CHAPTER FIVE

Transportation & Mobility

Vision

Every Carrboro resident, with particular attention to Black, Indigenous, People of Color (BIPOC) populations, has increased safe and quality access to multimodal transportation options (including bike, pedestrian, and transit) for efficient connections to jobs, recreation, and services.

Key Findings

1. Since the 1970s, the Town has committed to a transportation system that serves all users by improving its walkability, bikeability, sidewalks, bike facilities, and greenways.

2. Carrboro has partnered with Chapel Hill and UNC for nearly 50 years, developing a local transit system that serves almost 7 million bus trips per year and on average nearly 8,000 boardings per day in Carrboro alone. Carrboro spends over $2 Million annually to provide free bus rides. EZ Rider Paratransit service is also available from GoTriangle (regional service) and Orange County Transit (smaller bus/van service and on demand service). 12.7 percent of commuters travel to work by transit.

3. Carrboro is committed to addressing disparate impacts of transportation decisions and prioritizing investments in racial minority and lower-income communities. Much of Carrboro's more affordable housing stock consists of apartment complexes, which are located along the NC 54 corridor or other nearby arterial roads. The "NC 54 Pedestrian and Bicycle Corridor Safety Study of 2019" assessed that several characteristics of the corridor (i.e. high speeds and traffic volumes, lack of sidewalks and paths, wooded areas) create a challenging environment for safe pedestrian crossings, connection to the downtown area, and access to transit.[1] Conducting targeted outreach to these residents will help the Town prioritize and implement policies and projects with equity at the center. (As of this document's publication, there will soon be new signalized pedestrian crossings installed at three locations along NC 54.)

4. The Town has been recognized for its outstanding commitment to bicycling by the League of American Bicyclists since 2006. As the first North Carolina community to receive Silver-level designation, Carrboro's bicycle commuter's share of 4.72 Percent places it just below the first and second highest communities (Portland, Oregon and Washington, D.C.) nationally in this metric. The closest North Carolina community, neighboring Chapel Hill, has a bike commute share of 1.94 percent. All of the other 13 North Carolina cities (out of a total of 532 municipalities) recognized by the League have well below 1 percent of bicycle commuters.

5. The Town's FY 2021 Capital budget is an indication of the Town's commitment to improving transportation access, including projects such as Morgan Creek Greenway, Jones Creek Greenway, S. Greensboro Sidewalk, and Sidewalk Bond Projects that include Rogers Road sidewalk repairs and bus shelter replacement. Until planning began on "The 203 Project" (new construction with shared Town and County facilities downtown), investments in these types of infrastructure outpaced all other capital planning by the Town.

6. Advisory board members, residents and Town officials continue to express interest in expanding active transportation and transit options, while ensuring that equity and sustainability remain top priorities. Despite packed sidewalks and large numbers of walkers, strollers, runners, and others every day, Carrboro's largely residential land use pattern yields a "car-dependent" label from WalkScore (an online tool that measures how walkable a municipality is, due to its land use and infrastructure), with a walkability score of 28 and bike-ability score of 59 out of 100.

7. Carrboro has easy access to regional transportation highways such as Interstates 85 and 40, the Raleigh-Durham International Airport, Research Triangle Park, two major health care complexes and other municipalities in the Triangle region. It is close to large employment centers like UNC Chapel Hill, Duke University, Raleigh, and the Research Triangle Park; an outstanding primary and secondary public education system; open space/recreation; and approximately mid-way between the State's mountain and coastal regions. The different transportation modes have contributed to its desirability and are well-recognized aspects of the Town's identity.

8. The Town has a record of transportation planning that considers the interrelated nature of infrastructure, the environment, and land use. That approach is carried into this plan which incorporates previous planning efforts such as: 2050 Metropolitan Transportation Plan, Vision 2020, Community Climate Action Plan (CCAP) 2020, Energy and Climate Protection Plan (ECPP) 2020, Comprehensive Bicycle Transportation Plan Update 2020, NC 54 Pedestrian and Bicycle Corridor Safety Study 2019, Chapel Hill Transit Short Range Plan 2020, Chapel Hill /Carrboro/UNC 2035 Long Range Transit Plan, Town of Carrboro Downtown Parking Plan 2017.

What We Will Measure

1. Number of BIPOC and low-income residents involved in transportation decision-making
2. Number of fatalities and serious injures between people walking/ biking and automobiles
3. Vehicle Miles Travelled (VMT) per capita
4. Bus ridership
5. Mileage of protected bike lanes
6. Quantity of off-road bicycle and pedestrian infrastructure installed to improve high priority connections and complete the pedestrian and bicycle network
7. Number of downtown car trips replaced with micro-mobility and public transit trips

Race & Equity and Climate Action

Race and Equity:

Transportation strategies and projects have been designed to advance race and equity in the town through:

- Modifying Town community engagement practices to reduce barriers for BIPOC and low-income residents' participation.
- Increasing mobility options for BIPOC and low-income communities with an iterative and incremental approach to also avoid displacement.

Climate Action:

The Transportation strategies and projects aim to advance the Town's Climate Action Plan and Energy and Climate Action Plan through:

- Increasing fossil-free/low fossil-fuel use mobility options to travel from residences to various destinations while reducing emissions from automobile use.
- Creating a more thorough and safer sidewalk/ bike path/trail/greenway network to ensure access to fossil-free mobility options.

Transportation & Mobility Strategies Map

The map on the following page provides an overview of current and proposed strategies to improve active transportation (such as walking, biking, etc.) in Carrboro. Details about the priority area/corridors and in-development projects can be found on the following pages. Intersection improvements refer to suggestions for improving pedestrian safety. The details of this map were informed by the 2009 Bike Plan and 2020 Updated Bike Plan as well as community members' feedback on transportation infrastructure changes. This map does not provide an exhaustive list of projects and priorities, which may shift in the future.

A. Estes Dr. (Hillcrest to N. Greensboro): Carrboro has installed a marked crosswalk with two pedestrian hybrid beacons on N Greensboro (need for improvement predates plan)

B. Hillsborough & Old Fayetteville Road: Carrboro has installed a pedestrian refuge island (need for improvement predates plan)

C. Jones Ferry Road (NC-54 to Hillsborough): Bike Improvement (protected bike lanes on Jones Ferry Rd), safety improvements to reduce speed

D. NC-54 (at Henry Anderson Park): Sidewalk connectivity, bike improvements (connect park to Old Fayetteville with shared use path)

E. S. Greensboro (Carr to Old Pittsboro): Safety improvements to reduce speed (improve signage and connectivity at Carr to access South Green Shops), pedestrian safety

F. Greensboro (Estes to Weaver): Safety improvements to reduce speed (traffic calming at Short), sidewalk connectivity, intersection improvement (Weaver & Greensboro to access Community Center)

G. N. Greensboro (Hillsborough to Estes): Safety improvements to reduce speed, bike improvement

H. Hillsborough (N. Greensboro to W. Main/E. Poplar): Bike improvement, additional pedestrian lighting, safety improvements to reduce speed

I. Smith Level Road: Bike improvement, safety improvements to reduce speed (safe routes to school), green stormwater infrastructure improvements

J. NC-54 (Main to Jones Ferry): Safer crosswalks, traffic signals at bus stops, additional pedestrian lighting, improved connectivity to downtown

K. Hogan Lake Trail: Bike improvement, sidewalk connectivity, greenway improvement (protected passive recreation area)

L. Main Street (Downtown Carrboro): Bike improvement, intersection improvement, improve wayfinding and regulatory signage, safety improvements to reduce speed, improve sidewalk conditions, consider options for future of rail corridor

M. Homestead Rd. & Old NC 86: Once development occurs, improve bike facilities and extend transit service

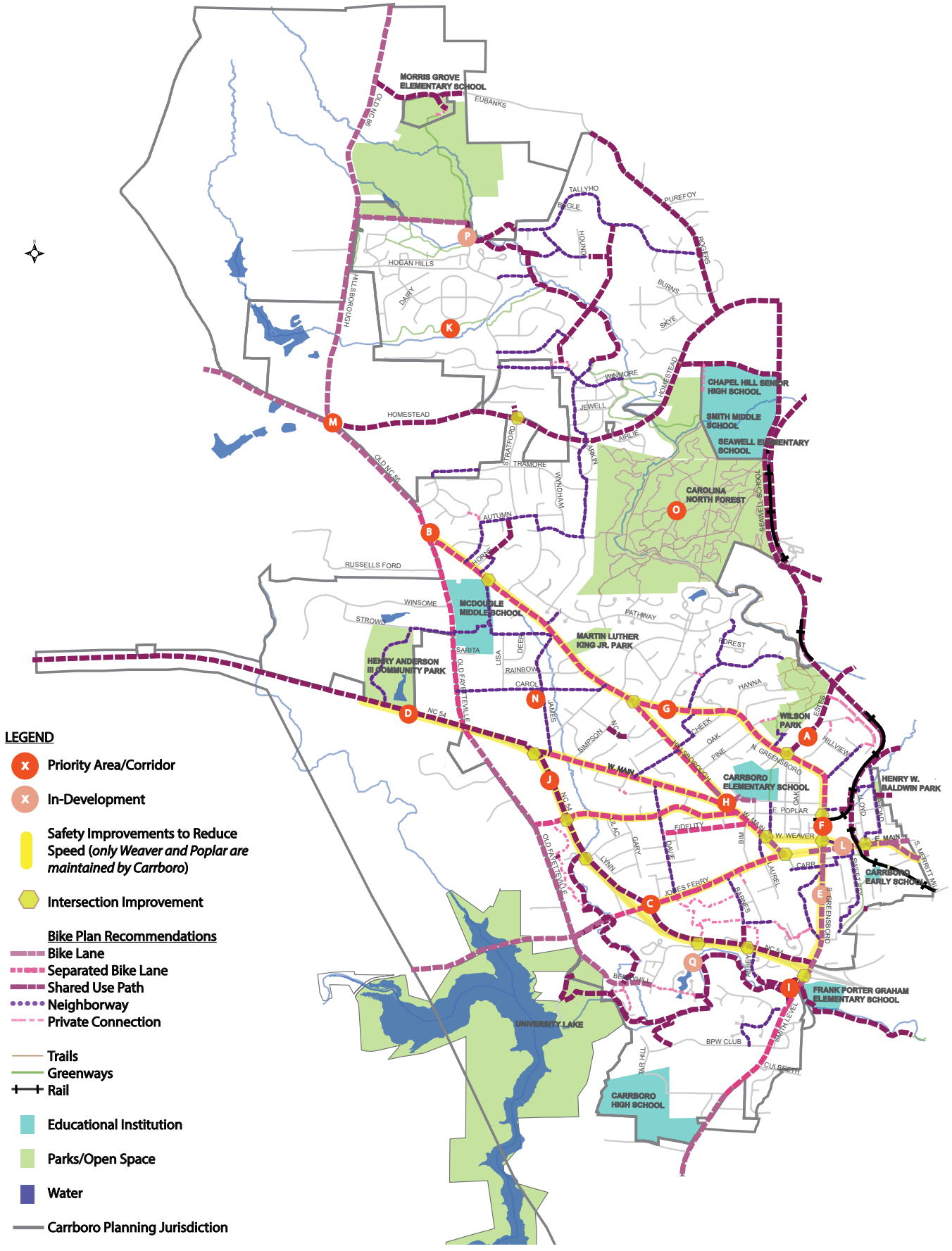
N. Barred Owl Creek: Coordinate transportation and public infrastructure improvements with green stormwater infrastructure

O. Carolina North Forest: Continue initiatives to improve access and travel (not Carrboro property)

P. Jones Creek Greenway: Continue initiatives to improve greenway access and travel

Q. Morgan Creek Greenway: Continue initiatives to improve greenway access and travel (pedestrian bridge to cross Morgan Creek)

Transportation & Mobility Strategies Map



Goals, Strategies, and Projects

Goal 1: Address disparate impacts of transportation decisions and investments in Carrboro's BIPOC, lower-income, and differently-abled populations.

Develop solutions with marginalized communities to increase mobility options from where they live, work, and generally spend time. Work with Carrboro's BIPOC and lower-income populations and persons with disabilities to know how they are currently not being served by the current transportation system and if and how this is a different experience for white, higher-income, and able-bodied populations.

Strategy 1.1: Center equity in transportation planning processes.

Equitable mobility should be the goal of any transportation planning process in order to repair past processes that have limited mobility of marginalized populations.

A Continue to promote the inclusion of equity as a weighing factor in the selection of local and regional transportation projects. Currently, Durham-Chapel Hill-Carrboro Metropolitan Planning Organization is working on including equity in its prioritization process.

B Prioritize inclusion of persons with disabilities to inform accessibility needs in transportation infrastructure and service design. Assess the opportunities for residents with disabilities to participate in advisory group roles or as members of the Transportation Advisory Board (TAB). Ensure that all transportation infrastructure decisions include people with disabilities as meaningful advisors, not as tokenized individuals.

C Use a community engagement process to identify places in town for implementing "best practice" projects for maximizing use of bike, pedestrian and transit as alternatives to automobile transportation. The CCAP survey included this question in 2019 and the results were shared as part of an ongoing education effort. The question will continue to be asked every 2 years.

> "Introduce recreation in transportation planning... Bikeways and sidewalks start to get to that [by connecting to recreation and amenities]."
> *–Resident idea*

▲ *Image from October 2021 Community Bike Ride*

Strategy 1.2: Improve transportation options for all communities, with a focus on incrementally shifting transit stops to denser areas to serve as connections between residences and points of interests while limiting displacement impacts on marginalized populations.

Research across the nation has shown that improving mobility options in an area tends to raise property values and thus forces low-income populations to move out because they can no longer afford to live there.[2] At community meetings, some residents have recommended incremental change because they do not want development to happen quickly without intentional thought. In Carrboro, there are no fixed-transit routes; public transit is bus and van service. Bus routes can be shifted incrementally, with a community process that centers on keeping people in their homes. Carrboro can improve mobility options to those who are marginalized, while helping to mitigate displacement. Refer to the Land Use chapter for more detail.

A Locate additional public transit routes along current and future high-density development to serve denser areas, and BIPOC residents in collaboration with anti-displacement policies, such as a route along Homestead and Old 86 if a new multi-use node is planned.

> "Paratransit mini bus system is helpful but needs to be expanded for those who are wheelbound."
> *–Resident idea*

Identify future public transit routes in collaboration with regional partners, ensure that these routes serve BIPOC and low-income residents and connect them to high-density developments. Co-plan with residents and/or advisory member representatives of these residents to envision changed routes; productive, high-density development uses; and create anti-displacement policies to keep land values affordable. Do so incrementally, so that there is appropriate time to plan with marginalized populations.

B Identify job centers and commercial hubs and conduct a Racial Equity Impact Analysis on current transportation options to these locations, prioritize transportation projects that fill in service gaps. Identify benefits and problems with mobility to job centers and commercial hubs with a specific focus on the impact on BIPOC communities. Use this analysis to prioritize multimodal transportation projects to highly desired destinations. Work with BIPOC and low-income populations to find out what types of transportation modes would best serve them to these locations.

▲ *Bus service is important to residents and workers who do not have access to a personal vehicle. Residents have expressed a need to explore an expanded network with service routes and times to serve all segments of the population, for example those who work the third shift.*

Goal 2: Continue to expand the transportation system to provide at least one non-automobile option (walking, biking, and transit) for every neighborhood to be usable for a variety of trip purpose.

A multi-modal transportation system means that individuals do not have to have access to a single-occupancy vehicle to travel around Carrboro. With a multimodal transportation system, individuals feel safe and can afford to walk, bike, or take public transit to easily travel around and out-of-town town for daily needs and recreation.

Strategy 2.1: Encourage non-automobile use in the community and reduce vehicle miles travelled through land use decisions of developments that lends itself to public transit use (such as denser mixed-use nodes) and enhancement of public transit itself.

Most towns and cities, since the 1950s, have been planned with automobiles as the default transportation method, thus land use decisions led to more sprawl. Transportation is a significant source of greenhouse gas emissions. In order to encourage multi-modal transportation systems, Carrboro needs to develop without displacement. Look for opportunities to increase density and create more mixed-use spaces so that people, including low-income households, do not have to travel far to address their multiple needs or access job opportunities, which could reduce community emissions from transportation and at the same time are paired with anti-displacement measures to ensure that low-income households are not priced out of Carrboro.

A Assess needs and identify funding to expand free public transportation service to low- and moderate-income households, populations who cannot walk without assistance, those who work outside of traditional work hours, the Transition Areas, and the Extraterritorial Jurisdiction (ETJ) transition area throughout the week, including weekends, by considering different passenger vehicle types.

Chapel Hill Transit trips are free for all users, as they are subsidized through a partnership in which the Town of Carrboro pays a 14% share and the Town of Chapel Hill and UNC each pay a 43% share. The free public transportation service with Sunday service has been welcomed by the community; however, many still find it difficult to travel to their destinations without a personal vehicle. Particularly, those employed outside of 9-5 working hours. Increasing the level of service through expanded hours of operation, and providing a more comprehensive bus network, will help overcome these barriers. Residents can call Orange County public transportation services to address some of these needs. Additionally, the Town should work with transit partners to provide service on lower volume days, e.g., by using a van or smaller bus and prioritize those who cannot easily access other forms of mobility based on location, ability and income.

Well-Designed Density Advances Climate Action Goals

Planning for greater density in strategic locations allows Carrboro to develop "15-minute neighborhoods" in which residents' needs are accessible by walking or biking. Increasing density at specific nodes also reduces transportation carbon emissions and other vehicle pollutants (such as microplastics from tire wear) by reducing vehicle miles traveled. Additionally, mixed-use building density planned with equity and paired with public transit provides households who cannot afford vehicles improved quality of life by reducing the time and distance they have to travel to complete everyday errands. **Increased density with intentional design elements can reduce total energy use, support renewable energy, and promote energy efficiency.**

B Seek to increase funding from the Triangle Transportation Demand Management (TDM) Program, Triangle Transportation Choices, and partner with surrounding transit authorities.

The Triangle Transportation Demand Management (TDM) Program links state policy and funding with local and regional transportation providers to reduce dependence on automobiles. The Town of Carrboro submits an annual grant to promote Transportation Demand Management and travel options. As of 2020, there is a new grant in place to help educate residents about diverse transportation options (previously on hold due to the pandemic). Carrboro has partnered with Chapel Hill for several years and is also working with the Duke Center for Advanced Hindsight and Orange County to design welcome packets for new residents on how to create a transportation routine that does not consist of driving. The Town should continue to pursue funding in partnership with Chapel Hill Transit and Orange County transit to improve transportation options in Carrboro.

C Include multiple languages in public transit signage and wayfinding.

Many residents of Carrboro's linguistically diverse population do not have access to personal vehicles and depend on public transit. However, current signage is mostly in English, making it difficult to use the public transit system. Public transit usage would benefit from signage in multiple languages, so that those who are most comfortable reading another language can easily access public transportation and get around town. Explore high tech solutions (ie. electronic signs) as well as low tech signs.

D Continue collaboration with the NC Capital Area Metropolitan Planning Organization (CAMPO) through the Durham Chapel Hill Carrboro (DCHCMPO) to determine future regional uses for rail lines whose current uses will end in the near future.

Collaboration should consider both how the rail line can support transportation like a fixed guideway system or recreational community desires like a rail to trails or rail near trails line.

Strategy 2.2: Continue to create safe streets and trail networks for pedestrians, bike riders, and transit riders.

Most roads built in the United States in the post-war period were designed to improve drivers' safety which ultimately have left pedestrians and cyclists at a higher risk for injury. Complete streets strategies increase pedestrian use by improving perceived safety and comfort and reducing pedestrian accidents through comprehensive safety improvements that prioritize pedestrians, cyclists and transit users in the right-of-way (ROW).

A Develop a complete streets policy statement that incorporates and implements a vision zero policy.

Vision zero policies seek to end traffic-related fatalities and serious injuries. A complete streets policy further a vision zero policy be working toward safety for all types of mobility.

B Explore pursuing jurisdictional control of NCDOT streets that are important corridors in Carrboro, such as Main Street and/or North Greensboro Street.

Design to Reduce Speed

C Evaluate and revise Town Standards for Street Design that explore changes to standards to use a maximum design speed of 20 miles per hour.

D Update the LUO Article XIV – Streets and Sidewalks, in particular the requirements related to street width, sidewalks, ROW width, shoulder width, and other design features.

Additionally, LUO Appendix C (specifications for design and construction) should be revised with the goal of reducing the minimum design speed, minimum sight distance, minimum centerline radius, and size of design vehicle. Many of these requirements are carryover from an era of transportation design which aimed to forgive the mistakes of people driving (which was often done at the at the expense of people walking and biking).

E Restructure Residential Traffic Management Plan (RTMP) and incorporate a Bike-Ped Safety Assessment Process.

The Town's Residential Traffic Management Plan has been a process by which residents can request traffic calming devices be installed by the Town and includes a petition-based process and data-driven assessment of the traffic conditions on the street. This process is piecemeal, in that it only responds to requests as they arise and does not take a systemic approach to assessing traffic calming and safety issues on Town-maintained, residential streets. The current process also has concerning implications for equity, as an update of the plan is needed to address the following issues:

1. Create a regular, annual timeline with a specific window during which requests and petitions can be submitted OR develop a systemic, town-wide approach to assessing traffic conditions (with associated data collection) and coordinate with neighbors at those locations where there are potential concerns identified.

2. Revise the process to collect data after a request is submitted (and prior to the petition phase).

3. Create processes for Town- and NCDOT-owned streets by which residents can request reducing the posted speed limits on residential streets. If desired, this could be a direct follow-up to a completed traffic calming project. If the follow-up data collection shows the operating speed (85th percentile) is at least 5 MPH below the posted speed, then a reduction in the posted speed limit can be considered.

Explanation of Federal and State Transportation Funding Process (MPO & SPOT Processes)

The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) is the regional lead planning agency that coordinates federal and state transportation funds for projects within the urbanized areas of Durham, Orange and Chatham counties. The DCHC MPO works to develop long range transportation plans, identify transportation projects to receive federal funding, submit projects for state-administered funding prioritization, and assist with project implementation.

Federal Funds: Multiple sources of federal funding are distributed by NCDOT (North Carolina Department of Transportation) to the DCHC MPO that can be considered for transportation projects in Carrboro. These federal sources typically require a 20% local match of the total project cost (often referred to as an 80/20 split). The MPO works to prioritize projects for federal funding based on a number of different factors including connectivity, transit access, population/employment density, equity, environmental justice, safety, and emissions/VMT reduction. The MPO accepts applications for funds once per year. Due to requirements on minimum project cost, this is generally a better funding source for larger transportation projects. MPO projects approved for federal funding are programed into NCDOT's State Transportation Improvement Program (STIP).

State-Administered Funds: The state administers and distributes both federal and state funds through a competitive process coordinated by NCDOT's Strategic Planning Office of Transportation (SPOT) which occurs every two to three years. A project that scores well enough to receive funding is added to the State Transportation Improvement Program (STIP). The SPOT process involves scoring all roadway, public transportation, bicycle, pedestrian, rail, and aviation projects on a number of criteria. Metropolitan Planning Organizations (MPOs), Rural Planning Organizations (RPOs), and the NCDOT Division offices also contribute by submitting projects for consideration and assigning local priority to projects.

The Strategic Transportation Investments (STI) law sets the distribution of funding between different modes of transportation. Additionally, highway projects (such as roadway capacity or other motor vehicle focused improvements) accepted into the STIP are fully funded by NCDOT but other projects for other modes (such as bicycle or pedestrian) require a local match of 20%.

Due to the competitiveness of this process and the timing of improvements in the STIP, it can be a lengthy process from initial submittal to project completion. Furthermore, it can be difficult to get some projects to score well in the process, so other avenues for implementation should be assessed. In addition to the SPOT process, NCDOT also reserves some funds for other projects/programs, such as safety improvements.

4. Create a process by which BIPOC or other underserved neighborhoods can bypass the labor-intensive petition process. The expectation of this would be that if data collected by Town Staff indicates a location meets the criteria for Stage 2, then staff can reach out to a neighborhood contact directly and gauge interest through a neighborhood meeting rather than the expectation of a formal petition process.

5. Incorporate into this process an assessment of bicycle/pedestrian facilities and sidewalk need. Potential guidance includes the FHWA Small Town and Rural Multimodal networks document (https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/).

6. Update the list of traffic calming devices under consideration.

F Explore and implement engineering solutions to reduce motor vehicle speeds in downtown.

With respect to the areas identified on the Transportation Strategies Map for 'safety improvements for speed reduction', a framework is needed to assess existing conditions, make improvements, and measure progress. Conversations with NCDOT with regards to a downtown slow zone (and associated reduction of posted speed limits) have indicated that the operating speed needs to be reduced prior to considering a reduction of the posted speed limit. To impact the operating speed, engineering changes are needed to modify the roadway environment and encourage slower speeds.

Infrastructure Plans & Improvements

G Identify existing, needed, and poor-quality sidewalks to update the existing sidewalks plan, for the purpose of implementation alongside development projects to increase pedestrian safety and decrease traffic speed.

The Town has been actively adding and improving sidewalks through bond referenda, state transportation prioritization and ADA transition work. The Town should conduct a gap analysis/audit of existing sidewalk infrastructure, access for high priority populations (e.g., non-ambulatory residents, low-to-moderate income households), and existing and projected development patterns, and update its framework for prioritizing sidewalk projects accordingly. The installation of sidewalks can be designed to help increase drivers' cautiousness around residents. Vehicle speeds can be managed by infrastructure, with most attention paid to arterial roads and the downtown.

H Continue to implement the Safe Routes to Schools Action (SRTS) plan in coordination with schools.

Implement plans that support safety for all age groups of children, especially those who have less opportunities due to location, ability, and income. Explore and develop partnerships with community organizations seeking to provide healthy and safe transportation options for youth and continue working to establish the SRTS Implementation Committee.

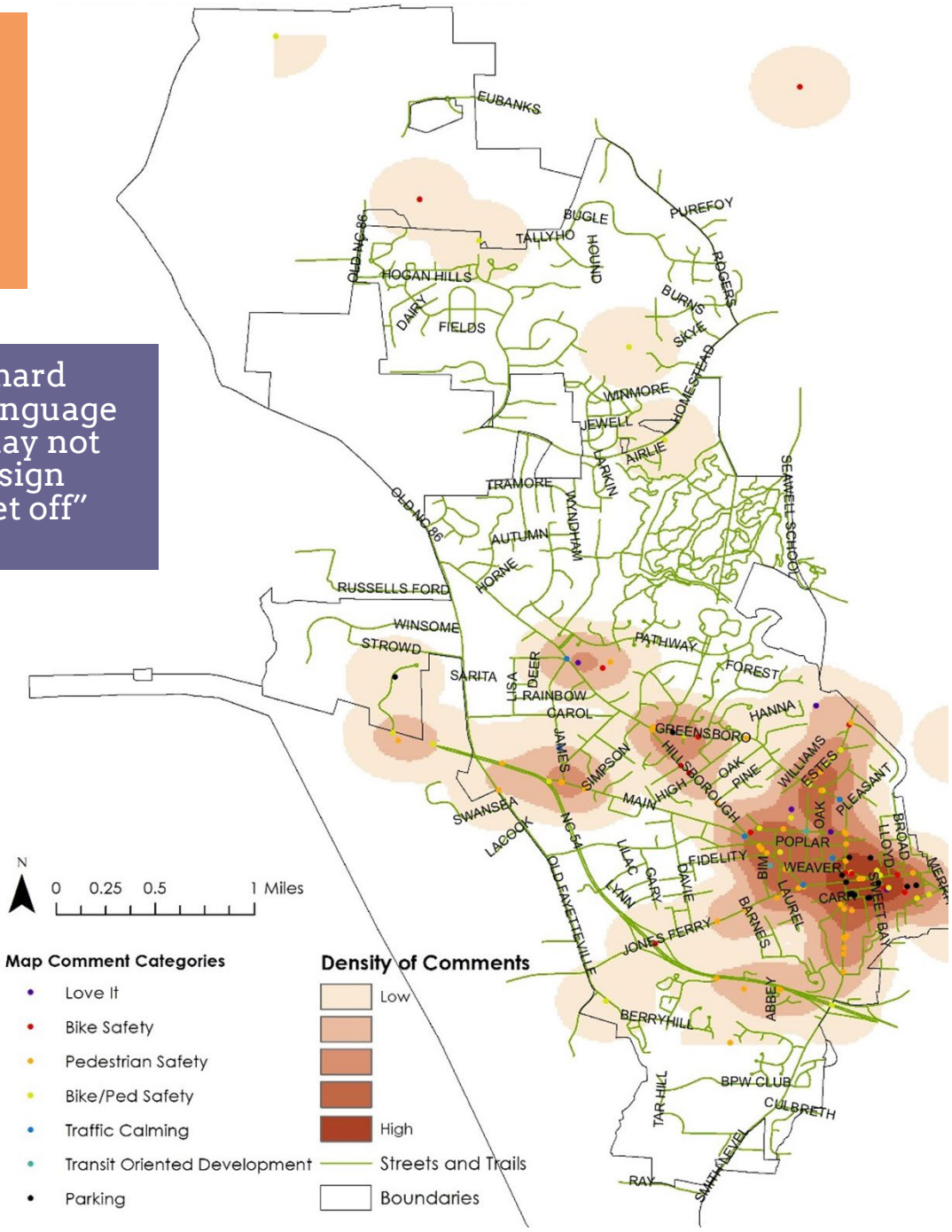
▲ *Roberson Street, next to The 203 Project, would be a great opportunity for a shared street that can be used by pedestrians, micro mobility users, and drivers.*

"Create a transportation hub system where smaller vehicles are picking people up in neighborhoods and going to downtown Carrboro to pick up Chapel Hill Transit" *-Resident idea*

"Finish greenways and bikeways so we can bike into town from the Northern Transition Area." *-Resident idea*

"Taking the bus is hard when [there is a] language barrier...[people] may not be able to read the sign or know when to get off" *-Resident idea*

"To improve walkability repair/widen existing narrow sidewalks and install sidewalks in areas without them, especially to access green spaces" *-Resident idea*



▲ *Public comments collected throughout the comprehensive planning process identified areas that should continue being prioritized for bike and pedestrian improvement. Priority locations include Downtown Carrboro and the surrounding area, Hillsborough Road and Greensboro Street, Main Street and NC-54/Henry Anderson III Community Park, and the Martin Luther King Jr. Park/Carolina North Forest area. Town staff have been working continuously on in these locations and continue to prioritize and seek funding to address residents' concerns.*

I Leverage Department of Transportation and Town resurfacing projects for exploration and implementation of bike and pedestrian improvements like bike lanes, bike boxes, intersection bike markings, center turn lanes, additional crosswalks, maintain parking.

Redesigning streets to include bike lanes, intersection markings, turn lanes, crosswalks, and parking lot lines have several benefits aside from promoting safe use of streets: they improve the curb appeal of businesses due to the improved aesthetics; they reduce liability by decreasing accidents, they provide better accommodations for people with disabilities, and also comply with laws such as fire codes.

J Create safe transitions for pedestrians to access bus stops.Continue engaging residents, especially those who are BIPOC and low-income, to design the best approaches to enhance pedestrian safety and access to bus stops. Potential modifications to improve access and safety include moving bus stops to shorten walking distances, improving signage/seating/shelter/lighting, and increasing maintenance.

K Develop a connected system of on- and off-road facilities to accommodate varying levels of bicyclists and follow bike plan recommendations to have physically separated bike lanes that are built for users of all ages ("8 to 80" framework of age accessibility).

As biking and walking becomes more important to Carrboro, improvements that create more opportunities for residents to walk and bike should increase in volume and distance. On- and off- street bikeway facilities offer opportunities to reduce congestion, improve air quality, and improve personal health.

Protected bike lanes offer benefits to more than just the safety of cyclists: once installed, they encourage more diverse users to bike (female users in particular increase), reduce accidents, and they increase storefront sales (more traffic from cyclists equates to more potential business). The Bicycle Plan Update identifies the best streets for protected bike treatments: N Greensboro Street, Hillsborough Road, W Main Street, Jones Ferry Road, and Poplar Avenue.

L Consider allocating a portion of Powell Bill funding to bike and pedestrian projects. The Town of Carrboro has historically allocated Powell Bill funds to roadways to support auto infrastructure. A portion of these funds can be used for bike and pedestrian projects.

Public Transit Access

M Continue partnership with transit partners, the Town of Chapel Hill, and UNC to continuously improve public transit access, with a particular eye to moderate-income homeownership communities and developments with an affordability component.

Work with transit partners, Chapel Hill, and UNC on scheduling and route updates that meet the needs of workers, particularly low-income households that may have weekend, night hours or are commuting to employment in less dense, car-dependent locations.

◀ *Jones Ferry Road Protected Bike Lane design in phases (from Main Street to Davie Road), Carrboro Bike Plan 2020.*

N Encourage and support increasing ridership on public transit by enabling access for transit mode shifts from pedestrians, bicyclists, and drivers at public transit stops and stations.

O Work with transit partners, Chapel Hill, and UNC to develop longer-range plans for Bus Rapid Transit (BRT), improved connectivity, connections to regional transit services, park-and-ride facilities, and transit-supportive land use development such as pedestrian-friendly, high-density, and mixed use.

Micromobility

P Explore different micro-mobility options that consider equitability, accessibility, and help address first-last mile efforts.

First-last mile is defined as the portion of a commuter's trip (usually the trip's origin and destination) that is completed on their own, while the bus or rail service used composes the majority of the trip. An example of this includes when someone must first walk, bike, or drive themselves to and from the nearest transit station. Micro-mobility options can be used to help aid in scenarios where transit is not adjacent to someone's home or intended destination. First-last mile is a particularly significant problem for residents that work in places without strong transit connections during non-traditional work hours. Micro-mobility options may result in safer and more efficient connections for those in most need of safe access to their place of employment.

Options can include micro-transit shuttles, electric bike share programs, carpool, and adaptive scooters for people with disabilities.

The Town of Carrboro is exploring opportunities for a joint bikeshare system in conjunction with Chapel Hill and UNC Transportation & Parking. Staff is hoping to implement a program that addresses equitability, accessibility (non-smart phone users, noncredit card holders, differently-abled users), and optimal locations for stations and use. Carrboro will continue exploring the integration of e-scooters, while assessing their accessibility, safety (including helmet use), and affordability.

Education

Q Develop programming and financial support (for relevant initiatives) to increase youth education and opportunities for walking and biking.

Youth overwhelmingly depend on walking and biking for transportation needs, understanding their viewpoints and collaborating to improve the modes will protect and mobilize our youngest, and one of our most vulnerable populations. Intentional outreach should be conducted to understand the needs and challenges faced by BIPOC and low-income youth as they travel about the town.

R Encourage people to "leave their cars behind" by continuing to coordinate biking and walking tours in different parts of Town.

▲ *A young bicyclist attending one of the Carrboro Connects Pop-Ups*

Goal 3: Reduce greenhouse gas emissions from motor vehicle use by 80% by 2030.

Burning fossil fuels such as gasoline and diesel releases carbon dioxide (a greenhouse gas) into the atmosphere, which is causing the earth to warm, resulting in changes to the climate. Different strategies to reduce emissions from vehicles include driving less (increasing active transportation options), choosing fuel efficient vehicles, and updating transportation fleets to include electric vehicles.

Strategy 3.1: Expand opportunities for transportation options that do not rely on fossil fuel-powered, single-occupancy vehicles.

A Also see Transportation Project 2.1A. Extending bus service to include off-peak and weekend hours can better serve residents employed by service-oriented jobs. Funding would be needed to extend such service.

B Increase opportunities for alternatively fueled public transit, municipal, and private vehicles. Alternative fueled vehicles' demand continues to grow as motorists desire ecologically sensitive (reduced carbon dioxide, so cleaner air) and cost effective (save on fuel, tax breaks, fuel efficiency) vehicle options.

C Improve and market vanpool and carpool options for commuters.

D Explore and implement land use practices to support EV charging to reduce greenhouse gas emissions.

On June 8, 2021, the Land Use Ordinance (LUO) was amended to require EV charging stations and infrastructure in new developments. Incorporate solar panels to power EV charging stations at these locations (CCAP 2020). The Town should pursue grants and other funding sources to make EV charging a possibility at affordable house locations and support shared EV use programs. Provide technical assistance or educational resources to HOA boards on how to incorporate EV charging stations at their associations. Additionally, advocate to the state for a clean energy supply to EV chargers so that EV use reduces carbon emissions throughout its life cycle. EVNoire may be a possible partner.

E Promote the interconnectivity of local and regional bicycle infrastructure, transit, and other micromobility options between Carrboro, Chapel Hill, Orange County, and other jurisdictions and organizations in the Triangle Region.

▲ *Electric vehicle charging station at Town Commons*

▲ *Extending bus service to include off-peak and weekend hours can better serve residents employed by service-oriented jobs. Funding would be needed to extend such service.*

Goal 4: Improve the management of parking spaces in the downtown area.

Parking management strategies in downtown areas can oftentimes be complex: too little supply of parking can make a downtown unattractive to potential businesses, too much parking can increase traffic congestion, and an oversupply of surface parking can negatively impact the built environment by creating large gaps between buildings, increasing urban heat island effect, and making walking, and biking unpleasant. The following parking management strategies seek to balance concerns.

Strategy 4.1: Establish a regular schedule for conducting parking counts and inventorying existing spaces. Develop a more accurate methodology for utilizing shared parking and satellite parking. See Economic Sustainability Chapter for more information on "park once" policies.

A Research into best practices for parking management and conduct additional outreach to business owners, residents, and visitors to understand parking concerns.

Outreach efforts should include educational components to ensure stakeholders truly understand strategies and trade-offs being presented. Education and outreach will help determine priorities and help the town determine which approaches to use. The Town can target specific focus areas (such as the most congested streets downtown) to better identify needed stakeholders.

Discussing parking management with stakeholders should include conversations around right-pricing parking. Free parking is often seen as an incentive to drive, so potential solutions to dissuade an increase in numbers of drivers/cars may include requiring payment for parking: installing parking meters, implementing market-based parking pricing, or enforcing penalties.

B Implement wayfinding/signage improvements.

Wayfinding signage is an effective way to attract visitors, lengthen their stay, and support local businesses by marketing them together. Wayfinding signage should be provided at varying sizes and scales, and easily read by pedestrians, cyclists, and motorists.

C Incorporate and increase parking infrastructure for bicycles in parking plans.

Thoughtful parking infrastructure for bikes, e-bikes, and other micromobility options is one way to encourage cycling and support local businesses. When a destination adds bike parking it draws cyclists and normalizes bike culture to draw more diverse riders.

D Implement Transportation Demand Management (TDM) policies and pursue paid parking as a demand management strategy.

TDM focuses on understanding how people make transportation decisions and helping them use the infrastructure in place for transit, walking, or biking. Some tangible policies to implement TDM include educating people about their transportation options, shifting the priority away from driving alone, improving public transportation, and collaborating with employers to financially incentivize bike and transit use.

E Plan for multi-level electric vehicle (EV) and bicycle charging stations.

Electric vehicle charging stations have various positive impacts on communities: they promote cleaner air, lower the overall cost of driving for community members, pave the way for other forms of clean transportation options, and help communities achieve their climate change goals. Outreach and analysis should be conducted to determine the best locations for and levels of stations (wattage) to remain accessible for all. Additionally, careful consideration should be placed on equity impacts. EV vehicles (even internal combustion vehicles) are not accessible to all households. Placing chargers in low-income neighborhoods may contribute to displacement if additional anti-displacement measures are not adopted. Find ways to make EVs accessible to low-income households, for example a pooled/shared EV program paired with thoughtfully place EV chargers can increase access to EVs.

Strategy 4.2: Reduce negative effects of parking requirements on housing costs and natural resources.

A Remove minimum vehicular parking requirements for residential development close to transit.* Lower vehicular parking requirements for all residential uses, including ADUs. Further reduce vehicular minimum parking standards for dedicated, long-term affordable housing units. Consider maximum parking ratios to reduce impervious surfaces and make more efficient use of land.

*"Close to transit" is defined as housing units located within a half mile of a bus stop that is served at least seven days per week at an average of 30-minute intervals on weekdays and 60-minute intervals on weekends.

B Reclaim underused parking spaces in larger residential developments to allow for development of affordable housing.

Strategy 4.3: Implement a pilot program in downtown Carrboro that prioritizes alternatives to automobile parking.

A Develop a parking management pilot program with a focus on reducing required parking minimums for commercial areas and opening up more land for transit, pedestrian, biking, and micro-mobility transportation alternatives. Use any generated funds for downtown improvement projects (see Economic Sustainability).

Related Strategies & Projects in Other Chapters

Green Stormwater Infrastructure, Energy, & Water

- Increase opportunities for alternatively fueled public transit, municipal, and private vehicles.

Affordable Housing

- Investigate lowering residential parking requirements to reduce impervious surfaces and enhance affordability.
- Reclaim underused parking spaces in larger residential developments to allow for development of affordable housing.

Economic Sustainability

- Identify job centers and commercial hubs and conduct a Racial Equity Impact Analysis on current transportation options to these locations, prioritize transportation projects that fill in service gaps.

Land Use

- Locate additional public transit routes along current and future high-density development to serve denser areas, and BIPOC residents in collaboration with anti-displacement policies, such as a route along Homestead and Old 86 if a new multi-use node is planned.
- Encourage non-automobile use in the community and reduce vehicle miles travelled through land use decisions of developments that lends itself to public transit use (such as denser mixed-use nodes) and enhancement of public transit itself.
- Evaluate and make revisions to Town Standards for Street Design.
- The LUO Article XIV – Streets and Sidewalks should be updated, in particular the requirements related to street width, sidewalks, ROW width, shoulder width, and other design features.
- Explore and implement land use practices to support EV charging to reduce greenhouse gas emissions.

Principles and Recommendations for Inclusive Community Engagement

Examples of how another community (Chicago) is thinking about equitable Transit Oriented Development that could be helpful for improving transit accessibility without displacement and providing inclusive outreach to BIPOC communities.[3]

The City of Chicago's Equitable Transit-Oriented Development (ETOD) is about planning with communities so that people of all income levels experience the benefits of dense, mixed-use, pedestrian-friendly living near transit hubs. Recommendations to avoid displacement of lower-income and racial minorities include: streamlining and incentivizing the production of multifamily affordable housing, preserving existing affordable housing in the TOD zone, strengthening affordability and accessibility requirements, strengthening density and parking incentives, unbundling housing and parking costs, and strengthening equity in procurement and supplier diversity policies.

1) Shift our mindset: When engaging with communities bring a mindset that sees values in all voices, understand that communities are not monolithic, build and rebuild trust through both words and actions, foster collective learning, be mindful about timelines and commit to an action-oriented process.

2) Co-design Community Engagement with Community: Community engagement is most meaningful and effective when the process is designed with community partners.

3) Enable two-way Communication and Learning: Having an ongoing dialogue with communities makes engagement around a particular project or plan easier because we already have a trusted relationship established.

4) Promote Cultural Competency and Empathy: We must get to know the contexts—community values and norms—in which we are working, really well.

5) Value Community Knowledge and Capital: Community residents are, hands down, the experts on their community context and built environment challenges. We must not only acknowledge local expertise, but compensate and amply it.

6) Seek and Embrace Multiple Viewpoints: Seek out and engage people who are or will be most affected by development decisions. Embrace diversity and design engagement opportunities to reach out unusual community participants.

7) Cultivate Leadership and Advocacy: From inception and design to implementation and activation, we can use the built environment decision making process to cultivate and empower community leaders to lead future efforts.

8) Foster Ownership and Identity in Community: Celebrate community identity and explore ways to integrate technical and creative methods that spark interest in permanent community assets.

ENDNOTES

1. vhb: Venture 1. "NC 54 Pedestrian and Bicycle Corridor Safety Study of 2019." NCDOT, Office of Mobility and Safety, 2019. https://www.townofchapelhill.org/Home/ShowDocument?id=48573.
2. Miguel Padeiro, Ana Louro & Nuno Marques da Costa (2019) Transit-oriented development and gentrification: a systematic review, Transport Reviews, 39:6, 733-754, DOI: 10.1080/01441647.2019.1649316
3. City of Chicago (2021) "Equitable Transit-Oriented Development (TOD) Policy Plan." https://www.chicago.gov/content/dam/city/sites/etod/Pdfs/ETOD-Full-Policy-Plan-with-Appendices-6-15-21.pdf