Coalition for Appropriate Transportation

Bicycling & Walking on College Hill

Ideas presented to City of Easton and Lafayette College during consideration of college expansion

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1 About CAT

CAT-Coalition for Appropriate Transportation is a 501(c)(3) non-profit, based in Bethlehem, Pennsylvania, serving Lehigh and Northampton Counties (approx. 650,000 people) for the last 24 years. This includes the three urban areas of Allentown, Bethlehem and Easton, plus 59 suburban and rural municipalities, south to the Bucks County line and north to the Appalachian Trail.

CAT's mission is to promote smart bicycling, pedestrian access, and public transit. CAT aims to encourage bicycling through education in three areas: (1) Bicycling education for adults (traffic & mechanics); (2) Youth bicycling education programs in local schools; and (3) Bicycling outreach to local governments and police departments.

2 Background

The City of Easton's Comprehensive Plan 2035[i] and Lehigh Valley Planning Commission's regional Comprehensive Plan 2030[ii], both highlight the need to do more for walking & bicycling.

Due to high traffic volumes on Cattell Street with 11,000+ vehicles per day (ADT)[iii], and 70% of vehicles exceeding the speed limit[iv], there is much need for traffic calming to support pedestrians and bicyclists. CAT also understands the age-old challenge for residents & students to conquer the 200' elevation gain from the base of College Hill. The City of Easton Environmental Advisory Council also highlighted these needs in it's 2009 walkability report.[v]

3 Contents of this Report

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4 Summary

CAT has performed a review of current challenges to bicycling and walking for College Hill residents and Lafayette College students. The needs of both groups are very similar.

In particular, connecting the College Hill neighborhood across Cattell Street and calming its high levels of through-traffic is critical. Connecting College Hill to downtown Easton and to the Karl Stirner Trail is likewise beneficial.

CAT's recommendations shown on the map below (Figure 1) are outlined in the following report.

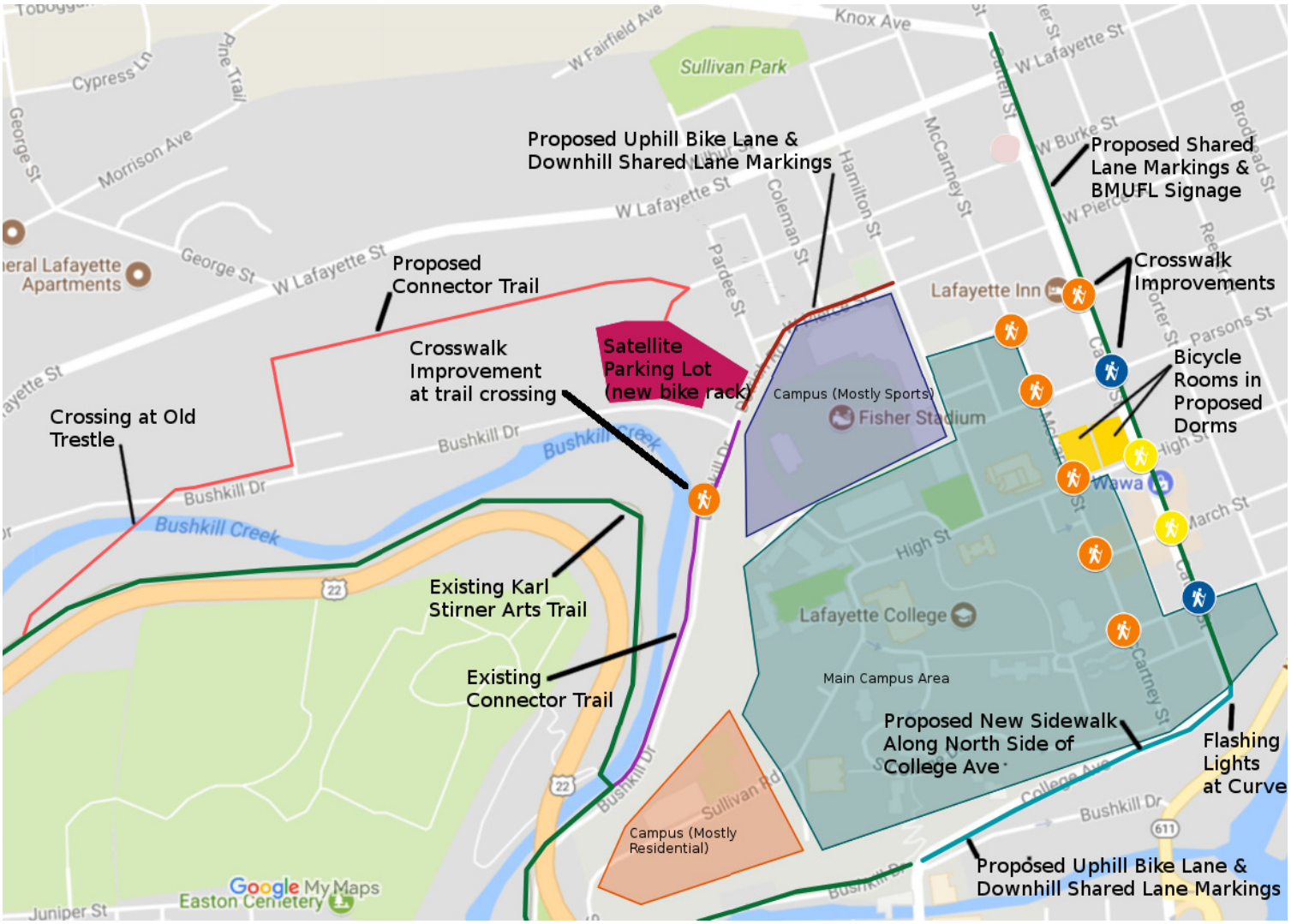

Figure 1 – Summary Map of CAT Recommendations

(pedestrian crossing colors detailed on page 8)

5 Detailed Recommendations

5.1 Bicycle Parking Rooms in New Dorms

Lafayette should include with their plans for dorms, bicycle parking rooms on the ground floor, with hooks or suitable racks to handle bikes for 20-30% of student residents. (30% is LEED green building guidance.[vi]) With the proposed 550 students per two dorm buildings, 20-30% would equate to 55-83 bikes per building.

Figure 2 – Examples of bicycle parking room configurations[vii]

These bicycle rooms would promote bicycling for Lafayette students and reduce dependency on driving cars across campus or to downtown destinations. The rooms are much better than simple racks outdoors, since they would reduce theft and provide protection from rain & snow.

Bike parking rooms should be located at ground level for ease of use and have secure entry and means for students to lock their bikes to the racks/hooks.

A two level rack in Figure 2 requires 85 sq ft per 10 bikes, so 55-83 bikes would require 470-700 sq ft.

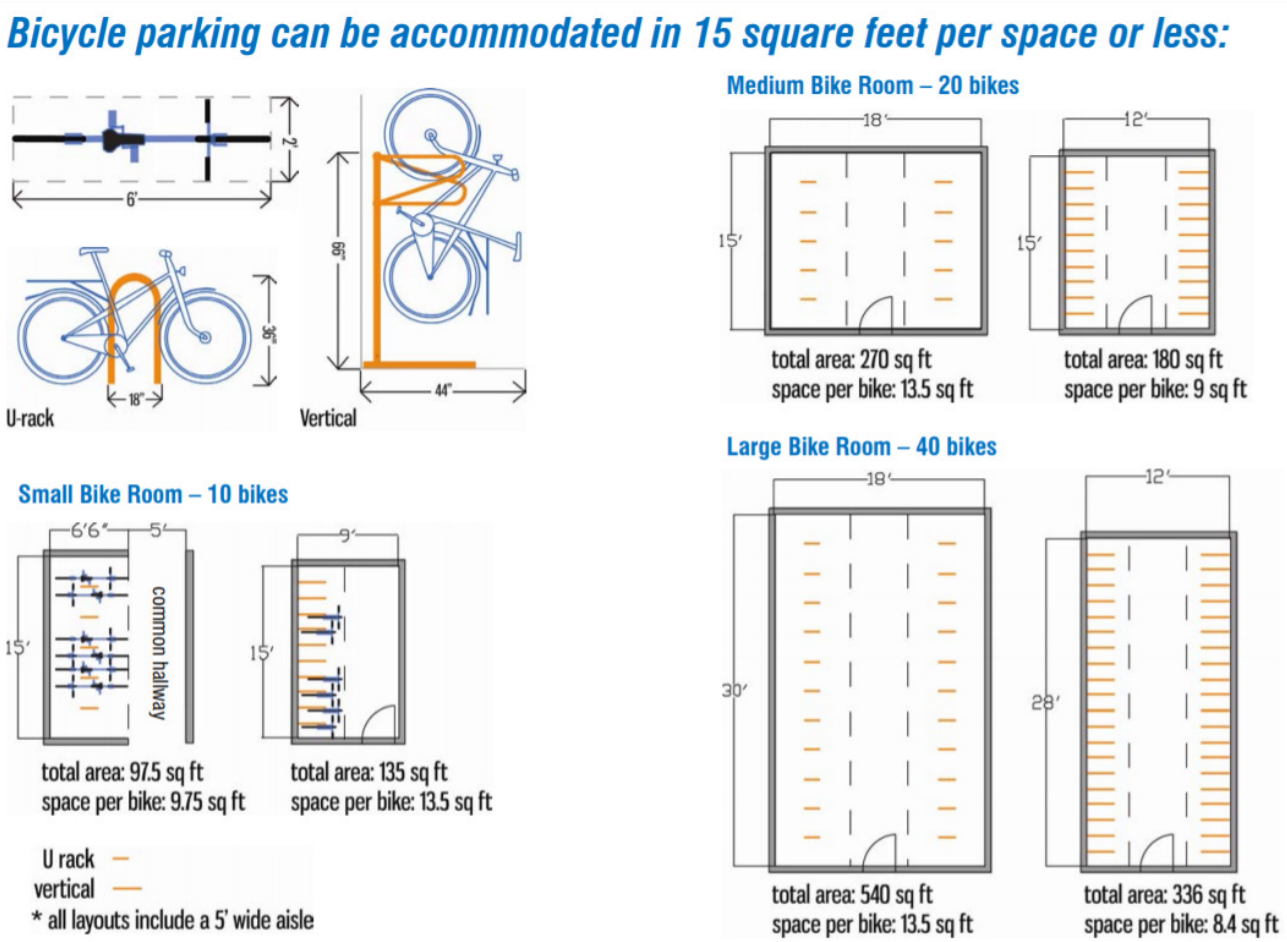

Figure 3 – Sample layouts of bicycle parking rooms[viii]

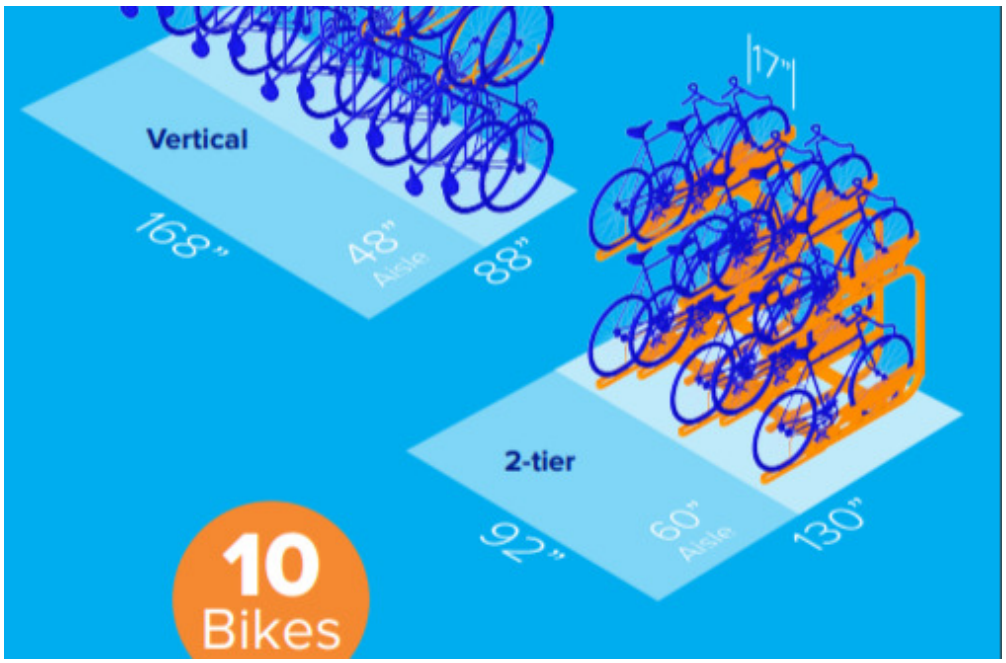

Figure 4 – Bike parking space requirements[ix]

5.2 Cattell Street Corridor (Knox Ave to College Ave)

5.2.1 Pedestrian Improvements

For drivers, we're talking about traffic calming and awareness of people crossing the street. For pedestrians, we're talking about giving them a prominent place to cross.

Improvements suggested would be pedestrian curb extensions, push-button activated flashing lights and ADA curb cuts with high-visibility crosswalks. Curb extensions are recommended for all four crossings at each intersection. See Figures 5 & 6 below for examples.

Figure 5 – Pedestrian curb extensions and painted high-visibility crosswalks

Figure 6 – Pedestrian curb extensions and high-visibility faux-brick inlay crosswalks

To avoid inundating over-signage, consider moving all existing mid-block pedestrian signs with and without warning lights (Figure 7) to be directly adjacent to crosswalks and make them push-button instantly-activated as is used at the North Third Street Williams Visual Arts building crosswalk.

Figure 7 – Existing pedestrian "Ahead" flashing lights on Cattell St. (solar) are not push button activated and could be relocated to a crosswalk and used with push-button activation

Figure 8 – Push-button pedestrian activated flashing lights (solar)

CAT recommends pedestrian curb extensions, high-visibility crosswalks, and pedestrian-activated flashing lights shown in blue on map (Figure 9):

- Cattell St & Clinton Terrace
- Cattell St & Parsons St

Recommended pedestrian curb extensions and pedestrian-activated flashing lights (existing high-visibility “faux-brick” crosswalks) at the following locations shown in yellow on map (Figure 9):

- Cattell St & March St
- Cattell St & High St

Recommended pedestrian curb extensions and high-visibility crosswalks at the following locations shown in orange on map (Figure 9):

- Cattell St & Monroe St (existing traffic signal)
- McCartney St & Clinton Terrace
- McCartney St & March St
- McCartney St & High St
- McCartney St & Parsons St
- McCartney St & Monroe St

Recommended high-visibility crosswalks, and pedestrian-activated flashing lights shown in orange on the map (Figure 9):

- Karl Stirner connector trail crossing at Bushkill Drive just south of Detrick Street.

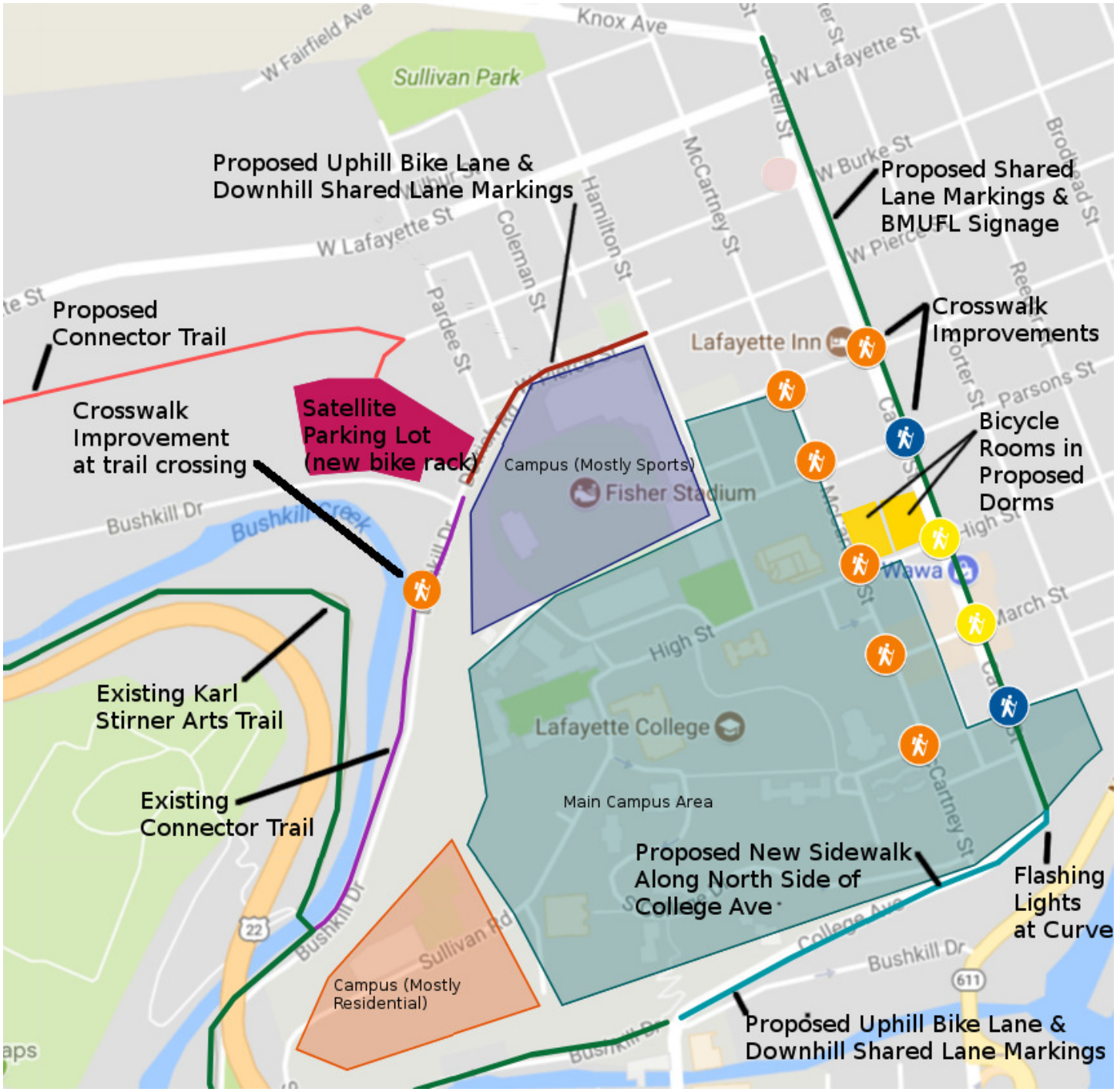

Figure 9 – Detail Map of Proposed Bicycle-Pedestrian Improvements

5.2.2 Bicycle Shared Lane Markings & “Bicycles May Use Full Lane” Signs

For bicyclists, Shared Lane Markings and “Bicycles May Use Full Lane” (BMUFL) signs encourage riding the same direction as traffic and not riding on sidewalks, as well as not riding too close to parked car doors that may open.

For motorists, these markings & signage alert that bicyclists may be present, but does not require removal of on-street parking, and does not promote abnormal traffic flow, such as tempting a motorist to turn across a cyclist’s path.

Figure 10 – Bicycle Shared Lane Marking

Figure 11 – Bicycles May Use Full Lane Sign (R4-11)

CAT suggests Bicycle Shared Lane Markings along the entire Cattell St corridor in both directions from Knox Ave to Clinton Terrace, where overall road width is 36’. Locate every 250’, placed laterally 14’ from curb. Locate just after intersections and mid-block, but not within 100' before an intersection.

A northbound “Bicycles May Use Full Lane” sign should be just after the Clinton Terrace intersection, to correspond with the first Shared Lane Marking. A southbound BMUFL sign should be located in the block between W. Pierce St and W. Burke St.

Installing Shared Lane Markings on Cattell Street would form a continuous network with the College Ave uphill bike lane and downhill Shared Lane Markings to bridge the perceived gap to downtown.

5.2.3 Radar Speed Readouts

Install solar radar speed readout at one location in each direction along Cattell St., "Your speed is _____" "Thank You" or "Slow Down". This is to encourage reasonable, calm traffic flow and compliance with 25mph speed limit. See Figure 12.

In addition, speed enforcement by the Easton Police Department would also be effective traffic calming.

Figure 12 – Solar Radar Speed Readout with Gratitude

5.3 College Avenue (North Third St to Cattell St-Clinton Terrace)

5.3.1 Dedicated Bike Lane Uphill, Shared Lane Markings/Signage Downhill

It appears possible to install a 5’ wide climbing bike lane (bikes only, no parking) in the uphill direction for one-way bike traffic, and Shared Lane Markings in the downhill general travel lane marked every 250’, with a BMUFL sign after McCartney Street. The reasoning here is that riding uphill, the bicyclist will be traveling 5-10mph, whereas downhill will be traveling 20-30mph, the same speed as other vehicles.

Lane configuration: College Ave (overall width ranges 30-35’), stripe two 10’ wide lanes, 5’ wide bike lane on uphill direction, 2’ painted buffer between bike lane and uphill general travel lane, and new 8’ sidewalk on downhill direction. Locate Shared Lane Markings 5’ from curb on downhill direction so that they are center of the lane. Terminate bike lane 100’ on Cattell Street before Clinton Terrace.

Challenges to implementation will be:

1. Parking prohibition along College Ave and how it would affect the four residences (one has off-street parking, others don’t.) All residences are owned by Lafayette College?
2. For left turns from bike lane onto McCartney Street cyclist is encouraged to move into the leftmost part of the normal travel lane to turn left. Bike lane lines should be discontinued 100’ before intersection and restart immediately after the intersection. (At 7mph, this is 10 seconds travel time)
3. Snow removal from bike lane without dumping it on sidewalk

5.3.2 Add a Sidewalk on North Side of College Avenue

Adding a new 8’ wide sidewalk (shown in Figure 13) would remove the obstacle for pedestrians to cross College Avenue at McCartney St. The currently unmarked crosswalk at McCartney St and College Ave is the shortest distance for people walking from Lafayette campus area heading downtown. The small bend just before the intersection makes pedestrians crossing here from north to south not visible to southbound drivers. Adding this new sidewalk would provide the added benefit of traffic calming by absorbing superfluous roadway width.

Figure 13, Artist’s rendering for a new sidewalk along College Ave proposed in City of Easton

5.4 Detrick Road/W Pierce St (Bushkill Drive to Hamilton St)

5.4.1 Dedicated Bike Lane Uphill, Shared Lane Markings/Signage Downhill

Install a 5’ wide climbing bike lane (bikes only, no parking) in the uphill direction for one-way bike traffic. Shared Lane Markings approximately every 250’ in the downhill general travel lane. A BMUFL sign should be located for downhill travel.

Possible lane configuration: On Detrick St (overall width 30’), by restricting parking and striping two 10’ wide lanes, 6’ wide bike lane and a 2’ painted buffer between bike lane and general travel lane. On W Pierce St (overall width 36’) where tour buses often park, restrict parking, and stripe two 10’ wide lanes, 5’ wide bike lane, 11’ wide bus parking lane along the curb. Terminate bike lane 100’ before Hamilton Street.

Locate Shared Lane Markings 5’ from curb on downhill direction so that they are center of the lane.

The beautiful potential is that this connects the campus to the satellite parking lot as well as to the Karl Stirner Arts trail connector trail. A new bike rack in the Satellite parking lot with visibility from a security camera would also be helpful to this end.

Challenges to implementation will be:

1. General parking prohibition on both sides of Detrick St, permitted for buses only on uphill direction of W Pierce, since buses don’t have left side doors.
2. Avoid conflict between bike lane and bus parking lane, by locating bike lane to left of bus parking.
3. Turns from bike lane onto Pardee St and Coleman St will require mixing zone at least 100’ before intersection where cyclist is encouraged to move into the normal travel lane to turn left.
4. Snow removal from bike lane without dumping it onto the sidewalk.

5.5 Warning Lights for Curve at College Ave - Cattell Street

Recommend flashing yellow lights or multiple chevron warning signs (W1-9) on curve where Cattell St becomes College Ave (both directions) for driver awareness to prevent frequent overspeed crashes at curve.

Figure 14 – W1-9 Chevron Warning Signs

5.6 Connector Trail from West Burke St

West Burke Street is currently a dead-end street, however, county maps show what appears to be a right-of-way between property lines that runs westwardly and mostly backs up to a 5.5 acre parcel

owned by Lafayette College. This would make an excellent connector trail from the neighborhood to a disused railroad trestle that crosses the Bushkill Creek and runs toward the Karl Stirner Arts Trail. A short spur could also run from W Burke St to the satellite parking lot. Both are shown in pink in Figure 14 below. Both proposed connector trails are shown in pink on the maps below (Figures 15, 16).

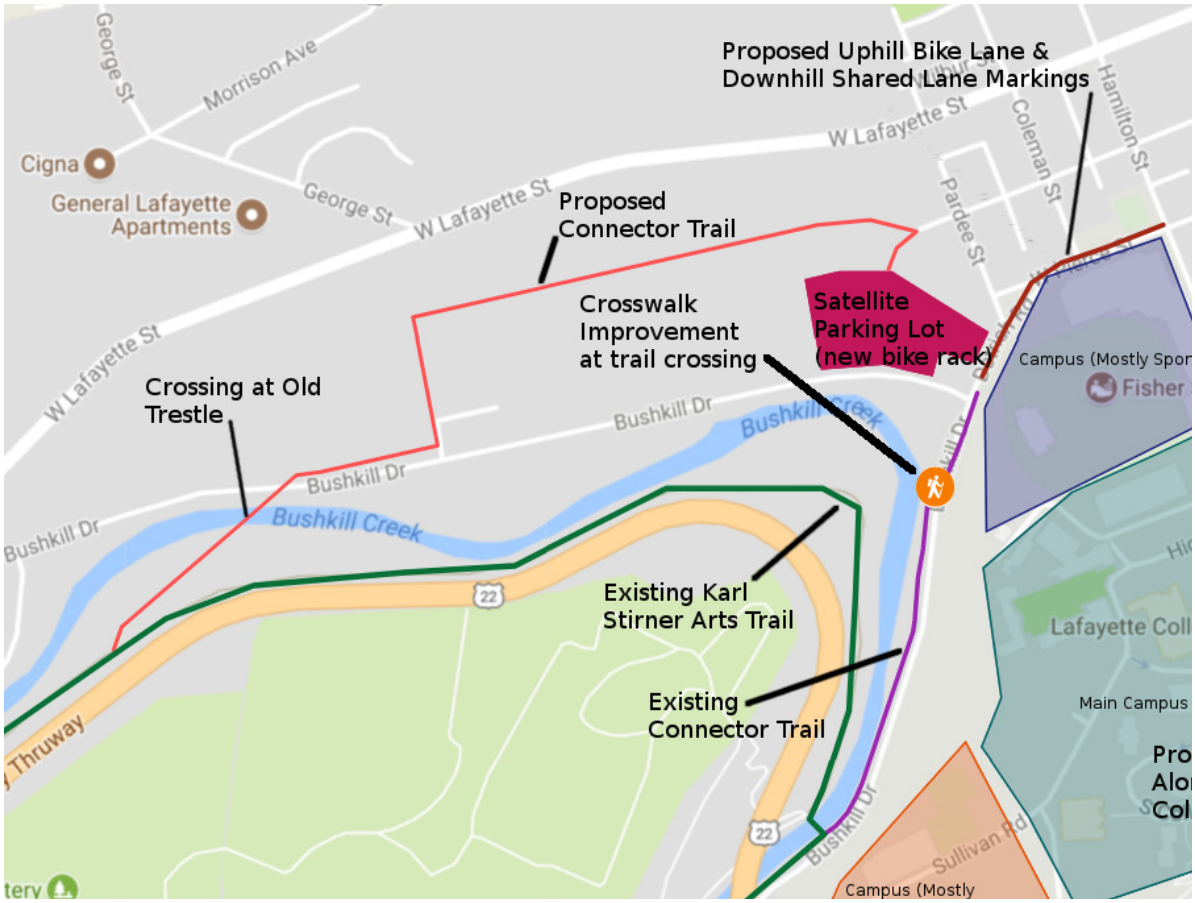

Figure 15 – Proposed Old Trestle KSAT Connector Trail

Figure 16 – Detail of Apparent Existing Right-of-Way for Proposed Trail

6 References

i "City of Easton Comprehensive Plan 2035", adopted January 2017, http://visioneaston.org/wp-content/uploads/2017/03/Adopted-Comp-Plan_WEB.pdf

ii "Lehigh Valley "Comprehensive Plan the Lehigh Valley… 2030", updated June 2010, (Transportation section, page 81) http://www.lvpc.org/comprehensive-plan.html

iii PennDOT Traffic Volume Map, Northampton County, http://www.dot7.state.pa.us/BPR_pdf_files/MAPS/Traffic/Traffic_Volume/County_Maps/Northampton_TV.pdf, retrieved 1/21/2018

iv "Technology Clinic Final Report on North Third Street and Cattell Street", May 10, 2004, https://techclinic.lafayette.edu/files/2016/08/ThirdStreetDevelopment-Final-S04.pdf, retrieved 1/21/2018

v "Enhancing Easton's Status as a Walkable Community: An Evaluation of the Third Street Corridor", https://www.easton-pa.com/planning/thirdststudyreport.pdf, retrieved 1/21/2018

vi LEED ND: Plan v4 Bicycle facilities, https://www.usgbc.org/credits/neighborhood-development-plan-neighborhood-development/v4-draft/sllc4, retrieved 1/19/2018

vii Bike Room Designs, http://www.bikeroomdesigns.com/, retrieved 1/19/2018

viii NYC Dept of City Planning, "Zoning for Bicycle Planning", 11/17/2008, http://www1.nyc.gov/assets/planning/download/pdf/plans/bicycle-parking/zoning_bike_parking.pdf, retrieved 1/19/2018

ix Dero Bike Parking Guide, https://www.dero.com/bike-parking-guide, retrieved 1/19/2018

7 Author & CAT Contact

This are unsolicited, unpaid suggestions for improvement prepared by:

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Scott Slingerland, Professional Engineer, Executive Director, League of American Bicyclists certified Instructor (LCI) since 2006. He has taught youth bicycling education programs to over 10,000 Lehigh Valley children and has instructed over 500 adults and has led multi-day tours and group rides since 2002. Working through CAT, he has also studied and supported pedestrian, transit and trail improvements in our region.

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