



Charlotte Department of Transportation

Memorandum

Date: February 16, 2011

To: Tammie Keplinger
Charlotte-Mecklenburg Planning Department

From: Michael A. Davis, PE *Mike Davis*
Development Services Division

Subject: Rezoning Petition 10-067: Response to Zoning Committee Questions

During the January 26 Zoning Committee meeting, CDOT staff was requested to provide additional information regarding traffic issues associated with the subject petition. This memorandum is to provide an overview of CDOT's analysis of the proposed rezoning.

Observations about Bevington's Present Operation

Bevington Place serves as a collector, connecting a major thoroughfare (Rea Road) and a minor thoroughfare (Elm Lane). The Shoppes at Piper Glen which consists of a grocery store a pharmacy and various other retail establishments has a driveway connection to Bevington Place. Bevington Place experiences the highest volume of traffic during the PM Peak (4-6PM). Throughout the day pedestrians cross Bevington Place to access the Four Mile Creek Greenway on the south side of the road, or the retail establishments on the north side of Bevington Place. Pedestrian traffic typically increases during the weekend.

Traffic Volumes

Traffic counts for Bevington between Rea and Elm were last collected on February 24, 2010. This traffic count indicates that approximately 4,900 vehicles per day travel along this segment of Bevington. Bevington is classified as a minor collector, which would be expected to carry volumes in this range. For the purposes of comparison, below are volumes collected from nearby streets.

Street	Classification	Vehicles/Day	Count Date
Bevington Place (West of Rea)	Minor Collector	5,400	2/24/10
Rea Road (South of Bevington)	Major Thoroughfare	25,800	9/28/10
Elm Lane (South of NC 51)	Minor Thoroughfare	13,300	6/16/10

Crash Data

A review of crash data for the period from January, 2005 to November 2010 reveals the following:

Bevington Place between Rea Road and Elm Lane

- 2 documented crashes total
- 1 rear-end crash at intersection of Bevington/Birkdale Valley Drive

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- 1 sideswipe with the on-street parking on Bevington Place between Birkdale Valley Drive and Rea Road

Intersection of Bevington Pl/Rea Rd

- Total of 31 documented crashes
- Predominant pattern is left-turn, same-roadway crashes (13 of 31) and most are the northbound left-turn from Rea Rd onto Bevington Pl. 58% of total crashes involved no injury and 33% involved injury
- There does not appear to be a significant time of day pattern to the crashes
- There is a slight increase on number of crashes on Fridays and Saturdays, which represent almost half (48%) of the total crashes

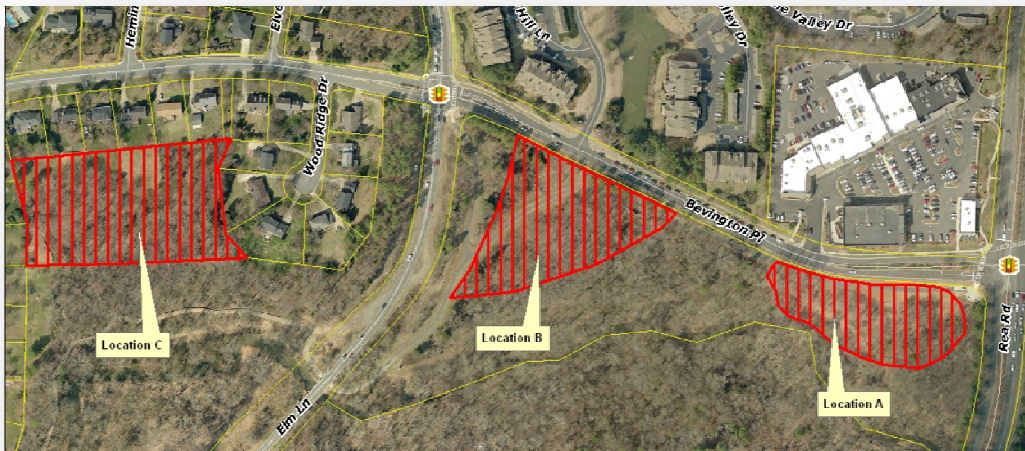
Intersection of Bevington Pl/Elm Lane

- Total of 21 documented crashes in approx 5 years
- 48% of crashes involve injury and 48% involve no injury (4% unknown)
- Of the total, 14 crashes were angle-type, which are correctable by installation of a traffic signal. A traffic signal was installed within the last year
- There does not appear to be a significant time-of-day or day-of-week pattern to the crashes

Based on this crash data, CDOT does not have any specific concerns about the safety record of Bevington Place.

CDOT Involvement with the Petition

At the request of Lat Purser and Associates, CDOT participated in a stakeholder group along with representatives from Lat Purser and Associates, Mecklenburg County Greenway Parks and Recreation, and the Greenway Advisory Committee. Lat Purser and Associates voiced concerns about the amount of parking being utilized in the shopping center for greenway users and the impact it was having on some of the businesses. The goal of the stakeholders group was to identify ways to achieve additional parking to accommodate the visitors of the greenway. CDOT studied potential alternatives to achieve additional on-street parking and developed multiple concept drawings. In addition, CDOT worked with the stakeholder group and identified three potential locations (shown below) for an off-street parking lot. CDOT developed concepts for two of the three locations based on feasibility.



Locations Studied for Off-Street Parking

Off-Street Parking Location A:

A parking lot in this location would provide for approximately 35 to 40 spaces. The topography is slightly rolling and would accommodate a parking lot with minimal grading. In addition, the parking lot would be able to stay out of the floodplain. The impacts could be limited to the upland zone of the swim buffer if the driveway was located as shown in the rezoning plan.

Off-Street Parking Location B:

A parking lot in this location appears to accommodate approximately 35 parking spaces. The parking lot would impact the community floodplain possibly triggering a flood study. In addition, a 10-foot retaining wall may be needed in the rear of the lot to accommodate the existing topography. Due to cost of the wall and the potential impacts to the floodplain this option was determined economically infeasible.



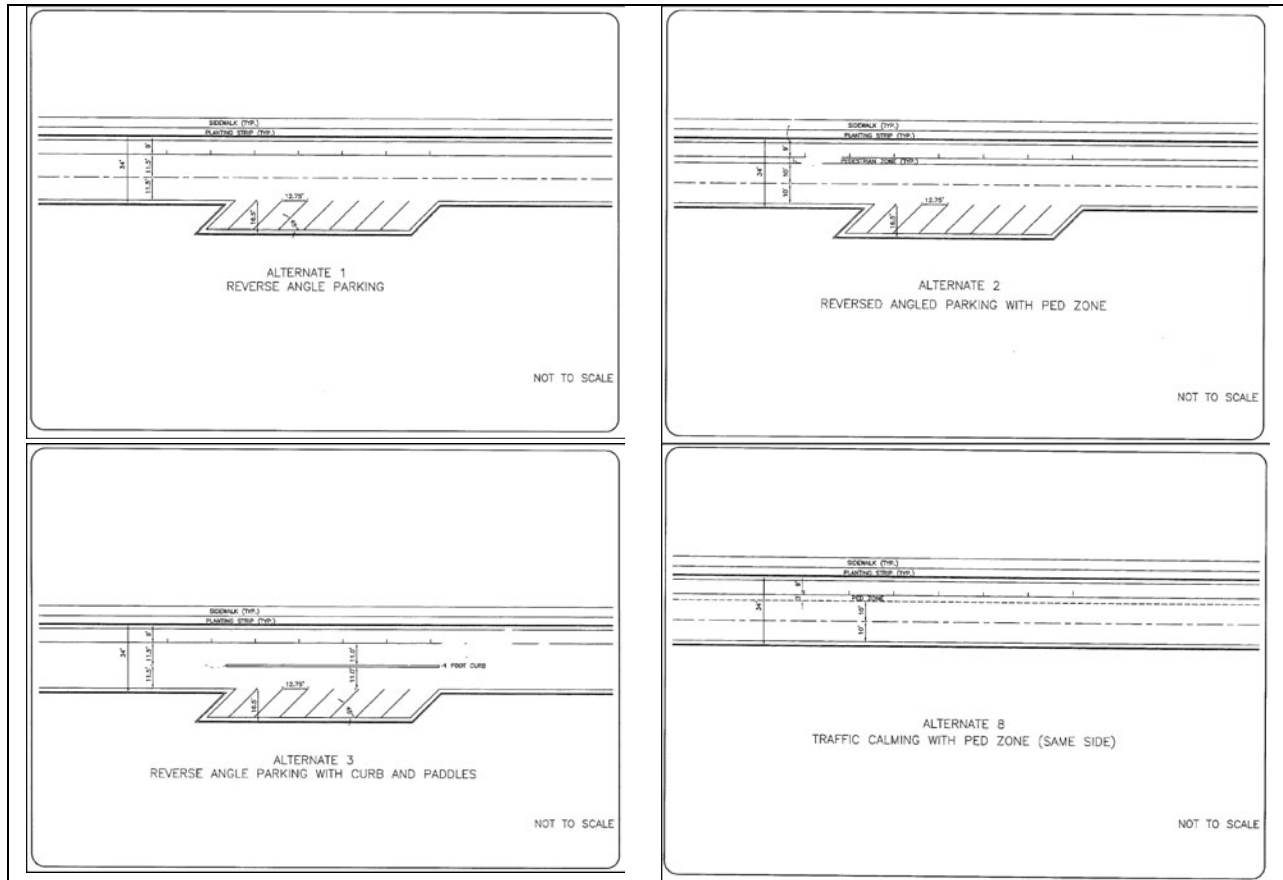
Off-Street Parking Location C:

A concept for Location C was not developed due to the limits of the floodplain, a 30-foot post construction water quality buffer and potential access challenges.

On-Street Parking:

Presently, there is marked on-street parking on the north side of Bevington Place from the retail driveway west to Birkdale Valley Drive. This parking was installed in December, 2007 at the request of and funded by Lat Purser & Associates. In January, 2010 on-street parking was added along the south side of Bevington Place. The parking along the south side was removed in February, 2010 because there was inadequate width to accommodate two-way traffic and the high-turnover parking. The parking that remains predominantly serves people visiting the retail development and the greenway.

In an effort to seek additional on-street parking, CDOT studied various configurations including parallel on-street parking, reverse angle parking and standard angled parking. In order to provide adequate width the curb would have to be relocated to accommodate any of the designs. The concepts showed that additional parking could be achieved, but only provide 15 to 18 spaces. Examples of on-street parking designs are included below.



Examples of proposed on-street parking configurations.

Given that both uses create demand for the on-street parking and that the width of Bevington Place will only allow for parking on one side, there will be demand for pedestrian crossings regardless of which side of the street the parking is located.

The north side of Bevington Place is favored for on-street parking by CDOT for the following reasons:

- 1) The north side of Bevington Place has sidewalk, which allows for safe and convenient passenger loading and unloading.
- 2) On-street parking on the north side naturally favors westbound traffic, which would serve as a logical counterpart to off-street parking with the access proposed, which would naturally favor eastbound traffic.



Aerial Photo of Present On-street Parking Along North Side

Potential Traffic Calming

In January, 2009 the speed limit along Bevington Place was reduced from 35 mph to 25 mph. Presently the operating speeds exceed the speed limit. Bevington Place currently qualifies for traffic calming by City policy regardless of the outcome of the proposed zoning. However, it is our intention to make decisions about the most appropriate form of traffic calming after the outcome of the petition is known, allowing for more observation. The following treatments have been identified as possible traffic calming measures for Bevington Place:

Posted Pedestrian Zone

Alerts motorists to the likely presence of pedestrians in the street through the use of warning signs that define a zone. This treatment is best for locations where pedestrian conflicts are not concentrated at a single point along the street, but evenly dispersed, as in the case of streets that generate crossings to and from vehicles parked along the street.

Speed Humps

Bevington Place qualifies under the City's traffic calming policy for speed humps. These devices are used citywide and have been shown to reduce vehicles speeds. Public acceptance of speed humps varies and so the policy requires local community support.



Raised Pedestrian Crosswalk

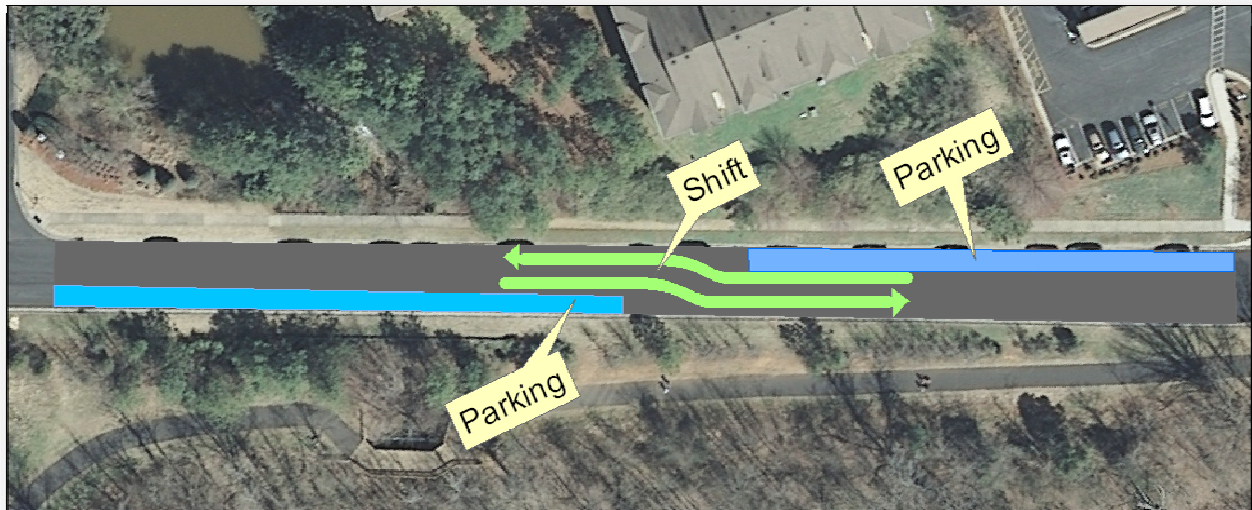
A raised pedestrian crosswalk can be beneficial for pedestrian crossings by assigning the right-of-way to the pedestrian, alerting the driver to the presence of potential pedestrian conflicts, and introducing a vertical element that reduces vehicle speeds. If implemented under the wrong conditions, marked crosswalks can increase the likelihood of pedestrians being hit by motorists, and so they should only be implemented where pedestrians are likely to use them frequently, and under proper conditions of speed, volume, sight distance, and separation from nearby driver conflict points. Below is an image of a raised pedestrian crosswalk.



Raised crosswalks also create challenges for street drainage because they interrupt the flow of water along the gutter. In this example, the gutter is bridged with a metal plate, which is an inexpensive solution, but one which introduces significant maintenance challenges due to debris that can collect in the gutter. Though significantly more expensive, this can be mitigated with the construction of catch basins.

Alternating Side-of-Street On-Street Parking

Traffic calming can also be accomplished by introducing lateral shifts in the driver's path along Bevington by alternating the side of the street on which the parking is placed. This can be an effective traffic calming measure, but one which would reduce the number of on-street parking spaces.



Retail Driveway

The existing driveway to the retail development is constructed as a type III driveway, which means it acts like an intersection and pedestrians have to yield to entering and exiting vehicles. The driveway is presently imposing to cross for pedestrians due its width and lack of pavement markings. The pedestrian comfort and circulation could be improved along Bevington Place simply by adding pavement markings to the driveway similar to what is depicted in the image to the right. This would help organize the vehicle movements, reduce uncertainty, and potentially moderate entering and exiting vehicle speeds. It may be a feasible alternative to mark a single lane exit with a painted or raised median that facilitates pedestrian crossings.



Please let me know if you have questions or if I may be of further assistance.

C: L. Harmon
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