In 2016, the City of Charlotte began several multimodal planning studies to enhance pedestrian and bicycle travel on portions of arterials (thoroughfares) in Charlotte. The studies evaluate existing conditions, identify deficiencies, and make recommendations to improve the safety and ease of walking and biking along and across busy streets.

These corridors were identified and selected for further study based on the evaluation of many criteria including: four or more lanes, a posted speed limit over 35 mph, top 15 transit ridership routes, no planned street improvements by other projects in the Community Investment Plan (CIP), and limited pedestrian crossing opportunities.

The corridors studied to date are:

- South Boulevard
- South Tryon Street
- West Boulevard
- Parkwood Avenue & The Plaza
- Eastway Drive (through the Comprehensive Neighborhood Improvement Program (CNIP))

Map 1: Corridor Studies in Charlotte
In January 2017, the Charlotte Department of Transportation (CDOT) initiated a study of West Boulevard between Camden Road and Billy Graham Parkway. The focus of the study was to examine and address safety concerns, especially for those who walk or bike along the facility. West Boulevard is a key transportation link on the city’s west side, connecting residents and commuters with Charlotte-Douglas International Airport, I-77, South End and Center City.

The current design of the road presents a number of challenges to pedestrians and bicyclists. It is generally four travel lanes (two in each direction) with turning lanes at signalized intersections. Sidewalks are present along most of the corridor, however, they are narrow (four to five feet wide) and generally located at back-of-curb. There are significant vehicular traffic volumes and high driver operating speeds, so the design results in an uncomfortable walking environment. There is also high transit use and pedestrian activity throughout the corridor, and a significant number of pedestrian and bicycle crashes have occurred over the past several years, including the death of Johnnie Lee Tisdale in 2013 and Ty’Asia Young in 2016.

As part of the study, CDOT hosted several public meetings, including walking tours, to gather on-the-ground feedback from participants, worked with NCDOT to determine a toolbox of options, and presented final recommendations to the public at a meeting in August 2017.

Map 2: West Boulevard Corridor
PUBLIC ENGAGEMENT

In order to better understand the conditions residents face, CDOT hosted a series of meetings, including walking tours that were open to the public over the course of the spring and summer of 2017.

Kick-off Meeting

The study’s kick off meeting was held at the West Boulevard Branch Library in March 2017. The public was asked to provide detailed input about the experience of walking on West Boulevard. Specifically, residents told the city about locations where they had challenges.

There were many issues discussed with residents and the most frequent concerns were:
- Speeding
- Back of curb sidewalks
- Narrow sidewalks
- Not enough lighting
- Lack of options to cross the street safely

Other concerns people noted:
- Pedestrians don’t use crosswalks at signals
- Drivers have difficulty making left turns onto West Boulevard
- Sidewalks need to be maintained

The most frequent location-specific concerns:
- I-77 (congestion and access to on-ramp)
- Barringer Drive (access to new greenway)
- West Tyvola Road (northbound congestion turning right on to West Boulevard)
- Difficulty for pedestrians crossing at the YMCA
- The pedestrian crossing at the library is not comfortable

![Study Wrap-up Meeting](image)
**Walking Tours**

In order to better understand the conditions residents face, CDOT hosted a series of meetings, including walking tours that were open to the public over the course of the spring and summer of 2017.

During the walking tours, residents participated in a “walking audit,” which is a tool used by planners and engineers to evaluate the walkability and bikeability of the existing built environment. The routes were designed to focus on a variety of conditions that pedestrians and cyclists face every day along West Boulevard. These audits also provided residents an understanding of how planners and engineers evaluate roadway conditions for all users.

Surveys included in the walking tour packet were collected and summarized.

Walking tours were held on April 18, 19, and 20 at the West Boulevard Branch Library, CMPD Westover Division, and Calvary United Methodist Church, respectively.

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**WALKING AUDIT SUMMARY**

<table>
<thead>
<tr>
<th>Key Concerns</th>
<th>% of participants that agree with statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossing the street is not comfortable for people of all ages and abilities</td>
<td>94%</td>
</tr>
<tr>
<td>There is not enough space between the sidewalk and traffic</td>
<td>88%</td>
</tr>
<tr>
<td>There is insufficient lighting</td>
<td>71%</td>
</tr>
<tr>
<td>Drivers do not obey the speed limit</td>
<td>86%</td>
</tr>
<tr>
<td>The sidewalk is not in a good state of repair</td>
<td>69%</td>
</tr>
</tbody>
</table>
Advisory Group

Several members of the community who participate in the West Boulevard Neighborhood Coalition requested a way to get more involved with the study. In order to provide an opportunity for residents to understand the decision making process in more detail, an Advisory Group was formed. The group met with staff separately from the public meetings and discussed the input process and how it informed the recommendations.

Advisory group meetings were held on May 3, June 8, June 29, and July 25 at Progressive Baptist Church.

Follow-up Meetings

After the kick-off meeting, two additional meetings were held to provide updates and recommendations to the community.

A drop-in style meeting was held on July 13 at the West Boulevard Branch Library which provided details about the study. Staff discussed the data and “toolbox” of potential treatments. The data analysis and toolbox of treatments are both described in detail later in this document. Staff asked the public if they supported the toolbox of treatment options and 100% of attendees supported it.

On August 8, City staff hosted a project wrap-up meeting at the West Boulevard Branch Library. The meeting was a drop-in style, and staff explained the study process overall and provided a specific set of recommendations found later in this document.
DATA & ANALYSIS

After the initial public conversations, CDOT staff searched for data related to the five key issues identified by residents: 1) crossing the street, 2) speeding, 3) lighting, 4) walking along the street, and 5) sidewalk maintenance. Notably, each of the key issues center around conditions that make it challenging for pedestrians on West Boulevard.

1. Crossing the Street

Residents indicated that it is difficult to cross West Boulevard as a pedestrian, bicyclist, and motorist. In order to better understand where and why it is difficult to cross the street, CDOT reviewed a number of different data sets. In order to improve the ability for pedestrians to cross the street, it was first necessary to understand where people are trying to cross the street or would like to cross the street.

Pedestrian Data (Map 3)

Pedestrian counts were collected at signalized intersections and at eight unsignalized locations along the corridor. These counts reflect 13 hours of observation and reflect the number of pedestrians that crossed West Boulevard generally during daylight hours. The highest locations that were counted include over 50 pedestrians at Reid Park, at the Stratford Richardson YMCA just east of Clanton Road, and at Remount Road.

CATS Ridership Data (Map 4)

CATS provided bus ridership data shown in Map 4. Average daily boarding and alighting data show where high-use bus stops are located. The core assumption is that most users will need to cross the street at least once to use the bus. The highest use stops are at Old Steele Creek Road, Clanton Road, Remount Road, and Camden Road. Each of these stops is located at a transfer point for another route.

Crash Data (Map 5)

A review of data showed that between 2011 and 2016 there were 28 crashes involving bicyclists and pedestrians on this approximately four-mile stretch of road (Map 5). Twelve of the 28 crashes occurred in dark lighting conditions (evening or night time). Six crashes involved bicyclists, of which five were at signalized intersections. There were 22 pedestrian crashes, eight of which occurred at signalized intersections. Two crashes were fatalities. There is
a significant grouping of seven crashes, including both fatalities, in the vicinity of the Reid Park neighborhood between West Tyvola Road and Romare Bearden Drive.

Traffic Volume (Map 6)

Traffic volume is key to pedestrian crossings because it gives a sense of how difficult it can be to cross. Higher numbers of cars tend to reduce opportunities for pedestrians to cross the street. The highest volumes of traffic are located between West Tyvola Road and I-77, suggesting that many drivers are using West Boulevard to connect between the interstate and places of employment to the southwest of the study area.

2. Traffic Speeds

CDOT conducted a speed study on West Boulevard to determine the extent of the speeding problem reported by residents (See Map 7, right).

Between Camden Road and Remount Road the posted speed limit is 35 mph, and in this segment, over 40% of traffic exceeded the speed limit by five or more miles per hour.

Between Remount Road and Billy Graham Parkway the speed limit is 45 mph, but the travel speeds varied for different segments. Between Remount Road and Old Steele Creek Road, five percent of traffic exceeded the speed limit by five or more miles per hour, and between Old Steele Creek Road and Billy Graham Parkway, 74% of traffic exceeded the speed limit by five or more miles per hour.
3. Street Lighting

The City inventoried the street lights on West Boulevard to determine how many were operating. There are 231 overhead streetlights and 62 pedestrian-scale lights — a total of 293 lights. After the inventory, the City determined that 63 lights, or 22%, were not operating. The inventory of non-functioning lights was reported to Duke Energy for repairs.

<table>
<thead>
<tr>
<th>Type</th>
<th>Total Number of Lights</th>
<th>Total Outages</th>
<th>% of Lights Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Lights</td>
<td>62</td>
<td>17</td>
<td>28%</td>
</tr>
<tr>
<td>Overhead Street Lights</td>
<td>231</td>
<td>46</td>
<td>20%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>293</strong></td>
<td><strong>63</strong></td>
<td><strong>22%</strong></td>
</tr>
</tbody>
</table>

4. Walking Along the Street

Sidewalk Width

The portion of West Boulevard within the study area is approximately four miles long. Sidewalk exists along both sides of the street for 98% percent of the route, with the only gap located between Billy Graham Parkway and New Renaissance.

In 2007, the City of Charlotte adopted the Urban Street Design Guidelines (USDG) which include minimum sidewalk width dimensions for various street types. For all thoroughfares, including West Boulevard, six feet is the minimum desired width.

In total, when taking both sides of the street into consideration, there are 7.9 miles of sidewalk on West Boulevard. According to the City’s sidewalk inventory database, 7.4 miles (93%) are five feet wide or less, with the remaining 0.5 miles (7%) meeting the standard six foot width for a thoroughfare.

Planting Strips

According to the 2016 Transportation Survey conducted by the City of Charlotte, Charlotteans prefer sidewalks that are both wide and separated from traffic by a planting strip. A planting strip offers additional buffer space from fast moving traffic and allows for trees to be planted. As mentioned above, the USDG, adopted in 2007, require an eight foot planting strip along all streets.

According to the City’s sidewalk inventory database, 2.6 miles (33%) of sidewalk have a planting strip offering a significant buffer between pedestrians and moving traffic. The remaining sidewalk (67%) does not meet the preferred eight feet width or wider for a thoroughfare. Much of the sidewalk with a planting strip is located in Wilmore between South Mint Street and Camden Road, and along buildings that have been built within the past few years like the YMCA or the CMPD Station.
5. Sidewalk Maintenance

During the course of the corridor study, CDOT staff met with its Street Maintenance Division to review and discuss potential sidewalk repairs. The condition of the sidewalk varied widely. There are conditions of sunken, heaving, cracked, and missing sidewalk. These conditions often include trip hazards or make a section of sidewalk impassable. Many sections of sidewalk do not meet the minimum requirements stated within the Americans with Disabilities Act (ADA) in terms of cross-slope and wheelchair ramp design.
STUDY FINDINGS & RECOMMENDATIONS

The purpose of this corridor study is to evaluate and document the transportation conditions along the West Boulevard corridor and make recommendations for improvements that can be implemented over time. The public involvement process identified five key issues related to the transportation system on West Boulevard: crossing the street, lighting, walking along the street, maintenance, and traffic speed. The City has a number of tools available to address the issues, and some solutions can be implemented in a shorter time frame than others while several will require a longer term approach. Some of the key improvements are identified below. The Charlotte City Council allocated funding in 2017 to implement the short and medium-term improvements.

Key short-term improvements include:

**STREET LIGHTING IMPROVEMENTS**
Street lights are operated and maintained by Duke Energy. The City conducted a lighting inventory as part of the study, and will work with Duke to improve the lighting by replacing burnt-out bulbs and adding additional street lights where needed (See Map 10), including underneath the I-77 overpass.

**SIDEWALK MAINTENANCE**
Sidewalks are maintained by the City. CDOT will work to identify and make repairs to sidewalks.

Key medium-term solutions include:

**NEW MID BLOCK CROSSING IMPROVEMENTS**
Pedestrian Hybrid Beacons, which are pedestrian-activated signals that stop traffic, will be installed as identified on the following pages.

**ACCESSIBILITY IMPROVEMENTS**
Some sidewalks and wheelchair ramps require significant redesign and reconstruction as opposed to a quicker repair process. In these cases, engineers must design more technical solutions to create a sidewalk that is compliant with the Americans with Disabilities Act.

Key long-term improvements include:

**COORDINATE WITH OTHER STUDIES & LONG RANGE PLANS**
Several planning studies and long range planning efforts are underway that could affect West Boulevard. The City will coordinate with these planning efforts to ensure that the plans are consistent with this study.

**CONSIDER FUTURE STREETSCAPE PROJECT(S) FOR BOND FUNDING**
Future changes to the pedestrian network and streetscape will require additional capital funding. The City will consider opportunities to fund these improvements.
## Recommendations Toolbox

<table>
<thead>
<tr>
<th>Short Term</th>
<th>Toolbox</th>
<th>Key Issues Identified by Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tool</strong></td>
<td><strong>Photo</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>STREET LIGHTING INVENTORY</td>
<td><img src="image1.png" alt="Photo" /></td>
<td>Inventory lighting conditions along West Boulevard and send maintenance requests with Duke Energy.</td>
</tr>
<tr>
<td>SPEED ENFORCEMENT BY CMPD &amp; SPEED LIMIT EVALUATION</td>
<td><img src="image2.png" alt="Photo" /></td>
<td>Work with CMPD and NCDOT to lower vehicular operating speeds.</td>
</tr>
<tr>
<td>TRAFFIC SIGNAL TIMING CHANGES</td>
<td><img src="image3.png" alt="Photo" /></td>
<td>Add “Leading Pedestrian Interval” phase to existing traffic signals to give pedestrians a head start to cross the street before stopped traffic begins moving.</td>
</tr>
<tr>
<td>SIDEWALK MAINTENANCE &amp; ADA REPAIRS</td>
<td><img src="image4.png" alt="Photo" /></td>
<td>Work with CDOT's Street Maintenance Division to make repairs to sidewalks and wheelchair ramps.</td>
</tr>
<tr>
<td>PEDESTRIAN HYBRID BEACONS &amp; BUS STOP ADJUSTMENT</td>
<td><img src="image5.png" alt="Photo" /></td>
<td>Install pedestrian crossing signals at key locations between existing signals, and adjust bus stops in coordination with new crossings.</td>
</tr>
<tr>
<td>NEW TRAFFIC SIGNALS</td>
<td><img src="image6.png" alt="Photo" /></td>
<td>Install new traffic signals at key locations.</td>
</tr>
<tr>
<td>MID TERM</td>
<td><strong>Tool</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Tool</strong></td>
<td><strong>Photo</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>SMART TOOLS</td>
<td><img src="image7.png" alt="Photo" /></td>
<td>Make changes to existing signalized intersections to reduce crossing distance for pedestrians and slow turning traffic speed.</td>
</tr>
</tbody>
</table>

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**SHORT TERM**

**Toolbox**

- **STREET LIGHTING INVENTORY**
  - Inventory lighting conditions along West Boulevard and send maintenance requests with Duke Energy.

**KEY ISSUES IDENTIFIED BY RESIDENTS**

- **SPEED ENFORCEMENT BY CMPD & SPEED LIMIT EVALUATION**
  - Work with CMPD and NCDOT to lower vehicular operating speeds.

- **TRAFFIC SIGNAL TIMING CHANGES**
  - Add “Leading Pedestrian Interval” phase to existing traffic signals to give pedestrians a head start to cross the street before stopped traffic begins moving.

- **SIDEWALK MAINTENANCE & ADA REPAIRS**
  - Work with CDOT's Street Maintenance Division to make repairs to sidewalks and wheelchair ramps.

- **PEDESTRIAN HYBRID BEACONS & BUS STOP ADJUSTMENT**
  - Install pedestrian crossing signals at key locations between existing signals, and adjust bus stops in coordination with new crossings.

- **NEW TRAFFIC SIGNALS**
  - Install new traffic signals at key locations.

**MID TERM**

**Toolbox**

- **SMART TOOLS**
  - Make changes to existing signalized intersections to reduce crossing distance for pedestrians and slow turning traffic speed.
Proposed Locations for PEDESTRIAN HYBRID BEACONS
1. Holabird Drive
2. Reid Park Plaza
   (between Morning Drive and Ridge Avenue)
3. West Boulevard Branch Library
4. Walton Road & Entrance to YMCA
5. Merriman Drive

Proposed Locations for NEW TRAFFIC SIGNALS
1. West Tyvola Road & West Boulevard
2. West Tyvola Road & Old Steele Creek Road

Proposed Corridor Improvements NOT MAPPED
1. Sidewalk Repairs & Maintenance
2. Accessible Ramp Repairs
3. Streetlight Maintenance
4. Truck Aprons
5. Raised Pedestrian islands

Proposed Intersections for LEADING PEDESTRIAN INTERVAL
1. Old Steele Creek Road
2. Clanton Road / Donald Ross Road
3. Dr Carver Road
4. Remount Road
5. Barringer Drive / I-77 Ramp
6. South Mint Street
7. South Tryon Street
8. Camden Road
Truck aprons are a type of curb extension constructed to encourage drivers to make slower turns while allowing large vehicles — trucks, buses, and recreational vehicles — to navigate turns without striking fixed objects or other road users. They also reduce the apparent crossing distance for pedestrians at intersections by creating a space that is visually distinct from the rest of the road.

This page includes an example of where this tool can be used to enhance an intersection.
The City will begin the work to build and implement the recommendations from this study (as funding allows).

The City will work to adopt changes to development ordinances to require all new development to build or rebuild the sidewalk with a planting strip and street trees to create a more comfortable walking environment.

The City will coordinate with ongoing studies and long range plans to ensure that the concepts recommended in this study are included and implemented with any future project, study, or development.

The City will host future meetings to update the public on the status of implementing recommendations from this study. The City will also keep its website up to date and attend neighborhood organization meetings when requested to provide updates to residents.

As traffic patterns change, opportunities may arise to implement a road diet to reduce the number of travel lanes on West Boulevard. CDOT will continue to monitor traffic patterns over time and work to implement changes at that time.

A West Boulevard Streetscape project would provide an opportunity to rebuild the sidewalks and add planting strips and trees to create a more comfortable walking environment.