

STAFF REPORT

To: Planning & Economic Development Committee
Date: November 19, 2013

From: Ken Putnam, PE, Transportation Department Director

Via: Mr. Gary Jackson, City Manager

Subject: Charlotte Street Corridor (I-240 to Edwin Place)

Summary Statement: The consideration of reviewing alternatives/recommendations to enhance pedestrian safety and overall mobility along Charlotte Street from I-240 to Edwin Place.

Review: VHB Engineering NC, PC (formerly Martin/Alexiou/Bryson, PC) presented the Charlotte Street Corridor Study to City Council on August 27, 2013 and City Council directed staff to move forward with the following two action steps:

1. Provide alternatives/recommendations to enhance pedestrian safety and overall mobility to the PED Committee during November 2013.
2. Report any recommendations from the PED Committee to City Council during January 2014.

Background: City Council authorized staff to move forward with preparing and releasing a request for qualifications (RFQ) for a comprehensive traffic-engineering analysis (study) along the Charlotte Street corridor from I-240 to Edwin Place during their June 26, 2012 meeting. A comprehensive traffic-engineering analysis (study) was one of the recommendations that were included in the January 2002 Charlotte Street Transportation Enhancement Study. The request for qualifications (RFQ) was released during the summer months of 2012 and a contract was awarded (October 2012) with VHB Engineering NC, PC (formerly Martin/Alexiou/Bryson, PC) in the total amount of \$52,265 (including a section on economic impacts).

The traffic count information for the study was collected during October 2012 and it included daily traffic volumes (passenger vehicles) at three locations and 13-hour full-turning movement counts (passenger vehicles) at 11 intersections. In addition, counts were collected for trucks, buses, bicycles, and pedestrians.

Daily traffic volumes were collected again at the same previous three locations during October 2013 and there is a 10% increase in traffic compared to last year. During October 2012, the daily traffic volumes ranged from 13,200 vehicles per day to 21,500 vehicles per day and during October 2013, the daily traffic volumes ranged from 14,400 vehicles per day to 23,500 vehicles per day. It is difficult to come to any final conclusions with only two "time" data points; therefore, staff is already planning on collecting the data during October 2014 (see attached map sections).

Highlights from the study include the following items:

1. Three alternatives were compared; specifically, existing 4-lane (do-nothing), 3-lane, and 3/4 lane (hybrid).

2. Existing speeding is minimal, more common for northbound vehicles.
3. Existing crash rates are within acceptable range.
4. Existing level of service (LOS) acceptable except at the I-240 ramps (LOS "D" is considered acceptable for urban conditions).
5. Afternoon peak period is the most critical (highest traffic volumes).
6. Poor access management (multiple driveways, excessively wide driveways, and driveways located too close to intersections).
7. Queue lengths are an issue with the 3-lane alternative.
8. Congestion begins to spread to multiple peak periods by 2015 and 2035.
9. Pedestrians have less than desirable sidewalk widths, clearances, poor crossing conditions, and ADA compliance issues.
10. Bicyclists have less than desirable conditions including narrow lanes, no shoulder, frequent driveways/conflicts, and heavy traffic.

Staff has been meeting regularly since August 27, 2013 to come up with alternatives/recommendations that would enhance pedestrian safety and overall mobility along the subject corridor. As a starting point, the following baseline criteria/"facts" were established:

1. Charlotte Street is classified as a minor arterial from I-240 to Clyde Street (NCDOT Functional Classification System – approved by the Federal Highway Administration on February 14, 2006).
2. Charlotte Street is classified as a collector from Clyde Street to Edwin Place (NCDOT Functional Classification System – approved by the Federal Highway Administration on February 14, 2006).
3. Maintain the Level of Service (LOS) and capacity for vehicular traffic.
4. Minimize delay and queuing for all transportation modes.

Three overall alternatives/recommendations were prepared in a matrix format listing various solutions with pros, cons, and a potential cost range. They are listed as follows:

1. Multi-Modal Corridor
2. High Pedestrian Level of Service/Car Oriented Corridor
3. Low Pedestrian Level of Service/Car Oriented Corridor

The multi-modal corridor option has the highest degree of complexity and potentially the highest cost to accomplish. Its goal would be to accommodate the needs of all the transportation modes. The other two options emphasize improving the pedestrian experience including undergrounding the utilities with the "high" option.

Action Steps:

Since the City is currently seeking proposals for a multi-modal transportation plan, staff suggests that additional action on the Charlotte Street Corridor should possibly be delayed until the multi-modal transportation plan is completed and accepted (adopted) by City Council. One of the objectives of the plan is to help City Council and staff to prioritize major "complete streets" projects. Staff anticipates that the contract will be awarded during February 2014 and that it will be presented to City Council during April 2015.

In the event that action should occur now, staff recommends that the PED committee move forward to City Council for their consideration and approval an action plan instructing staff to move forward with preparing and submitting a request for qualifications (RFQ) for a consultant team to prepare 100% construction-ready design plans to enhance the pedestrian experience along the Charlotte Street Corridor (This action step would require much staff time with limited resources as well as revisions to the CIP budget unless it is considered as a part of the upcoming budget process).

Please let me know if additional information is needed.

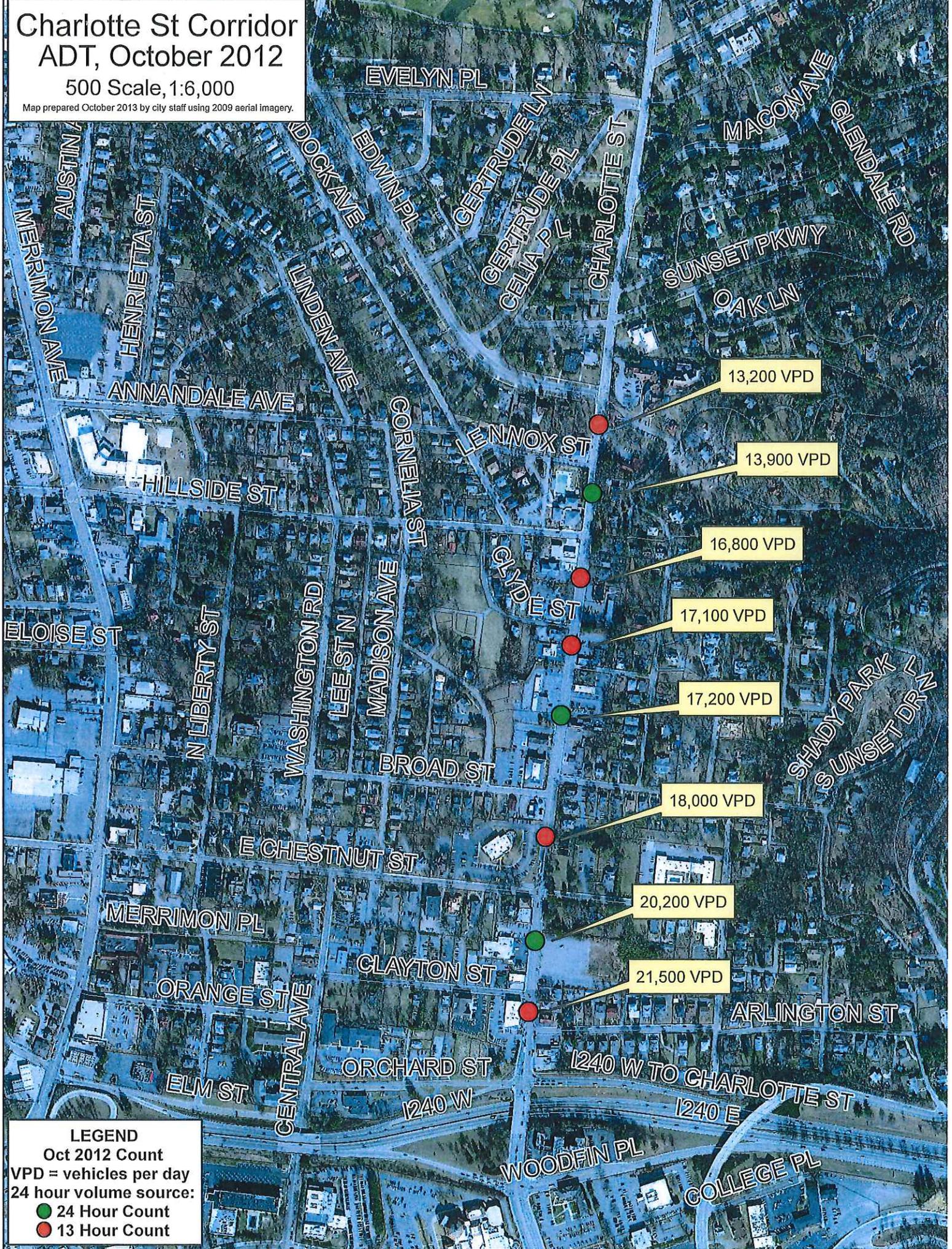
KJP/

Attachments

Charlotte St Corridor ADT, October 2012

500 Scale, 1:6,000

Map prepared October 2013 by city staff using 2009 aerial imagery.



LEGEND

Oct 2012 Count

VPD = vehicles per day

24 hour volume source:

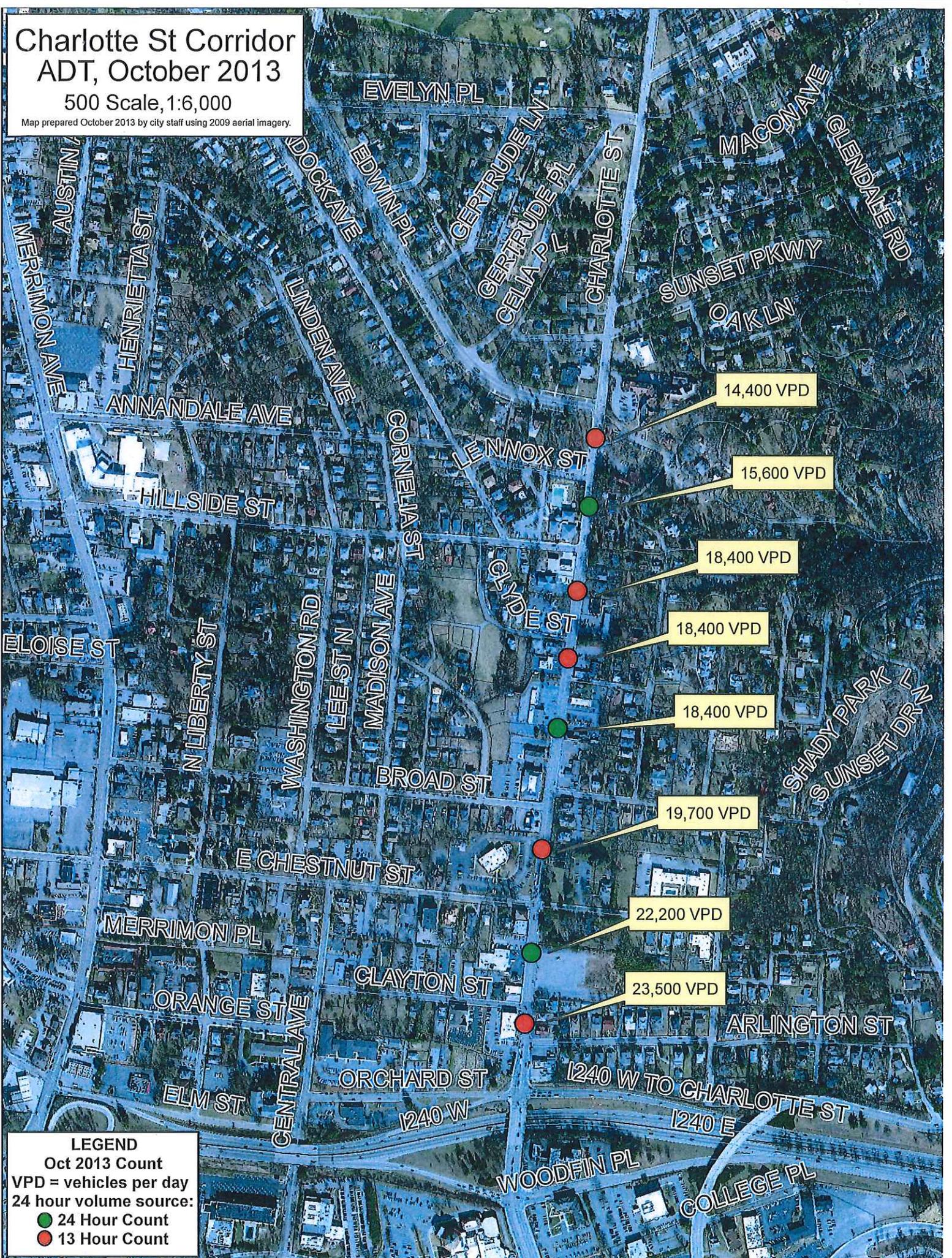
● 24 Hour Count

● 13 Hour Count

Charlotte St Corridor ADT, October 2013

500 Scale, 1:6,000

Map prepared October 2013 by city staff using 2009 aerial imagery.



Multi-Modal Corridor	Degree of Complexity: High	Cost/Benefit: High	
Solution	Pros	Cons	Cost
Maintain the same level of service for motorized vehicles.	Ensures continuous flow through the corridor.	Might impact other transportation modes.	Medium
Consider road diet and/or different lane alignment.	Minimizes the need for additional ROW. Could reduce travel speeds.	Could increase travel delay and queuing.	Low-Medium
Construct a raised median between I-240 and Chestnut Street.	Restricts left-turning movements. Improves traffic flow. Beautifies the entrance to the corridor. Safer for pedestrians.	Restricts access to business from opposite lane. Could create new traffic patterns.	Medium-High
Acquire additional ROW.	Enables improvements to sidewalks along both sides of the street without affecting the existing street footprint.	Requires easements.	High
Widen sidewalks on both sides of the street.	Provides a safer pedestrian environment. Improves sense of place. Increases pedestrian activity to nearby businesses.	Requires easements and/or ROW acquisition. Involves relocating existing walls. Involves removing mature trees.	High
Redesign and close driveways (access management).	Reduces conflicts between vehicles, pedestrians, and bicycles. Complies with ADA requirements.	Might adversely impact some business traffic flow patterns and parking.	Medium-High
Ensure ADA compliance.	Makes sidewalks compliant with ADA requirements.	ROW acquisition and easements might be required. Underground utilities might be required.	Medium
Provide bicycle infrastructure (bicycle lanes).	Improves bicycle safety. Separates vehicular and bicycle traffic.	Could require additional ROW. Could reduce vehicular travel lanes. Could increase travel delay and queuing.	Medium
Upgrade 2 traffic signals.	Improves interactions between pedestrians, vehicles, and bicycles. Improves traffic flow along the main corridor.	Could require additional ROW.	Medium
Underground utilities.	Enhances the pedestrian experience.	Coordination with various utilities.	High

<p>Install roundabout at the intersection of Charlotte Street and Edwin Place.</p>	<p>Reduces ADA compliance issues with obstacles on the sidewalk. Beautifies the corridor.</p>	<p>Cost</p>	
	<p>Eliminates the need for a traffic signal. More efficient than a traffic signal (eliminates left-turning movements). Organizes traffic flow. Improves pedestrian crossings. Beautifies corridor.</p>	<p>Potentially requires additional ROW.</p>	<p>High</p>

High Pedestrian Level of Service/Car Oriented Corridor	Degree of Complexity: Medium-High	Cost/Benefit: Medium-High	
Solution	Pros	Cons	Cost
Maintain the same level of service for motorized vehicles.	Ensures continuous flow through the corridor.	Might impact other transportation modes.	Medium
Consider road diet and/or different lane alignment.	Minimizes the need for additional ROW. Could reduce travel speeds.	Could increase travel delay and queuing.	Low-Medium
Widen sidewalks on both sides of the street.	Provides a safer pedestrian environment. Improves sense of place. Increases pedestrian activity to nearby businesses.	Requires easements and/or ROW acquisition. Involves relocating existing walls. Involves removing mature trees.	High
Acquire additional ROW.	Enables improvements to sidewalks along both sides of the street without affecting the existing street footprint.	Requires easements.	High
Redesign and close driveways (access management).	Reduces conflicts between vehicles, pedestrians, and bicycles. Complies with ADA requirements.	Might adversely impact some business traffic flow patterns and parking.	Medium-High
Ensure ADA compliance.	Makes sidewalks compliant with ADA requirements.	ROW acquisition and easements might be required. Underground utilities might be required.	Medium
Provide alternative bicycle route along nearby streets.	More space could be dedicated to pedestrian facilities. Shift to lower volume streets.	Increases distance to downtown. Reduces bicycle accessibility to businesses.	Low
Upgrade 2 traffic signals.	Improves interactions between pedestrians, vehicles, and bicycles. Improves traffic flow along the main corridor.	Could require additional ROW.	Medium
Underground utilities.	Enhances the pedestrian experience. Reduces ADA compliance issues with	Coordination with various utilities. Cost	High

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obstacles on the sidewalk.
Beautifies the corridor.

Low Pedestrian Level of Service/Car Oriented Corridor	Degree of Complexity: Medium		Cost/Benefit: Low-Medium
Solution	Pros	Cons	Cost
Maintain the same level of service for motorized vehicles.	Ensures continuous flow through the corridor.	Might impact other transportation modes.	Medium
Acquire additional ROW.	Enables improvements to sidewalks along both sides of the street without affecting the existing street footprint.	Requires easements.	High
Widen sidewalks on both sides of the street.	Provides a safer pedestrian environment. Improves sense of place. Increases pedestrian activity to nearby businesses.	Requires easements and/or ROW acquisition. Involves relocating existing walls. Involves removing mature trees.	High
Redesign and close driveways (access management).	Reduces conflicts between vehicles, pedestrians, and bicycles. Complies with ADA requirements.	Might adversely impact some business traffic flow patterns and parking.	Medium-High
Ensure ADA compliance.	Makes sidewalks compliant with ADA requirements.	ROW acquisition and easements might be required. Underground utilities might be required.	Medium
Provide alternative bicycle route along nearby streets.	More space could be dedicated to pedestrian facilities. Shift to lower volume streets.	Increases distance to downtown. Reduces bicycle accessibility to businesses.	Low
Upgrade 2 traffic signals.	Improves interactions between pedestrians, vehicles, and bicycles. Improves traffic flow along the main corridor.	Could require additional ROW.	Medium