Shared Mobility

E-Scooter Plan

City of Charlotte
Department of Transportation

CHARLOTTE.

Shared Mobility: E-Scooter Plan

November 26, 2018 DRAFT

City of Charlotte Department of Transportation

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Charlotte, NC 28202

CharlotteNC.gov/SharedMobility

704-336-4119

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INTRODUCTION & VISION STATEMENT

Introduction

Over the past decade, shared mobility systems have become a common sight on North American streets, creating new mobility opportunities and changing the way people move around their cities. To support shared mobility systems local governments and trusted civic partners have developed public-private partnerships, vetted companies through competitive bidding, and established regulations to ensure the best outcomes for the public. Over the past decade, the long-term public-private-civic/non-profit partnerships developed for, by, and along with bike share systems in the U.S. have helped this new transportation option to thrive.

In Charlotte, the BCycle bike share system was launched in 2012, and will soon expand to a system approaching 400 bikes spread across nearly 40 stations. Other shared mobility providers like Uber, Lyft, and ZipCar also operate in Charlotte, providing an alternative to private vehicle ownership and single-occupancy vehicle trips.

In January 2017, a new breed of shared mobility technologies began operating on North American public streets. "Dockless" bicycle and e-scooter share operators attracted a new audience to shared mobility options by offering a new level of convenience and flexibility within the marketplace. Across the country, as in Charlotte, many of these companies initially launched without contracts, permits, or business licenses. In response, cities have developed new permitting and licensing structures to manage them and to ensure that public safety and welfare remain at the forefront of new mobility advances.

Dockless bicycles first appeared in Charlotte in August 2017. Charlotte responded to this interest from dockless shared mobility providers by creating a Shared Mobility Pilot Program beginning in November 2017. In May 2018 the City amended that Shared Mobility Program to accommodate the launch of e-scooters on our streets. After a year of experience through the Shared Mobility Pilot Program, we've learned a lot about this exciting new trend in urban mobility.

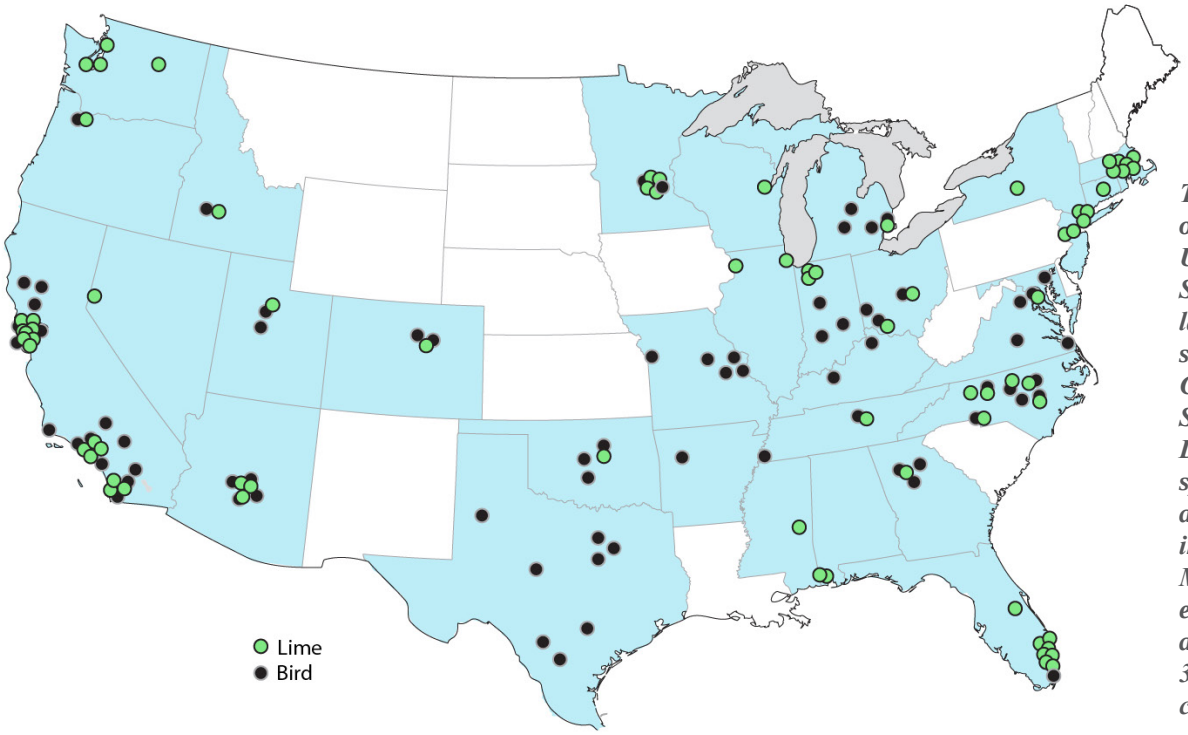
In particular, we've learned that dockless e-scooter share provides a significant opportunity for:

1. **Complementing transit service** overcoming first/last mile transit connections;
2. **Replacing short vehicle trips** with a clean **emissions-free** transportation option;
3. Using a low-stress technology to introduce a new audience of residents to **active transportation options**; and
4. Encouraging city leaders to **invest in shared infrastructure** to support growing demand for bicycle/e-scooter mobility.

Along with that huge potential, we've also learned that challenges still remain, namely:

1. **Ensuring equitable access** to shared mobility technologies across Charlotte's many diverse neighborhoods,
2. **Encouraging appropriate rider behavior**,
3. Maintaining an **orderly system** and **keeping pedestrian pathways clear**,
4. Regulating the **size, weight, and speed** of e-scooters, and
5. A **lack of connected bicycle/e-scooter infrastructure, especially in Uptown Charlotte**, forcing many users to ride on crowded sidewalks.

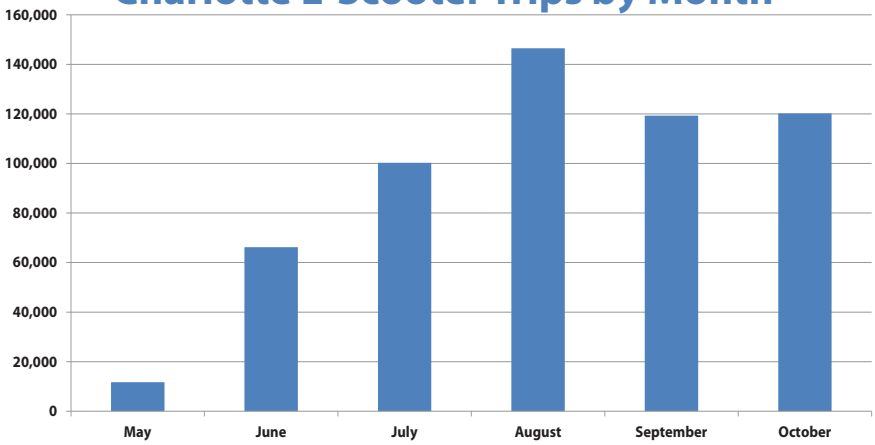
E-Scooters in the United States



The first appearance of e-scooters in the United States was in Santa Monica, CA in late 2017. They soon showed up in other California cities like San Francisco and San Diego, and they quickly spread to other cities around the country, including Charlotte in May 2018. Currently e-scooter services are operating in over 30 states around the country.

E-Scooters in Charlotte

Charlotte E-Scooter Trips by Month



1,523,567

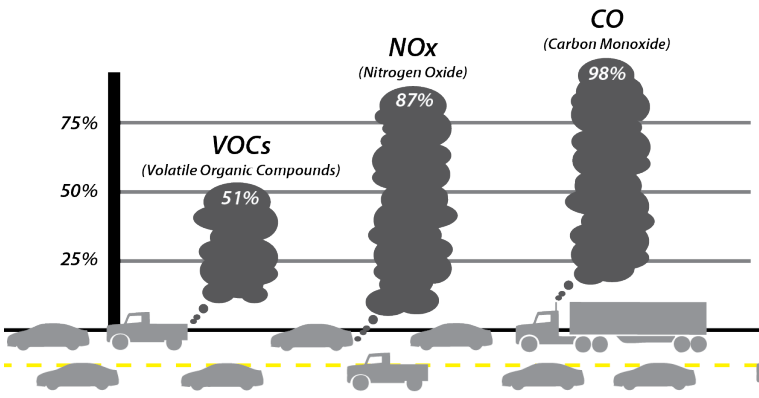
The total number of miles ridden on e-scooters in Charlotte since they arrived in May 2018.

439,971

The total number of e-scooter trips taken in Charlotte since they arrived in May 2018.

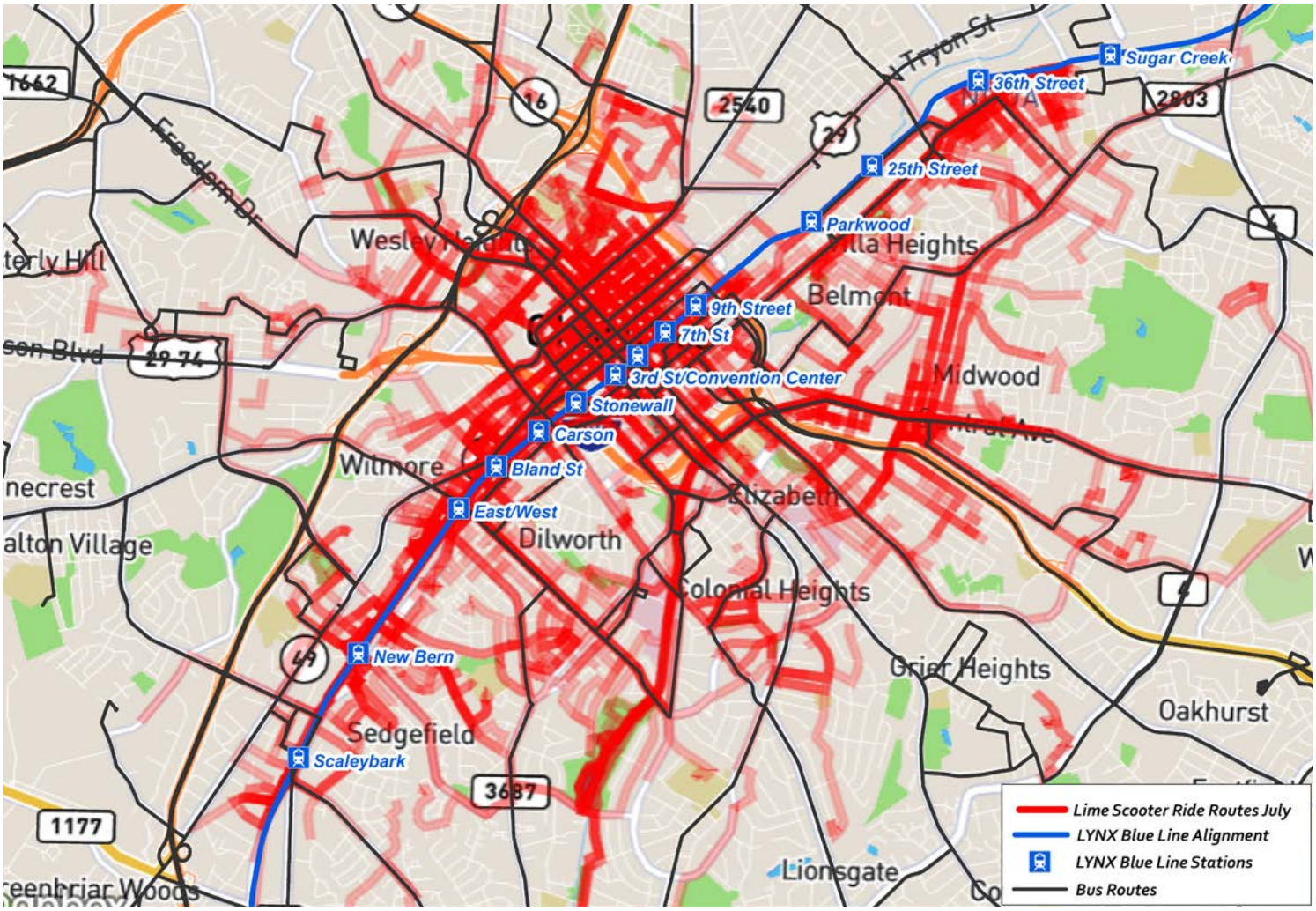
1.43 mi.

The average distance per e-scooter trip in Charlott which indicates a high likelihood that many e-scooter trips replace single-occupancy car trips



Percent of Pollutants from Mobile Sources

Many e-scooter trips replace single-occupancy vehicle trips, which are a significant contributor to air pollution in Mecklenburg County. (Source: Mecklenburg County Air Quality. Emmisions Inventory. 2012.)

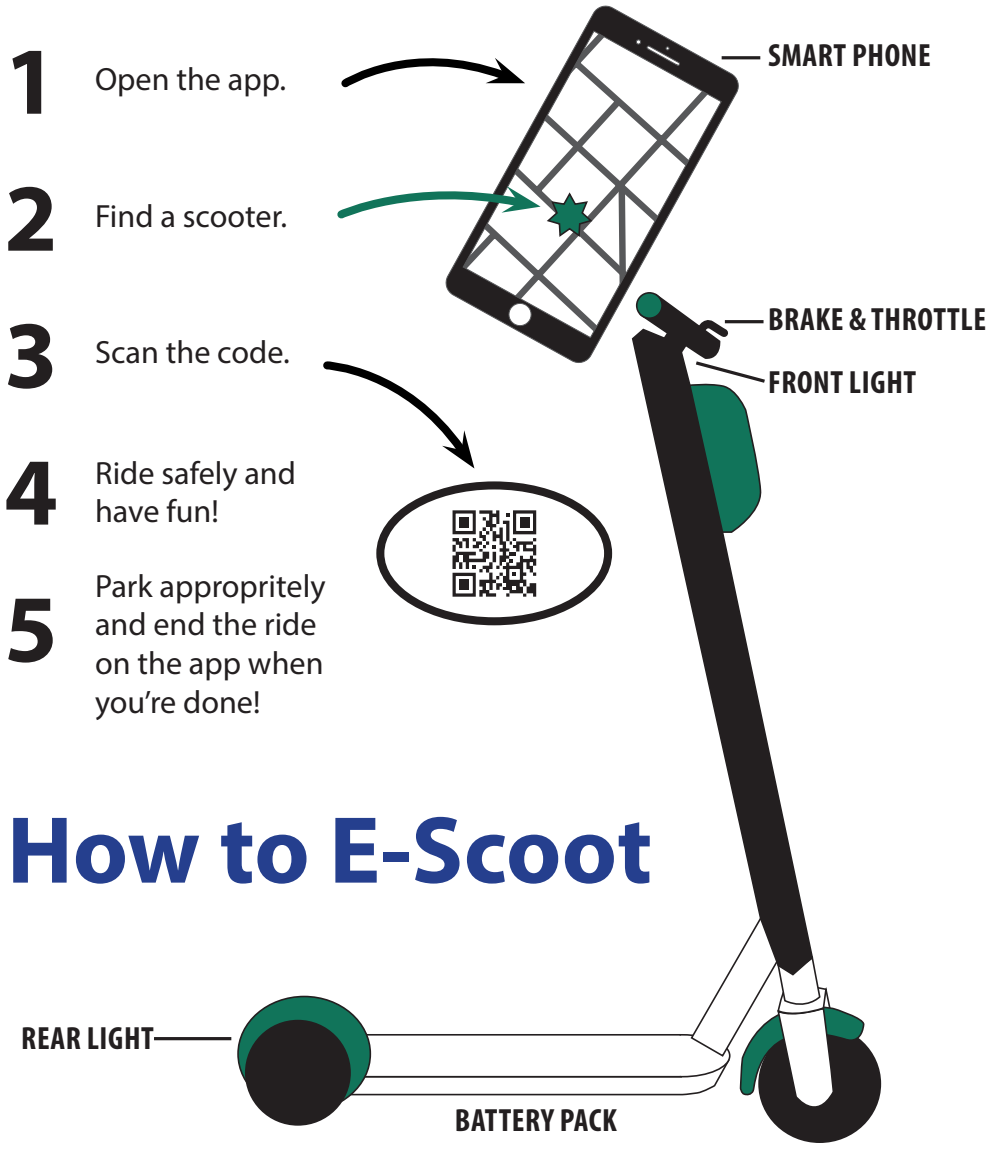


E-scooters provide a significant opportunity to complement existing transit service by overcoming first/last mile transit connections. The heat map above illustrates how e-scooter trips in Charlotte tend to cluster near high-ridership CATS routes.

The purpose of this E-Scooter Plan is to encourage e-scooter ridership, support the significant benefits of e-scooter technology, and address ongoing challenges. The plan is divided into 4 chapters. Each chapter describes Charlotte's **"Current Practice"** and contemplates **"Potential Next Steps"** to make e-scooters in Charlotte even more successful.

This E-scooter Plan draws on guidance from 4 primary sources:

- Recommendations developed by a Shared Mobility subgroup of **Charlotte's Bicycle Advisory Committee**;
- National best practices assembled and published by **National Association of City Transportation Officials (NACTO)** in their "Guidelines for the Regulation and Management of Shared Active Transportation (July 2018)";
- **Charlotte's learned experience through the Pilot Program** and permit requirements; and
- City Council's adopted **Charlotte BIKES Bicycle Plan**, which provides guidance for investing in a bicycle network that will also serve e-scooter riders.



Vision Statement: 4 Pillars

Charlotte's vision to be the best place in the nation to ride an e-scooter.

1. Safety & Education

MANAGE E-SCOOTERS SAFELY: The City of Charlotte aims to collaborate with e-scooter operators, users, and the general public to manage e-scooters in way that maintains order and safety, promotes an inclusive system, and encourages ridership.

2. Infrastructure & Parking

INVEST IN INFRATRUCTURE: The wide popularity of e-scooters is evidence of the significant latent demand in Charlotte for more non-automobile transportation choices. Investing in a connected, safe, and comfortable bicycle network, that also accommodates e-scooter use, is more important than ever.

3. Operations & Permitting

TREAT E-SCOOTERS LIKE BIKES: E-scooters should be managed so that they can align as closely as possible with expectations for the safe operation of bicycles in the built environment.

4. Data Sharing & Learning

PROVIDE TRANSPORTATION CHOICES: E-scooters are a part of a greater shared mobility system that offers more transportation choices to Charlotte residents. Shared mobility also includes bike share (dockless and dock-based), ride share (Lyft, Uber, ZipCar, etc.), and transit service.

"The huge popularity of e-scooters demonstrates the need to invest more in our bicycle/e-scooter network, especially in high ridership areas."

- Sustain Charlotte

"It is recommended that e-scooters operate on our transportation system similar to how bikes are expected to."

- Charlotte Bicycle Advisory Committee, Shared Mobility Subgroup

1. SAFETY & EDUCATION

1. Safety & Education

Providing for the public health, safety, and welfare is the foremost concern in the City's management of e-scooters. The City of Charlotte aims to collaborate with e-scooter operators, users, and the general public to manage e-scooters in a way that maintains order and safety, promotes an inclusive system, and encourages ridership.

Current Practice *(as part of Charlotte's existing Shared Mobility Program)*

- ☐ Establish a maximum speed limit of 15mph for e-scooters when powered solely by the motor.
- ☐ Allow riders to use e-scooters on sidewalks except in the Congested Business District.
- ☐ Require e-scooters to meet equivalent safety standards as those outlined in the Code of Federal Regulations (CFR) under Title 16, Chapter II, Subchapter C, Part 1512 – Requirements for Bicycles.
- ☐ Reserve the right to terminate any operator permit if the battery or motor on an e-scooter is determined by CDOT to be unsafe for public use.
- ☐ Require all e-scooters to meet the North Carolina General Assembly (NCGA) requirements for proper use of headlights and taillights during hours of darkness.
- ☐ Maintain a website with educational information, and contacts for scooter operators.
- ☐ Conduct a month-long e-scooter safety campaign focused on encouraging appropriate rider behavior.
- ☐ Require all e-scooter operators to provide in-app messaging that notifies their users they must:
  - adhere to all applicable local, state, and federal laws regarding motorized and non-motorized vehicles;
  - yield to pedestrians;
  - operate e-scooters safely; and
  - park responsibly.

Among the most important strategies for managing e-scooters safely is to invest in more bicycle/ e-scooter infrastructure so that e-scooter users have more safe places to ride and park appropriately. This image from Council's adopted Charlotte BIKES Bicycle Plan illustrates a two-way cycletrack that would also be available for e-scooter use. A similar facility is currently planned for 6th Street in Uptown, one of the highest ridership districts for e-scooters.

Potential Next Steps

1. Clarify Where/How to Ride

- ☐ Support ongoing efforts to educate bicyclists, motorists, and e-scooter users about safe and courteous operations on city streets.
- ☐ Invest in more bicycle/e-scooter infrastructure so that e-scooter users have more safe places to ride and park appropriately. *(Also see Chapter 2.)*

2. E-Scooter Equipment

- ☐ Follow emerging national best practices regarding lighting and turn signals on e-scooters. *(E-scooters currently lack turn signal lights, and on the top-heavy, small-wheeled e-scooters it is difficult for riders to use typical bicycle hand signals to indicate their intention to turn.)*

3. Statewide Guidance

In addition to the "Potential Next Steps" listed at left, the City anticipates that the North Carolina General Assembly will take up e-scooters as an issue in its next legislative session. Staff anticipates that the State will provide clarity on several important issues related to the safe operation of e-scooters. For example,

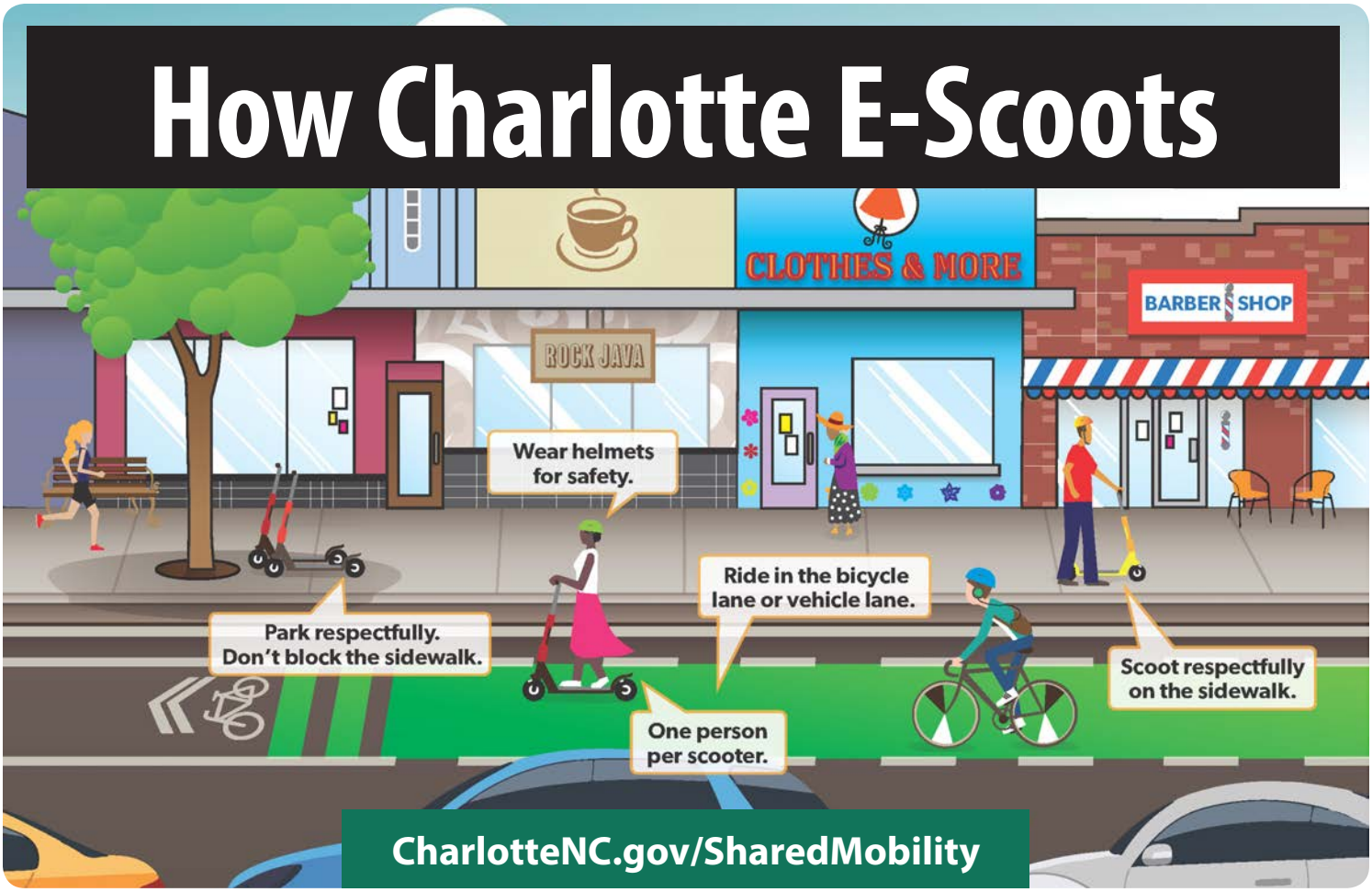
- Definition for e-scooters as vehicles, bicycles, or something else,
- Maximum allowable weight/size for e-scooters, and
- Age restrictions related to operation of e-scooters and helmet use.

- ☐ Consistent with statewide guidance, amend City Code to clarify/expand regulation related to sidewalk-riding.

Staff anticipates that the North Carolina General Assembly will attempt to provide clarity on e-scooter operations in North Carolina by amending the NC General Statutes in the upcoming legislative session. Age restrictions related to the operation of e-scooters is one issue that the State may choose to take up.

"Managing a maximum speed will be important to allow sidewalk riding."

- Charlotte Bicycle Advisory Committee, Shared Mobility Subgroup



Throughout November 2018 city staff partnered with e-scooter operators in Charlotte to conduct an e-scooter safety campaign including e-mail/social media/in-app messaging, pop-up events, helmet giveaways, and on-the-street conversations with e-scooter riders to talk about safety and reward riders for good behavior.

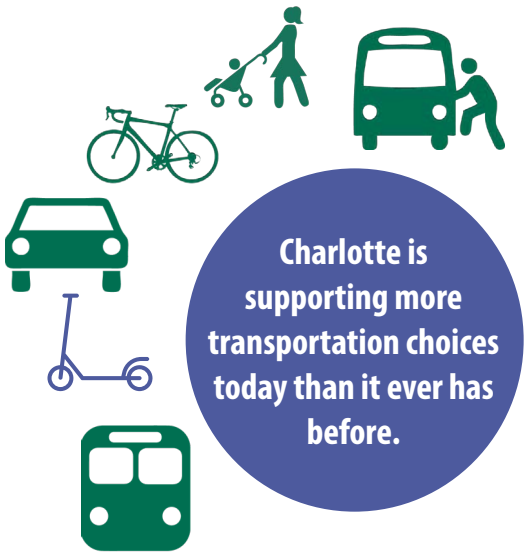
2. INFRASTRUCTURE & PARKING

2. Infrastructure & Parking

The wide popularity of e-scooters is evidence of the significant latent demand in Charlotte for more non-automobile transportation choices. Investing in a connected, safe, and comfortable bicycle network, that also accommodates e-scooter use, is more important than ever.

Current Practice *(as part of Charlotte's existing Shared Mobility Program)*

- ☐ Allocate $4 million to the Bicycle Program through the 2018 bonds which will be used to support bicycle/e-scooter infrastructure and parking throughout the city. *(Council's adopted Charlotte BIKES Plan recommends an allocation of $8 million per bond cycle for the Bicycle Program.)*
- ☐ Continue design work on the 6th Street Cycletrack project which would connect greenways and provide a protected facility for cyclists and e-scooter riders to use to commute into Uptown.
- ☐ Require users to park e-scooters upright and within eligible parking areas as outlined in the permit (for example, within the planting strip in a location that does not obstruct a drivers' sight triangle at intersections).
- ☐ Require operators to inform customers on how to park properly.
- ☐ Continue to prohibit parking e-scooters in any manner that blocks the sidewalk and/or reduces the width of pedestrian zone to less than 6 feet, or to less than 8 feet in the Congested Business District or within ¼ mile of any rail transit station.
- ☐ Continue to require operators to move any e-scooter blocking a sidewalk or curb ramp, or otherwise parked inappropriately, within 2 hours if notified between 7am and 7pm (excluding holidays) and within 12 hours at all other times.
- ☐ Reserve the right to determine certain areas where e-scooter parking is prohibited, and to establish defined parking zones in certain areas where e-scooters must be parked.
- ☐ When deploying or rebalancing limit operators to no more than 2 e-scooters per block face to ensure good coverage and distribution.
- ☐ Continue to require operators to move any e-scooter that is parked in one location for more than seven consecutive days.



Potential Next Steps

1. Infrastructure Programs

- ☐ The City should consider continued funding for the Bicycle Program in future transportation bonds, as recommended by Council's adopted Charlotte BIKES Plan, in an effort to build more e-scooter and bicycle-friendly infrastructure.
- ☐ The City should consider funding a State Highway Participation program, so that the City can ensure that NCDOT projects have adequate accommodations for bicycles and e-scooters. *(NCDOT requires local governments to pay for what they call "betterments" in state roadway projects in order to provide adequate options for pedestrians, cyclists, and e-scooter riders.)*

2. Parking

- ☐ Install bike/scooter corrals at light rail stops, at high-ridership bus stops, in center city, and at other popular e-scooter locations
- ☐ Consider implementing dynamic parking pricing to incentivize good parking behavior.

A row of e-scooters appropriately parked near the 36th Street Blue Line Station.

3. Fund Critical Standalone Projects

- ☐ The City should consider identifying construction funding for the 5th/6th Street cycletrack project as a critical standalone project for the safe operation of bicycles and e-scooters in our highest ridership district. *(The project is currently funded for design but not construction, which is estimate at $6.5 million. See rendering on next page.)*
- ☐ Allocate ongoing funding to implement the recommendations of the Uptown Connects study which would create a network of protected facilities for bicycles/e-scooters through Uptown.
- ☐ Identify and fund other critical standalone projects in high ridership areas.

4. Update Policy/Design Focus

- ☐ Shift toward more buffered and protected bicycle/e-scooter lanes which provide a greater level of safety and comfort for all users. *(Providing this level of safety and comfort requires either more space on new/widened roads or reallocating vehicular lanes on existing roads.)*
- ☐ Consider incresasing the "2 e-scooters per block face" limitation for deploying/rebalancing e-scooters, especially in Uptown and Transit Stations Areas.

There are currently 34 continuous east-west facilities for cars across Uptown, and 0 for bicycles/e-scooters. The 5th/6th Street Cycletrack project (not currently funded for construction) would help to correct that imbalance and provide a safe option for cyclists and e-scooter users.

Identifying funding for construction of the 6th Street Cycletrack project (picutred above) will be one of the most important next steps the City can take to ensure that e-scooter riders and cyclists alike have a safe way to commute across Uptown.

"The best way to support safe e-scooter use in Charlotte is to get more serious about investing in new bicycle/e-scooter infrastructure on our auto-oriented roadways."

- Sustain Charlotte

3. OPERATIONS & PERMITTING

3. Operations & Permitting

E-scooters should be managed so that they can align as closely as possible with expectations for the safe operation of bicycles in the built environment. The convenience and flexibility provided by dockless e-scooters should be balanced by regulations and enforcement that maintain a safe and accessible transportation system for other users – pedestrians, cyclists, transit riders, and motorists.

Current Practice *(as part of Charlotte's existing Shared Mobility Program)*

- ☐ Require all e-scooter operators to maintain a minimum fleet of 50 e-scooters and a maximum of 400 e-scooters.
- ☐ Require all e-scooter operators to maintain insurance coverage and limits of liability as outlined in the permit ($1 million in automobile liability, and $2 million in commercial general liability).
- ☐ Require all e-scooter operators to sign and record an agreement indemnifying and holding harmless the City as outlined in the permit.
- ☐ Require all e-scooter operators to have a direct local contact and staffed operations within the City of Charlotte for the purpose of maintenance and rebalancing.
- ☐ Require all e-scooter operators to have a 24-hour customer service phone number for customers to report safety concerns, maintenance issues, complaints, or ask questions.
- ☐ Require every e-scooter operator to have a customer service phone number that is in-service during all operating hours and clearly displayed and visible to the user.
- ☐ Require operators to reimburse the City for any substantial costs incurred in addressing or abating any violations of the existing permit requirements.
- ☐ Require operators to reimburse the City for any substantial costs incurred for any repair or maintenance of public property.
- ☐ Require every e-scooter to have a unique identifier that is clearly displayed and visible to the user.
- ☐ Require any inoperable or unsafe e-scooter to be removed from the right-of-way within 24 hours of notice and be repaired before being placed back into the City right-of-way
- ☐ Reserve the right to remove any e-scooters from the right-of-way which are interfering with pedestrian or vehicular traffic, or in the case of an emergency.
- ☐ Prohibit the use of e-scooters for the sale or display of any third party advertising.
- ☐ Require annual renewal of e-scooter permits to reflect changes in regulations over time.

Investing in a connected, safe, and comfortable bicycle network, that also accommodates e-scooter use, is more important than ever.

"We believe it is unrealistic to police scooters from shared-use paths and greenways."

- Charlotte Bicycle Advisory Committee, Shared Mobility Subgroup

Appropriate e-scooter riding and parking behavior will be crucial to a successful permanent e-scooter program in Charlotte.

Potential Next Steps

1. Offset City Costs

- ☐ Explore opportunities to offset costs incurred by the City in regulating, managing, and enforcing orderly e-scooter operations.

2. Support Greater Enforcement

- ☐ Hire a third-party auditor to enforce the requirements of the e-scooter permit related to fleet size, appropriate parking, sidewalk riding, etc.
- ☐ Reserve the right to require operators to temporarily halt operations and remove all e-scooters from the right-of-way in the event of extreme weather, emergencies, special events, or other exceptional circumstances.
- ☐ Explore incentives that foster compliance and better e-scooter riding and parking behavior.

3. Change Fleet Size Caps

- ☐ No cap: Consider removing the minimum and/or maximum fleet size requirements for e-scooter operators.
- ☐ Phased approach: Consider increasing the maximum fleet size dependent upon operators demonstrating good user behavior.
- ☐ Dynamic cap: Consider increasing the maximum fleet size to a dynamic cap based on an average of 3 rides per e-scooter per day.

4. Collaborate with Partners

- ☐ Work with partners to increase in app messaging and push notifications for the purposes of safety/education messaging and special event alerts.
- ☐ Work with partners at the County to consider allowing e-scooters on County greenways.
- ☐ Work with e-scooter operators to refine the Dockless Bicycle / E-Scooter Guidelines used during the Pilot Program. These Guidelines would live outside of this plan to maintain flexibility and allow for changes as the market and regulatory best practices mature.

"We also recommend requiring operators to present an engaged maintenance plan that requires, at a minimum, that an e-scooter cannot stay in the same location for more than 3 days."

- Charlotte Bicycle Advisory Committee, Shared Mobility Subgroup

4. DATA SHARING & LEARNING

4. Data Sharing & Learning

E-scooters are a part of a greater shared mobility system that offers more transportation choices to Charlotte residents. Cities across the United States are assessing how this new transportation choice can fit within their communities. Charlotte will continue to be a part of that emerging conversation by collecting/analyzing data, participating in conversations with transportation planning groups, coordinating with vendors, and speaking with peer cities.

Current Practice *(as part of Charlotte's existing Shared Mobility Program)*

- ☐ Require operators to maintain a record of maintenance activities, including but not limited to e-scooter identification number and maintenance performed for the entirety of the pilot program.
- ☐ Require operators to provide CDOT with a monthly data report with information on usage/ridership as stipulated in the permit. *(See next page.)*
- ☐ Require operators to provide anonymized data for each trip to inform and support safe and effective management of the system, and for transportation planning efforts.
- ☐ Require operators to provide CDOT with anonymized real-time data upon request.
- ☐ Continue participating in the National Association of City Transportation Officials (NACTO) shared mobility conversations.

Potential Next Steps

- ☐ Consider hiring a third-party data analytics firm to collect, manage, and develop conclusions from the operator-provided data.

Charlotte Monthly Data Template

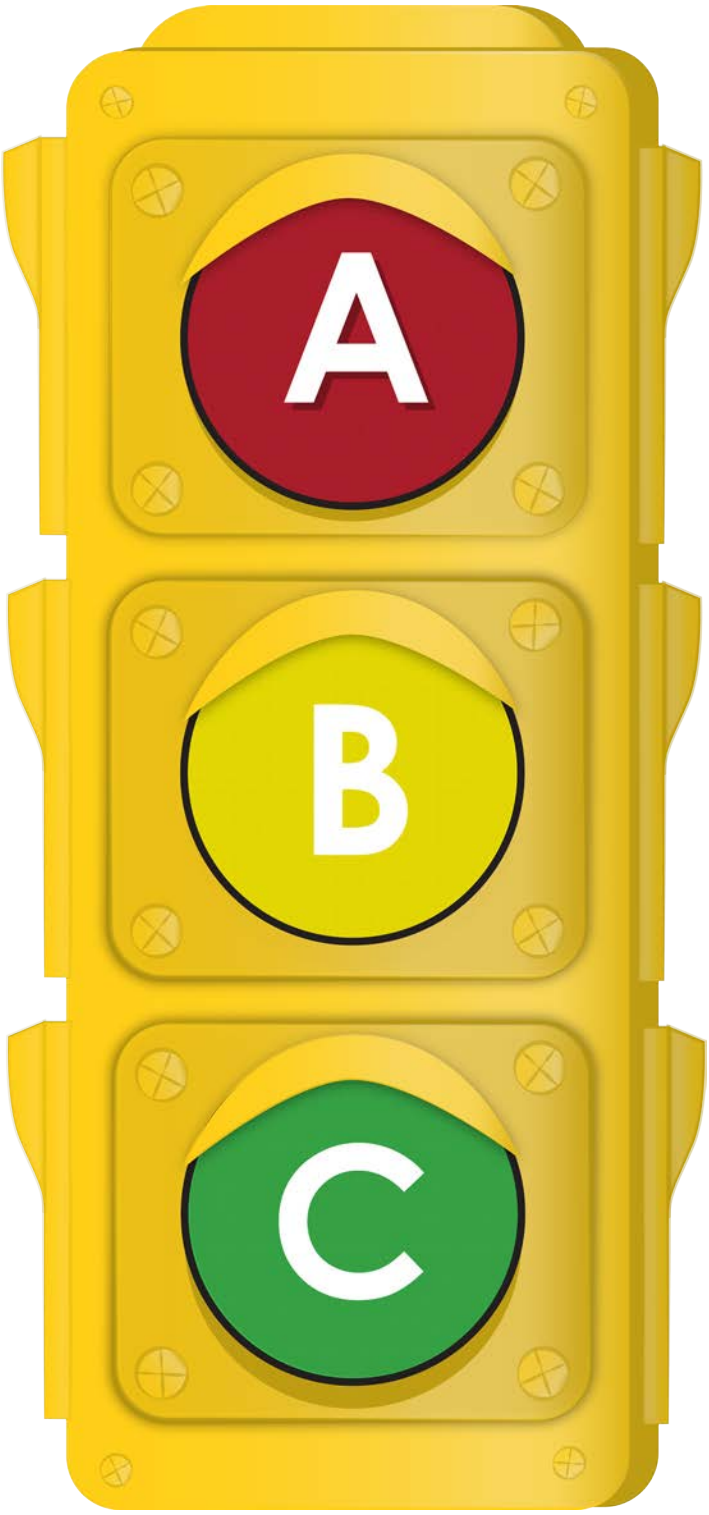
Company		
Your Name		
Begin Date	12/1/2017	(first day of month)
End Date	12/31/2017	(last day of month)

Notes for CDOT Staff:

	Category	Description	Value	Unit	Begin	End	Definition/Clarifications
Trips	Total trips	Monthly Total *		trips			Total number of trips taken this month and Total trips taken each week ***Note: A full week begins on Monday and ends on Sunday.*** If the month ends or begins in the middle of a week, do not include data from other months. For example, December 2017 starts on a Friday, so Week 1 should only include data from Friday, Dec 1 through Sunday, Dec 3.
		Week 1 (1/0 - 1/0) *		trips			
		Week 2 (1/0 - 1/0) *		trips			
		Week 3 (1/0 - 1/0) *		trips			
		Week 4 (1/0 - 1/0) *		trips			
		Week 5 (1/0 - 1/0) *		trips			
		Week 6 (1/0 - 1/0) *		trips			
	Total trip distance	Monthly total *		miles			Total distance e-scooterd for all trips that were made this month, quarter, and year. See begin and end dates for clarification on time frames
		Quarterly Total (QTR 4) *		miles			
		Annual total *		miles			
	Average trip	Average trip distance *		miles			Average length of trips made this month, by distance (miles) and time (minutes)
		Average duration of trip *		minutes			
E-scooters	E-scooters in Circulation	Week 1 (1/0 - 1/0) *		e-scooters			Number of e-scooters available to use on the first day of each week, and on the last day of the month ***Note: A full week begins on Monday and ends on Sunday.*** If the month ends or begins in the middle of a week, do not include data from other months. For example, December 2017 starts on a Friday, so Week 1 should only include data from Friday, Dec 1 through Sunday, Dec 3.
		Week 2 (1/0 - 1/0) *		e-scooters			
		Week 3 (1/0 - 1/0) *		e-scooters			
		Week 4 (1/0 - 1/0) *		e-scooters			
		Week 5 (1/0 - 1/0) *		e-scooters			
		Week 6 (1/0 - 1/0) *		e-scooters			
	E-scooter usage	Daily trips per e-scooter *		trips			Average number of trips per e-scooter per day
	Damages & Repairs	e-scooters vandalized*		e-scooters			Total number of e-scooters that were vandalized, damaged, and repaired during this month
		e-scooters damaged*		e-scooters			
		e-scooters repaired*		e-scooters			
Users	Trip Frequency	New user		users			Total number of active users, according to the number of trips they made this month **New users** are riders who took their first trip but only used it once **Active users** are individuals who used the service at least once during the reporting period.
		1 - 3 trips		users			
		4 - 8 trips		users			
		9 - 15 trips		users			
		16 - 30 trips		users			
		31- 60 trips		users			
		More than 60 trips		users			
Complaints	Complaint Resolution	Total complaints		complaints			Total number of complaints made & resolved this month
		Total complaints resolved		complaints			
	Complaint Type	e-scooters blocking sidewalk		complaints			Total number of complaints according to the subject of the complaint e-scooters are considered inoperable if they're missing seats, handlebars, chain, tires, etc. e-scooters are considered vandalized if they've been written on, scratched, etc. but are still operable
		e-scooters on private property		complaints			
		e-scooter is vandalized		complaints			
		e-scooter is inoperable		complaints			
		Other		complaints			

Each month e-scooter operators are required to fill out and submit ridership/usage data to the City of Charlotte using the template above. In addition, the City reserves the right to require additional data, like ridership heat maps, upon request.

Always Be Careful



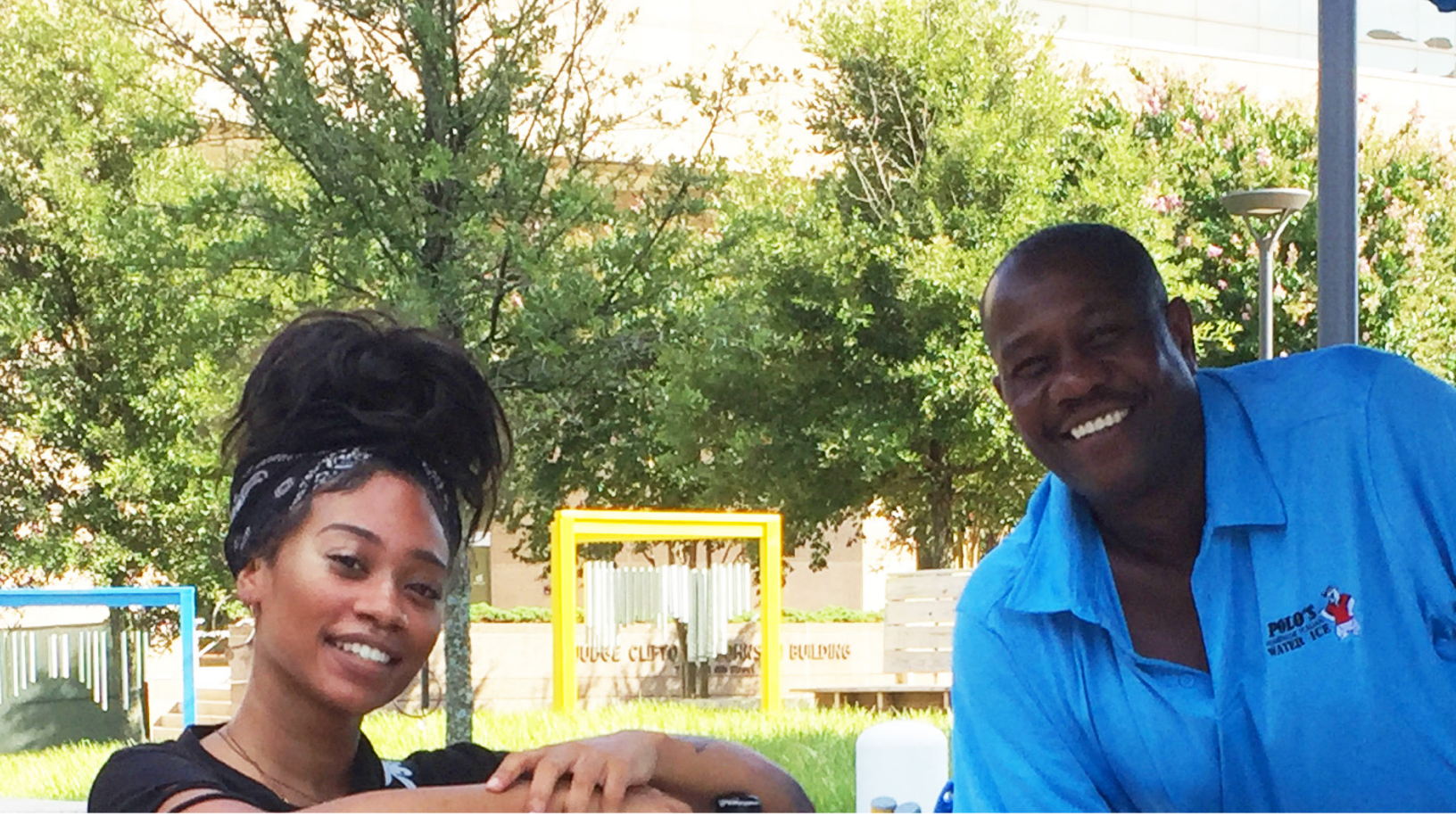
ALWAYS
obey vehicle traffic rules and always ride solo.

BE VISIBLE,
courteous and yield to pedestrians at all times.

CURB
and park your scooter appropriately.

CITY OF CHARLOTTE #ScooterSafety

CLT 250


POLO'S
WATER ICE


Lime-S


WATER ICE
Lime-S