SUMMARY OF ANALYSIS AND RECOMMENDATIONS

Kenilworth and Scott Avenues and Park Road Corridor Study

City of Charlotte, North Carolina

Charlotte Mecklenburg Planning Department and the Charlotte Department of Transportation

February 2008

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

The Kenilworth-Scott Avenue one-way pair through the Dilworth neighborhood serves a multitude of roles for its users. The one-way pair is the main north-south spine through the neighborhood. Kenilworth and Scott Avenues serve a large commuter population traveling from South Charlotte into Center City on a daily basis, and it provides both motorized and non-motorized access for residents of the adjacent neighborhoods to businesses located along East Boulevard. In addition to the one-way pair of Kenilworth and Scott Avenues, Park Road forms the southern boundary of the Dilworth neighborhood and also serves an important function as more of a neighborhood "main street" with commercial office and retail uses within walking distance of many homes. This corridor transitions dramatically from a thoroughfare serving commercial and office land uses into a low-volume residential street north of Ideal Way.

In 2006, the Dilworth Land Use and Streetscape Plan (Dilworth Plan) was adopted by City Council. From the adopted plan, it was recommended that the Kenilworth-Scott corridor be further studied from a standpoint of enhancing pedestrian safety along the corridor. With the passage of the 2006 bond package, Charlotte-Mecklenburg Planning Department (Planning Department) in conjunction with the Charlotte Department of Transportation (CDOT) commissioned this study in early 2007 to develop a plan for Kenilworth and Scott Avenues as well as Park Road. This document presents the analysis, community collaboration, and recommendations developed during that planning effort.

The effort included analysis of existing traffic conditions, development of issues and opportunities, and collaboration with the community to develop a slate of initiatives to address the overall walkability of the corridor. Corridor improvements such as curb extensions, road diets, and roundabouts were developed and evaluated, and an integrated plan was developed that included the following major recommendations:

- Implementation of curb extensions along Kenilworth and Scott Avenues (entire length);
- Installation of enhanced crosswalk markings and signage[(*)];
- Advance pedestrian-activated lighting at three intersections along the Kenilworth and Scott corridors [(*)];
- "Road diet" to reduce travel lanes from two to one on Kenilworth and Scott Avenues south of East Boulevard (*);
- Implementation of a two-lane roundabout at Park Road and Kenilworth Avenue to serve as transition to "road diet" section and serve as gateway to neighborhood [(*)];
- Creation of gateways at the north and south entries to the Kenilworth and Scott Avenue corridors;

[(*)] CDOT will need to further study these recommendations to determine if they are feasible or appropriate

- Installation of four mid-block pedestrian refuge islands on Park Road between Ideal Way and Scott Avenue; and
- Replacement of the traffic signal at Ideal Way and Park Road with a mini-roundabout or stop-controlled intersection [1*].

Implementation of these initiatives are contingent on funding, but can be accomplished in a tiered approach in which specific measures were divided into short term (0-2 years), mid term (2-5 years), and long term (beyond 5 years) projects. Costs were also developed for the initiative and are presented in this report.

In addition to the recommended initiatives, the study also recommended that other initiatives such as the implementation of a road diet north of East Boulevard be revisited at a later date should traffic patterns or development change along the corridors.

[*] CDOT will need to further study these recommendations to determine if they are feasible or appropriate

INTRODUCTION

The Kenilworth Avenue and Scott Avenue one-way pair forms a major north-south spine through the Dilworth neighborhood, connecting the areas of South Charlotte and Myers Park to Uptown Charlotte as a major thoroughfare. The roadways also serve as an important part of the framework of the Dilworth neighborhood, offering vehicular and non-vehicular mobility to residents and patrons of the various businesses, residences, and parks along or near the corridors. Many of the residents have expressed concern about the safety of non-vehicular users along the corridors, especially when crossing the roadways as a bicyclist or pedestrian. During the planning process for the Dilworth Plan completed in 2006, stakeholders identified this corridor as an area of concern for further study, with a recommendation that the pair be the subject of a special study within three years; the Planning Department and Charlotte Department of Transportation (CDOT) have funded the study through the 2006 Bond Package. In addition to the Kenilworth and Scott Avenues corridor, the study also addressed strategies to create an enhanced pedestrian-friendly corridor along Park Road between Scott Avenue and Ideal Way. The study area is identified in ***Figure 1***.

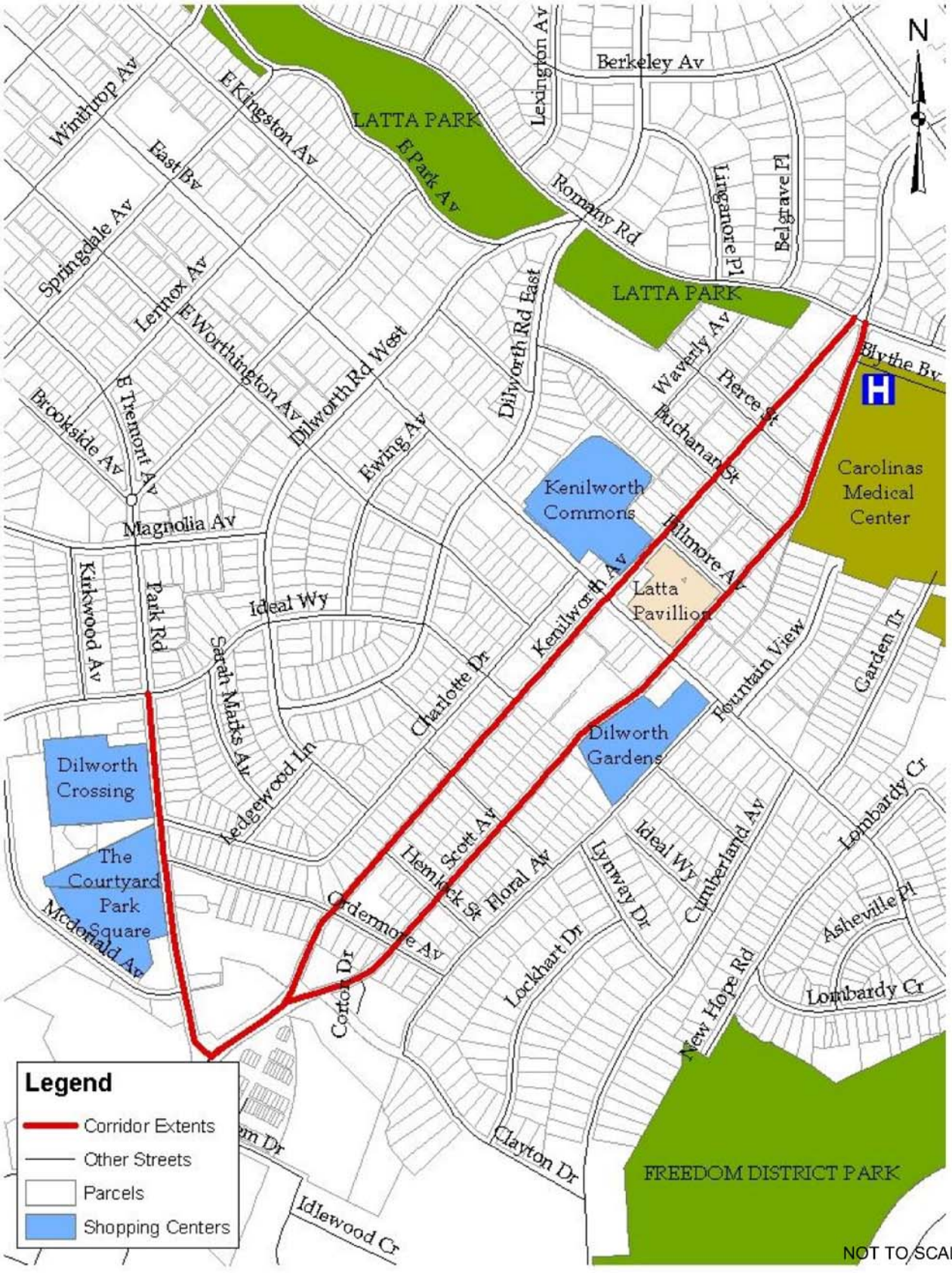
The inherent goal of this project was to balance the needed vehicular throughput along Kenilworth and Scott Avenues with the enhancement of the environment and safety for bicyclists and pedestrians. Specific goals identified in the Dilworth Plan marked a starting point for the development of enhancements along the Kenilworth-Scott and Park Road Corridors:

- Moderate vehicular travel speeds;
- Reconnect the two sides of Dilworth for pedestrians and bicyclists;
- Create corridors that are more compatible with adjacent land uses;
- Make it easier for pedestrians and bikes to cross the roadways; and
- Make it easier to park along Kenilworth and Scott Avenues.
- Make Kenilworth and Scott Avenues more compatible with the adjacent residential land uses

This study was conducted in a highly interactive format that included neighborhood stakeholders in the identification of issues and opportunities, as well as the development of specific enhancement solutions to address those issues. Two community worksessions were held with the Dilworth Community Development Association (DCDA) to identify the series of enhancement alternatives and recommendations. The community participation was bolstered by traffic analyses as well as development of specific initiatives that could help “tame” the corridors from a vehicular travel speed standpoint while enhancing the environment for non-motorists. Stakeholders and the design team reviewed the issues and selected measures and initiatives from a “toolbox” of options to address the issues. From these initial community worksessions, the recommended plan was formulated to address the issues through a combination of initiatives geared toward controlling travel speeds and increasing walkability within, along, and across the corridors.

This report summarizes the process and recommendations of the corridor study. The process began by conducting an analysis of existing conditions along the Kenilworth-Scott and Park Road Corridors.

From the existing conditions analysis, issues and opportunities for the corridors were identified. The results of the existing conditions analysis were coupled with potential opportunities for the corridor and presented to the public through a series of community worksessions. Dilworth residents, property owners, and members of the DCDA assisted in formulating the development and analysis of initiatives for the corridors. The final recommended plan for the Kenilworth-Scott and Park Road corridor includes the implementation schedule and cost estimates to implement the project.



Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Study Area	Figure 1

EXISTING CONDITIONS AND OBSERVATIONS

In order to address pertinent issues relating to the improvement of pedestrian safety and walkability along Kenilworth and Scott Avenues as well as the Park Road corridor, an extensive existing conditions analysis was performed along with several observations of existing traffic patterns. The existing conditions analysis consisted of an initial site walk, an analysis of existing land use within the study areas and the analysis of methods and routes that residents chose to reach these locations, a summary of the existing roadway geometrics, and a descriptive analysis of corridor travel speeds as well as a summary of observed operations.

Site Walk

Prior to data collection, a site walk was conducted on June 1, 2007 with Mr. Dan Gallagher, Transportation Planner from CDOT, and Mr. Bryman Suttle, Associate Planner from the Planning Department. During the site walk, corridor extents were established, vehicular and pedestrian/bicycle issues were highlighted as identified in the Dilworth Plan. While on-site, photo-documentation of the corridors was conducted. A supplemental detailed site investigation was conducted later in June. Both geometric and existing operational parameters were collected, analyzed, and documented as part of the data collection process.

Corridor Description and Land Uses

The study area extents for this project include Kenilworth Avenue from the intersection of Park Road to the intersection of Romany Road, a distance of 0.81 miles. The entire length of Scott Avenue is considered in this study from Kenilworth Avenue to Romany Road, a distance of 0.85 miles. In addition, the Park Road corridor has been included in this study from the intersection of Kenilworth Avenue to Ideal Way, a distance of 0.32 miles (see ***Figure 1*** – Study Area). A description of each corridor has been included below:

- Kenilworth Avenue from Park Road to Romany Road
  This roadway forms the southbound direction of the one-way pair with Scott Avenue. Kenilworth Avenue is classified as a major thoroughfare with a posted speed limit of 35 mph from Park Road to Romany Road. There are three signalized intersections (Park Road, East Blvd and Romany Road) and seven unsignalized intersections with local streets along the Kenilworth Avenue Corridor. North of East Boulevard, the alignment for Kenilworth Avenue consists of two through lanes, and parking on the left side of the street. South of East Boulevard, the alignment consists of two through lanes, a parking lane on the left side and a bike lane on the right side of the street. While there are sidewalks present along at least one side of Kenilworth Avenue, crosswalks only exist at the intersection with East Boulevard. The land use along the Kenilworth Avenue corridor is predominately residential. In the vicinity of East Boulevard, the land use transitions to mixed use with the Kenilworth Commons Shopping Center and Latta Pavilion Development.
- Scott Avenue from Kenilworth Avenue to Romany Road
  This roadway forms the northbound direction of the one-way pair with Kenilworth Avenue. Scott Avenue is classified as a major thoroughfare with a posted speed limit of 35 mph from Kenilworth Avenue to Romany Road.

There are two signalized intersections (East Blvd and Romany Road) and six unsignalized intersections with local streets along the Scott Avenue Corridor.

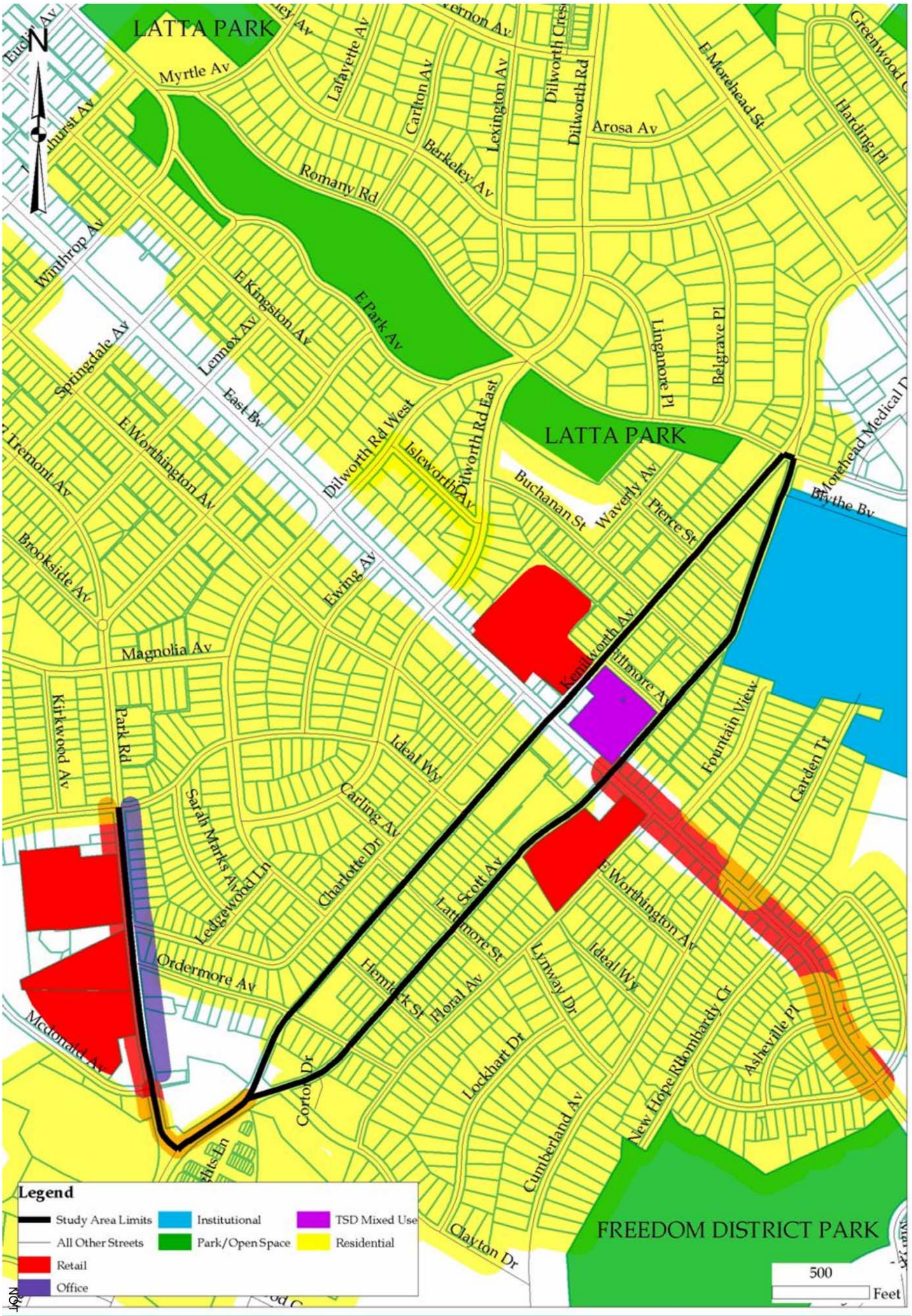
North of East Boulevard, the alignment for Scott Avenue consists of two through lanes, and parking on the left side of the street. South of East Boulevard, the alignment consists of two through lanes, a parking lane on the left side and a bike lane on the right side of the street. While there are sidewalks present along at least one side of Scott Avenue, crosswalks only exist at the intersections with East Boulevard and Blythe Boulevard. The land use along the Scott Avenue corridor is predominately residential. In the vicinity of East Boulevard, the land use transitions to mixed use with the Dilworth Gardens Shopping Center and Latta Pavilion Development. In the vicinity of the intersection with Romany Road, the land use becomes office and institutional given the proximity to Carolinas Medical Center Hospital.

- Park Road from Kenilworth Avenue to Ideal Way
  Park Road is classified as a major collector with a posted speed of 35 mph. There are two signalized intersections along the Park Road corridor (Kenilworth Avenue and Ideal Way) and three unsignalized intersections with local streets. Park Road has a three-lane alignment for the majority of the study area with the center lane striped as a two-way left turn lane (TWLTL). Bike lanes are also striped along both sides of the corridor. While sidewalks are present along both sides of the corridor, there are frequent curb openings for businesses and residences along both sides of the corridor. Crosswalks are present along the Park Road Corridor at the intersections with Kenilworth Avenue, McDonald Avenue, and Ideal Way. The land use is mixed along the Park Road Corridor, with retail land uses located on the west side of the street and office located along the east side of the street. North of the intersection at Ideal Way, Park Road transitions into an established residential neighborhood with a roundabout at the intersection of Park Road, Tremont Avenue and Brookside Avenues.

Overall, the predominant land use throughout the corridors is residential (see ***Figure 2 – Corridor Land Use***). Residents must traverse the Kenilworth-Scott and Park Road Corridors to reach Freedom Park, Latta Park, and the numerous commercial and neighborhood-serving land uses along East Boulevard and Park Road. ***Figure 3*** depicts the corridor destinations and attractions.

Summary of Existing Roadway Geometrics

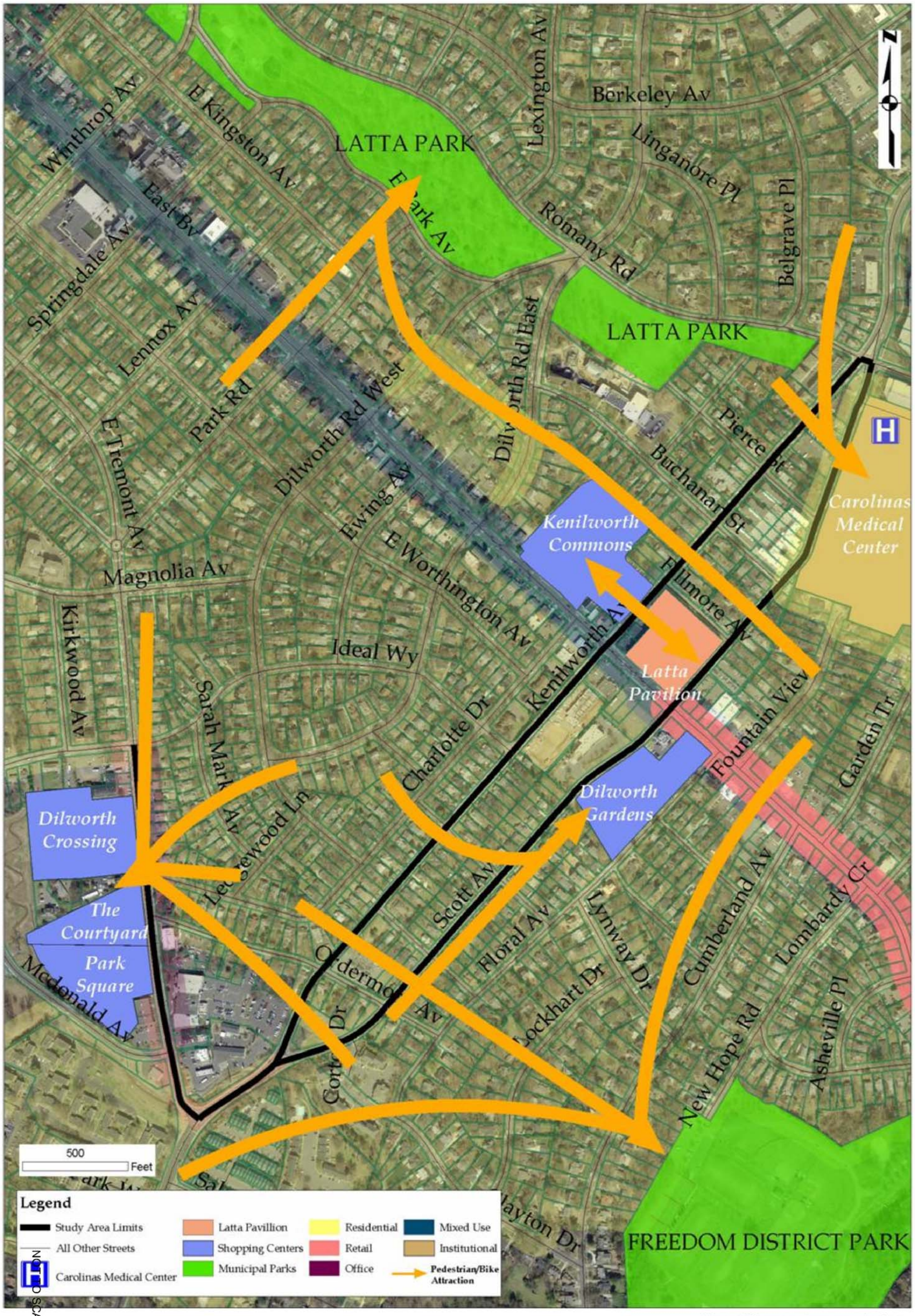
Geometric data relating to the Park Road, Scott Avenue, and Kenilworth Avenue corridors was field-verified on a detailed site investigation held on June 27, 2007. Roadway cross-section data was collected for each block at mid-block locations. Measurements of the roadway cross section included the widths of travel lane(s) for both approaches, bike lane, parking lane, planter strip, and sidewalks. Widths for each segment of the cross-section were obtained by using a measuring wheel with segment changes determined from pavement markings. The lane configuration was noted for each block and sketches were drawn of each cross section in the field. Corridor cross sections were also photo documented to illustrate the character of each individual segment of each corridor.



NOT TO SCALE

Note: This map does not depict city council adopted land uses

Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Corridor Land Use	Figure 2



Note: This map does not depict city council adopted land uses

Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Corridor Attractions and Destinations	Figure 3

A strip map of the study corridors was created from the collected data for the roadway corridors that graphically depicts the dimensions of each cross section as well as character photographs; (see ***Figures 4a through 4c***). The purpose of the strip map is to denote section changes between blocks in the corridor (i.e. loss of parking lane) and to display the dimensions of each cross-section in the study area. From this base information, detailed concept development for each segment can be accomplished.

Descriptive Analysis of Corridor Travel Speeds

The 85th percentile speed is the speed at or below which 85 percent of the motorists drive on a given road unaffected by slower traffic or poor weather. It indicates the speed that most motorists on the road consider safe and reasonable under ideal conditions. The 85th percentile speeds are substantially greater than the posted speed limit of 35 mph, particularly along Kenilworth and Scott Avenues south of East Boulevard. The high rate of speed is not compatible with the surrounding residential land uses and is not conducive to safe pedestrian and bicycle navigation across these streets or to travel alongside them. The data confirms the concerns of the stakeholders regarding vehicular speeds within the corridors.

Average Annual Daily Traffic (AADT) data and 85th percentile speed data were collected at four locations along the Kenilworth-Scott corridors. ***Table 1*** depicts the AADT and 85th percentile speed data along the Kenilworth-Scott corridors (this data is also depicted graphically in ***Figure 5***).

Table 1: AADT and 85th Percentile Speed Data

Location	AADT	85th Percentile Speed (mph)
Kenilworth Ave. at Pierce St.	11,332	41.75
Kenilworth Ave. at Lattimore Ave.	10,618	43.66
Scott Ave. at Lattimore Ave.	11,963	47.12
Scott Ave. at Buchanan St.	14,029	36.86

Source: CDOT, 2007

It is evident from the data that higher daily volumes are observed along Kenilworth and Scott Avenues north of East Boulevard.

Summary of Observed Operations: Kenilworth Avenue and East Boulevard

In order to verify the results obtained in the Synchro and SimTraffic analyses, a field observation of queue lengths and overall traffic flow was conducted at the intersection of Kenilworth Avenue and East Boulevard on Thursday, August 2 between 5:00 p.m. and 5:45 p.m. Each approach was photo and video documented.

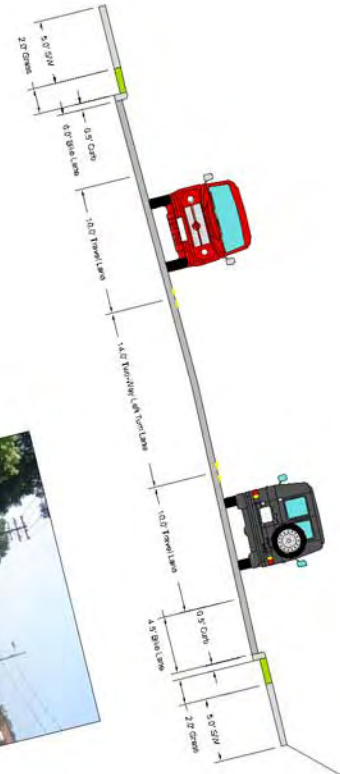
Significant queuing was found on the southbound approach of Kenilworth Avenue to the north of the intersection with East Boulevard. At 5:00 p.m., the traffic queue during the red phase extended beyond the intersection of Fillmore Avenue, a distance of approximately 400’ north of the intersection with East Boulevard. Vehicles that were queued to the north of Fillmore Avenue did not clear during the green phase at the intersection of East Boulevard.

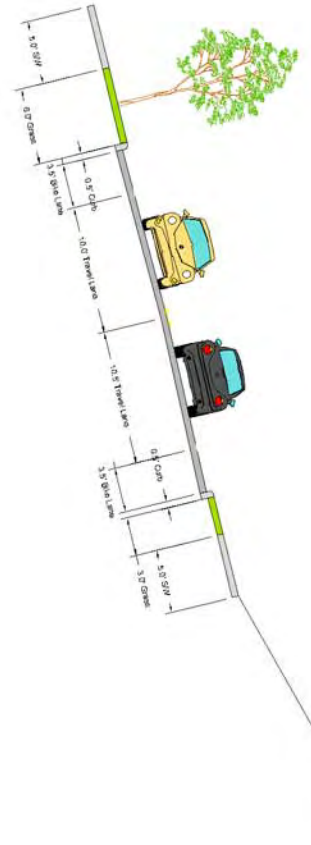
Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

Park Rd South of Scott Ave facing north

Park Rd midblock between Orchard and Kenilworth facing south

Park Rd midblock between Charlotte and Ordermore facing south





Salem Dr
Kenilworth
Ordermore
Charlotte Dr
Park Rd
Park Rd

Figure 4a

Park Road Corridor

Kenilworth - Scott Corridor Study

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TRANSPORTATION GROUP, INC.

Note:
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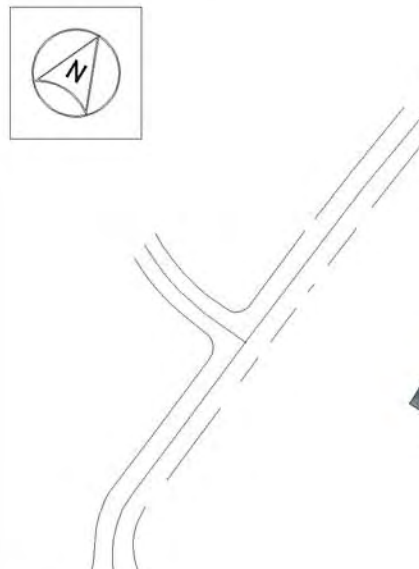
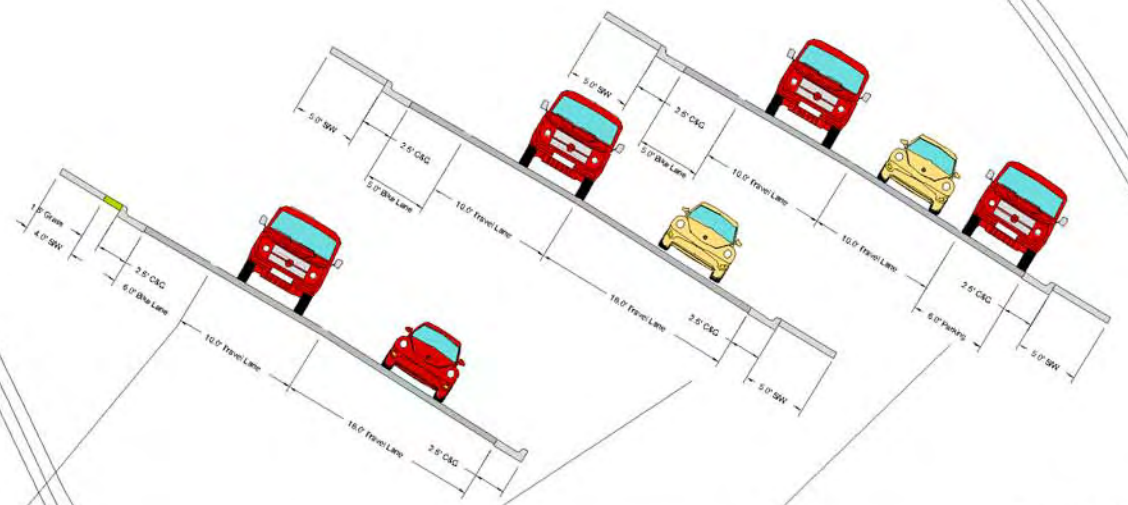
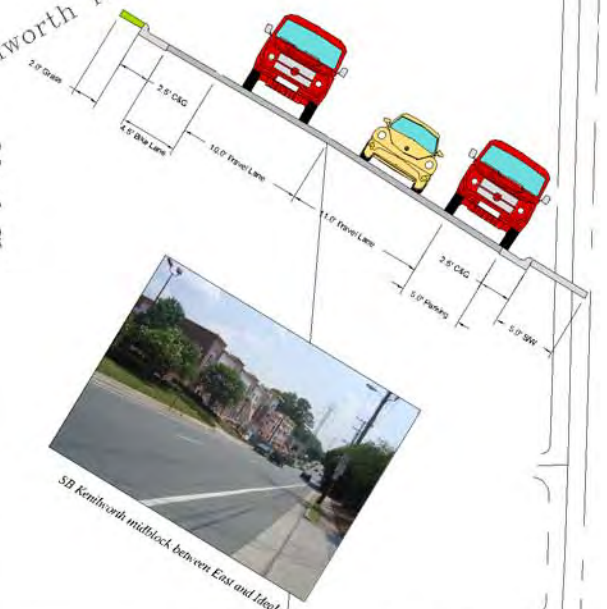
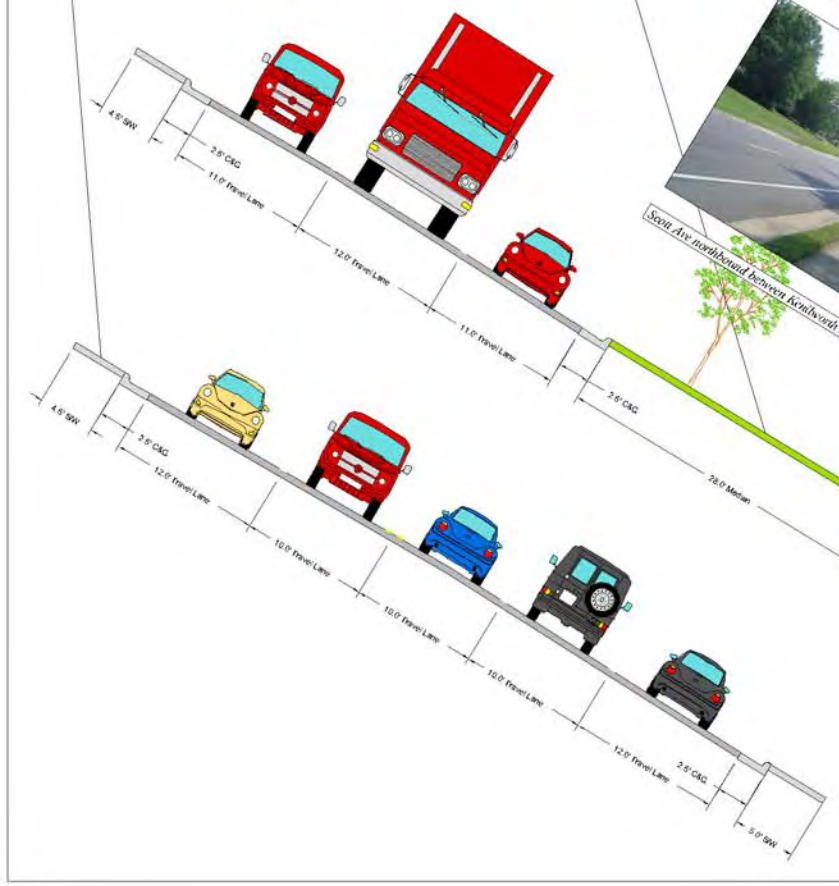

SB Kenilworth between Ordermore & Scott

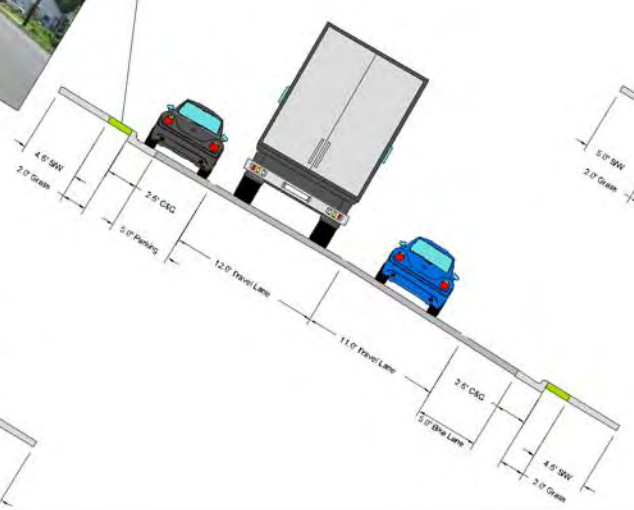



SB Kenilworth midblock between East and Ideal

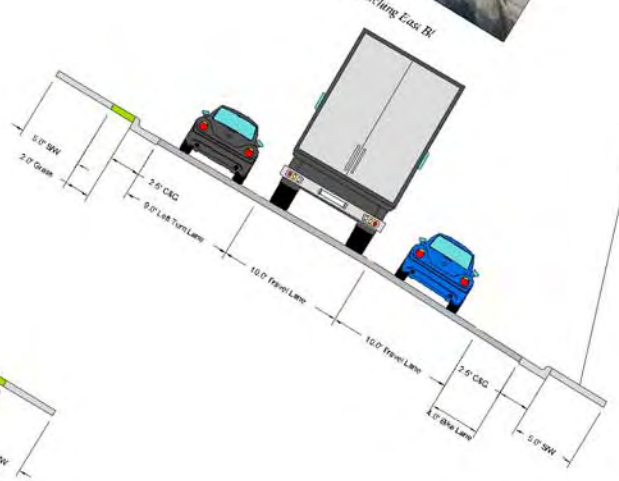


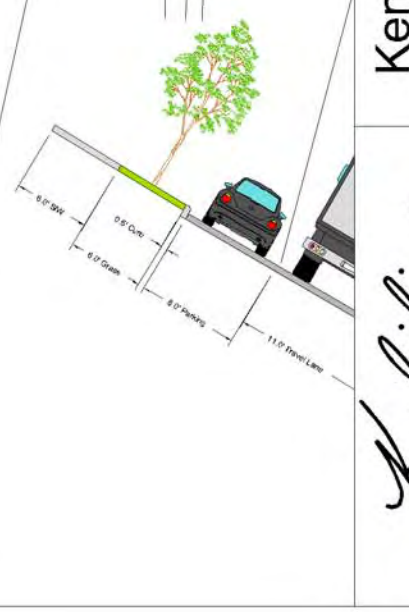

Scott Ave northbound between Kenilworth and Ordermore


Scott Ave north of Ordermore




Scott Ave approaching East Bl





Charlotte Dr
Ordermore
Av
Kenilworth
Charlotte
Dilworth Rd East
Ideal Wy
Hemlock St
Lattimore St
Scott Av
East Bv

Figure 4b

Kenilworth - Scott
South of East Blvd

Kenilworth - Scott
Corridor Study

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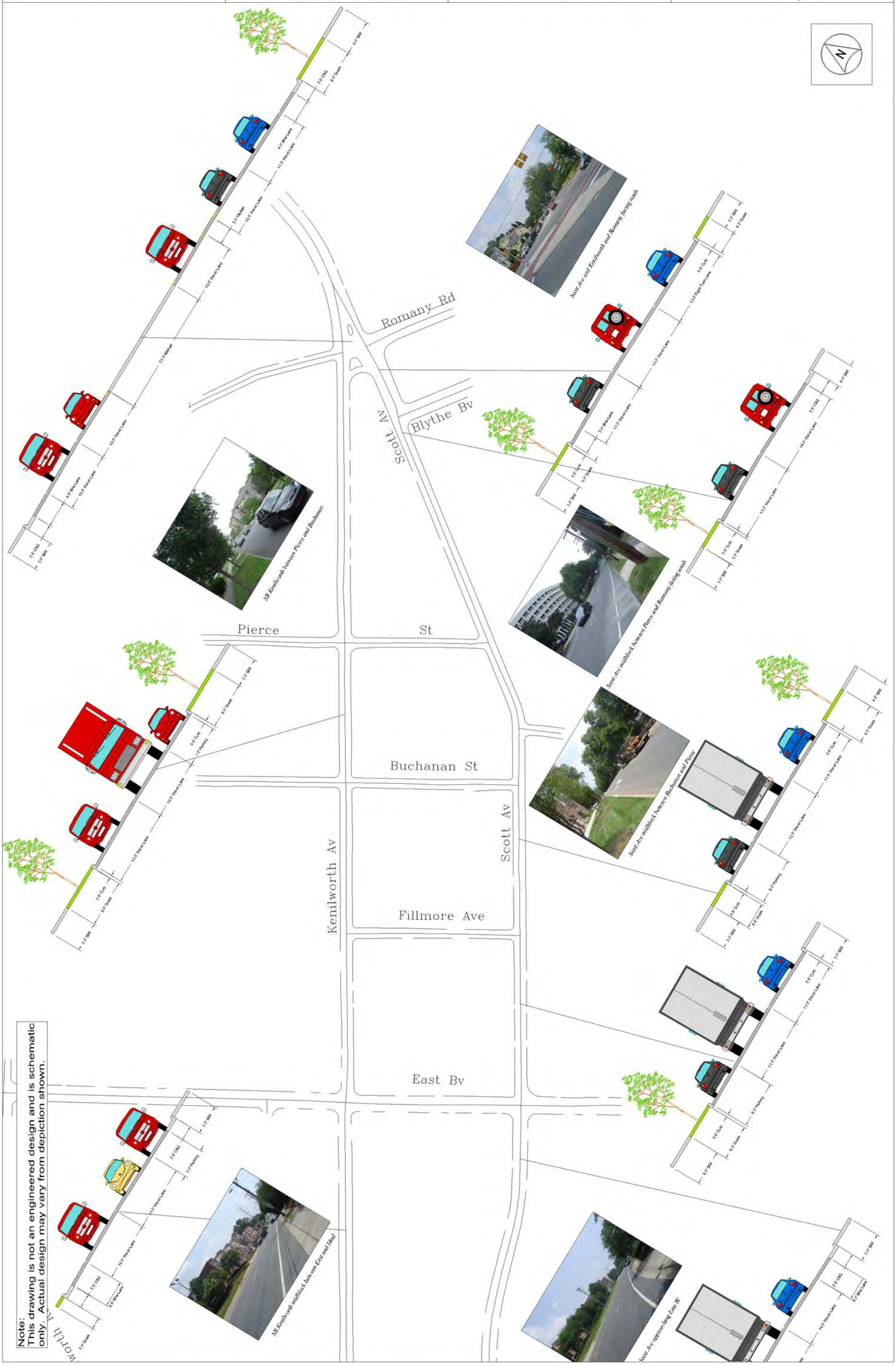
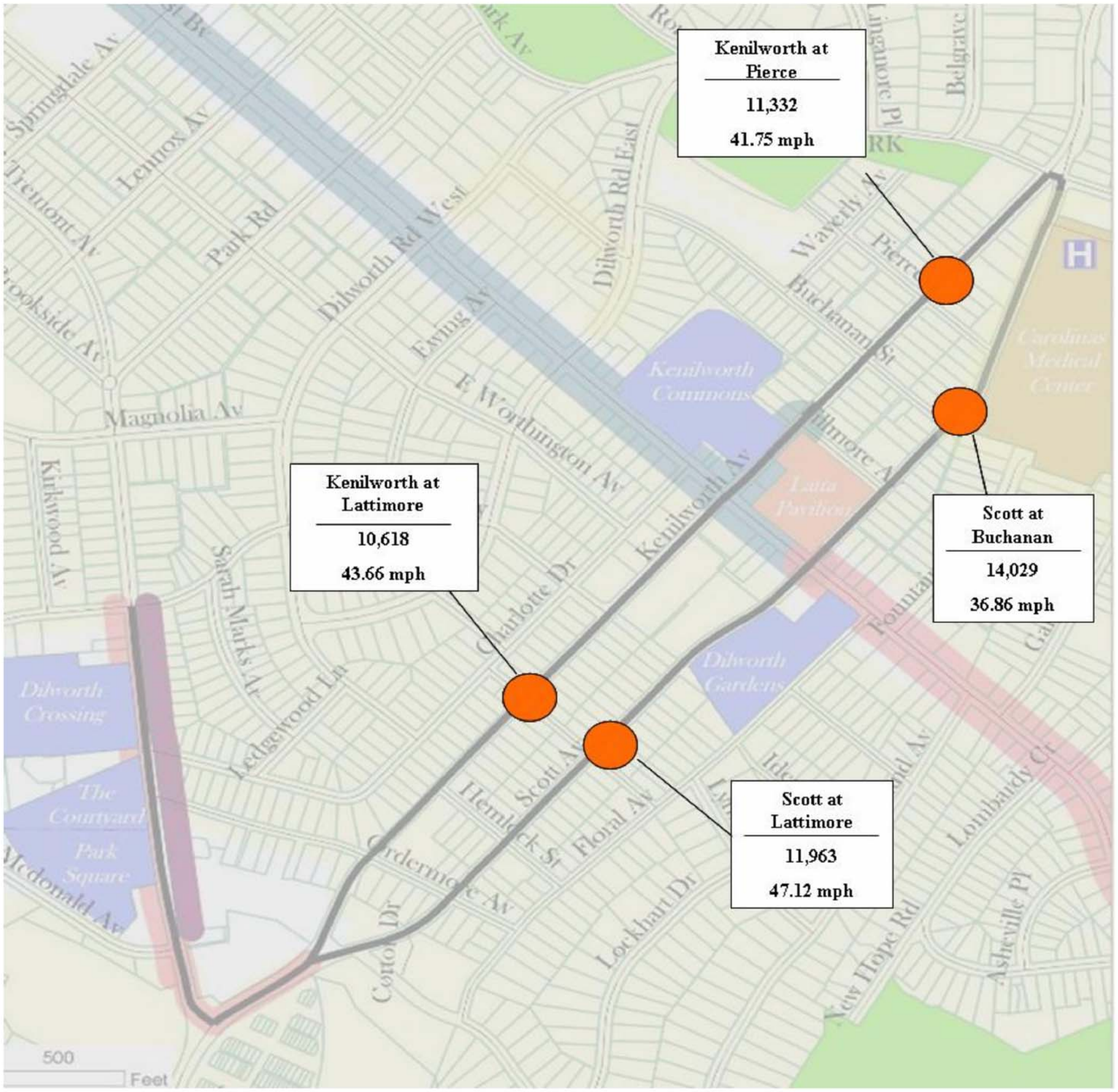
Kenilworth - Scott
Corridor Study

Kenilworth - Scott
North of East Blvd

Figure 4c





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NOT TO SCALE

Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Corridor Speeds and Volumes	Figure 5

At 5:30 p.m., the queue for southbound approach of Kenilworth Avenue had extended to Pierce Avenue, a distance of approximately 1,100' north of the intersection with East Boulevard. It was estimated that queued vehicles missed at least one green cycle at the intersection with East Boulevard. The right lane of Kenilworth Avenue appeared to have longer queues with a significant amount of the traffic in this lane making a right turn onto East Boulevard.

Kenilworth Ave SB at Fillmore Ave, 5:00 p.m.

The eastbound approach of East Boulevard also experienced extensive queue lengths at the intersection with Kenilworth Avenue. At 5:00 p.m., the eastbound queue extended to the intersection of Charlotte Drive, a distance of approximately 200' west of the intersection with Kenilworth Avenue. At 5:40 p.m., the queue on the eastbound approach of East Boulevard extended to the intersection of Dilworth Road East, a distance of approximately 830' west of the intersection with Kenilworth Avenue. It was estimated that queued vehicles missed at least one green cycle at the intersection with East Boulevard.

East Boulevard EB at Charlotte Drive, 5:00 p.m.

In summary, the operational analysis of the existing conditions reveals that the intersections and mainline segments of the corridors experience some queuing issues, especially at the approaches with Kenilworth Avenue and East Boulevard. Development of alternative scenarios to enhance walkability along the corridors must recognize these queuing issues and incorporate them into the operational analyses of the alternatives. However, all alternatives developed must strike a balance between vehicular mobility and accessibility of pedestrians and cyclists.

East Boulevard EB at Charlotte Drive, 5:40 p.m.

ISSUES AND OPPORTUNITIES

The Dilworth Plan identified the Kenilworth/Scott corridor as particularly hostile to pedestrians and bicyclists wishing to cross the roadways. Residents cited the difficulty of pedestrians and bicyclists needing to cross these streets to access amenities to the east such as Freedom Park. Specific issues identified by the stakeholders in this study are as follows:

- High vehicular speeds along the corridor particularly on the one-way pair south of East Boulevard;
- Sight distance issues with the crossings at Lattimore Street, Ordermore Street, Filmore, and Buchanan Streets;
- Balance pedestrian environment versus required vehicular throughput
- Difficulty pulling out of driveways along corridors
- Better definition of the character of Park Road.

This study also addresses the segments of Kenilworth/Scott Avenues north of East Boulevard. From our observations, many of the same issues exist along these segments, but in a decidedly different land use context. Traffic volumes north of East Boulevard are also slightly higher than those to the south of this intersection. For these reasons, it is likely that the alternatives developed may include differing elements both north and south of East Boulevard.

Upon review of the existing conditions and analysis, it appears that three different "families" of initiatives could be implemented to rebalance movement along and across these corridors. Each "family" is defined below, along with a listing of elements and initiatives included:

I. *Traffic Calming*: This family of initiatives includes retroactive measures that can be implemented relatively quickly and easily, with negligible impact on the traffic carrying capacity within the corridors. Focused around the theme of traffic calming, such elements may include the following:

   - Lane diets (make lanes narrower) through re-striping
   - Addition of on-street parking
   - Addition of marked bicycle lanes
   - Bulb-outs at intersections
   - Paved and/or raised pedestrian crosswalks
   - Unsignalized intersection crosswalk marking and signing enhancements
   - Roundabout or Stop Control (Park Road/Ideal Way)

Thornton Park Roundabout, Orlando, FL

Mid-block pedestrian crossing, US 29, Fairfax, VA

Each of these elements can be implemented with relatively minor construction and capital costs impacts.

II. *Road Diets*: This family of initiatives includes of the reduction of through travel lanes on both Kenilworth and Scott Avenues and reclaiming the excess pavement width for bulb-outs, on street parking, and/or striped bicycle lanes. This family of options would have greater impacts on traffic operations through the corridors, especially at peak hours. An example of this measure was recently implemented on the segment of East Boulevard west of the Scott Avenue intersection; the pavement was reduced from two lanes in each direction to one lane in each direction with a center turn lane and mid-block pedestrian refuge islands. Preliminary analyses of this family of options indicate that there would be some delay and queuing issues to overcome, especially at the intersections with East Boulevard. Due to the higher measured traffic volumes on the northern segment, this option may only be viable for the segments south of East Boulevard. Additional capital costs would be incurred with the implementation of this family of options unless this is timed with the resurfacing cycle for these streets. Given the significance of a "road diet" change to the corridors, it is imperative to secure the consensus of neighborhood and community interest. Strong support for the concept south of East Boulevard was heard at both Community Worksessions held with the DCDA.

III. *Road Reconstruction*: In addition to the improvements listed in Sections 1 and 2 above, the Dilworth Plan (pages 83-94) called for wider planting strips and sidewalks along Kenilworth, Scott, and Park Road. The cross-sections developed in the *Dilworth Plan* make up the final family of initiatives. Because the road beds must be modified (curblines must also be moved) these improvements represent the most costly of the family of initiatives in terms of both construction capital and time for implementation. While these sections should remain as a long-term goal as land uses are transformed and parcels are redeveloped along the corridors, this study focuses on development of alternatives that meet the intent of the *Dilworth Plan* and can be accomplished in a shorter time frame.

East Blvd Road Diet

TOOLBOX OF POTENTIAL IMPROVEMENTS

Through a combination of corridor site visits, discussions with stakeholders, and review of the issues presented in the Dilworth Plan, the following list of questions to address was compiled for the Kenilworth, Scott and Park Road corridors:

- How can pedestrian safety be enhanced, especially when crossing the streets?
- Are there ways to make it more comfortable for motorists to utilize the parallel on-street parking?
- Can we improve the sight distance issues and reduce "blind spots" associated with the horizontal and vertical curvature of the road?
- How can we improve the entrances to the corridors and signal to motorists that they should expect more pedestrian activity?
- How can we make Kenilworth and Scott more compatible with adjacent residential land uses?
- How can we make Park Road more pedestrian-friendly and slow vehicle speeds entering the residential area?

In preparation for the initial community work session, a set of preliminary measures were developed through discussions with the design team to address the issues highlighted in the corridor site visits, analysis, and the *Dilworth Plan*:

- Enhancements to the pedestrian crosswalks, ranging from high-visibility markings or textured pavement for the crosswalks to advance pedestrian-activated lighted signing;
- Curb extensions or bulb-outs, used to shorten the pedestrian crossing distances, shield on-street parking, and physically narrow the roadway (See ***Figure 6*** – Curb Extensions);
- Road diets, which entails narrowing the roadway from two travel lanes in each direction to one in each direction in an effort to control vehicle speeds;
- Mid-block pedestrian refuge islands to create a safe street crossing and calm vehicular traffic, especially along the segment of Park Road from Ideal Way to the signalized intersection of Scott Avenue; and

Ped-Activated Crosswalk Sign- Boulder, CO

East Blvd Road Diet

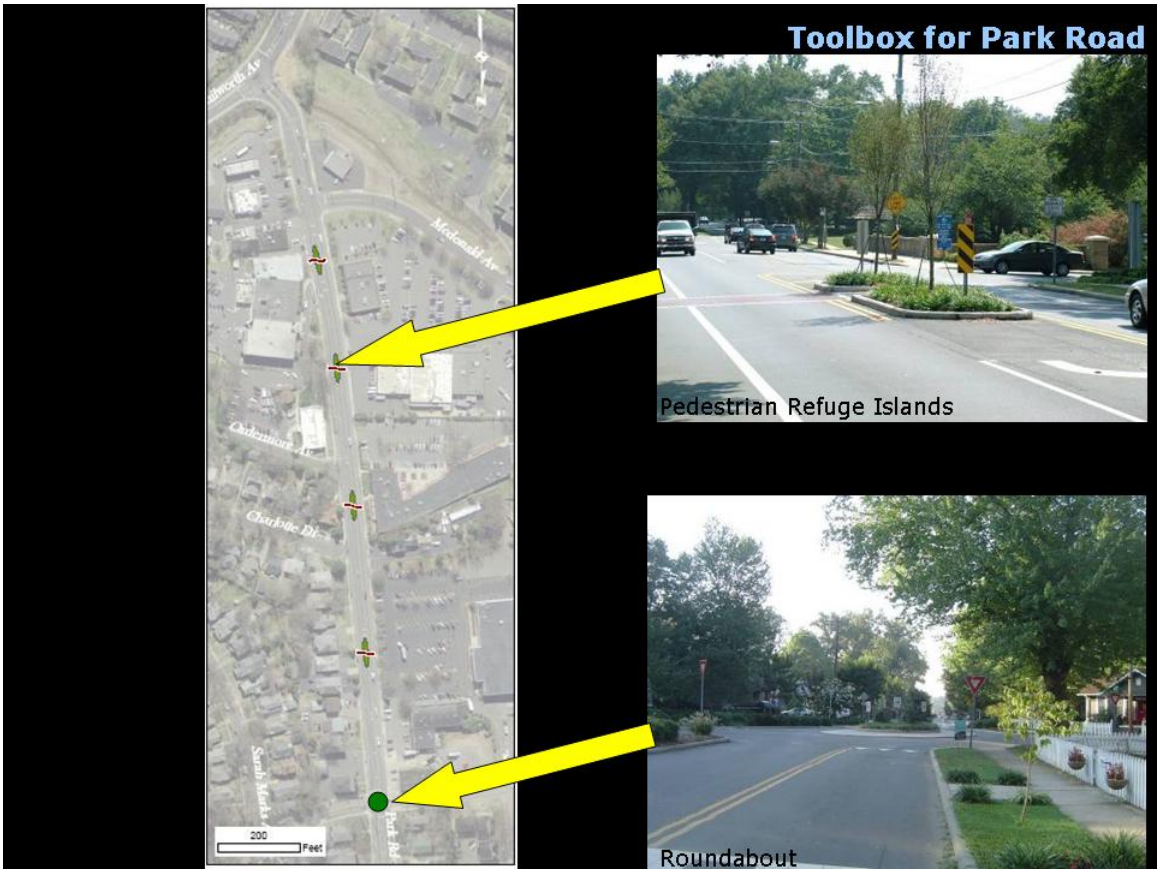
NOT TO SCALE

Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Curb Extensions	Figure 6

- Mini-circles or roundabouts to replace existing signalized intersections to slow traffic and denote a transition from a higher-speed auto-oriented corridor to a lower speed, walkable neighborhood context.

The initiatives above were conceived as applicable to the entire corridor; the last two initiatives (mid-block pedestrian refuges and mini-circles) were identified specifically for issues relative to the Park Road corridor as shown in *Figure 7*. Each of these concepts was evaluated and presented to the DCDA at the first community worksession held on October 24, 2007. Following the first worksession, the potential corridor improvement concepts were further tested and refined, and compiled into a draft set of recommendations for the entire corridor that was presented back to the stakeholders in a second worksession held on November 14, 2007.

Figure 7: Mid-block Pedestrian Refuges and Mini-Circle Concepts



COMMUNITY COORDINATION – SUMMARY OF PUBLIC MEETINGS

Two community worksessions were held with the Dilworth Community Development Association (DCDA) within a one-month period in the fall of 2007. The purpose of the worksessions was to collaborate with the community stakeholders in an effort to identify specific issues and opportunities and solicit stakeholder opinions concerning to the recommended strategies to address issues and opportunities along the corridors. A summary of each community worksession and its results is summarized below:

Worksession One

Held on the evening of October 24, 2007, Worksession One was an interactive design session geared toward identifying and confirming the issues for the corridors as presented in the Dilworth Plan, and working with the community to identify specific initiatives and their locations. The worksession was held in conjunction with the monthly DCDA meeting of its Planning and Land Development Committee. The meeting was open to all residents and stakeholders within the community. The worksession was facilitated by representatives from the Planning Department, CDOT, and the design consultant. The worksession began with a presentation that summarized the study's objectives, detailed the evaluation of existing conditions, illustrated the issues and opportunities as the team understood them, and presented a "toolbox" of possibilities for initiatives to address the issues along the corridors.

Stakeholder Breakout Group – Worksession One

Following the presentation, the stakeholder participants were subdivided into small groups; where a facilitator worked with the group to identify corridor attractions and destinations, determined how the stakeholders used the corridor (by car, walking, biking, or a combination of all three modes); recorded where the stakeholders specifically had issues with vehicular speeds or crossing the corridors; and listed specific measures in the "toolbox" in which locations would help address their concerns and issues. At the conclusion of the one-hour collaborative table sessions, the group reconvened and each respective groups presented back to the larger audience of stakeholders. From the discussions and summaries, the following initiatives were recommended:

- Implement 32 specific initiatives along the corridor;
- Focus on all modes of transportation;
- Lower vehicular travel speeds along all corridors;
- Reduce the impact of blind spots along the corridors;
- Create gateways at the north and south ends of the corridors;
- Add street trees and pedestrian-scale lighting to all corridors;
- Implement traffic calming at the intersections;

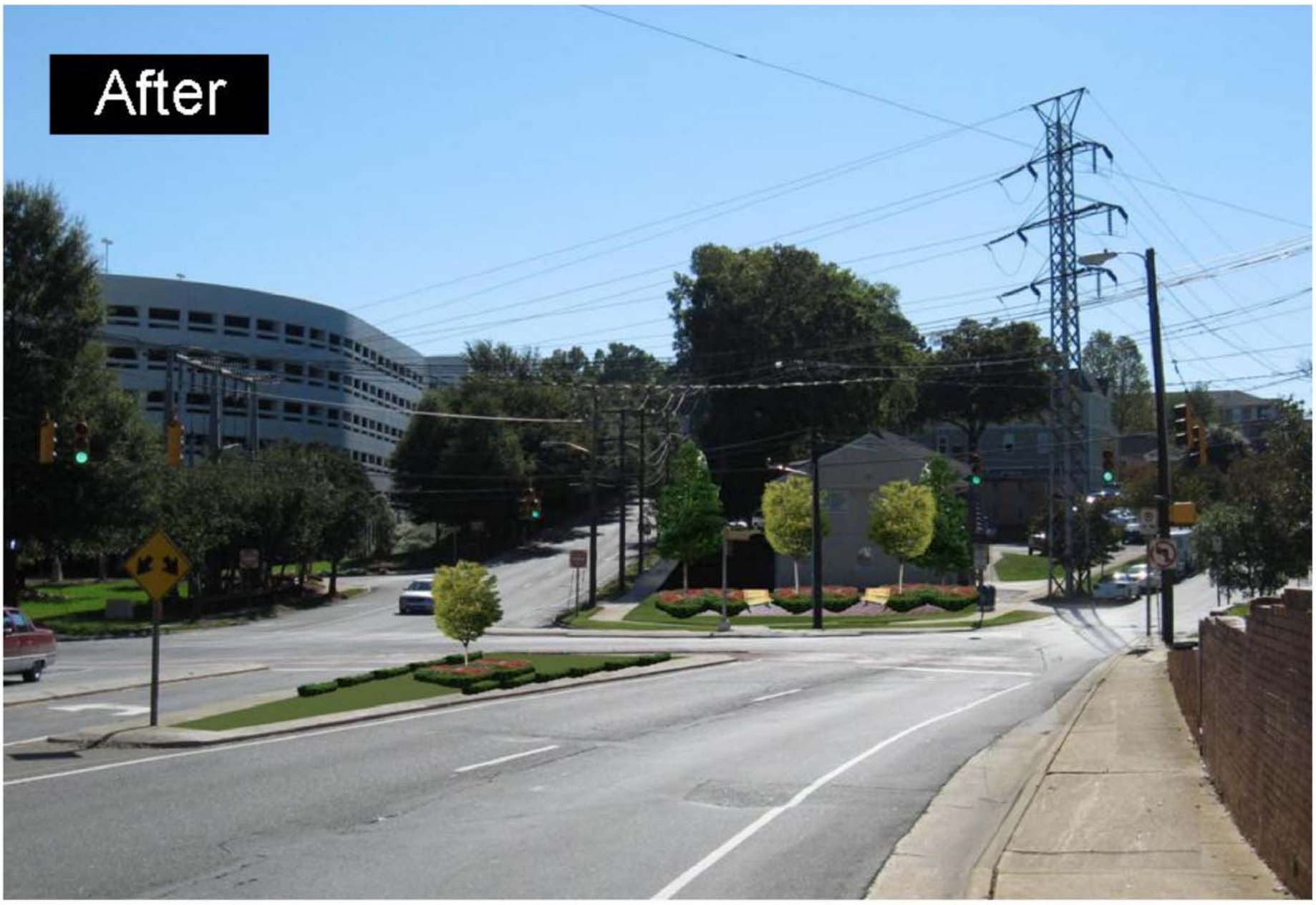
- Implement bicycle routes and lanes wherever possible within the study area;
- Implement a roundabout (or four-way stop control) at the intersection of Park Road and Ideal Way and investigate the possibility of a roundabout at the intersection of Park Road and Scott Avenue on the south end of the corridor;
- Consider a "road diet" that would reduce the number of through lanes on the Kenilworth and Scott Avenue corridors from two lanes in each direction to one;
- Add mid-block pedestrian refuge islands and crosswalks along Park Road between Scott Avenue and Ideal Way;
- Add bus shelters on all the corridors where only stops exist today; and
- Consider implementing trolley service from Uptown Charlotte/Center City to the Dilworth area.

At the conclusion of Worksession One, the team refined and prioritized the initiatives as recommended by the stakeholders; the results of the refinement were incorporated into the draft plan, and presented to the stakeholders at Worksession Two.

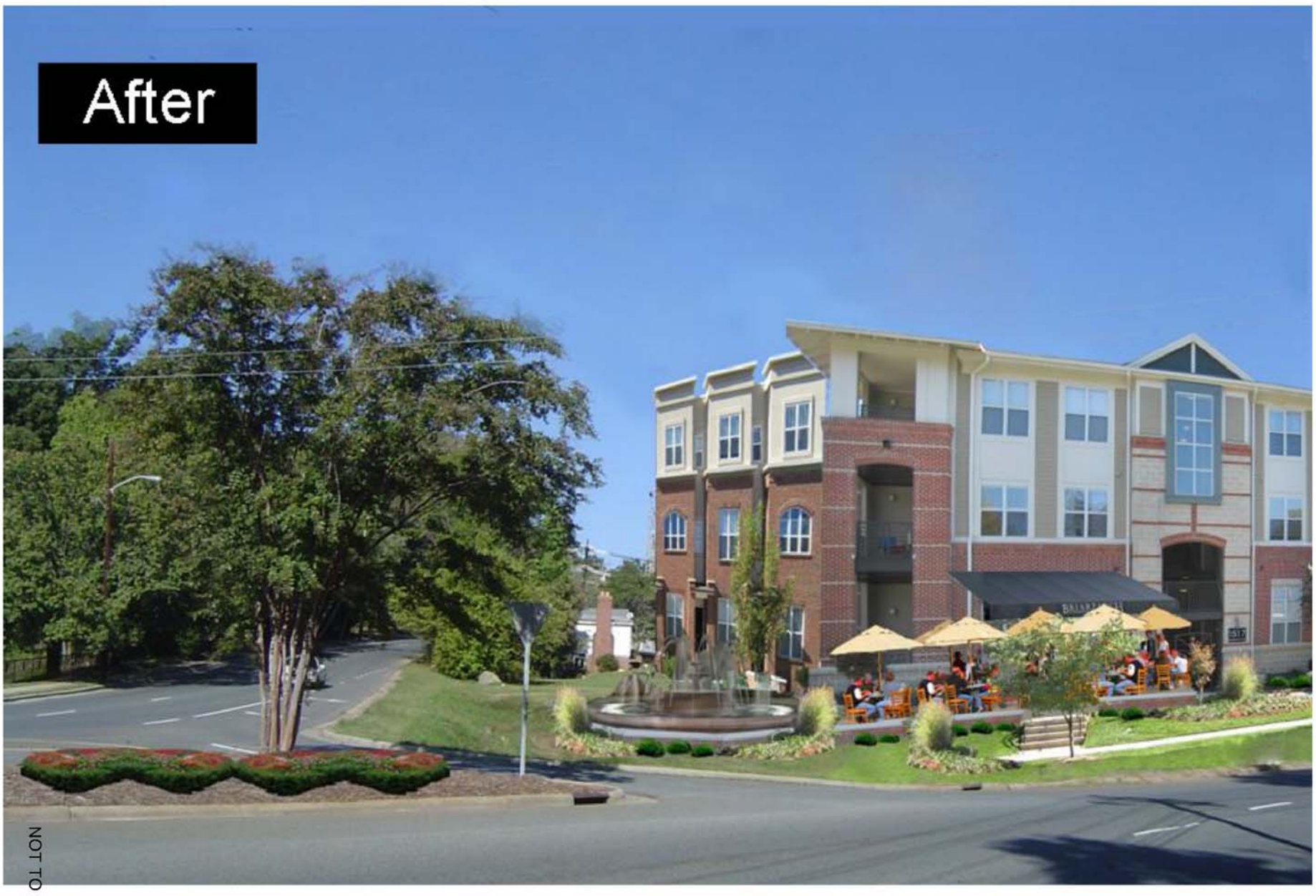
Worksession Two
On November 14, 2007, the team reconvened at the Dilworth Elementary School to present the draft plan to the stakeholders. Based in the input received at Worksession One, the team developed a draft plan for the corridors that included initiatives that were classified as immediate (0-2 years), short-term (2-5 years), or long-term (over 5 years) implementation. The recommendations included the following elements:

- Enhanced pedestrian crossings at unsignalized intersections, utilizing pedestrian-activated signing and lighting as well as enhanced pavement markings such as colorization or high-visibility markings for the crosswalks;
- Construction of curb extensions/bulb-outs at intersections to shorten crossing distances, shield on-street parking, and enhance sight distance at intersections;
- Implementation of a "road diet" on the segment of Kenilworth and Scott Avenues south of East Boulevard, with the recommendation to reevaluate implementation of a road diet to the north at some point in the future;
- Development of gateways at the northern and southern ends of the Kenilworth and Scott Avenue corridors to provide an identity upon entering the Dilworth neighborhood (illustrated in ***Figure 8***);
- Implementation of pedestrian refuge islands at four locations along Park Road between Scott Avenue and Ideal Way;
- Implementation of a roundabout/mini-circle (or four-way stop control) to replace the signalized intersection at Park Road and Ideal Way; and
- Consideration of a multi-lane roundabout at the current signalized intersection of Park Road and Scott Avenue on the south end of the corridor.

The recommendations were summarized in a series of maps and displays that were supplemented by photo-enhancements and other graphical support that was presented to the stakeholder group. ***Figures 9a through 9g*** summarize the Draft Master Plan recommendations.



North Gateway



NOT TO SCALE

South Gateway

Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Corridor Gateway Concepts	Figure 8

Kubilins TRANSPORTATION GROUP, INC.	Kenilworth-Scott Corridor Study	Concept Plan- Overview	Figure 9a

Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

Corridor Improvements

* Round-a-Bout (optional)
* Ped Refuge Islands
* Beginning of Road Diet on Kenilworth/Scott Aves

0' 100' 200'
SCALE: 1"=100'

* Mid-Term, Contingent on Funding and Further CDOT Analysis

Figure 9b

Concept Plan-
(Park-Ordermore)

Kenilworth-Scott
Corridor Study

Kubilins
TRANSPORTATION GROUP, INC.

Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

Corridor Improvements

* Round-a-Bout or four-way Stop Control at Park Road and Ideal Way
* Ped-Refuge Islands

Park Road

Ideal Way

N

0' 100' 200'
SCALE: 1"=100'

Figure 9c

Concept Plan-
(Ordermore-Ideal)

Kenilworth-Scott
Corridor Study

Kubilins
TRANSPORTATION GROUP, INC.

Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

Corridor Improvements

* Round-a-Bout at the intersection of Kenilworth Ave and Park Road
* Corridor Gateway treament at Kenilworth-Scott south split
* Road Diet on Kenilworth and Scott Avenue
* Bulbouts to shield parking
* Enhanced landscaping

Ordermore Avenue

0' 100' 200'
SCALE: 1"=100'

Figure 9d

Concept Plan-
(Park-Ordermore)

Kenilworth-Scott
Corridor Study

Kubilins
TRANSPORTATION GROUP, INC.

Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

Corridor Improvements

* Road Diet
* Bulbouts to shield parking
* Enhanced landscaping
* Crosswalks

Kenilworth Avenue

Hemlock Street

Lattimore Street

Scott Avenue

0' 100' 200'
SCALE: 1"=100'

Figure 9e

Concept Plan-
(Hemlock-Ideal)

Kenilworth-Scott
Corridor Study

Kittelson
TRANSPORTATION GROUP, INC.

Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

Corridor Improvements

* Road Diet on Kenilworth and Scott Aves south of East Blvd
* Bulbouts to shield parking
* Enhanced landscaping with bulbouts
* Crosswalks

East Boulevard

Fillmore Avenue

0' 100' 200'
SCALE: 1"=100'

Figure 9f

Concept Plan-
(Ideal-Fillmore)

Kenilworth-Scott
Corridor Study

Kubilins
TRANSPORTATION GROUP, INC.

Kenilworth-Scott Corridor Study

Concept Plan- (Fillmore-Romany)

Figure 9g

Kubilins
TRANSPORTATION GROUP, INC.

Corridor Improvements

* Bulbouts to shield parking
* Enhanced landscaping
* Gateway Features
* Enhanced Crosswalks

0' 100' 200'
SCALE: 1"=100'

Scott Avenue

Pierce Street

Buchanan Street

Fillmore Avenue

Kenilworth Avenue

Romany Road

Note:
This drawing is not an engineered design and is schematic only. Actual design may vary from depiction shown.

The design team walked the stakeholders through the recommendations in a "pin-up" format in which one-on-one discussions were held with the Draft Master Plan maps. Questions were fielded on an individual basis and other potential refinements to the draft plan were noted. At the conclusion of the "pin-up," the attendees were asked to complete a survey that asked four specific questions as follows (responses are listed with each question):

1. Do the proposed concepts generally meet your goals for the Kenilworth-Scott and Park Road corridors? (10% no, 90% yes)
2. Do you support the proposed concepts for the Kenilworth-Scott and Park Road corridors? (40% support, 60% strongly support, 0% do not support, 0% strongly do not support)
3. Do you approve of the City of Charlotte moving forward with the proposed corridor improvement plan for the Kenilworth-Scott and Park Road corridors? (40% approve, 60% strongly approve, 0% do not approve or strongly do not approve).

The final question on the survey asked the stakeholders if there were any additional issues or potential improvements that had been omitted from the proposed plan that they would like to see addressed. Responses from the stakeholders were as follows:

- Too much accommodation for automobiles. High density areas with higher populations should be given some priority over automobiles. Concerned about Scott Avenue north of East Boulevard.
- There is no need to do more to slow down traffic from East Boulevard to Romany Road on Scott and Kenilworth Avenues.
- Would like to see entry gates for Dilworth at the north and south extents of Kenilworth and Scott study areas.
- Short-term awareness of speed limits until the road diet would be helpful. Mobile speed detectors, etc.
- Noise reduction asphalt, limiting truck/18-wheeler road use when other, more industrial-based roadways are available.
- Truck route for Bi-Lo and other businesses using McDonald Avenue. This will keep trucks from using the traffic circle at Park Road and Ideal Way.

Three survey respondents did not list any further issues.

From the survey of the ten attendees at the second worksession, it appeared that consensus was reached for the initial draft plan and set of recommendations.

TECHNICAL ANALYSIS

In order to evaluate the proposed improvements in the study area, the project team originally analyzed two possible Kenilworth/Scott scenarios to simulate congestion in the morning (AM) and evening (PM) peak hours (Case 1 and Case 2). At the request of several stakeholders at the 11/14/07 public workshop, CDOT and the consultant agreed to specifically test a road diet alternative that included the Case 2 scenario with the addition of a road diet on Scott Avenue between East Boulevard and Romany Road (Case 3).

The following three scenarios were tested:

- **Case 1: No-build**; existing roadway configuration of two-lanes in each direction

- **Case 2: Road Diet (Kenilworth/Scott – South of East Boulevard);**

    - Reduction of one travel lane on Kenilworth Avenue from approximately 200 ft. south of Ideal Way to approximately 300 ft. south of Ordermore Avenue.
    - Reduction of one travel lane on Scott from approximately 470 ft. south of Ordermore Avenue to approximately 565 ft. south of East Boulevard (shopping center entrance).

- **Case 3: Road Diet (Kenilworth/Scott – South of East Boulevard and Scott – North of East Boulevard);**

    - Reduction of one travel lane on Kenilworth Avenue from approximately 200 ft. south of Ideal Way to approximately 300 ft. south of Ordermore Avenue.
    - Reduction of one travel lane on Scott Avenue from approximately 470 ft. south of Ordermore Avenue to approximately 565 ft. south of East Boulevard (shopping center entrance).
    - Reduction of one travel lane on Scott Avenue from Fillmore Avenue to Pierce Street.

Traffic conditions were analyzed with the Synchro 7.0 and SimTraffic software. For this analysis, congestion levels were quantified by comparing congestion levels between the three scenarios based on the table below.

Congestion Levels (seconds/vehicle)	
Low	< 35
High	35 to 55
Severe	> 55
Source: HCM; LOS Criteria for Signalized Intersections	

The project team summarized the transportation analysis in the following tables. Based on the traffic analysis it appears that Case 2 will result in levels of delay comparable to existing conditions. Case 3 appears to result in significantly higher levels of congestion than existing conditions.

Table 2a: Congestion Levels at Study Area Intersections (AM Peak)

Node	Intersection	Signal Type	Case 1	Case 2	Case 3
			Congestion Level		
9	Scott Avenue and Shopping Center entrance at Dilworth Gardens	Unsignalized	**Low**	**Low**	**High**
11	Scott Avenue, 300 ft South of Ordermore Avenue	Unsignalized	**Low**	**Low**	**Low**
17	Scott Avenue and Presbyterian South Access	Unsignalized	**Low**	**Low**	**Low**
23	Scott Avenue and Fillmore Avenue	Unsignalized	**Low**	**Low**	**Low**
28	Kenilworth Avenue and Ideal Way	Unsignalized	**Low**	**Low**	**Low**
40	Kenilworth Avenue, 200 ft South of Ideal Way	Unsignalized	**Low**	**Low**	**Low**
502	Kenilworth/Scott Avenue and Romany Road	Signalized	**Low**	**Low**	**Low**
638	Kenilworth Avenue and East Boulevard	Signalized	**Low**	**Low**	**Low**
639	Scott Avenue and East Boulevard	Signalized	**Low**	**Low**	**Severe**
641	Ideal Way and Park Road	Signalized	**Low**	**Low**	**Low**
642	Scott Avenue and Park Road	Signalized	**Low**	**Low**	**Low**

Table 2b: Congestion Levels at Study Area Intersections (PM Peak)

Node	Intersection	Signal Type	Case 1	Case 2	Case 3
			Congestion Level		
9	Scott Avenue and Shopping Center entrance at Dilworth Gardens	Unsignalized	**Low**	**Low**	**Severe**
11	Scott Avenue, 300 ft South of Ordermore Avenue	Unsignalized	**Low**	**Low**	**Severe**
17	Scott Avenue and Presbyterian South Access	Unsignalized	**Severe**	**Severe**	**Severe**
23	Scott Avenue and Fillmore Avenue	Unsignalized	**Low**	**Low**	**Low**
28	Kenilworth Avenue and Ideal Way	Unsignalized	**Low**	**Low**	**Low**
40	Kenilworth Avenue, 200 ft South of Ideal Way	Unsignalized	**Low**	**Low**	**Low**
502	Kenilworth/Scott Avenue and Romany Road	Signalized	**Severe**	**Severe**	**Severe**
638	Kenilworth Avenue and East Boulevard	Signalized	**Severe**	**Severe**	**Severe**
639	Scott Avenue and East Boulevard	Signalized	**High**	**High**	**Severe**
641	Ideal Way and Park Road	Signalized	**Low**	**Low**	**Low**
642	Scott Avenue and Park Road	Signalized	**Low**	**Low**	**Severe**

Delay per vehicle is calculated by dividing the total delay by the number of vehicles. During the model simulation, the delay per vehicle was measured at all signalized intersections. During the process, it became clear that the Kenilworth and Scott intersections with East Boulevard experience some levels of existing congestion. Staff paid particularly close attention to these intersections when analyzing the 3 cases to determine whether reasonable mobility levels would be maintained under each scenario.

Delays per vehicle for the AM and PM peak hour at East Boulevard and Scott Avenue intersection are documented in the following table. Compared to the no-build scenario, a

net increase of 28% in delay per vehicle at the Scott Avenue/East Boulevard intersection was observed in the PM peak hour for Case 2 as compared a 196% net increase in delay associated with Case 3. For the AM peak hour, Case 2 will result in delay similar to existing conditions while Case 3 will result in a 140% net increase in delay. Based on these results, the project team felt that Case 2 should be carried forward as a study recommendation. Due to significant increases in delay associated with Case 3, the project team recommended that Case 3 not be carried forward as a recommendation. However, the project team recommended that the City revisit the Case 3 scenario if redevelopment occurs along the corridor or elsewhere that causes a shift in traffic patterns or volumes.

Table: PM Peak Hour Delay per Vehicle

Intersection	**Case-1**	**Case-2**	**Case-3**
	Delay (sec/veh)	Delay (sec/veh)	Delay (sec/veh)
Scott Avenue/East Boulevard	36.3	46.6	107.8
Net Increase	--	(46.6-36.3)/36.6*100 = **28%**	(107.8-36.3)/36.3*100 = **196%**

Table: AM Peak Hour Delay per Vehicle

Intersection	**Case-1**	**Case-2**	**Case-3**
	Delay (sec/veh)	Delay (sec/veh)	Delay (sec/veh)
Scott Avenue/East Boulevard	29.5	29.2	70.2
Net Increase	--	(29.2-29.5)/29.5*100 = **-1.01%***	(70.2-29.2)/29.2*100 = **140%**
* = Due to upstream metering the delay in Case-2 is less than Case-1. This does not indicate that the intersection performance has improved in Case-2			

It is recommended that prior to implementation of the Case 2 “road diet” on Kenilworth Avenue and Scott Avenue between the intersections with Park Road and East Boulevard (Case 2), a temporary closure of the outside lane be tested. The purpose of the temporary lane closure test is to ensure that the model outputs reflect realistic operating conditions if the “road diet” is implemented.

RECOMMENDATIONS, IMPLEMENTATION, AND ESTIMATED COSTS

From a combination of the analysis of existing conditions, issues, opportunities, and community input, a draft plan was developed and presented back to the community at a second community worksession. Consensus was reached by the community on the direction and list of recommendations during this worksession, and further testing of traffic operational parameters was conducted. The recommended plan, illustrated in ***Figures 9a-g*** of this report, includes the following major initiatives:

- Implementation of curb extensions along Kenilworth and Scott Avenues (entire length);
- Installation of enhanced crosswalk/intersection markings and signage (CDOT to study further);
- Advance pedestrian-activated lighting at three intersections along the Kenilworth and Scott corridors (CDOT to study further);
- "Road diet" to reduce travel lanes from two to one on Kenilworth and Scott Avenues south of East Boulevard, pending results of field testing lane reduction to confirm model results;
- Implementation of a two-lane roundabout at Park Road and Scott Avenue to serve as transition to "road diet" section and serve as gateway to neighborhood (CDOT to study further);
- Creation of gateways at the north and south entries to the Kenilworth and Scott Avenue corridors;
- Installation of up to five (5) mid-block pedestrian refuge islands on Park Road between Ideal Way and Scott Avenue; and
- Replacement of the traffic signal at Ideal Way and Park Road with a mini-roundabout or multi-way stop control (CDOT to study further).

The specific recommendations as presented in the previous section are broken into three timeframes for implementation: short term (0-2 years), mid-term (2-5 years), and long-term (beyond 5 years). These time frames are estimates subject to adequate funding being secured to implement these enhancements. The recommendations for the corridors are graphically illustrated in the Concept Plan (***Figures 9a-g)***; estimated costs and timeframe for each specific initiative for the immediate and short-term initiatives are broken down by area (Park Road between Ideal Way and Scott Avenue, Kenilworth-Scott between Park Road and East Boulevard, and Kenilworth-Scott between East Boulevard and Romany Road) in ***Table 5***. **Appendix A** summarizes the corridor recommendations by timeframes for implementation and **Appendix B** lists additional initiatives that have not been addressed in this study.

It is important to note that although none of the initiatives currently have funding allocated, it is expected that most of the implementation steps would be funded in the future through transportation bond funding. The projects identified in this report will have to compete with other projects for future transportation bond funding.

Table 3: Estimate of Project Costs

Park Road Corridor

Improvement Type	*Further CDOT Study*	*Location*	*Details to implement item*	*Unit Cost*	*Number*	*Cost*
Mid-block Ped Refuge Islands		Along Park Road Corridor	Demo, Curbing Install, Backfill c&g, Stamped x-walk, ramps, landscape, signage, drainage	40,000	4	160,000
Roundabout	*	Park Road and Ideal Way	Demo, Install new curbing, backfill, Stamped x-walk, landscape, removal of existing signal, drainage	100,000	1	100,000
Convert signalized intersection to four-way stop control	*	Park Road and Ideal Way	Signal Removal, Signage	11,640	1	11,640
Bus shelter installation		Park Road at Bi-Lo	Bus Shelter, pad, benches, signage (CATS to study)	5,000	1	5,000
Implement signed bicycle route		Along Ordermore Ave from Park Road to Floral Avenue	Signage	410	10	4,100
			TOTAL PROPOSED IMPROVEMENT COSTS FOR PARK ROAD CORRIDOR			**$280,740**

Kenilworth and Scott Avenues south of East Boulevard

Improvement Type	*Further CDOT Study*	*Location*	*Details to implement item*	*Unit Cost*	*Number*	*Cost*
Roundabout (optional)	*	Kenilworth and Park Road (if road diet occurs south of east)	2 lane roundabout, demo, install curbing, c&g, stamped x-walk, ramps, landscape, signage, drainage	570,000	1	570,000
Install High Visibility Crosswalks (mid-term)	*	Kenilworth and Park Road (if road diet occurs south of east)	Grinding and Striping	750	6	4,500
Intersection Bulbouts to shield parking		Kenilworth and Scott Avenues between south split and East Blvd	Demo, Construct c&g, backfill, curb ramps, landscaping, drainage	10,000	22	220,000
Short-Term Intersection Highlights (Paint intersection)	*	Several intersections along Kenilworth-Scott south of East Blvd	Striping, Grinding	4,000	6	24,000
Passive Actuation Pedestrian Warning Signage	*	Ken-Scott approaches to Lattimore; Kenilworth between Hemlock and Ordermore	Signage, flashing actuation componentry	7,650	3	22,950
Road Diet		Kenilworth and Scott Avenues between south split and East Blvd	Re-striping, done in coordination with bulbouts	16,500	1	16,500
Prohibit right turns on red		Scott Avenue at East Blvd	Signal and signage modification (city to study)	2,910	1	2,910
			TOTAL PROPOSED IMPROVEMENT COSTS FOR KENILWORTH AND SCOTT SOUTH OF EAST BLVD			**$860,860**

Kenilworth and Scott Avenues north of East Boulevard

Improvement Type	*Further CDOT Study*	*Location*	*Details to implement item*	*Unit Cost*	*Number*	*Cost*
Install High Visibility Crosswalks (mid-term)	*	Location	Grinding and Striping	750	6	4,500
Intersection Bulbouts to shield parking		Location	Demo, Construct c&g, backfill, curb ramps, landscaping, drainage	10,000	10	100,000
North Gateway Treatment		SB Splitter Island; South Quadrant of Kenilworth-Scott and Romany Road Intersection	Demo, Remove c&g, Backfill, Reconstruct Sidewalk, Landscaping	64,000	1	64,000
Bulbouts (with Road Diet)	*	Kenilworth and Scott Avenues north of East Blvd	To be constructed with Road Diet; Demo, Construct c&g, backfill, curb ramps, landscaping, drainage	10,000	6	60,000
Bus Shelters/Enhancements		Bus Stops along Kenilworth and Scott north of East Blvd	Bus Shelter, pad, benches, signage (CATS to study)	5,000	5	25,000
Short-Term Intersection Highlights (Paint intersection)	*	Several intersections along Kenilworth-Scott north of East Blvd	Striping, Grinding	4,000	6	24,000
Road Diet (optional based on future conditions)	*	Kenilworth and Scott Avenues north of East Blvd	Re-Striping, additional bulbouts to be required for left side of roadway	11,300	1	11,300
Install Shared Bike Lane		Kenilworth and Scott Avenues north of East Blvd	Install a 6" stripe, signage, painted bike icon	6,000	1	6,000
Sign a bicycle connector route		Between Scott Avenue and Little Sugar Creek Greenway on CMS Property	Signage	410	4	1,640
Additional signage/striping		Buchanan Street between Kenilworth and Scott	Install two Do Not Enter signs	410	2	820
			TOTAL PROPOSED IMPROVEMENT COSTS FOR KENILWORTH AND SCOTT NORTH OF EAST BLVD			**$297,260**

EXCLUDED FROM COST ESTIMATE
Borrow Materials
Enhanced Landscaping/gateways

TOTAL ESTIMATED PRE-CONTINGENCY CORRIDOR PROJECT IMPROVEMENT COSTS	**$1,438,860**
ESTIMATED CONSTRUCTION CONTINGENCY COSTS	**$25,000**
TOTAL ESTIMATED CORRIDOR PROJECT IMPROVEMENT COSTS	**$1,463,860**

Appendix A: Project Costs by Implementation Period

Short-Term Priorities*

Improvement Type	*Further CDOT Study*	*Location*	*Details to implement item*	*Unit Cost*	*Number*	*Cost*
Short-Term Intersection Highlights (Paint intersection)	*	Several intersections along Kenilworth-Scott north of East Blvd	Striping, Grinding	4,000	12	48,000
Passive Actuation Pedestrian Warning Signage	*	Ken-Scott approaches to Lattimore; Kenilworth between Hemlock and Ordermore	Signage, flashing actuation componentry	7,650	3	22,950
Convert signalized intersection to four-way stop control	*	Park Road and Ideal Way	Signal Removal, Signage	11,640	1	11,640
Bus shelter installation		Park Road at Bi-Lo	Bus Shelter, pad, benches, signage (CATS to study)	5,000	1	5,000
Implement signed bicycle route		Along Ordermore Ave from Park Road to Floral Avenue	Signage	410	10	4,100
Prohibit right turns on red		Scott Avenue at East Blvd	Signal and signage modification (city to study)	2910	1	2910
Sign a bicycle connector route		Between Scott Avenue and Little Sugar Creek Greenway on CMS Property	Signage	410	4	1,640
Additional signage/striping		Buchanan Street between Kenilworth and Scott	Install two Do Not Enter signs	410	2	820
Bus Shelters/Enhancements		Bus Stops along Kenilworth and Scott north of East Blvd	Bus Shelter, pad, benches, signage (CATS to study)	5,000	5	25,000
			TOTAL SHORT-TERM PROPOSED IMPROVEMENT COSTS			**$122,060**

Mid-Term Priorities**

Improvement Type	*Further CDOT Study*	*Location*	*Details to implement item*	*Unit Cost*	*Number*	*Cost*
Roundabout (optional)	*	Kenilworth and Park Road (if road diet occurs south of east)	2 lane roundabout, demo, install curbing, c&g, stamped x-walk, ramps, landscape, signage, drainage	570,000	1	570,000
Install High Visibility Crosswalks	*	12 Intersections throughout study area on Kenilworth and Scott Aves	Grinding and Striping	750	12	9,000
Intersection Bulbouts to shield parking		32 Locations throughout study area on Kenilworth and Scott Avenues	Demo, Construct c&g, backfill, curb ramps, landscaping, drainage	10,000	32	320,000
Mid-block Ped Refuge Islands		Along Park Road Corridor	Demo, Curbing Install, Backfill c&g, Stamped x-walk, ramps, landscape, signage, drainage	40,000	4	160,000
North Gateway Treatment		SB Splitter Island; South Quadrant of Kenilworth-Scott and Romany Road Intersection	Demo, Remove c&g, Backfill, Reconstruct Sidewalk, Landscaping	64,000	1	64,000
Roundabout	*	Park Road and Ideal Way	Demo, Install new curbing, backfill, Stamped x-walk, landscape, removal of existing signal, drainage	100,000	1	100,000
Road Diet		Kenilworth and Scott Avenues between south split and East Blvd	Re-striping, done in coordination with bulbouts	16,500	1	16,500
			TOTAL MID-TERM PROPOSED IMPROVEMENT COSTS			**$1,239,500**

Long-Term Priorities***

Improvement Type	*Further CDOT Study*	*Location*	*Details to implement item*	*Unit Cost*	*Number*	*Cost*
Bulbouts (with Road Diet)	*	Kenilworth and Scott Avenues north of East Blvd	To be constructed with Road Diet; Demo, Construct c&g, backfill, curb ramps, landscaping, drainage	10,000	6	60,000
Road Diet (optional based on future conditions)	*	Kenilworth and Scott Avenues north of East Blvd	Re-Striping, additional bulbouts to be required for left side of roadway	11,300	1	11,300
Install Shared Bike Lane		Kenilworth and Scott Avenues north of East Blvd	Install a 6" stripe, signage, painted bike icon	6,000	1	6,000
			TOTAL LONG-TERM PROPOSED IMPROVEMENT COSTS			**$77,300**

EXCLUDED FROM COST ESTIMATE
Borrow Materials
Enhanced Landscaping/gateways

TOTAL ESTIMATED PRE-CONTINGENCY CORRIDOR PROJECT IMPROVEMENT COSTS	**$1,438,860**
ESTIMATED CONSTRUCTION CONTINGENCY COSTS	**$25,000**
TOTAL ESTIMATED CORRIDOR PROJECT IMPROVEMENT COSTS	**$1,463,860**

* Short Term projects could be implemented between 0-2 years depending on funding availability.
** Mid-Term projects could be implemented between 3-5 years depending on funding availability.
*** Long Term projects could be implemented beyond 5 years depending on funding availability.

Appendix B: Additional Initiatives not Addressed in Corridor Study

Short-Term Priorities*

Improvement Type	*Corridor*	*Extents*	*CDOT to determine feasibility*	*Notes*
Trim vegetation to address related sight distance issues	All	Intersections throughout study area	*	
Evaluate traffic calming measures at intersections	All	Entire Corridor	*	High visibility crosswalks, Intersection highlights/pavement markings, other traffic calming techniques
City to initiate Mid-Term project designs within two years for possible funding and implementation in years 3-5	All	Entire Corridor		
Review bus stops for additional shelter locations (CATS)	Kenilworth and Scott Aves	Between East Blvd and Romany Road		Shelters/Improve comfort for riders
Review ped activated signals at intersections	Kenilworth and Scott Aves	Kenilworth Ave and East Blvd; Scott Ave and East Blvd		
Review one-way signage on Buchanan to determine if additional signage is necessary	Kenilworth and Scott Aves	Buchanan between Kenilworth and Scott Aves	*	
Lower speed limit	Park Road	Between Kenilworth Ave and Ideal Way	*	

Mid-Term Priorities**

Improvement Type	*Corridor*	*Extents*	*CDOT to determine feasibility*	*Notes*
Install additional street trees and landscaping	All	Entire Corridor		Coordinate with installation of bulbouts, mid-block ped refuge and gateway treatments
Enhance landscaped area (sw quadrant); improve overall aesthetics of the intersection	Kenilworth and Park Road	Intersection of Kenilworth and Park Road		
Bulbouts with landscaping and street trees	Kenilworth and Scott Aves	Throughout study area where applicable		To shield parking and coordinate with Road Diet
Gateway Treatments	Kenilworth and Scott Aves	Kenilworth and Scott south split		Addressed through roundabout/deflection techniques in the vicinity of Kenilworth and Park Road; North gateway will be addressed through the Morehead Street Pedscape plan or private contribution (hospital)
Provide additional enforcement to prohibit drivers from traveling in the improper direction	Kenilworth and Scott Aves	Intersections with Filmore Ave and Private driveways		In lieu of pork chop islands
Improve Existing Sidewalks	Kenilworth Ave	South of East Blvd to Ideal Way		Add Sidewalk on west side if possible
Designate truck access to Bi-Lo along McDonald Avenue if Roundabouts are constructed	Park Road	Between Kenilworth Ave and Ideal Way		

Long-Term Priorities ***

Improvement Type	*Corridor*	*Extents*	*CDOT to determine feasibility*	*Notes*
Retrofit crosswalks to textured	All	Entire		Short-term task, tied to pending resurfacing project along the corridors
Install sidewalks/major relocation of sidewalks	All	Several locations along corridors	*	OVERALL: Improve sidewalk connections on local streets between Kenilworth, Scott and Park
Implement traffic deflection strategies	Kenilworth and Scott Aves	South Split		Slow travel speeds at both approaches
Additional street trees and landscaping	Kenilworth and Scott Aves	North of Lattimore Avenue		Involves reconstruction of sidewalks; contingent upon redevelopment
Extend Gold Rush Entertainment trolley	Kenilworth and Scott Aves	Extend trolley to include stops on East Blvd		CATS will continue to evaluate service opportunities in the Kenilworth-Scott Area
Evaluate the conversion of Filmore Ave to one way operation	Kenilworth and Scott Aves	Between Kenilworth and Scott Avenues	*	CDOT will continue to monitor/analyze as development occurs
Address cut-through movement in Blockbuster Video parking lot	Kenilworth Ave	In vicinity of Kenilworth and East Blvd		Continue to monitor/solve upon redevelopment
Improve existing sidewalks	Scott Ave	between Kenilworth Ave and Ordermore Ave		Subject to redevelopment
Implement access management strategies for several driveways	Scott Ave	Between East Blvd and Filmore Ave		As properties develop