

A Tale of Two Bikeways

Bicycle/Pedestrian Equality Issues in New Brunswick, NJ



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In this paper, we explore the issues of bicycle/pedestrian equality in New Brunswick. We focus specifically on the Rutgers University student population and the local residents in terms of their respective demographics and existing conditions. We also investigate a series of activation policies to support our redesign proposals.

Introduction

From San Francisco to Minneapolis to Philadelphia, the United States is experiencing a bicycle revival. Bike lanes and bike-friendly policies are popping up in cities, large and small, with supporters urging communities and policymakers to make non-car planning projects a priority. Such initiatives extol the well-documented health and environmental benefits of cycling and promote virtuous secondary outcomes like renewed sense of community and improved safety with increased ridership. However, there has been considerable backlash against bicycles. The sources of this acrimony are plentiful, but a considerable amount comes from people who are angry that this bicycle and pedestrian utopia seems to be driven select members of society— young, white, middle-class adults that generally have short-term attachments to their community in which they are pushing for bicycle infrastructure. Furthermore, the benefits of bicycle and pedestrian infrastructure rarely trickle down to the less desirable neighborhoods. In Brooklyn, for example, the majority of bike infrastructure is concentrated in the northern sector of the borough, thereby neglecting the remaining neighborhoods that are already underserved by transit. In 2010, NYC DOT implemented or expanded upon 15 bicycle lanes projects in Brooklyn, ten of which were located in the northern neighborhoods (PlaNYC Bicycle Network Expansion, 2011).

Bicycle and pedestrian infrastructure have the opportunity to restore transportation equity and link neighborhoods that are underserved by transit to employment centers, educational institutions, recreational destinations, and transit. Yet this is rarely done. This paper will explore the potential for a more bike/ped friendly New Brunswick that is accessible by the Rutgers community and local residents. It will begin with a demographic overview of the residents and Rutgers community and describe the existing conditions of specific traffic corridors (College Avenue, French Street and Suydam) in New Brunswick. Next, AutoCAD drawings will illustrate some modifications that can be made to the existing street infrastructure to better accommodate pedestrians and cyclists. Finally, this paper will explore the many ways New Brunswick can reach out to the diverse range of communities and support bicycle and pedestrian policies that are inclusive and beneficial to all.

Study Area and Demographics

Our general study area is New Brunswick, New Jersey. Our two specific study populations are student demographic who live near the Rutgers New Brunswick Campus (Rutgers students) and the population that lives near and around French Street and Suydam Street (local residents). This paper will look specifically at College Avenue, French Street and Suydam Street. These streets were selected because they serve as key connectors for the Rutgers and Local residents. College Avenue is a critical link for the students to, from and around

campus. French Street is a busy commercial corridor and Suydam Street is a busy residential and commercial street. Together, the study corridor connects both the Rutgers students and Locals to downtown New Brunswick and the Rutgers College Ave and Cook-Douglass Campus (Figure 1).

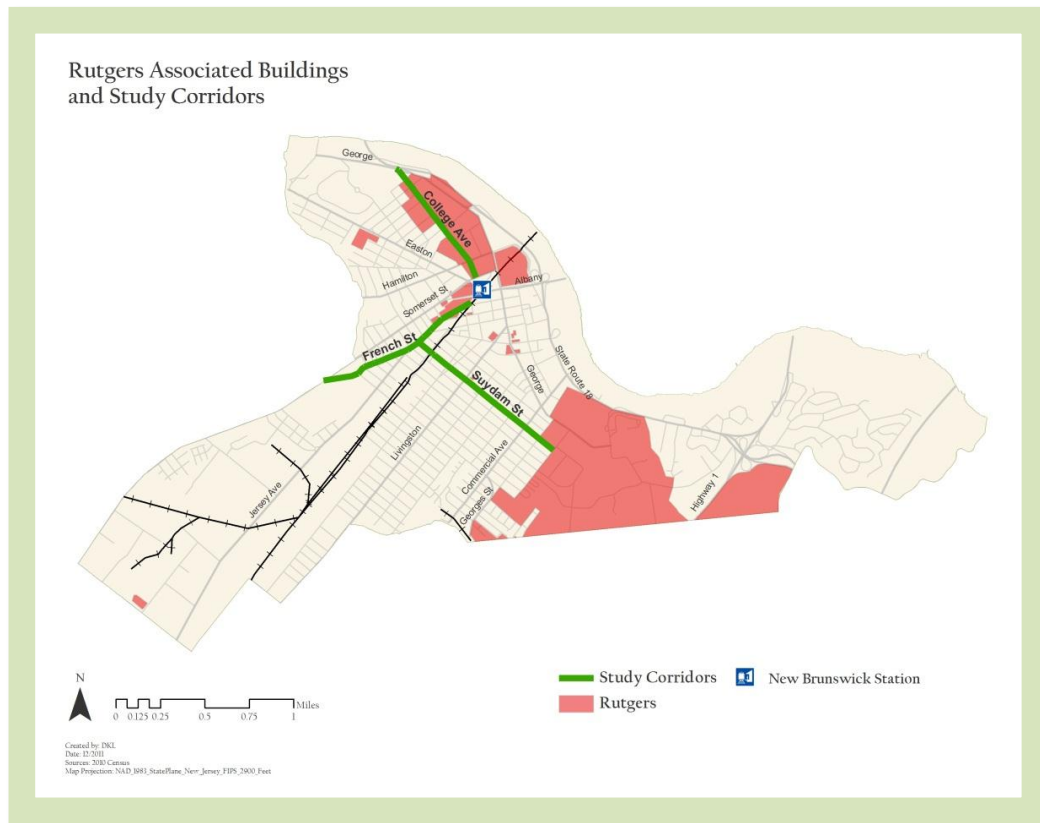


Figure 1: Study Corridor, New Brunswick

The Rutgers students and the locals share many similarities, and yet there are differences between these two populations that may require careful thinking in infrastructure, policy and program design. Figure 2 illustrates the similarities and differences between the two groups in terms of needs.

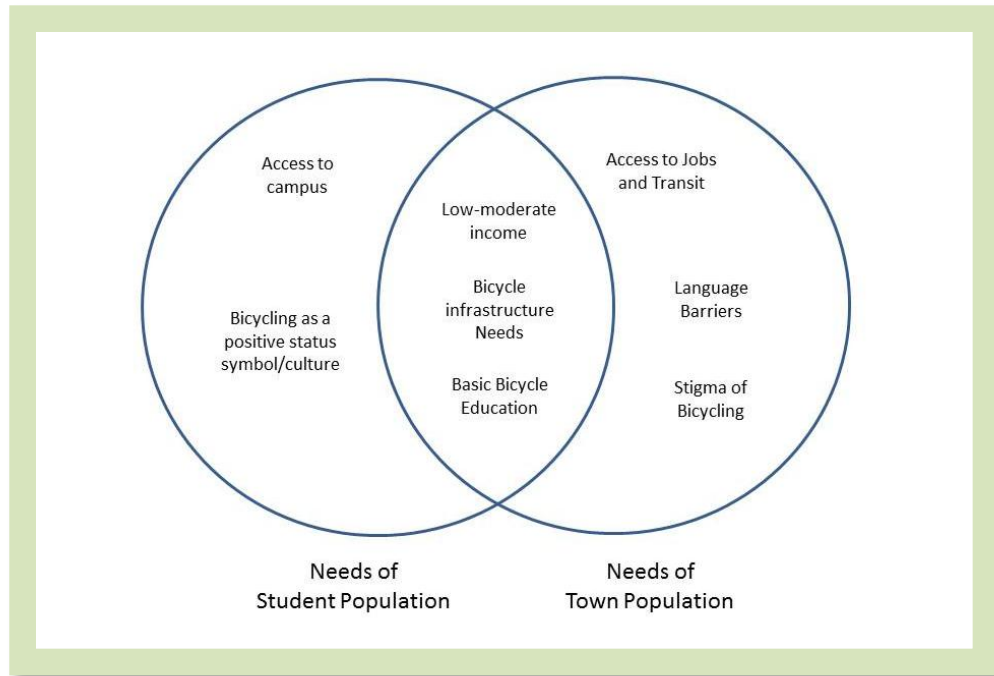


Figure 2: Characteristics of Rutgers Students and New Brunswick Locals

Both groups can be considered low- to moderate-income, and both groups lack access to bicycle infrastructure and education. The Rutgers students are more educated and live near a campus, which have more amenities and resources. The locals may have more of a language barrier and may have a stigma with bicycling. In the next few portions of this section, we will describe more specific information about the two population demographics.

New Brunswick locals

In 2010, 55,181 people lived in New Brunswick. Sixteen percent of New Brunswick residents were 16% and nearly 50% were of Hispanic or Latino origin. As of 2009, median household income was approximately \$45,000, which was approximately \$30,000 less than the county average and \$20,000 less than the

state average. Furthermore, over 25% of residents reported living under the poverty line (Table1).

Table 1: Key Demographic Data for New Brunswick, 2010 Census

Population, 2010	55,181
Black persons, percent, 2010	16.00%
Persons of Hispanic or Latino origin, percent, 2010	49.90%
Per capita money income in past 12 months (2009 dollars)*	\$17,391
Median household income*	\$45,645
People of all ages in poverty – percent*	25.60%

*Source: ACS 2005-2009 Survey

Figures 3 and 4 illustrate the distribution of race and ethnicity throughout New Brunswick (Census 2010). Latino/Hispanic residents are more concentrated in the southwestern census tracts of New Brunswick whereas Black residents are more evenly distributed throughout the city.

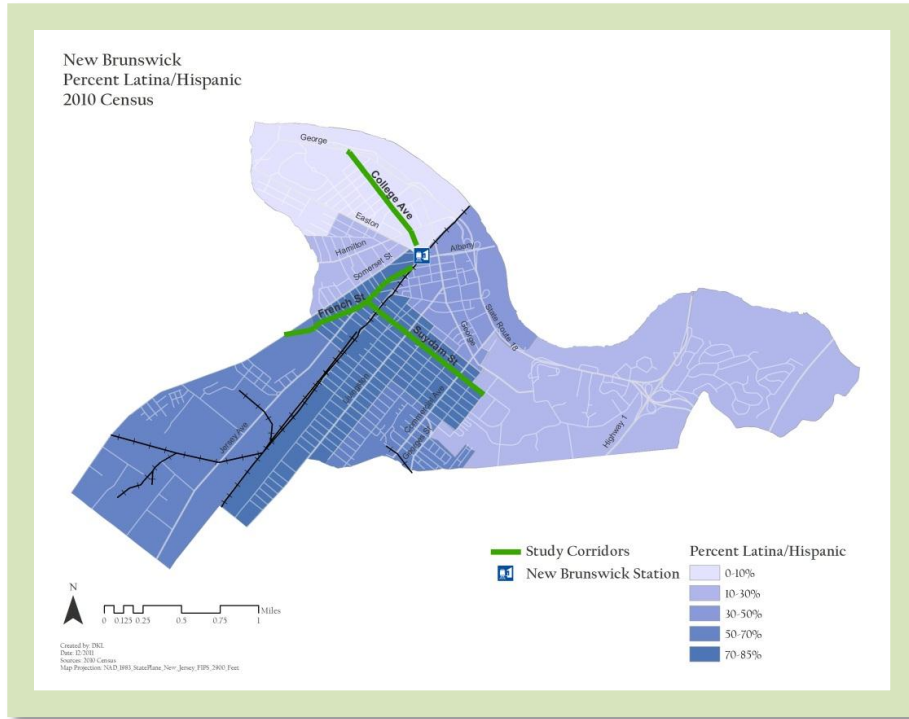


Figure 3: Percent Latino/Hispanic by Census Tract

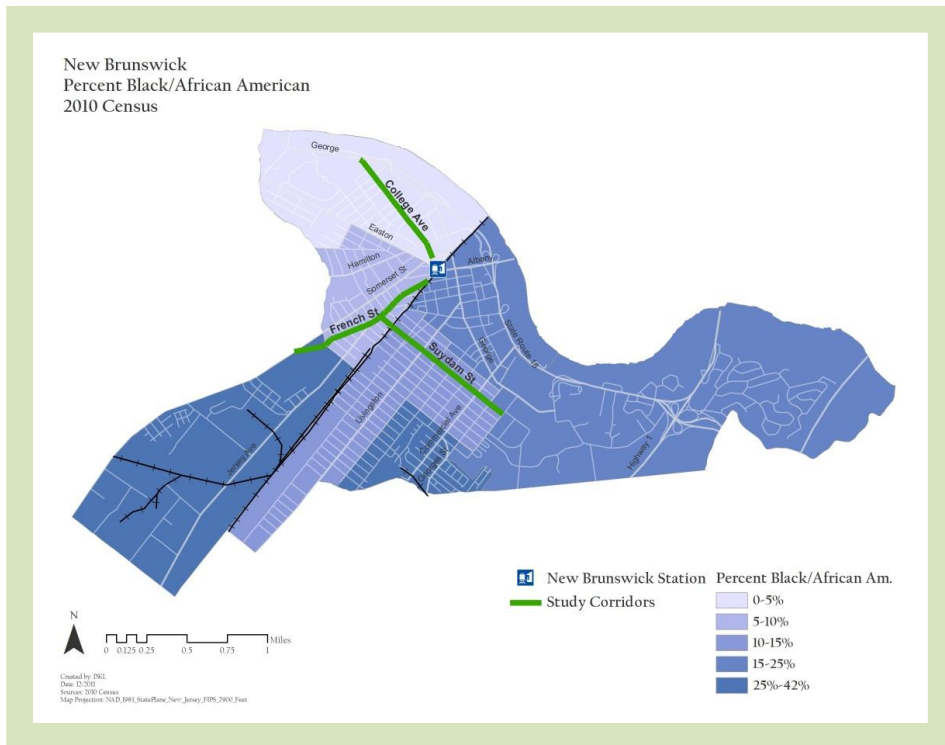


Figure 4: Percent Black American by Census Tract

Rutgers Student Population

While we are primarily concerned with the College Avenue campus, it is important to consider the demographic profile of the New Brunswick campus as a whole. According to the Rutgers University website, there are over 38,000 undergraduate and graduate students enrolled at the Rutgers New Brunswick Campus, which includes Busch, College Avenue, Cook-Douglass, and Livingston Campuses

According to Rutgers Alumni Club of Washington DC, eighty-six percent of Rutgers students are from the state of New Jersey. Minority students comprise 32% of the total student body. In terms of financials, during fiscal year 2000, 65% of undergraduates received some form of financial assistance.

Existing Conditions

The College Avenue section of our redesign is currently plagued with wide roads, over-parking and unfriendly bike and pedestrian conditions. At the north end of the corridor, the egress from the foot/bike path on the John A Lynch Senior Memorial Bridge onto George St forces bicyclists and pedestrians into mixed traffic without an effective means to alert oncoming traffic of their presence. The two lane road along College Ave measures at a full 40 feet from curb to curb. Though this expansive, concrete stretch isn't traffic congested, its breadth mandates that pedestrians cross at the faded crosswalks or otherwise risk not making it across before a car causes one to pause in the middle of the

road. The street is lined with parallel parking lanes and bus loading zones. The sidewalk measures eight feet wide and is usually set back 14' from the street and buffered by brick pavers, grass or an occasional tree. The buildings are normally set back another 40-45 feet from the sidewalk. This makes for a wide-feeling street measuring 120-135 feet across and having a height-width ratio of usually 1:9 and occasionally 1:3, except for at certain points like the Alexander Library, which is significantly taller than the surrounding structures. Street furniture is sparse, excluding the areas near the grease trucks or the Au Bon Pain. Cross streets (usually one-ways) connecting Easton Avenue to George Street cut intermittently through the College Ave stretch. Overall, the College Avenue corridor is simply too unaccommodating to pedestrians and cyclists and lacks the character that a university campus should have.

The French/Suydam segment of our bikeway is much more diverse in use and physical design. The French Street section is bordered by towering medical facilities near the train station. The buildings become shorter and more commercial/residential near the Suydam Street intersection and become almost entirely residential for the remainder of Suydam Street until it runs into the Cook/Douglass campus. The existing intersection on French St at Louis and Suydam Streets is disjointed and confusing for motorists, pedestrians and cyclists alike. This is significant because it is highly a trafficked area. Suydam Street is extremely wide and measures 46' from curb to curb. Since there are only two lanes with sporadic parallel parking, traffic tends to move at rather high speeds.

With mostly 2 story homes along Suydam Street, the lack of texture creates uncomfortably wide feel to it with a 1:3 height-ratio.

The street conditions along Suydam and the surrounding streets are evidence of a neglected neighborhood. The pavement is in serious disrepair, causing damage to cars and dangerous on-road cycling conditions. The sidewalks are cracked and broken. The pedestrian lighting is poor. All of these factors hinder walking and cycling behavior.

New Designs

Based on the existing conditions and observed pedestrian and bicycle behavior along the study corridor, we have made a number of recommendations to improve the pedestrian and cycling experience in these corridors.

College Ave

1) George Street at the John A Lynch Sr Memorial Bridge:

- Add a curb cut at the bottom of the foot/bike path. In order to mitigate cyclists from bolting out into traffic, place a bollard to force cyclists to slow down to maneuver around it.
- Install a HAWK signal, which stops automobile traffic on George Street when a pedestrian or cyclist presses the button to cross the street to Buccleuch Park.

- Create an off-street bike path that borders Buccleuch Park and heads towards College Ave.
- Add signage to alert drivers of bicyclists and pedestrians crossing and to direct bicyclists from the off-street bike path to the College Avenue bike path.

2) *College Ave Transit Mall between Huntington St and Hamilton St:*

- Restrict access to bicycles, pedestrians, buses and emergency vehicles only.
- Re-route Rutgers Bus service so both north- and southbound service occurs on College Ave. Car traffic will be directed to George Street.
- Remove all on-street parking.
- Redesign street to include a 12 ft two-way cycletrack separated from two 10 ft two-way bus lanes a 8 ft landscaped median
- Minimal changes will be made to the existing sidewalks.
- Install bollards at the intersections along College Ave to prevent cars from entering the transit mall.
- Sidewalk treatment extends across street in lieu of crosswalks.
- Add signage to minimize bicycle and pedestrian conflict.
- At the intersection of College Ave and Somerset St, install actuated signaling that will respond to both bicycle and bus movements. This signal will assist buses as they turn into mixed traffic and bicycles as they cross

the intersection onto the shared bike/ped plaza on the Gateway Center towards the New Brunswick Train Station.

- New plaza (R U Hungry) in front of grease trucks
- New plaza by Brower Commons



Figure 5: Proposed Design for College Ave near Rutgers Student Center



Figure 6: Proposed Design for College Ave from Huntington St to Hamilton St

3) Chelsea Traynor Memorial Bridge:

- Named after Chelsea Traynor, a Rutgers student who was killed in 2010 after being struck by a car on her bicycle at the intersection of George St and Route 18.
- The pedestrian plaza will be shared bike/ped space with sign-enforced speed limit of 7mph.
- Thru bicycle traffic will continue onto the Chelsea Traynor Memorial Bridge, a 12 ft wide bicycle path that extends north of the Northeast

Corridor line above Easton Ave and Little Albany, and reconnects with street level traffic on French St near Joyce Kilmer Ave.

- Alternative connections to French Street and downtown New Brunswick include on-street facilities on Somerset St, Easton Ave and Plum St.

French St and Suydam St

1) French Street from Joyce Kilmer Ave to Suydam and Louis Streets:

- Remove all on-street parking on French Street between the New Brunswick train station to Suydam and Louis Streets—approximately 40 parking spots.
- Reduce street width from 40 ft to 36 ft and add 2 more feet to both sidewalks.
- Redesign street to include two 5 ft curbside bike lanes along French street separated from 11 ft travel lanes by 2 ft painted buffers.
- Buffers minimized at intersections to make room for left turn bike lanes.

2) French St at Louis St/Suydam St

- Install separate signal phases for Suydam and Louis Streets to reduce turning and thru vehicle conflict.
- Extend parking on both Louis and Suydam streets so that there is only one thru traffic lane.
- Install curb extensions on all corners

- Bike box on the westbound lane on French Street to allow for cyclists to turn left onto Suydam.
- Louis Street
 - i. Paint sharrows
 - ii. Paint a bike box at signal
 - iii. Remove 2 parking spots to create space to move bicycles to the front of cue
- Suydam Street
 - iv. Curbside bike lanes will be buffered by parking.
 - v. SE corner bike lane will be continuous—bicyclist will not have to stop but will have to yield for east bound cyclists on French street.
 - vi. Space between parked cars and curb extension will allow cyclists to move into bike box for through or left turn movements.

3) *Suydam Street to C/D campus*

- Paint two 6 ft curbside bike lanes
- Two 8 foot parking lanes will separate bike lanes from two 10 foot travel lanes. Figure 6 shows a cross section of typical intersection along Suydam.
- Install curb extensions throughout the Suydam St corridor.
- Improve sidewalk and pavement improvements throughout the Suydam St corridor.

- Install Pedestrian-oriented lighting improvements throughout the Suydam St corridor.

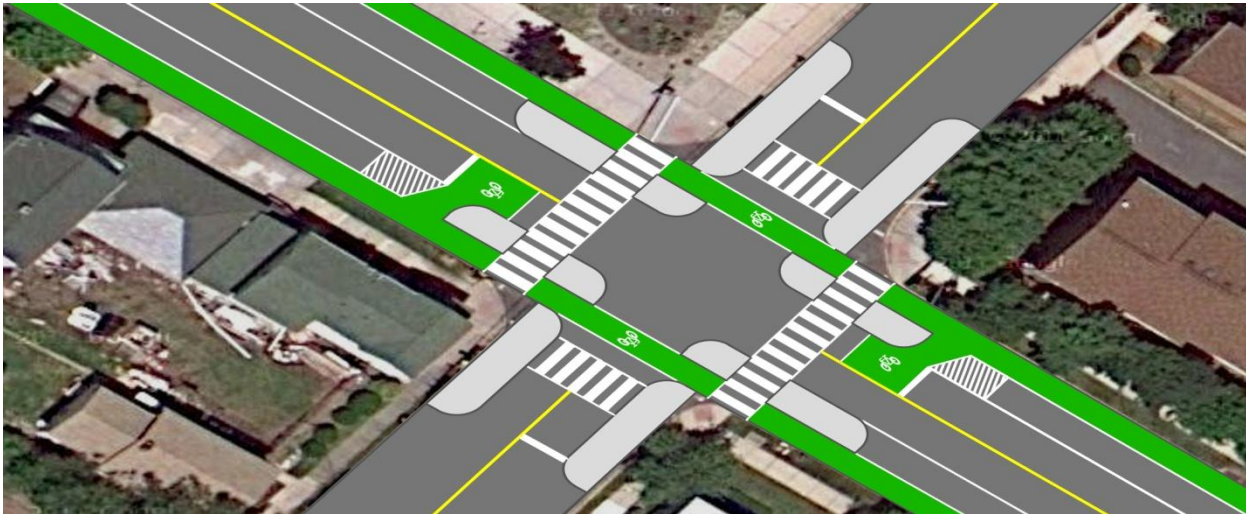


Figure 7: Proposed Design for a Typical Intersection on Suydam St.

Policy: Rutgers University

It is imperative that Rutgers University implements a number of activation policies to accompany the proposed design modifications. These policies include codifying a master plan, increasing coordination with the city, developing bike/pedestrian programs and performing routine evaluations relating to bike/pedestrian issues.

Master Plan

It is widely recognized that the bus system has been maxed out and many have expressed interest in emphasizing other non-motorized forms of transportation. An integrated master plan that consistently promotes walking and biking in existing and proposed projects will help guide construction

processes to be bicycle and pedestrian friendly. One way to do this is to write cycling and pedestrian facilities into building codes. A new building, for example, could be required to have a certain number of bike parking based on building occupancy and bicycle mode share.

The Rutgers Master Plan states that “Of central importance is College Avenue itself.” The plan proposes several ways in which Rutgers can make College Ave more of a focus, including improving the streetscape by narrowing road width and adding trees, new buildings and site furnishings. The plan also identifies the potential benefit of increased student, faculty and staff housing behind the Rutgers Student Center and College Avenue Gym and shifting commuter parking to more strategic locations, both of which will reduce traffic congestion (Rutgers 2003) and make it safer for cyclists and pedestrians.

City Coordination

Coordination also plays a significant role in enacting proposed infrastructure changes. Though New Brunswick has a moderate amount of sidewalks for pedestrian use, it severely lacks anything that even resembles bicycle-conducive facilities. Bike lanes or even sharrows are non-existent, and bike parking is often overflowing or insufficiently placed, which can lead to either bikes being stolen or bikes being located in inconvenient places. The lack of safe lanes is particularly an issue for college students given the potential they have for increasing bike traffic. Working with the city requires an understanding

of road use on multiple levels. College Ave is currently owned by the city of New Brunswick, and therefore any alterations would have to be passed through town hall. Our proposal to run a bridge over Easton Ave will also have to be cleared with the Gateway Center Developers, DEVCO (New Brunswick Development Corporation (The Gateway)).

Bike/pedestrian Programs

Best practice guidelines recommend a wide range of programs that encourage more students to participate in walking and biking experiences. Such programs include: bike safety classes, helmet discounts, repair stations, map resources, bicycle registration services and bike share options. Rutgers currently has very little in the way of bike or pedestrian programs. There are a few clubs that incorporate bicycle and pedestrian issues, like the Outdoors Club, the Rutgers Cycling Team and the Road Runners club. There are also a few unofficial clubs/interest groups like Critical Mass that promote biking, but only the Walk Bloustein Bike Bloustein group, a subcommittee within the Rutgers Association for Planning and Policy Students, focuses primarily on cycling and pedestrian issues. Creating a bike/pedestrian advisory board is common practice at the municipal level and if implemented at Rutgers, would ensure that more vulnerable users are represented in transportation discussions.

Rutgers also neglects to offer classes pertaining to bike or pedestrian safety. This is especially problematic considering the fact that Rutgers has started a bike

share program. New bikers need to know how to properly conduct themselves on the road for both their own safety and the safety of others. Classes should also include bike maintenance techniques and focus on on-street group rides, which caters to the open-minded student mentality of trying something new and providing a means to increase their independence. On another note, increased penalties for motorist misconduct would also be beneficial, especially if a portion of the penalty is to take a driver's education class that educates drivers on how to more safely navigate in bike/pedestrian heavy areas like a college campus. This requires increased support and cooperation from the Rutgers Public Safety Department and the New Brunswick Police Department.

Evaluation

Evaluation is an important component of bicycle and pedestrian policy in that it identifies current trends and needs and provides guidance for future endeavors. Rutgers most recently administered a transportation survey in 2010 and came to the following conclusions:

- 44% of students live on campus
- 10% primarily walk and 1% primarily bike to campus
- 32% of students walk and 7% of students bike to campus

These numbers indicate that there is a desire to bike more around the campus, but there are some major barriers to doing so. Furthermore, continued survey results show that 77% of students currently use the Rutgers Transit System

to commute between campuses (2010 Rutgers). According to a survey performed by a fall 2010 Bloustein studio, only 20% of Busch residents, 41% of College Ave residents and 56% of Cook/Douglass residents actually have classes on their home campus (Bell, Q et al.). It is widely recognized that the Rutgers Transit System is at maximum capacity, and many students support increasing services (2010 Rutgers), but the Bloustein studio also found that a number of students would be willing to replace bus trips with bike share between College Ave and Livingston (13%), College Ave and Douglass (32%) and College Ave and Busch (30%) campuses. Furthermore, 51% of students expressed willingness to replace College Ave within-campus bus trips with bike-share trips (Bell, Q et al.). Referring again to the Rutgers transportation survey, 39% indicated that bicycle trails would be necessary for them to commute between campuses. Additionally 29% listed improved pavement conditions would be necessary (2010 Rutgers).

The proposed redesign of College Ave, French St and Suydam St speaks directly to these two issues as it would provide smooth, separated bicycle facilities for cyclists who wish to travel both within campus and also along Suydam to the Cook/Douglass campus. The new designs narrow College Ave and close it off to car traffic, which would 1) make it safer for the 63% who primarily walk and 4% that bicycle within College Ave (Bell, Q et al.), and 2) cut down on traffic congestion for the vast majority of students who travel via bus.

Cyclists can be seen riding through the streets throughout the entire city of New Brunswick – around the Rutgers campus, through the downtown and in the local, residential areas. While New Brunswick's downtown is a hub for lawyers and bankers, the surrounding areas are home to working- and low-income residents. For these residents, cycling is more a necessity than an alternative, as many face financial and social barriers that prevent them from car ownership. While biking exists in these areas, bike culture is lacking in local neighborhoods as there are no programs advocating for cyclists or educating about the responsibilities that come with that. For a city with a budding cycling population, New Brunswick needs to implement a complete streets policy that serves all of its residents and uses established community organizations that promote cycling as a viable transportation alternative that will benefit the local residents in a number of ways.

Cycling is often seen in New Brunswick but it has yet to fully flourish, as there are a number of barriers that stop lower income residents from cycling. One of the many reasons that can be attributed to the lack of cycling is the initial cost of purchasing a bicycle. While much smaller than purchasing a car, the lump sum needed to purchase a bike can be discouraging to those who are earning just enough to get by. Another is the fear of personal safety, both on the bike and off. Driving on the road with cars can be a harrowing experience for a new rider with the high speeds, wide roads and reckless driving. Poor lighting,

vacant, lonely areas, unsavory characters and bike theft are all additional factors that are more prevalent in low income neighborhoods. 'Where do we put them?' is another detractor of bicycles for these residents as they often live in multi-story apartments or high rises that don't have bicycle storage and their local stores and markets lack bike parking in front. Another deterrent, and possibly the biggest in some communities, is the stigma associated with cycling as it is often seen as something for the poorest of the community while cars are seen as a symbol of status.

Despite the challenges, there is a much to be gained by local New Brunswick residents participating in cycling. While the initial costs are drawbacks, the follow-up costs are minimal as repair costs are fairly inexpensive and the fare for public transit is either eliminated or greatly reduced. For new immigrants or those who have never fully learned English, drivers test can be an obstacle that prevents one from getting a driver's license so riding a bicycle is a viable alternative for getting around. Cyclists can traverse much greater distances and have more flexibility than a bus line, which gives them an advantage in looking for a work. Finally the commute time to work, home and elsewhere will be cut down dramatically when compared with the time spent walking.

We are confident that with the support of the city's government, Rutgers University, local organizations and citizen participation, cycling awareness, education and implementation can be expanded to the low-income and

working-class New Brunswick residents who will likely benefit the most. There are already community development groups in the neighborhood engaging with local residents so working with these existing groups would be the best route to promote cycling awareness and education. New Labor is a New Brunswick based Community Development Corporation (CDC) that has expanded statewide promoting English classes, computer training, and workplace training for Latino residents. Unity Square Partnership is another active local organization that provides services for some of the poorest areas of New Brunswick. Amongst the many initiatives they created, there is a Latino Crime Watch in which Spanish-speaking residents patrol the neighborhood, report crimes and develop a relationship with New Brunswick Police department officials. This group would be extremely important as instances of crime and lack of vigilance make many reluctant to ride. In addition to the neighborhood patrols, The Latino Crime Watch would be able to point out to officials which areas are in need of municipal improvements like broken sidewalks, inadequate lighting, busy intersections, and vacant properties that make cycling, and walking, very unpleasant. A partnership with Kim's Bike Shop on French Street could facilitate workshops and events where residents learn more about how to take care and make repairs on the bikes.

In addition to local organizations, New Brunswick's city government should take an active role in promoting cycling. The increase of bicycle ridership reduces the amount driving and parking in downtown New Brunswick, a huge

issue for the city. With implementation of complete streets, cars, bike and pedestrians will be safely accommodated on roadways, leading to a reduction in speed and an overall more pleasant experience for those outside the car. Bicycle education should start with the youth by implementing a Safe Routes to School program in New Brunswick elementary schools. This program will educate children and adults about safe practices when riding a bicycle in their neighborhoods.

Slowly, bicycle and pedestrian issues are being discussed more in and around New Brunswick. The city has recently made street improvements by paving sidewalks, setting new lampposts, placing bike racks and garbage bins and marking crosswalk intersection with new traffic signals along the main George St. corridor. While important, those efforts were largely concentrated in the downtown area along George Street and did not spread out to the outlying areas where improvements are needed. This is a constant issue seen in urban environments where priority is placed on the downtown area while poorer neighborhoods are often forgotten, viewed as areas not worth the investment. Cycling education and infrastructure should not follow a similar fate because low-income residents often have the most to gain. Access to a bike can improve the health, mobility and the job prospects of New Brunswick's most vulnerable residents. As cycling infrastructure is being considered, it is crucial to make sure it is distributed equally - implemented in the local neighborhoods, as well as in the downtown and University areas. It is important to make sure low

and working class residents also see the benefits of bike infrastructure in their community, as well as the capital improvements, education and the support needed to make it a successful venture.

Policy: Town-Gown Relationships

The benefits of colleges and universities to a community and local residents are many. Colleges and universities enhance a community's cultural offerings; they bring a more diverse mix to the community; they provide access to knowledge and resources; and they can bring economic benefits and revitalize a community. However, there are many concerns that arise when a town shares its community with a college. One of them is that the community becomes run by the University and serves the needs of students and faculty instead (or worse, at the expense of) local residents. With improved communication, policy changes and joint planning efforts, town-gown relations can be civil and even rewarding for all members, transient or permanent, of the community.

Over the past few years, Rutgers University has made a renewed effort to encourage its students to engage in public service and form partnerships with the New Brunswick community. Earlier this year, the Ralph W. Voorhees Center for Civic Engagement was established at the Edward J. Bloustein School of Planning and Public Policy. Their mission is to initiate conversations between

community actors, local government, students and academics to bring about the policies and programs that will serve the needs of its citizens.

The Civic Engagement and Service Education Partnerships (CESEP) program at Rutgers has been striving to improve community health and wellbeing in New Brunswick since 1988 by forming partnerships with Rutgers students and faculty and the residents and cultural organizations in New Brunswick. Students interested in public service are encouraged to work towards the Civic Pathway Certificate program, which requires them to take several CESEP courses, attend community meetings and complete a community-based learning capstone requirement. CESEP recently partnered with Johnson & Johnson to start the "Advancing Community Development" pilot program. The program intends to pair Johnson and Johnson employees with Rutgers CESEP students to work together on projects for non-profit community organizations that will support the organization's ability to serve local residents. CESEP is also actively involved in the Rutgers Future Scholars program, a mentorship program for middle and high school students in New Brunswick and Piscataway. In addition to supporting positive social and academic behaviors, CESEP encourages students to examine questions of educational equity and opportunity through classroom activities.

Both the Ralph W. Voorhees Center for Civic Engagement and CESEP have the potential to help bridge the gap between the bike/ped efforts led by Rutgers University and how they are implemented in the underserved

neighborhoods. They may also serve as the liaison between student activists, city government and locals and be best equipped to understand the variety of concerns different members of New Brunswick might have. Future bike/ped projects should consider working with these organizations to better understand the needs of its residents and to facilitate discussion.

Conclusion

New Brunswick's budding interest in implementing bicycle and pedestrian infrastructure and policies reflects an awareness of the need for multiple modes of transportation, including active transport. As New Brunswick moves towards this goal, it is important to ensure transportation equity for all residents. Bike/ped infrastructure should not be limited to the college parts of New Brunswick but should also serve the locals. The proposed design is a first step towards creating an integrated bike network and walkable community that connects the University and the city. The next steps include activating the proposed policies—urging Rutgers University to take the lead while nurturing community organizations and encouraging collaborations between Rutgers and local residents. The city should take a leading role, alongside Rutgers University, and multiple New Brunswick community organizations, to create a more equitable, bikeable and walkable New Brunswick.

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