Improving Livability in Northeastern Queens
A Vision for Complete Streets

PLANNING STUDIO
FALL 2019
About the Studio

Before graduating from Hunter College’s Master of Urban Planning (MUP) program, each student must participate in a Studio course where they apply the skills they learned in the classroom to a real-world practicum. Under the guidance of a faculty advisor, and working for a client organization, the Studio team leads a community-based planning project. During the Studio, the team has the opportunity to blend theory and practice, and employ the policy research and development methods that they have honed throughout their previous coursework. Studio is the culmination of the 54-credit MUP degree program.

This urban planning Studio is URBP 737 and took place in the Fall 2019 semester. Our team consisted of eight MUP students: Thomas Barndenett, Amanda Campelo, Jaime Cho, Kerry Goleski, Carlos Martinez, Jesslyn Moser, Kenneth Rivas, and Jenna Stein; our faculty advisor was Professor Jason Brody. Over the Fall 2019 semester, which spanned four months, we walked, biked, drove and took public transportation to and within Northeastern Queens (Queens Community District 11, or QCD-11) to learn about the existing transit network. We researched strengths and weaknesses of the street network as well as engaged with residents to understand their immediate desires and long-term aspirations. We consulted with community members and our client, the New York City Department of Transportation (NYC DOT) Bicycle Unit, to envision potential streetscape improvements that could improve mobility options in Northeastern Queens. The result, this vision plan, is designed to help inspire further dialogue among community members about how simple, low-cost and quick updates to existing streets can yield big benefits for pedestrians, cyclists, and drivers alike. These benefits include increased safety, accessibility, connectivity -- and above all, livability. We hope that ultimately the community can form a productive working partnership with NYC DOT, leverage City resources, and create a 21st century, unified network of Complete Streets that connects community members both to their destinations and to each other.
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For over a century, America has built roads for one main purpose: cars. However, growing environmental, demographic, economic and social trends have prompted cities to shift the way they think about streets. The majority of the world’s population (55%) lives in cities with an anticipated increase to 68% by 2050; transportation outpaces power as the largest source of US CO2 emissions in the United States; and there has been a generational shift in culture with greater demand for sustainability and zero-carbon forms of transportation. Many cities throughout the world are attempting to reduce reliance on automobiles and push the envelope on street design, including right here in New York City. The question is no longer “What are streets for?” but rather “Who are streets for?” New York City is leading the way in setting “a new standard” for streets with innovative policy legislation and quick, low-cost and effective street design tactics that elevate humans over cars. Complete Streets are designed for multiple modes of transportation and offer a complete experience for commuters whether they walk, bike, take public transportation or drive. Complete Streets are safe, accessible, and bring people to where they want to go. Above all, Complete Streets improve a community’s livability, connecting people both to their destinations and to each other.

Streets play an important role in New York City: they are the “social, political, and commercial arteries of cities” and “every city resident is a pedestrian at some point in the day.” Modern streets support vibrant public life, which is critical for the health and long-term well-being of cities. Since the early 2000s, New York City has innovated street design. Under the Bloomberg Administration (2002-2013), the bike network expanded, the Citi Bike share program launched, NYC DOT’s public art program expanded, and events such as Summer Play Streets which temporarily closed streets to traffic for recreation events highlighted the importance of streets as public space. Under the de Blasio Administration (2014-present), the notion of human-centered streets continues to occupy the mainstream. Vision Zero, an action plan to reduce traffic-related deaths, was launched in February 2014. In July 2019, NYC DOT issued Green Wave, a plan for cycling in New York City. New York City is currently home to the largest network of bike lanes in North America, boasting over 1,200 miles of cycling routes. Green Wave aims to improve street conditions to make them safer and more hospitable to cyclists. One of the plan’s major goals is to create 30 miles of protected bike lanes annually. In October 2019, the City Council approved Speaker Corey Johnson’s Streets Master Plan
that dramatically changes the way New York City plans its street network. The bill requires NYC DOT to create and implement a master plan for the use of streets, sidewalks and pedestrian spaces. The plan prioritizes and promotes the safety of all street users, the access and use of mass transit and the reduction of traffic congestion and emissions. The passage of this legislation marks the latest milestone to cement the importance of sustainable street planning in New York City. The bill seeks to promote pedestrian and bicycle rider safety, but also reap the environmental benefit of zero carbon forms of transportation.

Northeastern Queens (CD-11), encompassing the neighborhoods of Bayside, Douglaston, Douglas Manor, East Flushing, Little Neck, Auburndale, Oakland Gardens and Hollis Hills, in many ways resembles a slice of suburbia in New York City. The prevalence of single family homes, well-regarded public schools, low crime and ample parkland points to Northeastern Queens’ orientation towards families and a strong sense of community. Community Board 11’s mission is “to increase the quality of life for our families and neighbors, while elevating local civil discourse, and building a greater New York City.” The area’s street network remains largely unaltered since the area was first settled in the late 19th and early 20th century when cars were both the dominant form of transportation and the promise of the future. Today, the street network reflects an outdated paradigm and does not adequately serve the district’s mobility needs.

The street network primarily requires the use of automobiles, and the range of available transportation options require significant time and cost trade-offs. Retrofitting Northeastern Queens’ auto-dominated streets into human-centered streets, or Complete Streets, can allow for multiple modes of transportation, provide commuters options, and improve the community’s quality of life through increased safety, accessibility, and connectivity. Above all, Complete Streets elevate humans over cars which engenders positive social, environmental, health and economic benefits. In Northeastern Queens, where there is an intimate, small town atmosphere; bountiful beauty in parks and open space; and thriving commercial corridors; Complete Streets would invite residents and visitors to step out of their houses, apartments or cars and experience the district on a human level, reinvigorating the community experience.

Northeastern Queens is a community in transition: the population is aging, becoming more
diverse, and experiencing more vehicular traffic on the road. Furthermore, there is a growing interest in sustainable forms of travel and an increased number of cyclists on the road.

The confluence of these trends necessitate taking a fresh look at how to modernize the street network to meet the community's current and future needs. Car-culture may be de facto for many Eastern Queens residents due to what the existing land use dictates. Bike and pedestrian infrastructure improvements can be immediate, low-cost and effective implementations that produce incremental, positive effects on quality of life. In our one-semester Studio project, we completed planning theory, best practice and quantitative research and analysis, as well as community outreach, to develop a vision plan that provides ideas for:

A unified network map of bike lanes that connects cyclists safely to key destinations

Pedestrian and intersection interventions

Increased bike parking

Expanded wayfinding

Potential programming

In 2017, the NYC DOT installed a protected bike lane along a segment of Northern Boulevard after an elderly cyclist was hit and killed in 2016. In these intervening years, the community has had robust dialogue - and debate - about the role of bike infrastructure in Northeastern Queens.

Our hope is that this Vision for Complete Streets can help advance the discussion by demonstrating how Complete Streets can improve safety, accessibility, connectivity -- and most importantly, livability. Re-imagining Northeastern Queens with a unified network of Complete Streets can be achieved with simple, low-cost, and often reversible interventions. These small changes in street design can be tackled immediately while the community discusses and pursues additional, longer-term policy changes to its transportation network. This Vision for Complete Streets will make streets more safe, accessible and connected for residents and visitors of all ages, and secure the long-term livability and future of Northeastern Queens.
Research Methodology
Our client, the New York City Department of Transportation (NYC DOT) Bicycle and Pedestrian division, requested that this Studio examine potential opportunities for pedestrian and bike infrastructure improvements in Northeastern Queens. NYC DOT’s mission is to provide for the “safe, efficient, and environmentally responsible movement of people and goods in the City of New York and to maintain and enhance the transportation infrastructure crucial to the economic vitality and quality of life of our primary customers, City residents.”

Additionally, the NYC DOT evaluates how bicycle lanes impact safety, mobility, and economic vitality in New York City through studies, pilot programs and bicycle counts. The Studio’s project objectives were three-fold:

Identify how bike and pedestrian infrastructure improvements in Northeastern Queens (QCD-11) can be used as a tool to increase mobility and equity

Develop a community vision plan for street network improvements in QCD-11

Catalyze community dialogue about cycling and pedestrian infrastructure improvements

In recent years, NYC DOT implemented small, piecemeal segments of new bike infrastructure in Northeastern Queens, which received both praise and pushback from the community. We understood that there was an ongoing, robust dialogue within the community about the need to update and improve the existing transportation network - and controversy about the role of bike infrastructure in achieving this goal. Understanding our unique role as students, with resources and the ability to conduct research and communicate with the community, our Studio designed a four-month project to re-imagine the Northeastern Queens street network. Our Studio designed a scope of work that would allow us to achieve our project objectives within the four-month duration of the semester. We adhered to the workflow outlined in the scope of work, making minor adjustments as necessary as we worked through the semester. The scope of work was as follows:

**PHASE 1: PROJECT DEFINITION AND SCOPE OF WORK (8/27/19-9/12/19)**

The purpose of this phase is to define the project objectives, outcomes, and the overall scope of work. Based on preliminary research of CD-11, the community, and the physical space, our team can understand the issues that face the district and how we can define and scope the Studio project.

**PHASE 2: RESEARCH AND COLLECT DATA (8/27/19-10/8/19)**

The purpose of the research and data collection phase is to understand the current conditions and population of CD-11 in order to make informed decisions about the transportation network. We aim to understand and familiarize ourselves with demographics; existing conditions of bike network; bike infrastructure best practices; traffic data; and community opinions.

**PHASE 3: DEVELOP PRELIMINARY VISION PLAN (10/8/19-10/22/19)**

We will use the background knowledge gathered in Phase 1 to identify themes and opportunity areas. Examples may include areas high safety concern; connect residents to transportation systems, schools and business districts; or connect residents and non-residents to recreation areas via a bike network. The Studio will determine specific geographic locations within the district that provide realistic opportunities to increase safety, equity and social mobility. These sites will be selected early enough to incorporate feedback from the client and key stakeholder. This phase will culminate in the Studio team’s presentation to NYC DOT at the Mid Semester Review.

**PHASE 4: DEVELOP FINAL VISION PLAN (10/22/19-11/18/19)**

We will analyze client feedback to finalize the direction of the analysis. The Studio will agree as a group on how to interpret and apply the client’s feedback to best achieve desired outcomes. Once conceptual themes and areas of opportunity/priority corridors are finalized, the team will connect those corridors and begin to fill in the details of implementation.

**PHASE 5: REFINE PLAN AND PRODUCE FINAL MATERIAL (11/18-11/26)**

We will create the final report and craft a succinct powerpoint presentation that summarizes the project and vision plan.

**PHASE 6: PRESENT FINAL VISION PLAN (11/26/19 - 12/19/19)**

We will present the final vision plan to Hunter College and the NYC DOT. We will seek opportunities to present to Community Board 11 to help advance dialogue among community members about the role of pedestrian and bike infrastructure in improving their mobility options.

To organize our Studio, we launched a multi-pronged effort involving various methodologies to gather a research body about Northeastern Queens, or Community District 11 (QCD-11).

These research methodologies included: planning theory research, quantitative analysis, best practices, qualitative analysis and community outreach. We also engaged in a process, or methodology, to develop the vision plan which included developing principles based on the initial research that helped to prioritize the interventions. The research and plan development methodologies informed the basis of the vision proposed in this Studio project. Each of these methods is outlined below.
2.1 Planning Theory Research

We grounded our vision plan process in both rational/technical and collaborative/communicative planning theory

At the outset of our Studio, we researched planning theory typologies to determine which style(s) would fit well for the project considering our 4-month Studio semester duration, the task at hand and the community context. Our Studio team based the decision on our role consulting with New York City Department of Transportation (NYC DOT) and the varied voices in the community that we should take both a technical approach and a collaboration approach. Through a technical approach, “planners operate as analysts whose job it is to explore a range of alternative and evaluate each in light of agreed-upon goals to see which will work best.”11 We applied the technical approach through an analysis of street conditions such as width, traffic flow, and crash data, to see how the existing street network was or was not working well. In a collaborative planning style, “stakeholders representing the differing interests meet for face-to-face dialogue and collectively work out a strategy to address a shared problem.”12 Through our vision process, we attempted to listen to and nurture authentic dialogue and understand communities members views. We sought to engage in extensive community outreach so that the visioning process could help catalyze existing community discussion about the role that bike and pedestrian infrastructure could play in QCD-11. Our intention to use these two specific planning theories as a framework helped inform the next steps of best practices, quantitative research and community outreach.

2.2 Best Practice Methodology

We looked toward other communities to determine the best implementation strategies

As part of the research process, our Studio took a deep dive into current bicycle and pedestrian best practices on the city, national, and international level. Bike infrastructure best practices have evolved over the last few decades with a movement towards protected facilities to avoid conflicts with automobile traffic. Best Practices research focused on recent transportation and street policies enacted in New York City, such as NYC DOT’s Vision Zero (2014) and Green Wave plan (2019); as well as City Council Speaker Corey John’s Streets Master Plan (2019). New York City, with its extensive network and robust implementation push, has led the way over the last fifteen years when it comes to creatively approaching bike lanes. We reviewed strategies from “Handbook for an Urban Revolution: Street Fight” by Janette Sadik-Khan (NYC DOT Commissioner during the Bloomberg Administration) and Seth Solomonow. Given that QCD-11’s low density, semi-suburban character and automobile dominance sets it apart from much of rest of New York City, we research additional communities of similar character for inspiration including: Albany, NY;13 Charlotte, NC;12 Minneapolis, MN;13 Portland, OR;14 Rochester, NY;15 and Washington, D.C.16

2.3 Quantitative Methodologies

We analyzed crash data to understand street conflict areas

Analyzing crash data is one method our Studio applied to understand the current context of the research area. The Studio created hot spot maps in ArcGIS to provide a look at the severity of the traffic incidents within the district and create a visualization of conflict areas. For the analysis, the team filtered and downloaded data from Crash Mappers using ArcGIS where it was processed through the hotspot analysis tool. This program created a layer that highlighted areas of crash points which are statistically significant compared to other locations in the district. Collect events, a spatial statistic tool, helped to determine the specific problem areas such as intersections and roads. This tool aggregates the point data, combining points that occurred at the same coordinates. These results were then refined to isolate the areas which were most problematic for street conflicts.

We analyzed the accessibility of the network through a mapping exercise

To analyze the accessibility of the current transit system, our Studio created a map to show which parts of the district are within walking distance of public transportation. Through ArcGIS, the Studio used network analysis tools to...
calculate a service area around bus stops and the Long Island Railroad stations. The analysis used a quarter-mile walking distance buffer around a bus stop and a half-mile walking distance around a train station for service and excluded private roads and roads unsuitable for walking. A quarter-mile radius is considered a fairly typical distance for traveling to transit, while a half-mile radius is a reasonable distance for traveling to a regional train stop such as the LIRR. The New York City Subway does not service QCD-11.

Upon seeing that the majority of QCD-11 is serviced by bus through the initial analysis, the Studio determined that an analysis of the service of the buses was warranted. The bus frequency analysis map displays how often a bus passes through a bus stop, over the course of the day. For this analysis, Monday from 1 A.M. to Midnight was selected and processed data through a specialty ESRI geoprocessing toolbox called "Better Bus Buffers." After preprocessing the General Transit Feed Specification (GTFS) data, the information is run through a tool called "Count Trips for Individual Routes," which statistically determines the number of trips frequenting a stop per hour during Monday from 1 A.M. to Midnight. Both maps helped determine transit coverage and frequency in the district.

We analyzed how people move and commute through the district

We conducted a trip generators analysis by collecting data from publically-available QCD-11 land use data, as well as data gathered from our community survey, interviews with stakeholders, and additional community outreach efforts. The Studio team identified the top destination areas inside the boundaries of the district such as parks, transportation hubs, commercial corridors, multifamily housing, colleges, and schools. Then the team used the Institute of Transportation Engineer (ITE) Trip Generation Handbook methodology to quantify the number of origin/destination trips from each point of interest. The ITE’s Trip Generation methodology consists of assigning a number of trips per square foot of commercial area based on the activity performed, or the number of dwelling units in the case of apartment complex/multi family residential areas. The final result is an estimated number of origin/destination trips made to this specific points and to visualize in a map format the top attraction areas in the district.

2.4 Qualitative and Community Outreach Methodology

We listened to the Northeastern Queens community to understand the local context

To better understand the unique local context and wide range of perspectives regarding the QCD-11 transportation network, the Studio surveyed the community, conducted in-depth stakeholder interviews, attended community meetings, and engaged in fieldwork to collect
street observations. By combining multiple data collection methods, the Studio team was able to provide data and evidence to serve as inputs that would help inform the vision plan. Additionally, the Studio team made a point to meet with many people with varying perspectives in the community. Our community outreach efforts garnered local attention and resulted in an article in QNS on September 30, 2019 and another article in the Bayside-Douglaston Patch site on November 13, 2019.

We explored QCD-11 commuting behaviors and motivations through community surveys

The Studio team designed two online surveys to gain a broad understanding of QCD-11 community behaviors and desires based on individual perspectives. The first survey was released on September 29, 2019 and a follow-up survey was distributed on November 6, 2019.

Designed for residents of QCD-11 as well as those who visit the district on a regular basis for work, school or other business, the surveys were open to the public and available for a total of 38 days. The survey was widely distributed among stakeholders, including community, business, historic, and religious groups who could blast it to their email lists, and school administrators and teachers. The surveys were written about and distributed by two Patch and QNS. More than 200 survey responses provided us with information that described general attitudes and feedback about commuting behavior, cycling habits, and the desire for bike and pedestrian infrastructure interventions. The survey was also administered in person at a NYC DOT bike helmet giveaway event on October 20, 2019.

The Studio team also reviewed the results of a survey that the NYC Department of City Planning (NYC DCP) released in mid-September 2019 “to increase knowledge and understanding of bicycle use in New York City.” DCP stated that the results of the survey would be used by the City to make communities better for cycling by focusing on physical improvements. DCP

Robust Community Dialogue About the Existing Northeastern Queens Transit Network

"Some of the worst areas are on streets like Northern Boulevard which have high congestion, very slow buses, and no safe bike lanes or are not enjoyable to walk through."

"You're not going to make us not drive, right?"

"People only use bikes for recreation."

"Free on-street parking is not a subsidy."

"It's America. I have a right to drive."

"I need to have street parking in front of my home."

"Does it make sense to take away a huge lane of traffic to impact hundreds of cars every hour for three bicyclists?"

"Children and teenagers are at the mercy of whenever their parents can drive them around."

"Bike lanes have caused an increase in traffic, as well as noise and pollution conditions for residents."

"Since the installation of the bike lane [my commute has increased from two minutes to 20 minutes. Northern Boulevard] is a major artery throughout northeastern Queens."

"I would like to see them [bike lanes and sidewalks] made more user friendly especially around the parks and schools."

"The elderly are beholden to buses or rides from others."

"We need to get a bike lane that they can ride safely. We can't afford to lose any more lives."
targeted cyclists who submitted their responses anonymously online or by mailing physical copies via the self-addressed stamped envelopes that were taped to bicycle handlebars in all five boroughs. Preliminary results of this survey were made available to the Studio team by DCP. The results of this survey generally aligned with our survey findings.

**We conducted deep-dive interviews with community leaders who represented various interests**

We also learned about QCD-11 by attending community board meetings. By serving as community representatives, QCD-11 community board members play a valuable role in strengthening the already active civic life of northeast Queens. The Studio team had the opportunity to attend three Community Board 11 general board and transportation committee meetings to learn first hand about their priorities and challenges. Collectively, the Studio team spent more than 35 hours partaking in these meetings.

Furthermore, the Studio team conducted over a dozen face-to-face and phone interviews with local and citywide stakeholders who are very familiar with the complexities of the district, from advocates, civic officials, and business owners, to residents passionate about mobility issues in QCD-11. In each interview, the Studio team engaged in both a standard structured interview with a common list of questions, as well as solicited free-form discussion.
The Studio team captured more than 10 hours of audio, video, and written notes that were particularly useful for capturing the story behind each participant’s experiences, values, knowledge, attitudes and behaviors. The interviews covered many different groups in the district but, given time limitations of a one-semester Studio semester, we have identified additional groups as a next step in further research: more high school students, business owners, the growing Asian community, and the various religious communities.

We captured and amplified the voices of unrepresented community members

The Studio team participated in NYC DOT’s Free Helmet Fitting and Distribution Event in Fresh Meadows on October 20, 2019, which was organized by their Safety Education and Outreach division and sponsored by elected officials. The Studio hosted a tabling event to engage in dialogue with Northeastern Queens residents, and offered a mapping exercise so participants could record their commuting patterns and desires directly. Those attending the event included many families and some individuals from Northeastern Queens, in and outside of QCD-11 and even some from Long Island. There were a range of ages, from small children learning to cycle to an 87 year-old avid cyclist. The racial demographics of the event reflected a diverse community, with Hispanic, Asian, White, and Black populations represented.

The Studio team spent more than 20 hours designing and executing this community mapping activity and table discussion in which hundreds of participants shared their impressions and opinions about the street safety and cycling habits in QCD-11 and the surrounding neighborhoods. The table displayed three large maps and asked participants “Where do you currently bike to?” “Where would you like to bike?” and “Where do you feel unsafe biking?” To answer the questions, participants were provided sticky dots to place directly on locations in maps. The resulting maps with a compilation of dots in a geographic spread paints a picture of participants’ experiences and relationships with the streets. The mapping activity also serves as a gateway to spurring informal and unstructured conversation about various topics such as where people wanted to travel, dangerous intersections, and desired paths or routes where bike lanes were absent. Additionally, while participants were waiting in line, the Studio team administered to them the community survey that our Studio team released in late September. In doing so, we sought to capture a broader universe of survey participants, who might not typically have been reached from online survey distribution through outlets such as

Results from the community mapping activity.
We spent time exploring QCD-11 and living the street network with stakeholders on foot, bike, and car.

Each time members of the Studio team traveled to QCD-11 for interviews, field work or meetings with the community, we tested different modes of transportation to experience first-hand the different commuting options that residents face: some took the subway and transferred to the local bus, others used the LIRR service, and some drove cars. Furthermore, on four different occasions, the Studio team had the opportunity to tour the streets of QCD-11 with the local stakeholders and conducted over 40 hours of unstructured observations, field work, and conversations. These stakeholder tours were conducted through walking, cycling and driving to gain multiple perspectives.

2.5 Plan Development Methodology

We distilled the results of our research to identify the community’s goal and their guiding principles.

Our Studio team synthesized our research findings and identified common threads or concepts that would guide our plan development: livability, connectivity, accessibility and safety. These four concepts were isolated as common recurring themes that surfaced throughout our research and community outreach.

These principles were deemed important based on both the physical space of the street network and the community outlook. By collecting and then distilling our research findings, we discovered that the community’s main goal is quality of life, or livability. Safety, accessibility and connectivity are guiding principles that prop up and support the overarching goal of livability.

We selected key destinations based on quantitative and qualitative research.

Before building out a comprehensive network map, we sought to identify key destinations within QCD-11. Quantitative data (trip generators, survey data) as well as qualitative data (information gleaned from interviews, field work to observe street conditions) revealed where community members who live and travel through QCD-11 want to go. Furthermore, the goal of livability and the guiding principles of safety, accessibility and connectivity pointed to the importance of key destinations. The team identified three main key destination types based on research and principles: Schools and Youth Friendly Sites, Parks and Greenway, and Business Corridors and Transit Hubs. Analyzing the existing land use map and understanding current transit conditions, the team was able to identify these key locations that would benefit from better connections throughout the district.

We planned routes based on a technical assessment of the roadways.

Once the team determined the key destinations that need to be connected, we developed a rational/technical alternatives matrix to evaluate which corridors would best serve as part of a district wide network by weighing the risks and benefits of various routes. The evaluation took into account various factors such as: current street context, traffic volumes, road widths, and number of curb cuts along the corridor to identify conflict points, along with the simplicity of the route, value in promoting connectivity to identified community assets, and opportunity to connect to the greater citywide bike network and greenway.
We selected interventions to create human-centered streets that promote livability and allow for the possibility of multiple modes of transportation. With the gaps in the bicycling network and need for pedestrian interventions, applying a Complete Streets framework is the best way to achieve a successful vision plan. Complete Streets are streets that cater to all types of mobility—walking, transit, driving and cycling—with a focus on the human experience in the street. Complete Streets emphasizes active sidewalks, green space and space for cars. While QCD-11 has active sidewalks, green space and car-oriented streets, it is lacking in safe crossings and bicycling lanes. The interventions proposed address that gap. Furthermore, there has been a push for Complete Streets both in New York City and in cities across the world. There is political will, through City Council Speaker Corey Johnson’s Streets Master Plan, and funding through NYC DOT’s Vision Zero and Green Wave policy initiatives, so now is the opportunity for QCD-11 to identify improvements to their street network that promote safety. The research completed for the project was robust, informing the final vision proposal. With planning theory research, quantitative analysis, best practices, qualitative analysis and community outreach, our team learned the community context, the dilemma and challenges faced by the community. That background and context lead to assessing the values of the community and thus the principles of the project and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation. Each step of the process, led to more complete understanding of the problem and the overall goal of increasing livability, which finally led the team to propose a Complete Streets implementation.
Existing Conditions
A Community in Transition Self-Reflects on Challenges to Livability
Through an analysis of the existing conditions in Northeastern Queens, the Studio identified values that unite the community along with challenges they face collectively. Northeastern Queens and more specifically, QCD-11, prides itself on its livability, or quality of life which is based on a historical attraction to the natural beauty and the community-oriented way-of-life. Today, while QCD-11 remains a low density, quiet enclave with a strong sense of community, it is experiencing a demographic transition and thus behavioral changes. With these shifts, the needs of community are changing and in particular, the auto-dominated streets are less than ideal for the current population of Northeastern Queens in terms of safety, accessibility, connectivity and most importantly, livability.

3.1 Existing Conditions: The Community Context

What makes QCD-11 great? The people and the place

Northeastern Queens (QCD-11), encompassing the neighborhoods of Bayside, Douglaston, Douglas Manor, East Flushing, Little Neck, Auburndale, Oakland Gardens and Hollis Hills, in many ways resembles a slice of suburbia in New York City. The prevalence of single family homes, well-regarded public schools, low crime and ample parkland points to Northeastern Queens’ orientation towards families and a strong sense of community.

Despite diverse backgrounds and interests, people who live in and move to these neighborhoods in Northeastern Queens are attracted to the region for similar reasons. The draw is the open space, incredible parks, access to the waterfront and a small town atmosphere all within reach of the biggest economic and cultural hub in the United States. Though each neighborhood is unique in itself, there is collective pride in how different the Northeastern Queens lifestyle is from New York City as a whole.

Historically, people sought to settle in Northeastern Queens for similar reasons: its natural beauty, calm and quiet environment, and high quality of life. The area's natural beauty and distance from the core of New York City attracted people seeking a calm and quiet atmosphere. The structure and land uses of today’s QCD-11 started taking shape in Douglaston and Little Neck with settlers in 1853 who fished and farmed and sold their produce to the restaurants in New York City. Simultaneously, what is now Bayside, acted as a rural retreat for Manhattan’s wealthy. A historic photograph of Northern Boulevard between Little Neck Park

Source: Douglaston Local Development Corporation

QCD-11 At a Glance

Total Population: 121,139
Median Income: $78,930
K-12 and QCC Students: 37,500
88% have access to a vehicle
8% poverty rate
5% roadways with bike infrastructure
46% Asian
37.5% White
12.4% Hispanic
Race/Ethnicity

Population 65 and Older: 18%
way and Glenwood Street in 1890 illustrates the serene, countryside nature of the street at the time. The local train line was constructed in 1866 with stops in Bayside, Douglaston and Little Neck, spurring settlement in the region.22

By the 1900s, farmers began to sell off their land.23 Rickert-Finlay Realty company bought 175 acres to create Douglas Manor, a planned community, advertised as 20 minutes from Herald Square with miles of shore front.24 The area is currently preserved as the Douglaston Manor Historic District.25 Bayside Land Association also purchased land for development in the first half of the 19th century.26 Northeastern Queens would offer a community of quiet and solitude, away from the hustle and bustle of the city center in Manhattan.

In the southern region of the district, William Vanderbilt, the financier and racing fan decided to build the Vanderbilt Motor Parkway to accommodate car racing. Wealthy business leaders and families saw utility in what was then a 60-mile, limited access parkway through Queens and Long Island and believed their property values would increase. The Parkway originally opened for races and some public traffic in 1908 and became the nation’s first super highway. Following the racing ban in 1910 the parkway was open for general transport and by the end of World War I, Motor Parkway found use as an access road for wealthy Long Islanders retreating to their estates. By 1929, the parkway was used by 175,000 at $1 toll fare.27

The parkway’s next transformation into a cycling path came after dispute with Park’s Commissioner Robert Moses in 1929 after business negotiations over purchase of the parkway failed. Owners wanted the state to buy and
incorporate the parkway into the Northern State Parkway but were rejected due to geographical concerns over the layout. Unable to compete with the toll free Northern State Parkway, the motorway was sold to Nassau county, officially eliminating motor vehicle traffic and the opening the Queens section as the "Queens Cycling Path."

A 1923 Map of the Borough of Queens - supplement to the Brooklyn Eagle Almanac - shows the presence of Northern Boulevard extending across Queens (though street alignment varies slightly from today's configuration). As people settled in Douglaston and Little Neck, Northern Boulevard became a cultural hub, home to a movie theater with over 500 seats that opened in 1929. With the increased population and rise of the automobile, Northern Boulevard was widened in 1931. At the same time, many actors and actresses were moving to Bayside with movie Studios in Astoria and the rumor that a Studio would be built in Bayside. At this time Bell Boulevard flourished as a commercial center as well. The street was widened in 1930 to accommodate the increased population. There was general interest in widening roads at this time. The Cross Island Expressway designed by Robert Moses, initially constructed in the late 1930s with four 12 foot wide lanes and a wide grassy median, was later widened to six lanes during the 1940s, due to a sharp increase in post war traffic volume.

A second boom of settlement happened after World War II for Bayside, Douglaston and Little Neck. Between 1950 and 1970, the region saw an increased number of single family homes. One internet forum dedicated to reminiscing about Bayside in the 1950s hosts wistful community dialogue. One member posted, "Roller skating, sleigh riding down hills and playing punch ball in the street...we are the lucky ones who got to experience those great times...agreed??" Much of the older population look back at those times fondly as they remember the high quality of life and the feeling of fun and freedom that came with community life playing out, in part, on the streets.

A 1923 Map of the Borough of Queens - supplement to the Brooklyn Eagle Almanac. Red marker is not Northern Boulevard.
Following this most recent population boom, Northern Boulevard was widened again to accommodate increased traffic in the region in 1974. The redesign and widening was accomplished by a current community board member, former transportation committee chair member and one of our stakeholder interviewees, Bernard Haber.33

Current conditions reflect and continue a strong tradition of livability in Northeastern Queens. At a glance, the current population of approximately 116,40034 has remained relatively stable in terms of size over the past couple of decades. That current population identifies as 46% asian, 37.5% white, 12.4% hispanic and 2.5% black.35 Though the population has changed since in size and demographics, some of what remains from the historical neighborhoods is the desire to live close to Manhattan in a suburban enclave with a high quality of life. That high quality of life can be found with the top-notch schools, impressive parks and a neighborhood feeling. The schools are ranked highly with high average graduation rates at 95% for those graduating in QCD-11 compared to New York City as a whole with a graduation rate of 76%.36

Out of all of the land in QCD-11, 22% of land is parks or open space, a remarkable amount of green space in a densely populated city. The 54% one and two family homes give the neighborhoods a quieter ambience than more densely populated areas in New York City. Those interviewed specifically mentioned the natural beauty of the community district and how parks are an asset in the community. One resident interviewee was involved with create access to the park near the district. Resident, Georgi Kraft said, “Years ago, I worked on a project that opened up Fort Totten to the public.” Fort Totten is a park outside of the district with a preserved civil war fortress.37 Her enthusiasm for the project and the type of project that she worked on underscores the general values in the community—she and the community value the parks and natural beauty of the district and are also willing to put effort in for a resource that will benefit locals in the area.

With all of these perceived benefits, the people who settle in Northeastern Queens have made an intentional decision. “People who want to live in Bayside really want to live in Bayside — that’s all there is to it,”38 said Betsy Pilling to the New York Times in an article about living in Bayside. The desire to live in these neighborhoods is also reflected in the ability to have a choice in where to live. QCD-11 as a whole is upper middle class with a high median income of $70,188. At 8%, the poverty rate is low but there are pockets of poverty in specific census tracts. Furthermore, the Community Board District 11 mission punctuates the collective goal of the members of these communities. The mission is “to increase the quality of life for our families and neighbors, while elevating local civil discourse, and building a greater New York City.”39 The community board mission reflects the general desires of the community and this shows an emphasis on “quality of life” and “neighbors and families” in the local area but acknowledges its role in the larger New York City community.

Today, while QCD-11 remains a low density, quiet enclave with a strong sense of community, it is experiencing a demographic transition.

While Northeastern Queens continues to be recognized as a strong and stable community with excellent quality of life, the population is aging and becoming more diverse. Families are moving to the district, attracted by good public schools. And as seniors age and sell their single-family homes, those new families that purchase them often reconstruct the homes in a manner that is out of scale to existing conditions, a change that long term residents in the community oppose. At the same time, some in the community feel like the district is experiencing an increase in density, which has led to the perception of more street traffic and safety concerns.

The population of QCD-11 is becoming more diverse.

In recent years, Northeastern Queens has experienced a significant demographic shift. While the total population has remained essentially stable,40 the ethnic composition is shifting from predominantly white to an Asian plurality. The Asian population now comprise 46% of the population, the largest racial group, followed by 37.5% White, 12.4% Hispanic and 2.5% Black.41 The percentage of the Asian, Hispanic and Black populations increased from 2000 to 2017 while the percentage of the White population declined from 60.3% to 37.5%. The decline of the white population in QCD-11 mirrors a larger, documented demographic trend in the New York City.
Map of Existing Land Uses in QCD-11

Legend
- Community District Boundaries
- Street Centerlines
- Land Use

- Green Trees, Parks, Ponds
- Multi- and Single-Family Dwellings
- Single Family, Townhouses/Apartments
- School, Community Center, Elementary Schools
- Commercial Commercial
- Industrial
- Public Facilities and Institutions
- Existing Facilities
- Vacant Land

Map made using data from NYCDCP's Pluto dataset..
York City. According to the 2000 census, In 2000, the non-Hispanic whites comprised 54.3 percent of the area’s population and by 2010, this share had decreased to 49.6 percent. The presence of racial and ethnic diversity also manifests in the high presence of foreign-born residents. 43% of QCD-11 are born outside the US compared to 37% across all of New York City. Furthermore, 29% of QCD-11 of residents 5 years or older have limited English proficiency, suggesting that the community is also ethnically diverse. For context, this statistic is on par with 29% in Queens and is higher than the 23% NYC rate. Anecdotally, Northeastern Queens residents attest to the increase in Asian population in the district. In a 2013 New York Times real estate article about Bayside, Daniel Algar, the broker/owner of East Coast Realtors in Bayside opines that “in the last two decades, Korean- and Chinese-Americans have been its fastest-growing ethnicities, many moving east from the Flushing area.”

In considering the demographics and population of QCD-11, it is important to note the student population in particular, which in total represents more than 26,738 people between the three public high schools and CUNY Queens Community College (QCC). While this student population draws from both within QCD-11 and outside of QCD-11, its sheer size in proportion to the total population of QCD-11 warrants special consideration. Students, though they may not reside in QCD-11, spend a considerable amount of time within QCD-11 and as such are a significant user population to consider for the Studio vision plan.

There are three public high schools in QCD-11, which draw a total population of 11,338 students. The shifting racial landscape within Northeastern Queens is reflected in the population of these high schools as well. Each of the three high schools are racially diverse settings with demographics that do not mirror the district (see accompanying QCD-11 racial demographics chart). There is a lower percentage of white students and a higher percentage of black and hispanic students in the high schools of QCD-11 than those living in the district. QCC demographics diverge from the residents of QCD-11 even more drastically, with a lower asian and white population and higher black and hispanic populations.

At the same time, it appears that there may be a trend of students in QCD-11 choosing to go to other schools outside the district. One resident who we interviewed said “it’s hard being mainstream in the New York City School system... It’s not like Long Island where students go to school with other students in their own district.” Another former resident who we spoke with mentioned that since the New York City Education system has gone through multiple reorganizations in the past couple of decades, “students who live in the area are now being sent to private schools and a lot of the [current] students are from outside the district.” According to the New York City Department of Education currently 85% of students who go
to public high school in QCD-11 are from outside of the district.

QCC, a school which currently enrolls 15,400 students and an anchor institution within the Northeastern Queens community, has experienced demographic shifts over the past decade. Over the past ten years, as illustrated in the chart with data sourced from CUNY, the white population has declined from 25% to 15%, while minority populations have remained relatively constant or increased: Asian 25% to 29%, Blacks 26% to 25% Hispanic 24% to 30%.51

Based on our demographic research of the public high school and college populations within QCD-11, our Studio team would like to highlight the significance of considering this distinct population in the vision plan. Providing a transportation network that connects schools to residential areas both within QCD-11, the existing street network that could lead outside of QCD-11, and to key destinations where students want to go are important to achieving equity and accessibility across racial/ethnic, age and geographic lines.

The population of CD11 is aging. QCD-11 has a growing senior population. Over the past decade, the district has seen a 17% increase in people 50 and over and a 4% decline in those under 50 years old.52 American Community Survey data shows the shifting age demographics from ACS 2006-2010 to ACS 2013-2017.53 A detailed look at the change in discrete age groups shows that over this same time period, there was a 10% increase in ages 50-64 years old, a 30% increase in ages 65-79 years old and a 15% increase in age 80 years old and over.

In part, the aging population of QCD-11 reflects a bigger picture demographic trend across the city. New York City as a whole is experiencing an increase in the population age 65 and older, due to the aging of the post-World War II “baby boomers” (born between 1946-1964), decline in fertility and increases in life expectancy.54 This trend is reflected in QCD-11’s population with the increase in people over the age of 50 and substantial increase in those 65-79 years old.

The dynamic of shifting age and racial/ethnic demographics has led to concerns about increased density, traffic and street safety. The housing market and the scrutiny of the character of the neighborhood is an important topic for QCD-11: the majority (66%) of QCD-11 land use is comprised of residences, of which 54% are one and two family buildings. Homes are focus of this community. In 2017, the homeownership rate was 73%, compared to 43.8% homeownership rate in Queens. In recent years, there has been increased focus on the housing market.

The Department of City Planning (DCP) rezoned 350 blocks of Bayside in 2004, 135 blocks of Douglaston and Little Neck in 2006, 50 blocks of North Flushing/Auburndale in 2009, and 418 blocks of Auburndale, Hollis Hills, and Oakland Gardens in 2010. The goal of rezoning was to curtail overdevelopment and maintain the low density nature of the district. New zoning designations were also introduced for single family homes, R2A and R1-2A, to limit the size of homes. Ensuring compliance is important to residents to maintain the suburban-like feel of the neighborhoods in CB 11.57

There has been an increase in complaints to the Dept. of Buildings for illegal commercial use in a residential zone, illegal conversions, and illegal occupancy.

An examination of the 2006 NYC DCP Douglaston - Little Neck Rezoning approval project document spotlights some community perception of changes to the housing stock:

<table>
<thead>
<tr>
<th>Age</th>
<th>2006-2010</th>
<th>2013-2017</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 49 years old</td>
<td>66,246</td>
<td>65,279</td>
<td>-1%</td>
</tr>
<tr>
<td>50 years and over</td>
<td>41,058</td>
<td>47,970</td>
<td>17%</td>
</tr>
</tbody>
</table>
The preservation of the area’s small town character has prevailed since the rezonings. “Small-scale, village character and uniform facades of buildings” were top concerns for Douglaston Village’s main street. A New York Times article from 2017 alluded to changes in housing stock in Little Neck, “that in the past few years, as older residents sold their homes, a largely Asian immigrant population has been buying houses, resulting in an increasing number of knockdowns and expansions.”

The article quotes Susan Seinfeld, district manager of Community Board 11: “There are many beautifully done homes, but very big, and some of them are getting more and more ornate,” she said.

CB11 summed up their concern about changing demographics, a perceived increase in density, land use character and the transportation network through the FY20 Statements of Community District Needs and Community Board Budget Requests:

New homes continue to be built in the district along with the enlargement of existing homes to accommodate an increasing population of families attracted by the educational opportunities in the district. Elderly homeowners are selling their homes to relocate, often to the garden apartment complexes in the area. Many of the new homes are much larger than the existing housing stock and is changing the character of the neighborhoods. In areas that are zoned for multiple families, homes are being renovated to reflect that zoning. Our community is becoming denser as the population continues to grow. We are, in turn, experiencing increases in traffic and an increased concern about transportation needs and safety.

In conclusion, Northeastern Queens is a community in transition, shifting towards an older and more diverse demographic. At the same time, the community board has a perception that density is also increasing - which may be real or simply pronounced on a daily level for a community whose population has remained relatively stable from 2000 to 2010. In turn, the community associates this demographic transition and perceived increased in density with more street traffic and significant concerns for street safety.
3.2 Existing Conditions: The Dilemma

The existing transportation network primarily supports car-based transportation; these auto-dominated streets are less than ideal for the current population of Northeastern Queens. The community is concerned about congestion and street safety for non-car users, particularly along busy, multi-lane thoroughfares such as Northern Boulevard. Four highways - the Cross Island Expressway, the Long Island Expressway, the Clearview Expressway, and the Grand Central Parkway - intersect through the district adding to the traffic on local streets, creating a physical and psychological barrier dividing the district and affecting the mobility of all road users.

Streets have not changed significantly in their design for automobiles since they were laid out in the late 19th and early 20th century, and to this day, people traveling in QCD-11 rely on cars. Despite a changing population and a modern context, land uses in the district remain relatively the same affecting the way people travel throughout the district. A current photograph of a stretch of Northern Boulevard from 2018 illustrates how the roadway has grown into a modern day scene: commercial businesses flank a six-lane boulevard with cars and trucks, and a cyclist waits to cross the street. The street has existed since the 17th century, but it has grown in width, and the community context around it has developed in density.

During the Eastern Queens boom of the 1960s, street design was centered around the car and these auto-centric design and land use patterns remain today. Currently, Northeastern Queens has separate residential areas, business districts, park areas and school areas between which it is difficult to walk or bicycle. The streets are laid out in semi-gridded patterns that accommodate calm traffic and quiet streets but have major arterials cutting through, carrying thousands of cars at high speeds and dividing the district into pieces. Despite some community desire to use other forms of transportation including cycling and walking, cars are an easier and safer way to get around with the current street infrastructure because that is what the streets are designed for. The reliance on the automobile is evident in the community’s access to cars. According to the American Community Survey 5-year estimates 2013-2017, 88% of households in Northeastern Queens have vehicles, high in comparison to 63% in Queens and 45% in New York City. Anecdotally, we heard through our community outreach that it is common for many households to have more than one car. The existing QCD-11 street network is primarily designed for and prioritizes automobile use. According to the New York City Department of Health and Mental Hygiene (NYC DOHMH) 2018 Community Health Profile, the QCD-11 street network contains 5% bike infrastructure.62

At the same time, the community has expressed frustration and dissatisfaction with the existing street network: they have even deemed Northeastern Queens a “transit-desert.”
Attending community board and transportation committee meetings, walking the streets with community members, and interviewing stakeholders, our Studio team heard first-hand repeated community complaints about living in a “transit desert.” In unpacking the “transit desert” notion, it is apparent that QCD-11 lacks any subway service within the district. On the New York City Subway Map, QCD-11 not only contains zero subway stops, but the geographic district is entirely hidden by the map’s legend. Northeastern Queens’ absence from this iconic subway map strikes an emotional chord within the community. Victor Dadras, CB-11 Transportation Committee Chair said, “Our community is wiped off the map… even places that have no subway access like Breezy Point are on the map, but you can’t see us.”

The fact that community members consistently evoke the notion of living in a “transit desert” belies their deep-seated frustration and belief that the existing transit network is less than optimal. In a community survey our Studio team developed to gather targeted information about QCD-11’s commuting behavior, cycling habits, and desire for bike infrastructure interventions, only 20.3% of survey respondents reported satisfaction with the overall quality of the QCD-11 transportation network. The majority (54.7%) of survey respondents disagree or strongly disagree with the following statement: “I am satisfied with the overall quality of the transportation network in QCD-11.” 25% of survey respondents reported they neither agree nor disagree with the statement. While this community survey was designed to take a quick pulse of community outlook, it reflects the divergent views regarding the transportation network.

A transit-desert would lack accessibility to all forms of public transportation but whether the district is by definition a “transit-desert” or not, the sentiment reveals further dissatisfaction with the transportation network. The majority (78%) of survey respondents agree or strongly agree with the statement “I would like to see interventions to improve the transportation network in QCD-11.”

Furthermore, the mere presence of congested streets could inspire frustration with mobility in the district. Due to the geographical layout of the district, there are some physical barriers to the flow of traffic. The 655-acre Alley Pond Park’s centralized location within QCD-11 is a natural barrier that funnels traffic through two main arterial roads, Northern Boulevard and West Alley Road. Those living on the eastern end of the district are forced to reach the rest of the New York City or Long Island through two roads that are prone to congestion during peak hours.

There are issues with the transportation service and major points of conflict, but it is not exactly a transit desert.

In looking at a map of the existing transportation network in QCD-11, the most glaring transit weakness is that it lacks any subway access within the district. However, there are other transportation options available that provides
What is a Transit Desert?

The notion of a transit desert is a recent term that is inspired by the notion of “deserts” to describe policy dilemmas such as the popular “food desert” discourse. While there is no single, technical definition of this emerging term, a broad, informal definition of a transit desert is an area with limited transportation supply. Recent definitions of a transit desert in transportation forums include:

A transit desert is a relatively new concept, defined as an urban area full of transit-dependent people (usually city residents who are low-income, elderly, disabled, or all of the above) but lacking sufficient transit service.65

Transit Deserts “include how far one has to walk, the time it takes to access transit, and the suburban physiographic conditions encountered.”66

“Transit deserts... areas where people down own or can’t afford cars and lack convenient access to other major forms of transportation.”67

**Percentage of Households with Vehicles**

- **QCD-11**: 88%
- **Queens**: 63%
- **NYC**: 45%
mobility across the district. 20.5% of QCD-11 residents live within a half-mile of the closest subway station to the district, the Flushing - Main Street Station located west in QCD-7. Nevertheless, this represents one of the lowest rates across the city of residents with easy subway access.

Interviewees and residents at community board meetings expressed concerns about problems with the bus services reliability and frequency and the price of the Long Island Railroad. The lack of efficient and low-cost mobility options was a prominent topic at the Community Board 11 Transportation Committee meeting on November 26, 2019. An elderly resident shared that he walks or takes the bus and is concerned with frequency of service and location of bus stops. Based on feedback from the community, we believed that transportation network warranted a technical analysis. At first glance the bus and train network may look limited but a further analysis shows that the bus network is within walking distance throughout most of the district.

This transit accessibility map shows the network-constrained service area within a half a
mile for train stops—distances considered walkable for the form of transportation. Most of the district appears to be covered by some form of mass transit but there are gaps in the service area that leave out certain parts of the district. The northern part of Little Neck in the East has no accessible bus service and is well outside of the Douglaston LIRR service area. Surrounded by the Hudson River and Udall Park Preserve, this area is uniquely isolated and presents walkability issues in addition to its relative lack of transit. The middle of Little Neck between Northern Boulevard and the Long Island Expressway shows gaps in service, further deteriorating the transit network in the east. While coverage is better in the western part of the district, gaps still exist. The areas towards the east end of the Bayside and Hollis Hills show large parts of the network that are disconnected from mass transit, particularly north and south of Crocheron Park.

QCD-11 transit weaknesses became more noticeable once we analyzed the frequency of bus service. While buses may service the majority of QCD-11, the frequency of bus service is a major area of concern. Again, Little Neck has the lowest level frequency levels throughout the entire district. With the exception of routes along Northern Boulevard, bus frequency is minimal with most stops experiencing less than 7 trips per hour. Further, routes that extend east/west on Northern Boulevard like the Q12 or the Q30 along Horace Harding Expressway clearly experience a decrease in frequency as they make their way east into Little Neck. The only north/south route in Little Neck (Q36) is on Little Neck Parkway and has an unacceptably slow frequency throughout its entire run considering the lack of traffic throughout the area. In the west, Auburndale experiences slow service along the lines that run through the majority of district, similar to Little Neck. The Q76 along Francis Lewis Boulevard is an extensive north/south connector and intersects with more frequent routes along Northern Boulevard (Q12, Q13) and 47th Avenue (Q27, Q31) but is one of the slowest routes in the west side of QCD-11. The same is also true of the Q31 on Utopia Parkway which meets 47th Avenue in the north and Horace Harding Expressway in the South. As a neighborhood with a longer length than width, and one of the largest neighborhoods in the district these slow north/south routes decreases resident mobility throughout the neighborhood and the district more broadly.

In some ways, QCD-11 can be loosely categorized as a transit desert. There is no subway access at all, let alone a quarter mile walking access to a subway stop. And with over 19% of the population age 65 and older and 19% of the population under age 17, QCD-11 has significant transit-dependant populations. Bus service frequency is a problem, and while the LIRR exists as a barrier to entry as it is nearly four times the cost of a subway ticket. Most importantly, that Northeastern Queens residents raise the notion of living in a transit desert underscores the deep-seated dissatisfaction with existing mobility options in general. To them, the transit system is less than ideal and involves a series of trade-offs in efficiency, cost and time with which they are uncomfortable. They also feel that their mobility options are generally more limited than service provided for the rest of New York City as a whole.

Community members have wide-ranging solutions for the Transit-Desert issue: there is dialogue - but debate - over the role of bike infrastructure

Through our community outreach we learned that there is a wide range of opinions about how to improve the transportation network in QCD-11. The opinions and observations diverge on the type of transportation options that should be added and how people are currently getting around. One resident of Douglaston and current Community Board Member said almost everyone owns cars. For this reason, he suggests improving traffic in the area with more options for cars such as widened lanes. Those residents who did recognize that some people may not have access to cars mentioned that children and elderly are beholden to buses or rides from others. Some residents desire more bus lines and more frequent buses, others want lower fares on the Long Island Railroad while still others mention biking as a viable transportation option if safety improvements are made. Eastern Queens residents broadly support cycling as a healthy recreational activity in local parks and greenways. However, opinions may diverge on biking’s place on the existing auto-dominated street network. Some drivers view biking as unsafe in high traffic areas and put the responsibility on the bicyclist to avoid dangerous areas. Their belief is that there are not enough bicyclists in Eastern Queens to accommodate safe travel on those roads. It is apparent vehicular drivers are reluctant to give up road space for cyclists if it would translate to fewer car lanes or parking options. Nevertheless, there is an emerging “collection” of advocates for cycling for improved quality of life on streets. Advocates include but are not limited to residents, cycling groups, low-income groups, students, and people interested in more sustainable travel. Many of these advocates cross-cut multiple groups – for example, there is a generational interest in sustainability, marked by 16-year old environmental activist Greta Thunberg and youth-led climate change protests, and a burgeoning group of existing and future potential advocates in their teens within QCD-11. One Douglaston parent acknowledged this strong generational interest—her teenagers and their friends are conscientious of their carbon footprint and make an effort to reduce energy with lifestyle choices. Part of the dilemma is acknowledging and helping to support this growing vocal group and address their need and desire for increased mobility options that are not car-dominated.
“Our community is wiped off the map... even places that have no subway access like Breezy Point are on the map, but you can’t see us.”

Victor Dadras
Transportation Committee Chair, Queens Community Board 11
3.3 Existing Conditions: Challenges to Livability

Auto-dominated streets challenge the community’s self-perception of livability; these streets are less than ideal for the current population of Northeastern Queens with regard to safety, accessibility and connectivity. The community is vocal about their concerns about the transit network and transportation in QCD-11. Those concerns can be categorized and tied to an analysis of the streets and transit. Reviewing community feedback, crash data, land uses, prices, trip times and connectivity, the auto-dominated streets threaten safety, accessibility and connectivity for all users.

Safety. Community residents have mounting concerns about street safety.

NYC DOT has not identified QCD-11 as a Vision Zero "priority district" compared to the rest of New York City, yet street injuries occur and fatalities abound as evidenced by data drawn from the Vision Zero interactive website which shows activity in 2019 to date.

In 2016, an elderly cyclist was fatally struck while riding along Northern Boulevard at the corner of 223rd street, sending shock waves through the community. Since then, community safety concerns have mounted. In July 2019, the 111th police precinct, which corresponds with QCD-11, posted tweets to call attention to the increased number of vehicular crashes along Northern Boulevard, which it attributed to inattentive driving. While these crashes are not related to pedestrians or cyclists, the NYPD’s concern with inattentive driving and poor driving behavior highlights the growing local tension around automobile dominance in the district and the sentiment that cars are aggressive and engaging in unsafe behavior.

An analysis of traffic summons issues by NYPD 111th precinct shows the four of the most prevalent car-related incidents between 2016-2018. Incidents such as failing to yield to a pedestrian, disobedience of traffic control devices such as stop signs and red lights and speeding illustrate the dangerous behavior of some drivers that can have significant repercussions for the safety of all who use the street.

The New York City Police 111th Precinct posted about bike crashes on Twitter.
ty of all who use the street.

The number of these incidents reveals the less-than-ideal auto-dominant environment of QCD-11. In total, this time period returned 34,629 incidents across all categories: 15% were for cell phone usage, 12% were for disobeying a traffic control device, 9% were for not giving the right of way for pedestrians and 8% were for speeding and 2.6% were for speeding. In total these violations comprise almost half of all violations issued between, accounting for a total of 46.6%.

An analysis of traffic incidents pinpoints areas of concern at major arterial intersections

The traffic incident maps shows all traffic related incidents that occurred over a five year period (2014-2019). The maps provide a general view of problem areas in the district by using a hotspot analysis tool available in ArcGIS products. The optimized hot spot analysis is a tool that analyzes and aggregates data points (crash locations) and creates a visualization of hot and cold spots that are “statistically significant.” In statistics, to say that an event is statistically significant is to say the event(s) were not the result of a random accident but were the result of certain circumstances that led to that outcome. In the case of this analysis, purple hotspots indicate that accidents within the designated area were the result of non-random factors that lead to this outcome. Cold spots are less frequent in this analysis meaning that there are few locations that have less accidents as a result of non-random factors. To locate more specific problem areas and intersections, the team used an ArcGIS tool called collect events to isolate areas that had multiple accidents. The aggregated data was further refined to find the most troubled spots for each class and to isolate patterns in traffic accident locations.

Within the district, motorists experienced the greatest number of accidents, with the Long Island Expressway (LIE) presenting as the most dangerous areas. The motorist hotspots are clustered mostly across the LIE, from the east end of the district near the Queens/Nassau County border to the intersection with the Clearview Expressway. The intersection of the LIE with the Cross Island Parkway has the most pronounced hotspot in the district for motor vehicles and smaller hotspots extend throughout the highway’s east/west extension. Broadly speaking, motorists appear to be most at risk on the highways, particularly at intersections with other high traffic areas such as Northern Boulevard, the Cross Island Parkway and the Clearview Expressway. The danger of these intersections is reinforced by the presence of the high incident points, all occurring near these intersections. In some regards this is a reassuring result as pedestrians and cyclists appear to operate outside of the most troubled areas concerning collisions between motor vehicles, the exception being the intersection of Northern Boulevard and the Cross Island Parkway. Optimism should be tempered however when considering the effects of problems on the highways with local roads. Traffic accidents on the main highways increase commute times and congestion causing excess traffic to spill onto the local street network. Problems on the...
LIE reverberate onto Horace Harding Expressway and problems on the Cross Island Parkway increase issues on Northern Boulevard, local thoroughfares where people are cycling and walking to get where they want to go. On top of that, one standout location for motorists, the Northern Boulevard and Cross Island Parkway’s intersection is a location where cyclists and pedestrians cross and thus are at a higher risk for incidents in this location as well.

For both pedestrians and cyclists, the north west section of the district in Auburndale and Bayside causes the most concern. The prevalence of narrow streets, the busy downtown area of Bell Boulevard and the east-west corridor of Northern Boulevard cause conflicts between between cars, pedestrians and cyclists. While the one hotspot for cyclist is more evenly spread across the area and extends farther into the middle and upper part of the district, the pedestrian hotspots are clearly split across the east and west end of the Clearview Expressway and are more localized in a smaller vicinity. This indicates that cyclists are at a greater risk for a larger territory on the north-west of QCD11. Furthermore the localized hotspots for pedestrians have a greater intensity and a higher significance (99% confidence), whereas the cyclist hotspot experiences greater variation in its significance. Pedestrians are at a greater risk in a smaller territory while the level of danger for cyclist depends on the location in the north west.

The area of significance for pedestrians is almost exclusively clustered along and around Northern Boulevard, showcasing that it is a dangerous street for pedestrians. The two high incident areas for pedestrians are at Northern Boulevard intersections that cross with other major roads that have high traffic volumes and commuter transit, Francis Lewis Boulevard and Bell Boulevard respectively. Wide streets with high traffic volumes are dangerous for pedestrians in this district and interventions should be considered where this street pattern exist.

For cyclists, the two high incident areas both occur on Northern Boulevard and reveal a problem area in need of particular intervention. One of these high incident areas for cyclists is located on Northern Boulevard and Cross Island Expressway intersection, a location also highlighted in the motorist analysis and a point of concern for the community. A motorist hotspot and high incident point is also located at this intersection, revealing this area is problematic for both cyclists and drivers. At this junction, the Northern Boulevard bike lane turns south onto the Brooklyn-Queens Greenway and riders are forced to ride across four lanes of traffic and stay aware of cars moving in the same direction. It is worth noting there is a significant cluster of cold spots indicating a safer experience for cyclists in southern Little Neck. This area has residences, parks, schools and a golf course. It is a lower volume motorist traffic area with less busy intersections, which further proves that cyclists are more at risk with more cars on the road and at major intersections.

With the in-depth incident analysis, our team can see that the complaints of the community
are founded in issues with the current street design and affect the safety of all users.

Accessibility. Increased traffic on streets creates safety hazards and cost burdens for all people, with a disproportionate burden on more vulnerable populations.

Youth, seniors, and disabled populations may need more time as pedestrians to cross busy streets, as well as benefit from more accessible street design such as defined crosswalks, curb cuts and slowed signal timing. With 18% senior population age 65 and over, QCD-11 has a higher rate than the citywide rate of 14%, according to the New York City Department of Health and Mental Hygiene 2018 Community Profile Report. Within QCD-11, 37% of the population is either under the age of 17 or over the age of 65. In fact, the senior population (18% age 65+) and the youth population (19% age 0-17) are roughly equal in size within QCD-11.

Teenagers and young adults crave freedom and independence and yet do not have an efficient, safe and low-cost transportation option. National trends reflect that this demographic has a decreased interest in obtaining licenses, driving, and accessing cars. According to an April 2019 Wall Street Journal article recent academic studies show that there has been a 20.2 percentage point decrease in the percentage of 16 year olds that have their licenses in the United States between the years of 1983 and 2017. While in the mid 20th century teenagers flocked to automobiles as a right of passage and entryway to freedom and independence, today there are various dynamics at play. Technology, primarily through smartphones, represent newfound freedom for teenagers and allow them to “see,” interact and socialize through video chat and apps. The cost of cars may be prohibitive for some. And there is growing consciousness among teenagers about reducing their carbon footprint.

Adults have a cost burden of owning or accessing automobiles. According to a recent American Automobile Association (AAA) article, the average annual cost to own a vehicle is $9,282, which translates to $773.50 a month. This is “the highest cost associated with new vehicle ownership since AAA began tracking expenses in 1950 and a reminder that the true costs of owning a vehicle extend far beyond maintenance and fuel.” Families with children have the additional time burden of shuttling around dependants in their household, since few other viable transportation exists in the district. Many QCD-11 households own cars: nearly 47% of residents own 1 vehicle, 33% own 2 vehicles, and nearly 10% own more than three vehicles. 10% of households have no access to vehicles. With more cars on the road, increased traffic ensues, along with additional externalities such as noise and pollution which are detrimental to everyone’s quality of life.

Connectivity. The current transportation network offers limited mobility options that are less than ideal for those who live, work and attend school in QCD-11, as they involve significant trade offs of efficiency, time and cost.

Today, over 100 years after the Eastern Queens street network was laid out, if a person does not have access to a car, it can be difficult to move to, from and around the area. One may decide to use the bus but then must face limited frequency of stops. The Long Island Railroad makes stops throughout the district at scheduled times, but is more expensive.
Chart of Transportation Options and Time/Cost Trade Offs for a One-Way Trip from Bayside to Flushing*

<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th>Estimated Time</th>
<th>Estimated Cost</th>
<th>Barrier to Entry</th>
<th>Additional Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>1 hour 7 minutes</td>
<td>$0</td>
<td>Must be physically fit</td>
<td>Weather conditions can considerably affect commute.</td>
</tr>
<tr>
<td>Bike</td>
<td>21 minutes</td>
<td>$0</td>
<td>Cost of owning a bicycle (including bike lock) must be physically fit bike</td>
<td>May involve various street biking segments. Bike lanes in Flushing are being proposed by NYC DOT. Weather conditions can affect commute.</td>
</tr>
<tr>
<td>Drive</td>
<td>20 minutes +</td>
<td>$1.30*</td>
<td>Cost of owning a car (including insurance), cost of parking in Flushing and/or Bayside</td>
<td>Traffic usually elapses estimated commute time.</td>
</tr>
<tr>
<td>Local Bus (240) to Northern Blvd/Parsons Blvd, stop</td>
<td>34 minutes</td>
<td>$2.75</td>
<td>Many bus stops are not senior friendly and lack shelters and benches</td>
<td>Need to access bus stops; bus ride consists of 32 stops along Northern Blvd; bus wait times vary.</td>
</tr>
<tr>
<td>Express Bus (263) to Northern Blvd</td>
<td>13 minutes</td>
<td>$0.75</td>
<td>Many bus stops are not senior friendly and lack shelters and benches</td>
<td>Need to access express bus stops; bus ride consists of 16 stops along Northern Blvd; bus route operates on weekdays only.</td>
</tr>
<tr>
<td>NICE Bus (1004) to Roosevelt Ave/Astoria, stop</td>
<td>34 minutes</td>
<td>$0.75</td>
<td>Many bus stops are not senior friendly and lack shelters and benches</td>
<td>Bus ride consists of 25 stops along Northern Blvd; Commuters making fare payment via a split fare transaction on a NICE bus are not entitled to a free transfer onto the subway.</td>
</tr>
<tr>
<td>LIRR (Bayside station to Flushing-Main St.)</td>
<td>16 minutes</td>
<td>$0.75</td>
<td>Train stations are not conveniently accessible within the district; train stops are ADA</td>
<td>Need to access LIRR stations. Train ride consists of 4 stops. Train arrives at set intervals, every 59 minutes stop; limited service on time of day.</td>
</tr>
<tr>
<td>Ride Share Uber</td>
<td>20 minutes +</td>
<td>$0.98*</td>
<td>Need a smartphone to utilize app and make the ride reservations</td>
<td>Traffic usually elapses estimated commute time.</td>
</tr>
</tbody>
</table>

Chart of Transportation Options and Time/Cost Trade Offs for a One-Way Trip from Bayside to Manhattan*

<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th>Estimated Time</th>
<th>Estimated Cost</th>
<th>Barrier to Entry</th>
<th>Additional Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>56 minutes +</td>
<td>$1.30*</td>
<td>Cost of owning a car (including insurance), cost of parking in Flushing and/or Bayside</td>
<td>Traffic usually elapses estimated commute time, can take up to 1.5 hours during rush hour.</td>
</tr>
<tr>
<td>Local Bus to Subway (Q51/Q133/Q1227 to subway station) (7 train at Flushing Blvd)</td>
<td>1 hour 24 minutes +</td>
<td>$2.75</td>
<td>Many bus stops are not senior friendly and lack shelters and benches</td>
<td>Need to access bus stops; bus ride consists of 30 stops along Northern Blvd; bus wait times vary; train rides on every 10 to 12 minutes.</td>
</tr>
<tr>
<td>Express Bus (C35 to 61st Ave, 7/4/11 Fl.)</td>
<td>49 minutes</td>
<td>$0.75</td>
<td>Many bus stops are not senior friendly and lack shelters and benches</td>
<td>Need to access express bus stops; bus ride consists of 14 stops along Northern Blvd; bus route operates on weekdays only.</td>
</tr>
<tr>
<td>LIRR (Bayside station to Penn station)</td>
<td>46 minutes</td>
<td>$10.75</td>
<td>Train stations are not conveniently accessible within the district; most stops are ADA</td>
<td>Need to access LIRR stations. Train ride consists of 7 stops. Train arrives at set intervals, every 30 minutes depending on time of day.</td>
</tr>
<tr>
<td>Ride Share Uber</td>
<td>56 minutes +</td>
<td>$0.98*</td>
<td>Need a smartphone to utilize app and make the ride reservations</td>
<td>Traffic usually elapses estimated commute time, can take up to 1.5 hours during rush hour.</td>
</tr>
</tbody>
</table>

*Calculation estimated based on 18 mile trip, $2.60 per gallon price of gas in Bayside Queens; and 24.7 miles per gallon.

The mobility options involve trade-offs and considerations involving time and cost that can limit connectivity to destinations outside of the district. An analysis of sample transportation options for a commute from QCD-11 to midtown Manhattan illustrates that the Northeastern Queens residents have a range of options, including bus, subway, LIRR, car and ride share. However, since the subway does not extend to QCD-11, commuters must take the bus to the closest subway stop at Flushing Main Street. At $2.75, this is the least expensive option, though it takes some of the longest time at approximately 1.5 hours. On the other end of the spectrum, the LIRR is the quickest commute at 46 minutes, though the cost is $10.75. In this scenario, the LIRR costs nearly four times as much as taking the subway. Driving, either with a personal car or ride share, is costly due to the cost of owning a car or paying a premium for accessing ride share.

**Long commute times challenge notions of livability**

Northeastern Queens has some of the highest average commute times at 42.6 minutes and as residents perceive more cars on the road, there is frustration about commuting. For context, the average commute times range in New York City range from 53 minutes in the Rockaways to 26 minutes in the Financial District and Greenwich Village. In QCD-11, 34% of residents take mass transit to work; 63% of QCD-11 residents drive to work and 2.9% of residents walk or bike to work. For context, 22% to 78% of residents in other neighborhoods in the city take mass transit to work, while the range of residents who drive to work is 9% to 76%.

Mobility and connectivity issues apply to moving within the district as well. To understand the lack of connectivity, it is important to understand where the trips are originating. Below is an analysis of major trip generators, based on both feedback from the community and ITE’s Trip Generation methodology.

These are some of the most frequent destinations in the district. Getting to these locations and locations outside of the district has caused daily stresses for community members. As mentioned earlier in the hotspot analysis some of the most dangerous places to move around in and through are also the most frequented. Northern Boulevard and Bell Boulevard. This is not only a safety concern but also a connectivity concern for people will avoid traveling through areas that are perceived as unsafe--these areas are unsafe for cyclists, pedestrians and drivers alike. Beyond the safety concerns, these destinations are not necessarily in a walkable distance for the entirety of the district and as detailed before buses are not always reliable in the district and the subway is not an option.
Legend
- Community District 11
- Existing Bike Facilities
  - Protected Bicycle Path
  - Bicycle Lane
  - Shared Lane
  - Signed Route

Map made using NYCDOT’s Bicycle Route dataset.
With traffic a concern and access to a car not available to everyone, driving is not always ideal or even an option. Finally, only 5% of QCD-11 street network has bicycle infrastructure and cannot connect people to the places that they want to go with current bicycling facilities. With the entire district within a bikeable distances, a little over 4 miles from one end to the other, connected lanes could provide another option that would get people where they want to go.

A growing cycling contingent voices desire for safe, accessible and connected bike routes as a mobility option.

Biking is not only a feasible option for connectivity but there is interest. There is a growing contingent of cyclists who move in, around and through Northeastern Queens on bike, and growing conflicts in sharing the road with cars. In our Studio’s community survey, we learned that 71% of survey participants bike. The majority (63%) bike for the purpose of exercise or recreation. Bike commuting (29%) is a secondary reason. This was echoed in the DCP survey for respondents who live in QCD-11 and surrounding neighborhoods show that the four highest ranked reasons why people ride bicycles were (in order): (1) ‘Exercise or enjoy cycling’, (2) ‘Environmental concerns’, (3) ‘Economical’, and (4) ‘Faster/more efficient than other modes.’ In the same vein, the choices ‘No access to a car’ and ‘There is good bike infrastructure’ were not selected. The majority of survey participants who bike do so (75%) frequently: every day, several times a week, or several times a month.

With an analysis of existing conditions in Northeastern Queens, the team determined not only that this is shifting population that has the value of livability in common, but the auto-dominated streets are less than ideal for that population in terms of safety, accessibility, connectivity and most importantly, livability. Community members suggested a number of solutions but the quickest and easiest solutions, though controversial, are bike and pedestrian interventions that connect key destinations safely giving everyone access to the transportation network and raising the quality of life for those who live and spend time in QCD-11.
The Vision: A Unified Network of Complete Streets
Our Studio sought to develop a plan that supported the community's goal of livability and addressed their guiding principles of safety, accessibility and connectivity.

Our Studio sought to develop a vision to solve for QCD-11's dilemma of an outdated street network that does not adequately serve the district's needs. The vision reflects QCD-11's context within New York City and its goal to improve livability, marrying this with planning theory, best practices, quantitative and research, and community outreach. The vision is aspirational, a loose concept or framework to aim for, but also reflects the reality of what could be achieved as far as policy and implementation. The vision is anchored by guiding principles, and can be implemented through a number of interventions.

1. A unified network map of bike lanes Complete Streets that connects cyclists safety to key destinations: parks and playgrounds, schools and youth friendly sites, commercial corridors and transit hubs
2. Pedestrian and intersection interventions
3. Increased Bike Parking
4. Expanding Wayfinding
5. Programming

All proposed interventions are intended to be representative proposals, not a comprehensive master plan. This vision will increase livability in QCD-11 by making the transportation network more connected, accessible and safe.

### 4.1 New York City's Larger Network Context

The "new standard" of New York City streets elevate humans over cars, emphasizing safety, accessibility and connectivity.

Looking at the transportation dilemmas presented in QCD-11, New York City has an opportunity to unburden this community from streets that are auto-dominated, congested, unwelcoming and, even, inhospitable to pedestrians by expanding Vision Zero and Green Wave goals into the district. Bike lanes have expanded across New York at a rapid rate over the last 20+ years. The city's bike map has radiated out from the core of Manhattan and central business districts and into the outer boroughs, creating a dense, robust network that reaches large swaths of the city. While the network expansion has lead to a dramatic increase in ridership, communities further from the urban core have not seen the same levels of investment and by extension, opportunity.

The recently released Green Wave\(^8\) plan, building off of the Vision Zero\(^8\) initiative, spotlights the successes of the current bike network while acknowledging the gaps in coverage, particularly throughout Queens and Brooklyn. Bike ridership is climbing nearly twice as fast as other large cities in the country and fatalities have been dropping consistently each year, up until this year. In order to address this recent uptick, the Green Wave lays out an ambitious plan to expand protected lanes and neighborhood networks throughout the city, especially in high demand areas.

Funding for bike infrastructure throughout the city has seen dramatic increases over the last...
several years, including new legislation announced in the fall of 2019. After a spike in cyclist deaths, the de Blasio administration, working alongside City Council Speaker Corey Johnson, introduced a $1.7 billion transportation bill to revamp the city's streets in favor of cyclists and public transit riders. The bill requires the addition of 30 miles of protected bike lanes each year, up from 20 miles, as well as the introduction of new bus lanes. Vision Zero target projects have previously seen a ten year budget of $1.5 billion as part of the 2017 Capital Strategy budget, but the new funding adds additional priority to the safety of cyclists.

Green Wave priority districts have been selected based on high accident rates and a lack of bike infrastructure. Northern Queens, specifically Community Districts 1, 3, 4 and 7, has been identified as a priority for the expansion of neighborhood networks. This designation sets these districts up to receive more than just a few key corridors of protected lanes, but ensures that they are evaluated for further connections into the neighborhoods. Queens Community District 7 has already begun moving forward with a plan to expand bike facilities, reaching up to the border of QCD-11. Having a vision in place and nurturing community dialogue in QCD-11 regarding the role of bike infrastructure could better position the district to engage with NYC DOT and tap into existing funding that would help strengthen safety, accessibility and connectivity in the community's street network - not just for cyclists but for everyone who shares the road, including drivers and pedestrians.

Bike infrastructure is starting to radiate to the outer boroughs, connected less dense areas with the city's robust bike network. The Citi Bike program will be introduced in the Bronx for the first time in early 2020 and over time will be expanding into deeper reaches of the outer boroughs, including Queens. This larger coverage area will be coupled with a dramatic increase in bikes for the system, with an aim to have 40,000 bikes by 2023. Queens is included in Phase 3 Citi Bike expansion (see map), yet Northeastern Queens will not receive City Bike in the planned expansion. Even more, Northeastern Queens is not shown on the New York City Citi Bike map, which plays into the community's sentiments of living in a "transit desert."

City funding for streets should be spread across the city in an equitable way, meaning QCD-11 should be part of the process. With the majority of our proposals falling within the parameters of NYC DOT's Street Improvement Projects (SIP) program, an extensive network of low cost interventions will provide an opportunity for the district to take advantage of the newly available resources while improving mobility within the district for those who either do not own or opt not to use personal vehicles. The Green Wave does see an opportunity to connect QCD-11 with flushing through a strong east-west connector, as well as connecting the existing Northern Boulevard bike lane eastward towards Nassau County. Both of these improvements will connect the district to the city at large, but they do not improve connections within the district.

In order for QCD-11 to truly become part of the citywide network, a neighborhood wide network must be considered. This not only includes the expansion of bike lanes, but also improvements to the street composition around frequent destinations and assets within the community. A unified network of Complete Streets will ensure that all users of the public realm will be able to do so safely and efficiently. It will also allow QCD-11's assets, including its world class park system, to become accessible to people from all over the city, showcasing the many reasons residents look to reside here.

4.2 Complete Streets Concept

Streets are the new frontier for reclaiming precious public space and creating community space. Modern streets or Complete Streets support human-centered activities such as biking, walking, strolling, sitting and playing. While many New Yorkers may live in tight quarters...
quarters or not know their neighbors, they can find literal and metaphorical “space to breathe” as well as interact with their community on city streets. As other parts of New York City embrace streets that accommodate all, QCD-11 should not miss the opportunity to increase quality of life in their district through a street network that is accessible, safe and connected. Applying Complete Streets to the district is the best way to address the guiding principles of connectivity, accessibility and safety in the pursuit of livability.

From "What are streets for?" to "Who are streets for?"

Cars have connected communities throughout the city—accommodating car travel has decreased livability. The awkward mixture of pedestrians, cyclists and motor vehicles in a street designed mainly for cars is dangerous for all road users, excluding those without the ability, the resources or the desire to own a motor vehicle. A more inclusive streetscape is needed, one that is egalitarian and improves the lives of its all its users, not just those that own a motor vehicle. This type of network is called "Complete Streets." Simply put, "Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are traveling as drivers, pedestrians, bicyclists, or public transportation riders." Although the concept is straightforward, complete street implementation varies based on community context. Since the creation of these streets depends on the particular network under discussion, the application of Complete Streets to QCD-11 is unique.

In QCD-11, where residents value a sense of community, making small interventions to create Complete Streets, reduce the dominance of cars on the street network, and provide a more welcoming pedestrian and bike experience on streets can connect people both to destinations where they want to go and to each other. In short, environment induces behavior. Small-scale changes to the street environment can motivate people to walk or bike, for those who have the option to do so. For those who prefer to drive, there will be less traffic on the road since others may choose to walk or bike.

The Studio team conducted research about the district’s transportation network, engaged in extensive community outreach given our limited, one-semester time frame, and has created a Complete Streets plan to improve the current system’s limitations and dangers. As highlighted in the previous sections, QCD-11 stands out from the rest of New York City for its dense green space; its distinct and thriving commercial corridors; and the abundance of single family homes. QCD-11 has the character and the density of a suburb in a city known for skyscrapers and crowds. Like many towns in the suburbs, QCD-11 is auto-oriented because that is what the land use dictates. The district is often identified by residents as a “transit-desert,” lacking a subway connection or timely bus service. If a resident in the district does not have access to a car, money for the LIRR or time to wait for bus services, they then lack access to district resources and connectivity to desired destinations. While alternatives to cars exist, they are dependent on resources and capabilities that many in the district do not have. Also, like many auto-dominated areas, traffic incidents are common, particularly near the commercial sectors, and the residents of QCD-11 feel the consequences. Violations of speeding and disobeying red lights and other traffic control devices have resulted in the most summonses issued from 2016-2018 and collectively account for 22.6% of the total issued during that period.4 The Long Island Expressway is an accident hotspot for motor vehicle traffic as is Bell Boulevard and the northwestern section of the district for bicycles and pedestrian traffic.

Introducing Complete Streets to QCD-11 can help solve these dilemmas. The application of Complete Streets often includes active side-

![What is a Complete Street? Source: Birmingham City Council.](image-url)
“A driver almost hit my wife, who was 8 months pregnant, and me, who is over 6 feet tall, as we were crossing Northern Boulevard legally by Bell during the day.”

Northeastern Queens Resident

Safe crosswalks, planting strip and green spaces but, as stated, every implementation is unique. Since QCD-11 already has active sidewalks, especially along commercial corridors, has active roadway due to its high car volumes, is surrounded by large green spaces and has planted many street trees, the vision for Complete Streets focuses on dedicated bike lanes and safe crosswalks or intersections. The proposed network addresses concerns over connectivity, accessibility and safety through streetscape improvement projects that implements a bicycle network, improvements to pedestrian infrastructure, wayfinding and traffic calming measures.

4.3 Guiding Principles

Eastern Queens residents value quality of life, and Complete Streets with bicycle and pedestrian infrastructure will strengthen their community by promoting livability through three main principles: safety, accessibility, and connectivity.

Safety: Safety is the most pressing concern in the district and is an area where Complete Streets proposals are strongest. In the conversations around bicycle and pedestrian infrastructure, no matter the opinion, the argument is framed around safety. Pedestrians, cyclists, public transit riders and drivers are all concerned about safety. Safety is the main theme echoed by the community board and Chistine Haider, Community Board 11 chairperson, said, “The community board would not have done their due diligence if we did not recommend the safest situation for all.” Improved infrastructure will go a long way to create human centered streets that all can enjoy. Pedestrian infrastructure for safe passage in busy areas, an extensive bike network to relieve some congestion and traffic calming measures all work towards making streets safer for the least mobile, the most vulnerable and entire district populations.

The option to use the bicycle and pedestrian network is based on both perceived and actual safety of the street network. According to our survey, the main reason people in QCD-11 who are currently interested in biking but don’t is due to safety concerns. Currently, bike lanes mostly run through the parks but community members should not have to be within a park just to feel safe as a pedestrian or cyclist. There have been a number of bicyclist fatalities in the district in areas without bike lanes. One Northeastern Queens resident said, “A driver almost hit my wife, who was 8 months pregnant, and me, who is over 6 feet tall, as we were crossing Northern Boulevard legally by Bell during the day.” Crash data shows where there are opportunities to create safer infrastructure for drivers, bikers and pedestrians. With better infrastructure, all people no matter what method of transportation they choose, can feel comfortable and safe. Complete Streets, which provide a unified street design for various types of commuters to share the road, make it safer to walk, cross, catch a bus and bike.
Accessibility: Across New York City, public space is a precious commodity. Representing 30% of New York City’s land, the street network is the largest component of the city’s public realm. Streets are the new frontier for reclaiming precious public space and creating community space. Modern streets welcome equitable use across different modes of transportation and support human-centered activities such as biking, walking, strolling, sitting and playing. While many New Yorkers may live in tight quarters or not know their neighbors, they can find literal and metaphorical “space to breathe” as well as interact with their community on city streets. In Northeastern Queens, where there is a small town atmosphere and natural beauty, Complete Streets would invite residents and visitors to step out of their houses, apartments or cars and experience the district on a human level, reinvigorating the community experience.

The fact that Eastern Queens residents feel like they live in a “transit desert” is reflective of the perceived lack of transportation accessibility. Transportation options vary depending on age, access to a car and income. Pursuing equitable options means giving more access to the transportation network for all of these groups. Complete Streets will increase access to efficient and low-cost mobility options in QCD-11 for those most vulnerable populations, thus promoting equity. Those who aren’t capable of driving are denied access to some of the district’s most valued resources. The youth population and the elderly are two of the largest

“America needs streets designed to be safe and convenient for travel by automobile, foot, bicycle and transit regardless of age or ability.”

American Association of Retired Persons
Northeastern Queens Resident

“...children and teens are at the mercy of whenever their parents can drive them around.”

groups affected by the district’s lack of mobility options. The 18% senior population will benefit from Complete Streets with pedestrian improvements, making it easier to cross intersections and thus give access to nearby locations that may have been previously inaccessible. In a policy statement, the AARP (American Association of Retired Persons) states, “America needs streets designed to be safe and convenient for travel by automobile, foot, bicycle and transit regardless of age or ability.” Access to a safe and connected street network can also encourage seniors to engage in walking, one of the best free forms of exercise. For retirees on a fixed income, controlling lifestyle costs are prominent community concerns. It costs a premium to drive a car, but if the street network allows, the senior can walk a few blocks comfortably to the supermarket.

On the other end of the spectrum, the 25% of QCD-11 population that consists of children, teenagers and young adults benefit greatly from improvements to the street network. This age group may be old enough to be independent but still too young to drive. Schools can be difficult to reach and students may be constrained by the time and cost burdens of their commutes. Many residents complained about congestion on the roads and buses during the school pick up and drop off times. Improving students’ mobility options pays dividends in the form of a better educated younger population and provides much needed relief to parents who are responsible for their children’s transportation needs. One Northeastern Queens resident who grew up in Oakland Gardens said, “children and teenagers are at the mercy of whenever their parents can drive them around.” Beyond getting to school, teenagers can gain access to resources like the parks, commercial districts, libraries and entertainment, giving them more autonomy and freeing parents from the burden of transporting teens to the places they need and want to go. For some families, having an accessible network of Complete Streets could reduce the need to have more than one vehicle in their household. Based on district census data and number of students in each high school, currently less than 47% of students who go to public high school in QCD-11 are from the district. This demonstrates the need for QCD-11 public high schools to connect with outside the district as well.

Finally, cost is also a consideration related to the accessibility of a transportation network. For those who are physically capable of biking, a 30 minute trip to school or work is a reasonable commute and could be the difference between a $9,000 a year expense and $100 a year expense. For some, that may be a good incentive to drop a second household car but for others it could be a life-altering amount of savings. For those who don’t have a car and rely on public transportation, using a bike can give a person the freedom and flexibility to choose their own schedule. With bus frequency being a problem in QCD-11, a reliable form of
transportation such as biking or walking could provide people increased mobility options.

**Connectivity:** The district has a strong network of bike infrastructure in parks and greenways but is missing vital connections elsewhere. Having only short segments of greenway scattered throughout QCD-11 amounts to a piecemeal approach that does not bring people to where they want to go. The existing greenway that stretches north-south through the center of the district is one of the few major connections provided to cyclists. Aside from a small east/west connection in the southern part of the district, there is no extensive east-west connection to outside the district, nor to attractions within the district. Many of these missing connections for cyclists can also increase connectivity for pedestrians as they traverse major thoroughfares that currently feel unsafe regardless of chosen method of transport.

Connecting the bike network is essential to ensure safe routes for those who want to use the network. Anecdotally, our Studio heard and observed through our community outreach efforts that it is common for people in QCD-11 to drive to Alley Pond Park, Joe Michaels Mile or Cunningham Park, unload their bikes, then cycle in the parks. In surveys and interviews, residents expressed interest in wanting to bike to the parks but not feeling safe enough without connections from their house to the parks. Connections to parks, transit hubs, schools, and commercial centers will give people in the district option to cycle to any of their destinations. Complete Streets increases connectivity within the district through new and improved new bicycle and pedestrian network. In this regard, the team analyzed the district to establish ways of connecting neighborhoods both to each other and connecting the district to the rest of New York City. QCD-11 is comprised of a number of neighborhoods, each one distinguished from the other but playing a similar role in defining the district’s character. Complete Streets not only connects points of interest but considers the district as a whole, connecting Bayside to Auburndale to Little Neck to Hollis Hills so that each area can benefit from what other neighborhoods have to offer. Similarly, QCD-11 is located in and is a part of New York City so there is a greater need to think more broadly in terms of a larger, connected citywide network. New bicycle infrastructure needs to account for what has been built and is currently under construction in nearby community districts. Many residents commute out of the district for work or shopping and connections to areas like downtown Flushing were considered vital to the success of the network.

Complete Streets are the next step in the evolution of QCD-11 community transportation and a way for this somewhat geographically isolated area to connect with and tap into “the new standard” of New York City street design. Complete Streets do not ignore the context of the community and propose radical overhauls of the network. Rather, changes are small and
dependent on the given environment. Community concerns over traffic violations in residential neighborhoods, crossing the high traffic roads of Northern Boulevard, getting to the parks and the limits to the greenway can all be addressed through minor adjustments that create significant changes. The following sections illustrate the Complete Streets proposals and further explains what benefits Complete Streets can bring to QCD-11.

4.4 Proposed Network Map

The Bicycle Network: Connecting People and Place

Like any form of transportation, having a fully realized network is crucial when it comes to providing access and convenience for users. Piecemeal expansions of bike infrastructure would limit the adoption of commuting via bike as riders would still spend most of their commutes without a designated lane, raising safety concerns. In order for a bike network to work it must provide safe and efficient travel options, connections to key destinations, and interconnectedness to a greater network. The proposed network within QCD-11 builds off of the success of the extensive greenway through the center of the district and looks to connect to existing infrastructure outside of the district including proposals currently being considered by NYC DOT.

As a way to alleviate the “last mile problem,” which refers to the last leg of people’s travels (for example after they park their car or come off a bus), three anchoring destination categories were identified within the district: parks and playgrounds, schools and youth friendly sites, as well as business corridors and transit hubs.

Parks and Open Space: Celebrating the Gems of Northeastern Queens

Routinely cited as one of the greatest assets within the district, the park system attracts residents and visitors alike. While commuting by bike is still rare within the community, biking within the park system and throughout the greenway is highly popular among residents as well as visitors. Survey responses and interviews reaffirmed the attraction to the parks and biking through them. Currently, many visitors drive their cars to the parks and begin riding bikes once they have arrived. While some would be willing to ride their bike to the park, they believe the street network is not safe for them to traverse. Due to this demand, and the already existing bike facilities, the parks system should be seen as the backbone for an extended network. Providing those safe links will encourage those who already ride within the park to ride to the park. Therefore, a bicycle wayfinding system would be beneficial to guide cyclists as well as pedestrians to points of interests within the district.
The U.S. Department of Transportation suggests some ways to increase connectivity, to bring people to where they want to go:

1. Integrating transportation and land use planning to locate major commercial and institutional activity centers in highly accessible areas, such as public transportation hubs and central business districts.

2. Reducing distances between key destinations required to satisfy daily needs so that walking or bicycling are attractive and practical options for frequent trips that take place close to home.

3. Improving local pedestrian and bicycle infrastructure and parking, particularly at key access points to neighborhood destinations. This might include pedestrian crossings on busy main roads, public transportation stops and stations, sidewalks throughout shopping centers, and paths that provide safe access to schools.

4. Managing the transportation system to reduce travel times to destinations through measures such as improved incident response, public transportation signal prioritization, and congestion management.
Connections to major employment centers requiring infrastructure that is safe for all users. Seniors all must gain access to this space, relating to the area. Workers, families with children, and some that act as regional destinations. Bell Boulevard and Northern Boulevard have the commercial nodes that provide for daily needs. Ensuring safe connections from all corners of the district to these facilities also worked to connect the proposed network to the greater network outside of the district. With many students and workers coming from neighboring areas, easily accessible bike facilities will allow for greater options for these commuters. Building out this network should be considered in phases. Phase One would implement the essential corridors that are needed to build out the network's frame, building off of the backbone that is the existing greenway. Phase Two would fill in the gaps, add additional connectivity, and provide a more equitable network.

Phase One: Building the Frame

In order to achieve a unified network of Complete Streets that improves livability across Northeastern Queens through increased safety, accessibility and connectivity, a minimum density of street network is needed to ensure viability. Phase One builds the frame for this unified network and ensures sufficient support to address the community’s dilemma of an outdated street network that experiences congestion and offers sub-optimal mobility options for residents. Four east-west connectors (32nd/33rd/35th Avenues, 47th/48th Avenues, 56th/58th Avenues, and 73rd Avenue) along with three north-south connectors (the west side of the Clearview Expressway Service Road, Oceania Street/ Corporal Kennedy, and Marathon Parkway) work together to create a general network covering the entire district. While sparse, the Phase One Network provides critical access to the greenway and the anchoring destinations, including three out of the four LI RR stations within the district. Quiet neighborhood streets are easily accessible off of this framework as are the business along Bell Boulevard. Implementing Phase One makes small changes to the existing street network to offer accessible options of walking and cycling safely to their key destinations.

Phase Two: Connecting the Dots

Building off of Phase One, Phase Two would create infill, building out the frame by filling missing bike infrastructure gaps. Phase Two includes additional east-west connectors (26th Avenue and West Alley Road) and additional north-south routes of varying sizes. These additions help to connect further with the greenway as well as ensuring a strong connection between neighborhood east of Alley Pond Park with those west of the park. While we believe these routes are valuable, they can be phased in slowly to increase the usefulness of the network.

There is a growing consensus that the density of your bike network is more important than how extensive it is. As is often noted, a majority of trips are under 5 miles, with at least a third or more under 3 miles. Often this is considered too far to comfortably walk, but it is a perfect length for a bike ride. These are the connections that a dense network can provide. According to a study by Jennifer Dill, et al., those who live less than a half mile from a bike path are 20% more likely to ride a bike once a week than those living a half to one mile from a bike path. Transportation Alternatives sets a goal of getting every New Yorker a quarter mile away from the nearest bike path, which would mean some sort of bike infrastructure on every 3rd or 4th street. Portland is looking to achieve this same goal, not only ensuring that a bike lane is within reach, but a lane suitable for all ages and abilities. While these goals may be ambitious, and geared more towards high density neighborhoods, they point to the importance of density when it comes to ridership. American city planner and author Jeff Speck notes that a dense network allows for a critical mass of bike riders to aid in the safety in numbers argument. Once a network is used regularly by an increasing number of riders, expansion becomes easier to justify and safer to implement.
Proposed Bike Network: Phases

The Bike Network Provides Safe, Accessible and Connected Streets for All. While the network is primarily for cyclists, bike facilities benefit all users of the streetscape. Bike facilities provide drivers with predictability when it comes to interacting with cyclists along the road, thus promoting safer driving.

Phase One builds off of the existing bicycle infrastructure embedded within the park system. This phase implements the east-west and north-south corridors that are needed to build out the frame for a bicycle network in QCD-11. Phase One provides critical access to anchoring destinations within the district, including parks and playgrounds, transportation hubs, commercial corridors, and youth friendly sites.

Phase Two fills in the gaps, adds additional connectivity, and provides a more equitable network for those who choose to ride their bicycles for short trips within the district and longer adventures beyond the boundaries of QCD-11.
Proposed Bike Network: Facility Class
The Bike Network: Provides Safe, Accessible and Connected Streets for All

While the network is primarily for cyclists, bike facilities benefit all users of the streetscape. Bike facilities provide drivers with predictability when it comes to interacting with cyclists along the road, thus promoting safer driving. By knowing where to expect cyclists drivers can adjust their behaviors accordingly and reduce surprises. Pedestrians, especially the most vulnerable among us, benefit from drivers being forced to slow down when turning at intersections. The network also works to connect QCD-11 and all of its unique neighborhoods with the city at large. Creating safe ways for city residents to gain access to the world class park system and vibrant local businesses will advertise these neighborhoods and attract a new generation of residents, as will the increasing amount of mobility options available within the district. Being a great neighborhood for families means adapting to keep pace with the needs and desires of new families.

4.5 The Vision: Proposed Interventions

To accompany the bike network and create a proposal that is robust, the Studio team has proposed interventions beyond bike lanes, including pedestrian improvements, bike parking, wayfinding and programming. Plus the team has split the bike lanes into specific interventions, that can be categorized as corridors and connections. The aspiration is to have these interventions implemented as a whole network of interventions but each can be viewed and implemented as a standalone intervention.

4.5.1 Make Pedestrian Improvements and Improve Key Intersections

A complete street must provide safe ways to cross for pedestrians, which can be extremely challenging when wide roadways are filled with car congestion. High automobile speeds, long street crossing distances, and short signal crossing times result in public spaces that are intimidating to anyone not in a car. Roadways can become barriers to anyone travelling on foot, especially the vulnerable members of our society; seniors, youth, and those with physical disabilities. In order to bridge these barriers the visibility of pedestrians must be increased along with safe spaces for pedestrians to wait. To have the greatest impact, interventions must be targeted at where pedestrians frequent most. We are focusing our efforts along the Bell Boulevard commercial corridor and high traffic intersections near the high schools within the district.

Cyclists are at their most vulnerable at intersections, no matter the design of the bike lane. Transportation Alternatives notes that 89% of serious bike injuries and fatalities occur within an intersection. To improve safety, intersection design is the most effective manner.

The Dutch intersection is the current gold standard in terms of safety. It is characterized by floating islands that force drivers to take wide turns, slowing traffic while providing cyclists and pedestrians a barrier that draws attention
to them as they enter the intersection. This intervention is primarily used when protected lanes meet, but aspects of it can be adapted in other contexts.

Bike boxes also provide visual priority to cyclists on intersections where left hand turns are required. The box is placed between the stop line for motor vehicles and the pedestrian crosswalk, also providing a safety buffer for pedestrians. By placing cyclists at the front of an intersection, they are able to enter the intersection first, increasing their visibility to drivers as they turn.105

Bell Boulevard Business Corridor (Map Key: A) Bell Boulevard and the Bayside LIRR station act as a focal point for much of the community. While a physical bike lane along the busiest portion of Bell Boulevard is advised against at the present moment due to an emphasis on pedestrian walkability along the corridor, bike access will be provided on the parallel corridor of Corporal Kennedy and Oceania Street with a connector running along 42nd Avenue. There are certain actions that must be considered to improve mobility and access within the commercial district. Sidewalks are currently being shared by pedestrians and cyclists, creating a dangerous situation. Valet parking offered by some restaurants along the street has resulted in increased double parking as patrons wait to be served.

Intersections along this corridor are crucial links between the LIRR station and the municipal parking lot, along with many local businesses. Curb bump outs, or neckdowns, will aid in slowing vehicle traffic, providing added visibility to pedestrians in the most walkable area of the district, and ensure slower, safer turns onto the side streets. Similar interventions should be considered along the length of the Bell Boulevard business corridor, from Northern Boulevard north to 38th Avenue, along with high visibility crosswalks. In combination, these simple interventions will emphasize the importance of pedestrians within the area and ensure their
safe movement.

**Corporal Kennedy/42nd Avenue (Map Key: B)**

The community has raised safety concerns in regards to the four way stop at Corporal Kennedy and 42nd Avenue. Drivers are often seen rolling through the stop sign heading south on Corporal Kennedy, increasing the risk of a collision. The community has considered advocating for a traffic signal to be installed, but the main concern is creating a more visible reminder for drivers to stop. With this intersection serving as a major connector to Bell Boulevard for the proposed bike network it is imperative that the safety standards are improved.

High visibility crosswalks along with pedestrian crossing signs would alert drivers to the fact that they are entering into a space that is likely to be frequented by people on foot. Implementing a modified version of what is known as a Dutch intersection would also help to protect pedestrians and ensure cyclists a safe path through the intersection. Dutch intersections include small barriers between bike lanes and travel lanes, providing a buffer between cyclists and cars while also cutting down the crossing distance for pedestrians. Left hand turns are already modified due to the park like median, but the small barrier of the Dutch intersections would also modify right hand turns, forcing drivers into a safer motion for cyclists and pedestrians alike.

**Francis Lewis Boulevard/Horace Harding (Schools) (Map Key: C)**

Based on our research, schools are a point of conflict for pedestrians and drivers. With students coming to school from all over the district and outside of the district, many commute via public buses. Those public buses drop students off along Horace Harding Expressway, a high traffic road, to get to Francis Lewis High School and Benjamin Cardozo High School. The following case study shows improvements that we are suggesting to make the intersection at Utopia Parkway and Horace Harding Expressway. A similar treatment should be applied to the southern side of the Horace Harding and to Springfield Boulevard and Horace Harding near Cardozo High School. We are suggesting a pedestrian island in the middle of the crosswalk on Utopia Boulevard. Since this crosswalk is longer, students will have a safe place to wait if they cannot make it across the whole road. We are also adding school crossing signs in every direction to alert drivers that this is an area where students cross so that they will use caution at this intersection.
Cross Island Parkway and Northern Boulevard (Map Key: D)

With the implementation of protected bike lanes on Northern Boulevard between Douglaston and Bayside, it is now safer for bicyclists to use Northern Boulevard. However, there is notably low visibility of cyclists and pedestrians for cars at the intersection of Northern Boulevard and the Cross Island Parkway in every direction. Through our own fieldwork walking and driving along Northern Boulevard, we identified this intersection as a priority. Through interviews with community members, we heard repeated support for making improvements to this intersection. To make the bike lane more visible, we suggest green striping across the bike lane. Drivers will see the bike lane better when turning. To prevent drivers from turning too sharply traveling west on Northern Boulevard and turning onto the Cross Island Parkway, we propose extending out the bike lane further and the curb where pedestrians would enter the Joe Michaels Mile greenway. For those traveling South from the Cross Island Parkway and turning onto Northern Boulevard we propose that the road is funneled into the stop light instead of a stop sign. Both cyclists and pedestrians will be more easily seen by drivers and have less time and space where they may be vulnerable to an accident. Improvements to this intersection will improve safety, accessibility and connectivity to parks which would respond to community interest in recreational cycling. The community and NYC DOT may also wish to explore opportunities for incorporating public art onto the jersey barriers to further highlight the bike lane. As a driver, it is often difficult to distinguish the different lanes of the road. In particular, driving left turns on Northern Boulevard are difficult to make.

4.5.2 Corridors and Connections

Traffic within Northeastern Queens primarily flows in an east-west direction due to major transit hubs and central business districts located west of the area. In order for a bike network to be successful within QCD-11, strong east-west connections must be achieved, along with connections to the greater bike network outside the district. Providing bike infrastructure along an east-west corridor also can help reduce traffic since that is the primary direction of traffic flow in the district. While Northern Boulevard handles the majority of this traffic, there are a number of other east-west thoroughfares that provide direct access to central areas within Queens; 26th Avenue, 32nd/33rd Avenues, 56th/58th Avenues, and 73rd Avenue. Each of these corridors act as connections to the existing greenway, the outside bike network, and the Flushing area, as well as many of the most frequented destinations within the district.

<table>
<thead>
<tr>
<th>Corridors</th>
<th>Total Crashes</th>
<th>Cyclist</th>
<th>Fatalities</th>
<th>Pedestrian</th>
<th>Motorist</th>
<th>Injures</th>
<th>Cyclist</th>
<th>Pedestrian</th>
<th>Motorist</th>
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<tr>
<td>48th Ave.</td>
<td>101</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>41</td>
<td>8</td>
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<td>89</td>
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<td>56th Ave.</td>
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<td>23rd Ave.</td>
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<td>0</td>
<td>33</td>
</tr>
<tr>
<td>North-South</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cranview Expressway Service Rd</td>
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<td>25</td>
<td>6</td>
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<td>62</td>
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<td>Copperwood Country Club</td>
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<td>3</td>
<td>31</td>
<td>6</td>
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<td>69</td>
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<tr>
<td>Little Neck Parkway / Marathon Parkway</td>
<td>81</td>
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<td>0</td>
<td>3</td>
<td>30</td>
<td>8</td>
<td>0</td>
<td>88</td>
</tr>
</tbody>
</table>

Crash Data for Proposed Bike Network Corridors in QCD-11
Source: NYC Crash Mapper. Data from August 2011 to December 2019.
Bay Terrace, an open air shopping venue with an AMC movie theatre, is located along the northern edge of district between the greenway and the Utopia Parkway bike lane. As one of the larger retail centers in the area, Bay Terrace remains disconnected from the bike network and a prime location for its expansion. The greenway has an existing on ramp located on 28th Avenue within a quiet neighborhood. Bike infrastructure would connect 28th Avenue to 26th Avenue via a short two block run on Bell Boulevard. 26th Avenue west of Bell Boulevard traffic counts indicate a moderately busy street with space for a designated bike lane. The route would run the length of 26th Avenue until it connects to the Utopia Parkway bike lane, which in turn connects to the proposed Flushing bike network that is moving forward at this time.

This route would allow residents from the north to ride safely and comfortably to Bay Terrace as well as connect to the extended bike network and greenway. The bike infrastructure will have the added benefit of tightening the road to slow down traffic and reduce the walking distance for pedestrians, increasing the accessibility of the commercial center.

26th Avenue

Providing a direct connection from Crocheron Park and the greenway to Downtown Flushing demonstrates the appeal of adding a pair of bike facilities primarily along 32nd and 35th Avenues. Low traffic levels and a quiet character make it an ideal route for comfortable cycling. This corridor connects a number of important assets within the community, including two schools (Bayside High School and PS 159) and four parks (Bayside Fields, Crocheron Park, Raymond O’Connor Park, and Bowne Park). Between Crocheron Park and Raymond O’Connor Park the corridor will function as a shared road. Due to the narrow nature of the roadways the route will split at Raymond O’Connor Park with an east bound lane on 32nd Avenue along the southern side of the roadway and a west bound lane on 33rd Avenue along the northern side of the roadway. Between 210th Street and the Clearview Expressway, both lanes will be parking protected as they pass Raymond O’Connor Park and Bayside High School. West of the Clearview Expressway the lanes shift to conventional lanes, with the lane on 33rd Avenue jumping down to 35th Avenue and introducing a buffer due to higher traffic volumes. We also recommend exploring the possibility of a pedestrian-cyclist shared path on one side of the street because
there is no sidewalk between Crocheron Park and Raymond O’Connor Park, providing unsafe street conditions for pedestrians.

jumping down to 35th Avenue and introducing a buffer due to higher traffic volumes. We also recommend exploring the possibility of a pedestrian-cyclist shared path on one side of the street because there is no sidewalk between Crocheron Park and Raymond O’Connor Park, providing unsafe street conditions for pedestrians.
47th/48th/Rocky Hill Road

Closely paralleling Northern Boulevard, this corridor offers up direct connections to the greenway and Downtown Flushing, along with close access to QCC. While the corridor continues on multiple streets, the path is continuous and straight creating an easily navigable route. Although the roadway is fairly narrow, narrowed conventional lanes, or a conventional lane/shared lane combo, would help provide direct access to the business corridors along Bell Boulevard and Northern Boulevard through connections with the north-south corridors. There is no sidewalk between Crocheron Park and Raymond O’Connor Park, providing unsafe street conditions for pedestrians.

56th/58th Avenues

While the southern portion of QCD-11 has considerably more east-west bike infrastructure than the rest of the district, there remains a large gap that can aid in connecting important assets to the community. Beginning where 56th Avenue meets E. Hampton Boulevard (also known as Alley Pond Park edge), the route along 56th Avenue would connect Queensborough Community College, Cardozo High School and Oakland Gardens Playground to the existing bike network within the park system while stretching westward. Just before crossing the Clearview Expressway, the route would jump to 53rd Avenue to cross the highway, before turning cyclists south to continue westward on 58th Avenue passing through Peck Park, Kissena Corridor Park, which connects to the Kissena Velodrome and the greater Queens bike network as well as Francis Lewis High School.

While this route does not pass substantial commercial businesses, it connects to the proposed north-south corridor and allows residents to ride westward toward flushing on a designated route. Cyclists will benefit from infrastructure on a low volume street that connects critical education facilities and residential neighborhoods to the greater area.
73rd Avenue

Filling the gap on 73rd Avenue between Springfield Boulevard and 199th Street would finally connect Alley Pond Park with Flushing Meadows Corona Park through the southern portion of QCD-11. With a robust bike network currently built up within the parks, this glaring gap should be a priority. In terms of infrastructure, the current lane design being used east of Springfield Boulevard should be continued to the west. The roadway has excess space for the current traffic levels and would benefit from narrowed lanes to slow down traffic along this neighborhood corridor. The parking protected lane is ideal due to the lack of curb cuts along the route, minimizing the conflict zones between cyclists and drivers. Finally, this route proposal passes through the only CDBG-eligible census tract in the district, thus addressing equity and increasing transportation accessibility.

Northern Boulevard


Pedestrian jaywalking on Northern Boulevard near 215 Pl. Many intersections along the boulevard lack crosswalks on both sides of the street forcing pedestrians to walk additional blocks in order to make a safer crossing. Screenshot from Google Street View. Image capture: July 2018.

Pedestrians crossing the intersection at Bell Boulevard and Northern Boulevard. Screenshot from Google Street View. Image capture: July 2015.

Senior citizen cycling on Northern Boulevard near 188th Street. Screenshot from Google Street View. Image capture: October 2014.
Northern Boulevard may be the most natural east-west connection within QCD-11 as it runs the length of Queens from the East River through Flushing to Nassau County. With an average right-of-way of between 90 and 100 feet and a street width of 70 feet, the corridor at times acts as a barrier splitting the district in two. When not snarled in rush hour traffic, drivers are often driving well above the speed limit. These factors create an unwelcoming environment for anyone not protected by a vehicle. Safe streets advocates and the communities along Northern Boulevard have voiced concern about safety along this essential corridor that must be addressed, including reshaping the corridor to benefit pedestrian connections. Three possible Complete Street solutions have been identified and should be considered for greater study. We understand that many community members are also interested in exploring the idea of creating an express bus lane on Northern Boulevard to increase accessibility to Downtown Flushing, so we encourage the community to consider these proposals in tandem with other planned efforts for this road to determine an ideal design.

**Pedestrian Islands**

Crossing the width of Northern Boulevard and navigating an onslaught of cars on foot is a daunting task for many members of the community. Some of the most vulnerable members of the community may find it difficult to cross the distance during the time allotted for pedestrians, with no space to wait safely. In order to address these safety concerns, wide pedestrian islands should be installed at major intersections along the route. To accommodate this new pedestrian space, the outside lanes, which currently serve as travel lanes during rush hours and parking lanes on off-peak hours, would be switch permanently to parking lanes and reduced in width. These lanes can be adjusted to accommodate future potential SBS bus service, which CB11 has repeatedly requested to the MTA. Travel lanes in either direction would be narrowed slightly and maintain the alternating turn lane as currently exists. Traffic patterns would not be altered, but wider, safer turns would be induced due to the pedestrian island, creating a safer space for people in cars and on foot.

**Side Protected**

Adapting the current bike infrastructure on Northern Boulevard for more heavily developed sections along the route would require a preservation of on-street parking. Along the northern side of the corridor a two-way bike lane would be protected by a floating parking lane separated by a buffer. Parking lanes would again be made permanent and reduced in width. While maintaining most of the available parking, some spaces would be lost to ensure proper sightlines for those entering and exiting business parking lots. Space around bus stops would become a bus/bike mixing space similar to spaces along the current bike path on Northern Boulevard. Traffic patterns would not be dramatically altered while allowing for people on bikes to gain access to key commercial centers in a safer manner.
Center Protected

Taking inspiration from the protected bike lane along Pennsylvania Avenue in Washington, D.C., a two-way protected lane would run directly down the center of Northern Boulevard curving to allow for alternating turning lanes at major intersections. At those intersections, a flat, brick or concrete island with guard posts would act as a pedestrian island as well as a forcing drivers to take wider, safer turns. People on bikes would use the crosswalks to turn during their signal phase, while those going straight would have a leading signal after the turn signal, to provide greater visibility in the intersection.

The protected lane would restrict left-hand turns to major intersections only, forcing anyone from side streets to turn right and perform a U-turn at the nearest left hand turn signal. Forcing drivers to turn right reduces conflict points as speeding across the roadway to beat traffic increases the risk of collisions. Traffic flow will improve on side streets and exiting parking lots as vehicles will not be stuck waiting for gaps in traffic wide enough for them to turn left or go straight across the roadway. Cyclists would be given priority along the route and benefit from high visibility and protection. While access to side streets is reduced, they can still be easily accessed once connected to the expanded north-south bike lanes in this new network.

We view the eastern portion of Northern Boulevard, between Douglaston Parkway and the Nassau County line, as essential when it comes to expanding the connectivity within the district. Due to the infrequency of east-west connections through Alley Pond Park, to connect the eastern portion of QCD-11 to the larger network requires a continuation of the Northern Boulevard protected bike lane in some form. West of the 223rd Street, the available network of options expands to include the previously mentioned corridors that offer direct connections to key destinations, as well as access to Northern Boulevard through north-south connectors. Traffic and safety concerns must be addressed along the entire corridor, but requires more study before deciding upon the proper solution.

The Alternatives Matrix:
Considering Trade Offs of Proposed Street Designs

When developing the proposed bike network, we created and used an alternatives matrix to evaluate the pros and cons of each potential corridor. The following characteristics were considered and analyzed to inform the placement of bike infrastructure:
Example Alternatives Matrix for Proposed Street Designs

<table>
<thead>
<tr>
<th>Bike Route</th>
<th>Northern Blvd.</th>
<th>26th Ave.</th>
<th>35th Ave.</th>
<th>56th Ave.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Street Context</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial district with frequent curb cuts. 10-15 ft sidewalks. Parking lanes become driving lanes during morning/afternoon rush.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Direct Access to Businesses/ Major Destinations</strong></td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>AADT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32,514 (Clearview Exp - Cross Island; 37,333 (Cross Island - Francis Lewis)</td>
<td>12,971 (Bell - Bayside La)</td>
<td>15,412 (Bell - Francis Lewis) 6,629 (Francis Lewis - Northern)</td>
<td>2,836 (53rd Ave from Bell - Undine)</td>
<td></td>
</tr>
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<td><strong>AADT Rank</strong></td>
<td></td>
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</tr>
<tr>
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<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of Traffic Lanes (Total)</strong></td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Curb Cuts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>100</td>
<td></td>
<td></td>
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<tr>
<td>70</td>
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<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Major Risks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Busy major arterial that expands lanes during rush hours. Curb cuts increase conflict points. Major entrances onto expressways. Complicated intersections as the northern and southern grids do not line up. Push back from previous bike lane installation. Speeds often well over 25mph posted limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Benefits of this Corridor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connections to the Greenway, Bay Terrace shopping center, and Utopia bike lane. Acts as northern connector for the district.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct connections to commercial corridors and Downtown Flushing. Runs full length of the district. Can create safer crossing sections for pedestrians by reducing crossing distance. Direct connections to the current bike network.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Street Context.** Adjacent land use, density of residences, and building type were essential characteristics to consider. Corridors that ran near valued destinations offer accessibility benefits that purely residential streets do not. Access to the greenways and existing bike facilities were also considered.

- **Average Daily Traffic (ADT).** Traffic levels on streets are a major factor when determining the protection needed for cyclists. NACTO and the Federal Highway Administration have both produced guidelines for selecting the proper bike facilities to encourage use by all ages and abilities. High traffic levels must be addressed by added protection for cyclists and pedestrians, which requires additional space within the right-of-way.

- **Average Width/ Number of Lanes.** Going hand-in-hand with ADT data is the width of the street. Considering whether a corridor is wide enough to not only handle the current traffic levels, but also provide the space needed for the proper bike facility necessary for use by all ability levels.

- **Number of Curb Cuts.** One of the most important factors when evaluating streets within the district is the number of curbside conflict points. As many of the streets within QCD-11 are residential, curb cuts for driveways and parking lots cut up the available space for on-street parking. The frequency of these curb cuts can limit the ability of installing a protected bike lane along certain corridors due to sightline requirements, turn radius considerations, and parking concerns.

- **Risks Associated with the Corridor.** Some corridors pose specific risks to cyclists and drivers, including drop-off and pick-up routines around schools, bus routes, and high-way on- and off-ramps. Each of these pose unique risks and complications that must be taken into account for any form of proposal.

**Benefits of the Corridor.** The benefits of selecting a specific corridor can outweigh some of the associated risks. Efficient access to the greenways and priority destinations, along with connections to the greater bike network, are key to a successful bike network within the district. One important aspect to consider is the simplicity of the route. Many streets within QCD-11 do not line up with one another, or result in dead ends due to the LIRR tracks or expressways. Routes that can be placed along a single corridor simplify navigation and traffic flows.

### 4.5.3 Create More Bike Parking

In Northeastern Queens, there is a potential to increase access to bicycle parking and make it easier for people to engage in this active transportation mode. With a total of only 227 city bike racks within QCD-11 as of 2018, increasing the amount of bike parking will make it more convenient for people to bike to and from popular destinations, thereby improving their connection to local bus and rail options. Considering the volume of people traveling to major destinations such as the LIRR Bayside Station, LIRR Douglaston Station, local schools, and business corridors, we will provide recommend
recommended sites for bike parking interventions. Locations are selected based on site visits, survey results, and secondary research.

**Recommendations**

Based on our survey results, people would generally like to see more bike infrastructure, such as bike parking, to increase accessibility to where they work, go to school, and where the commercial centers are located. To accommodate this desire within the community, we are recommending locations near the major points of interest, such as the LIRR Bayside Station, area schools, park entrances, and more. In this section, we will provide a list of recommended locations for bike parking and further elaborate on preferred alternatives for LIRR Bayside Station and the greater Bell Boulevard Business Corridor. According to NYCDOT, there are plans through Green Wave to install 1,500 racks annually with emphasis on site selection through a community-based process. In the future, people may recommend sites through an interactive portal.

**LIRR Bayside Station**

Within a half mile radius of the train station, there are currently 77 city bike racks to serve commuters and shoppers. The radius was used to capture the number of racks within a 10 minute walking distance, the standard for how long people will walk before they consider other...
Designating Spaces for Bikes

A potential solution to increase bike parking near the LIRR is to repurpose 2-3 parking and underutilized spaces within the area's public and/or commercial parking lots. Currently, the NYC DOT’s Bayside Municipal Parking Lot has capacity for 92 metered parking spaces with both short term (4 hour limit, 49 spaces) and long term parking (15 hour limit, 31 spaces) available. As illustrated in the picture below, designating two spaces for bike parking, either locked or unlocked, could create room for about 20 or more bikes. Moreover, converting corner areas of the lot into bike parking spaces should be considered and would further increase supply for commuters and shoppers in the area.

Activating Underutilize Sidewalks

During visits to the neighborhood, we noticed that there is a lot of underutilized sidewalk space on Bell Boulevard south of Northern Boulevard. The sidewalks are wider and with lower foot traffic than other areas. While the sidewalk is managed by the commercial tenant, there is an opportunity to develop partnerships options. Based on public data from NYC-DOT and in-person observations, the racks are spread inconsistently along Bell Boulevard and Northern Boulevard with few nearby the station itself. Meanwhile, the station has dedicated bike parking facilities with an open air bike corral with a capacity for 16 bikes, that is not enough to serve the volume of passengers using the LIRR that might consider biking and are seeking a day-long parking arrangement. According to the MTA's passenger counts, the LIRR Bayside Station has the highest ridership among the stations on the LIRR's Port Washington line (2014). Based on our observations, we determined three opportunities to increase bike parking within the area:

- Repurpose several parking spaces into high capacity and/or sheltered bike parking within the NYC DOT’s Municipal Parking Lot
- Work with businesses to install bike corrals in the area’s commercial parking lots
- Increase bike parking within the train station’s vicinity.

Increasing Bike Parking Options at the LIRR Station

Safe and secure parking increases ridership: over half of New Yorkers who used to commute by bike but have stopped cited a lack of safe parking as one of the main reasons for stopping, according to a survey conducted by Transportation Alternatives. While New York City has rapidly expanded its storage capacity - there are currently over 30,000 racks with a plan to add 1,500 more per year through Green Wave - there is still room for improvement. Expanding bike parking options near transit connections has also been shown to boost bike travel and transit usage, according to a study by Jennifer Dill, et al. QCD-11 has expanded parking near the Bayside LIRR station, but lacks robust bike parking near other transit stations. Placement of bike parking is important to consider. While providing easy access to transit, shops, and other destinations is important, it cannot interfere with pedestrian flows on the sidewalk. A concern raised in Amsterdam has been over crowding of bike parking facilities, making walking on the sidewalks difficult. Portland has continued to expand its bike coral program in former on-street parking spaces to...
ease the congestion on sidewalks. Each parking space can hold an average of 10 bikes, increasing the number of people able to use the space. Businesses in Portland have begun voluntarily turning parking spaces into bike corals as it has only increased their financial bottom line due to more customers.113

As one of the LIRR Port Washington Line stations with the highest ridership, about 2,500 people ride the rail to work during the week day,114 the amount of bike parking is low with just 16 available spaces. To encourage commuters to bike to the station and to ease concerns about the safety of their bike, there must be increased bike parking that is sheltered and nearby. Here, we recommend for a quarter of the station’s underused waiting room to be repurposed into a long-term bike parking for LIRR riders, while the rest of the space remains as is. To do this, the waiting room’s hours must be extended from the current 6am - 2pm to 6am - 10pm to accommodate for LIRR riders that needs to retrieve their bikes.

4.5.4 Expand Wayfinding

QCD-11 is not only home to residential districts, commercial corridors, and well regarded schools, but is also the location of highly regarded parks and open spaces. Additionally, the parks consists of a greenway system, which runs along and through the parks, as well as provides one of the district’s only bike networks. This resource is critical to the community as it provides recreation and activity for its citizens. However, due to the lack of safe connections from the community itself to the parks and public spaces, many of the community members feel there is no choice but to drive. Once they drive and park their car, they are then able to access the greenway and park space. Therefore, the key to ensuring accessibility to the parks and greenways is to create a safe route within the communities. When citizens have the resources to safely access the space, every trip taken is an opportunity to engage in activity. Further, wayfinding can increase accessibility to the parks and open space jewels for people who live outside Northeastern Queens. One low impact way to create a safer way for the community to navigate the streets and get from point a to point b is through wayfinding. Wayfinding is a process which people construct a mental map that allows them to better understand what they do not immediately see. This “map” is important for all users of the street, whether travelling by foot, bike, vehicle or other form of transit and is essential to the process of understanding how to best navigate between one’s location and destination. Wayfinding signage can not only help users navigate between their origin resources.
A successful mixed use environment requires a comprehensive network of wayfinding elements to create an effortless navigation system. Signage conveys important information that can improve road safety and let bicyclists and motorists know what to expect, thus improving the chances that they will react and behave appropriately. Wayfinding signs can be used for a variety of measures including: identification, letting the user gain their bearings, direction, helping the user move toward their destination, informational, providing users with supplemental knowledge, and regulatory, letting visitors know requirements and regulations in certain areas. The below guide plan serves as a set of informational guidelines to unify the street system and provide navigational information for cyclists and pedestrians alike that reflect the unique character and landscape of Northeastern Queens. Beyond safety, wayfinding is a tactic to connect places, providing guidance and seamless connections to destinations, helping people to realize they can bike to places they want to go. The signage should be designed according to best practices:

- **Identify**: Consistent and easy to identify as belonging to a system.
- **Direct**: Identify destination direction, distance, and estimated time to travel. Distances are important information for cyclists. Decision signs should include destinations, directional arrows, and distance. Arrows, labels, and symbols should distinguish route options and identify the destination served by each path. Signs should optimally be placed 25 to 75 feet before any decision-making point. Because the information on each sign is particular to its location, most directional signs are site specific and reflect the geometry the pathway segments in which they are placed. Directional arrows and the name of a destination, which is very helpful to users navigating the street network. Distance to destination should communicate known distances to connecting paths, general points of interest, and path exists/entrances, among other key points. Estimated time to destination information is also helpful, as many path users prefer to know approximately how long it will take to arrive at a given destination. Distance signs or mileage markers should also be placed soon after key decision-making points because they serve as a confirmation to path users that they have selected the correct route.
- **Inform**: Reassure cyclist they are on the right and safest route as well as identify any relevant landmarks to aid orientation. Different sets of informational signs can be used to follow the cyclists journey. Throughout the journey there are visual reminders that they are on the right path. Path marker are posts or signs placed at trail entrances that identify the name of the path for the user. Markers can include information about park regulations, the length of the shared use path, and time/distance to destination(s) information. Since shared use path markers are considered to be part of an off-street system, they are not beholden to any federal or state design standards. This allows the local municipality to design and implement path markers that reflect local character.
- **Regulate**: Alerts rider of any precautions, whether a bike line ends, a street merges, etc.

**Standard Placement/ Comfort and Consistency**: Signage should be placed in patterns so they become, easy to read and accessible to a wide range of users. A safe route to a park must reflect various levels of mobility. Proper design benefits all users and allows all citizens to use safe routes to parks

**UTCD (The National Manual on Uniform Traffic Control Devices for Streets and Highways)**: All public streets in the United States utilize a standardized wayfinding and signing system based on the Federal Highway Administration’s MUTCD. This manual defines the color, size and placement of all roadway signs. It is recommended to use these guidelines for ease of recognition. Chapter 9 of the MUTCD is dedicated to bike signage and their placement within street right of-ways. To easily distinguish the signage, it is encouraged to use the consistent color scheme for directional and distance information, allowing bicyclists to clearly see and understand the information contained therein.

While standard signage is important on streets to have uniformity, in parks and public spaces, wayfinding signage can get creative and more eye catching. Wayfinding signage can range from basic to more complex. A well-planned signage system takes into consideration the information bikers and pedestrians will need and who will use it, whether locals, tourists, or both.
4.5.5 Programming Ideas

Education concerning cycling and street safety will also be important in empowering people to ride bikes safely. To encourage cycling, our Studio team suggests programs that address people who would like to commute to work, school, parks or other recreational activities.

Bike to Work Program

Commuting to work incentive programs are popular in other areas and could serve as a complementary strategy to the bike network plan to encourage cycling. NYC DOT and/or advocacy groups such as Transportation Alternatives and the Eastern Queens Greenway could provide information to local businesses about structuring an incentive program. Incentives or perks can include miles that convert to dollars added toward the paycheck or for a bicycle or bicycle maintenance, loaner bicycles on lunch breaks and reduction of health insurance premiums, among others. Furthermore, there may be opportunities to tap into existing health incentive programs that are popular with employers.

Learn to Ride Programs at Schools

Students have a lot to gain from learning how to ride a bicycle, as they represent the future generation of commuters. Schools can partner with non-profit education groups to host lessons on how to ride, fix and be safe on a bike. This will not only encourage cycling for the younger generation but will promote safety for cyclists who are already commuting to school by bicycle. Located in QCD-11, Peak Mountain Bike Shop partners with organizations that encourage biking for both youth and adults. They also have the skills to teach bike mechanic classes. Star Track is a youth focused bicycle training non-profit that teaches riding and racing for children ages 8-14. They are a free program that operates at the Velodrome located in Kissena Park, right outside of QCD-11. They have expressed interest in partnering with schools and could also expand to teaching bike mechanics.

4.5.5 Programming Ideas

Education concerning cycling and street safety will also be important in empowering people to ride bikes safely. To encourage cycling, our Studio team suggests programs that address parts of the district through the Greenway. Triangle Cyclist hosts rides for experienced cyclists starting in Little Neck regularly throughout the year. They could expand their program to accommodate different skill levels or other events could be hosted to raise the visibility of the cycling experience in QCD-11, get people outside of their homes and cars, and experience the natural beauty of Northeastern Queens.

Ride Club Through Greenway

With the parks and Greenway being such an asset to the district and a space that already accommodates cyclists, hosting well advertised rides through the parks could help with encouraging less confident cyclists to ride throughout the district and see the parks from a new perspective. As new bike lanes are implemented those cyclists will be able to connect to many parts of the district through the Greenway. Triangle Cyclist hosts rides for experienced cyclists starting in Little Neck regularly throughout the year. They could expand their program to accommodate different skill levels or other events could be hosted to raise the visibility of the cycling experience in QCD-11, get people outside of their homes and cars, and experience the natural beauty of Northeastern Queens.

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The Vision Conclusion

In order for QCD-11 to truly become part of the citywide network, a neighborhood-wide network must be considered. This not only includes the expansion of bike lanes, but also improvements to the street composition around frequent destinations and assets within the community. A unified network of Complete Streets will ensure that all users of the public realm will be able to do so safely and efficiently. The application of Complete Streets often includes active sidewalks, active roadways, dedicated bike lanes, safe crosswalks, planting strip and green spaces but, as stated, every implementation is unique. Since QCD-11 already has active sidewalks, active roadways, and is surrounded by large green spaces, this vision for Complete Streets focuses on a bike network and safe intersections. Each of the proposed interventions builds off of one another but also provide individual benefits that work towards the stated goals of safety, accessibility, and connectivity. While we believe they are best implemented together as a suite, individual interventions can be utilized as first steps towards a complete street network.
Conclusion

The Northeastern Queens street network, largely constructed over 100 years ago, quite simply favors the dominance of automobiles. Environment induces behavior and today, with few changes to the street network since it was laid out, the vast majority of Northeastern Queens residents remain tethered to cars. Many Northeastern Queens residents own one or more cars per household, higher than the average citywide rate. Those who do not have access to cars and are more transit dependent - such as low-income, youth/students or seniors - are left with sub-optimal mobility choices that involve uncomfortable trade-offs between time efficiency and cost. At the same time, there is existing community passion for cycling as a recreational activity and some growing interest in expanding cycling opportunities to streets. Northeastern Queens is a generally stable and thriving community, and yet residents gripe about increased congestion on streets and believe they live in a “transit desert.” While technically Northeastern Queens does have transit coverage, the network is less than ideal. While these residents may be diverse in age, income or race and ethnicity, what is clear is their shared belief that the existing transit network does not adequately serve the district. There is a general sentiment that theirs is a corner of New York City that is effectively “missing out” on a robust, dense transportation network from which other areas benefit. The weaknesses in the existing street network are challenging the Northeastern Queens community’s self-perception of livability.

Over the past 20, New York City has made tremendous progress building a dense, robust bike network, starting in the city’s core and radiating through the outer boroughs. This progress highlights the fact that biking has become a mainstream form of transportation. Building off of the city’s exploding interest in cycling, the de Blasio Administration is focused on improving street safety through Vision Zero, plans to build new bike infrastructure through Green Wave, and is now recently mandated to plan the citywide street network through the Master Streets Plan legislation. With such concentrated city efforts to improve and humanize New York City’s street network, now is an opportune time for Northeastern Queens to connect in to the city’s bike network. The creation of a segment of protected bike lane on Northern Boulevard in 2017, in response to a cyclist’s death there in 2016, is an effective reminder of both the challenges and opportunities with building bike infrastructure in QCD-11. Some in the community welcomed the new bike lane, believing it increased safety, accessibility and connectivity while others in the community pushed back on the bike lane, citing poor design and...
implementation. Holding aside the specific design of Northern Boulevard, what this robust community dialogue demonstrates is a shared commitment to the principles of safety, accessibility and connectivity. If these principles can grow into a shared language, the community can advance the discussion about what interventions to implement to best achieve their common goals.

We hope this Vision for Complete Streets helps community residents evaluate potential opportunities to upgrade their street network and find common ground in “the new standard” of street design which elevates humans over cars. Complete Streets are safe and accessible, and can be connected through a unified network that brings people to where they want to go. Complete Streets are safer because multiple modes of transportation can co-exist in a coherent street design. Complete Streets are more accessible because the mere opportunity to walk or bike provides efficient and low-cost mobility options that are alternatives to costly driving. Complete Streets promote connectivity and bring people to where they want to go because they provide greater mobility options and support multi-modal transportation. Above all, Complete Streets promote greater livability in a community. Complete Streets also enable greater environmental, social, and economic benefits.

Based on our research over the past four months, we have identified certain next steps should the opportunity arise for stakeholders to build upon this vision plan. For community outreach, we recommend deeper engagement with the large student population in the district. While we took the pulse of this group’s views through survey outreach, stakeholder interviews and the tabling event at the DOT Helmet Giveaway on October 20th, 2019, there is an opportunity to expand on this outreach directly with students who both live and attend school in QCD-11. Students represent a large portion of QCD-11’s future generation and by engaging this population in further visioning they can become truly invested in how the community is shaped moving forward. Additionally, we recommend more targeted outreach to the growing Asian and other minority populations. While our community outreach did capture the Asian community, they were underrepresented in our findings. This is largely the result of language barriers; thus, we recommend further dedicated community outreach that is aided by translators.

Introducing a unified network of Complete Streets in Northeastern Queens can increase street safety, accessibility, connectivity and above all — livability. Complete Streets in Northeastern Queens can increase street safety, accessibility, connectivity and above all — livability. Prioritizing safety, accessibility and connectivity will allow the community to live its values and fortify their community infrastructure to meet their current and future needs. With a 21st century unified network of Complete Streets, Northeastern Queens can benefit in a multitude of ways, including:

- Children will have safer sidewalks and intersections, particularly at schools
- Teenagers will have options to walk or bike safely and commute autonomously; parents will have less burden in shuttling their kids around
- Adults will have a reduced cost burden of owning cars; will have the option to walk or bike shorter distances rather than drive; will experience fewer cars on the road and parked on streets since people will have more mobility options beyond cars
- Seniors will have safer sidewalks and intersections with more accommodating design for mobility needs
- Families can bike from their home to greenways in parks
- Commuters can bike from their residence to a bus stop or LIRR station and proceed with their transit trip

Community Board 11’s mission is “to increase the quality of life for our families and neighbors, while elevating local civil discourse, and building a greater New York City.” This Vision for Complete Streets can inspire local dialogue about how quick, low-cost and achievable street interventions can increase quality of life, benefit people across QCD-11, and build a greater New York City. In Northeastern Queens, where there is an intimate, small town atmosphere; bountiful beauty in parks and open space; and thriving commercial corridors; Complete Streets would invite residents and visitors to step out of their houses, apartments or cars and experience the district on a human level, reinvigorating the community experience. Above all, Complete Streets can improve livability in Northeastern Queens, connecting people both to their destinations and to each other.
Acknowledgements

Our Studio would not have been possible without the knowledge and commitment of many. Our team would like to thank our Client, the NYC DOT Bicycle Unit, for providing the impetus for this project. Specifically, we would like to thank Ted Wright, Amber Knee and Paula Rubira for providing feedback and guidance along the way.

We would also like to thank the many community members and stakeholders who shared their time to speak with us about their perspective on the Northeastern Queens transit network. We also want to thank those gave us feedback through our survey. The interview and survey feedback has been invaluable to helping shape this vision plan. We would like to express our gratitude to John Kelly, Joby Jacobs and Bernard Haber and who spent time guiding us through the neighborhood through biking, walking, and by car. Thank you to Victor Dadras who has helped connect us with the Queens Community District 11.

Thank you to Department Chair, John Chin, for providing resources during the studio project.

Finally, a special thanks to our faculty advisor, Jason Brody, for his guidance, knowledge and encouragement throughout the semester.
6.1 Information about Buffered/Protected Bike Lanes

While conventional bike lanes have become ever present, NACTO has signaled a move towards buffered bike lanes as the preferred standard. Earlier this year they released a guide to determine what type of bike infrastructure would make the most vulnerable feel safest riding on different types of streets. A conventional bike lane is only recommended for quiet, single lane streets with low traffic counts. Even then, a buffered bike lane is also seen as ideal. Cities across the country, including New York, are moving towards protected lanes. Portland and Minneapolis are moving towards a future of only protected bike lanes, with Charlotte prioritizing them. Protected lanes not only make riders feel safer, but they have been shown to reduce injuries and fatalities for all users of the road, including drivers. Research from the University of Colorado, Denver that reviewed statistics from 12 cities has shown that a protected bike lane reduces fatalities from all modes of transportation by 44% along those corridors.

As a result of roadways becoming safer, cycling numbers have increased. In Minneapolis, protected bike lanes and bike boulevards have seen 6x the growth of ridership as conventional bike lanes. This points to an increasing demand for safe infrastructure that suits all abilities. Transportation researcher Jennifer Dill, along with her team, has found that 88% of those interested in biking would be more likely to bike if there was a physical barrier between them and traffic. The comfort level changes based on what the barrier consists of, with planters and curbs ranking the highest, but plastic flexposts close behind. Painted buffers rank at the bottom of the comfort scale when compared to other buffer types. Jeff Speck, planner and author of Walkable Cities, acknowledges there is a need for conventional lanes when a protected lane is not feasible, but believes that any street with more than two lanes traveling in each direction should require a protected lane. He also notes that “sharrows” should never be used or considered as part of bike infrastructure. Studies have shown that “sharrows” actually increase the likelihood of crashes and injuries for cyclists as it makes drivers feel safer driving closer to people on bikes.

While protected lanes are becoming a more standard practice nationally and internationally, smaller cities are seeing value in expanding bike boulevards in Rochester, NY and Albany, NY.

Source: NACTO
are have both identified plans to expand bike boulevards on quiet side streets. Rochester looks to create a “one-off” system which allows for cyclists to access busy commercial corridors by riding on a parallel street with much less traffic. The primary issue with moving forward with bike boulevards in New York is traffic levels. Bike boulevards tend to be built on streets with below 5,000 cars per day, which is a rarity in New York. QCD-11, with its semi-suburban character, does provide an opportunity to explore this idea once a standard is created for the city.

6.2 About the NYCDOT Street Improvement Program (SIP) Program

Working within the parameters of New York City, NYC DOT makes use of an extensive toolbox of interventions that have been proven to work in a variety of contexts. These interventions range from bike infrastructure to pedestrian improvements to improvements to the public realm. Each of these can be assembled together to help create a complete street for all users.

DOT’s Street Improvement Projects (SIP) program is designed to implement low-cost, high-impact solutions to test their success before creating more permanent, capital programs. SIP can include painted medians and bump outs for pedestrians, conventional and buffered bike lanes, as well as a reconfiguration of traffic lanes to improve flow. Once an intervention is proven to be successful/gained support from the community, the project will be made permanent with additional beautification adjustments made to improve the space.

QCD-11 has seen only minor interventions from the SIP program, but would benefit from expanding the interventions. Cyclists and pedestrians, who feel most comfortable within the park spaces, would gain safe access to the district at large while drivers adjust to new traffic patterns. Adjustments can and should be made if an intervention is proven to be inadequate or has created a new traffic concern. This allows the community to be part of the dialogue, while also finding new ways to envision their streets.
Endnotes

44 NYC DCP Queens Community District 11 profile. Data based on American Community Survey 2012-2016 5-year estimates, calculated for PUMAs. PUMAs are geographic approximations of community districts


48 Ibid.


50 NYC Department of Education. Obtained from the NYC Department of Education through a Freedom of Information Law request; requested as “Community District 11 - Zip Codes / Census Tracts” November 2019; received December 2019.


53 Ibid.


61 Note that as discussed in earlier sections of the report, the community board does not reflect the racial and ethnic diversity of the district’s residential population.

62 For context, the street network in Queens has 6%, NYC has 10%, and the neighborhood in NYC that has the highest % of bicycle infrastructure is Crown Heights with 45%.

63 Survey methodology is explained in the Community Outreach section. The survey received 172 responses, but is not statistically significant.

64 Northern Boulevard is an avenue to major highways in the district in addition to being a major commuter corridor to Long Island and Nassau County. West Albany Road leads into Horace Harding Expressway, which functions as a service road for the Long Island Expressway for most of its length.


69 Ibid.

70 GTFS data provided by New York MTA.

71 A subway ticket costs $2.75. A peak one-way LIRR ticket from QCD-11 to Manhattan costs $10.75.

72 On November 26, 2019 the CBII Transportation Committee discussed issuing a policy statement for LIRR parity for subway fares.


74 Monteverdi, S. (2016 August 24) Erlanger’s cycling plan is finally struck by car while riding through Bayside cops say. QNS. Retrieve from www.qns.com/stories/community_facts.xhtml?src=bkmk

75 Although these incidents are some of the most common, it is worth mentioning that failure to wear a seat belt and “other movers” received the most summons for the years analyzed. They were removed for irrelevance to the project. Other incidents were excluded for lack of relevance or having a smaller quantity.

76 All traffic data was pulled from CHEKPEDs “Crash Mappers” which visualize locations of traffic incidents across multiple municipal boundaries, including community districts. Crash data is pulled from NYC Open Data Motor Vehicle Collision index, which maintains a visual record of all incidents requiring an MV104-AN police report. The five year time period was from November 2014 - November 2019, the earliest completed month with available data.

77 The program runs a statistical formula to calculate the Getis-Ord Gi* statistic. In brief, the formula is performed on each point in the data set and returns Z and P values. These values are then clustered together to determine areas that are statistically significant. Hot spots are areas with multiple data points returning high values and cold spots are areas returning low values. ESRI. 2019. “How Hot Spot Analysis (Getis-Ord Gi*) works” pro.arcgis.com/en/pro-app/tool-reference/spatial-statistics/h-how-hot-spot-analysis-getis-ord-gi-spatial-stat.htm


83 Ibid.
