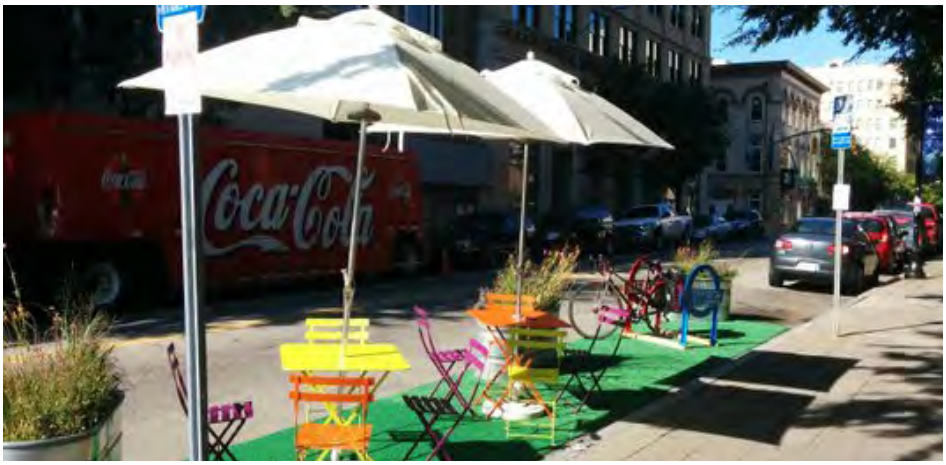
Implementation

"This BikeRaleigh Plan Update provides a long-range vision for improving conditions for bicycling in Raleigh. This plan will be implemented incrementally over the coming years."

The infrastructure, policy, and program recommendations in previous chapters provide strategies for making Raleigh more bicycle friendly. The purpose of this chapter is to provide guidance and action steps for implementing the recommendations.

Implementation of the BikeRaleigh Plan Update will require leadership and dedication to bicycle facility and program development on the part of a variety of agencies. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Even small amounts of local funding could be very useful and beneficial when matched with outside sources. Most importantly, the City need not accomplish the recommendations of this plan by acting alone; success will be realized through collaboration with regional and state agencies, the private sector, and non-profit organizations.

This chapter provides the necessary steps and guidance for delivering the recommendations of this Plan. Phase One and Phase Two action steps, with recommended project partners, are detailed at the start of this chapter. Additionally, further guidance on project delivery, maintenance, partnerships, funding, investment approach, and evaluation are provided.



Pop-up events, such as the parklet developed for 2015 park(ing) day, are a low-cost implementation and evaluation strategy.

BICYCLE PROJECT DELIVERY PROCESS

Iterative Process

1. Project selected through prioritization process for implementation

2. Project development and design process:
   - Data collection and technical analysis
   - Public engagement
   - Design alternatives analysis and selection
   - Assess maintenance needs
   - Detailed design engineering

3. Pre-implementation marketing

4. Project implementation and education

5. Post-implementation encouragement programming to publicize new facilities

6. Evaluate projects

7. Bicycle facility maintenance

8. Continue evaluation and consideration for upgrades

BICYCLE PROJECT DELIVERY PROCESS

This plan recommends the creation of a more integrated and strategic Bicycle Project Delivery Process to be used by the City, especially in regards to public engagement and project evaluation. Consistency is critical to provide the public a general understanding of how a project will be developed, designed, and implemented.

As noted in the diagram on page 8-2, the project development process includes a number of iterative steps, public engagement and communication throughout the process. The following pages provide additional details on the steps. The following list highlights important action steps to implement this process.

BICYCLE PROJECT DELIVERY ACTION STEPS

Develop procedures and processes for bicycle project delivery that includes public engagement, data collection and technical analysis, conceptual design alternatives, and preferred design.

Evaluate and monitor projects by conducting before-and-after data collection, including incorporating new technology and user perception surveys.

Develop a pilot program, or "Living Laboratory" for temporary implementation of bicycle facilities. Experiment and test improvements of a bicycle facility in order to determine traffic operation pros and cons.

Provide training for City staff on bicycle facility design best practices, the bicycle project delivery process, and project evaluation techniques.

Evaluate the need for an additional staff person that would more directly oversee the bicycle project delivery process and all bicycle plan implementation activities.

PROJECT SELECTION FOR IMPLEMENTATION:

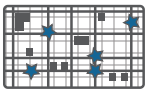
Bicycle projects are selected through several means:

- The prioritized methodology described in chapter 4.
- Recommendations from corridor, area, and other city plans.
- By building on opportunities, such as street resurfacings, major street projects, or those that arise when new connecting facilities (from completed projects or new development) trigger a change in needs or expectations.
- By considering budgetary constraints and implementation considerations.
- Strategically building an interconnected network building and expanding off of existing facilities.
- Evaluation of existing facilities may lead to changes as opportunities or needs arise.

2

PROJECT DEVELOPMENT AND DESIGN:

The design process is highly dependent on project context. Three examples are included below, but not all projects will fit cleanly into one category.



	NEIGHBORHOOD BIKEWAY PROJECTS *See page 3-7 for a full description of neighborhood bikeways, which take advantage of calm neighborhood streets and can often be implemented more incrementally than other facilities.*	RESURFACING AND RESTRIPING PROJECTS *These are projects that install bike facilities by painting new pavement markings, often when a street is resurfaced. Most bike lanes are implemented this way.*	MAJOR PROJECT *These are more complicated projects involving more than simple pavement markings. They are likely to include many separated facilities recommended by the BikeRaleigh Plan.*
DATA COLLECTION AND TECHNICAL ANALYSIS	Gather or organize traffic counts and speed data, but don't otherwise develop conceptual designs, beyond the stage of a rough alignment, before consulting with residents.	Gather necessary data: counts, speeds, crash history, parking surveys, and field measurements for streets that are anticipated to be resurfaced or are identified for facility installations. Conduct traffic analysis if motor vehicle capacity may be reduced.	Gather necessary data: counts, speeds, crash history, parking surveys, and field measurements.
INITIAL PUBLIC ENGAGEMENT	Neighborhood workshop to gather data on • best routes • local traffic concerns and conditions • destinations Workshop should lead to shared expectations and understanding between city-wide desires of bicyclists and the residents of the areas the facilities will be routed through.	Consult with public on conceptual treatments. Specific strategies may include: • For residential areas with parking impacts, send postcards and ask for feedback. • Communication to CACs • For projects with many potential alternatives, hold meeting or workshop to ask for citizens' feedback on alternatives.	Consult with public on conceptual treatments. Specific strategies may include: • Public workshops for businesses and residents to compare alternative design concepts • Project websites • BPAC presentations • CAC presentations • Postcard communications

	NEIGHBORHOOD BIKEWAY PROJECTS	RESURFACING AND RESTRIPING PROJECTS	MAJOR PROJECT
DESIGN DEVELOPMENT	• Develop and refine alternatives • Analyze and evaluate the alternatives • Assess maintenance needs • Additional public engagement as necessary • Selected preferred design	• Develop and refine alternatives • Analyze and evaluate the alternatives • Assess maintenance needs • Additional public engagement as necessary • Selected preferred design Note that often streets slated for potential resurfacing get delayed. Earlier steps may need to be redone or reconsidered, and follow up communication each time a street appears on the potential resurfacing street list may be needed.	• Develop and refine alternatives • Analyze and evaluate the alternatives • Assess maintenance needs • Additional public engagement as necessary • Selected preferred design
TRANSITION TO IMPLEMENTATION	• Develop final engineering plans and transition into implementation • Present concept plans at a follow up meeting and/or at a CAC meeting • Plan for facility maintenance • Engagement process evolves as the project moves into implementation	• Confirm final resurfacing list for projects to be implemented through resurfacing • Develop final engineering plans and transition into implementation • Create necessary construction plans • Plan for facility maintenance • Work with resurfacing manager to communicate timeline and changes to those effected	• Develop final engineering plans and transition into implementation • Hire engineering consultant as appropriate • Develop pilot implementation and evaluation strategies, especially when project designs are unique, innovative, or controversial • Create necessary construction plans • Plan for facility maintenance • Engagement process evolves as the project moves into implementation
PROJECT APPROVAL	• Staff approves wayfinding only projects. • Changes to traffic schedule and traffic calming treatments are approved by City Council.	• City Council approves projects that require changes to traffic schedule.	• Inform City Council and present project for their approval as appropriate

3

PRE-IMPLEMENTATION MARKETING AND EDUCATION

The goal of this step is to increase awareness and eliminate or reduce surprise and confusion that may result from a new bike facility. It requires the development of education materials to clearly explain new designs and then the targeting of materials as appropriate.

Strategies can include:

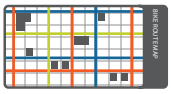
- Proactive, high-level outreach to press and media for major projects
- Community engagement through CACs in affected communities such as newsletter-style communications or attendance at meetings
- Temporary placards or posters posted on signs, utility poles, windshields of parked cars, shopfront windows, etc. in contexts with significant on-street parking and/or pedestrian traffic
- Postcard mailings, especially in residential neighborhoods
- Door-to-door marketing, especially in commercial and retail areas with street-level shop fronts, potentially requiring volunteer resources from partner organizations
- Changeable message boards immediately before, during, and after construction, especially in areas with significant through motor vehicle traffic or in cases where traffic patterns will undergo great change

4

PROJECT IMPLEMENTATION

- Structure contracts and field work to reduce potential for confusion, conflict, and undesirable interim conditions when projects are partially complete
- Unless a segment of street is left as an obvious and ongoing construction site, each day of construction should end with a condition that is safe and respects all users expectations—half-completed pavement markings are unacceptable
- Continue marketing and outreach through active project implementation

5



POST-IMPLEMENTATION ENCOURAGEMENT PROGRAMING

After the project is constructed, the focus shifts to efforts to publicize the new facilities in order to encourage their correct use. This information includes how the facilities should be used (from all perspectives: bicyclist, driver, parker, pedestrian). There is also a focus on:

- Destinations served
- Program goals
- Benefits of the facility or new configuration to safety, clarity, capacity, etc.
- Evaluation process and need for constructive feedback and time to evaluate

6

EVALUATE PROJECTS

This step begins immediately after a project is completed but continues for years as evaluation metrics on a project can be tracked. In the early stages, project evaluation may identify issues requiring immediate attention due to unforeseen circumstances. In these cases corrections should be promptly made. Over time, specific steps include:

- Record public feedback
- Count bicyclists using facilities
- Monitor motor vehicle volumes
- Track crash history
- Document lessons-learned for future projects

Specific factors to consider when conducting follow-up studies to evaluate the effectiveness of new treatments include:

- Does the treatment reduce conflicts between people riding bicycles and other roadway or trail users?
- Does the treatment improve the behavior of people bicycling?
- Does the treatment improve the behavior of people driving?
- Do people riding bicycles perceive that they are safer?

7

BICYCLE FACILITY MAINTENANCE

People riding bicycles are particularly sensitive to the condition of the roadway or multi-use trail surface, because maintenance-related issues like potholes, irregular surfaces, and debris can be uncomfortable and may lead to collisions. Maintenance affects the comfort and appeal of facilities, and lack of well-maintained facilities may reduce bicycling rates. Improving maintenance for bicycle facilities requires action on several fronts:

- Designers should be expected to think about maintenance (materials and labor costs) when they begin project development.
- Low-maintenance and high-quality techniques and materials should be the rule rather than the exception.
- Maintenance policies should be shared and agreed upon by all relevant departments.
- Bicycle facilities and pavement conditions should be assessed.
- The public should be involved in identifying maintenance needs.

On-street bicycle facilities should be maintained as part of other routine roadway maintenance, but with greater attention to detail to ensure smooth travel for more vulnerable street users. Maintenance activities should be funded at a level that allows the City to meet the maintenance performance outcomes described below. As separated bikeways are implemented, new maintenance equipment will be needed to adequately and efficiently maintain these on-road bicycle facilities with vertical separation.

Maintenance Activity	Current Maintenance Activity	Desired Maintenance Activity
Permanent utility cut restoration	Within one year	Within one year
Replace drain grates with new bicycle-friendly grates	As needed	As needed and with all new bicycle projects
Repair and replace pavement	50–100 years; Varies due to City and NCDOT funding allocations.	25–65 years
Repair potholes	Within 24 hours of report	Within 24 hours of report
Replace signs	As needed	As needed
Replace pavement markings and striping on bicycle facilities	None	Annual review/as needed
Clean leaves, debris, trash, snow, and sand in bicycle facilities	None	As needed and upon request
Maintain bicycle racks/furniture	Upon request	As needed
Sweep streets with bicycle facilities	Seasonal and as equipment/ labor allows. Bicycle facility not used as a priority metric.	Major and Minor Thoroughfares: monthly Collectors and Residential: as needed

8

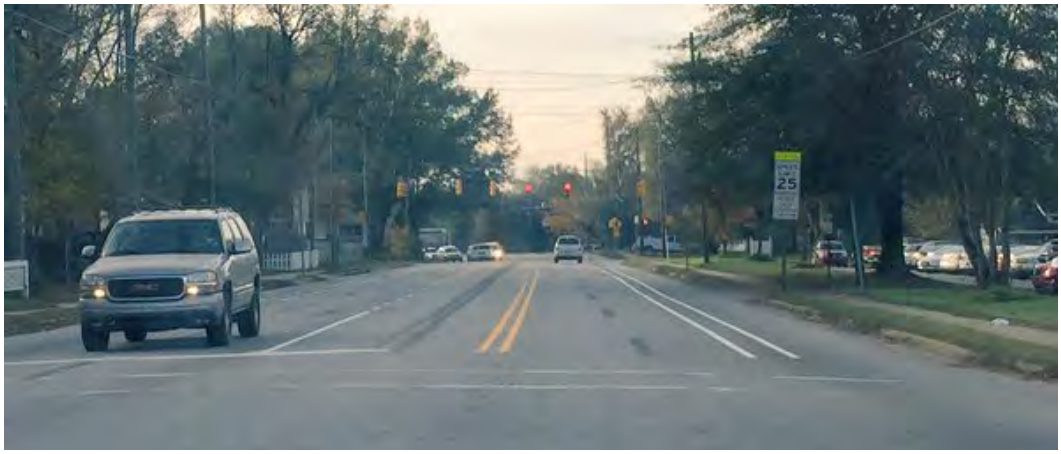
CONTINUE EVALUATION AND CONSIDERATION FOR UPGRADES

In addition to maintaining existing bicycle facilities, the City should also work to improve facilities as needed. An improvement of an existing facility could involve the condition of a bicycle facility, modifying operations for all modes, or other engineering elements that provide a safer street for everyone.

The City should maintain the data-driven prioritization process developed in this Plan to re-prioritize bicycle facility corridors to be considered for improvements. A bicycle network is always evolving. The City must continually update its GIS bike facility database, re-evaluate, re-prioritize, and modify its bicycle facilities to best meet the needs of all bicycle riders. Data to be considered may include the following:

- High collision locations
- Collision history and trends
- Bicycle facility pavement condition assessment
- Bicycle counts
- Signal timing
- Bicycle detection functionality

This final step is functionally the same as step one in the process, as Raleigh reevaluates its bicycle network, identifying new projects to undertake and existing facilities that need modification, expansion, or removal. The process is a cycle of continuous improvement.



Projects installed through the Raleigh Bicycle Design Project, such as the Tarboro Street buffered bike lanes, should be evaluated in the future.

PARTNER ROLES

The City acknowledges the critical role of various nongovernmental, public, and private partners in implementing the BikeRaleigh Plan. While the City is the primary implementor of bicycle infrastructure improvements in Raleigh, coordination with other partners is critical to success. Furthermore, working with all City departments effectively to achieve the goals of the plan is a key and necessary action step. All City departments should understand their roles in the process and and commit to achieving safer streets while also providing people with options for getting around the City. For example, interdepartmental cooperation, especially regarding project delivery, will be essential for efficient and successful roll-out of projects.

To help partners deliver programs, the City should provide support where possible. This includes providing grant funding, technical assistance, sponsorship and logistical support for events, and event or meeting space. There are a variety of bicycle related partners that the City already works closely with: NCDOT Division 5, Capital Area Metropolitan Planning Organization (CAMPO), NCDOT Bicycle & Pedestrian Division, BikeWalkNC, CommuteSmartRaleigh, Oaks and Spokes, Triangle Transit/ Go Smart, and local businesses and bike shops. Developing relationships with a large variety of bicycle specific organizations and advocates will help expand the knowledge about why bicycling is important to the future of Raleigh.

OAKS & SPOKES

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

COMMUTESMARTRALEIGH

CAMPO
NC Capital Area Metropolitan Planning Organization

BikeWalk NC

GoSmart

Seeking and maintaining partnerships will be key for implementing projects, initiatives, and programs.

INVESTMENT APPROACH

Raleigh's funding approach to implement this plan should be multi-pronged, covering investments not just in constructing new facilities, but also in offering bicycle parking, encouraging people to use facilities, educating people about the rules of the road, maintaining bicycle facilities, and tracking the success of bicycle projects and programs. The City should employ a funding allocation strategy that is flexible and allows for opportunistic spending.

CAPTIAL FINANCING & FUNDING STRATEGY

Since the 2009 Bicycle Transportation Plan was adopted, local funds have been allocated to bicycle-specific projects, primarily from Powell Bill revenues (the city's share of state fuel taxes) and transportation bond proceeds (financing property tax revenues). Some of these resources have gone to match funds granted from state or federal funds. Bicycle projects have been funded by the Surface Transportation Program-Direct Allocation (STP-DA) and the Congestion Mitigation and Air Quality Improvement (CMAQ) program. These funds are competitively awarded through the Capital Area MPO's Locally Administered Projects Program (LAPP). The table at left shows some of the grants recently awarded for bicycle projects.

Selected Bicycle Project Grants	Amount	Fiscal Year
Bicycle Parking (NCDOT)	$24,000	2011
Pavement Markings (STP-DA)	$116,000	2011
Pavement Markings (CMAQ)	$480,000	2014
Raleigh Bikeshare Implementation (CMAQ)	$1.7M	2016
Blount/Person Complete Streets (STP-DA)	$1.3M	2017

Federal and state grant funding sources are important, but are becoming a less reliable option for local governments. Federal support for active transportation grants is stagnating while competition for funding is increasing. Currently, state funding cannot be allocated to bicycle-only projects in North Carolina. Current budget allotments are not sufficient for widespread expansion of the bicycling network. The City will need to provide an increased Capital Improvement Program (CIP) allotment for standalone bicycle projects defined in Chapter 4 of this Plan while continuing to take advantage of implementation during street resurfacing and major street improvements. The City should also seek private partners to support programs (Chapter 6) and support facilities such as bicycle parking and wayfinding.

A deliberate strategy is needed in order to maximize the amount and productivity of grant funding, positioning the City for successful grant applications. The following table describes funding strategies to build the various types of bicycle facilities recommend in this plan.

Funding and financing strategies applied to different types of bicycle facility projects. Rarely: ◯ Sometimes: ◑ Often: ●	Separated Bikeways	Neighborhood Bikeways	Bicycle Lanes
Continue to include bicycle facilities in street projects and development-provided public improvements, as directed by the Long Term Bikeway Plan (Chapter 3) and the City's complete streets policy.	●	◑	●
In order to build a cohesive network of facilities for cyclists of All Ages and Abilities, use quick build techniques, such as pilot projects or interim designs, which reduce cost and risk while increasing flexibility. Over time, with a spirit of continuous improvement and as funding allows, convert the facilities to more attractive and permanent installations.	●	◑	◯
Continue to install pavement markings for bicycle facilities through the street resurfacing program.	◯	◑	●
Coordinate with greenway and pedestrian plan implementation to install shared use paths where appropriate, building one facility to serve multiple purposes and saving capital.	◑	◯	◯
Position bicycle projects to compete for LAPP grant funds by developing preliminary plans for priority bicycle projects. Compete for funds on an annual basis in significant but manageable packages of projects.	●	◑	◑
As done with other major transportation investments, utilize bonds to finance priority bicycle projects.	●	◑	◯

FUNDING COMMITMENT

Top cities across the country have shown that a broad based approach to bicycle investment funding for infrastructure, marketing, education, and maintenance can simultaneously realize marked increases in bicycle use and safety. To attain the successes of other cities, Raleigh should emulate their strategies and commitment to bicycling, including providing continuous and predictable investments. Doing so is critical for the City to achieve the goals of the BikeRaleigh Plan Update.

FUNDING STRATEGY ACTION STEPS

- **Include bicycle projects in the City's Capital Improvement Program (CIP), increasing consistent year-to-year funding levels.**
- **Integrate bicycle projects into a Complete Streets analysis and implementation plan.**
- **Fund bicycle facility maintenance and consider funding additional maintenance equipment needed to adequately maintain the system.**
- **To increase readiness for grant funding, develop preliminary plans (30% construction drawings) for priority bicycle projects.**
- **Fund bicycle programs and public outreach efforts. Expand the bicycle and pedestrian outreach coordinator position to fulltime and consider adding another staff member to oversee bicycle-related issues and the implementation of the BikeRaleigh Plan.**
- **Partner with private sponsors to fund the development of a Raleigh Bike Share program.**
- **Fund end-of-trip facilities as part of all future development of major capital projects.**
- **Leverage private development investment by requiring bicycle facility implementation as part of high-density and large-scale development.**

PERFORMANCE MEASURES

Performance measures are important for assessing if the plan is meeting its goals over time. While these recommended measures are focused on assessing progress over long-term, data on these measures should be collected on a continuous basis to help track interim progress. This information will allow for adjustments to be made quickly and throughout the implementation process.

The performance measures below support the goals of the plan developed early in the BikeRaleigh Plan Update process detailed in Chapter 1.

These performance measures are generally outcome based that are focused on achieving specific targets related to bicycling in Raleigh. The key to meeting these performance measures will be data collection. The City will need to collect the relevant data both now and in the future in order to effectively determine the outcomes of the performance measures.

Performance Measure	Baseline Measurement	Performance Target
Number of bicyclists counted at locations throughout Raleigh	Citywide quarterly counts and daily counts at counter locations	Quadruple ridership between 2016 and 2025
Bicycle collision rate	2015 rate	Reduce bicycle collision rate by half (50%) between 2016 and 2025
Percentage of bicycle facility network completed	2015 percentage complete of the Long Term Network: 22%	Ten Year plan in Chapter 4 constructed by 2025
Percentage of intersections that are bicycle-friendly	2015 percentage (calculate for intersections with treatments noted in the design guideline appendix)	25 percent of bicycle system constructed by 2025
Percentage of households within ¼ mile of an all ages and abilities bicycle facility (separated bikeway or neighborhood bikeway)	2015 percentage (calculate based on network complete in 2015)	Increase by 50% of households in Raleigh within ¼ mile of an all ages and abilities bicycle facility by 2025

BICYCLE FRIENDLY COMMUNITY STATUS

The core of the League of American Bicyclists (LAB) Bicycle Friendly Community (BFC) program is a balanced approach to engineering, education, encouragement, enforcement, and evaluation. Each of these categories is scored in the application through a series of detailed questions. The City was recognized in 2011 and 2015 with a bronze-level Bicycle Frendly Community (BFC) designation.

The application process is an important benchmarking tool for the City to enhance, develop, and manage the BikeRaleigh program. LAB provides detailed information on the strengths and weaknesses within each category as well as a comparison to premier Silver-level communities. To reach silver status, the City must commit to implementing the recommendations of this BikeRaleigh Plan Update and LAB's score card, of which the highlights are shown below. At the time of this Plan, the City had already addressed the fourth bullet below (filling the vacant Bicycle & Pedestrian Coordinator position). The completion of this Plan update addresses the fifth bullet below.

» Work with your Neighborhood Traffic Management Program and Streetscape program to increase the number of streets designed for speeds of 25 mph or less.

» Provide a variety of targeted bicycle events to engage seniors, minority populations, low-income populations, and other demographic groups that may benefit from non-traditional or group-specific bicycle events. Targeted events may help to encourage groups that have specific concerns about bicycling or which have not previously been engaged in supporting bicycling improvements.

» Work with law enforcement to ensure that enforcement activities are targeted at motorist infractions most likely to lead to crashes, injuries and fatalities among bicyclists. Traffic enforcement activities should be data-based and responsive to behaviors that have been observed to lead to crashes, injuries, and fatalities.

» Hire a Bicycle & Pedestrian Coordinator. Your application indicated that the Bicycle Program Manager position is currently vacant. To continue your bicycle programming and progress it is important to continue to have a staff person responsible for bicycle-related programming. See this report on the importance of Bicycle & Pedestrian program staff.

» Update your 2009 bicycle plan to ensure that state-of-the-art bicycle facilities are included, and that infrastructure planning is complimented with encouragement, education, and enforcement programs to increase usage.

2015 feedback summary from the League of American Bicyclists regarding the 2015 City of Raleigh BFC application.

PHASE ONE (2016-2017) ACTION STEPS

Action Step	Type	Partners	Details
Implement one neighborhood bikeway and one separated bikeway from the top 33 projects	Eng.	Raleigh Department of Transportation (RDOT) & NCDOT	The City should implement projects from the top 20 defined in Chapter 4. These projects are intended to address the "Interested but Concerned" bicyclist group and should have immediate impact. The City should include new bicycle wayfinding signage as discussed in Chapter 5 as part of these projects (Wayfinding should be coordinated with other City signage efforts such as Downtown and greenway signage). As part of this implementation, the City should communicate and educate the media and public about the roadway changes and the bicycle facility.
Begin concept development and preliminary design for top 33 projects	Eng.	RDOT & NCDOT	The City should begin an implementation program to develop preliminary design for top priority projects. The City should consider conducting some of this work in-house but also establish an on-call contract with consulting, engineering firm(s) to facilitate the preliminary design and ultimate design of these projects.
Continue implementation of projects through resurfacing	Eng.	RDOT & NCDOT	Implementation of on-road bicycle treatments is most cost-effective as part of a scheduled roadway resurfacing. The City of Raleigh has had tremendous success in the past and should continue to make this a priority.
Improve intersections for bicycle friendliness by conducting pilot projects.	Eng.	RDOT & NCDOT	Intersections are challenging for the "Interested but Concerned" bicyclist group. Today, most intersections do not include treatment/markings for bicyclists. The City should continue to advance pilot treatment of intersections and evaluate their effectiveness. Appropriate pilot projects would include the top priority separated bikeways.
Update UDO/Street Design Manual standards	Eng.	RDOT & NCDOT	Per recommendation on page 7-4, update the Street Design Guide to include separated bikeways, neighborhood bikeways, and intersection treatments. Additional information can be found in the Design Guidelines appendix. Also, add bike parking multi-unit residential requirement for long-term parking. See Chapter 7 for more considerations.
Improve portions of the greenway system for commuting	Eng. Enc. Educ.	City Parks, Recreation and Cultural Resources Department, RDOT, BPAC	In order to encourage the "Interested but Concerned" commuter to commute by bicycle, improvements are needed on select segments of the greenway network. Improvements include lighting, user conflict signage, and extending hours of operation. City departments listed here, with the assistance of BPAC, should determine the greenways that are most important to commuters. See page 7-6 for more information.
Expand existing programs and begin new programs	Educ. Enc. Enf. Eval.	RDOT, Parks, Recreation and Cultural Resources, BPAC, advocacy groups, local businesses, residents, private groups	As described on pages 6-9 through 6-12, implement Priority I programs. This includes an expansion of successful, existing programs and the addition of new programs such as Open Streets, women-focused programming, and safety education programs for children. As described in Chapter 6, the emphasis should be placed on reaching low-income, underserved communities.
Maintain bike facilities to keep them usable by bicyclists	Eng.	RDOT	Now that the City bicycle network has expanded so dramatically, it's more imperative to maintain facilities so they are usable by bicyclists. A dedicated sweeping program is one tool. See page 7-7 for more information.
Enforce inappropriate use of bike lanes for parking, leaf litter, etc.	Enf. Educ.	RDOT and other depts.	Throughout this planning process, bicyclists commonly reported the blocking of bicycle lanes with such things as parked cars and leaf litter. A consistent education and enforcement campaign should be implemented to discourage the blocking of bike lanes.

Eng. = Engineering; Educ. = Education; Enc. = Encouragement; Enf. = Enforcement; Eval. = Evaluation

PHASE ONE (2016-2017) ACTION STEPS CONTINUED

Action Step	Type	Partners	Details
Update Bike Raleigh maps	Educ. Enc.	RDOT	Update the printable, brochure map to account for the many miles of on-road bike facilities installed in 2015. Update the online and mobile app versions on a regular basis. In order to accomplish this, maintain the bike facility GIS database regularly.
Continue expansion of bicycle parking	Eng. Enc.	RDOT, Triangle Transit, Capital Area Transit, NCDOT Rail Division	Provide additional short-term bike parking such as typical bike racks, bike corrals, sheltered parking, and event parking. Find opportunities for the installation of pilot long-term parking such as bike stations, cages, and bike lockers. Ensure long-term parking options are provided with Union Station implementation.
Engage business community and other private partners	Eng. Enc.	RDOT, BPAC, advocacy groups	The City and its partners should build relationships with larger, local companies and private foundations to support the development of infrastructure and programs.
Launch count program	Eval.	RDOT	The City should launch an ongoing count program for bicyclists with a focus to capture "before" data on upcoming, near-term implementation projects in order to compare before/after counts. The count program would also begin to count bicyclists on existing facilities.
Initiate PR/marketing campaign	Educ.	The City	The City should initiate a PR/marketing campaign that seeks to educate broader range of residents about facility types and upcoming project implementation.
Conduct internal staff NACTO training	Eng.	RDOT, NCDOT, BPAC	The NACTO Urban Street Design Guide and Urban Bikeway Design Guide are increasingly used across the United States. NACTO has created a program for design trainings for cities across North America. Certified trainers would provide their expertise through a one-day workshop or enhanced event for City and NCDOT staff, answering questions of City staff. The City could consider merging the effort with the City of Durham, Town of Chapel Hill, and other Triangle communities as a cost-savings measure.
Endorse NACTO Urban Street Design Guide and Urban Bikeway Design Guide	Eng.	RDOT, NCDOT, BPAC	Communities across the country are endorsing these design guides including Charlotte, Chattanooga, Atlanta, Nashville, and Memphis. The City of Raleigh, through endorsement, should endorse to show commitment to world-class street design; an endorsement will also continue to push federal and state government to support implementation of these state-of-the-practice strategies.
Brand 1-2 more bicycling routes across the City	Enc. Eng.	RDOT, BPAC	Following on the success of the Art to Heart Corridor, the City should strategically choose 1-2 corridors, such as the Downtown Loop Trail, that connect significant Raleigh destinations. The routes should include bikeways that are suitable for the "All Ages and Abilities" population and will attract visitors and residents alike.
Prioritize Greenway Trail Development	Eng. Eval.	Parks, Recreation, Cultural Resources	Using a process similar to that outlined in chapter 4, prioritize future greenway trail construction, with a focus on areas for which on-street facilities are especially challenging.
Implement bike share	Eng.	RDOT	Per the bike share feasibility study, the City should move to implement the bike share system. Setting aside funding and establishing partners will be critical to this effort.

Eng. = Engineering; Educ. = Education; Enc. = Encouragement; Enf. = Enforcement; Eval. = Evaluation

PHASE TWO (2018-2020) ACTION STEPS

Action Step	Type	Partners	Details
Implement a mix of neighborhood bikeways and separated bikeways from the top projects	Eng.	RDOT & NCDOT	Using lessons learned from the first installation of a separated bikeway and neighborhood bikeway from Phase I, the City should implement more projects from the priority projects defined in Chapter 4. These projects are intended to address the "Interested but Concerned" bicyclist group and should have immediate impact.
Evaluate ridership on new bike facilities, especially separated and neighborhood bikeways	Eval.	RDOT & NCDOT	In order to understand the effectiveness of new separated bikeways and neighborhood bikeways, conduct "after" bicyclist counts (when facility is completed) to compare to "before" bicyclist counts (Phase I action step). In addition, conduct surveys to better understand bicyclist types that are using the facilities and their opinions of the facility. See page 8-13 for more information on performance measures.
Continue implementation of projects through resurfacing	Eng.	RDOT & NCDOT	Implementation of on-road bicycle treatments is most cost-effective as part of a scheduled roadway resurfacing. The City of Raleigh has had tremendous success in the past and should continue to make this a priority.
Re-apply for upgrade in Bicycle-Friendly Community (BFC) status with the League of American Bicyclists (LAB)	Eng. Educ. Enc. Enf. Eval.	RDOT, advocacy groups	After the adoption of this Plan and implementation of new projects and programs, the City should re-apply for an upgrade to silver-level BFC status. See page 8-14 for more information.
Update State of Bicycling in Raleigh report	Eng. Educ. Enc. Enf. Eval.	RDOT, other depts., advocacy groups	The State of Bicycling in Raleigh report should be updated every 2-3 years. The report will account for the increases in the bikeway network along with programmatic additions/improvements.
Expand existing programs and begin new programs	Educ. Enc. Enf. Eval.	RDOT, Parks, Recreation and Cultural Resources, advocacy groups, local businesses, residents, private groups	As described on pages 6-9 through 6-12, implement Phase II programs. This includes an expansion of successful, existing programs and the addition of new programs such as bike tourism development, traffic safety programs such as Vision Zero or 20's Plenty, school education, and a bike advocacy sponsorship or grant program.
Maintain bike facilities to keep them usable by bicyclists	Eng.	RDOT	Continue making maintenance a top priority as the network continues to expand. See page 7-7 for more information.

Eng. = Engineering; Educ. = Education; Enc. = Encouragement; Enf. = Enforcement; Eval. = Evaluation

Action Step	Type	Partners	Details
Evaluate crash data as part of Traffic Safety initiative	Eng. Enf. Eval.	RDOT and Police Department NCDOT	The City should begin an annual mapping evaluation of crash incidences to identify trends and identify possible SPOT improvements. The City should use mapped crash data from this planning exercise as a stating point but work closely with the Police and NCDOT to receive, monitor, and analyze current crash data.
Begin broad evaluation program	Eval.	RDOT	As described on page 8-13, the City should track performance measures to assess successes and failures. This evaluation program will be essential to defining the path forward for City bicycle planning and implementation and feed into future State of Bicycling in Raleigh reports.
Update Bicycle Plan	Eng. Educ. Enc. Enf. Eval.	RDOT, BPAC	The Bicycle Plan should be updated every five years. The process should be initiated in 2020-2021.

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