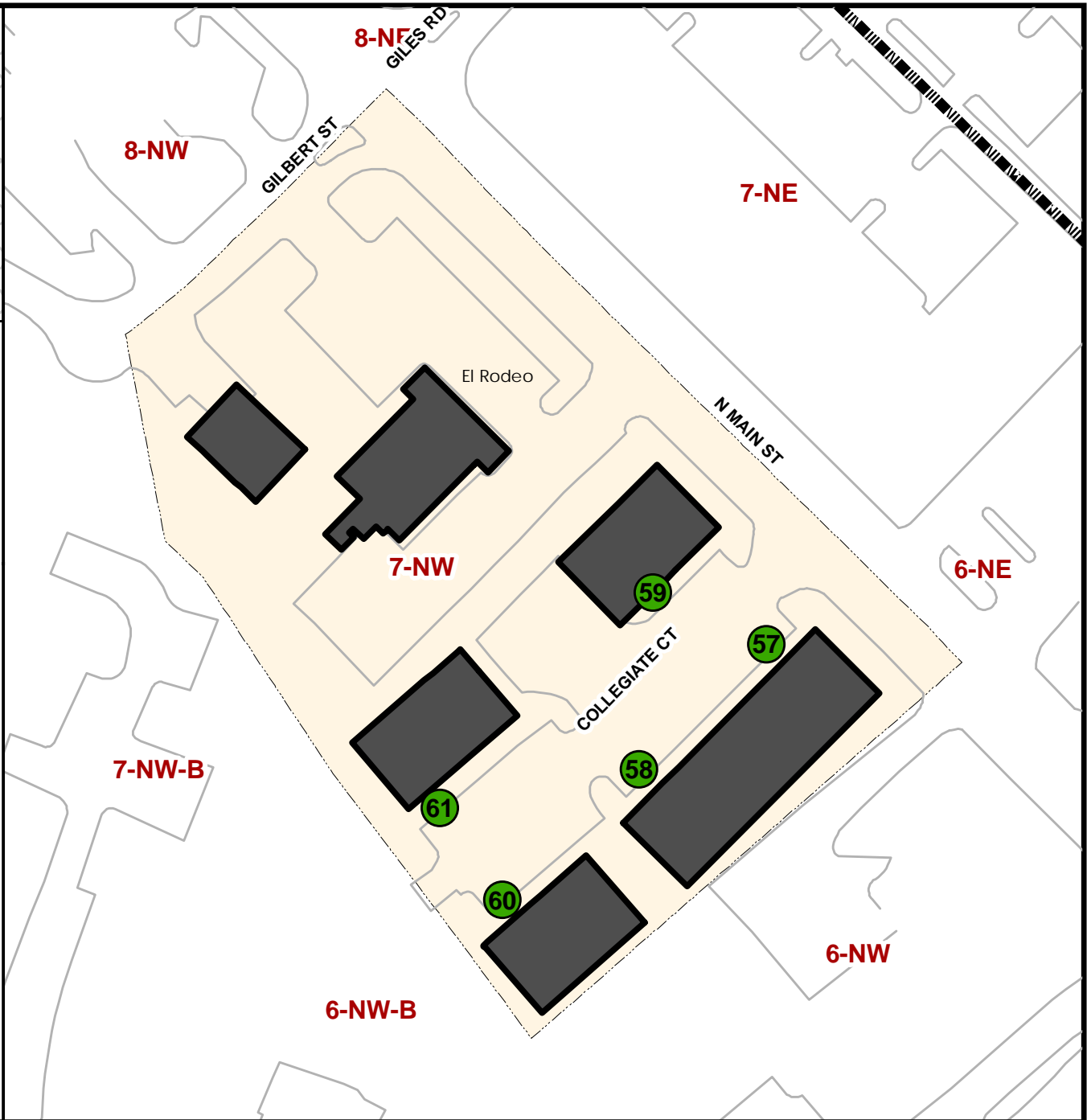
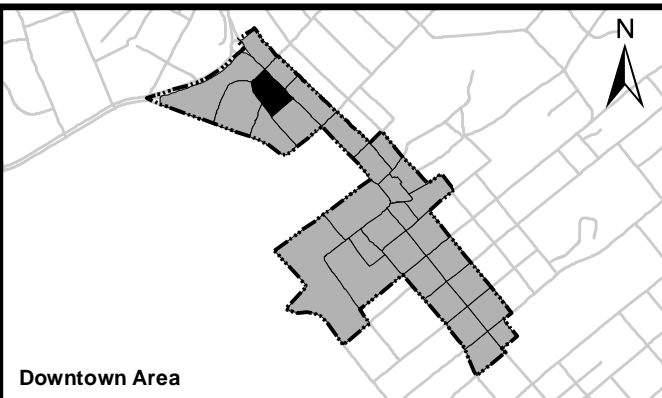
 Privately Owned

 Block 7-NE

 Downtown Area




Town of Blacksburg, E&G Dept., 10/1/14





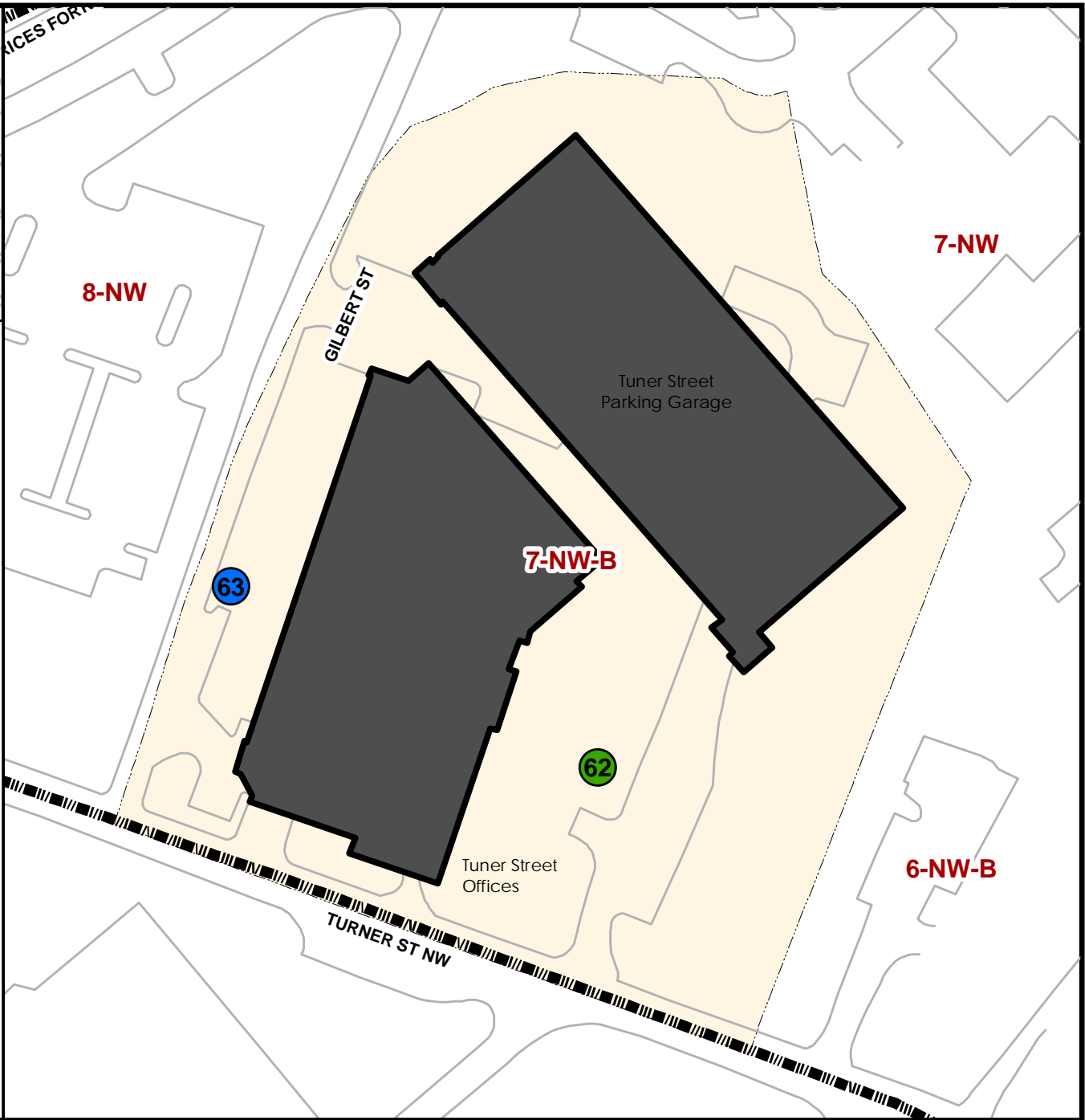
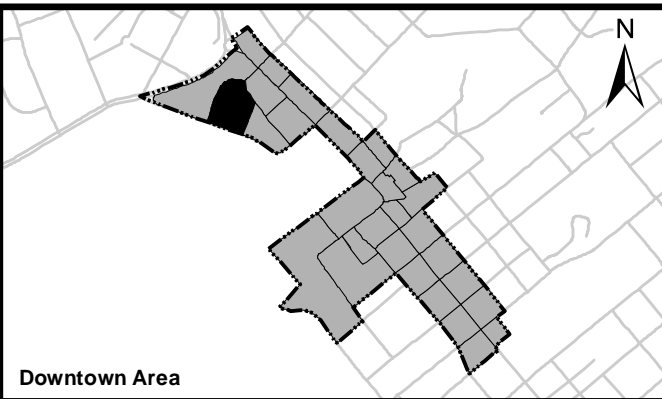
Bicycle Racks:

- 57) Collegiate Court
- 58) Collegiate Court (2)
- 59) Collegiate Court (3)
- 60) Collegiate Court (4)
- 61) Collegiate Court (5)

-  Privately Owned
-  Block 7-NW
-  Downtown Area





Town of Blacksburg, E&G Dept., 10/1/14



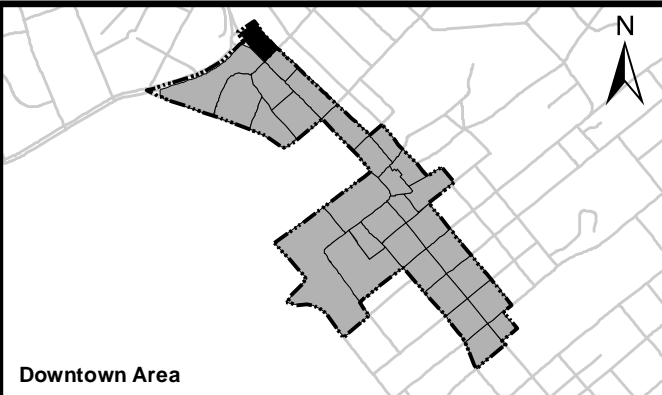


Bicycle Racks:

- 62) North End Courtyard
- 63) Moss Art Gallery


-  Town Owned
-  Privately Owned
-  Block 7-NW-B
-  Downtown Area

Town of Blacksburg, E&G Dept., 10/1/14




Bicycle Racks:

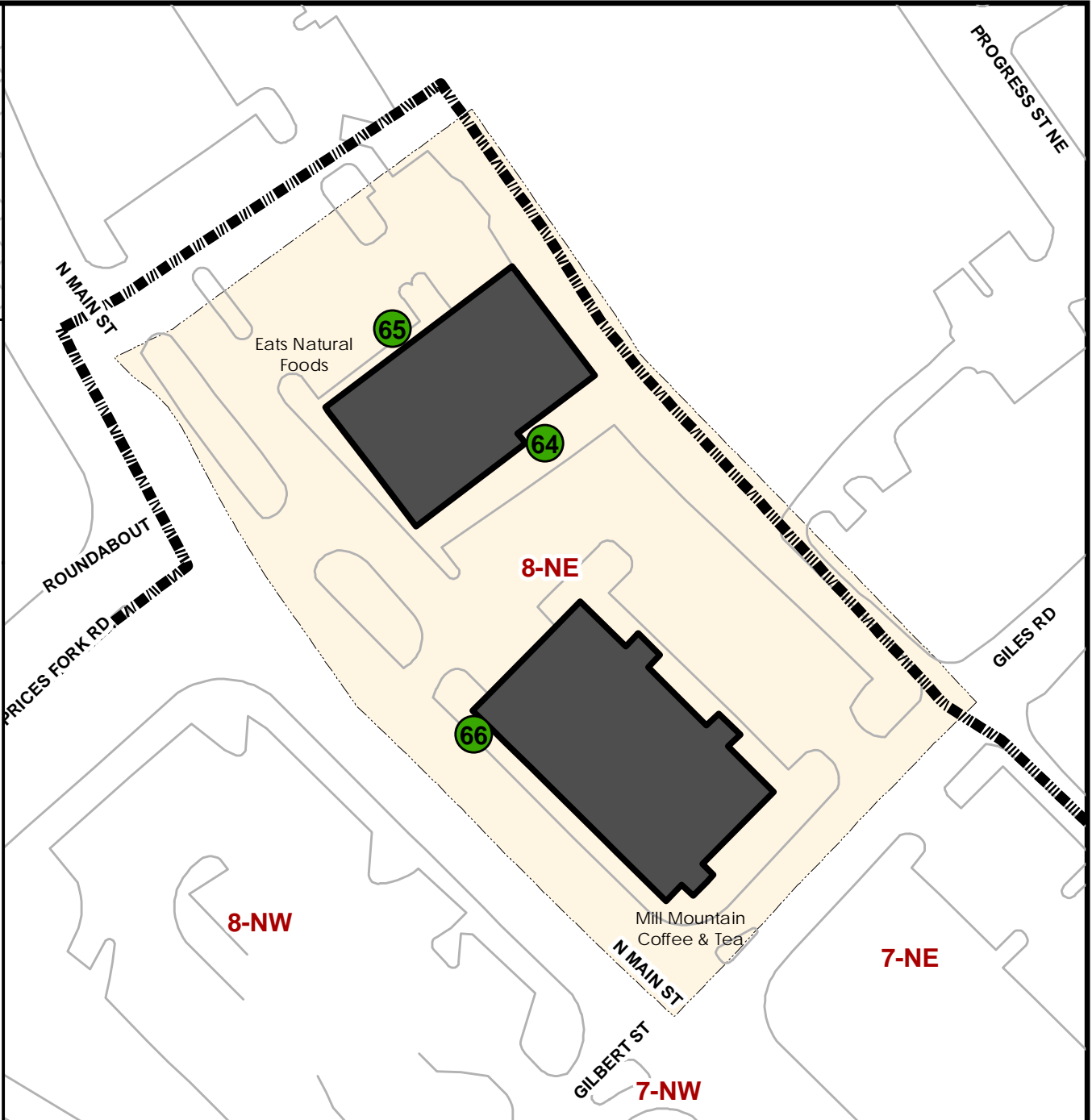
- 64) Back of Valley Women's Clinic
- 65) Eats
- 66) Outside Jiu-Jitsu

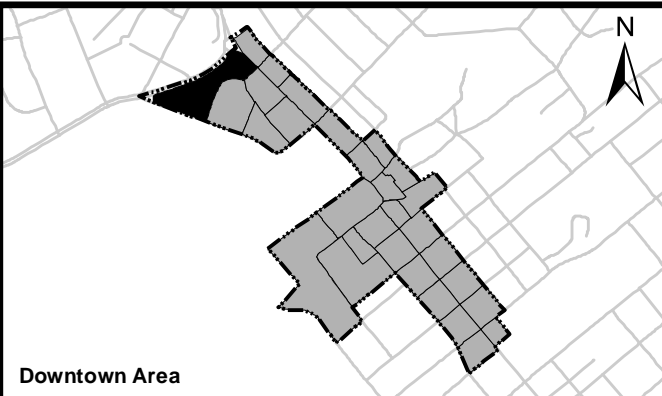
 Privately Owned

 Block 8-NE

 Downtown Area





Town of Blacksburg, E&G Dept., 10/1/14

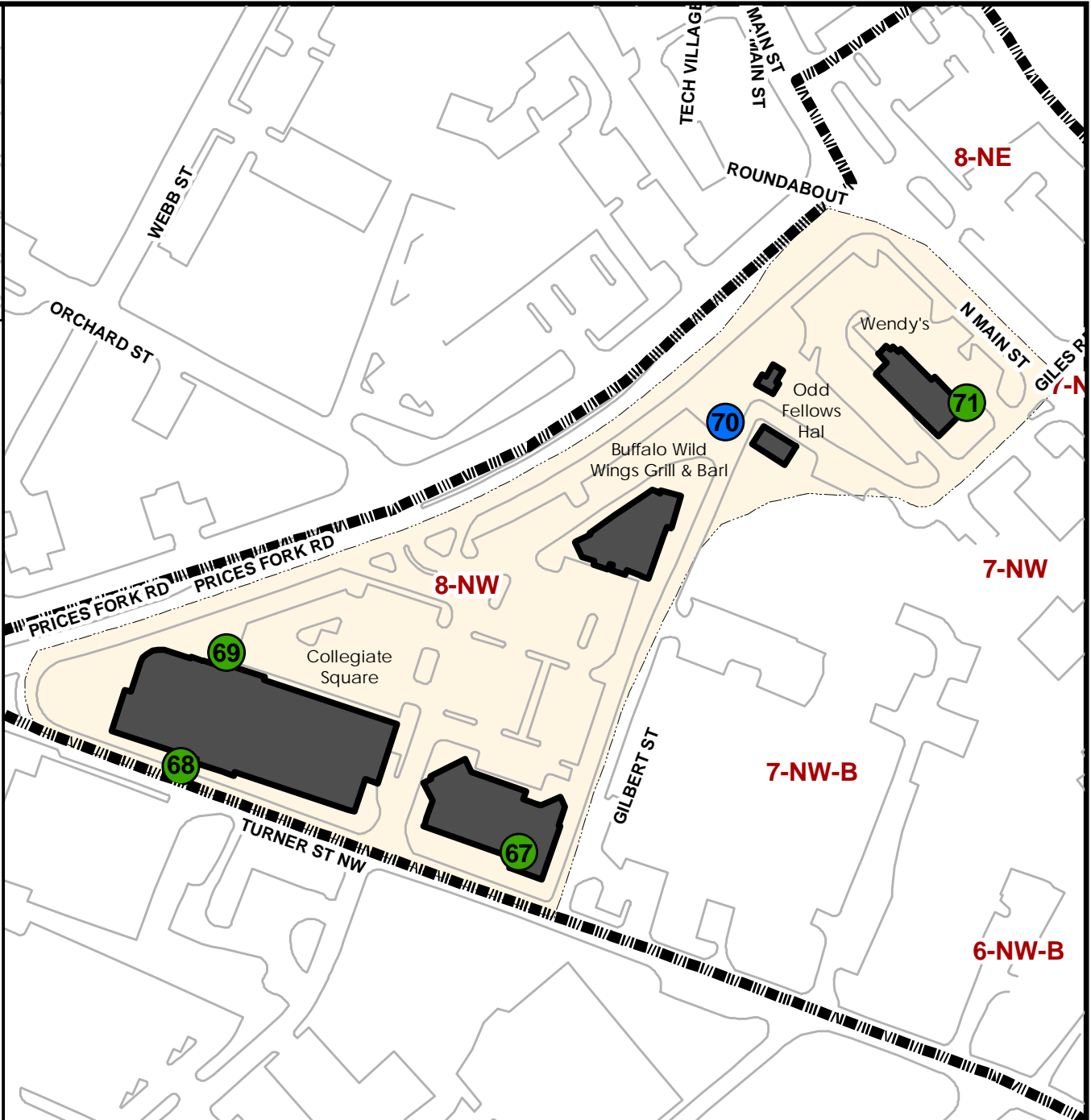




Bicycle Racks:

- 67) Inside Hall of Collegiate Square
- 68) Center for Dance (west)
- 69) Center for Dance (east)
- 70) Odd Fellows Hall (north)
- 71) Wendy's (SE)

-  Town Owned
-  Privately Owned
-  Block 8-NW
-  Downtown Area



Town of Blacksburg, E&G Dept., 10/1/14



PHOTO INVENTORY OF BICYCLE RACKS



Photo 1: Northwest of Post Office



Photo 2: Market Square



Photo 3: Across from Black Hen & Bar Blue



Photo 4: Corner of Main & Jackson

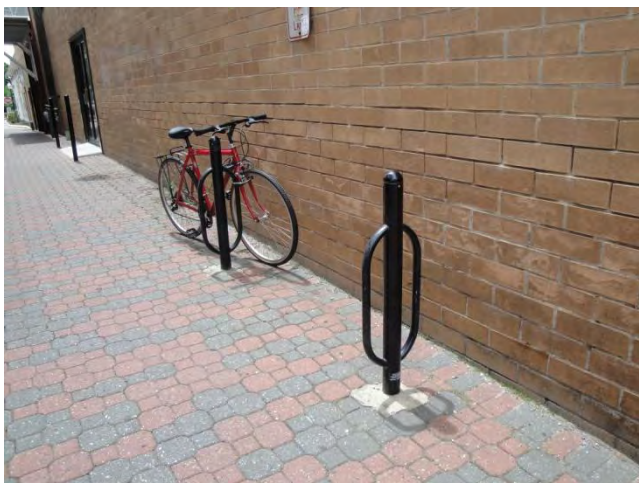


Photo 5: South of UPS Store



Photo 6: East of Farmer's Market

PHOTO INVENTORY OF BICYCLE RACKS



Photo 7: Architecture Annex - Southeast



Photo 8: Architecture Annex - East



Photo 9: Architecture Annex - West



Photo 10: Squires Parking Lot - Northwest



Photo 11: Behind University Club



Photo 12: Graduate Life Center - West

PHOTO INVENTORY OF BICYCLE RACKS



Photo 13: Graduate Life Center – North



Photo 14: Squires - Southwest



Photo 15: Squires – West



Photo 16: Squires – Northwest



Photo 17: Squires - Northeast



Photo 18: Squires - East

PHOTO INVENTORY OF BICYCLE RACKS



Photo 19: Squires – Southeast



Photo 20: Squires - South



Photo 21: Graduate Life Center – Northeast



Photo 22: Graduate Life Center - Southeast



Photo 23: Community Design Assistance Center



Photo 24: Tech Bookstore

PHOTO INVENTORY OF BICYCLE RACKS



Photo 25: Front of the Cellar



Photo 26: Fire and Rescue Station



Photo 27: Next to Bollo's



Photo 28: Next to Bollo's (2)



Photo 29 part 1: Next to DP Dough

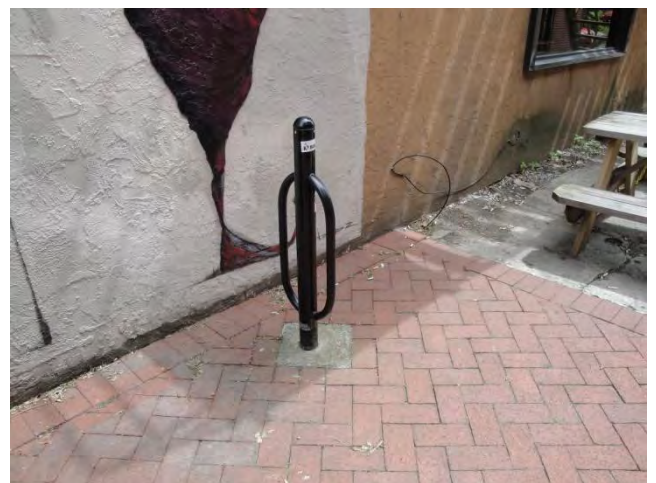


Photo 29 part 2: Next to DP Dough

PHOTO INVENTORY OF BICYCLE RACKS



Photo 30: South of Armory



Photo 31: Southwest of Tots



Photo 32: Northwest of Tots



Photo 33: Back of Main Street Inn



Photo 34: Kent Square Parking Entrance



Photo 35: Between Avail Vapor and Starbucks

PHOTO INVENTORY OF BICYCLE RACKS



Photo 36: Inside Kent Square Garage



Photo 37: The Cellar - Southeast



Photo 38: The Cellar - Southwest



Photo 39: VT's Play Hard



Photo 40: Henderson Hall – West



Photo 41: Henderson Hall 2 – West

PHOTO INVENTORY OF BICYCLE RACKS



Photo 42: Henderson Hall 3 - North



Photo 43: Theater 101



Photo 44: Municipal Building - South



Photo 45: Municipal Building - North



Photo 46: Outside Tobacco Shop



Photo 47: Bike Barn

PHOTO INVENTORY OF BICYCLE RACKS



Photo 48: Bike Barn 2

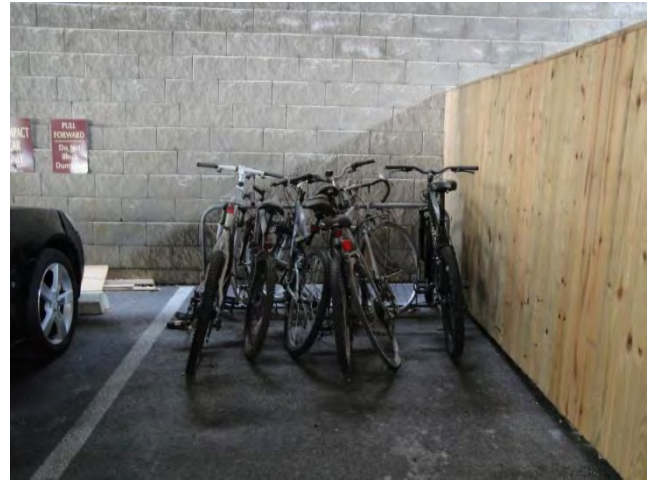


Photo 49: Clay Court Garage – Southwest



Photo 50: Clay Court Garage – Southeast



Photo 51: Blacksburg Motor Company



Photo 52: Taco Bell – Southwest



Photo 53: Shell Station - South

PHOTO INVENTORY OF BICYCLE RACKS



Photo 54: Union Bank – Southwest



Photo 55: Rear of Blacksburg Taphouse



Photo 56: Back of Tuck Chiropractic



Photo 57: Collegiate Court



Photo 58: Collegiate Court 2



Photo 59: Collegiate Court 3

PHOTO INVENTORY OF BICYCLE RACKS



Photo 60: Collegiate Court 4



Photo 61: Collegiate Court 5



Photo 62: North End Courtyard



Photo 63: Moss Art Gallery



Photo 64: Back of Valley Women's Clinic

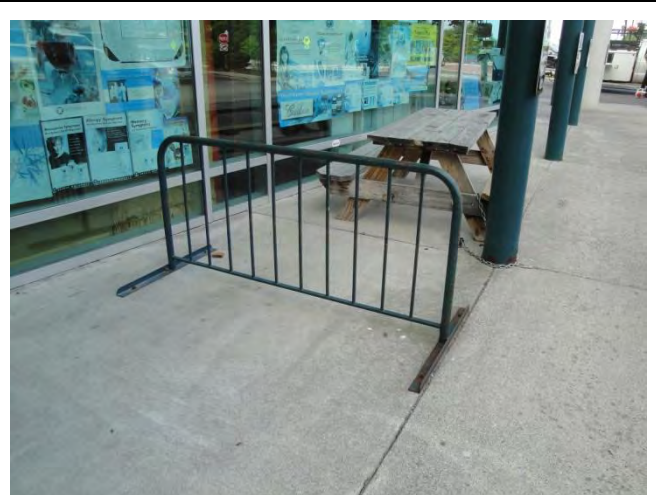


Photo 65: Eats

PHOTO INVENTORY OF BICYCLE RACKS



Photo 66: Outside Jiu-Jitsu



Photo 67: Inside Hall of Collegiate Square



Photo 68: Center for Dance - West



Photo 69: Center for Dance - East



Photo 70: Odd Fellows Hall - Northwest



Photo 71: Wendy's - Southeast

PHOTO INVENTORY OF BICYCLE RACKS



Photo 72: Squires – Northwest 2



Photo 72: Graduate Life Center - Northeast



Rogue Bicycle Example



Rogue Bicycle Example



Rogue Bicycle Example



Rogue Bicycle Example