



FEBRUARY 2021

 CITY of CHARLOTTE

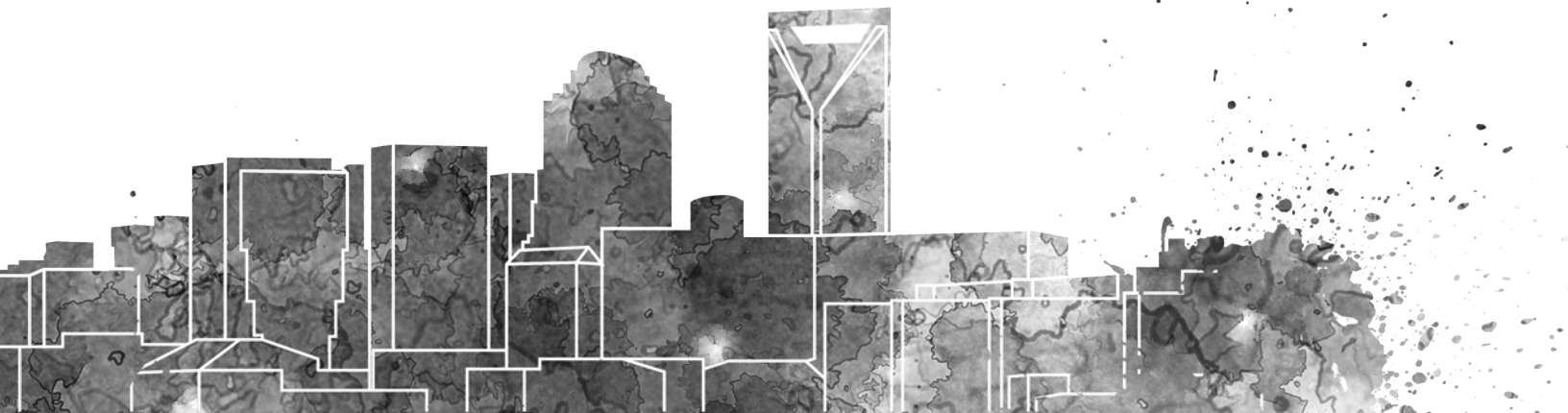
UPTOWN CYCLELINK

FEASIBILITY STUDY & CONCEPT PLAN





In memory of Todd Delk, devoted cyclist, friend, and colleague; and dedicated to the cyclists and pedestrians of Charlotte whose lives have been taken by traffic violence.



CONTENTS

NOTE - This document is an excerpt from a larger multi-year study, the "Uptown Connects Urban Trails Connectivity Study and Uptown CycleLink Concept Plan." Portions of that larger study have been removed here in order to reflect only the most relevant and up-to-date information. The Executive Summary explains the full context of the earlier efforts behind the Uptown CycleLink.



Photo by Grant Baldwin Photography, courtesy of Sustain Charlotte

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EXECUTIVE SUMMARY



With the adoption of the Charlotte BIKES plan in 2017, Charlotte residents and City Council described an aspiration for Charlotte to become a world-class city for bicycling. However, there are currently zero continuous, dedicated facilities for cyclists through Uptown Charlotte, which has the potential to be the most important cycling destination in the Carolinas. In an effort to enhance cycling options into and across Uptown, the Charlotte Department of Transportation (CDOT) and Charlotte Center City Partners teamed to sponsor a study of Uptown bike infrastructure. The study aimed to evaluate options that connect the Cross Charlotte Trail / Little Sugar Creek Greenway System and the Irwin / Stewart Creek Greenway system to destinations within center city Charlotte. The key goals were to **1)** identify a comprehensive Uptown network of bike facilities, **2)** identify a pilot project to implement as the first step in developing that network, **3)** select preferred alignments and advance concept design for the priority bikeways known as the Uptown CycleLink. The study consisted of 2 phases as summarized below:

Phase 1: Uptown Connects Study - The initial phase of the study was completed between May 2016 and July 2017. The first phase vetted all streets in Uptown and identified the best opportunities to create a connected, all-ages-and-abilities bicycle network throughout Uptown. As a result of the Phase 1 work, the 5th/6th Street Cycle Track project was selected as the first project for implementation funding, and the development of the Uptown CycleLink network (studied in Phase 2) was confirmed as the top priority for Charlotte's Bicycle Program.

Phase 2: Uptown CycleLink Feasibility Study and Concept Plan - The second phase of the study was conducted between January 2020 and January 2021 and is summarized in this document. This phase of the study focused on further developing the Uptown CycleLink network. It was conducted at the completion of the 5th/6th Street Cycle Track design and included a detailed feasibility analysis and concept designs for each of the priority bikeway corridors identified in Phase 1.

The Development of Phase 1: Uptown Connects Study - As part of the Phase 1 screening of the Uptown Connects Study, the project team considered numerous types of bike facilities and followed a step-by-step process to evaluate the impacts of implementing an Uptown bike network. The process included data gathering through mobile tours and stakeholder input sessions, evaluation of existing conditions and traffic operations to identify and evaluate candidate corridors, development of a proposed bike network, and the selection of a pilot project to test implementation. Extensive public involvement efforts included meetings with the Charlotte cycling community, interactive public workshops, installation and demonstration of a pop-up cycle track, one-on-one coordination with property owners, and a charrette with key stakeholders. Based on the combined technical analyses and public input, Phase 1 of the Study delivered three key recommendations which are summarized below:

1. Create A Tiered Uptown Bike Network - Creating a true bike network in Uptown Charlotte requires the implementation of a variety of facility types that provide appropriate protection and comfort for cyclists of all ages and abilities. Existing bike facilities in Uptown are limited but provide a clean slate for recommendations that establish a core loop of Tier I separated bike facilities that are then linked and supplemented by the extension of existing Tier II bike lanes. Tier III facilities (sharrows, bike boulevards, etc.) are recommended as local connections on low-volume neighborhood streets or narrow urban streets where shared use is appropriate and will be prioritized.

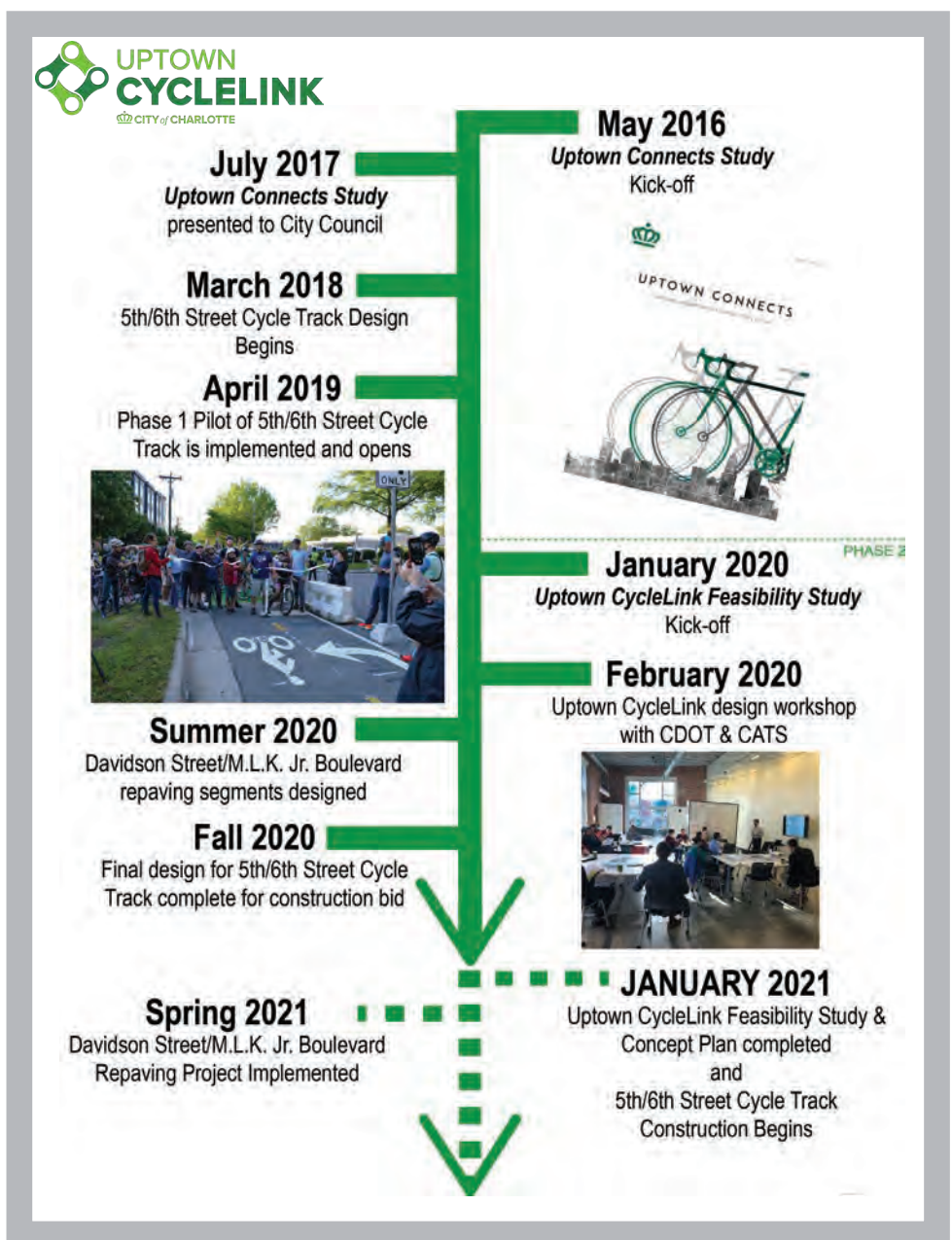
2. Build the 5th/6th Street Cycle Track - As the first step to implementing a complete Uptown bike network, Phase 1 of the study recommended the design and construction of a two-way cycle track along 5th St. and 6th St. connecting the Cross Charlotte Trail / Little Sugar Creek Greenway System and the Irwin / Stewart Creek Greenway system. Vertical and horizontal separation between the cycle track and vehicular lanes are recommended. The cycle track can be implemented within the existing curb lines and will have limited impact on congestion and parking as it crosses the city center. The corridor will serve as a spine for cyclists traveling east/west through Uptown and between the Little Sugar Creek and Irwin Creek greenways. As part of the planning and evaluation of the 5th/6th St. cycle track project, a long-term pilot project was implemented on 6th Street from McDowell Street to the Rail Trail (7th Street Market) in April of 2019. Since then, bicyclist volumes, safety, and comfort on 6th St. have increased with little to no impact on traffic patterns. Construction of the full 5th/6th Street cycle track project is expected to be completed by the end of 2021.

3. Invest in the Belk Greenway Connector - Redevelopment along Stonewall St just north of I-277 John Belk Freeway is transforming the south side of Uptown. The study recognizes the importance and the value of providing a premier connection along this corridor to the existing greenways east and west, the Lynx Blue Line, and major sporting venues like Bank of America Stadium and Truist Field. The originally proposed Belk Greenway sought to create that link with a multi-use trail located between new development and the I-277 freeway with limited street crossings and grade-separated paths across freeway ramps and under overpasses. That original (July 2017) vision for the Belk Greenway Connector has proven to be very capital intensive and likely a longer-term prospect. As a result, the Phase 2: Uptown CycleLink study (completed in January 2021) sought to identify an alternative Belk Greenway Connector alignment that recognizes the constraints associated with ongoing development along the Stonewall/I-277 corridor as well as opportunities that could be achieved in the near term through incremental investments that are more in line with available public funding for capital projects. This resulted in a more immediately feasible vision for the Belk Greenway Connector that is represented in the maps for the Uptown CycleLink alignment in this report.

The Development of Phase 2: Uptown CycleLink Feasibility Study & Concept Plan

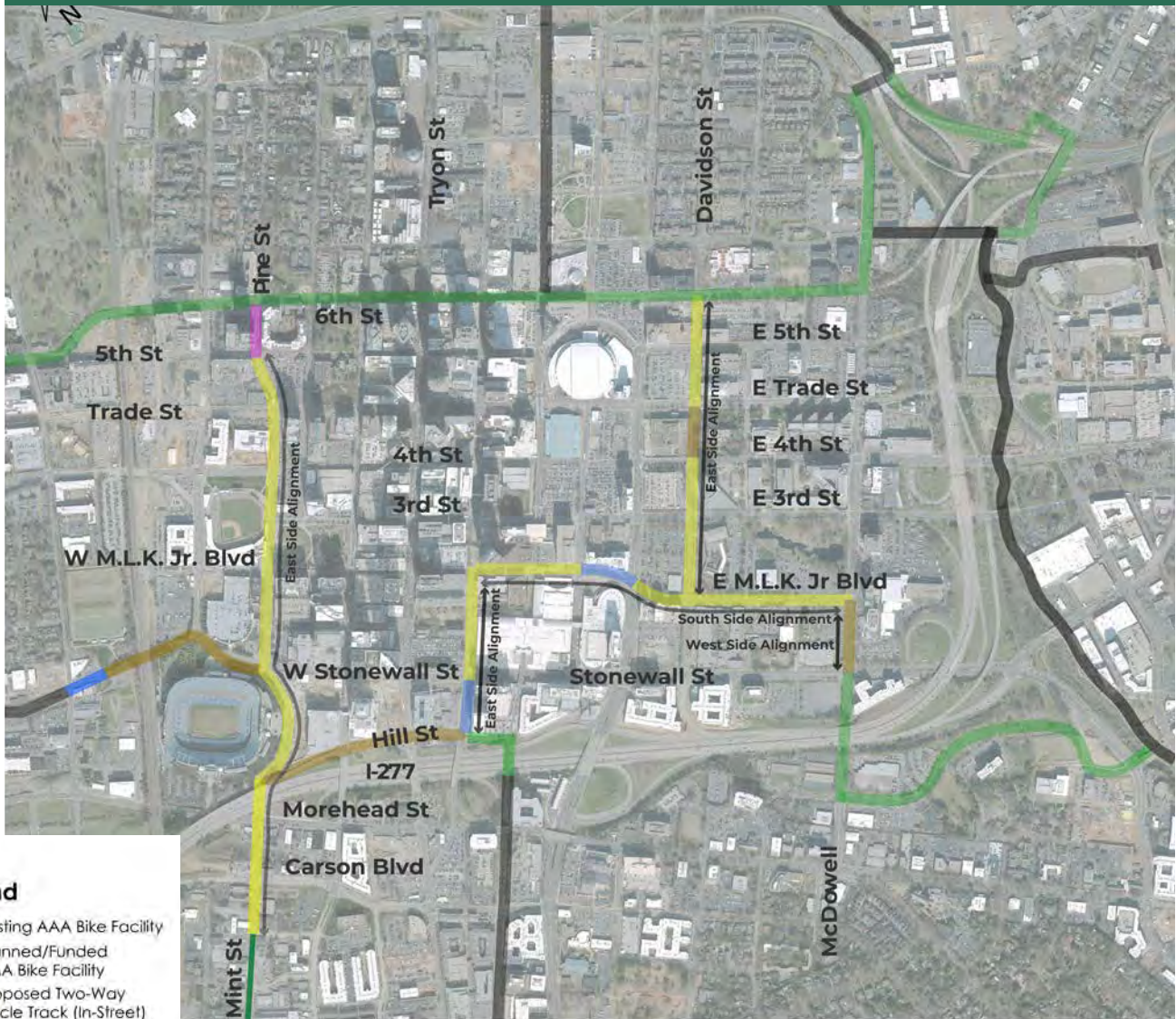
Following the completion of the Uptown Connects Study in 2017, the City allocated funding to build the 5th/6th Street cycle track as the first step towards implementation of the priority bike network. Building on the design and impending construction of the 5th/6th Street cycle track, Phase 2 of the study began to evaluate the feasibility of the remaining corridors recommended to build out the Uptown priority bike network, which has been named the Uptown CycleLink.

The Uptown CycleLink Study's goal is to complete a more detailed feasibility analysis that evaluates the preferred side of the street, facility type, and concept plans for the Uptown CycleLink network. This work will create a "AAA" (All Ages and Abilities) bike network and help support Charlotte's aspiration to become a world-class bicycle city. The study included block-by-block evaluation, design, and coordination with adjacent properties, private development, and city service providers. Based on the feasibility analysis, the project team recommends advancing the Uptown CycleLink network with the alignment and facility types as described in the diagram on the following page.



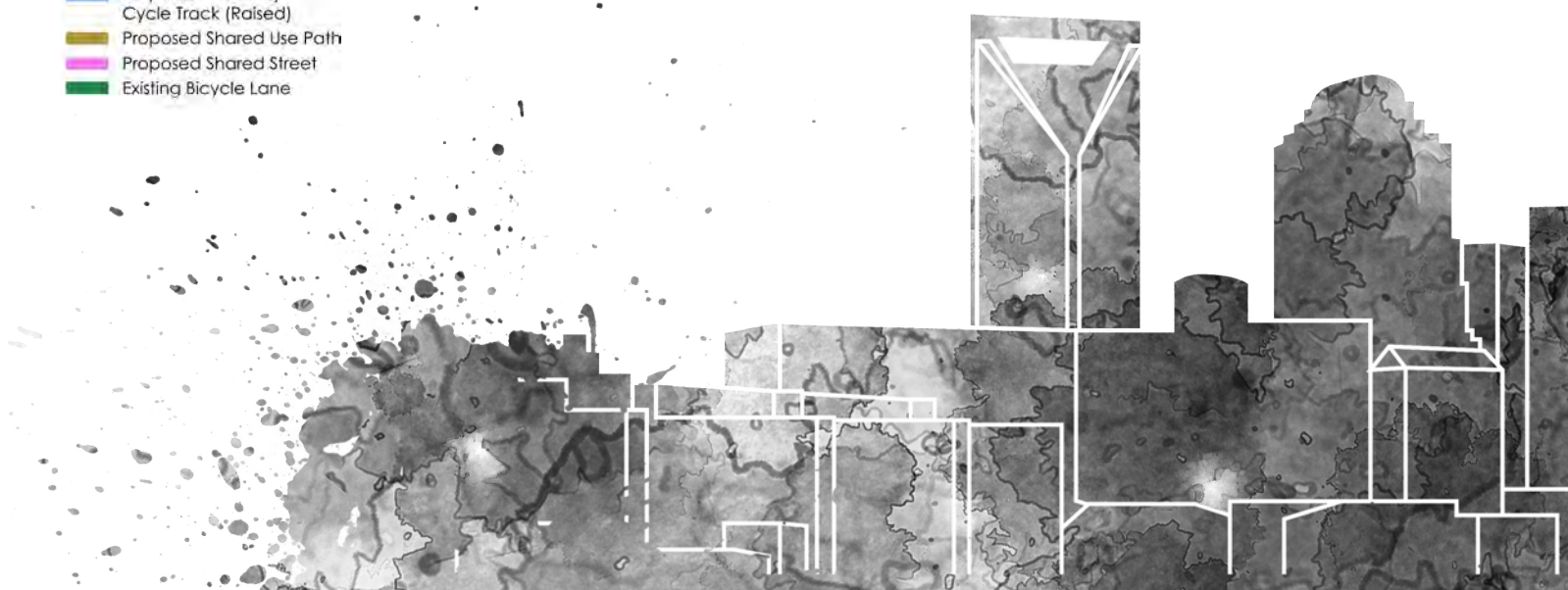
This Uptown CycleLink study includes concept designs for all the corridors in the Uptown CycleLink network, cost estimates, and an implementation phasing plan to build out this critical bicycle network.

UPTOWN CYCLELINK RECOMMENDATIONS



Legend

- Existing AAA Bike Facility
- Planned/Funded AAA Bike Facility
- Proposed Two-Way Cycle Track (In-Street)
- Proposed Two-Way Cycle Track (Raised)
- Proposed Shared Use Path
- Proposed Shared Street
- Existing Bicycle Lane





 CITY of CHARLOTTE



Residents enjoying the 6th St. pilot segment of the Uptown CycleLink in May 2019.

(Photo by Grant Baldwin Photography, courtesy of Sustain Charlotte)



EVENT SIGN
SPECIAL
\$9

BIKE LANE
ENDS

CAROLINA
THREAD
TRAIL



PURPOSE

While Charlotte has made great strides implementing bicycle facilities and greenways throughout the City, there are currently zero continuous, dedicated bicycle facilities through Uptown. Center City Charlotte has the potential to be the largest bicycle commuting destination in the Carolinas. However, the lack of facilities in center city misses an opportunity to connect Uptown to over 40 miles of bike facilities including trail assets like the Cross Charlotte Trail / Little Sugar Creek Greenway system and the Irwin / Stewart Creek Greenway system.

Phase 1 of the Uptown Connects Study identified a proposed network of bicycle facilities in Uptown to expand the all-ages-and-abilities (AAA) bicycle network. Phase 1 also identified the 5th / 6th Street Cycle Track as the first step in developing the network. That project will begin construction in 2021. Phase 2 of the study provides a more detailed analysis to confirm the feasibility, preferred alignment, and concept design for the remaining corridors in the Uptown CycleLink (previously identified as the "Interim Priority Bike Network" - see the map at right from page 38 of the original Uptown Connects Study).

This Uptown CycleLink Study focuses on adding bicycle infrastructure suitable for all ages and abilities along the following corridors in Uptown:

Martin Luther King (M.L.K.) Jr. Boulevard from McDowell Street to College Street

College Street from East Hill Street to M.L.K. Jr. Boulevard

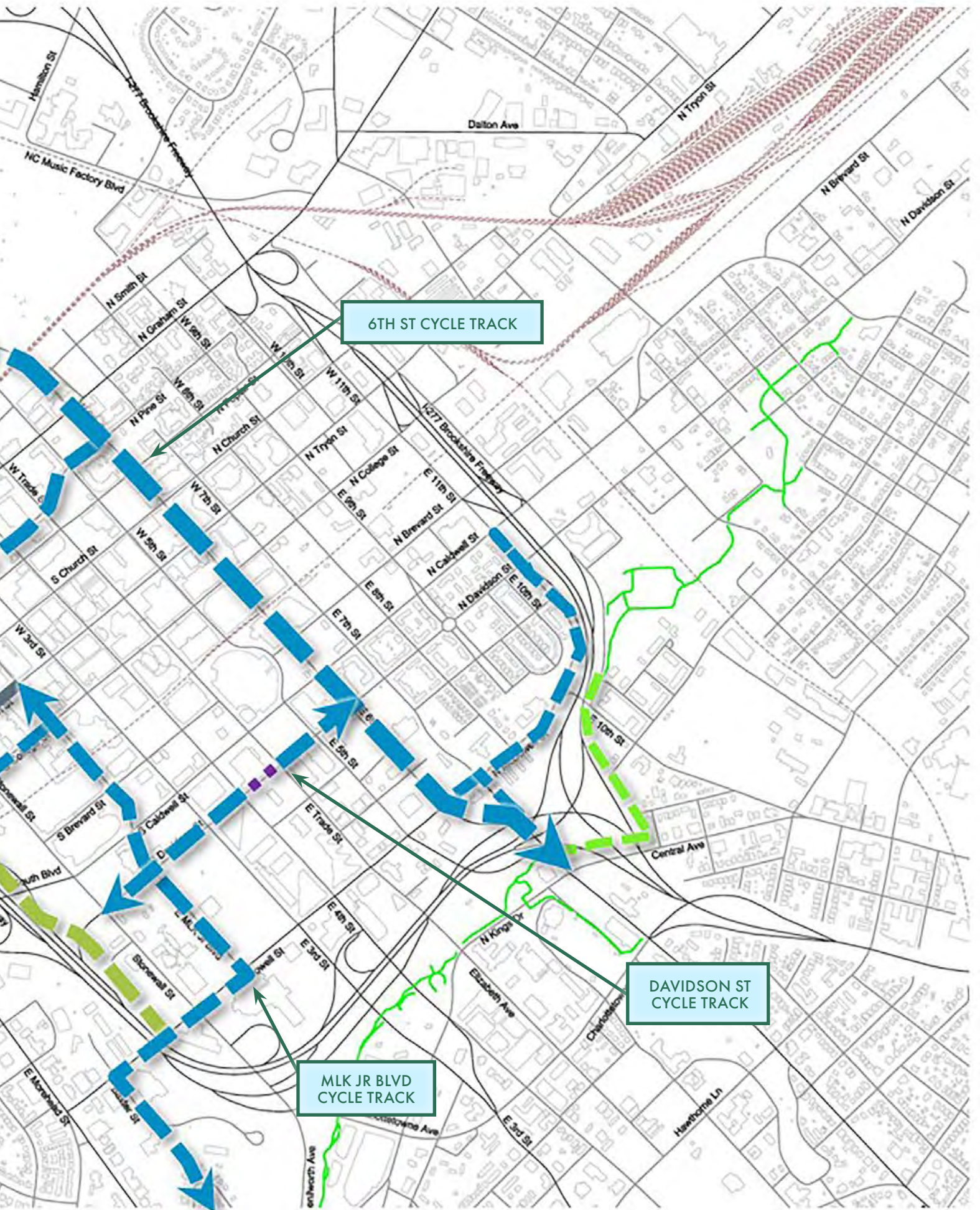
Mint Street/Pine Street from Palmer Street to W 6th Street

Davidson Street from M.L.K. Jr Boulevard to East 6th Street

McDowell Street from East Stonewall Street to M.L.K. Jr. Boulevard

Graham Street & Cedar Yards from Mint Street to Cedar Street





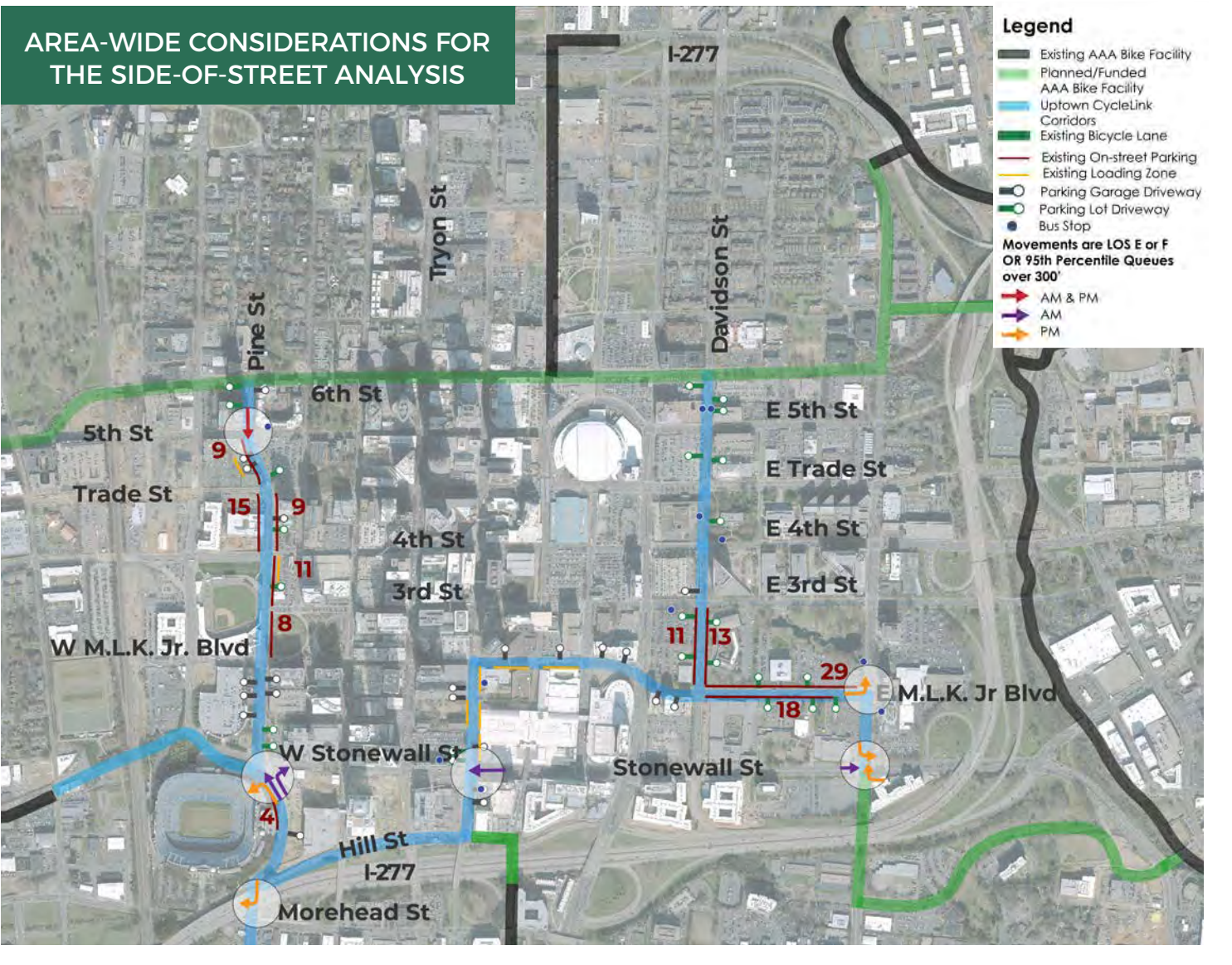
6TH ST CYCLE TRACK

DAVIDSON ST CYCLE TRACK

MLK JR BLVD CYCLE TRACK

DESIGN CHARRETTE

In February 2020, the City hosted an internal design charrette with staff from Charlotte Department of Transportation (CDOT), Charlotte Area Transit System (CATS), the Planning, Design & Development Dept., and the General Services (Engineering) Dept. The purpose was to assess area-wide considerations and identify AAA bicycle infrastructure alternatives and the preferred side-of-street based on the location of existing driveways, parking garage entrances/exits, existing bicycle and pedestrian facilities, on-street parking and loading areas, adjacent land uses, and major destinations along the proposed Uptown CycleLink alignment.





Side-of-Street Analysis

During the charrette attendees discussed strengths and opportunities of various types of bicycle infrastructure and alignments along each corridor. The side-of-street analysis involved an assessment of traffic operations, potential parking impacts, curbside uses, location of parking facilities, location of major driveways and activity centers, existing and proposed trail facilities, and pinch points. The existing conditions along the proposed cycle track corridors were used to inform each corridor-specific facility type and alignment. The existing conditions data used to assist the side-of-street discussion is summarized in the map on the previous page.

The potential impact to on-street parking was also carefully considered. Most of the paid parking that funds Charlotte's parking enforcement is in Uptown, and removal of metered parking spaces has the potential to impact City revenue as well as high-turnover parking access for Uptown businesses. The map on the previous page outlines the current curbside parking as well as the number of driveway conflicts for each block.

Key Findings and Outcomes

The input from the workshop was used to inform the cycle track alignment for each corridor. The workshop discussions revealed fatal flaws and opportunities along each of the corridors that informed the selection of a preferred side of the street for the bicycle facility. The opportunities and fatal flaws that drove the final decisions are summarized on the map to the right and in Table 1, on the following page.

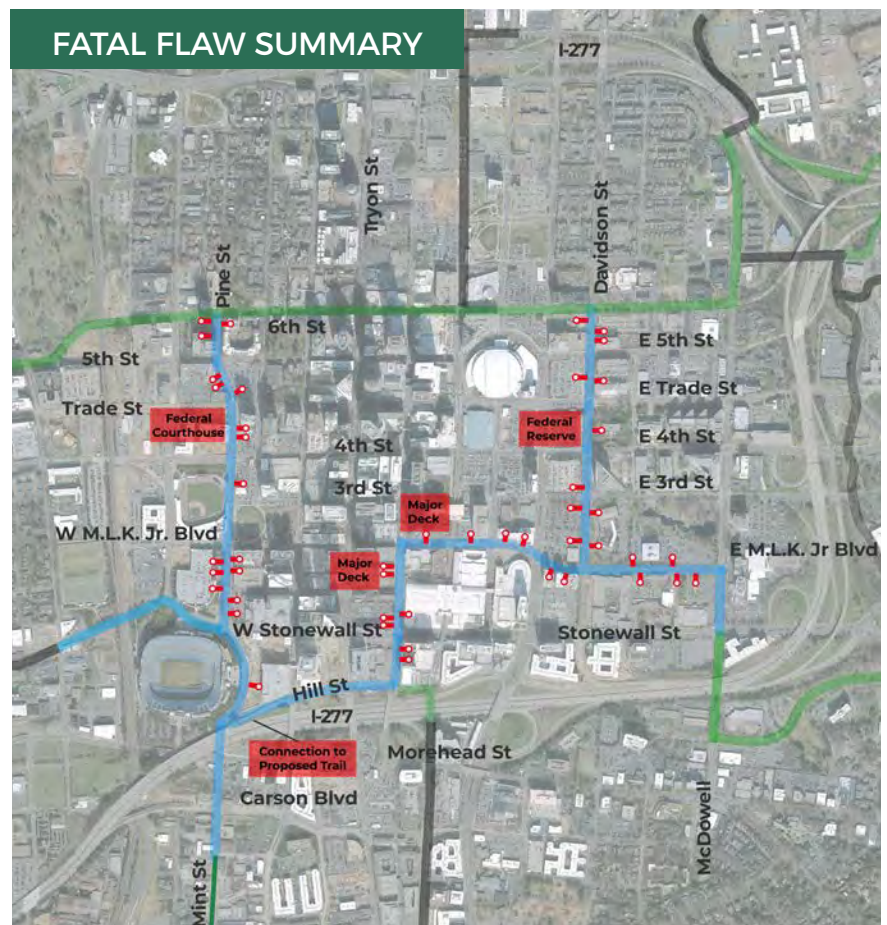


Table 1: Side-of-Street Analysis Summary

Corridor/Side-of-Street		Parking Spaces	Loading Zones	Bus Stops	Key Considerations/Fatal Flaws ¹	Preferred Side-of-Street
Mint Street/ Pine Street	East Side	28	1	0	Ties into Belk Greenway Connector: Better accommodates stadium event operations; Opportunity for placemaking and aesthetic enhancements with the Cycle Track adjacent to Romare Bearden park	East Side
	West Side	28	1	0	Removes parking next to the Federal Courthouse (assumed to be a fatal flaw due to previous conversations with Federal Courthouse regarding parking & security needs); Requires undesirable, and potentially infeasible, transition to tie into the Belk Greenway Connector on east side	
MLK Jr. Boulevard	North Side	33	0	0	Large parking deck at College Street/MLK Jr. Boulevard with visibility challenges	South Side
	South Side	18	2	0	Seamless connection between College Street cycle track and McDowell Street Cycle Track: Leverages existing wide pavement along NASCAR Hall of Fame and provides opportunity to enliven an otherwise underutilized public space	
College Street	East Side	0	3	2	Interaction at bus stops must be mitigated; Opportunity to mitigate traffic impacts by locating shared use path behind the curb south of Stonewall Street; Seamless connection to planned Rail Trail bridge	East Side
	West Side	0	1	0	Two large parking decks; Requires crossing College Street to connect to rail trail bridge	
Davidson Street	East Side	13 11	0 0	1 2	Avoids busy CMGC parking deck access point; Provides direct access for large employment/ government center; Avoids sensitive / secure government facility (Federal Reserve); Requires removing parallel parking in front of First Baptist Church	East Side
	West Side	11	0	2	Requires reconstruction of the sidewalk in front of the Federal Reserve building (security concerns)	
McDowell Street	East Side	0	0	1	Requires crossing McDowell Street twice to connect to Belk Greenway Connector	West Side
	West Side	0	0	0	Smoother connection to M.L.K Jr. Boulevard Cycle track and Belk Greenway Connector alignment south of Stonewall; Provides direct access to the Mecklenburg County Aquatic Center	

¹Fatal flaws are denoted in bold red text.

Identifying Alternatives at Challenging Locations

Charrette participants also discussed design considerations for particularly challenging blocks and intersections. In those difficult locations, participants developed several possible alternatives to be further studied. Curbside impacts, traffic impacts, safety and comfort were used to evaluate the feasibility of the alternatives identified in the charrette. The alternatives identified for further evaluation are described below:

Pine Street Alternatives

- For the Pine Street block between 5th Street and 6th Street, three alternatives were identified:
 - » Alternative 1: Rebuild the west side streetscape to accommodate a one-way, raised climbing lane for cyclists
 - » Alternative 2: Convert Pine Street to one-way southbound to construct an in-street cycle track on the east side
 - » Alternative 3: Rebuild the street as a curbside shared street

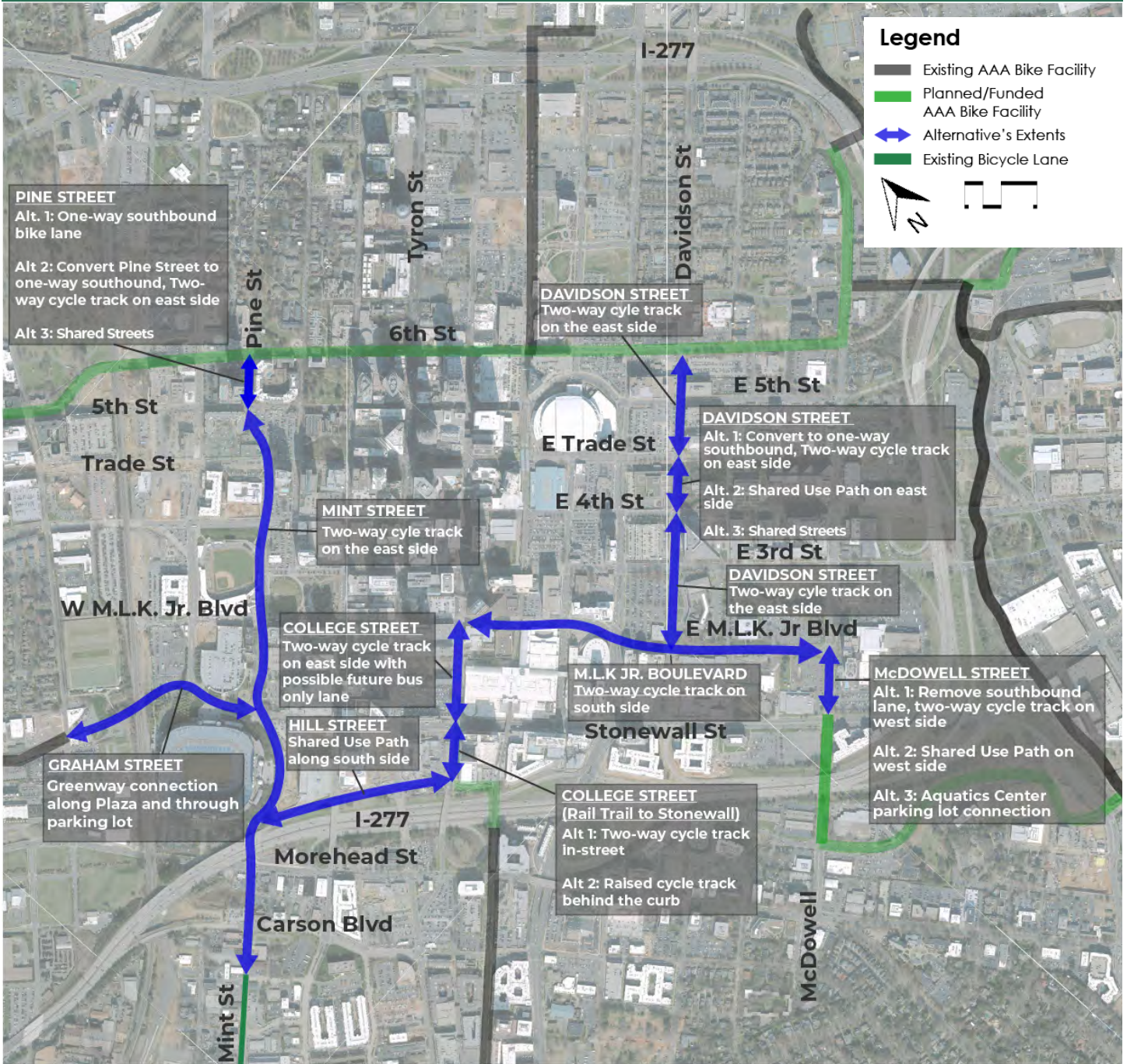
Mint Street at Morehead Street Alternatives

- For the intersection of Mint Street at Morehead Street, three alternatives were identified:
 - » Alternative 1: Replace one northbound through lane with a two-way cycle track in-street
 - » Alternative 2: Remove the southbound dedicated right turn lane to create space for a two-way cycle track in-street
 - » Alternative 3: Move the east side curb and sidewalk to create space for an 11' two-way cycle track in-street

College Street Alternatives

- For the College Street block between Hill Street and Stonewall Street, two alternatives were identified:
 - » Alternative 1: Two-way cycle track in-street - would require road diet
 - » Alternative 2: Raised two-way cycle track behind curb - would require some reconstruction of east side streetscape

UPTOWN CYCLELINK ALTERNATIVES



M.L.K. Jr. Boulevard Alternatives

- For the MLK Jr. Blvd. block between Brevard Street and Caldwell Street, two alternatives were identified:
 - » Alternative 1: Two-way cycle track in-street
 - » Alternative 2: Raised two-way cycle track behind curb

Davidson Street Alternatives

- For the Old City Hall Block between 4th Street and Trade Street, three alternatives were evaluated:
 - » Alternative 1: Convert Davidson street to one-way southbound to construct an in-street cycle track on the east side
 - » Alternative 2: Reconstruct the road and widen the

sidewalk on the east side by 4' to accommodate a shared use path

- » Alternative 3: Rebuild the street as a curbless shared street

McDowell Street Alternatives

- For the McDowell Street block between MLK Jr. Boulevard and Stonewall Street, three alternatives were identified:
 - » Alternative 1: In-street two-way cycle track on the west side- would include southbound road diet
 - » Alternative 2: Widen west side sidewalk to a multi-use path
 - » Alternative 3: Connect the bike facility between MLK Jr. Blvd and Stonewall St. through the Mecklenburg County Aquatic Center parking lot

ALTERNATIVES ANALYSIS

Using the key findings and outcomes developed during the design charrette, the alternatives analysis evaluated several cycle track configurations developed by the City and project team. The alternatives evaluated are summarized below.

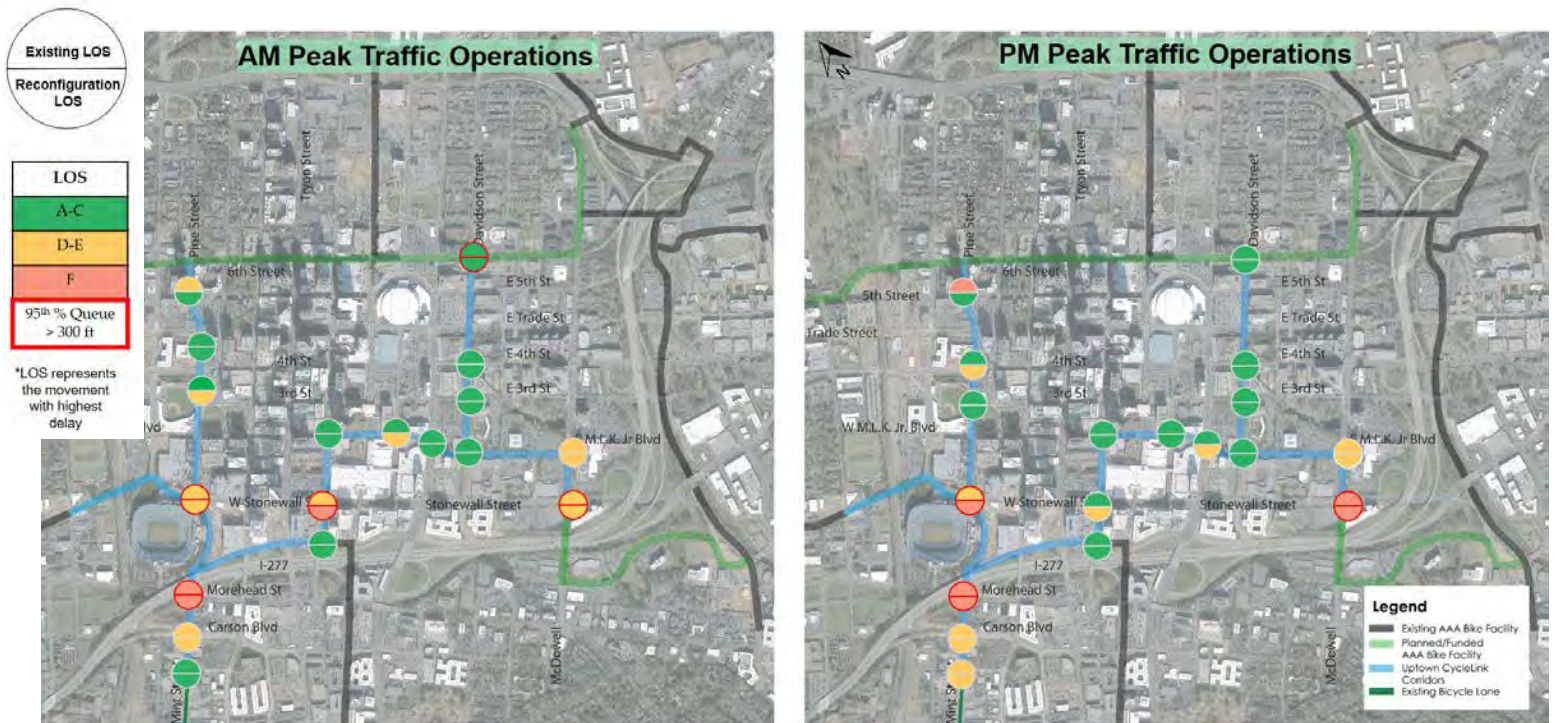
Traffic Operations Impact Screening

The potential impact on traffic operations during the AM and PM peak hour on each corridor was analyzed to identify key intersections where further alternatives analysis mitigation strategies may be warranted. Most of the intersections within the study area operate at acceptable conditions or better in their current condition, with levels of service (LOS) C or better and 95th percentile queues under 300 feet. Since the block lengths in Uptown are relatively short, any intersection queues longer than 300 feet were flagged, and the project team assessed mitigation strategies.

An alternatives evaluation was conducted for each corridor and evaluated based on curbside impacts, traffic operations, safety and comfort, and high-level cost estimates. Table 2, on the following page, summarizes the alternatives for each of the study area corridors. Alternatives in bold text in Table 2 were selected as the preferred alternative for each location.

As a part of the initial assessment of the Uptown CycleLink, potential signal modifications (e.g., timing, phases, geometry) were evaluated at a conceptual level. The Uptown CycleLink Concept Drawings in Appendix A include general notes that specify anticipated signal modifications which may be necessary at various intersections along the alignment to support safe and efficient traffic operations. Final signal phasing, timing, and geometry will be evaluated as a part of the next detailed phase of design for each Uptown CycleLink segment.

The final recommended Uptown CycleLink alignment includes just over 3 miles of new all-ages-and-abilities bicycle facilities, dramatically improving safety and comfort for cyclists traveling into and across Uptown Charlotte. The alignment crosses 23 intersections in Uptown, yet the proposed design creates only two new “Level of Service” F intersections for drivers. While a Level of Service F for drivers is not desirable, it is recognized that it is often necessary in a dense urban environment to prioritize bicyclist/pedestrian safety and comfort, especially to support critical infrastructure like the Uptown CycleLink. By adding a new traffic signal at the intersection of 5th St. and Pine St., it is expected that the Uptown CycleLink project will significantly improve vehicular operations at that location, while also improving bicycle and pedestrian safety and comfort.



Summary of AM (left) and PM (right) Peak Hour Traffic Operations

Table 2: Key Intersection & Blocks Alternatives Analysis

Corridors	Alternatives ¹	Traffic Operations	Safety/Comfort	Cost ²
Pine Street 6th Street to 5th Street (Further study needed between the two alternatives in bold. See page 21.)	Alternative 1: Rebuild the west side streetscape to accommodate a one-way, raised climbing lane for cyclists	●	●	●
	Alternative 2: Convert Pine Street to one-way southbound to construct an in-street cycle track on the east side	●	●	●
	Alternative 3: Rebuild the street as a curbless shared street³	●	●	●
Mint Street at Morehead Street	Alternative 1: Maintain existing curb, remove northbound through lane, add cycle track	●	●	●
	Alternative 2: Maintain existing curb and remove southbound right turn lane	●	●	●
	Alternative 3: Reconstruct east side curb and sidewalk and to create space for an 11' two-way cycle track in-street	●	●	●
College Street Hill Street to Stonewall Street	Alternative 1: Two-way cycle track in-street - would require road diet	●	●	●
	Alternative 2: Raised two-way cycle track behind curb - would require some reconstruction of east side streetscape	●	●	●
MLK Jr Boulevard Brevard Street to Caldwell Street	Alternative 1: Two-way cycle track in-street	●	●	●
	Alternative 2: Raised two-way cycle track behind curb	●	●	●
Davidson Street E Trade Street to E 4th Street	Alternative 1: Convert Davidson street to one-way southbound to construct an in-street cycle track on the east side	●	●	●
	Alternative 2: Reconstruct the road and widen the sidewalk on the east side by 4' to accommodate a shared use path	●	●	●
	Alternative 3: Rebuild the street as a curbless shared street ³	●	●	●
McDowell Street MLK Jr Boulevard to Stonewall Street	Alternative 1: In-street two-way cycle track on the west side-would include southbound road diet	●	●	●
	Alternative 2: Widen west side sidewalk to a multi-use path	●	●	●
	Alternative 3: Connect the bike facility between MLK Jr. Blvd and Stonewall St. through the Mecklenburg County Aquatic Center parking lot	●	●	●

- Significant traffic impacts; Facility is not safe and comfortable for cyclists of all ages and abilities; High cost
- There will be a traffic impact but maintains sufficient LOS and queues do not exceed 300; Facility is safe and comfortable for most riders; Medium Cost
- Little to no traffic impacts; Facility is comfortable for cyclists of all ages and abilities; Low Cost

¹ Alternatives in bold text were selected as the preferred alternative for each corridor.

² Based on opinions of probable costs.

³ A "Shared Street", or "pedestrian-priority street," describe spaces that combine and balance the needs of pedestrians, bicyclists, and low-speed motor vehicles. (PEDSAFE: [Shared Streets](#))

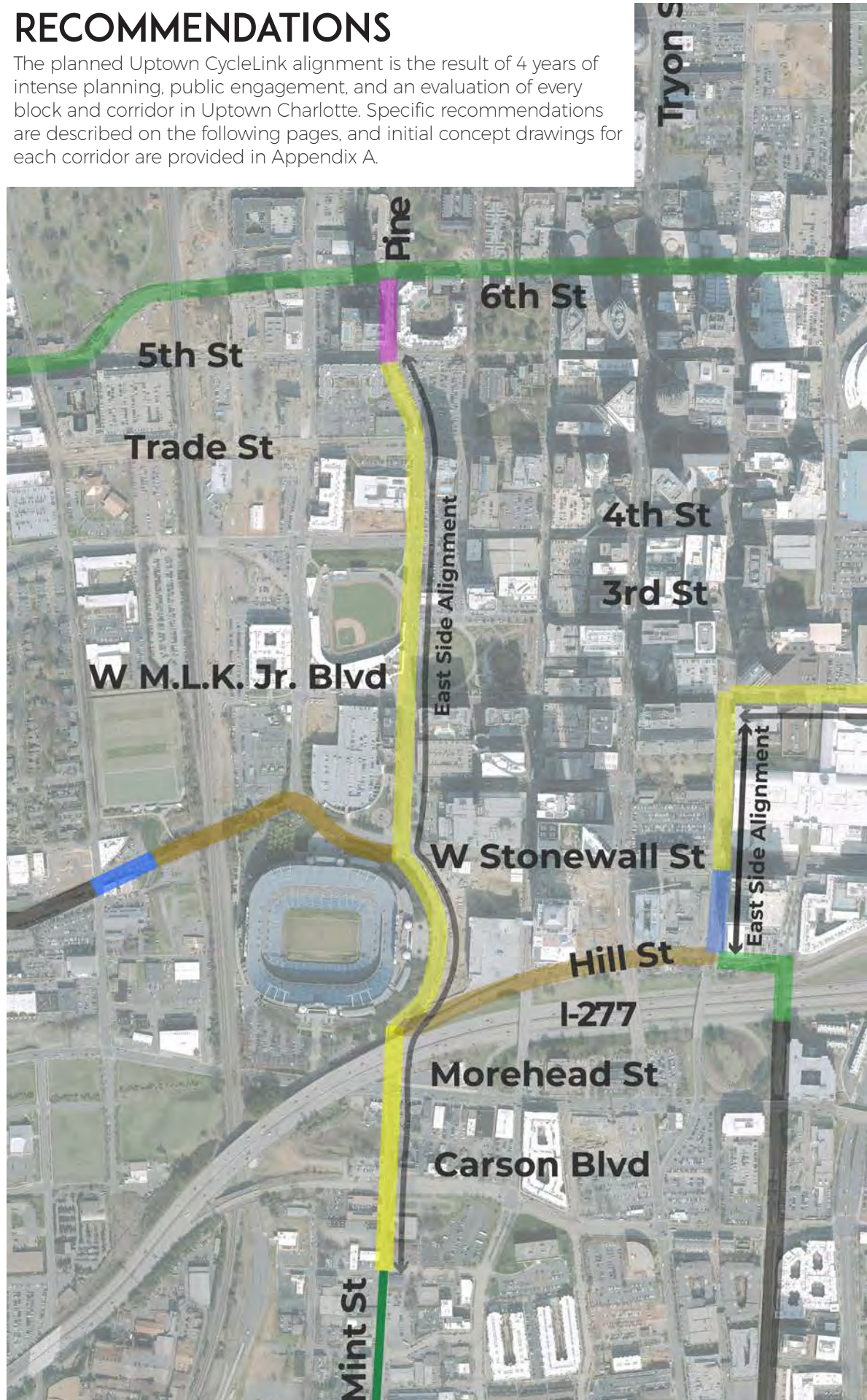
Special Events Considerations

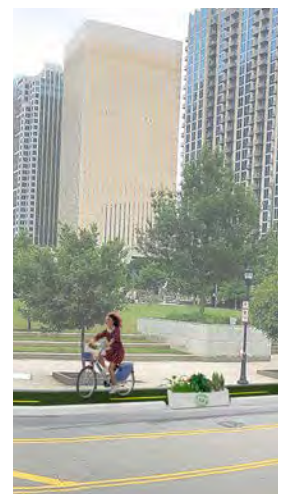
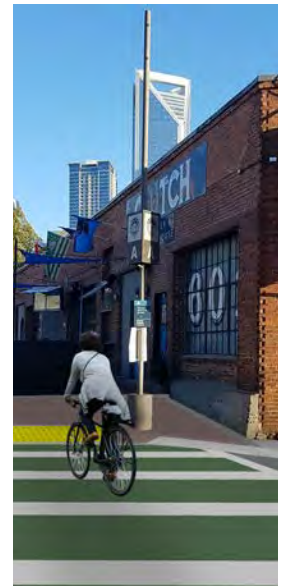
Mint Street is an important corridor for special event operations at Bank of America Stadium and Truist Field. The project team met with CDOT's special events staff to review the impacts of a cycle track on the east side versus the west side of Mint Street. Special event operations for Panther game days include shutting down Graham Street adjacent to the stadium and doing a partial shutdown of Mint Street between Morehead Street and 4th Street. The Mint Street operations along this portion

include repurposing the east curbside lane for additional pedestrian capacity and providing reversible lanes along the west side for traffic to enter and exit the parking garages on Mint Street before and after events. While an alignment on either side of the street would work with special event operations, it was determined that the east side alignment would better support special event operations and could provide the pedestrian overflow space on game days that CDOT usually creates by restricting on-street parking.

RECOMMENDATIONS

The planned Uptown CycleLink alignment is the result of 4 years of intense planning, public engagement, and an evaluation of every block and corridor in Uptown Charlotte. Specific recommendations are described on the following pages, and initial concept drawings for each corridor are provided in Appendix A.





College Street Corridor

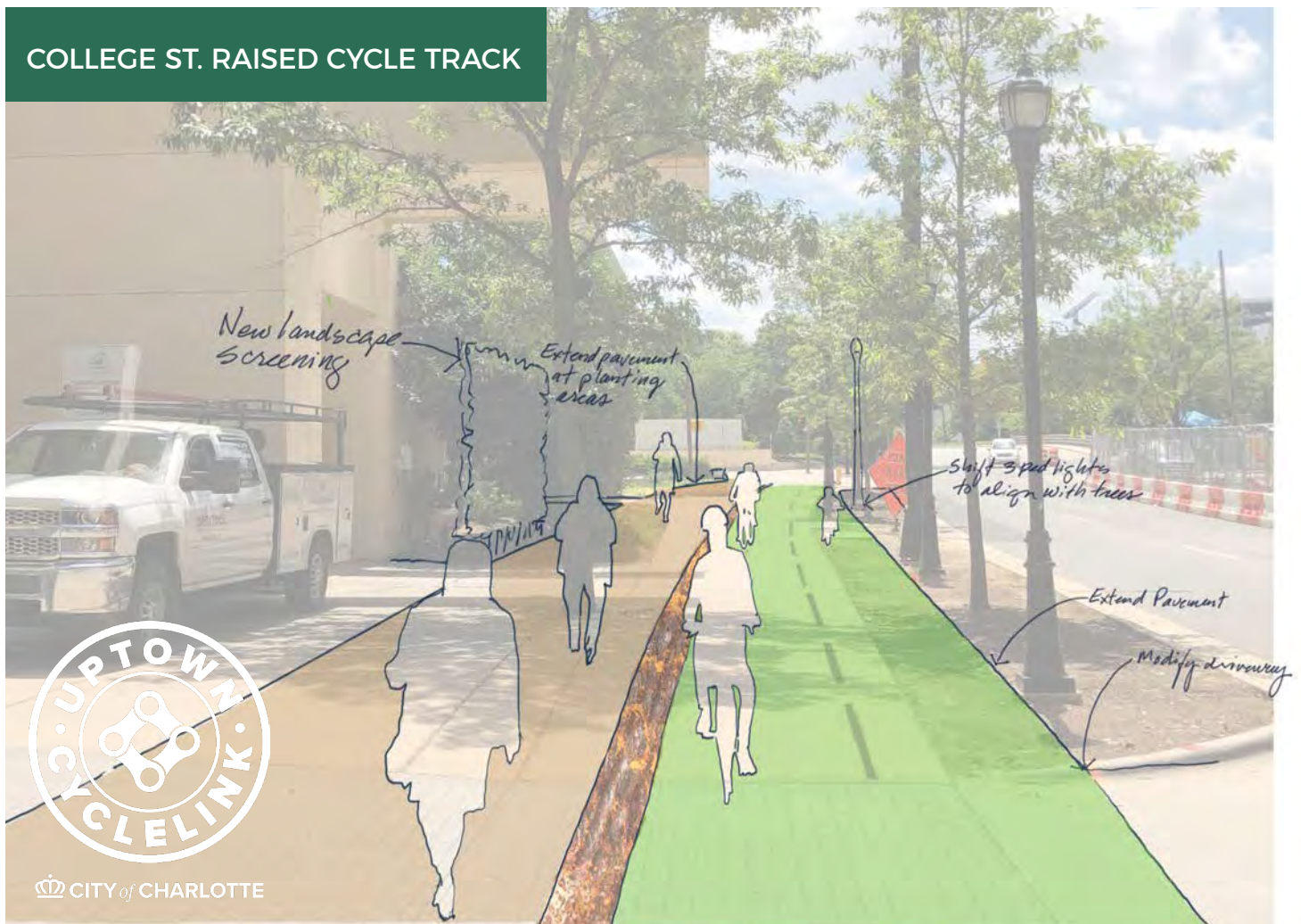
The College Street portion of the Uptown CycleLink is approximately .25 miles between M.L.K. Jr Boulevard and Hill Street. The proposed alignment runs along the east side of College Street and includes a raised two-way cycle track on the block from Hill Street to Stonewall Street, and an in-street two-way cycle track between Stonewall Street and MLK Jr. Blvd. The raised two-way cycle track (Hill Street to Stonewall Street) requires modifying/re-constructing the existing sidewalk. The in-street two-way cycle track from Stonewall Street to MLK Jr. Boulevard will repurpose what is now the east side vehicular curb lane. In addition, the adjacent vehicular lane is identified as a potential bus-only lane in the CATS Center City Bus Priority Strategy.

These proposed improvements will transform the College Street corridor into a more balanced and attractive multi-modal corridor. Similar to multi-modal transportation projects that serve convention centers in cities like Austin, TX, Atlanta, GA and Minneapolis, MN, the College Street portion of the Uptown CycleLink will provide a new front door for the Charlotte Convention Center. This will also calm traffic on College Street and improve pedestrian comfort and safety in a key pedestrian zone for visitors and residents alike. The cycle track will provide a new way for convention-goers to experience and explore Uptown, and the bus only lane will provide efficient transit service for travelers coming to enjoy convention center programming.

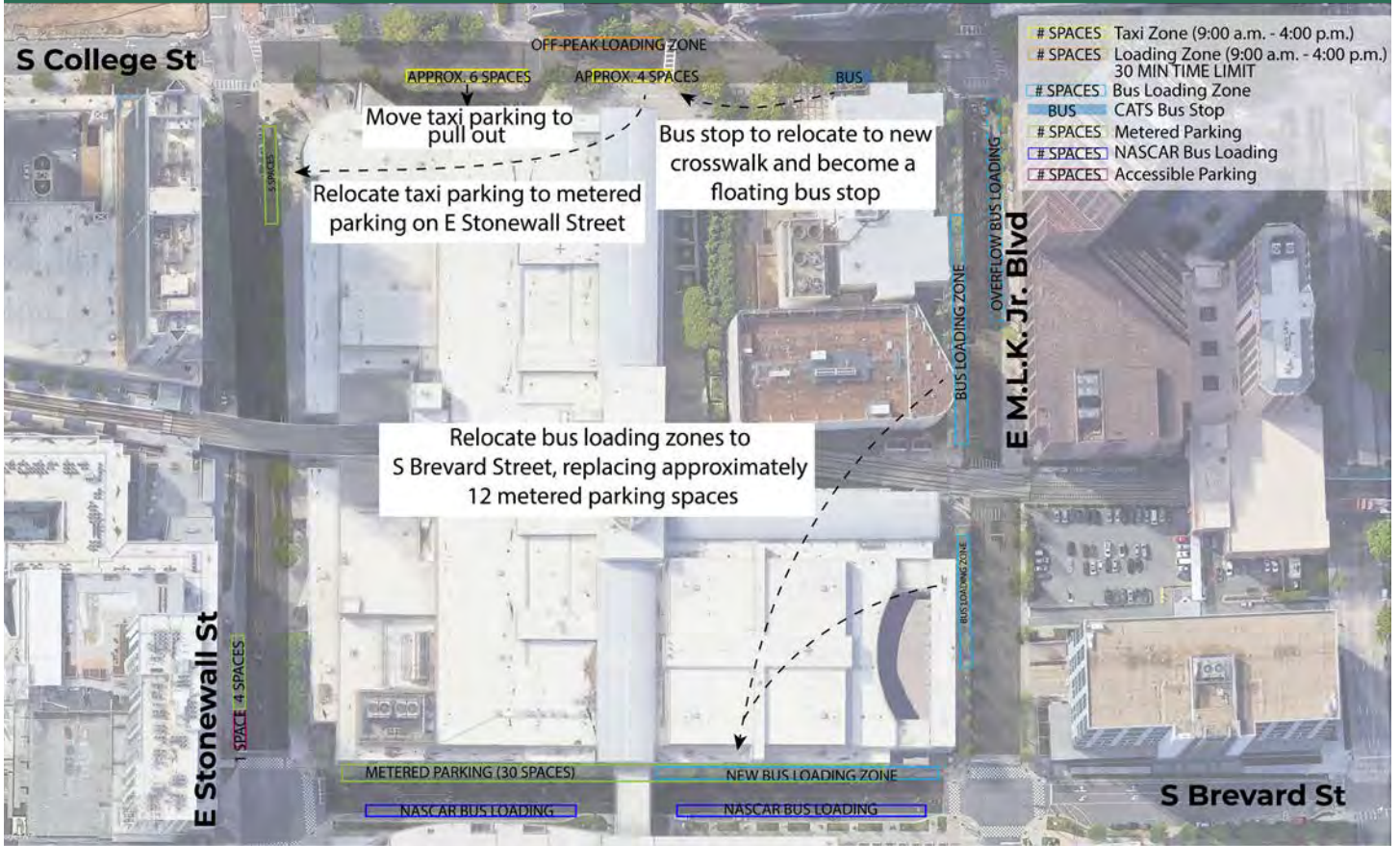
The proposed cycle track connects to the Hill Street multi-use path to the

south, and the proposed south side cycle track along M.L.K. Jr Boulevard. The addition of the two-way cycle track would require moving the existing taxi loading zones adjacent to the Convention Center. A map that summarizes the proposed curbside use changes around the Convention Center block, including relocation of the existing taxi stand, is provided on the following page.

In accordance with current best practice, the raised two-way cycle track from Hill St. to Stonewall St. should include pavement markings to identify the raised bicycle lanes and the sidewalk. This will clearly denote pedestrian space vs. bicycle space within the streetscape, make the raised cycle track more intuitive, and improve safety and comfort for all users.

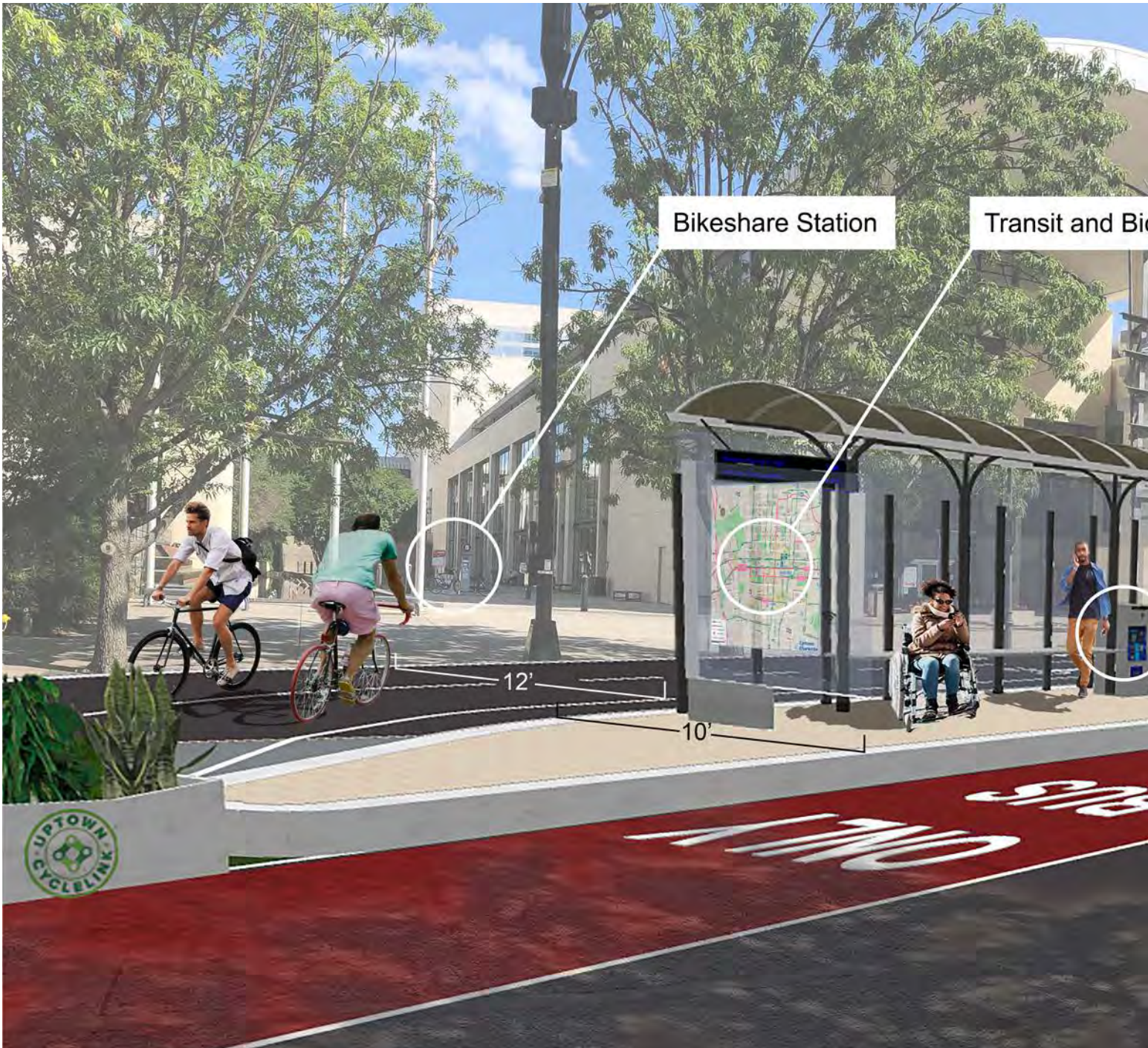


PROPOSED CHANGES TO CURBSIDE USES AROUND THE CONVENTION CENTER



COLLEGE ST. CYCLE TRACK AND BUS-ONLY LANE CONFIGURATION





COLLEGE STREET CYCLE TRACK AND BUS LANE AT CONVENTION CENTER

The College Street portion of the Uptown CycleLink is an especially important link because it will also fill a key gap in the 11-mile Blue Line Rail Trail system stretching from the Arrowood Road Blue Line Station (in south Charlotte) through SouthEnd and Uptown, to the Sugar Creek Blue Line Station and the Cross Charlotte Trail (through north Charlotte). A signature new pedestrian and bicycle bridge over I-277 connecting the existing Blue Line Rail Trail in SouthEnd to the Convention Center in Uptown is scheduled for completion in 2024. That significant

investment will connect directly to the College Street portion of the Uptown CycleLink and link the Uptown and SouthEnd employment, culture, and activity centers in a transformative and fun new way. The College Street portion of the Uptown CycleLink is critical to leveraging that substantial bridge investment so that bicyclists can access Uptown.

Cycle Network Map

Interactive Kiosk & Emergency Call Station

Real Time Transit Information

Bike & E-Scooter Parking

↑ to Rail Trail Bridge over I-277



 CITY of CHARLOTTE

Mint/Pine Street Corridor

The Mint/Pine Street portion of the Uptown CycleLink is approximately 1 mile from Palmer Street to 6th Street. South of Morehead Street, Mint Street is an important bikeway connection to the south with existing bicycle lanes on both sides of the street from Carson Boulevard to West Boulevard. The Uptown CycleLink connection to this corridor could transform Mint Street to a multi-modal corridor that enhances some of Uptown's greatest destinations and assets. Aesthetic enhancements such as planters, concrete medians and art can be integrated in a way that adds placemaking to special attractions along the corridor like Romare Bearden Park, Bank of America Stadium and Truist Field. The corridor also offers potential opportunities to partner with

Mecklenburg County, the Charlotte Knights and the Carolina Panthers to leverage funding and maximize multi-modal access to these destinations.

The following treatments are recommended for the various segments of this corridor:

Pine Street- 5th Street to 6th Street:

Two alternatives are recommended for further evaluation within a more detailed project design process.

Alternative 1 would convert vehicular traffic flow on Pine street to one-way southbound to allow for the implementation of a two-way cycle track on the east side of the street. This alternative implies significant operational challenges for vehicular traffic .

Alternative 2 involves ample traffic calming through a Shared Street treatment. This roadway type has been successfully used in many other cities but should be further evaluated for constructibility in this specific context. (See the examples and details on the following page.) This Shared Street treatment would prioritize pedestrian and bicycle traffic but would allow vehicular traffic in an environment designed to be slow and cautious for all users. (See the proposed concept rendering, below.) It could include raising the street to be level with the existing sidewalk so that walking, biking, traffic and loading activities would be shared throughout the width of the street. This alternative would require substantial reconstruction of the block.

PINE ST. SHARED STREET



EXAMPLES OF SHARED STREETS



Bell Street, Seattle, WA



River Street, Batavia, IL
Photo Credit: John Greenfield



Georgia Street, Indianapolis, IN
Photo Credit: Jerome Alexander Horne



Fayetteville Street, Raleigh, NC

Shared Street Characteristics:

A "shared street" configuration may provide an ideal design solution for segments of streets with the following characteristics:

1. The street must balance a variety of uses (walking, biking, parking/loading, two-way vehicular traffic, festivals, cafe seating, street trees/landscaping, etc.) while prioritizing safety and comfort for pedestrians and cyclists.
2. The available right-of-way and/or curb-to-curb width is too narrow to provide dedicated space for each of the desired uses.
3. The street has a relatively low traffic volume and is intended to operate at a slow speed for all users.

Shared Street Recommendations

- » Textured or pervious pavements that are flush with the curb reinforce the pedestrian-priority nature of the street.
- » Street furniture, including bollards, benches, planters, and bicycle parking, can help define a shared space, subtly delineating the traveled way from the pedestrian-only space.
- » A shared street sign should be used at the entrance to a shared street. In some cases, a modified YIELD TO PEDESTRIANS sign (MUTCD 2B-2) may be added to reinforce the conversion in early stages.
- » Provide tactile warning strips at the entrance to all shared spaces. Warning strips should alert drivers and pedestrians.

(Urban Street Design Guide. NACTO)

MINT STREET CYCLE TRACK AT ROMARE BEARDEN PARK



Mint Street-Morehead Street to 5th Street:

Convert the east side curb lane to an in-street, two-way cycle track. Some key portions of this cycle track segment would be protected with new concrete medians to provide extra protection for cyclists. Other portions would be separated by paint and flex posts.

Mint Street- Palmer Street to Morehead Street:

Reconstruct the east side sidewalk between Morehead Street and Dunbar Street and reconfigure the street space to accommodate the in-street, two-way cycle track as depicted in the street sections at right. Continue the two-way cycle track in street in the eastside curb lane south of Dunbar Street and transition to the existing Mint Street directional bike lanes (one on each side) using the existing traffic signal at Palmer Street.

Note: Mint Street between Morehead Street and Stonewall Street is currently maintained by NCDOT as part of route US-29. It is assumed that the proposed in-street cycle track on Mint Street between Morehead Street and Stonewall Street will not be permitted by NCDOT under their current standards. The City of Charlotte is working with the State to reroute US-29 so that CDOT can take over maintenance control of this portion of Mint Street and construct the proposed cycle track. Initial coordination and feasibility review with NCDOT for this transfer of maintenance is underway. Once all parties agree to terms, the transfer of maintenance will likely take 12-18 months to complete. The earliest that this would be complete is likely sometime in 2022.



Morehead Street to Palmer Transition



Existing Segment 1
Mint Street and Morehead Street



Proposed Segment 1
Mint Street and Morehead Street



Existing Segment 2
Mint Street from Palmer to Dunbar



Proposed Segment 2
Mint Street from Palmer to Dunbar



➔ **Proposed bicyclists transition from cycle track to bicycle lane**

Graham Street and Cedar Yards Corridor

The Graham Street Greenway connector will leverage the plaza in front of Bank of America Stadium (along Graham Street) and create enhancements to the existing trail connection under the CSX tracks and through the Cedar Yards parking lot to create a key connection between the Uptown CycleLink network, the Wesley Heights Greenway connector, and the Third Ward neighborhood. The proposed alignment will install pavement markings in the Bank of America stadium plaza to guide cyclists from the Mint St. corridor to the Cedar Yards area. The proposed alignment will also widen the existing narrow sidewalk through the Cedar Yards parking lot to 17 feet to accommodate a raised two-way cycle track and sidewalk

configuration (see graphic below). This trail connection will enhance a critical pedestrian and bicycle connection from the Third Ward neighborhood and the Irwin/Stewart Creek Greenway system to the Uptown network. It is also the primary, multi-modal connection for the Third Ward and Wesley Heights neighborhoods since there is limited street connectivity across the CSX rail road tracks.



Note: The Lynx Silver Line Light Rail project is currently in design, and there is a possibility the final Silver Line alignment may run through the Cedar Yards area. If that happens, the Silver Line project may provide an opportunity to construct the proposed Cedar Yards portion of the Uptown CycleLink.

Davidson Street Corridor

The Davidson Street portion of the Uptown CycleLink is approximately 0.5 miles from M.L.K. Jr Boulevard to 6th Street. The cycle track reconfiguration proposes replacing the east side curb lane with a two-way cycle track. This facility would provide a critical north-south connection through First and Second Ward. This provides additional multi-modal connection for key destinations, such as the Mecklenburg County Aquatic Center center (via the M.L.K. Jr. Boulevard Cycle Track), the Charlotte-Mecklenburg Government Center, the Federal Reserve, Old City Hall, and affordable housing located in First Ward. The cycle track would also provide multi-modal connectivity to the 6th St. portion of the Uptown CycleLink, the Davidson Street bike boulevard extending north from 6th Street, and the 4th Street Bus-Bike Only lane.

There is a pinch point on Davidson Street between East 4th Street and East Trade Street created by a large heritage oak tree that has been identified for preservation by Charlotte Urban Forestry. As a result, this segment of Davidson is too narrow to accommodate the proposed two-way cycle track while maintaining two-way traffic operations. After reviewing various alternatives, it is recommended that the east side of the street be reconstructed to narrow the existing vehicular lanes to 10 feet and widen the sidewalk to construct a 10-foot shared use path through this pinch point. Appropriate pavement markings should be used to help cyclists and pedestrians transition through this short stretch of shared space and navigate the Uptown CycleLink alignment safely and comfortably.

McDowell Street Corridor

The McDowell Street portion of the Uptown CycleLink alignment includes one block between M.L.K. Jr Boulevard and Stonewall Street. The McDowell Street Corridor will connect the proposed M.L.K. Jr. Boulevard cycle track to the cycle track on Baxter Street / Pearl Park Way and to the Cross Charlotte Trail in Midtown. The existing sidewalk on the west side of the street should be widened into the existing grass slope by the Aquatic Center parking lot to accommodate a multi-use path with a 14-foot minimum desired

DAVIDSON STREET CONNECTION TO THE 6TH STREET CYCLE TRACK



MCDOWELL STREET EXISTING CONDITION



STONEWALL STREET AT I-277 UNDERPASS



width. The exact shared use path width will be determined through additional engineering study based on slope stability. Because the width of the multi-use path will likely be constrained, pedestrian fencing along the curb line is recommended to provide additional comfort between pedestrians/cyclists on the multi-use path and moving traffic. (See the example above of pedestrian fencing on Stonewall St. at I-277.) Similar to other sections of multi-use path along the Uptown CycleLink alignment, appropriate pavement markings are recommended to help guide cyclists and reinforce the shared-use nature of this specific segment.

MLK JR. BLVD. RAISED CYCLE TRACK



Martin Luther King Jr. Boulevard Corridor

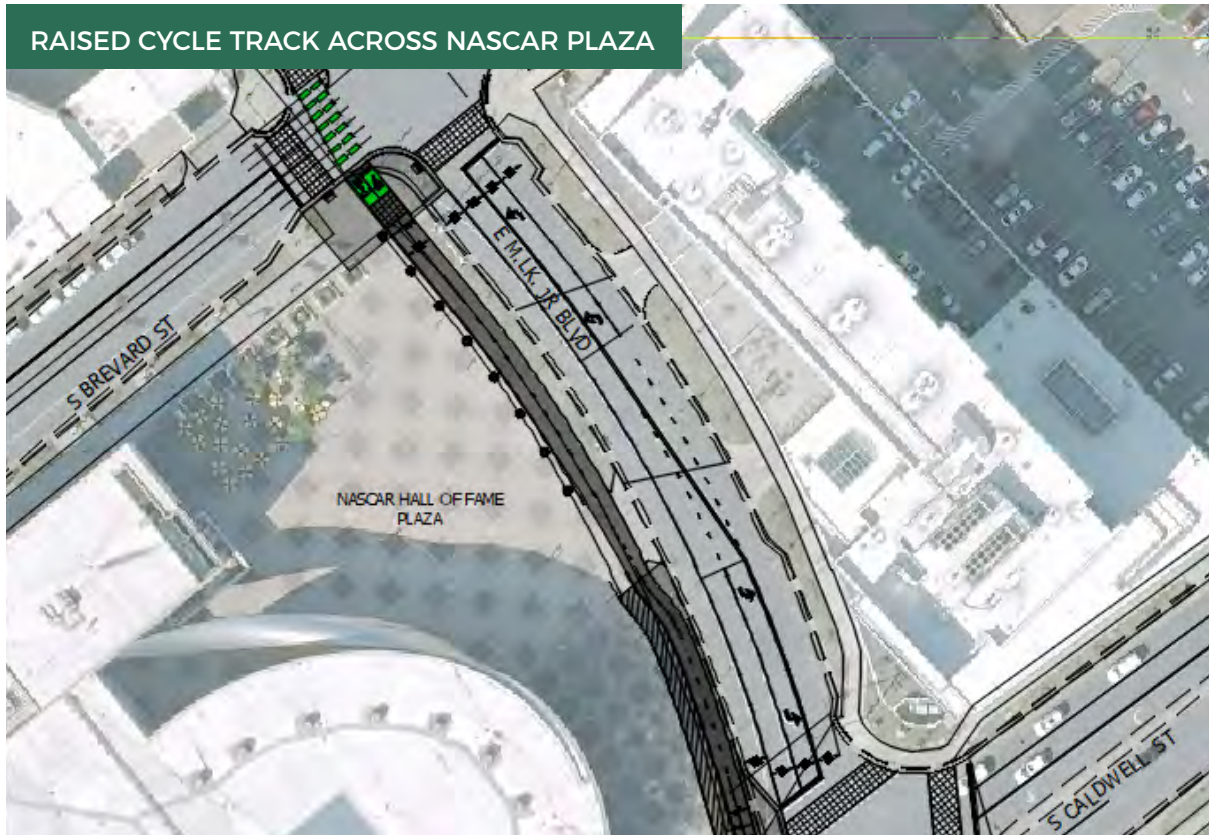
The M.L.K. Jr Boulevard portion of the Uptown CycleLink is approximately 0.6 miles from College Street to McDowell Street. A two-way cycle track is recommended for the south side of the street, utilizing the south side curb lane. On the block of MLK Jr. Blvd. in front of the NASCAR Hall of Fame (Brevard St. to Caldwell St.), the bikeway will transition into a raised cycle track configuration in the plaza space behind the curb. This will allow the south side curb lane on that block to continue to be used for NASCAR Hall of Fame and Convention Center bus loading. It will also enliven an Uptown plaza space which is typically vacant and unused. This can be done with minimal aesthetic and operational impacts to the plaza, by adding pavement markings, signage, and planters to delineate separate paths for pedestrians and cyclists through the plaza. The winter ice skating rink, NASCAR events, and other festivals will still be able to be held in the plaza as they are now.

This corridor creates a critical east-west connection through the south side of Uptown. It is a key part of the reimagined Belk Greenway Connector alignment, and it provides connectivity to the College Street cycle track and the Davidson Street cycle track. This corridor also provides multi-modal connectivity to key Uptown destinations such as the Convention Center, the Blue Line Convention Center Station, the NASCAR Hall of Fame, the Metro School, and the Mecklenburg County Aquatic Center.

In accordance with current best practice, the raised two-way cycle track from Brevard St. to Caldwell St. should include pavement markings to identify the raised bicycle lanes and the sidewalk. This will clearly denote pedestrian space vs. bicycle space within the streetscape, make the raised cycle track more intuitive, and improve safety and comfort for all users.



RAISED CYCLE TRACK ACROSS NASCAR PLAZA



Belk Greenway Connector- Hill Street

The original (July 2017) vision for the Belk Greenway Connector has proven to be very capital intensive and likely a longer-term prospect. As a result, City staff have been working to achieve an alternative alignment that capitalizes on the rapid ongoing development along the Hill St./I-277 corridor. Along Hill St. between College St. and Mint St., the city has invested in two public private partnerships to begin implementation of the Uptown CycleLink in this area. The final Uptown CycleLink configuration in this area will be as follows:

College St. to Tryon St.:

Shared-use path on the south side of Hill St. (Currently under construction through a public private partnership).

Tryon St. to Church St.:

Shared-use path on the south side of Hill St. (Design is complete. Awaiting future funding allocation for construction of shared-use path.)

Church St. to Mint St.:

Shared-use path between the Legacy Union parking deck and the I-277 on-ramp. (Rough grading and construction

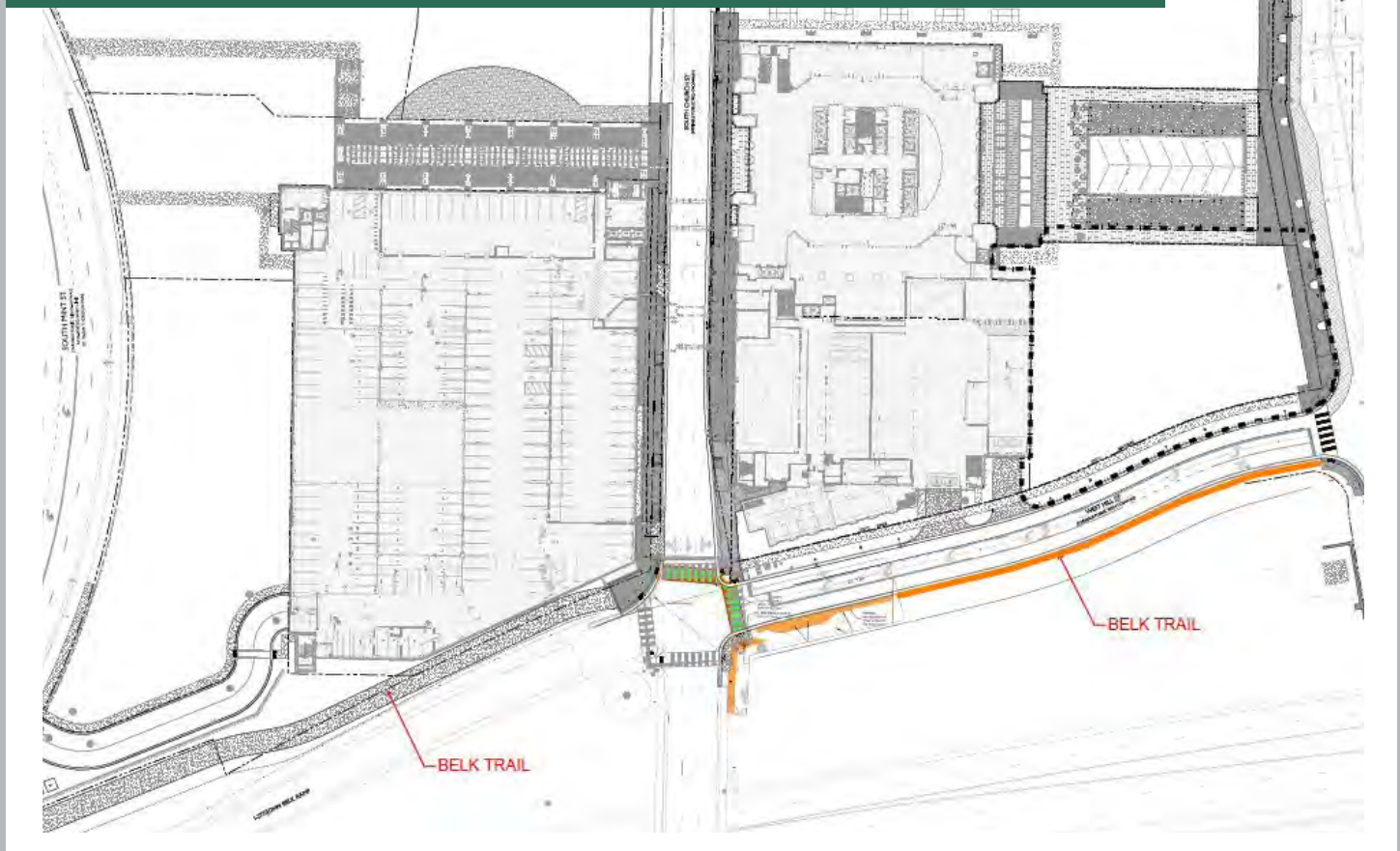
of a retaining wall to accommodate the Uptown CycleLink has been completed through a public private partnership. Awaiting future funding allocation for construction of shared-use path.)

As a result of this development coordination over the past 18 months, this 3-block stretch of the Uptown CycleLink is "shovel-ready" and poised for quick implementation when funding becomes available.

Bicycle and E-Scooter Parking Areas

As a part of the final design for the various segments of the Uptown CycleLink, future project teams should include bicycle and e-scooter parking areas. It is anticipated that the Uptown CycleLink will become a key corridor for people riding e-scooters. Bike racks and e-scooter corrals should be frequent and provide convenient access to major building entrances and points of exchange with other transportation networks, like bus stops, light rail stops, and greenway entrances.

BELK GREENWAY CONNECTOR ALONG HILL STREET BETWEEN TRYON STREET AND MINT STREET



Stakeholder Engagement

Substantial public engagement was conducted during the initial Uptown Connects phase of the study. Over the course of this Phase 2 study, there has been diligent additional outreach and coordination to engage stakeholders and partner agencies in the development of the Uptown CycleLink concept. A list of the stakeholder outreach that took place over the course of the study is at right. It includes field meetings, coordination with partner City agencies, outreach to stakeholders along the corridors, and public engagement. The City will continue diligent outreach and coordination through final design and implementation.



Sustain Charlotte Shifting Gears Event. Photos by Grant Baldwin Photography, courtesy of Sustain Charlotte

LIST OF STAKEHOLDER ENGAGEMENT

- Field Tour (CDOT Planning & Design) - 1.26.20
- CDOT Special Events (BofA Stadium Events - Mint St.) - 1.28.20
- College St. / 3rd St. / MLK Jr. Blvd. Field Review (CDOT Planning & Design) - 2.12.20
- CRVA (College St. & MLK Jr. Blvd.) - 2.18.20
- Uptown Resurfacing & Hill St. Opportunities (CDOT Planning & Design) - 2.24.20
- Internal City Charrette (CDOT, CATS, General Services, CATS, Planning) - 2.28.20
- Hill St. Coordination (CDOT, Crescent) - 3.10.20
- Hill St. Coordination (CDOT, Lincoln Harris) - 3.17.20
- Phone Call with Executive Pastor at First Baptist Church of Charlotte - 3.17.20
- Email Correspondence with Executive Pastor at First Baptist Church of Charlotte - 3.20.20
- CRVA (Rail Trail + Convention Center) - 3.25.20
- Cedar Yards Connection (CDOT, Planning, CATS, Foundry LLC) - 3.27.20
- Metro School: Email Notification to Principal Dyson - 3.30.20
- Hill St. Coordination (CDOT Land Development, Planning & Design) - 4.8.20
- Center City Partners: Presentation to 2040 Vision Plan Team - 4.30.20
- CRVA (Rail Trail + Convention Center) - 5.8.20
- Potential Gate Arm for 6th St. & MLK Jr. Blvd. (CDOT, General Services, CATS, HNTB) - 5.15.20
- Alternatives Analysis (CDOT P&D, Engineering & Operations, Public Service, CATS) - 5.13.20
- Alternatives Analysis (CDOT Planning & Design, Engineering & Operations) - 5.22.20
- Presentation to Charlotte Bicycle Advisory Committee - 5.26.20
- Hill St. Coordination (CDOT, Crescent) - 6.2.20
- CDOT Special Events (Arena & Convention Center Events - MLK Jr. Blvd. & College St.) - 6.8.20
- Presentation to Mecklenburg County: Greenway/Trails Advisory Council - 6.8.20
- Phone Call with Mecklenburg County Aquatic Center Director - 6.9.20
- Sustain Charlotte: Public Presentation at Shifting Gears Online Event - 6.10.20
- CRVA (Rail Trail + Convention Center) - 6.10.20
- Field Tour (CDOT Planning & Design) - 6.12.20
- Field Meeting with Mecklenburg County Aquatic Center Director - 6.26.20
- Email Correspondence with Meck. Co. Recreation Superintendent, Central Parks Manager, and Greenways Staff - 7.1.20
- Metro School: Email Notification to Principal Dyson - 7.9.20
- Metro School: Phone Call with Principal Dyson - 8.20.20
- Metro School: Email Correspondence with Principal Dyson - 8.31.20
- Coordination with CDOT Land Development - 10.12.20
- Update to Charlotte Center City Partners - 10.21.20
- Update to CDOT Leadership - 11.4.20

IMPLEMENTATION (PHASING APPROACH)

Based on project cost, priority, and available funding, a phased approach to funding and construction was applied to develop an implementation plan for the Uptown CycleLink project. Table 3 shows a four-phase approach to project implementation. Phase 0 and Phase 1 projects have already been funded and the design/ construction process is currently underway. The remaining corridor projects are not funded for construction at this time.

Opinions of Probable Cost

The costs listed below are planning level estimates only using rough assumptions for typical costs of similar projects. These opinions of probable cost serve as a useful starting point for programmatic funding requests to support more detailed planning, design, and implementation efforts, but they are not intended to portray estimated project budgets. The City will establish specific cost estimates and project budgets for individual projects during the planning phase of project implementation. The opinion of probable cost to plan, design, and construct the remainder of the Uptown CycleLink network is \$28 M.

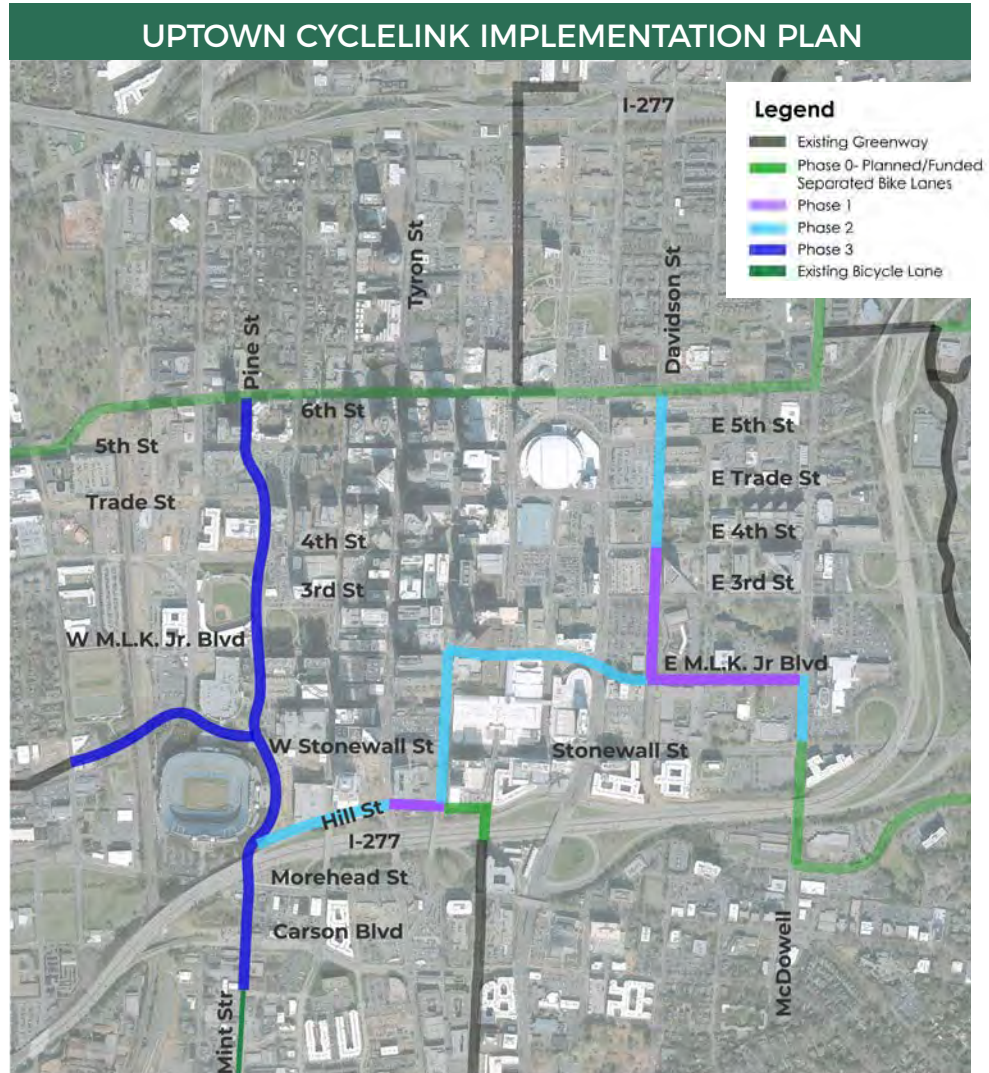
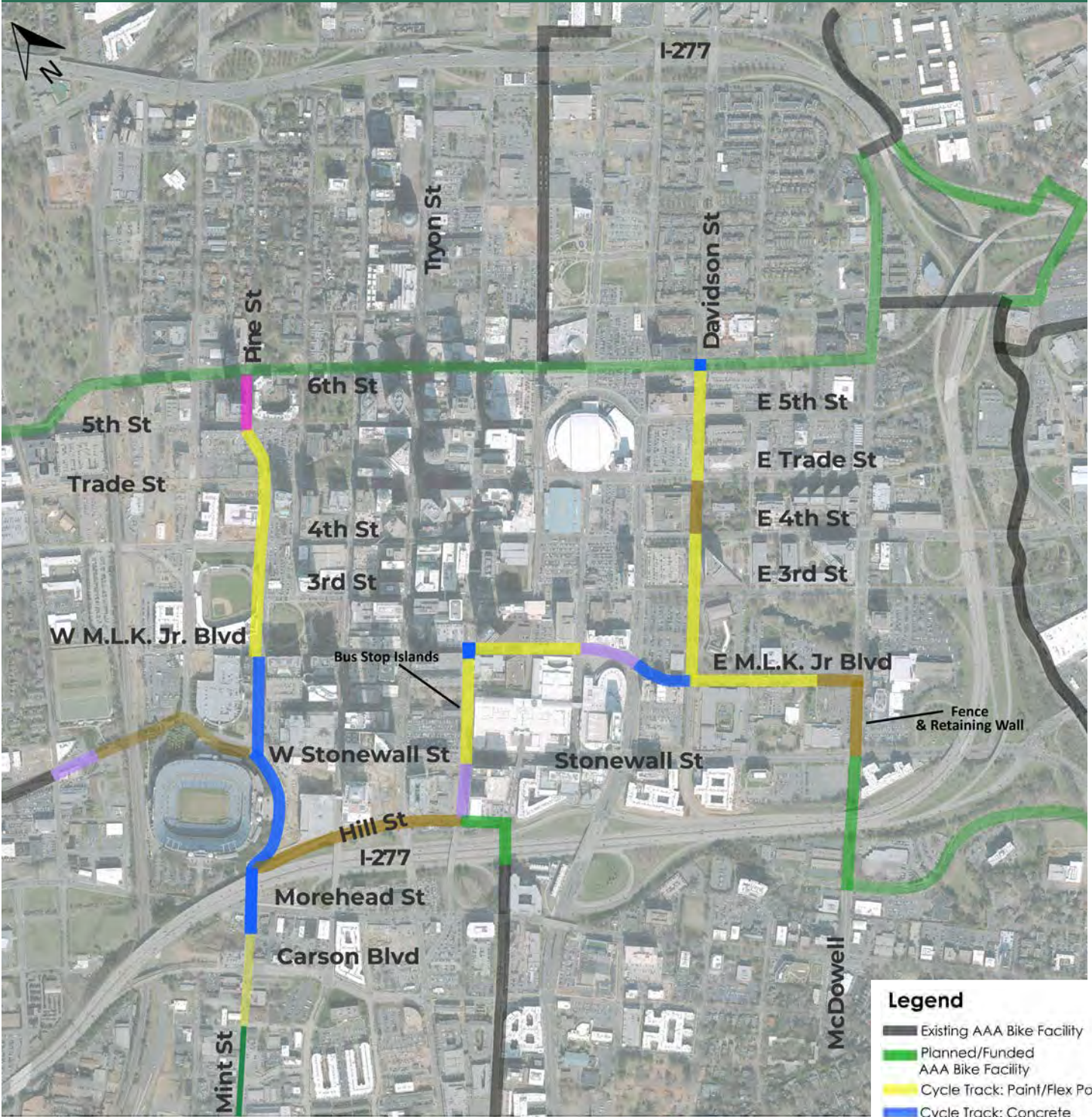


Table 3 Implementation Plan & Opinions of Probable Costs Summary

Phase	Project/Segment	Year	Funding Status	Total Project Cost	Total Phase Cost
Phase 0	5th/6th Street Cycle Track	2021	Funded	-	-
Phase 1	Davidson St (MLK to 4th Street) and MLK (Davidson to McDowell)	2021-2022	Funded - Resurfacing	-	-
	Hill Street - Tryon to College Street		Funded - Developer Reimbursement Agreement	-	
Phase 2	College Street- Hill Street to M.L.K Jr. Boulevard	2022-2025	Unfunded	\$2,364,000	\$13,946,200
	Martin Luther King Jr. Blvd- College Street to Davidson Street			\$1,646,900	
	Davidson Street- 4th Street to 6th Street			\$4,887,000	
	McDowell St- E Martin Luther King Jr Boulevard to Stonewall Street			\$3,038,600	
	Hill Street- Tryon Street to Mint Street			\$2,009,700	
Phase 3	Mint Street/ Pine Street - Palmer Street to 6th Street	2025-2027	Unfunded	\$11,734,200	\$13,820,300
	Graham Street Greenway - Mint Street to Cedar Street			\$2,086,100	
Uptown CycleLink Opinion of Probable Costs Total:					\$27.8 Million

*Cost estimate analysis and assumptions are included in Appendix B, including the preferred physical separation type and bike facility type. The bond look-ahead request for phase 2 is submitted for the 2022 bond cycle.

RECOMMENDED FACILITY TYPES AND TREATMENTS FOR COST ASSUMPTIONS



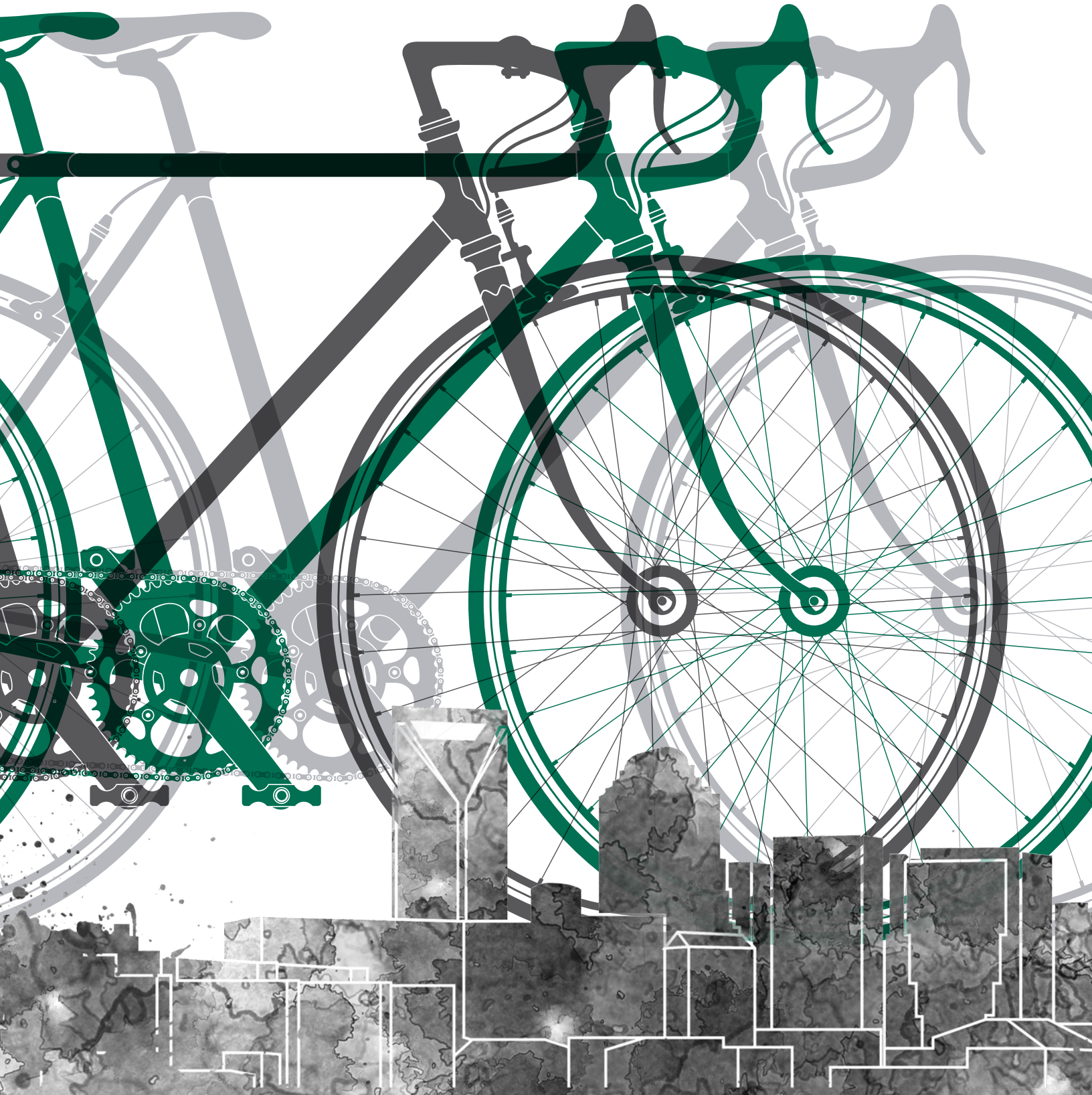
Legend

- Existing AAA Bike Facility
- Planned/Funded AAA Bike Facility
- Cycle Track: Paint/Flex Posts
- Cycle Track: Concrete Median
- Cycle Track: Raised
- Shared Street
- Shared Use Path
- Existing Bicycle Lane



UPTOWN CYCLELINK

 CITY of CHARLOTTE



APPENDICES

A CONCEPT DRAWINGS

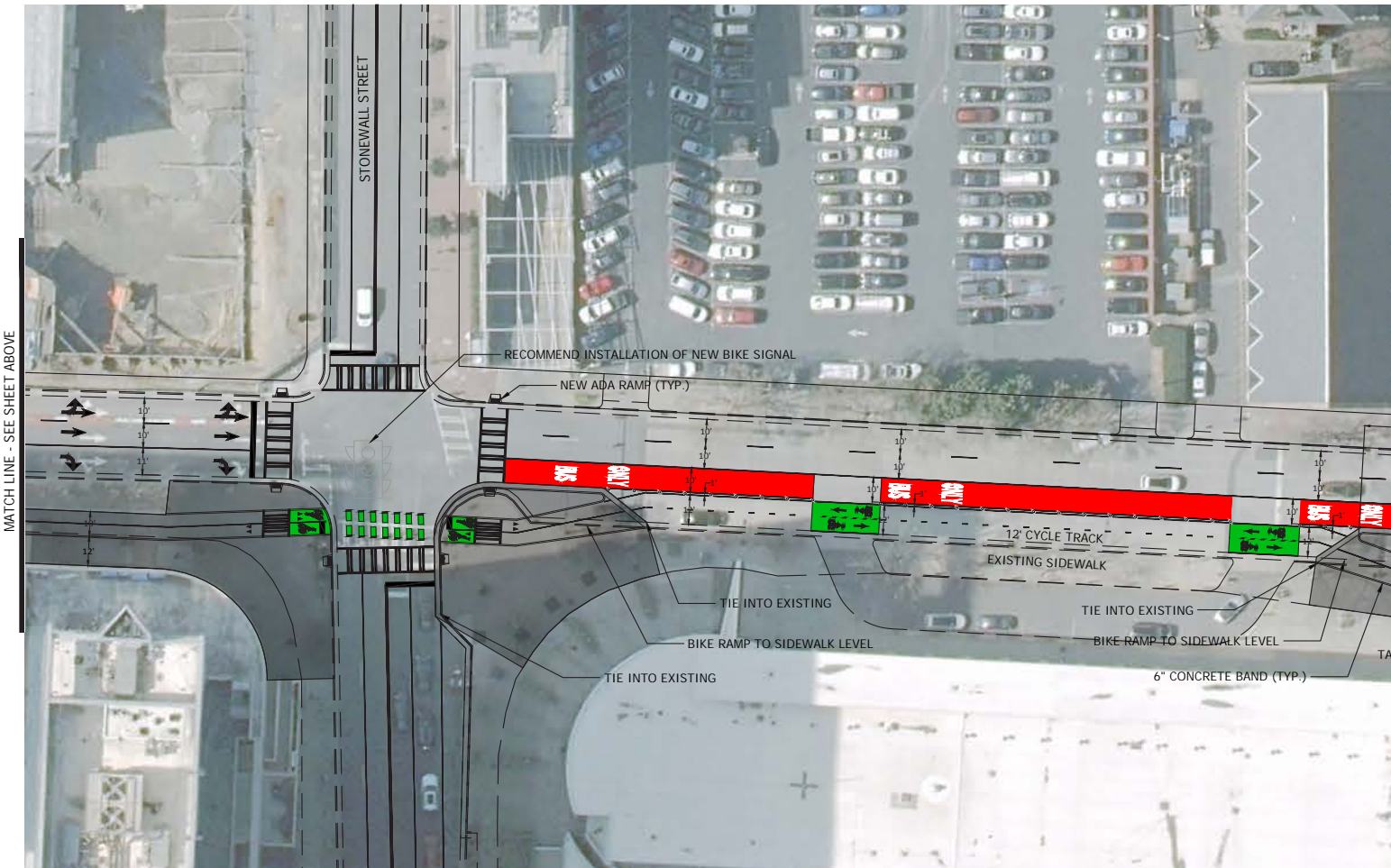
B UPTOWN CYCLELINK COST ASSUMPTION DETAILS

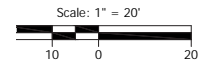
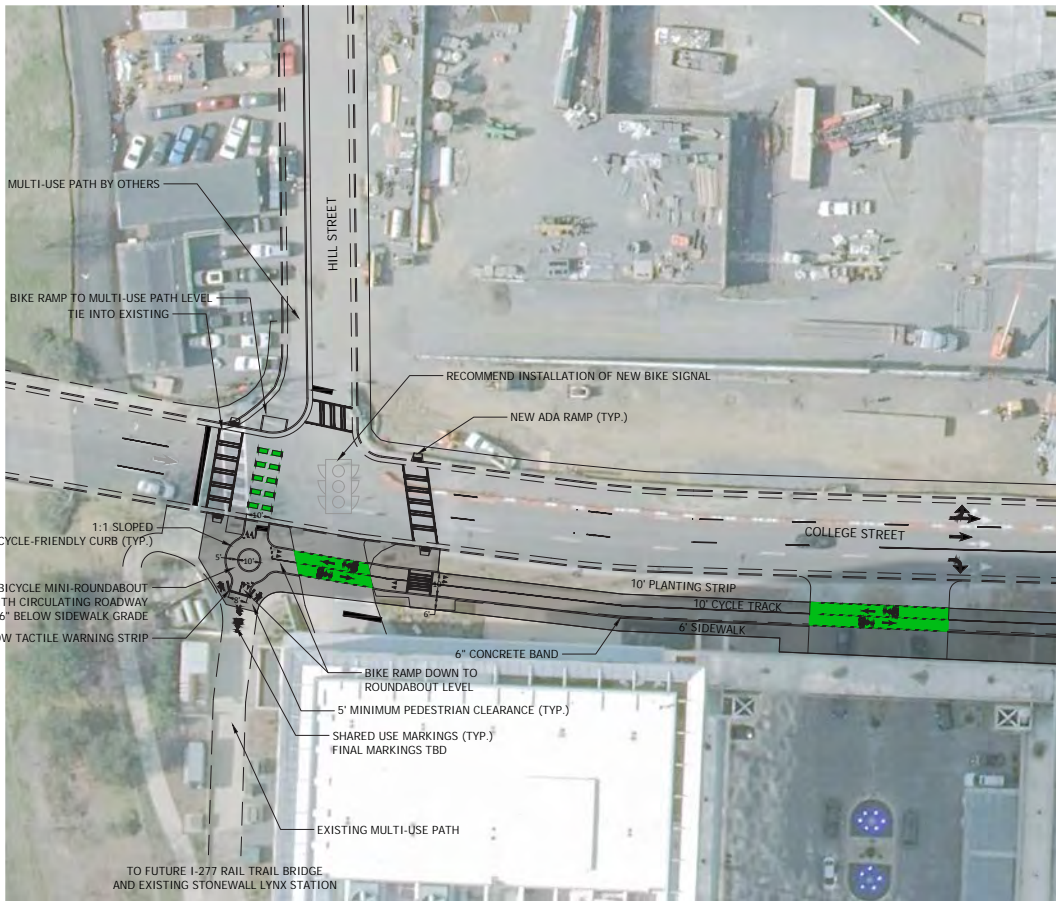


APPENDIX A

CONCEPT DRAWINGS

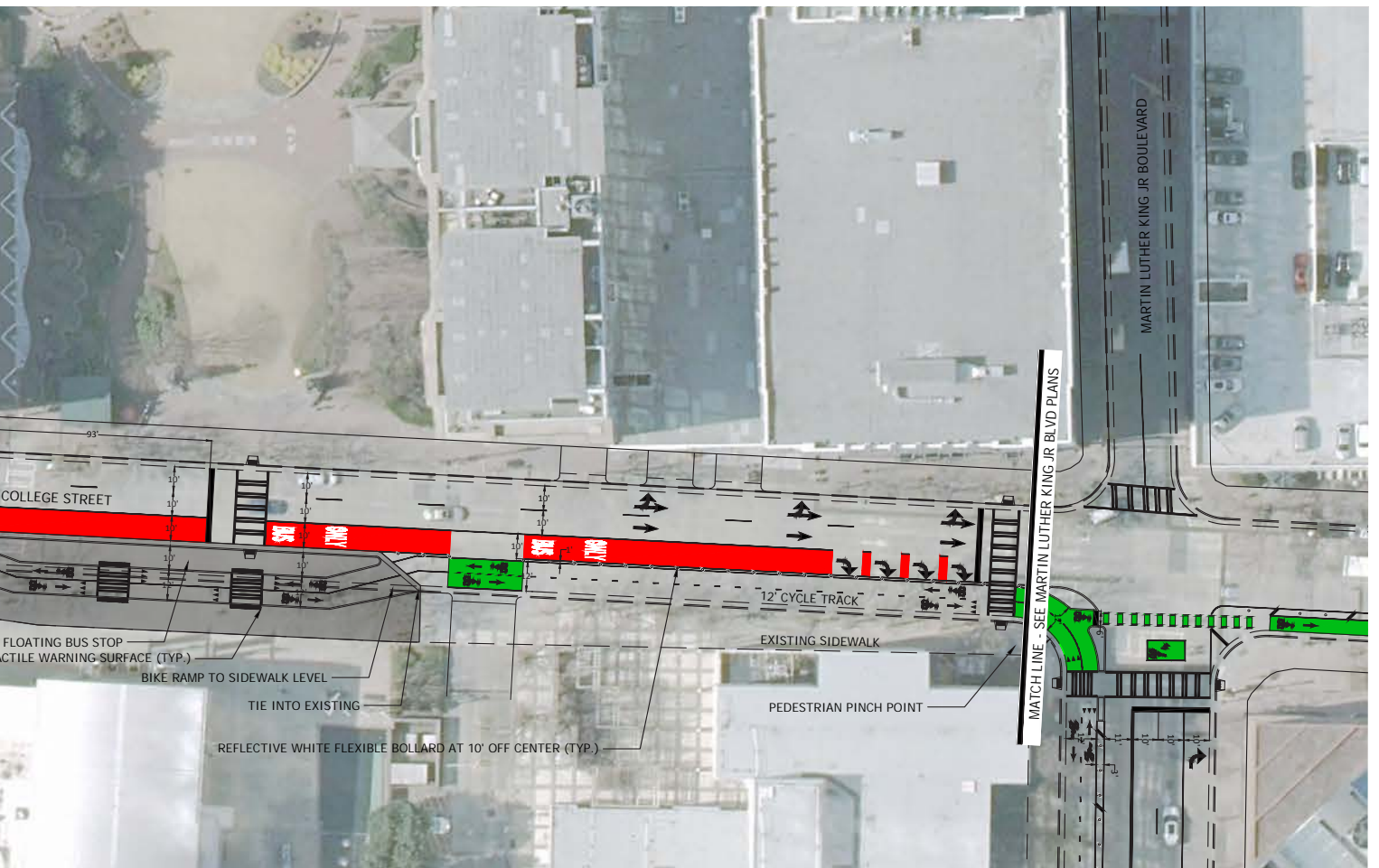
College Street Concept Design





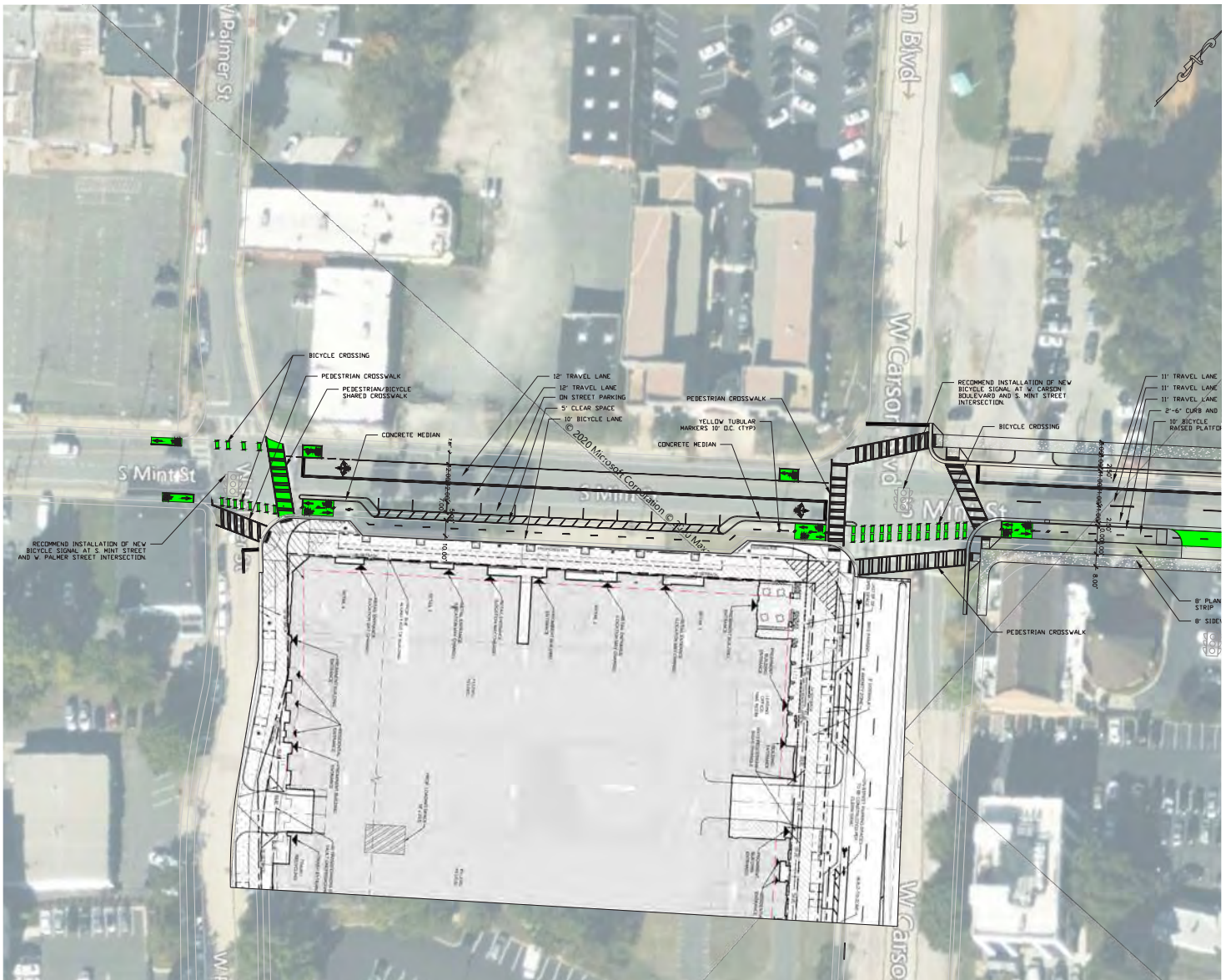
AREA TO BE RECONSTRUCTED

MATCH LINE - SEE SHEET BELOW

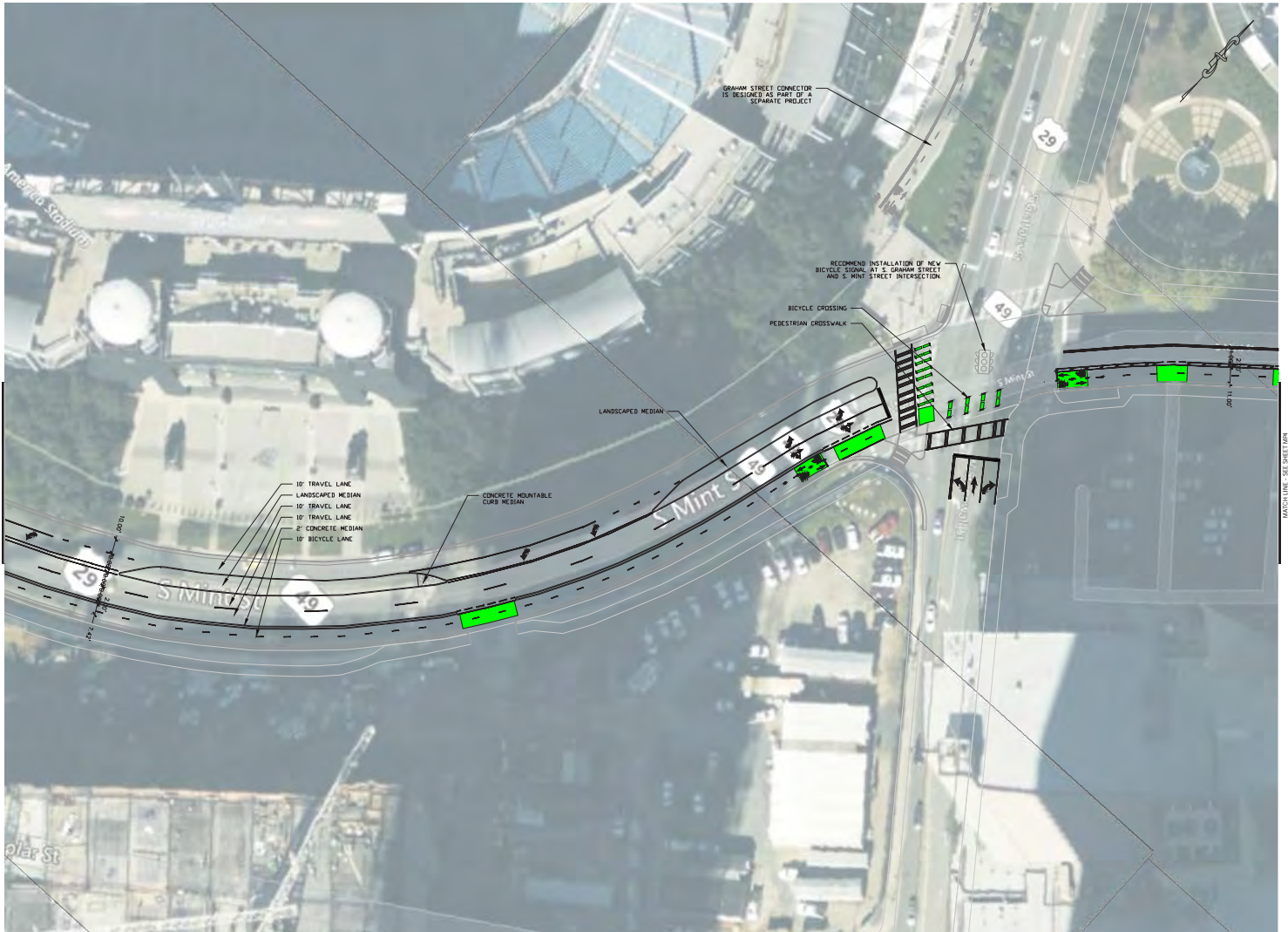


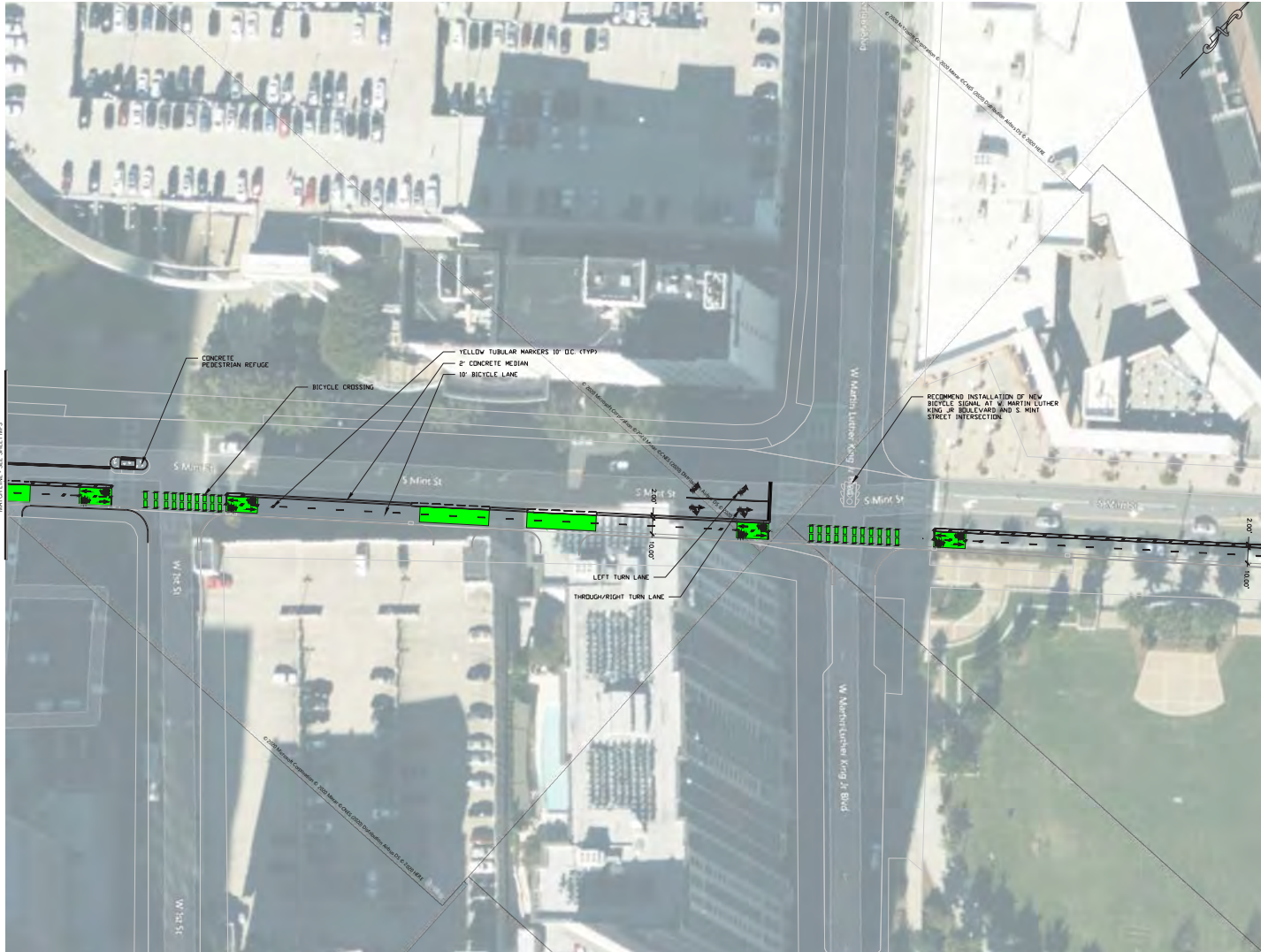
MATCH LINE - SEE MARTIN LUTHER KING JR BLVD PLANS

Mint/Pine Street Concept Design



Mint/Pine Street Concept Design (cont'd)





MATCHLINE - SEE SHEET P10

S Mint St

S Mint St

S Mint St

S Mint St

S MINT ST

W 15th St

15' 10' 00"

LEFT TURN LANE

THROUGH/RIGHT TURN LANE

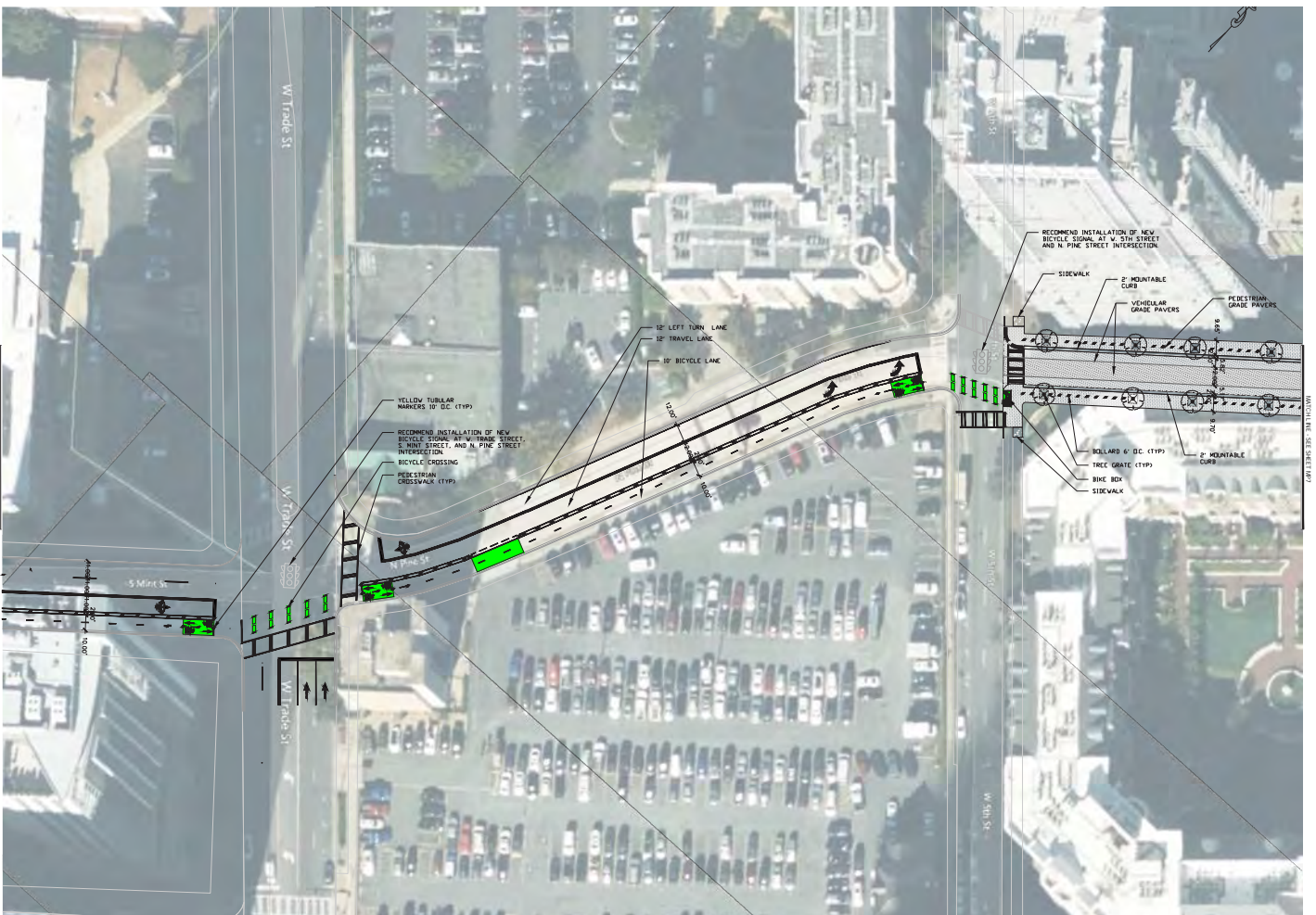
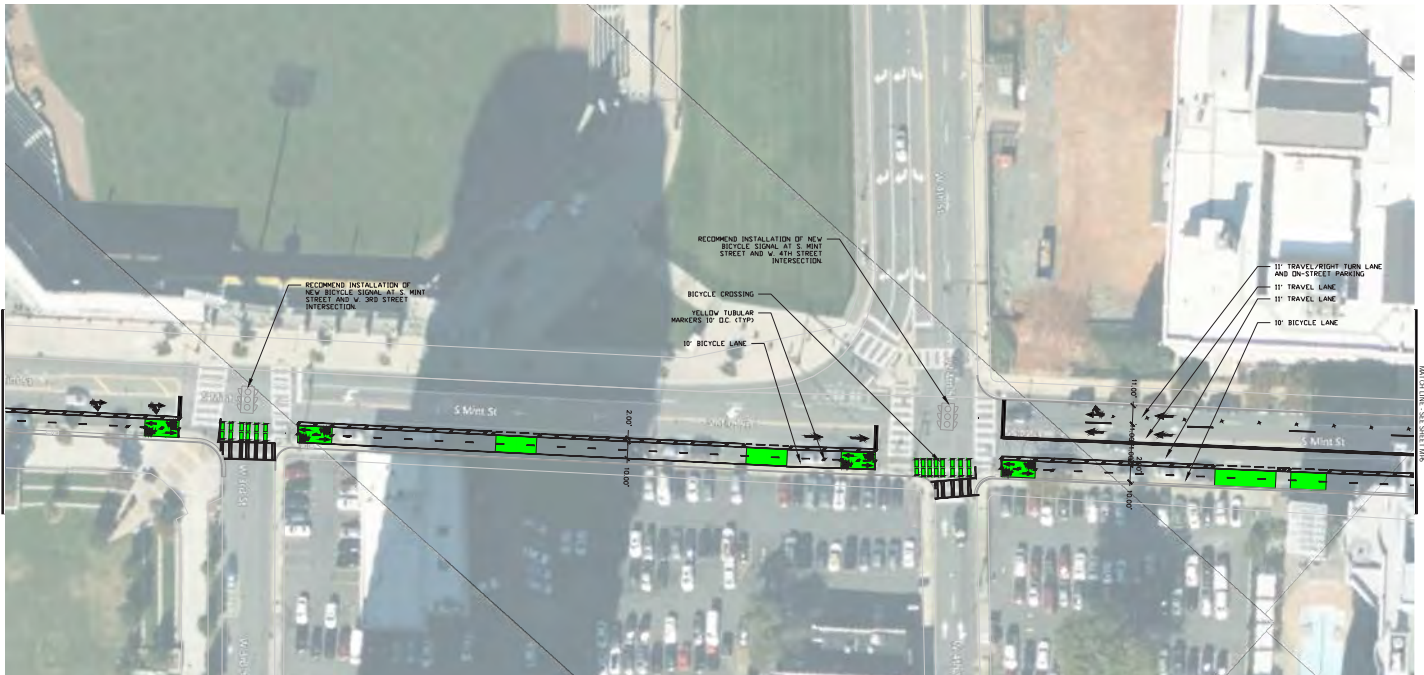
W Martin Luther King Jr Blvd

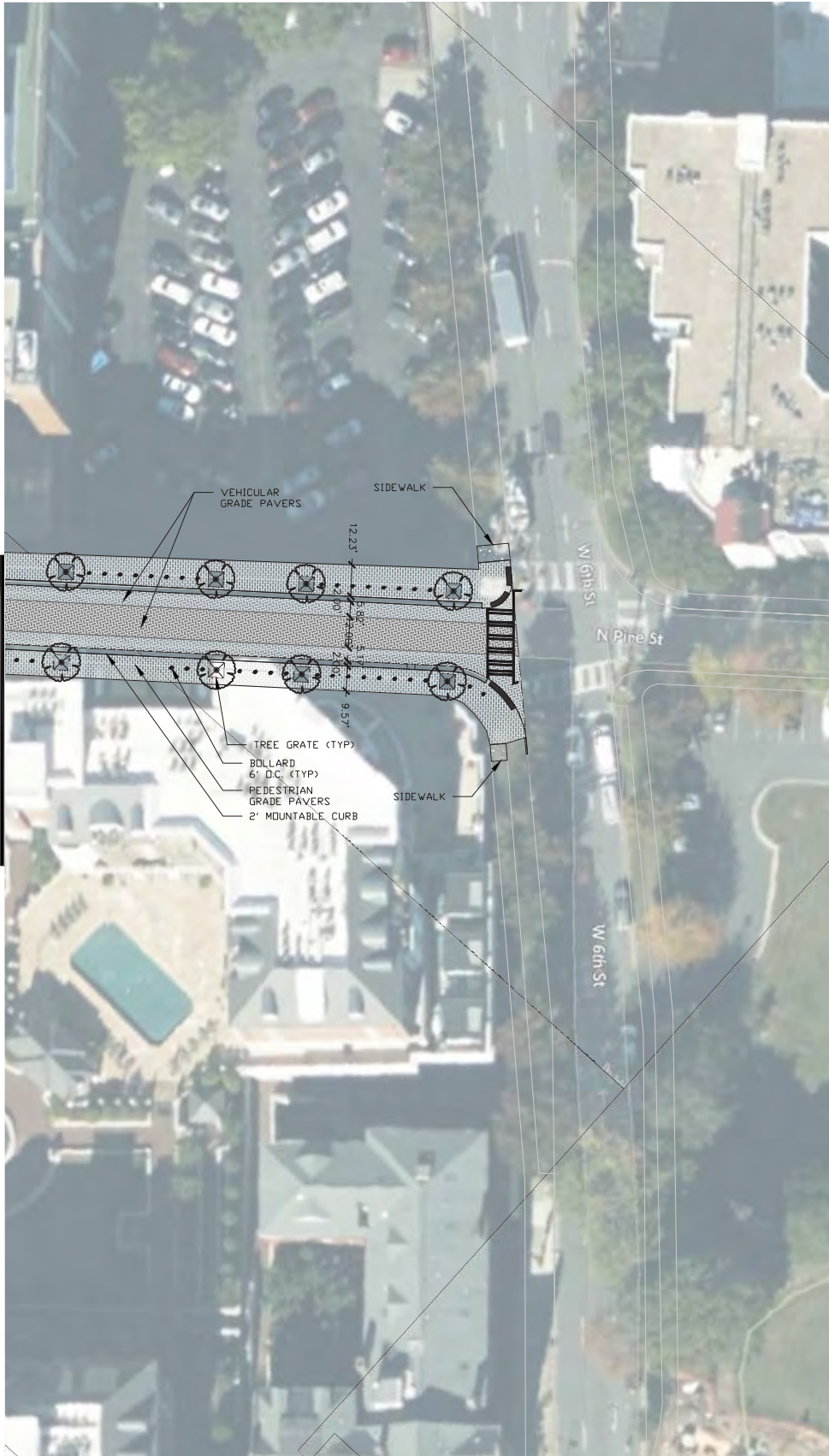
W Administration King Jr Blvd

RECOMMEND INSTALLATION OF NEW BICYCLE SIGNAL AT W. MARTIN LUTHER KING JR BOULEVARD AND S MINT STREET INTERSECTION

0 100 200

Mint/Pine Street Concept Design (cont'd)





MATCH LINE - SEE SHEET MPB

VEHICULAR GRADE PAVERS

SIDEWALK

12.23'

9.57'

2.25'

TREE GRATE (TYP)

BOLLARD 6' DC (TYP)

PEDESTRIAN GRADE PAVERS

2' MOUNTABLE CURB

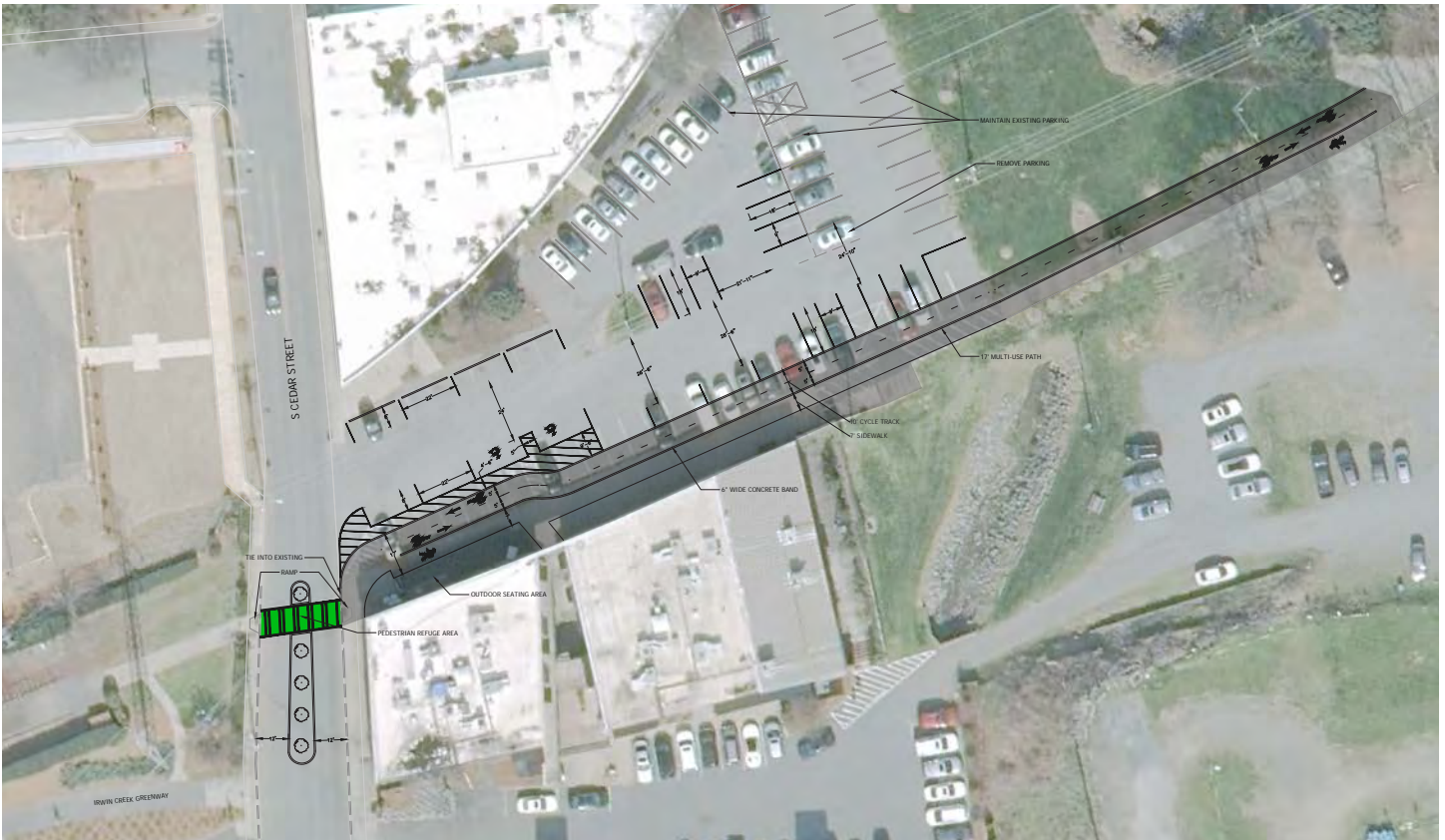
SIDEWALK

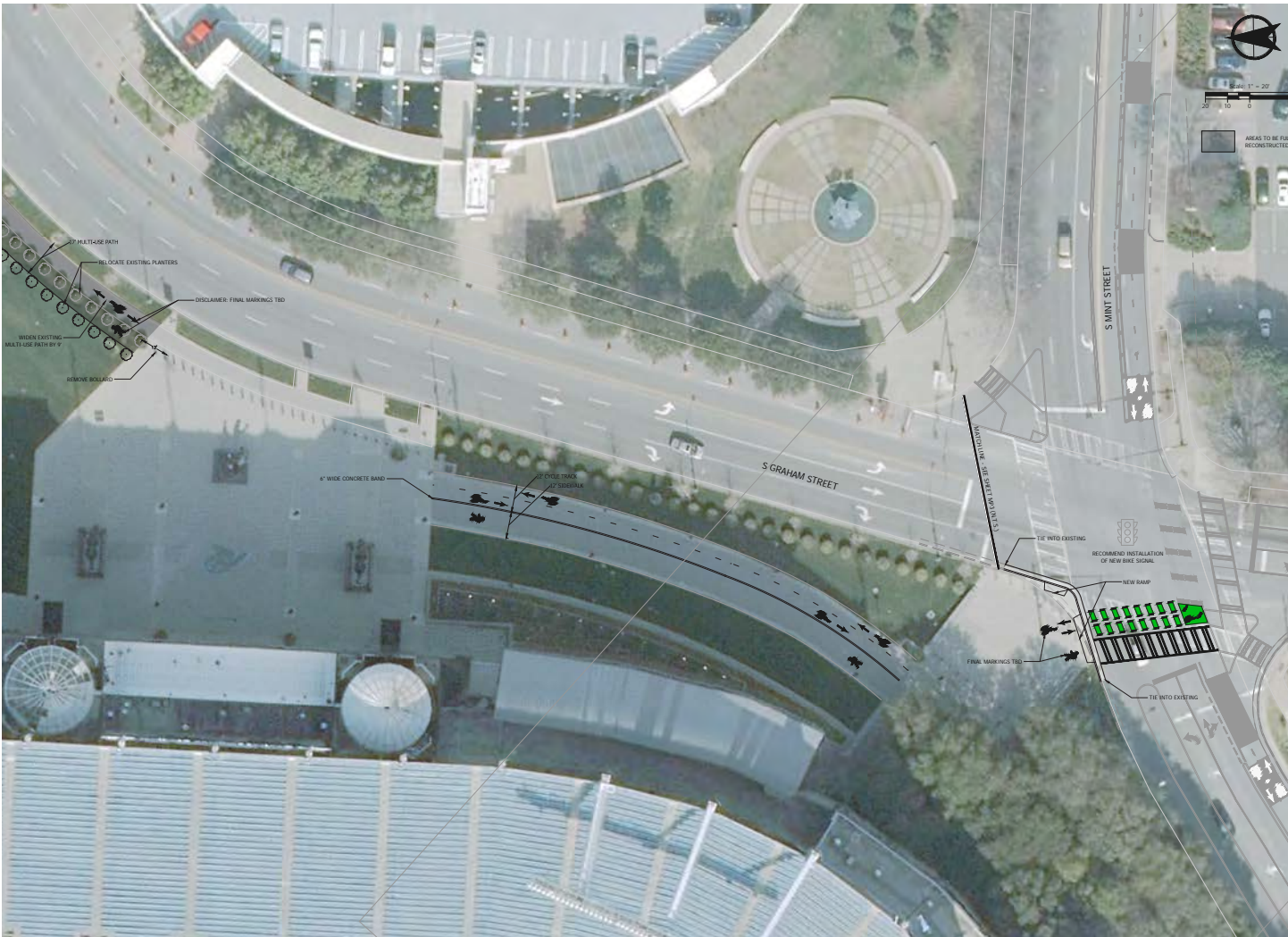
W 6th St

N Pine St

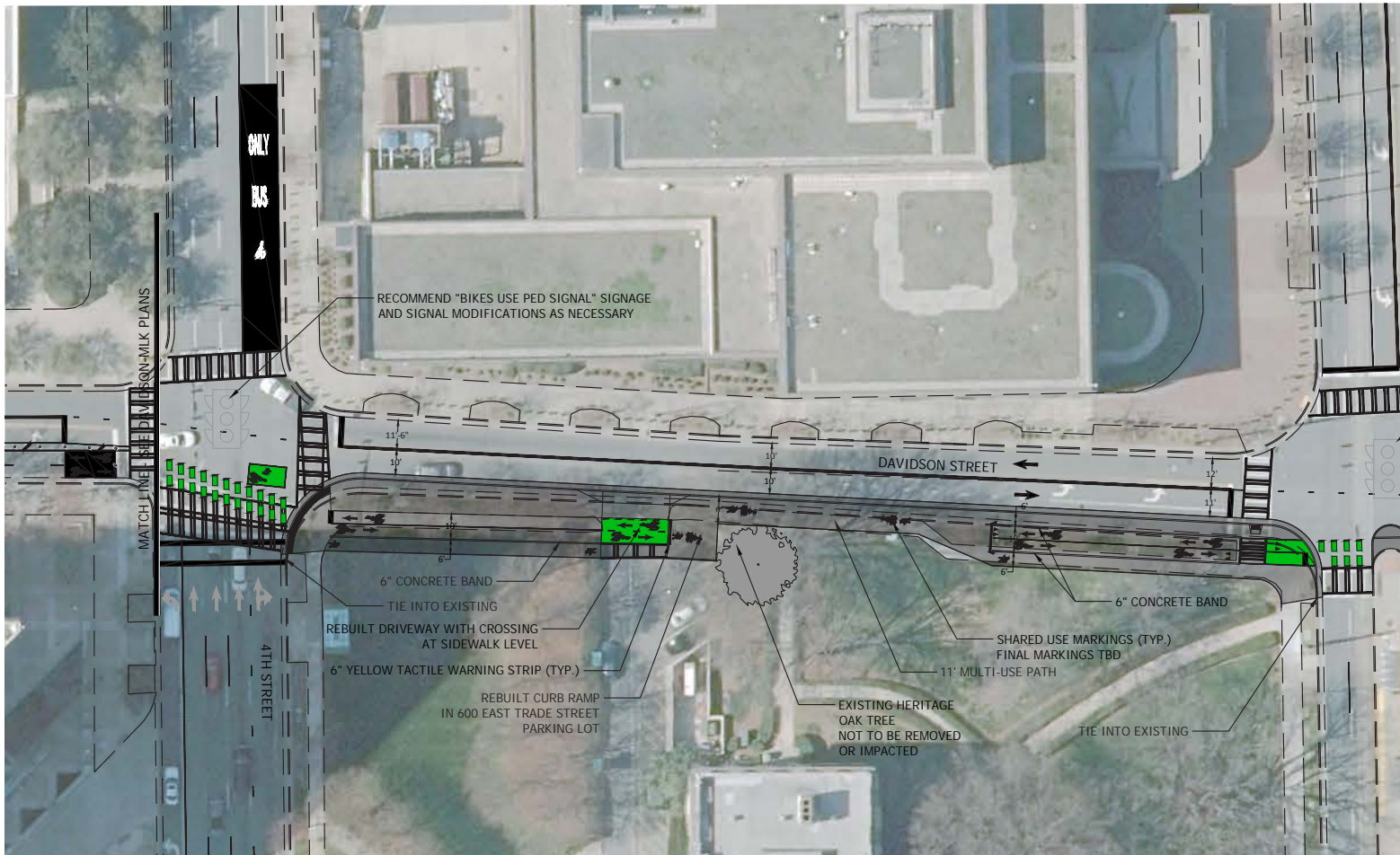
W 6th St

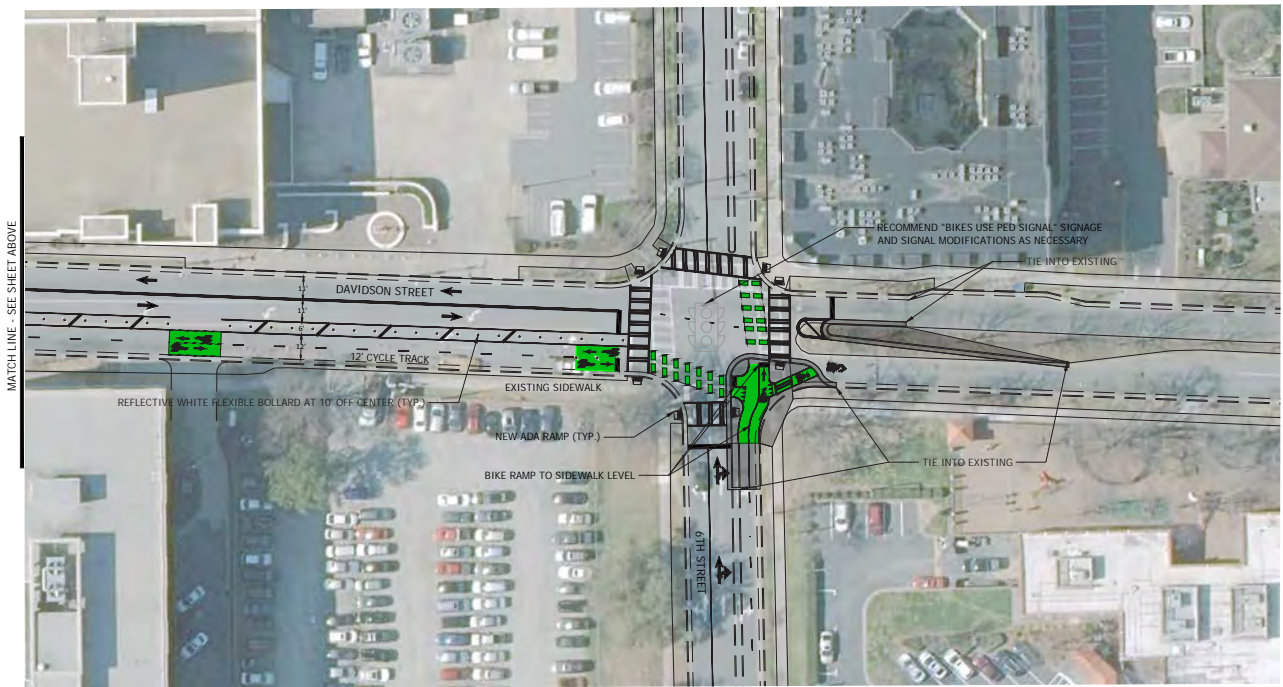
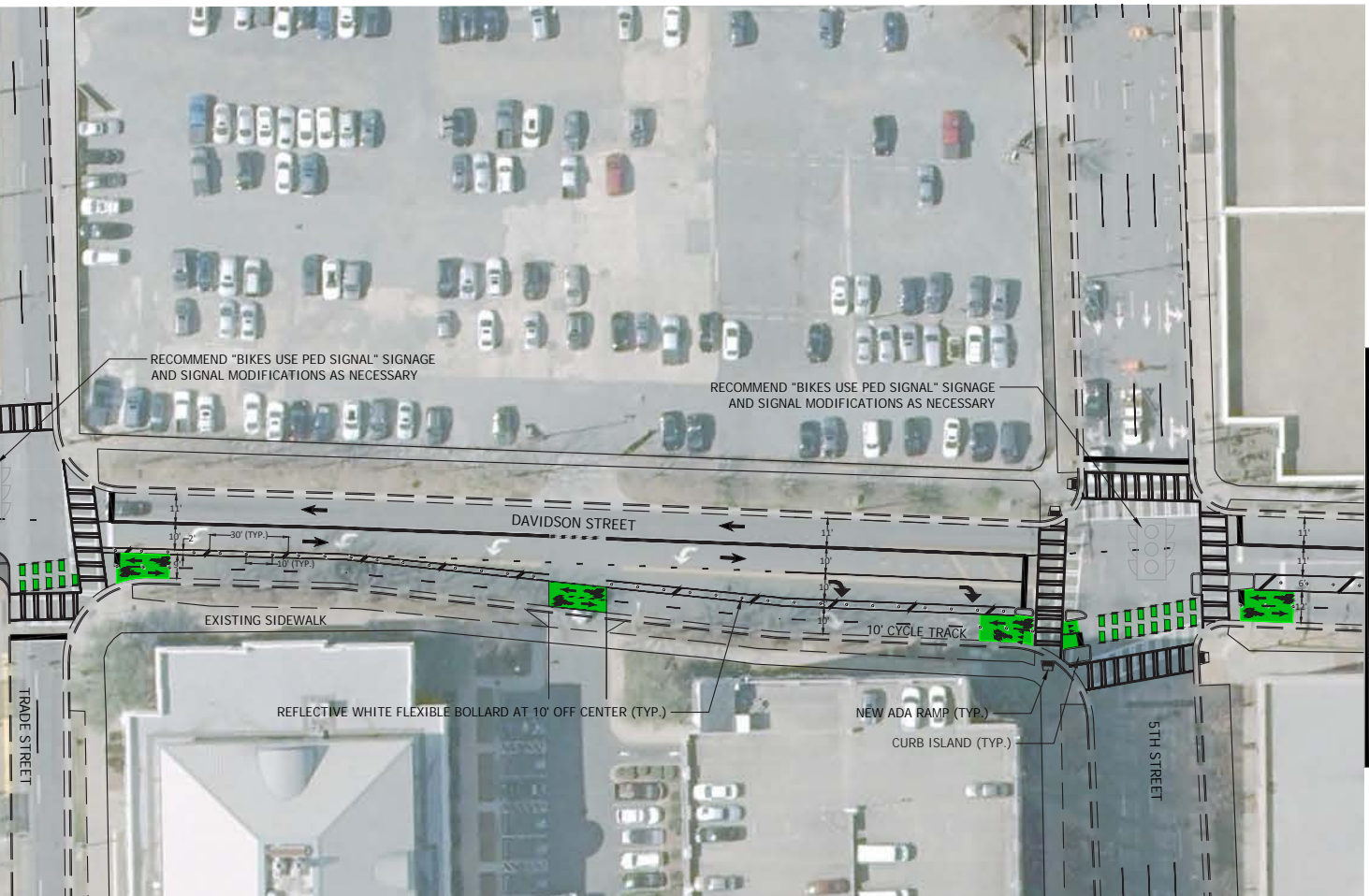
Graham Street Concept Design

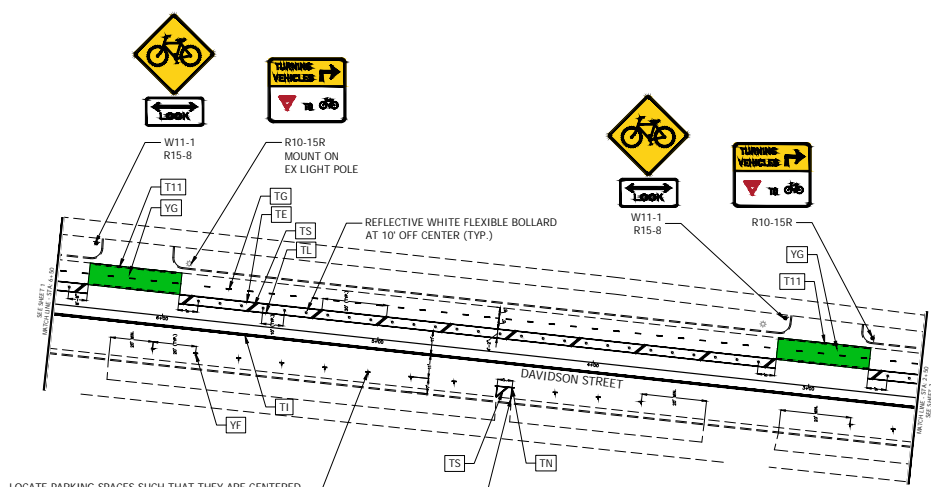




Davidson Street Concept Design







LOCATE PARKING SPACES SUCH THAT THEY ARE CENTERED ON THE ON THE CURB-PAINTED PARKING SPACE NUMBER

GORE MARKING TO LINE UP WITH EXISTING SIDEWALK

PAVEMENT MARKING LEGEND

- | | | | |
|-----|-------------------------------------------------|----|--------------------------------------------------|
| T2 | WHITE STOPBAR, 24" WIDE, 120 MIL | UA | LEFT TURN ARROW (90 MIL) |
| T11 | 2 FT WHITE MINISKIP, 6 FT SP, 6" WIDE, 120 MIL | UB | RIGHT TURN ARROW (90 MIL) |
| T12 | 2 FT YELLOW MINISKIP, 6' SP, 6" WIDE, 120 MIL | UC | STRAIGHT ARROW (90 MIL) |
| TC | 10 FT WHITE SKIP, 4" WIDE, 120 MIL | UD | COMBO. LEFT/STRAIGHT ARROW (90 MIL) |
| TD | 3 FT WHITE MINISKIP, 9 FT SP, 4" WIDE, 120 MIL | UE | COMBO. RIGHT/STRAIGHT ARROW (90 MIL) |
| TE | WHITE SOLID LANE LINE, 4" WIDE, 120 MIL | UH | HANDICAP PARKING (90 MIL) |
| TG | 3 FT YELLOW MINISKIP, 9 FT SP, 4" WIDE, 120 MIL | UI | ALPHANUMERIC CHAR. (120 MIL) |
| TI | YELLOW DOUBLE CENTER, 4" WIDE, 120 MIL | UJ | BICYCLE SYMBOL, HEATED-IN-PLACE (90 MIL) |
| TL | WHITE SOLID LANE LINE, 6" WIDE, 120 MIL | UK | BICYCLE STRAIGHT ARROW, HEATED-IN-PLACE (90 MIL) |
| TN | WHITE GORELINE, 8" WIDE, 90 MIL | UM | 12" YIELD LINE TRIANGLE (90 MIL) |
| TO | WHITE CROSSWALK LINE, 8" WIDE, 120 MIL | UO | BICYCLE LEFT ARROW, HEATED-IN-PLACE (90 MIL) |
| TS | WHITE GORELINE, 12" WIDE, 90 MIL | UR | SHARROW, HEATED-IN-PLACE (90 MIL) |
| TV | YELLOW DIAGONAL, 12" WIDE, 90 MIL | UY | BICYCLE RIGHT ARROW, HEATED-IN-PLACE (90 MIL) |
| | | YF | 4 FT BY 2 FT WHITE PARKING TEE, 4" WIDE, 120 MIL |
| | | YG | METHYL METHACRYLATE ACRYLNE (MMA) GREEN PAINT |
| | | YH | GREEN THERMOPLASTIC (120 MIL) |



Project Number: 1000000000
 Date: 10/1/2010
 Scale: 1" = 20'

NO.	DATE	DESCRIPTION

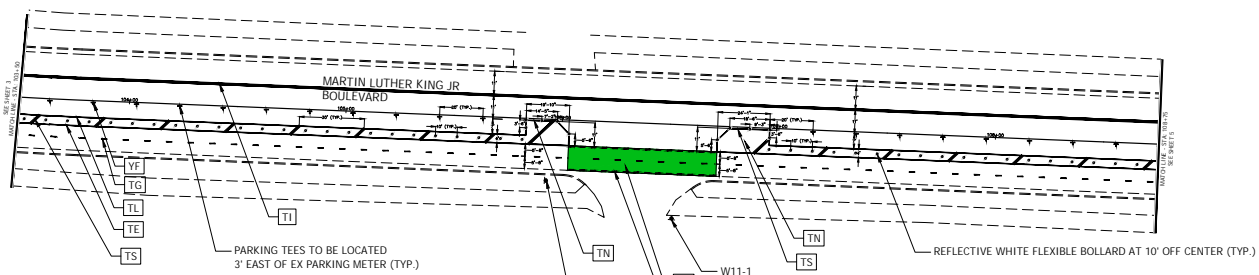


100% SUBMITTAL

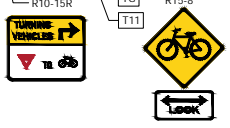
DATE	BY	DESCRIPTION

SHEET	2	OF	UPTOWN CYCLE LINK -
			DAVIDSON ST & MILK JR BLVD
			PAVEMENT MARKING PLAN

MLK Jr. Boulevard/Davidson Street Resurfacing Plans (cont'd)



- PAVEMENT MARKING LEGEND**
- T2 WHITE STOPBAR, 24" WIDE, 120 MIL
 - T11 2 FT WHITE MINISKIP, 6 FT SP, 6" WIDE, 120 MIL
 - T12 2 FT YELLOW MINISKIP, 6" SP, 6" WIDE, 120 MIL
 - TC 10 FT WHITE SKIP, 4" WIDE, 120 MIL
 - TD 3 FT WHITE MINISKIP, 9 FT SP, 4" WIDE, 120 MIL
 - TE WHITE SOLID LANE LINE, 4" WIDE, 120 MIL
 - TG 3 FT YELLOW MINISKIP, 9 FT SP, 4" WIDE, 120 MIL
 - TL WHITE SOLID LANE LINE, 6" WIDE, 120 MIL
 - TS WHITE SOLID LANE LINE, 8" WIDE, 90 MIL
 - TO WHITE GROSSWALK LINE, 8" WIDE, 120 MIL
 - TV YELLOW DIAGONAL, 12" WIDE, 90 MIL
 - UA LEFT TURN ARROW (90 MIL)
 - UB RIGHT TURN ARROW (90 MIL)
 - UC STRAIGHT ARROW (90 MIL)
 - UD COMBO. LEFT/STRAIGHT ARROW (90 MIL)
 - UE COMBO. RIGHT/STRAIGHT ARROW (90 MIL)
 - UH HANDICAP PARKING (90 MIL)
 - UI ALPHANUMERIC CHAR. (120 MIL)
 - UJ BICYCLE SYMBOL, HEATED-IN-PLACE (90 MIL)
 - UK BICYCLE STRAIGHT ARROW, HEATED-IN-PLACE (90 MIL)
 - UM 12" YIELD LINE TRIANGLE (90 MIL)
 - UO BICYCLE LEFT ARROW, HEATED-IN-PLACE (90 MIL)
 - UR SHARROW, HEATED-IN-PLACE (90 MIL)
 - YE BICYCLE RIGHT ARROW, HEATED-IN-PLACE (90 MIL)
 - YF 4 FT BY 2 FT WHITE PARKING TEE, 4" WIDE, 120 MIL
 - YG METHYL METHACRYLATE ACRYLINE (MMA) GREEN PAINT
 - YH GREEN THERMOPLASTIC (120 MIL)



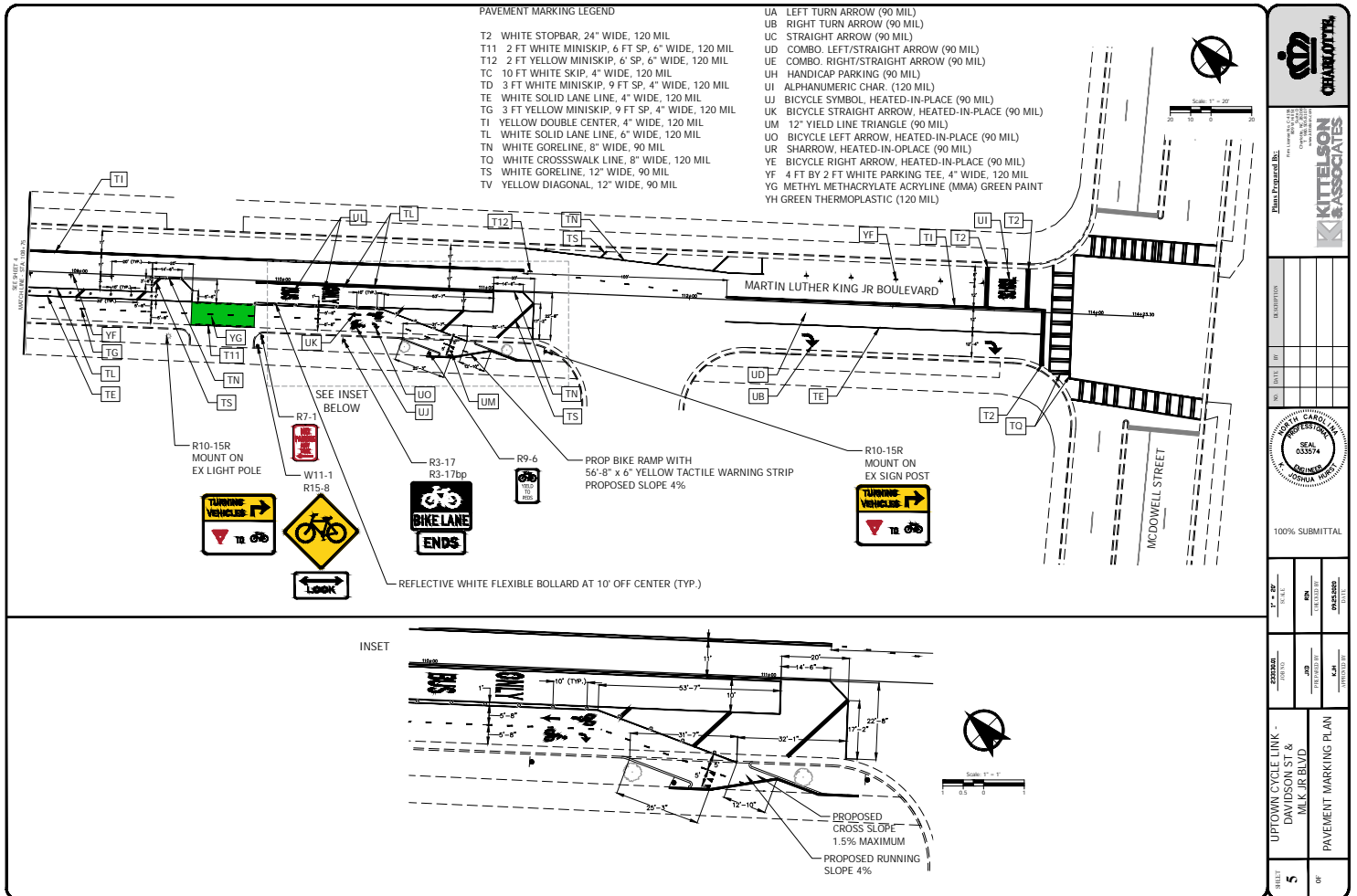
DATE	BY	REVISION



100% SUBMITTAL

SHEET	4	OF	PAVEMENT MARKING PLAN
PROJECT	UPTOWN CYCLE LINK - DAVIDSON ST & MLK JR BLVD		
DATE			

MLK Jr. Boulevard/Davidson Street Resurfacing Plans (cont'd)



CHARLOTTE

KITTELSON & ASSOCIATES

100% SUBMITTAL

UPDOWN CYCLE LINK - DAVIDSON ST & MLK JR BLVD
PAVEMENT MARKING PLAN

SHEET 5 OF 07

McDowell Street Concept Design





Scale: 1" = 20'

AREAS TO BE FULLY RECONSTRUCTED

S MCDOWELL STREET

E STONEWALL STREET

BELK TRAIL

DISCLAIMER: FINAL MARKINGS TBD

RECOMMEND INSTALLATION OF NEW BIKE SIGNAL

TIE INTO EXISTING

SLOW TURN WEDGE

NEW RAMP

REMOVE EXISTING TREES

ADJUST EXISTING UTILITY TO BE FLUSH WITH SHARED USE PATH

STONEWALL ST (OWN IN INSET)

RELOCATE AT&T 5G POLE

2' HIGH RETAINING WALL

6' HIGH RETAINING WALL

TIE INTO EXISTING

RECONSTRUCT NOSE OF ISLAND

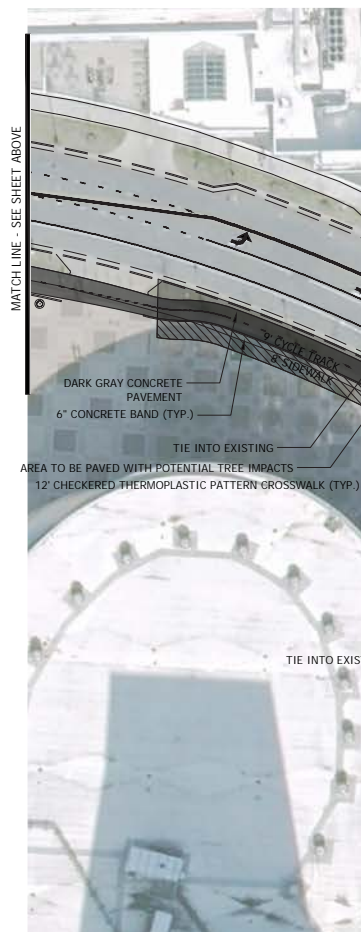
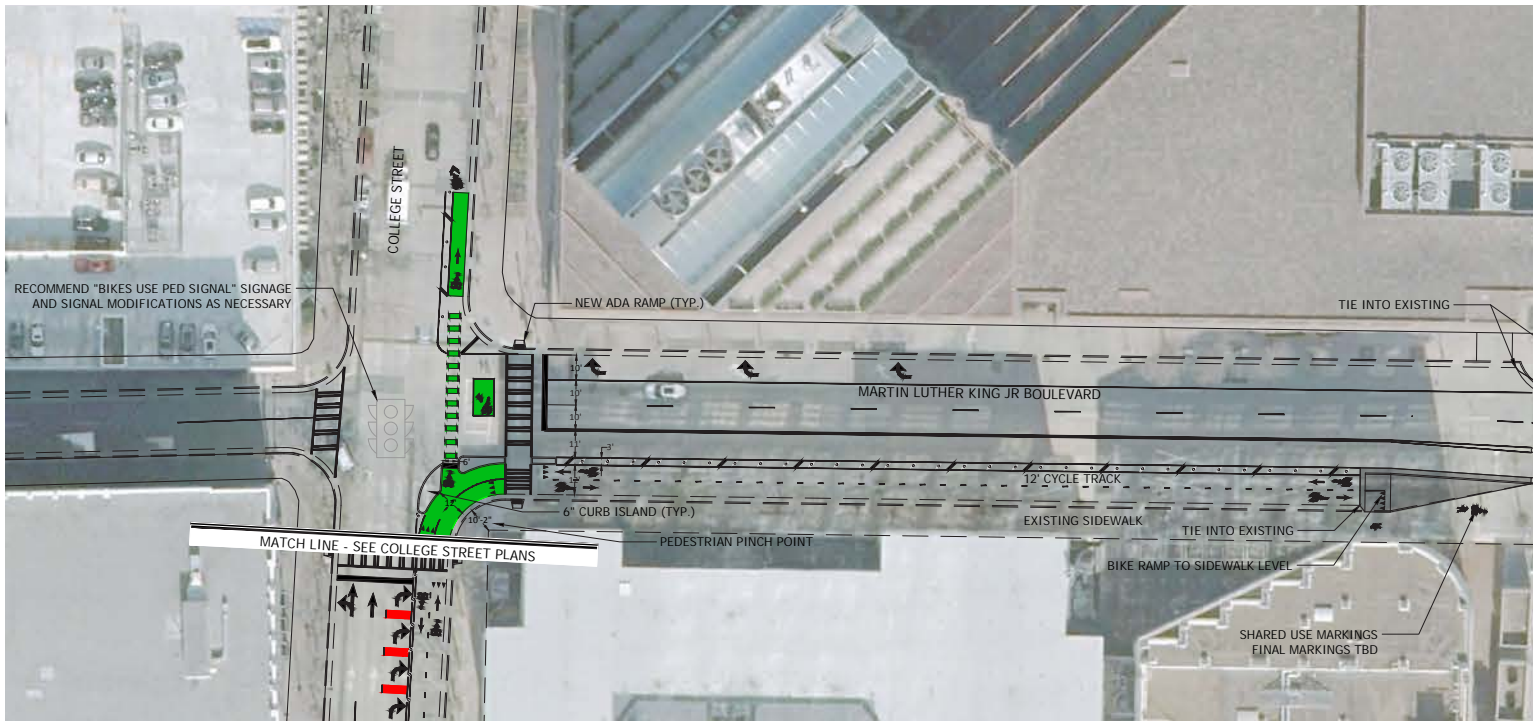
RELOCATE STOP BAR

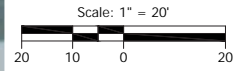
WIDEN RAMP ON BELK TRAIL PLAN

ANCE TYPE RECOMMENDED ALONG STREET UNDER I-277

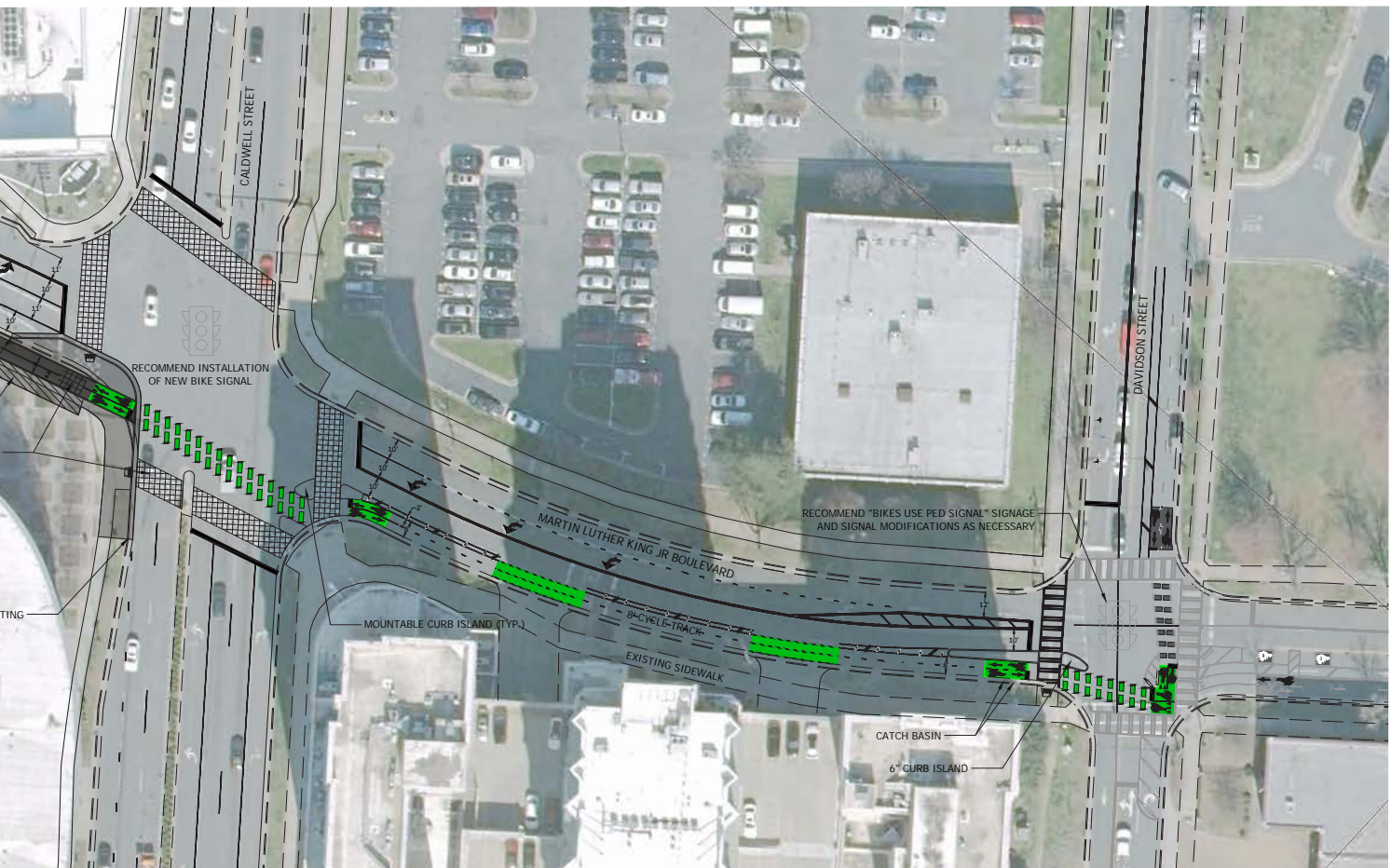
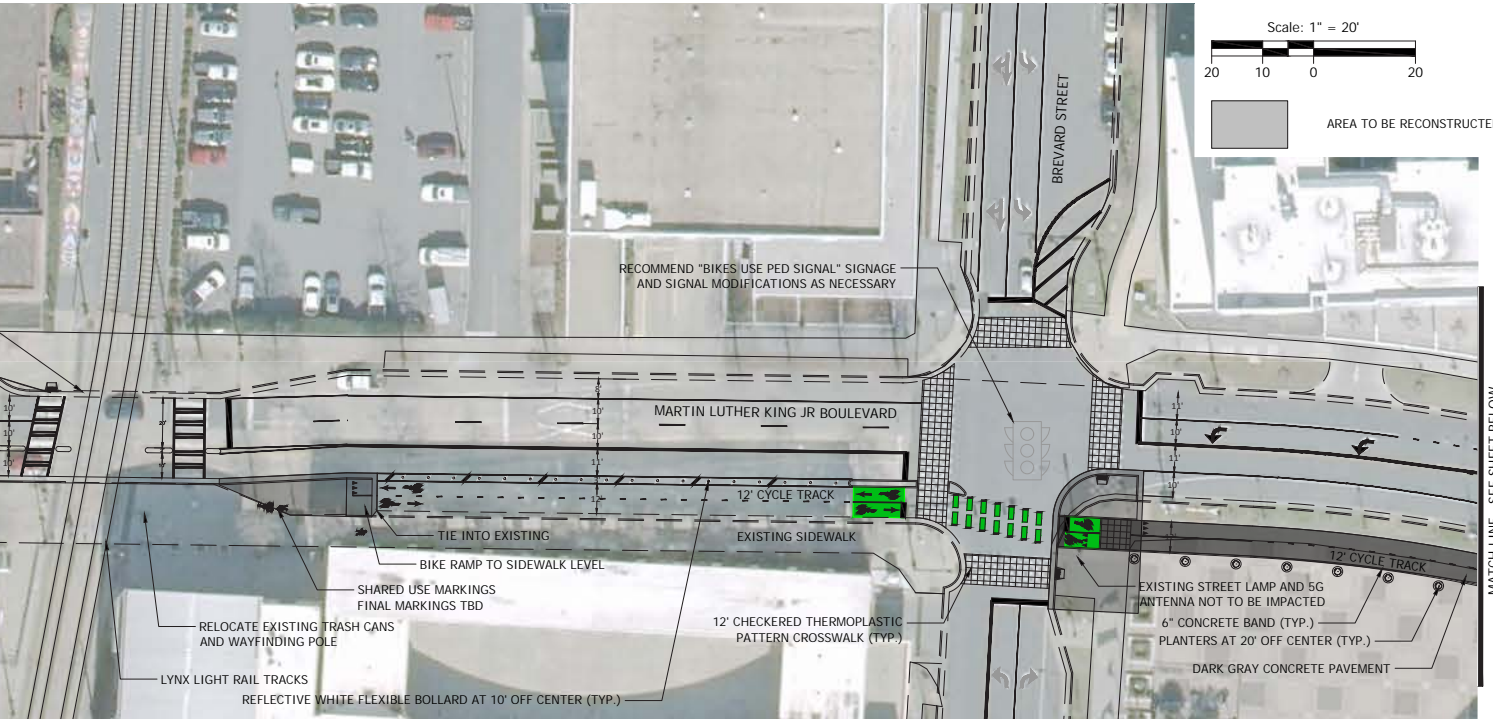


Martin Luther King Jr. Boulevard Concept Design





AREA TO BE RECONSTRUCTED



APPENDIX B

UPTOWN CYCLELINK COST ASSUMPTION DETAILS

Appendix G: Uptown CycleLink Cost Assumption Details

Phase	Project/Segment	Separation Type/Treatments/Assumptions	Length (Miles)	Construction Cost	Design (20%)	Planning Phase (20%)
Phase 2	Davidson Street- 4th Street to 6th Street	4th Street to Trade: Shared Use Path (Requires street reconstruction- moving curb, inlets, potential utility relocation etc) Trade to 6th Street: Cycle Track with Paint/Post/Planter Separation, Curb Islands at 5th Street, Signal modifications at 5th Street and 6th Street, Geometry Modifications at 6th Street	0.23	\$1,786,694	\$357,339	\$357,339
	McDowell St- E Martin Luther King Jr Boulevard to Stonewall Street	Shared use path, with retaining wall, relocate/new mast arm, relocate utility pole, relocate fiber pole, reconstruct curb at McDowell and Stonewall), ROW costs with Meck County	0.09	\$1,044,496	\$208,899	\$208,899
	Hill Street- Tryon Street to Mint Street	Shared Use Path	0.22	\$990,000	N/A	N/A
	Martin Luther King Jr. Blvd- College Street to Davidson Street	College to Brevard: Cycle Track with Paint/Post/Planter Separation, Bike ramps at Light Rail crossing (x2), Signal Modification; Brevard to Caldwell: Shared Use Path (350'), 2 ADA ramp reconstruction, planters every 20' (18) ; Caldwell to Davidson: Cycle Track with Concrete Median Separation at the intersections, Signal modifications	0.27	\$601,449	\$120,290	\$120,290
	College Street- Hill Street to M.L.K Jr. Boulevard	Hill to Stonewall: Shared Use Path, relocating 13 utility light poles, 2 ADA ramps; Stonewall to M.L.K. Jr. Blvd: Cycle Track with Paint/Post/Planter Separation, Double floating bus stop Island, Relocate Utility Poles (x4), New ADAD ramp, Curb modifications at College/Stonewall	0.24	\$864,025	\$172,805	\$172,805
Phase 3	Mint Street/ Pine Street - Palmer Street to 6th Street	Pine Street: Shared Street (Assumes street reconstruction- \$20 Million/Mile); 5th Street to MLK and Dunbar to Palmer: Cycle Track with Paint/Post/Planter Separation, Signal Modification (x2); 5th Street to Dunbar: Cycle Track with Concrete Median Separation, Signal modifications (at all signals)	0.97	\$3,653,633	\$730,727	\$730,727
	Graham Street Greenway - Mint Street to Cedar Street	Shared Use Path, includes widening of existing sidewalk across the Panthers Plaza (150'), Bike ramp along existing staircase (150'), Trail through the Cedar Yards Parking lot (200'), Corner reconstruction at Stonewall/Graham/Mint	0.31	\$649,205	\$129,841	\$129,841

NOTES:

- Assumes no milling and overlay of existing pavement, except for areas of full reconstruction.
- Paint/Post CycleTrack assumes construction with in-house on-call construction contract.
- Project costs do not include costs for right-of-way or utility relocations, beyond what is identified above.
- Does not include portions of the cycle link in Phase 0 or 1
- Cost estimates are planning level per mile/treatment estimate based on previous bids in Charlotte and industry rule-of-thumb. These are not official engineer's cost estimates.

ROW (as applicable)	Construction Soft Costs (15%)	Total Project Cost	Rounded Project Cost (2020 Costs)	Years Until Construction Phase	10% Inflation	30% Contingency	Total Project Cost	Total Phase Cost
N/A	\$268,004	\$2,769,376	\$2,770,000	4	\$1,286,000	\$831,000	\$4,887,000	\$13,946,200
\$103,000	\$156,674	\$1,721,969	\$1,722,000	4	\$800,000	\$516,600	\$3,038,600	
N/A	\$148,500	\$1,138,500	\$1,139,000	4	\$529,000	\$341,700	\$2,009,700	
N/A	\$90,217	\$932,245	\$933,000	4	\$434,000	\$279,900	\$1,646,900	
N/A	\$129,604	\$1,339,239	\$1,340,000	4	\$622,000	\$402,000	\$2,364,000	
N/A	\$548,045	\$5,663,131	\$5,664,000	6	\$4,371,000	\$1,699,200	\$11,734,200	\$13,820,300
N/A	\$97,381	\$1,006,267	\$1,007,000	6	\$777,000	\$302,100	\$2,086,100	

Opinion of Probable Costs Total: \$27.8 Million



UPTOWN CYCLELINK

 CITY of CHARLOTTE

