

Leawood, Ks 



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RESOLUTION NO. 4258

**A RESOLUTION APPROVING THE PLANNING COMMISSION'S
RECOMMENDATION TO ADOPT THE 135TH STREET COMMUNITY PLAN. [PC
CASE 83-14]**

WHEREAS, the Governing Body of the City of Leawood ("City") is entrusted with the responsibility to establish reasonable laws, policies and regulations to further the general public health, safety and welfare of the community and its orderly development; and

WHEREAS, the City has undertaken a study, with the assistance of a consultant, for the development of the 135th Street corridor ("135th Street Community Plan"), the area depicted in the 135th Street Community Plan, attached hereto as Exhibit "A" and incorporated herein by reference; and

WHEREAS, the City accepted the 135th Street Community Plan by resolution on April 21, 2014 ("Plan Resolution"); and

WHEREAS, the City of Leawood Planning Commission voted to adopt the 135th Street Community Plan on May 27, 2014; and

WHEREAS, the Planning Commission's recommendation was presented to the Governing Body at its regularly scheduled meeting on Monday, June 16, 2014; and

WHEREAS, the City now desires to approve the Planning Commission's recommendation to adopt the 135th Street Community Plan.

**NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE
CITY OF LEAWOOD, KANSAS:**

SECTION ONE: The Governing Body hereby approves the Planning Commission's recommendation to adopt the 135th Street Community Plan, attached hereto as Exhibit "A" and incorporated herein by reference.

Adopted by the Governing Body this 16th day of June, 2014.

Signed by the Mayor this 16th day of June, 2014.


Peggy J. Dwin, Mayor

[SEAL]

ATTEST:


Debra Harper, CMC, City Clerk

APPROVED AS TO FORM:


Franki Parsons Shearer, Assistant City Attorney

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Acknowledgements

The following are recognized for their leadership and contributions to the report:

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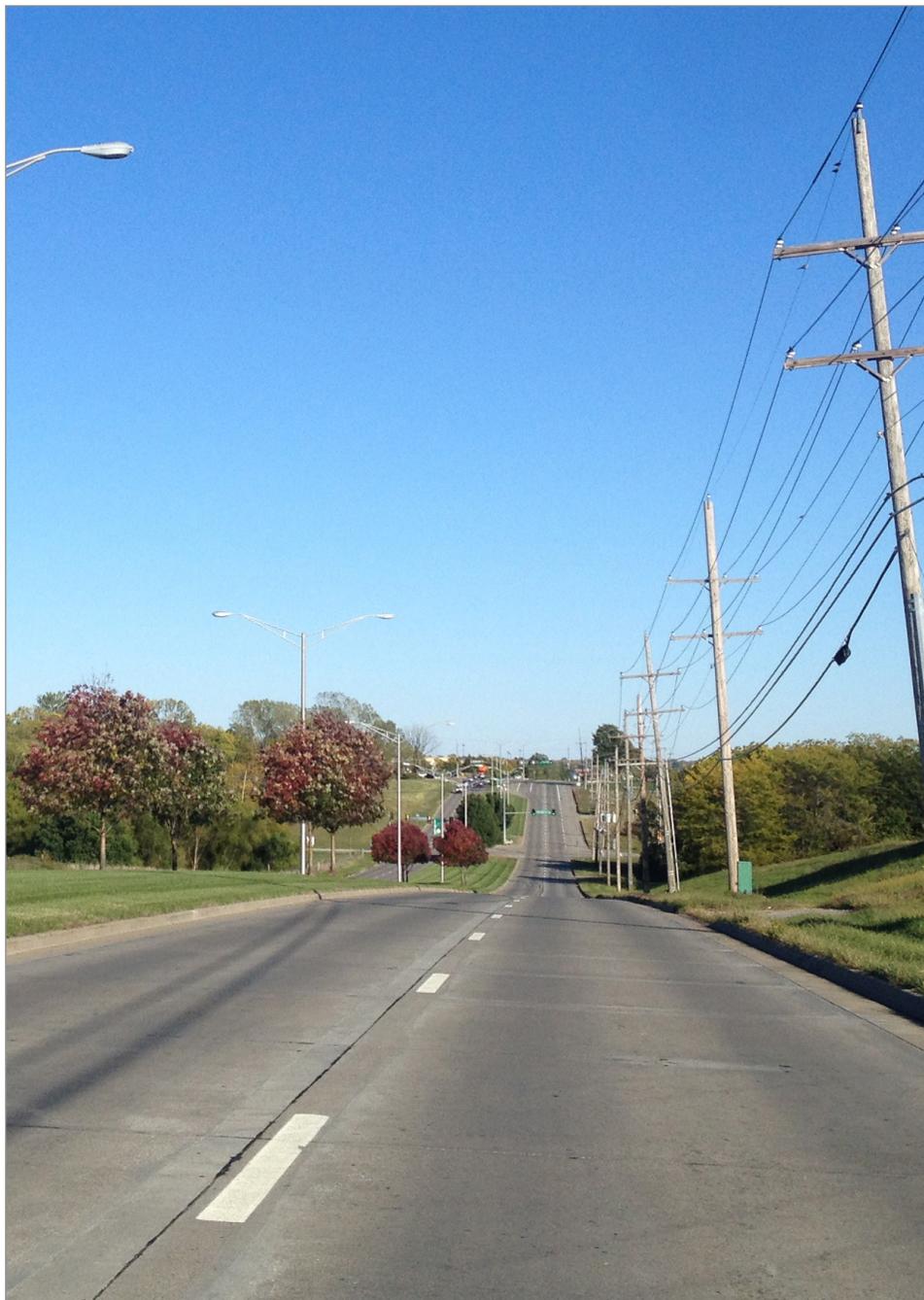
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PROJECT INTRODUCTION

Identifying the most optimal layout for 135th Street, defining key land uses, producing development concepts and providing a strategic implementation plan for improvements along the corridor will arm the City of Leawood with the necessary tools for creating a sustainable corridor and raising the local economy to a new level of success. The project team's use of metrics and nationwide best practices will give this plan the strength to guide development along 135th Street over the next two decades.



135th Street runs through the center of the study area.

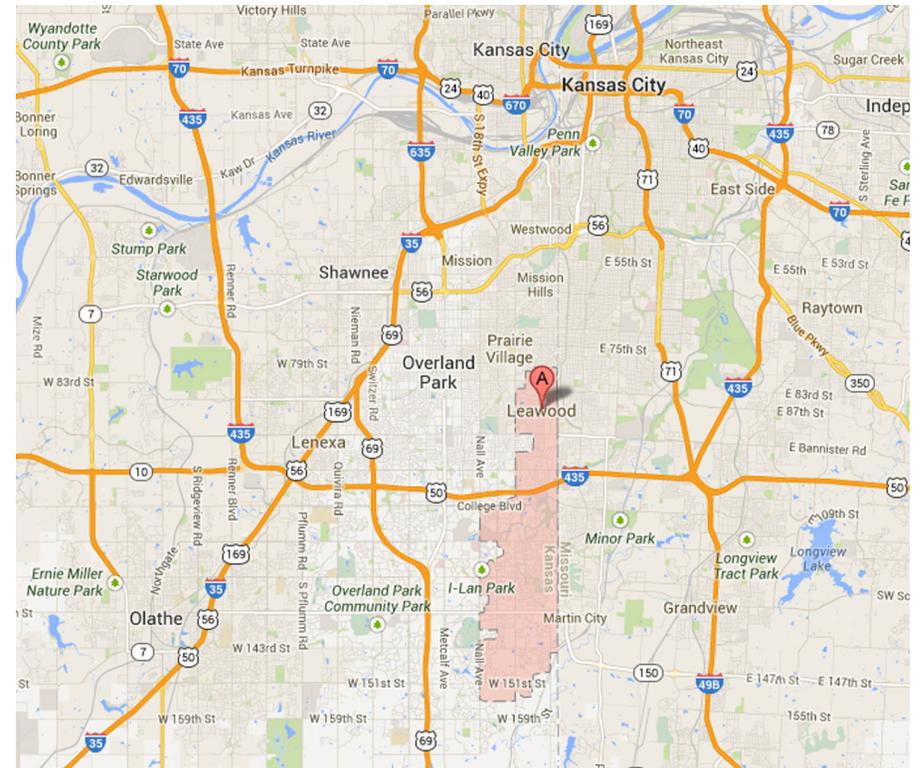
Project Background

The City of Leawood is an affluent suburban community with a population of 32,000. The southern half of this city is bisected by 135th Street, a six-lane arterial formerly known as K-150 highway. With 135th Street as the central thoroughfare of this Community Plan, the project area is bounded by Nall Avenue on the west, 133rd Street on the north, State Line Road on the east, and 137th Street on the south. Surrounded by high quality residential communities, retail, and office properties, the study area includes approximately 708 acres, over 600 of which have the potential for future development.

Recently developed projects in Leawood, such as Mission Farms, Park Place, and Parkway Plaza, provide the City of Leawood with a number of retail, office, and entertainment destinations. The 135th Street area is one of the last development sites in Leawood. The City is focusing its efforts on maximizing the potential of its buildout. To address the future of the 135th Street community, the City pursued a Planning Sustainable Places (PSP) planning project, administered by the Mid-America Regional Council, in 2012. The PSP Program provides local governments with financial support to advance detailed local planning and project development activities in support of Creating Sustainable Places, Transportation Outlook 2040's Activity Centers and Corridors framework, and the Mid-America Regional Council's (MARC) adopted policy statement on regional land use direction. The 135th Street Community Plan is one of 18 planning studies across the region chosen for funding through the Planning Sustainable Places Program.

In 2013, Design Workshop, Inc. along with its subconsultants was engaged to help the City of Leawood plan for the future mixed-use development of the 135th Street corridor and provide a plan to ensure a successful future for the area.

Figure 1.1: Regional Map



Leawood is located 20 miles south of Kansas City, MO

Figure 1.2: 135th Street Community Plan Study Area



Previous Studies

City of Leawood Comprehensive Plan (2010)

This Comprehensive Plan outlines the City of Leawood's goals for future development of residential and non-residential projects. An emphasis on quality design, human-scaled features and harmonious transitions between these two types of land uses articulates Leawood's commitment to creating a sophisticated mix of land uses and materials. This commitment will help the City achieve objectives to broaden the City's tax base and ensure an economic stability that is not solely dependent on residential property taxes.

The transportation goals described in the Comprehensive Plan support a multi-modal transportation network and express a desire to lessen dependency on automobiles in the City. As a means of adding alternative types of transportation to the Leawood network, the plan calls for additional parks and trails that will expand transportation options and give Leawood residents new cultural destinations to enjoy. The 135th Street Community Plan builds on this document to provide the City of Leawood with recommendations for creating a distinctive corridor in a growing suburban community.

135TH Street Corridor Urban Design and Development Plan (1997)

The 135th Street Corridor Urban Design and Development Plan describes possible land use options, access management strategies and aesthetic landscape, lighting and site features in the 135th Street corridor. It sets standards for property development and streetscape guidelines to create a unique identity along 135th Street. Following the seven goals outlined in this document, the project team used the plan as a guide of the current standards in place and built from these guidelines to meet the City's new goals as described in the 2010 Comprehensive Plan.

Leawood Development Ordinance (LDO)

The Leawood Development Ordinance provides citizens, developers, and investors with standards and appropriate tools to develop both

residential and non-residential properties that will meet the City of Leawood's high-quality building, material and planning expectations. This document addresses the range of site development topics from signage and lighting to parking and pedestrian connections. The project team assessed applicable articles in this document to recommend improvements for the 135th Street Community Plan.

135TH Street Corridor: What's Next for Leawood? (2012)

The urbangreen® presentation by Jim Heid provided an optimistic outlook on the future of the 135th Street corridor, provided the City take a future-focused strategy for planning and development. With an emphasis on nodal development, this presentation describes how mixed uses, connectivity and creating nodal identity and branding can lead to successful, strategic development in Leawood. The project team expanded on these ideas to create site-specific strategies for planning that will help to turn these concepts into a reality on 135th Street.

The 135th Street Community Plan used these previous studies, guidelines and presentations as a base upon which to explore and expand the planning efforts for 135th Street. These documents helped to define and explain the existing conditions within the study area, and gave the project team a deeper sense of the Leawood community's vision and goals.

The K-150 Corridor Study (1986)

The K-150 Corridor Study was completed jointly by the cities of Leawood, Overland Park, and Olathe in 1986. This study outlined a general transportation design strategy for 135th Street, then known as Kansas State Highway 150, or K-150, between Olathe and the Missouri state line in Leawood. The study established the idea of using parallel frontage roads in order to provide alternative access to local businesses along the 135th Street corridor.

Figure 1.3: North side of 133rd Street and Roe Avenue



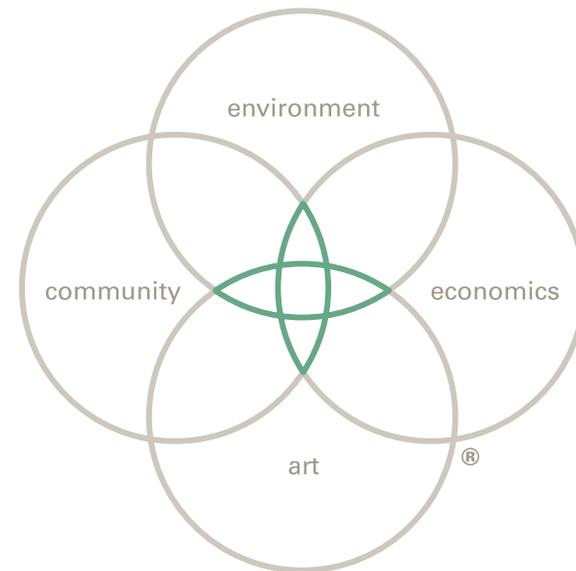
Figure 1.4: Area near 137th and Chadwick



DW Legacy Design®

Design Workshop's DW Legacy Design® process emphasizes a deliberate approach to sustainable design solutions that is comprehensive of four Legacy categories: Environment, Community, Art and Economics. All aspects of the design process and foundational thinking for the project are captured in this document. Issues associated with the project and our client's Critical Success Factors are defined at the outset. The design team and client defined a project vision, a problem statement called a dilemma and a design solution called a thesis. These steps are intended to build a strong foundational story for the project that aligns the design team and client with the same principles and goals. DW Legacy Design® metrics are employed to ensure that the project is accountable to the comprehensive legacy goals determined at the beginning of the process.

Figure 1.5: DW Legacy Design® categories of sustainability.



Client Vision

A Client Vision captures the client's articulation of what they envision for the outcomes of the project.

The 135th Street Corridor Plan will serve the interests of surrounding neighborhoods and stakeholders, the objectives of private property owners along the corridor and the economic development goals of the community. This street is the key east-west corridor in the southern portion of the city. As such, the 135th Street Community Plan will comprehensively address all modes of transportation and articulate a vision and implementation plan for mixed-use development that establishes a high-quality front door to Leawood from neighboring communities.

In order for the planning process to be successful, the following critical success factors must be achieved:

- Provide a robust public engagement process to involve all stakeholders and achieve consensus on preferred land use, transportation and related issues along the corridor.
- Integrate the input of various city departments to insure this plan clearly and effectively communicates corridor improvements.
- Create a model for Complete Streets planning in Leawood and Johnson County.
- Develop a plan for access management that will provide guidelines for optimal transportation flow.
- Evaluate level-of-service for all modes of transportation (pedestrian, bicycle, transit and auto) and create a multi-modal transportation plan that anticipates the introduction of transit service along 135th Street.
- Boost Leawood's position as an economic and fiscal competitor in the Kansas City suburbs.
- Effectively plan for connections to existing and potential parks, plazas and gathering spaces.
- Improve the aesthetic quality of 135th Street to create a welcoming and vibrant corridor.
- Integrate cultural improvements and public art throughout the corridor to define the character of 135th Street.

- Develop a plan that conforms to any existing or pending local, state, and federal regulations.

Dilemma

A Project Dilemma describes a project's greatest predicament. It sums up the major challenges that must be reconciled to achieve a Legacy Design outcome and renders vivid the complexities of the project and the need for a comprehensive solution.

The 135th Street corridor is one of Leawood's last remaining undeveloped areas. As Leawood approaches build-out in this area, how can the community help guide development in a way that will serve the economic interests of the City, off-set the environmental impacts of development, and provide an effective interface between the corridor and surrounding neighborhoods? How can the corridor evolve to support both mixed-use development and multi-modal transportation?

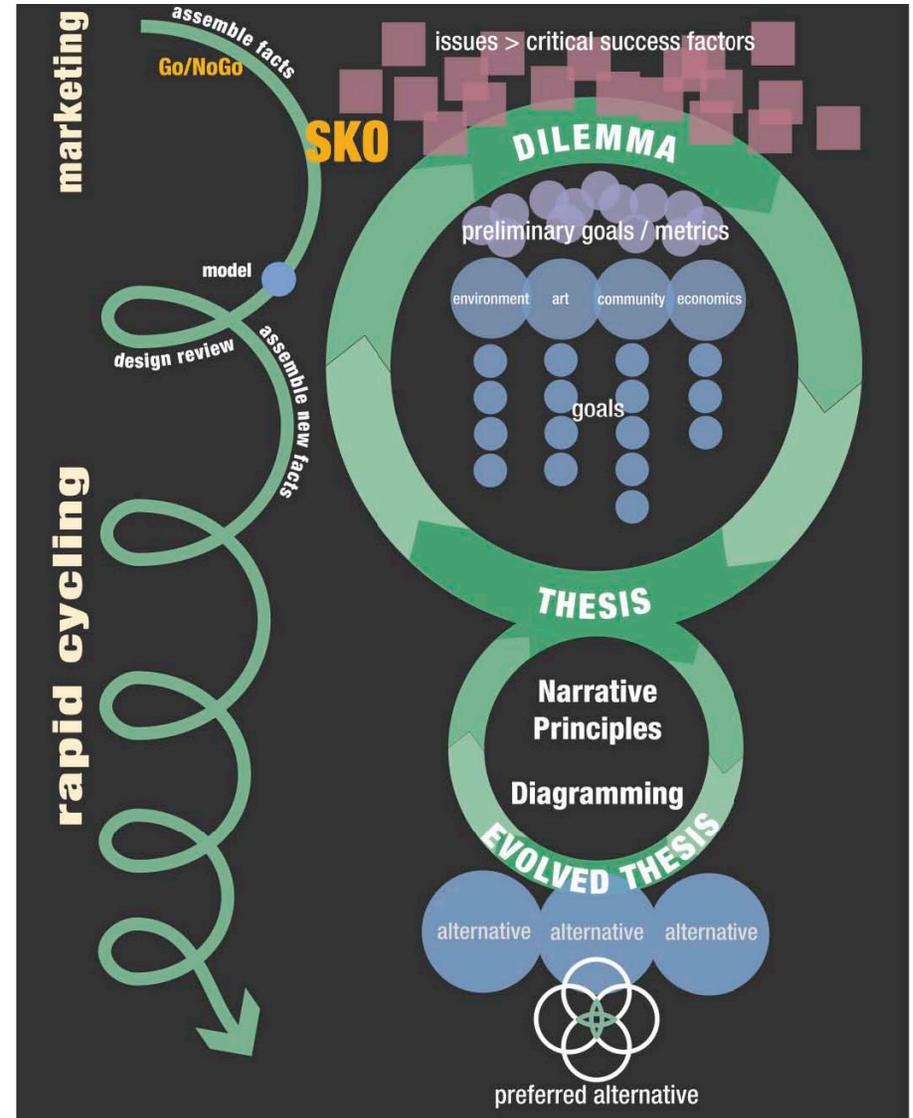
Thesis

A Project Thesis is an assertion about the project outcome that will be tested and resolved through the team's design and planning investigations. It is a proposed solution to the central problem or question stated in the dilemma.

To ensure the community has the opportunity to participate in the development of the 135th Street corridor, a rigorous citizen and stakeholder engagement process helped the project team evaluate design and development alternatives. Public involvement guided the preferred strategy for the community plan and produce a vision for the 135th Street corridor that is supported and endorsed by Leawood's citizens.

Identifying the most optimal layout for 135th Street, identifying key land uses, producing development concepts and providing a strategic implementation plan for improvements along the corridor will arm the City of Leawood with the necessary tools for creating a sustainable corridor and raising the local economy to a new level of success. The project team's use of metrics and nationwide best practices will give this plan the strength to guide development along 135th Street over the next two decades.

Figure 1.6: DW Legacy Design® Method



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COMMUNITY ENGAGEMENT

The importance of the 135th Street area to the City of Leawood, the involvement of various stakeholder groups including residents, businesses, property owners, and the City, and the need to maintain a shared sense of planning for the area heightened the need to execute a comprehensive, transparent, and well-conceived public outreach effort.



Community members participate in a mapping exercise.

Steering Committee and Stakeholder Meetings

The importance of the 135th Street area to the City of Leawood, the involvement of various stakeholder groups including residents, businesses, property owners, the City, and the need to maintain a shared sense of planning for the area heightened the need to execute a comprehensive, transparent, and well-conceived public outreach effort. The design team worked throughout the planning process to reach a broad range of participants and create a consensus for the recommended strategies for the 135th Street Community Plan that will help area developers and the City move forward with plan implementation and policy revisions. During the project, members of the design team and the City of Leawood met with community organizations, elected officials, property and business owners, and the general public to review, discuss and advance the recommended plan for the 135th Street community.

In order to engage businesses and investors in the 135th Street community, the project team worked with the City of Leawood to form a Steering Committee which included members from City Council, the Chamber of Commerce, the Planning Commission and City staff. The Steering Committee is a leadership group who serve as liaisons for the 135th Street community. At regular meetings throughout the evolution of the plan, this committee helped guide the project and advise the team on the interests of property owners and investors in the corridor, as well as foreseeable problems with project costs and implementation.

Additionally, the Steering Committee served as an agent to introduce project stakeholders to the project team and facilitate relationships among those interested parties in order to gain as much investment, usage and implementation feedback as possible. The project team met with property owners, business owners, area developers, elected officials and city staff in Leawood, Johnson County, the Leawood Chamber of Commerce and the general public. Key issues in the planning process included 1) development of plan alternatives that meet the needs of current property owners and the community's vision for 135th Street and 2) identification of projects that can be implemented in the near future.

July-September 2013 - Initial Stakeholder Outreach

During the summer of 2013, stakeholder interview invites were sent out to 17 individuals to discuss site specific issues and opportunities. The team conducted interviews with key city staff and elected officials in Leawood, Johnson County, the business community and developers. These conversations were often technical in nature and designed to "test the waters" for potential improvements and pave the way for implementation.

Tools and Strategies

The project team utilized a variety of tools to ensure participation by a broad cross-section of the community including public meetings, individual meetings, and on-line tools. This process also involved reaching out to local high school youth leadership groups at Blue Valley North. The community was interested in this project as indicated by the attendance at public meetings and participation in on-line forums. Additional methods of outreach included:

- Public meetings
- A project webpage
- Mindmixer
- Keypad polling and online surveys

Figure 2.1: *Public Meeting at the Ironwoods Lodge*



Public Meetings

Community members received notice about upcoming public meetings through Twitter (MARC), the Chamber website, HOA homepages, the City of Leawood Project website, community meeting yard signs, electronic highway signs, and community flyers. Flyers were distributed to community organizations, Homeowner's Association presidents and the school district. All three public meetings were held at 7:00 p.m. at the Lodge in Ironwoods Park.

August 22, 2013 – Public Meeting #1

At the first public meeting, approximately 70 attendees were introduced to the project during a 30 minute presentation. The presentation reviewed the goals of the project, existing conditions within the 135th Street area, and the opportunities and constraints for future planning. Following the meeting, community members participated in small group break-out discussions to address their concerns and provide input on specific plan topics.

A keypad polling session followed these discussions to gauge community interests in a variety of possibilities for the corridor. The public also helped to identify key issues and areas for improvement within the study area. Questions from this polling session were made available online after the meeting to allow residents and other interested parties to weigh in on corridor topics, despite their absence from the public meeting.

September 18, 2013 – Public Meeting #2

At the second public meeting the project team presented three land use alternatives, more specific ideas for new development along the corridor, and possible access management strategies. The public again provided feedback on these ideas through keypad polling and online surveys.

Following the meeting, attendees were invited to take part in a visual preference green dots, community members voted on different styles, materials, and types of aesthetic qualities they would like to see or not see in the 135th Street area. The project team tabulated the results, which are available in Appendix B.

October 18th – Public Meeting #3

The meeting was attended by approximately 30 people as the project team presented the preferred plan strategies and recommended policies. To evaluate public support of these recommendations, the project team conducted a keypad polling session. The project team was then available for a Question and Answer session to address community concerns and respond to public feedback

Project Webpage: 135th Street Plan

To further engage community members and provide the public with the latest studies and ideas developing in the corridor, the project team worked with the City of Leawood to create the 135th Street Plan webpage, hosted by the City of Leawood website. The public was able to access the page through a link on the City of Leawood homepage.

Survey Monkey

All three surveys conducted during public meetings through keypad polling were made available online to those unable to attend through a service called Survey Monkey. The surveys contained the same set of questions and images and allowed at-home participants to provide comments and feedback on a number of questions. Each survey was available online for three weeks after the associated public meeting. Results from both the previous polling session and online surveys were presented to the public during the subsequent meeting.

MindMixer

MindMixer is an online community engagement tool that allows the public to offer opinions, suggestions, and comments on specific topics related to the project. The project team created a City of Leawood 135th Street Plan Mindmixer website to garner additional public feedback and ensure that the design process remained transparent and collaborative. After presenting the 135th Street Plan Mindmixer website to users at the first public meeting, the site was open for public comment. Those not available to attend the public meetings were encouraged to participate online through the 135th Street Plan webpage.

During the design process, the project team posted topics and surveys. Topics included:

- Overall Vision
- Future Land Use
- Walking and Biking
- Community Amenities
- Quality of Development

All community comments were collected and disseminated to the project team in order to ensure that community voices were heard and implemented into the plan for the 135th Street corridor. The City of Leawood 135th Street Plan MindMixer page benefited from 59 active participants, 592 visitors and 3,954 page views.

Evaluation

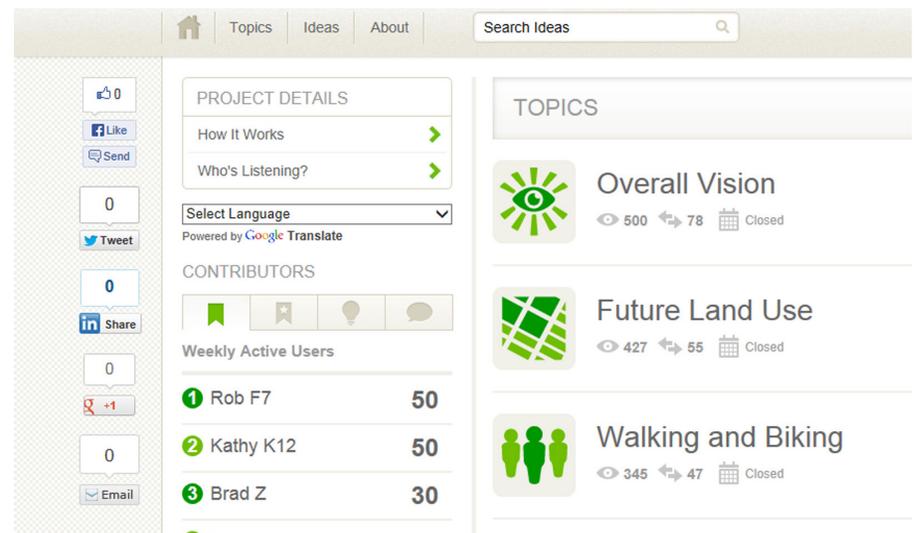
This project benefited from an engaged community whose interest in the project helped to shape the outcome of final recommendations and strategies. The process received local attention from *Leawood Lifestyle Magazine* which helped to educate the community about the project. Attendance at community meetings, participation in online surveys, and Mindmixer comments received throughout the design process, all helped to guide the project team and deliver a plan that incorporates the community wants and needs.

During the final public meeting, participants were asked to evaluate the public engagement process that took place during this project. A total of 69 percent of respondents positively favored this process and found the project to be inclusive of their input.

Figure 2.2: Project Webpage



Figure 2.3: MindMixer



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THE MARKET

This market study examines the potential demand for retail, office, and various residential products in the 135th Street corridor. While this analysis can help to predict densities and potential land use options in the study area over the next two decades, readers should keep in mind that the content provided represents merely a snapshot in time. Market conditions will change with real estate cycles and changes in the marketplace.



Commercial activity along 135th Street

Demographic and Economic Context

The project team used data from Environmental Systems Research Institute (ESRI) Business Solutions in order to complete an analysis of the 135th Street study area and the surrounding areas in Leawood and south Johnson County. ESRI is a national database of economic and demographic data that draws from data from the United States Census as well as information from state and local sources. ESRI allows cities and project teams to analyze different geographic areas within communities for planning purposes and for market studies. ESRI combines demographic and economic data together and allows practitioners to analyze this data using Geographical Information Systems (GIS) capabilities.

Leawood is highly affluent and has grown considerably over the last two decades. As the Table 3.1 illustrates, the area within a five minute drive time of the center of the corridor (defined for the purposes of this analysis as the intersection of 135th and Mission Road) has grown considerably over the last twenty years.

Long-Term Population Growth and Projections

The population of this area has grown by around 10,000 residents per decade since 1990, and the median household income has continued to grow considerably, from around \$79,000 in 1990 to nearly \$118,000 in 2012. The predominate age group is the 35 to 54 year old segment, and the corridor had a median age of 41 in 2012. The age 65 and older segment accounts for 14 percent of the population in 2012 and this age cohort will increase as a share of the overall population in the next five years. The demographics of the area are weighted toward higher income households. The median household income in the district exceeds the median household incomes for the metropolitan area and the nation.

Looking more broadly, the Mid America Regional Council (MARC) has completed projections of population and employment for individual cities and various counties in the metropolitan area for the 2008 to 2040

time period. These projections cover the forecast period for the 135th Street planning effort. According to MARC projections, Johnson County will continue to serve as the economic engine for the metropolitan area over the next 30 years. MARC anticipates that the population of the entire City of Leawood will grow by 13,000 residents during the 2008 to 2040 time period. The City of Leawood is anticipated to add another 15,000 jobs during this same time frame. The actual population and employment numbers for Leawood may differ from MARC projections over the near term as the growth of particular development projects or the hiring patterns of individual companies may vary from year to year.

The actual study area around 135th Street contains a significant percentage of vacant and undeveloped land (much of which is still in agricultural production). However, in the broader context, the study area represents an “infill” area of growth compared to newer areas of growth in Johnson County to the south and west. Therefore, retail and office land uses in the study area will benefit less from new population growth that will occur in the newer growth areas to the south and west. Retail and office uses benefit from having more people live in close proximity to a particular development. In order to substantially increase the population in the immediate trade areas around 135th Street, the City will need to promote the development of additional residential projects within the 135th Street corridor. Adding more residents to the study area will help to build larger customer bases for shops, restaurants, and various businesses serving this part of Leawood.

The following outlines the general market prospects for residential, office, and retail development in the 135th Street corridor, based upon research with local brokers and an examination of local and regional growth patterns in the Leawood area.

Table 3.1: Demographic Data, 5 Minute Drive Time Around 135th and Mission Road

	Population	Households	Median Age	Percentage Age 65 +	Median Household Income
1990	9,532	3,057	36.0	8.1%	\$79,168
2000	18,745	6,635	37.8	9.7%	\$100,738
2012	27,427	10,913	41.0	14.2%	\$117,806
2017 (Projected)	29,140	11,675	41.1	15.8%	\$125,859

Source: ESRI

Table 3.2: Demographic Data, City of Leawood

	Population	Households	Median Age	Percentage Age 65 +	Median Household Income
1990	19,374	6,731	39.0	12.8%	\$72,605
2000	27,656	9,841	41.2	12.6%	\$102,496
2012	32,317	11,954	44.7	15.7%	\$125,955
2017 (Projected)	33,747	12,564	45.6	12.9%	\$137,069

Source: ESRI

In terms of household income and median ages, the 135th Street corridor has similar characteristics to the City of Leawood.

Retail

Within the local retail market, developers have already created shopping centers that include most types of stores. Shopping centers just to the east of 135th and State Line in Kansas City, Missouri include a variety of big box stores such as Walmart and Target, junior or mid size stores such as Bed Bath Beyond, and a variety of restaurants typically found in suburban shopping centers around the country. To the west, the area around 135th and 69 Highway includes several shopping centers with various restaurants and stores. Between 69 Highway and the Leawood city limits (at Nall Avenue), the 135th Street corridor includes two new and significant shopping centers, Corbin Park and Prairiefire. Corbin Park, at the southeast corner of 135th and Metcalf, includes the Van Maur and JC Penney department stores. As of summer 2013, Corbin Park included a significant proportion of vacant retail space within the development. A number of smaller retail sites within Corbin Park, along 135th Street and along Metcalf, remain open for restaurant, bank, and other retail uses. Corbin Park will include a new Scheel's sporting goods store and already includes a new Lifetime Fitness facility that draws considerable traffic to the shopping center area. The Corbin Park project will include a total of 1.1 million square feet of space at completion. To the east of Corbin Park, the Prairiefire development at 135th and Nall continued construction as of October 2013. This mixed-use project will include over 350,000 square feet of retail at build-out, including REI, a national sporting goods retailer, and a Fresh Market grocery.

Within Leawood, the 119th Street corridor has emerged as a significant retail and entertainment corridor in recent years. The Park Place development, including 1.2 million square feet of space in total, features a Gordon Biersch restaurant, RA Sushi, several other restaurants, and several smaller retailers. The restaurants within Park Place have attracted significant visitation to Park Place over the last several years. Developers continue to weigh options to modernize the 20 year old Town Center Plaza development, to the north and west of 119th and Roe, by adding new stores and restaurants. Town Center Plaza has been and continues to be a major retail destination in the region.

One Nineteen project at the southeast corner of 119th and Roe has been renamed to Town Center Crossing, to tie in with the larger Town Center development to the northwest. Town Center Crossing includes a number of well known national retailers, such as Orvis, Crate and Barrel, North, and Trader Joe's.

Data from the ESRI database as of August 2013 indicates that the local trade area (within a five mile radius of 135th and Mission) is missing only a few categories of retailers, including casual dining restaurants and convenience stores. Data from ESRI indicate that the larger shopping centers to the east in Kansas City, Missouri, within the 119th Street corridor, and to the west along 135th Street within Overland Park are satisfying demand for clothing, gifts, and other retail categories.

Figure 3.1: *Corbin Park development at 135th and Metcalf in Overland Park*



Takeaways for Retail, 135th Street Area

- The corridor has an opportunity to develop stores and restaurants that will serve the surrounding neighborhoods in Leawood and Overland Park. Developing additional residential units within the study area would create a larger pool of residents that would provide additional demand for local stores and restaurants along 135th Street in the future.
- Park Place has demonstrated that combining retail and restaurants together with offices and residences in a mixed use development can draw business from a larger area. Park Place draws visitors and patrons from throughout Johnson County. Similarly, well designed mixed use developments along 135th Street have the potential to draw business from throughout Johnson County and the overall metropolitan area. New developments in this part of Leawood have the potential to succeed by drawing from the affluence of this part of Johnson County.

Figure 3.2: Seasonal Ice Rink brings year-round activity to Park Place



Table 3.3: MARC Adopted Growth Forecasts, 2008-2040

County	Total Population Increase, 2008-2040	Total Household Increase 2008-2040	Total Employment Increase, 2008-2040
Cass	58,354	73,865	19,142
Clay	166,648	73,914	80,369
Jackson	144,282	70,652	119,386
Johnson	300,432	136,825	300,203
Leavenworth	24,499	10,937	8,562
Platte	72,771	33,769	38,480
Wyandotte	27,752	13,691	20,269

City	Total Population Increase 2008-2040	Total Household Increase 2008-2040	Total Employment Increase, 2008-2040
Leawood	13,191	6,633	15,373
Olathe	74,881	34,675	76,117
Overland Park	69,318	31,847	66,202
Prairie Village	3,734	2,026	2,717

Office

The Kansas City office market, as well as the national office market, continues to recover slowly from the Great Recession. Developers are avoiding moving forward with any speculative projects and instead are waiting to have tenants lined up before beginning construction. The slow pace of hiring following the recession has also limited demand for new office space across the country. In addition, the trends toward working at home, and toward having a greater proportion of work completed by contractors or temporary employees, means that companies will likely have less need for office space in the future.

The College Boulevard corridor in Overland Park and Leawood serves as the key employment center in Johnson County and office development has continued to focus on this area over the last twenty years. The Sprint campus, along with other key office towers on College Boulevard, have made Johnson County an employment magnet that rivals Downtown Kansas City. However, to the south of College Boulevard, office development has tended to center around somewhat smaller buildings, often including local-oriented tenants (such as law firms, doctors' offices, small businesses, and the like). While the area to the north of 135th and Metcalf has developed with a mixture of somewhat larger office buildings (including office buildings for Chevron and a few other national tenants), the 135th Street corridor in south Johnson County has not developed as a key employment corridor. Office development has continued to cluster along College Boulevard and, to a lesser extent, along 69 Highway. In addition, Tomahawk Creek Parkway in Leawood contains a number of higher quality office buildings with a variety of professional services and corporate tenants. This location represents another key area of office development in this part of Johnson County.

Despite these larger trends in office development in Johnson County, office tenants have begun to look beyond conventional corporate campuses and office parks and have begun to locate in mixed use developments. Employers have begun to locate offices in mixed-use developments that feature nearby places to live, dine, and shop, as op-

posed to typical office developments that are separated from adjacent land uses. For example, the Park Place development in Leawood has attracted a number of notable key office tenants, including the AMC headquarters and Tortoise Capital Advisors. Park Place has relied upon office development to drive much of the initial success of the project. Office space comprises all of the space above the ground level retail that is present along Ash Street.

Mixed-use developments around the country have succeeded in attracting office tenants in a similar fashion, by using the presence of restaurants, convenience retail, and entertainment as a tool to attract employers and, in turn, employees. National research has shown that younger generations of workers, including the Millennials (also referred to as Generation Y, and defined as Americans born from 1982 to 2004), tend to prefer employers located near amenities and places to recreate. Thus, the 135th Street area could attract a larger pool of office development by creating centers or "nodes" of mixed-use development along the study area. By creating developments that include a well-crafted mixture of residential, office, and retail components, property owners can use the mixed-use model to attract major office tenants to the 135th Street study area.

Takeaways for Office:

- Given macroeconomic trends outlined above, the office market is likely to grow slower than retail or residential over the near term (next 5 to 10 years).
- The creation of well-planned mixed-use developments in nodes along 135th Street would allow this part of Leawood to attract key office tenants that could serve as anchors of development.
- The future planning for the study area should allow developers the flexibility to integrate larger office uses within plans for well-developed mixed-use projects.

Figure 3.3: *Tortoise Capital office building*



Residential

The local housing market has continued to recover over the last year, with Overland Park and other Johnson County communities reporting strong building permit activity for single-family homes as well as multi-family projects (including apartment projects). Development activity has continued to proceed on the outer fringes of Overland Park, to the south, and in the Gardner area. Local brokers also report that interest in infill projects such as Mission Farms and in existing and potential projects closer to the heart of the metro area continues to increase. While growth continues in suburban Johnson County, more people are seeking access to local amenities such as the Country Club Plaza and the Crossroads district.

Two main demographic trends are likely to drive the overall residential market over the next two decades.

First, the aging Baby Boomer generation and a tendency among Empty Nesters to choose lower maintenance living options (such as townhomes, patio homes, or even apartments) means that there will likely be additional demand for these product types in Leawood over the next twenty years.

Second, the young professional set, including Generation Y as well as Generation X (defined as Americans born from 1965 to 1981), is seeking to live near or in places that have a full range of amenities, including places to work, shop, and play. Many people in Generation X and Generation Y are choosing to live near downtown districts such as the Crossroads district, in order to be near various urban amenities. Those that choose to live in the suburbs tend to live near centers of mixed-use activity (such as Park Place). This trend may translate into a greater demand in Leawood for mixed-use development as well as for apartments, townhomes, and other multi-family products serving younger professionals.

Takeaways for Residential

- Given the aging and relatively affluent population present in Johnson County, the 135th Street area is a likely candidate for additional residential development, including townhomes and apartments, to serve the Empty Nester demographic groups. The area, given its appeal, could attract Empty Nester buyers from throughout Johnson County and beyond the Kansas City metropolitan area.
- Currently, demand exists for multi-family homes geared to younger professionals who work on College Boulevard or in other Johnson County employment centers. These units will need to include a full range of amenities and be located near shopping, entertainment, open space, recreation, and other features.
- The Kansas City market has demonstrated an inability to support additional condominium development and sales. Therefore, the most likely product types to move forward in the study area include row homes, townhomes, villa homes, and apartments.

Figure 3.4: *Mission Farms residential and mixed-use development, Leawood*



Conclusions from Market Analysis

The above information leads to the following conclusions that help to guide the overall planning effort for the 135th Street Community Plan.

- Experience from Leawood and elsewhere suggests that well planned mixed-use projects near 135th Street could attract a number of key office tenants. The Park Place development has attracted some higher profile office tenants such as AMC, and experience from around the country suggests that employers are increasingly seeking out mixed-use environments for their offices to entice highly desired employees.
- It may be possible to develop key mixed-use “nodes” along the corridor that could resemble Park Place in size and character. Park Place will contain around 1.2 million square feet of built out space (at full build out). These key nodal developments would more logically be developed near key intersections (such as near Mission Road, State Line Road, or Chadwick).
- While this market analysis discussion lays out the general framework for future development in the 135th Street area, the possibility remains that the study area could attract a large or unanticipated user. For example, Leawood could attract a mid-size or larger corporate headquarters to the area. Experience from around the country indicates that a project could successfully attract a significant office tenant by integrating office space into an adjacent mixed use development.

Figure 3.5: *Example of mixed-use development in Denver, Colorado*



4

135TH STREET COMMUNITY PLAN STREETSCAPES

Streets provide the framework for future development in the 135th Street corridor. This chapter outlines a potential complete network of streets for the area and defines a character for three street types that will create this network. Additionally, the option of a multi-way boulevard is explored for the future of 135th Street.



Heading north on Pawnee Lane towards 135th Street.

Purpose of the Plan

This document serves as the base plan for future development in the 135th Street corridor. As a supplemental guide to the City of Leawood Comprehensive Plan, this chapter outlines the opportunities for development that could most successfully serve the community, environment, economics and arts and culture of the 135th Street community that can be employed to inform future plans. This plan builds upon the Comprehensive Plan by providing a kit of parts outlining additions to and alterations of the existing Leawood Development Ordinance.

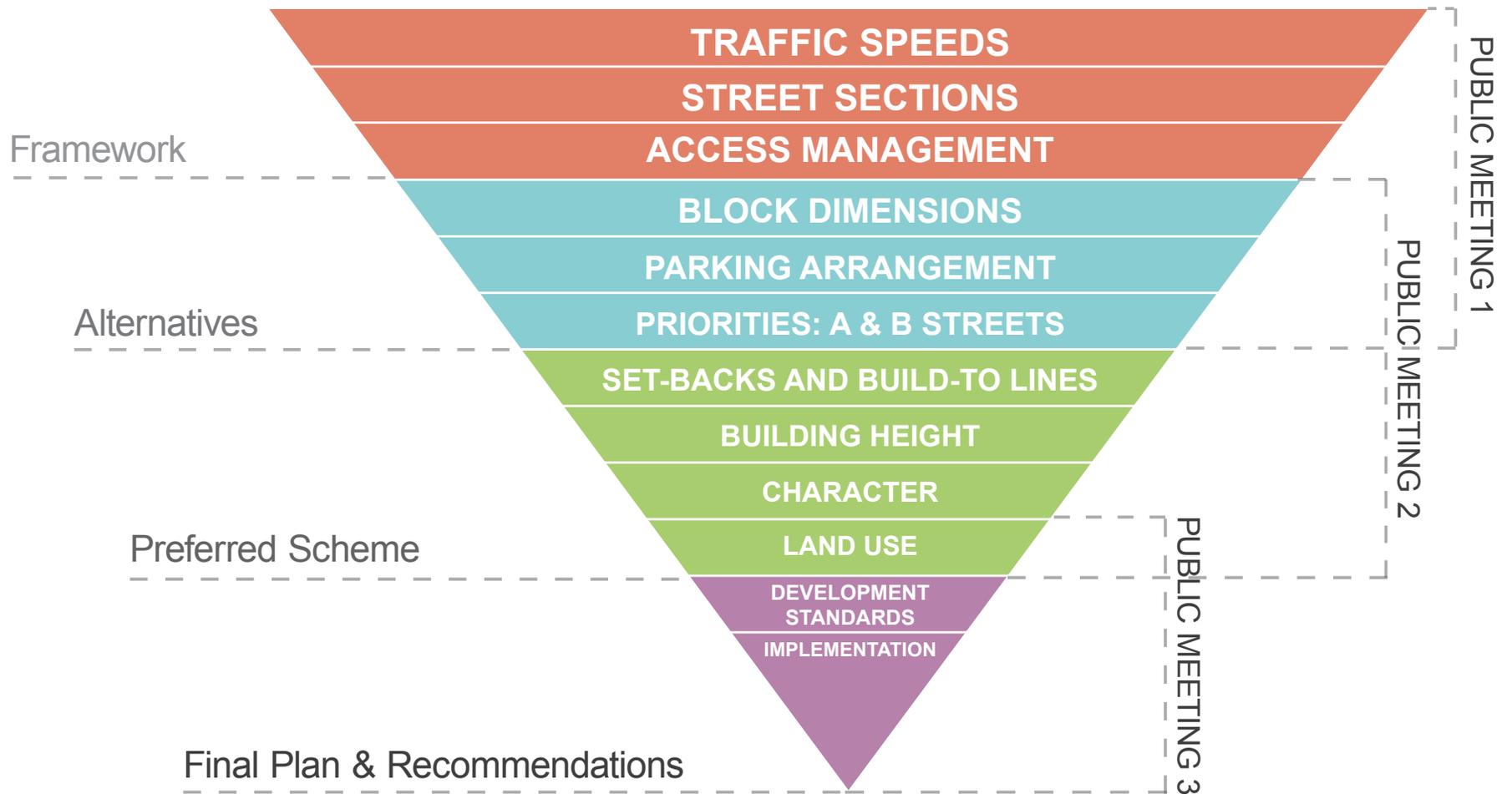
The strategies outlined in this chapter are designed to help the City and the 135th Street community better communicate their vision to property owners and developers in the area. These recommendations are flexible and will be further developed through the completion of a future Implementation Plan guided by the City of Leawood.

Process

In a joint effort, the project team and city staff worked through a series of neighborhood meetings to understand the community's vision for the 135th Street corridor.

Figure 4.1 to the right illustrates this process and provides an outline for the final recommendations of this effort.

Figure 4.1: Design and Decision-Making Process



Potential Street Network

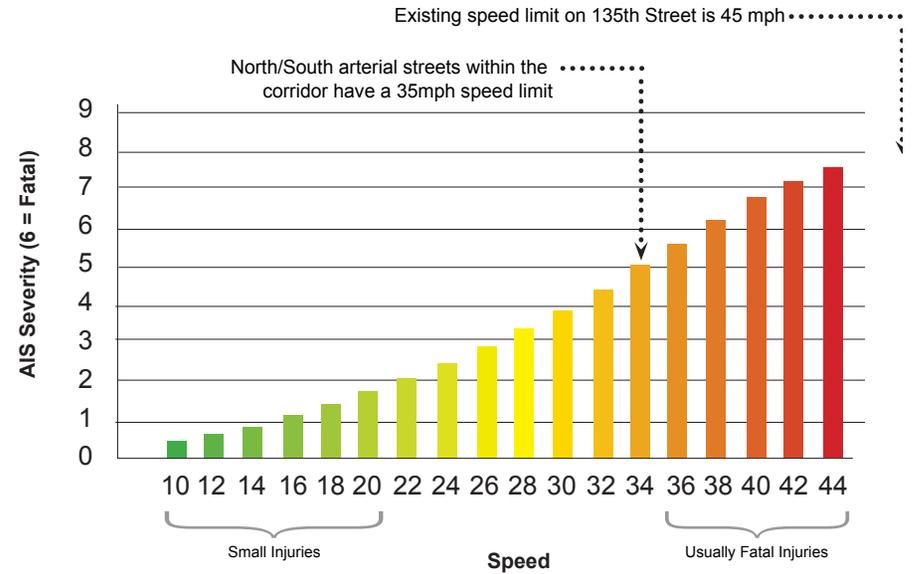
A street network and complete street grid help to set the framework for future development to take place in the 135th Street community. Additionally a complete street grid will help the study area:

- Improve traffic flow
- Provide more marketable real estate at four-way intersection
- Improve connectivity between districts and destinations in the corridor

This potential street network builds connections to existing infrastructure while taking advantage of existing and potential destinations. By providing a flexible hierarchy of streets, this network also optimizes areas with the greatest potential for creating unique, special places that will serve the Leawood community into the future.

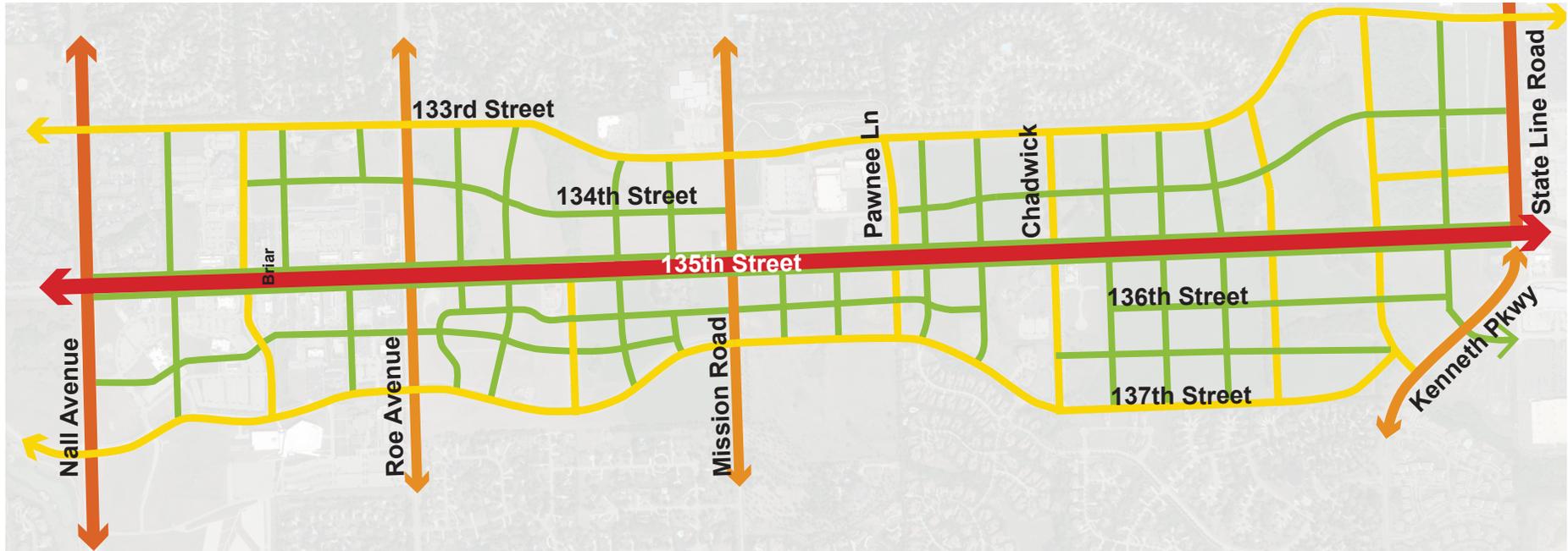
Speed limits not only affect drivers but can significantly impact the feel and character of a neighborhood for pedestrians and bicyclists. The speed limits defined in this diagram provide the corridor with a transportation network that attempts to maximize multi-modal level of service (MMLOS), create slower-paced areas for destination districts and create safe conditions for all users of the 135th Street corridor.

Figure 4.2: Vehicle Impact Speed vs. Potential Pedestrian Injury



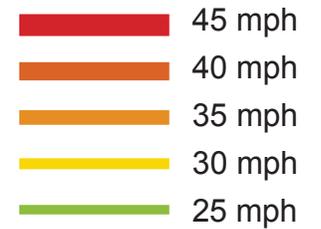
This diagram illustrates the importance of roadway speed limits. Collisions between pedestrians and vehicles usually result in fatality when cars are travelling above 34mph. Managing speeds in the corridor is an important strategy to improve safety and walkability in the community.

Figure 4.3: Potential Street Grid and Speed Limits



Leawood Development Ordinance (LDO) Recommendations

The implementation of the future street network is imperative to the infrastructural and transportation needs for future development and density in the corridor. The city should coordinate the development of various parcels within the corridor to ensure new development plans include the implementation of a fair percentage of street network infrastructure. That is to say, if simultaneous development takes place on two adjacent parcels, each developer is responsible for 50% of shared road building costs. The city can determine these percentages based on a variety of factors including but not limited to: amount of street frontage; primary and secondary access needs; traffic requirements as they respond to proposed densities.



Street Character

Once city staff and the community voiced support for the potential street network, the project team developed a series of alternative street sections. A street section defines dimensions of elements that compose a streetscape, such as travel lanes, sidewalks, and landscaped areas. These dimensions respond to traffic needs and the potential for pedestrian and bicycle amenities while helping to create a specific atmosphere for all users along a street.

Alternatives for existing streets were presented to the community during the first public meeting. After gathering feedback on these alternatives, a second series of section options were created and presented at the second public meeting (refer to Appendix B to review these alternatives). The project team used all of this feedback to redefine some existing streetscapes and create three Street Character options for new and some existing roads in the 135th Street Corridor. The location of these street types may change based on future needs and development applications.

LDO Recommendations

The elements of streetscape character will help distinguish districts and bring identity to neighborhoods. The street sections provided in this document present a unified character for the corridor but allow for flexibility in material and design to help the City and developers work together to build unique and distinct places in Leawood.

- Development plans should identify any proposed street character types and their associated elements.
- The implementation of particular street character elements, which include but are not limited to: rain gardens, seating amenities, bicycle facilities, can qualify development plans for density bonuses defined by the City.

Potential LDO Revisions

The existing development ordinance works to ensure that all buildings will have “street frontages” but the series of associated regulations doesn’t clearly define what a street frontage is or should be. The following points could be revised to help better explain this term and further establish street character throughout the corridor:

16-1-6

Use the below definition to help explain what it means for buildings to “front” upon a public street or approved private street.

16-2-9.2D1;3;4

Combine points D1, D3 and D4 into one comprehensive section to help define what a building frontage is and should be. All buildings shall be designed to create a strong physical relationship with their adjacent streets by:

- Providing a clearly defined, highly visible entrance
- Orienting the entrance toward the street-side of the building
- Connecting the entrance and the street with a sidewalk.

Figure 4.4: Potential Street Character



This diagram represents one potential option for street character. The City should work with the community, property owners, and developers to refine this diagram and create a street network that best responds to Leawood's needs.

The following six pages outline a recommended kit of parts that will make each street character type unique, vibrant and important to the quality of the 135th Street corridor.

-  Destination Street
-  Active Pedestrian Street
-  Neighborhood Street

Destination Streets

Destination streets lay the foundation for activity centers in the corridor and in Leawood. These streetscapes have the highest quality of design and material investment. They can have their own brand within the community to promote the street and surrounding area as a retail and shopping, entertainment, and/or dining district. As such, signage and wayfinding elements bring this street to life by announcing festivals, seasons, cultural events, or celebrations and reminding visitors that they are in the 135th Street corridor in Leawood, Kansas.

Overhead tree canopy and softscape understory plantings work throughout the seasons to give the street a visual rhythm and provide year-round interest through elements of structure, texture and color. Other vertical elements that should balance the planting system are street and pedestrian light fixtures. A destination street is still vibrant and alive with people, music and activity at night.

Traffic moves at a relatively slow pace on a destination street. Drivers travel cautiously amidst pedestrian activity and cars pulling in and out of on-street parking spaces. These convenient parking stalls allow travelers to pull over at a great restaurant or do some quick shopping in the corridor. Window shoppers and groups of friends pass each other easily on these wide sidewalks. At some locations these sidewalks are converted to outdoor cafes and sunny street-side bistros.

Open, Active Storefronts

There is no better advertisement for a shop or restaurant than seeing actual customers and merchandise. Maximizing storefront windows and ensuring in-store visibility will encourage and welcome shoppers and thereby boost activity on the street.

Intense Plantings

Shade is key to pedestrian comfort and the creation of destination places. In addition to shade, understory plantings with a designed raised structure and color palette that perform through all four seasons will enhance the street and create a vibrant, aesthetically pleasing streetscape throughout the year.

11'-6" Driving Lanes

Eleven and a half foot driving lanes create the best conditions for both drivers and pedestrians on this active street.

9' On-Street Parking

Destination Streets are the heart of the 135th Street nodes. Shopping, dining and entertainment storefronts line these streets and promote a 24/7 active streetscape. To bring people to the street and district, these streets include convenient, on-street parking.

Signage

Signage and wayfinding elements on a Destination Street help to brand the district.

16' Sidewalks

Of the three street character types identified, the Destination Street has the highest quality sidewalk paving. Choosing durable, attractive materials are essential to the design and continual success of this area.



Figure 4.5: Typical Street Section for Destination Street



Active Pedestrian Streets

Active Pedestrian streets are the bones of the street grid. They serve as the main thoroughfares for cars, bikes, people, and potentially transit or bus riders. Because of this, these highly visible streets should represent the 135th Street community with quality materials and elements of visual interest, but also be composed of highly durable and sustainable materials that will withstand the high volume of activity into the future.

As their name would infer, active pedestrian streets are designed to be highly conscious of people walking through the corridor. Wide sidewalks provide room for groups of walkers, strollers, or runners while also allowing room for dining and retail establishments to generate activity and maximize storefront visibility. Intersections with active pedestrian streets provide highly visible crosswalks, pedestrian lighting, and Americans with Disabilities (ADA) accessible curb ramps. Due to the potential for higher volumes of car traffic and faster traffic speeds, active pedestrian streets may also be equipped with a planted median. In crossing an active pedestrian street the median acts as pedestrian refuge island for those crossing the four lanes of traffic on these streets. Trees along these streets not only bring shade and aesthetic character to the corridor, but also act as a safety barrier between moving cars and pedestrians.

These streets also serve bicyclists travelling in the local area. Creating bike lanes and providing signage that acknowledges bicyclists on the road will help alert drivers to bicycle traffic in Leawood. Bike lane and bike route signage goes a long way to provide safe passage for bicyclists. This type of signage can also act as a wayfinding element to bring new visitors to the area from nearby bike routes that exist north and east of the study area.

The Active Pedestrian Street is a thoroughfare for all modes of transportation but through careful selection of design elements and material quality, these streets could also become the unifying ribbon that ties the corridor together.

16' Sidewalk

Permeable materials allow water to penetrate the ground, reducing stormwater runoff and associated costs.

11'-6" Travel Lanes

Lane width is directly related to pedestrian safety. 11'-6" lanes are the optimal width for this pedestrian-oriented street.

12' Planted Median

Leawood already enjoys the look and feel of planted medians in the corridor. By repeating this element on new streets, the 135th Street Community will continue to define its aesthetic. Additionally, medians act as safety islands for crossing pedestrian.

13' Sharrow

In addition to their environmentally-friendly mode of travel, studies have found that streets who accommodate bicyclists experience an increase in retail and dining sales.

8' Rain Garden

Rain gardens are a beautiful option for managing stormwater new developments and improving regional water quality.

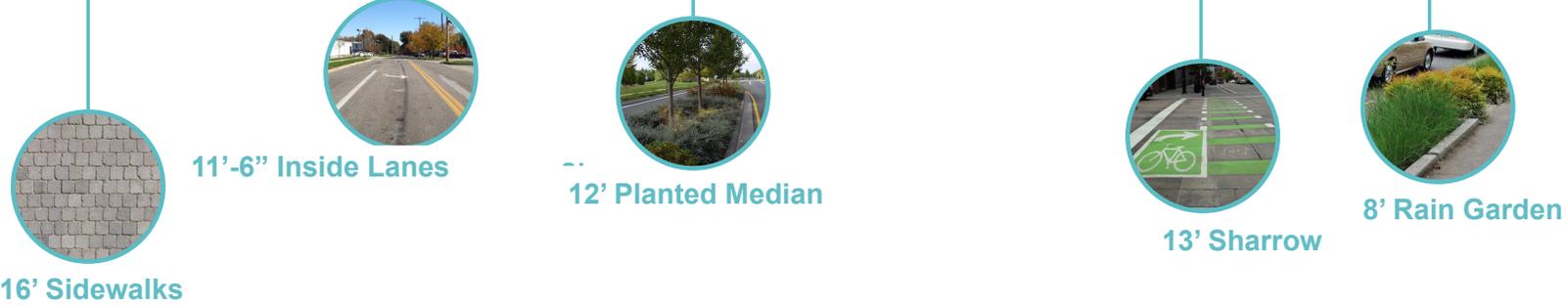


Figure 4.6: Typical Street Section for Active Pedestrian Street



Neighborhood Streets

Neighborhood Streets are low-traffic, secondary passageways for community members travelling on foot or in a car. The travel lanes on these streets are wide enough to accommodate trucks that will need to access neighborhoods and local businesses.

Primarily hosting residential building frontages, these streets create a welcoming atmosphere for visitors and those living in the corridor. Overhead tree canopies and ground-level lawns create comfortable conditions for those travelling in the area and bring a “neighborhood feel” to the street. The City will have the option to allow parking on residential streets to serve these more intimate neighborhood spaces. Neighborhood streets maintain Leawood’s aesthetic and add to the sustainability of the development.

4’ Rain Garden

In addition to collecting storm water, building-adjacent rain gardens help collect water from other impervious surfaces, like roofs.

8’ Tree Lawn

Trees on neighborhood streets provide great opportunities for shade. They also act as a buffer between pedestrians and moving cars.

12’ Travel Lanes

Neighborhood Streets can also act as service streets for trucks. The extra half foot of lane gives those trucks a bit more room to maneuver the corridor.

6’ Sidewalk

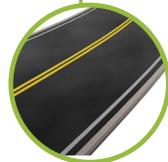
Pervious concrete is an affordable and easily implementable option for creating “green” sidewalks on neighborhood streets. Water is allowed to percolate into the ground, reducing runoff and its associated pollutants.



4' Rain Garden



8' Tree Lawn

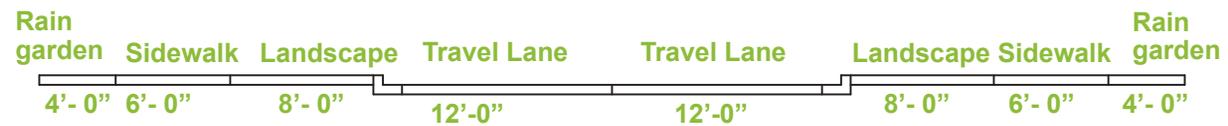


12' Travel Lanes



6' Sidewalk

Figure 4.7: Typical Street Section for Neighborhood Street



Potential Revisions to Existing Streets

During the course of the public engagement process, community members were presented a number of options for potential alterations to existing streets. These alternatives were designed to fit within existing right-of-ways and respond to both existing and potential needs of the street as development occurs in the corridor. Public preference for each alternative was measured during a public meeting keypad polling session and through an online survey. The preferred alternative for each street section is indicated.

The green box indicates the community's vote for a preferred option during public polling sessions. On 133rd Street, the public preferred the existing conditions over proposed alternatives.

Alternative 1

Changes within the right-of-way could include reductions in lane width to improve pedestrian safety and accommodate on-street parking.

Alternative 2

By reducing lane widths and changing buffer sizes, this alternative incorporates a cycle-track on the north side of the street and on-street parking on the south side.

Figure 4.8: 133RD STREET

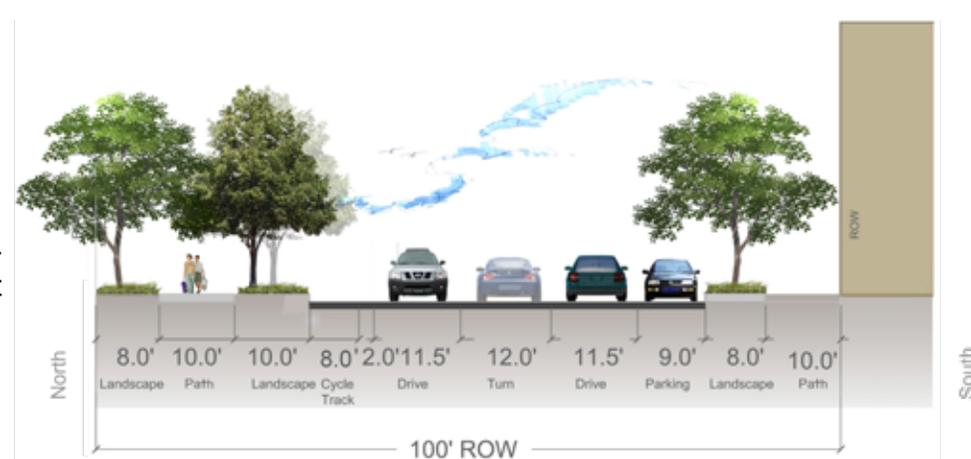
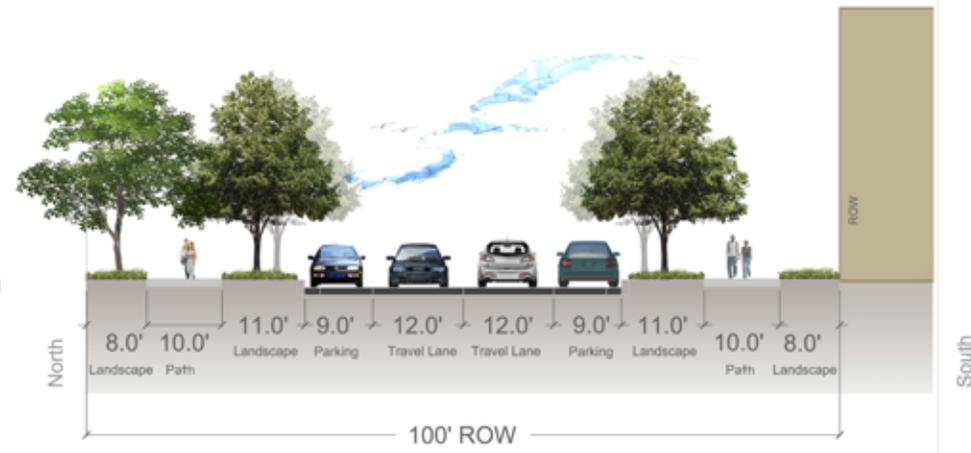
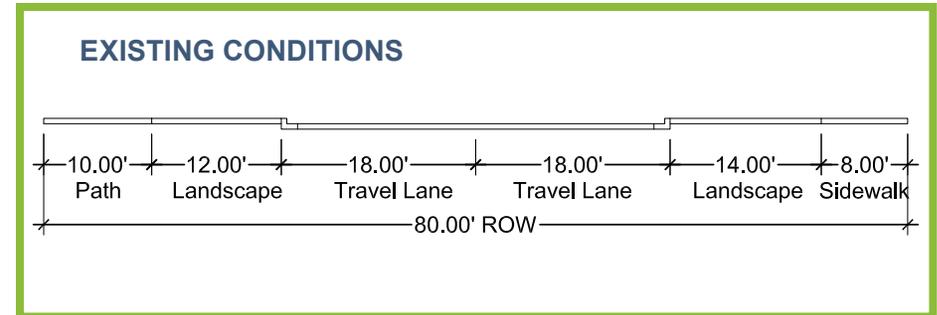
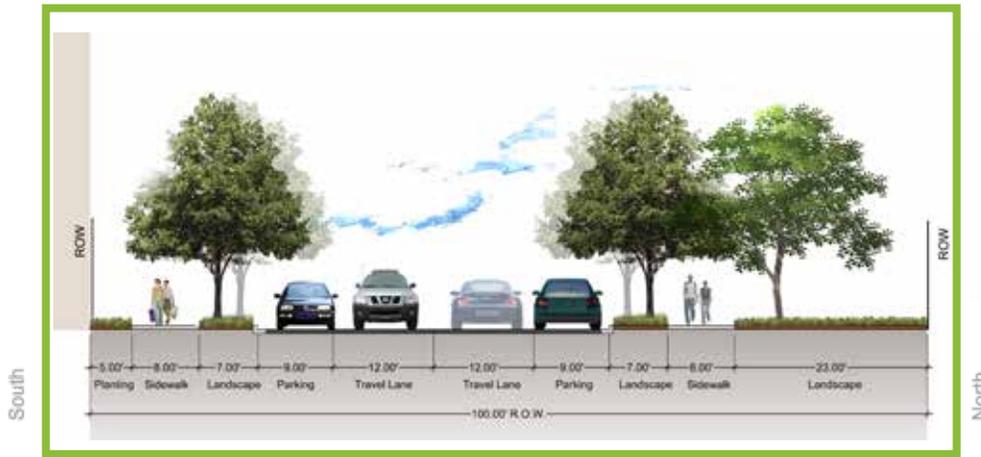
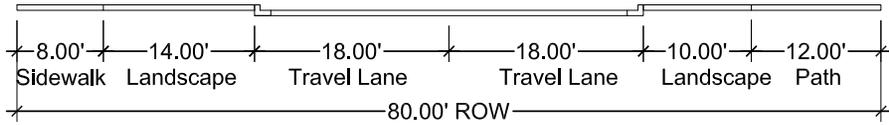


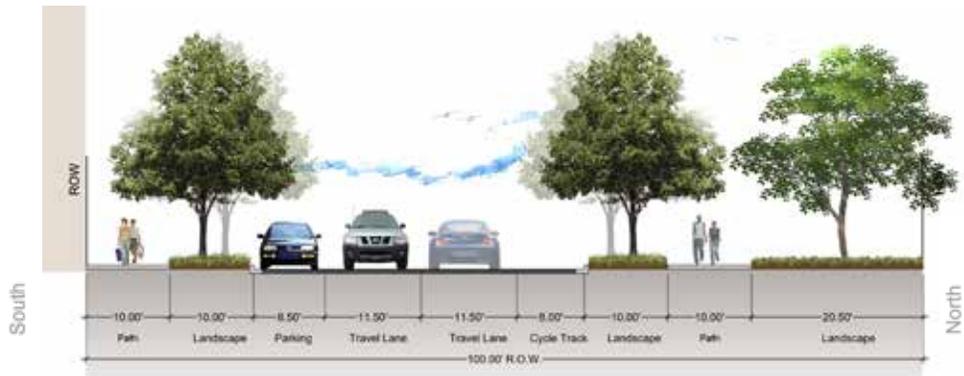
Figure 4.9: 137TH STREET

EXISTING CONDITIONS



Alternative 1

Changes within the right-of-way could include reductions in lane width to improve pedestrian safety and accommodate on-street parking.



Alternative 2

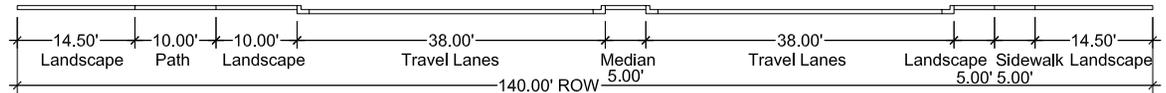
By reducing lane widths and changing buffer sizes, this alternative incorporates a cycle-track on the north side of the street and on-street parking on the south side.

Figure 4.10: NALL AVENUE

The project team explored potential alternatives for the future design of Nall Avenue, a key north-south arterial that intersects 135th Street and serves as the boundary between Leawood and Overland Park, south of the corridor. Portions of Nall Avenue that lie north of 135th Street are within the City of Overland Park. Any changes to the design and character of Nall Avenue would require coordination between the two cities.

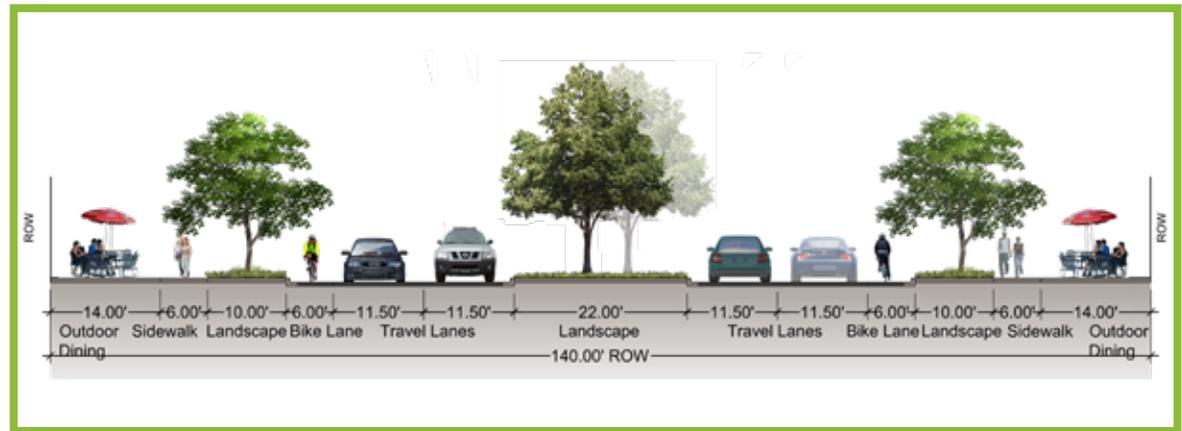
Existing Conditions

Wide travel lanes, and a small sidewalk on the south side limit the potential for activity on Nall Avenue



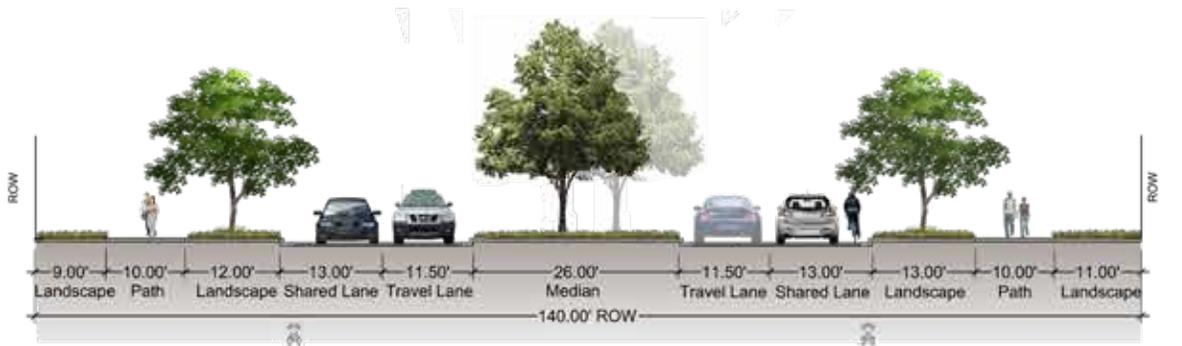
Alternative 1

Taking a few extra feet from the median and travel feet, this alternative allows for bike lanes on both sides of the street and can create sidewalks wide enough to allow outdoor dining.



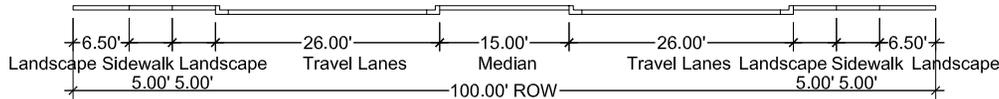
Alternative 2

Keeping the median width as it is, outside lanes could be converted to sharrows, allowing shared travel for drivers and bicyclists.



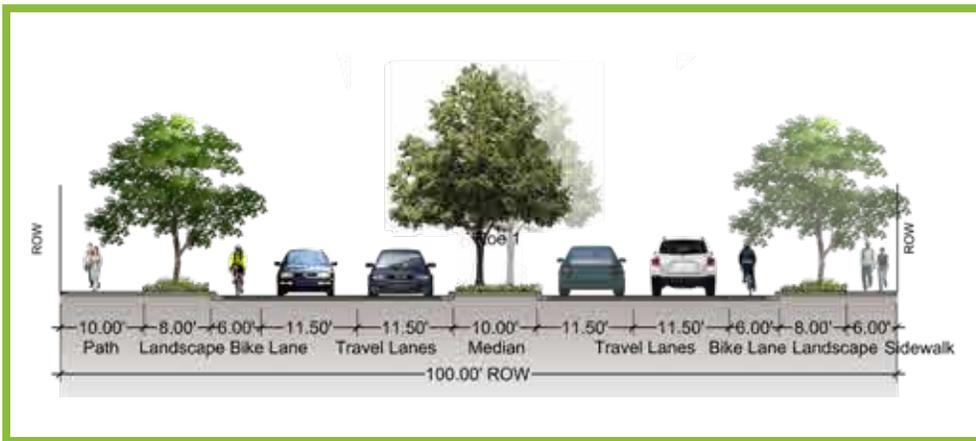
**Note: The legal Right of Way of Nall Avenue is 120 feet. However, the street includes additional room (in the form of a sidewalk easement) on the Leawood side. Therefore, the plan illustrates a 140 foot cross section for Nall Avenue.*

Figure 4.11: ROE AVENUE



Existing Conditions

A smaller median gives extra space within the right-of-way to accommodate bicyclists.



Alternative 1

A smaller median gives extra space within the right-of-way to accommodate bicyclists.



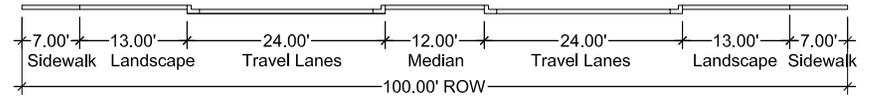
Alternative 2

This alternative, compared to alternative 1, provides sharrow and a wider sidewalk.

Figure 4.12: MISSION ROAD

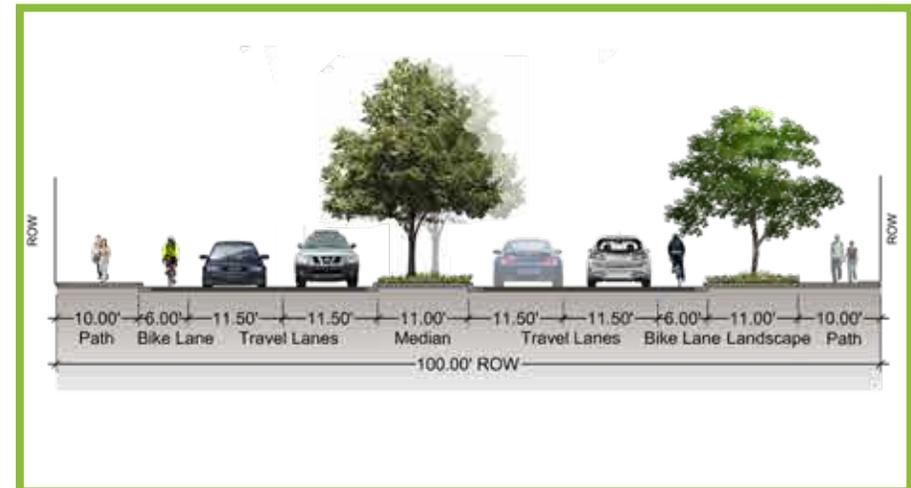
Existing Conditions

Wide travel lanes within the right-of-way present an opportunity to add new amenities to Mission Road.



Alternative 1

Reducing lane widths and the median width gives bicyclists a lane on the road.



Alternative 2

Removing the buffer zones to allow for large sidewalk and outdoor dining opportunities.

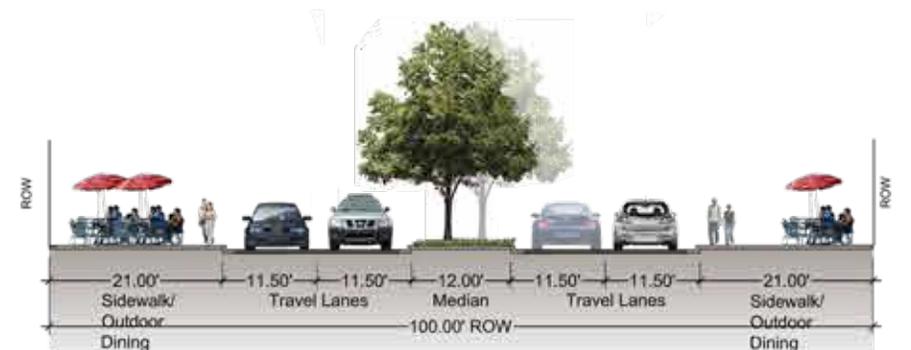


Figure 4.13: *Multi-way Boulevard Examples in Paris, France*



Multi-way boulevards are particularly popular in European cities for creating walkable spaces and great retail environments, while still accommodating traffic.

135TH STREET

A Potential Multi-Way Boulevard

Classic multi-way boulevards have central travel lanes for relatively fast-moving through-traffic bordered by tree-lined medians with walking paths. They have narrow one-way access roadways on each side for slower traffic and parking, and finally, at the edges, tree lined sidewalks. The combination of the median, narrow access roadways, and sidewalks create extended pedestrian realms, where movement is at a slow pace.

In the 135th Street study area, a multi-way could potentially be developed on private property.

Benefits of a Multi-Way Boulevard

- Provides a connected, high-quality pedestrian realm linking multiple properties.
- Encourages walkers to park once and access more stores and other land uses, thus reducing car trips on the faster moving center lanes.
- Enhanced pedestrian environments attract other possible building uses including office, hotels, and even residential.
- Because the parking lane is accessed at one point (at the beginning of every block) rather than at every parcel, there are fewer accesses interrupting the faster moving center lanes
- Attractive boulevards build value for the municipality, increases livability, increases tax base per infrastructure, and becomes a destination for visitors.

Figure 4.14: Potential street section for a multi-way boulevard on 135th Street

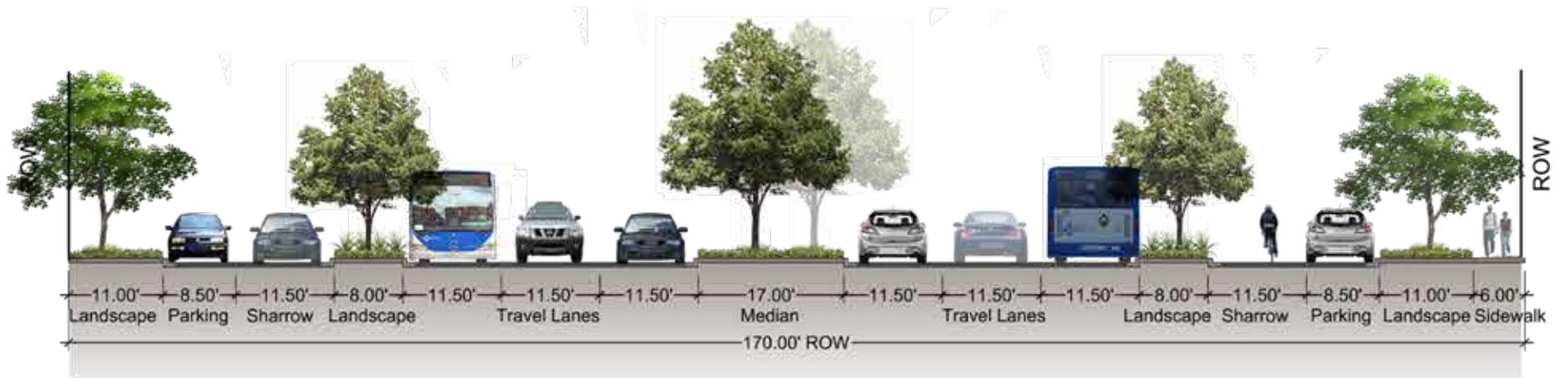
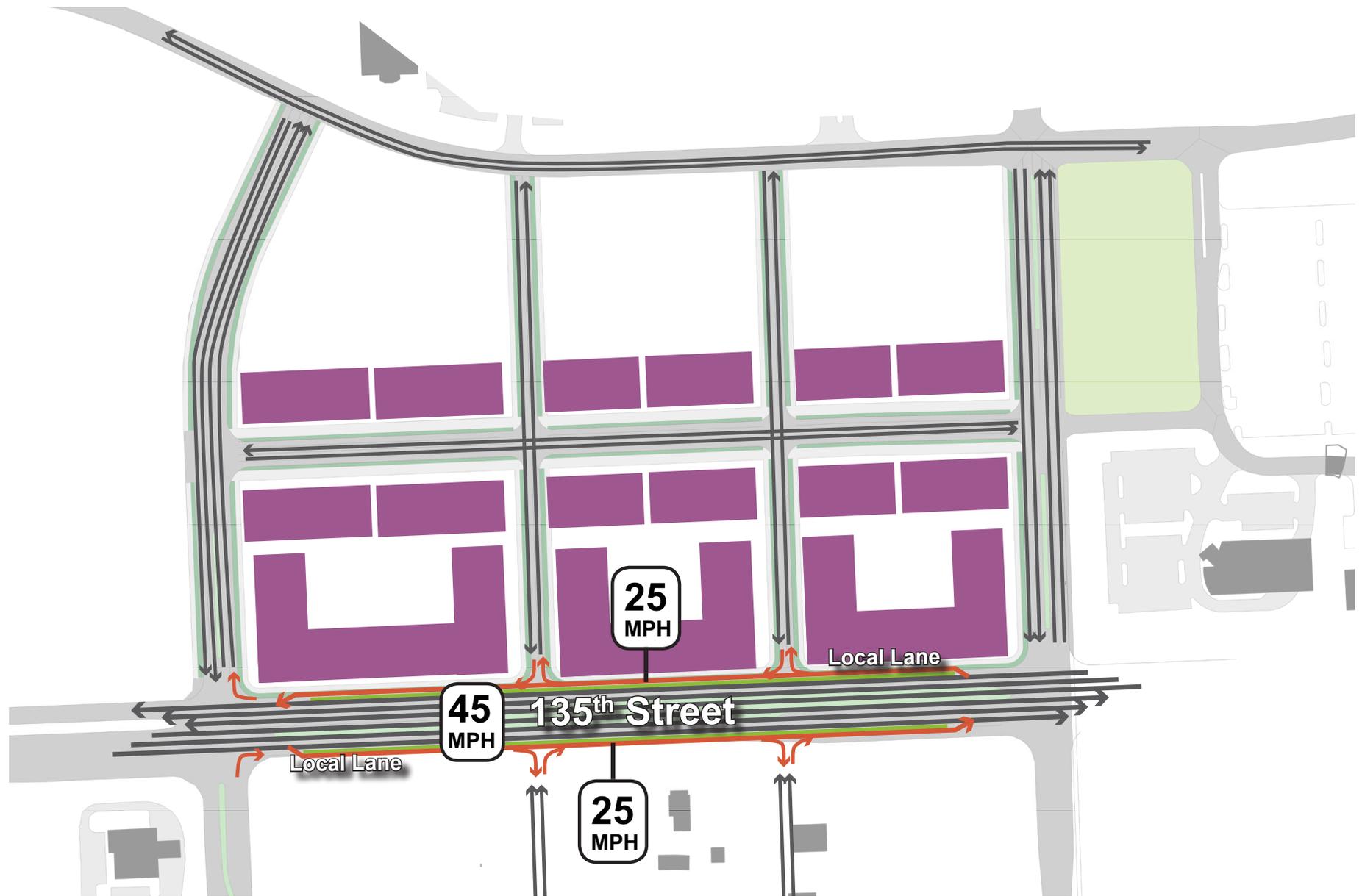


Figure 4.15: Potential traffic configuration for a multi-way boulevard on 135th Street



LDO Recommendations: The Kit of Parts

The existing development ordinance offers developers and their associated projects a number of bonuses for the inclusion of elements that exceed the minimum requirements. However, these helpful ingredients that encourage exceptional design and building are buried throughout the document. Providing developers with a “Kit of Parts,” or an easy-to-follow menu of elements and their associated bonuses could expedite both the communication and application processes for future development projects. The following is a list of potential elements recommended for inclusion in this kit:

Pedestrian Accommodations

Sidewalk Width

16-2-9.1 Performance Criteria-Public Sidewalks

The following represent minimum recommended widths per street character type. These widths respond to the needs of each street type and best management practices for pedestrian design.

- Neighborhood Street 6’
- Active Pedestrian Street 16’
- Destination Street 16’

16-2-9.2 E-5 Pedestrian/Bicycle Circulation

This ordinance requires that non-residential sidewalks be placed a minimum of six feet from the façade of a building in order to provide landscaping between buildings and sidewalk. This requirement limits the possible activities that could take place on an active sidewalk or Destination Street. The city should work with property owners and developers to determine the best placement of sidewalk facilities to create active pedestrian environments while maintaining a distinct quality of design throughout the corridor.

Sidewalk Material

In recent years there have been numerous advancements made to paving material technology. Some of the latest advancements include attractive options for porous pavement (concrete) and permeable pavers. Porous pavement is a type of paving that can bear traffic loads but has a high enough porosity and permeability to significantly influence

hydrology, rooting habitat, and other environmental effects. Permeable pavers consist of a layer of concrete (or other material) pavers separated by joints which are filled with small stones. Water enters joints between the solid pavers and flows through an open-graded base back into the soil.

As development occurs in the 135th Street corridor, the amount of impervious surfaces (which include elements such as pavements and rooftops) will significantly increase. This increase impacts the quantity and quality of surface runoff water. Surface runoff from dense development of impervious areas can contribute to water pollution, flooding, erosion, and loss of groundwater recharge.

Through bonuses and/or incentives, the City should work with developers to select and install permeable materials for sidewalks that meet the U.S. Environmental Protection Agency (EPA) stormwater performance criteria as a structural best management practice. In addition to reducing the negative environmental impacts of development, use of this material can help bring attention and possible marketing opportunities to new developments through the pursuit of LEED certification and/or Sustainable SITES certification.

Crosswalk Features

To meet the City’s goals of creating a truly pedestrian-friendly environment, the following features represent some best practices for crosswalk design and implementation that should be included in the creation of new intersections:

16-2-9.2 E-4 Pedestrian/Bicycle Circulation

The current LDO recommends differentiating the pedestrian route from the vehicular route at all intersections. This helps to protect pedestrians and gives clear signals to both pedestrians and drivers that safe passage is preserved at these locations throughout the corridor. The City should work with developers to ensure that crosswalk material is either uniform or similar at all crosswalks throughout the corridor. Uniformity and regularity in visual cues helps to reinforce the idea of safe passage to drivers and pedestrians alike. Permeable materials at crosswalks should be considered as best practices for stormwater management in the area.

Vision Impairment Accessibility. There are a number of ways to ensure that those with vision impairments can access and use crosswalks in the corridor:

- Detectable crosswalk warnings (truncated domes) at both ends of a crosswalk
- Consider audible pedestrian signals to alert those who cannot see a signal

ADA Compatible Curb Ramps Curb ramps should be placed to enable a person with a mobility disability to travel from a sidewalk on one side of the street, over or through any curbs or traffic islands, to the sidewalks on the other side of the street.

Pedestrian Push Buttons Well-marked, visible, and accessible to all from a flat surface at crosswalk signals. Push buttons should be consistent with recommendations from the U.S. Department of Transportation's Designing Sidewalks and Trails for Access.

Crosswalk Timing The city should work to coordinate adequate crossing times for each crosswalk. Target crossing speed for visually impaired and elderly is 2.5 feet per second.

Differentiated Crosswalks Crosswalk material should be visually differentiated from driving lanes.

Pedestrian Refuge Island The island should be raised, and clearly visible to traffic during day and night. Island width should be six feet at a minimum.

Street Furniture

16-3-9-A-4.d Pedestrian Amenities

The existing LDO offers a 10% increase in applicable maximum FAR for projects with substantial pedestrian amenities. Providing developers with a more comprehensive list of what these amenities could include will help developers and property owners better understand how to achieve the City's goals of creating excellent pedestrian-oriented spaces, and acquire the potential bonus.

Seating is an important part of vibrant public spaces. It allows pedestrians to rest, socialize, read and people-watch. The three street character types (Destination, Active Pedestrian, and Neighborhood) represent different levels of potential pedestrian activity. Urban design standards recommend one linear foot of seating for every 21 linear feet of street frontage. The recommended block size of 360 feet would require, at a minimum, 17 feet of seating. In addition to traditional benches, the City should work with developers and designers to produce creative seating opportunities, such as seat walls, multi-functional art pieces and raised planters.

Like seating, locations and amenities that allow for outdoor dining provide excellent opportunities for community members to meet, greet, and eat. While wider sidewalks will allow restaurants to pursue expanding their space with outdoor dining options, developers and property owners could work with the City to create outdoor dining spaces in key locations or plaza spaces throughout the corridor. Either temporary or permanent outdoor dining amenities can create inviting and active spaces for community gathering and social interaction in the area.

Shade also plays a key role in human comfort and pedestrian activity in urban environments. Street trees will be the main element to produce shade for pedestrians, but other opportunities for shade structures, art pieces and building amenities should be pursued to create the best possible pedestrian experience for the community.

Street Trees

16-4-7.3 Landscaping Requirements – Other Districts

Regulations require developers to install street trees. Developers and cities could work together to select optimal tree species for development that responds positively to surrounding species and meets current city regulations for size and shade.

16-4-7.4 Installation and Maintenance of Landscaping and Screening

New technologies in tree installation and design help to protect trees, can extend their life cycle and significantly reduce the impacts of sidewalk upheaval. In urban environments, tree soil volume is most com-

monly the deciding factor of street tree health. The recommendation of the design team is that all street trees be planted with a **1000 cubic feet** of soil. Soil that may be counted in this calculation includes uncompacted soil with an organic matter percentage of at least three percent. There are several methods for achieving this goal.

In areas where flush walking surfaces must be maintained, the design team recommends several methods including suspended pavers and underground drainage cells. Suspended pavement utilizes a structural sound steel frame that is anchored to slabs and supports the above pavers while leaving the soil below untouched. This system is used for newly planted trees and can come in various sizes to fit necessary requirements. These systems can be coupled together to provide a continuous soil trench between street trees allowing trees to share soil. They can support both concrete and pavers and the full load of cars and trucks. These systems can be used in tight areas where the surface material is irregular. For best results these systems should be used in conjunction with proper subsurface drainage and permeable pavers to allow for air and water flow between the soil and the atmosphere.

Lighting

16-2-9.2B Non-Residential Uses: Lighting

While the existing lighting guidelines described in the LDO do set standards for the lighting of parking lots and building entries, there are a number of other lighting areas and elements that should be considered in the design and development of urban spaces. Setting some minimum standards for lighting along the 135th Street corridor will allow development in the area to meet the following goals:

- **Promote Safety** “More light” is not necessarily “better.” Unsafe glare reduces the effect of lighting, contributing to accidents and hindering visibility.
- **Reduce Costs** Following professionally recommended light levels to provide adequate illumination and efficient luminaires will be more cost-effective and reduce energy usage.
- **Conserve Natural Resources** Inappropriate or excessive lighting wastes energy sources and pollutes the air and water by unnecessarily burning fossil fuels.

- **Build Community’s Character** by defining a lighting fixture palette, while reducing “Skyglow,” Leawood’s ability to see a dark, star-filled sky should be preserved and protected. Stray and excessive lighting contributes to light pollution, clutter and unnatural “sky glow.”

The design team recommends the use of Light-emitting diode (LED) luminaires. The following table provides standards for lamp type, uniform ratio and average footcandle to safely and responsibly light the corridor:

Table 4.1: Lighting standards by area type

By Area or Type			
	Lamp Type	Uniform Ratio	Footcandle
Parking	Light-emitting diode	4:1	1.0 Average
Main Trafficways	Light-emitting diode	4:1	2.0 Average
Main Pedestrian Routes	Light-emitting diode	4:1	3.0 Min/5.0 Max
Pedestrian Connections	Light-emitting diode	N/a	5.0 Average
Signage	Light-emitting diode	N/A	2.0 Min/5.0 Max

Bike Accommodations

The City of Leawood is currently engaged in a process to produce the Leawood Bicycle and Pedestrian Master Plan. In order to realize this plan within the corridor, the City should work with property owners and developers to install bike amenities that will make this plan a reality. To encourage these entities to take on bike amenities, the City may offer density bonuses or similar compensation.

On-Street Bike Lane

Bike lanes are a portion of the roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use by bicyclists. Bike lanes help make both bicyclists and motorists aware of each other and provide safer conditions for both users of the roadway.

Minimum width of bike lanes in the corridor (as recommended by the American Association of State Highway and Transportation Officials (AASHTO) is five feet. The design team recommends a six foot bike lane which includes the six inch paint stripe separating the bike lane from the car lane.

Sharrows

In some cases a *sharrow*, or shared roadway bicycle marking, may be the appropriate choice to accommodate bicyclists in the corridor. A sharrow marking designates a lane within the roadway as a shared route for both vehicles and cars. Sharrows are most commonly used on bicycle routes in travel lanes whose right-of-way is too narrow to accommodate both a travel and bicycle lane, or along roads with adjacent to on-street parallel parking.

Bicycle Parking

In order to welcome bicyclists and bicycle activity into the corridor, sufficient bike parking must be provided along community streets. The City may work with developers and designers to select and install bike parking accommodations.

Design guidelines recommend **two bike racks for every 2,000 feet** of plaza space. Studies have found that the most accommodating bicycle racks are inverted “U” racks, or variations of this form. Wave racks have been found to limit parking capacity. Inverted “U” rack elements mounted in a row should be placed on **30 inch centers**.

In some scenarios, potentially a plaza or park space, a bicycle “parking lot” may be appropriate. A bicycle parking lot is an area where more than one rack is installed. Aisles separate the racks. An aisle is measured from tip to tip of bike tires across the space between racks. The **minimum separation between aisles should be 48 inches**. This provides enough space for one person to walk one bike. **Seventy-two inches (six feet) of depth should be allowed for each row of parked bicycles (conventional bikes upright bicycles are just less than 72 inches long)**.

Bike parking location

The location of a rack area in relationship to the building it serves is very important. **The best location for a rack area is immediately adjacent to the entrance it serves**. Racks should not be placed so that they block the entrance or inhibit pedestrian flow in or out of the building. Racks that are far from the entrance, hard to find, or perceived to be vulnerable to vandalism will not be used by most cyclists.

The rack area should be located along a major building approach line and clearly visible from the approach. The rack area should be no more than a 30-second walk (120 feet) from the entrance it serves and should preferably be within 50 feet.

Bicycle Sharing Programs

A bicycle sharing program is community service in which bicycles are made available for shared use to individuals on a short-term basis. Parking stations are located throughout a city and allow people to travel from one destination to the next, without the worry of parking, ownership, or maintenance. There are examples around the world of bike-sharing programs that Leawood could potentially model in the 135th Street corridor. Some programs are organized by local community groups or non-profits and others have formed through public-private partnerships.

The Multi-way: 135th Street

During the planning process, the design team has worked with staff to create a multi-way boulevard option for developers and property owners as new projects develop along 135th Street. To peak the interest of developers, the multi-way option should present the following benefits:

- Street frontage for projects located along the multi-way is activated by slower moving traffic and a comfortable pedestrian realm.
- Easy-in, easy-out “teaser” parking located along the multi-way frontage road provides more sales opportunities for retailers and restaurateurs located along the multi-way.

Development bonuses should be made available to developers for the installation of multi-way elements along an entire block. Throughout the design process of the multi-way, design discussions should be sure to include traffic engineers, civil engineers, landscape architects, and public works representatives to insure the successful design and implementation of the boulevard. Some components to discuss will include:

Additional median/buffer

A planted median will separate the high speed travel lanes located in the center of 135th Street from the local, slower speed frontage lane and parking. Derived from studies of the existing right-of-way, a desire

to create a separated pedestrian realm, and the provision of adequate soil volumes for tree planting, the design team recommends an eight foot planted median.

On-Street “Teaser” Parking

The on-street parking is an essential element to the success of this multi-way. The design team recommends angled on-street parking, for easy-in, easy-out access. The recommended dimensions are 45 degree angles, nine foot space width and a 20 foot space depth.

Gathering Spaces

16-3-9-A-4

The existing LDO offers a ten percent increase in applicable maximum FAR for projects with substantial pedestrian amenities. Providing developers with a more comprehensive list of what these amenities could include will help developers and property owners better understand how to achieve the city’s goals of creating excellent pedestrian-oriented spaces, and acquire the potential bonus. Article 16-2-9-2F outlines some guidelines for plaza spaces. Listed here are other gathering spaces that should be provided to developers as options.

Pocket Park

Pocket parks are small park-like spaces that invite pedestrians to pause, and give urban dwellers a respite from the indoors. Seating areas and enhanced plantings can help give corridor pocket parks their own character. These features could enhance new streetscapes and contribute to the area’s developing identity.

Flexible/Festival Street

Festival streets give neighborhoods the opportunity to host tailgates, art fairs, food festivals and other large events to promote the city and celebrate its culture. A festival street expands the pedestrian environment into the street on event days, providing space for retailers, food trucks, tailgates, musicians and vendors. A festival street can attract pedestrians from all over the region and make the 135th Street Corridor stand out as a destination in Leawood. The wide variety of possible flexible events can also give corridor retailers exposure to new clientele.

Outdoor Farmers Market

Designating space for an outdoor farmer’s market has proven to be a great city amenity for developing community relationships, building activity on streets and in neighborhoods, and boosting local businesses.

Mobile Food Vending Space

Food Trucks and Carts (Mobile Food Vending) can be a vital part of more successful streetscapes. They offer seasonally changing attractions for daytime use by office workers and nighttime use by nightlife patrons. They also encourage local entrepreneurship by offering an avenue for budding chefs to build up a food and beverage business without the high expense of opening a restaurant. Many U.S. cities, like Cincinnati, Chicago and Denver, now offer programs to permit these small business owners with regulated licenses. Food trucks could represent a great asset for gathering spaces like Gezer Park. They also have the potential to create mutually beneficial relationships with local bars and other night-life venues.

Public Art

The Leawood Arts Council (LAC) supported enhancements to Gezer Park within the plan area. Coordination with the Art in Public Places Initiative (APPI) and the Leawood Arts Council for the private installation of future public art should be pursued by developers.

Signage and Wayfinding

The City of Leawood has a comprehensive set of Permanent Signage Development Guidelines to insure the aesthetic quality and character of corridor neighborhoods. The missing element of the City’s signage program is Wayfinding. Wayfinding is a series of elements, which can include but are not limited to: signage, art works, or natural features in the landscape, that improve and help to promote visitor experiences by providing essential information needed to navigate an area. A Wayfinding program for the corridor would be an excellent addition to help brand and promote the area into the future.

5

135TH STREET COMMUNITY PLAN TRANSITIONAL DEVELOPMENT

The plan outlined in this chapter provides a flexible model for development that regulates densities, building heights and building relationships to the street. This kind of model allows for patterns of development that respond to existing and potential adjacencies and will help the City to guide developers in the creation of both unique neighborhoods and a unified corridor.



135th Street

The Transect

The project team worked with city staff and community input to develop a transect. The transect is a framework that identifies a range of potential zones. Each zone designates possible densities, building heights, setbacks, and build-to lines that could be permitted in an area. The transect will shape the look and feel of the corridor without limiting property owner, developer, or community choices for the future of the area.

In the 135th Street community, the transect uses the previously defined street grid to set the pace for each zone. The most intense development is focused along the spine of the corridor: 135th Street. This high density zone is labeled T6: Development Core Zone. Development occurring adjacent to the Development Core, surrounding 134th Street on the north and 136th Street on the south is called T5: Development Center Zone. Continuing further from 135th Street, the adjacent zone is T4: General Development Zone. These areas generally lie south of 133rd Street and north of 137th Street.

Under this model, existing development north of 133rd Street and South of 137th Street would be known as a T3: Residential zone. Residential zones in general are low density and have maximum building heights up to 35 feet. What the transect provides for these areas is a gradual transition from single-family residential neighborhoods to the livelier, multi-use development that could happen along 135th Street.

Shaping Development

The transect defined by this plan collaborates with the street character plan to provide the most optimal conditions for interesting, attractive, and sustainable development. To successfully guide the best kind of projects in the corridor and create walkable, pedestrian-scaled environments, defining densities, building heights, setbacks, and build-to lines are essential.

Residential Density

Residential density is the number of dwelling units per acre before any adjustments for Transfer of Development Rights (TDR) or other functions. TDR is a method of relocating existing zoning rights from areas to be used for open space or other pedestrian amenities to areas that will be more densely developed.

Building Heights

The ratio of building height to street width is important for creating visual enclosure and intimate experiences for pedestrians. Successful enclosure occurs when buildings on a street occupy most of a pedestrian's cone of vision. This experiences can create a kind of "outdoor room" for the pedestrian. The ratio of building height to street width should not exceed 1:3.

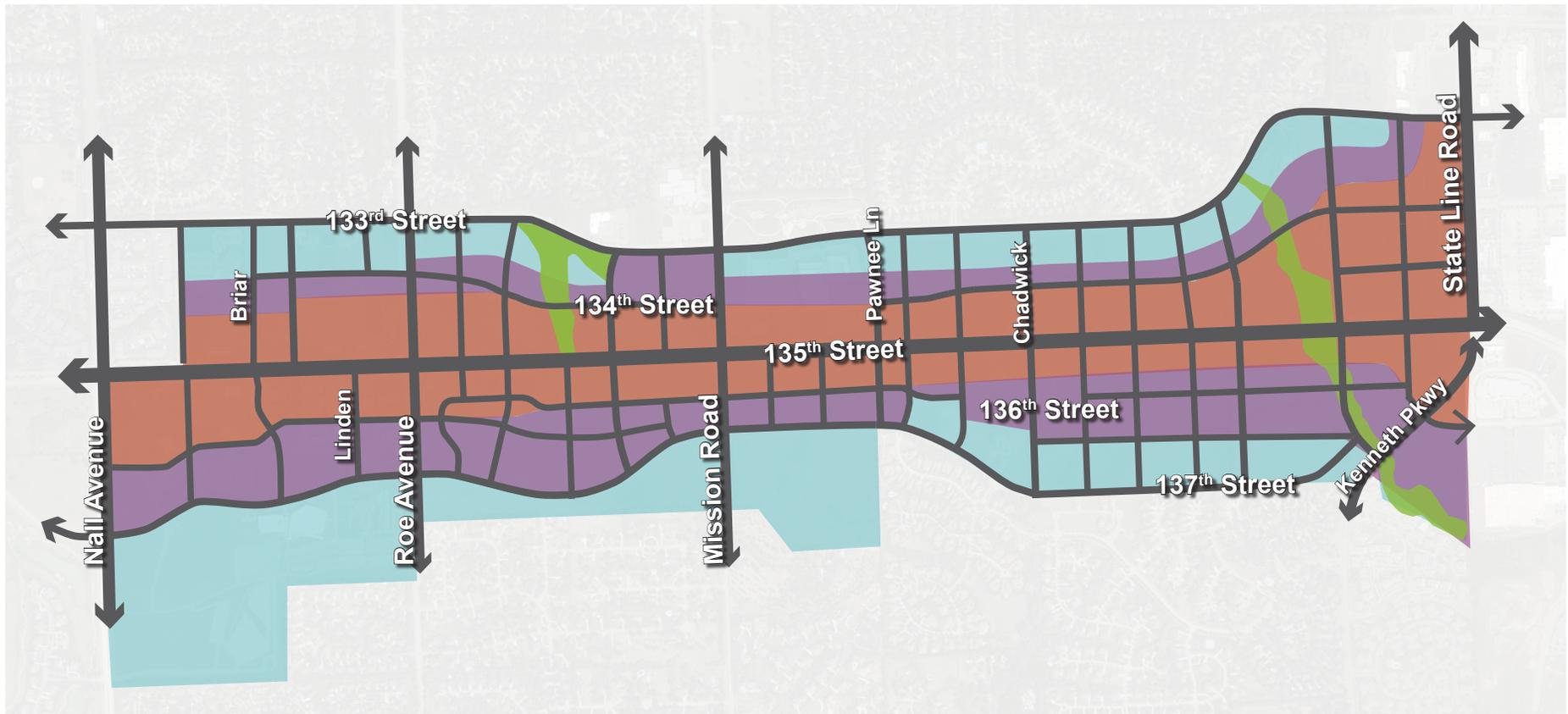
Setbacks

A setback is the distance from the property line to the face of a building that is maintained clear of permanent structures. These distances can also contribute to the feeling of enclosure but additionally dictate the amount of space in the pedestrian realm.

Build-To Lines

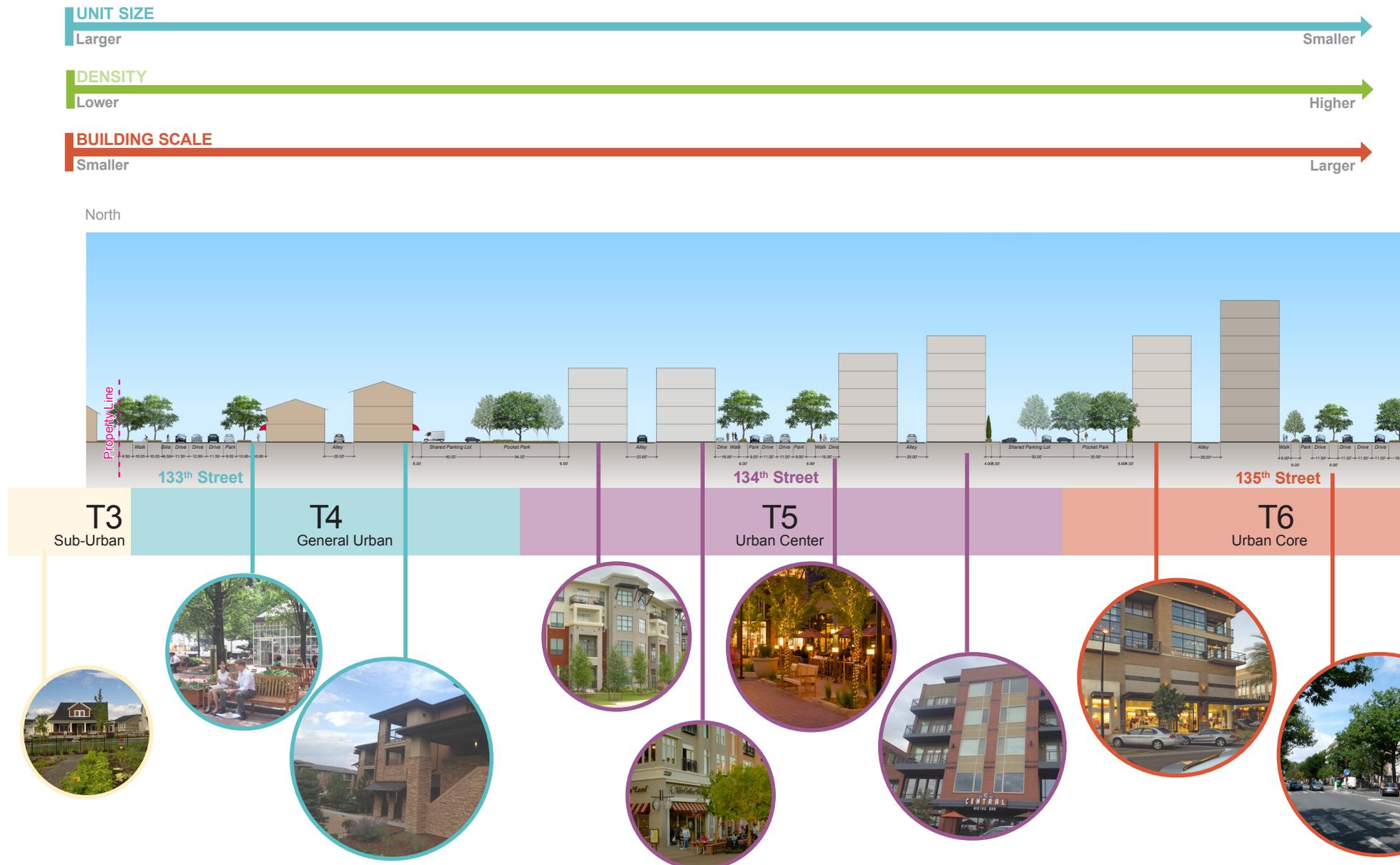
Build-to lines specify where along a street the front edge of a building should rest. These lines provide a method of creating visually interesting streetscapes by arranging a continuous line of storefronts and building entrances along a sidewalk.

Figure 5.1: 135th Street Community Plan Transect Zones



Transect Zone	T4: General Development	T5: Development Center	T6: Development Core	T1: Natural Zone
Residential Density				
By Right	4 du/ac gross	6 du/ac gross	12 du/ac gross	Buildings permitted with approved plan.
By TDR	12 du/ac gross	24 du/ac gross	96 du/ac gross	
Building Height	24ft min	24ft min	48ft min	Developers will be encouraged to preserve and enhance these local greenways for the community through possible bonuses.
Setbacks	42ft max	72ft max	115ft max	
Front	6ft min; 20ft max	18ft max	16ft max	
Back	12ft min	3ft min	6ft max	
Build-To Lines	N/A	18ft from property line	14ft from property line	

Figure 5.2: 135th Street Community Plan Transect Model



UNIT SIZE

Smaller

Larger

DENSITY

Higher

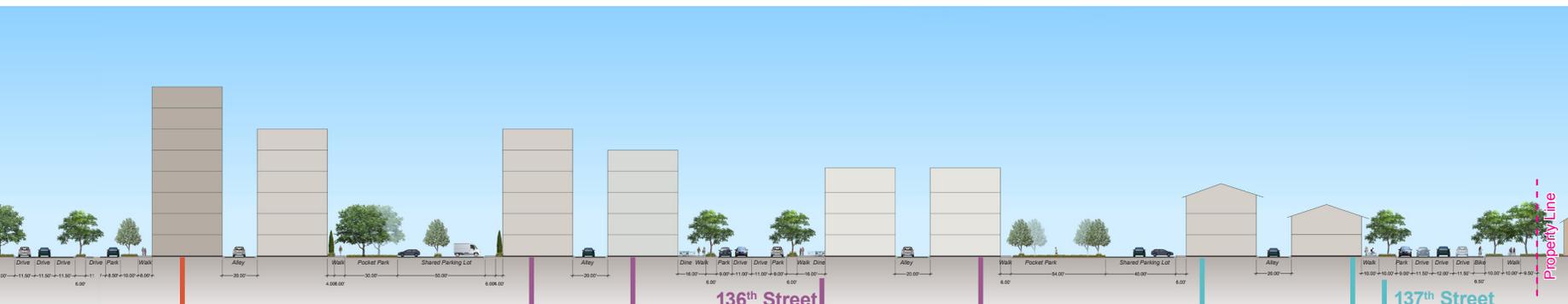
Lower

BUILDING SCALE

Larger

Smaller

South



136th Street

137th Street

T5
Urban Center

T4
General Urban

T3
Sub-Urban



LDO Recommendations: Transect Zones

Developing responsible and successful densities in the corridor is key to the corridor's future and the integration of new properties with existing neighborhoods. Including language to guide developers in planning for transitional densities and development will benefit both the corridor and the City of Leawood.

The City should work towards establishing a system for the gradual Transition of Development Rights (TDR). A TDR system would be administered by the City for the purpose of transferring development rights from open space and other amenitized areas to areas for development.

T4 General Development Zone

This zone consists of a mixed-use but primarily residential urban fabric. It may have a wide range of building types such as rowhomes, townhouses, condominiums, and small apartment buildings sprinkled with ground-floor commercial activity. Typical building heights in this zone are two to three stories to buffer existing residential from taller buildings in the denser, adjacent zone. Building frontages are a mix of landscaping, porches, dooryards, and commercial storefronts.

Suggested Residential Density

12 du (dwelling units) per acre

Building Height Range

24ft minimum - 42ft maximum

Frontyard Setback

6ft minimum - 20ft maximum

Backyard Setback

12ft minimum from property line.

Other considerations

- Units could have direct access to a semi-private backyard or shared courtyard.
- The provision of private parking spaces would help entice families and older residents to living in these homes.
- Appropriate commercial tenants or buildings would include cafes, coffee shops, corner convenience stores, wine shops, delis, general stores, salons, dry cleaners, and other small-scale options convenient to near-by residents.

T5 Development Center Zone

The Development Center Zone is composed of higher density mixed-use buildings that accommodate retail, offices, condominiums and apartments. Buildings are set close to the sidewalks to create an intimate streetscape atmosphere. Typical building heights are three to five stories high. These zones have substantial pedestrian activity so building frontages support their interests and curiosities with storefronts, galleries, high-quality dooryards and residential stoops. This zone is a transition from the General Development Zone to the Development Core Zone and will therefore have characteristics from both.

Suggested Residential Density

24 du per acre

Building Height Range

24ft minimum – 72ft maximum

Frontyard Setback

18ft maximum

Backyard Setback

3ft minimum from property line

Build-to Line

18ft from property line.

Other considerations

- Pedestrian activity will play a key role in the success of this zone. As such, it will be important to provide ground-floor tenants that will interest these patrons. Offices are more appropriately placed on the second floor of these developments.
- Developments in this zone present an opportunity for Shared-Parking (refer to page 62).
- Rooftop gardens, restaurants or event space are appropriate for this zone as it creates visual interest for taller buildings in the adjacent urban core zone and brings additional activity to this more vibrant district.

T6 Development Core Zone

The Development Core Zone has the highest density and building heights in the corridor. This zone also carries the greatest variety of land uses and project types with medium to high-density mixed-use buildings, entertainment and dining, and office. This zone may also be appropriate for future civic or cultural institutions. Attached buildings in this zone form a continuous street-front of storefronts, galleries, forecourts, and dooryards. Buildings in this zone are a minimum of four stories and can reach heights of eight stories. This zone should prepare for the highest level of traffic, a need for parking, and possible transit opportunities.

Suggested Residential Density

96 du per acre

Building Height Range

48ft minimum – 115ft maximum

Frontyard Setback

16ft maximum

Backyard Setback

6ft maximum from property line

Build-to Line

14ft from property line.

Other considerations

- Strategic planning for parking will help make this zone successful. Consider parking structures and underground parking as opposed to surface parking to maximize developable area and reduce surface parking.
- This zone is a great area for urban plazas and festival streets.

T1 Natural Zone

The Natural Zone is composed of lands approximating or reverting to their natural condition, including lands unsuitable for development due to topography, hydrology, or vegetation. This zone identifies opportunities for greenways and potential trail systems.

Trails could be permeable, suitable for hiking, running and biking or could be paved and more suitable for strollers and wheelchairs. Trails should have appropriate signage. This system could include educational components and/or art elements so long as these features do not disturb wildlife habitats or native species.

The Nodal Model

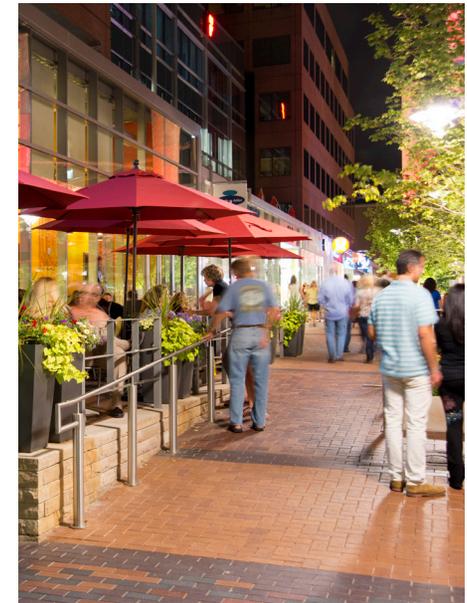
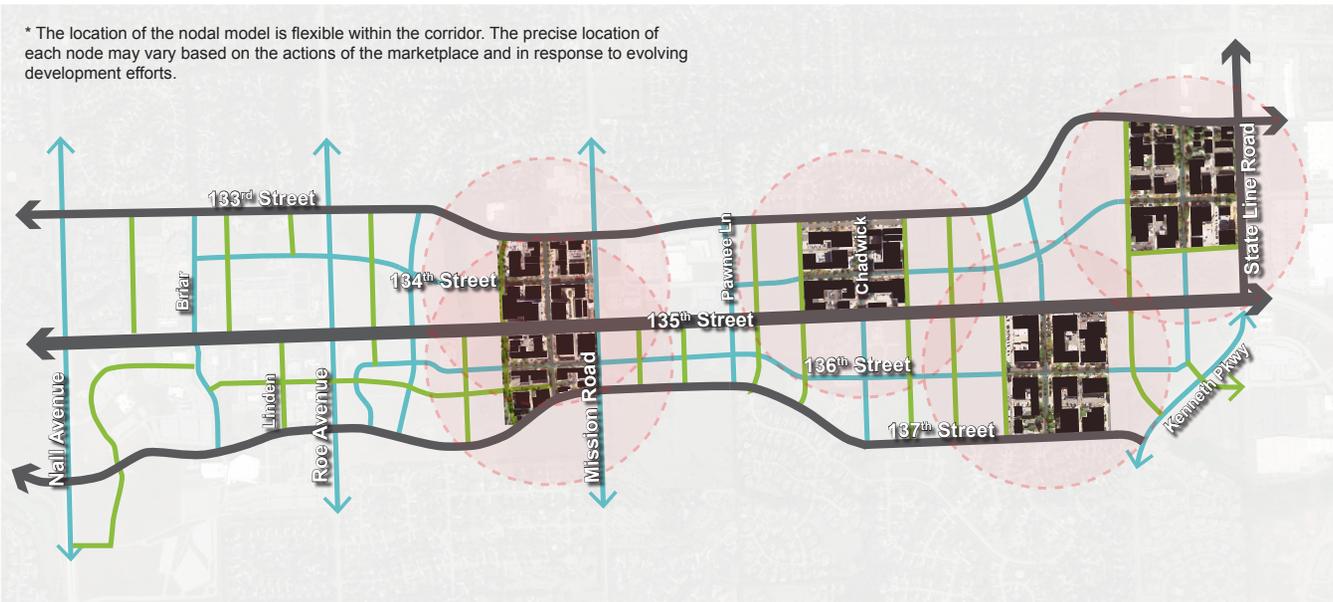
The key to success for development in the 135th Street corridor will be the strategic build-up of Destination streets and T5 and T6 Zones into “nodes” located throughout the corridor. These nodes will be areas of high activity, and serve as neighborhood hubs for community destinations, retail, dining, and entertainment while also providing space for office and residential. Each node will likely have its own unique feel and atmosphere, but the overall character and aesthetic quality of these places should reflect the caliber of design the rest of the corridor sets as a standard.

The market study has shown that this area is likely to support multiple nodes in the next twenty years. The City should prepare to play a significant role in the shaping of development of these nodes. For the success of both a node and the corridor as a whole, the city should work with property owners and developers to determine the most optimal locations for these places. Concentration of development, resources, and activity to realize each unique district from start to finish will put Leawood in the best position for creating destination districts.



Figure 5.3: The Nodal Model

* The location of the nodal model is flexible within the corridor. The precise location of each node may vary based on the actions of the marketplace and in response to evolving development efforts.



1 Access is Key

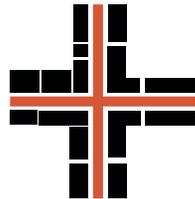
This approach helps direct a development by identifying locations for intense development that can be accessed by all modes of transportation in the future.



Nodes are built surrounding the intersection of two "Destination Streets." These streets are highly accessible by all modes of transportation, provide on-street parking for drivers, are adjacent to local bike and transit routes, and provide wide, highly amenitized sidewalks for pedestrians.

2 Retail Follows Retail

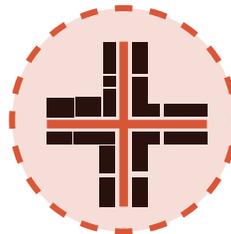
By concentrating development (and density) in nodes (rather than dispersed project by project across the corridor) we increase the odds of success.



Each node in the 135th Street community should be a mixed-use district with a focus on retail, dining and entertainment. These types of uses build activity in the nodes, spurring interest in these areas as places to live and stimulating adjacent developments.

3 Walkability Drives Success

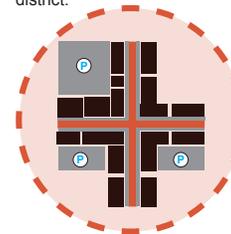
By clustering retail in key locations (at or near major intersections) we can create "park once" districts where someone can easily reach a wide variety of services.



Nodes are well-lit districts with high-quality landscaping, significant tree canopy, wide sidewalks, and plenty of seating areas for pedestrians to meet, rest, or watch the action take place in the community. The clustering of retail, entertainment, and dining in these areas creates a variety of options for residents and visitors to engage in activity.

4 Only Park Once

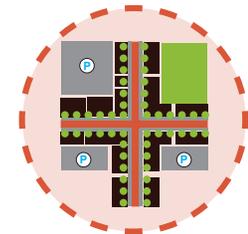
Providing a worry-free environment for visitors is important to the success of the node. The strategic placement of parking allows people to park once and spend the rest of their time walking around the node and activating the district.



The nodal model provides options for both parking structures and on-street parking to allow visitors to park once and enjoy their day in the district. By placing parking structures in and near the central core of the development, their efficiency will be maximized.

5 Form Pleases the Eye

At the end of the day, a better urban form creates aesthetically pleasing areas within the community. Gradual transitions from a variety of building heights and well-defined streetscapes provide that form.



A gradual transition of building heights, high-quality materials and landscape, and tree-lined streets combine to create a visually pleasing and engaging environment for drivers, bikers, transit riders and pedestrians in the district.

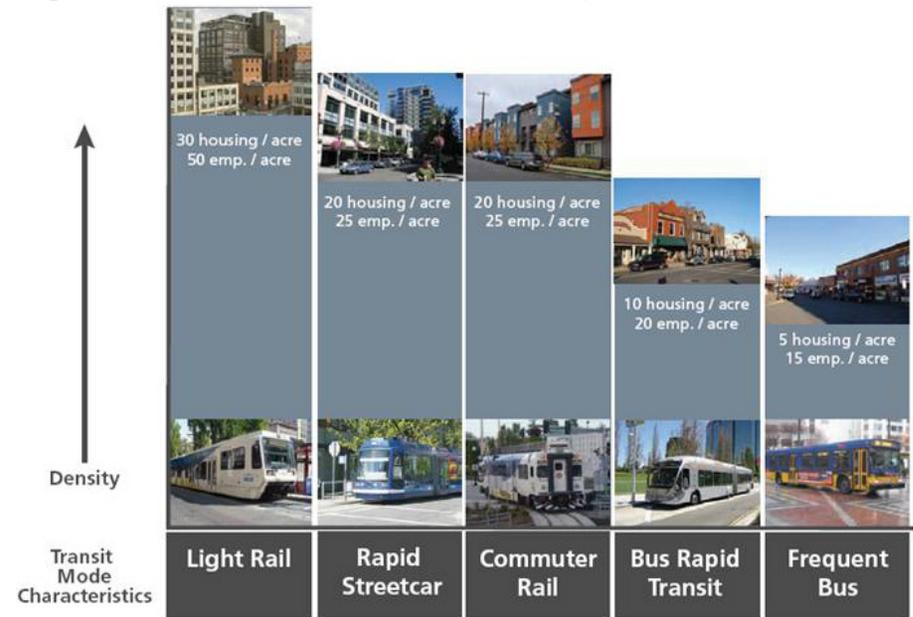
Future Transit Possibilities

In addition to creating concentrated, unique places, the nodal model of development also sets Leawood up to be “transit ready.” Should the BRT (Bus and Rapid Transit) or LRT (Light Rail Transit) find its way to the 135th Street corridor in the future, nodal development creates an excellent scenario for adding transportation routes and walkable transit stops.

The design team has developed three potential scenarios for future transit routes. Potential Route A imagines a new route coming down from State Line Road and travelling through the corridor along 134th Street, then up Nall Avenue. This route brings direct access to and from the 135th Street corridor from the north. Potential Route B could be the 135th Street Express route; possibly connecting with Route 556 (refer to Figure 6.14 on page 82) at Metcalf avenue to link activity in the nearby Prairiefire development with new districts along 135th Street. Another potential transportation option for Route B could include a shuttle that travels east and west along 135th to serve the new residential, retail, and office areas along the corridor. Potential Route C provides a transit option along the south side of 135th Street, connecting the Palazzo 16 Park and Ride at 135th Street and Antioch, with potential developments along 135th Street and up State Line Road.

As density and activity grows along 135th Street, the city should work with both Johnson County and the Kansas Department of Transportation to determine the best scenarios to serve both the corridor and surrounding areas.

Figure 5.4: Relationship between density and transit needs



The need for transit types is directly related to the density of areas they will serve. Higher densities require faster transit with higher capacities for passengers. These types of transit also come with significant infrastructural needs.

Figure 5.5: Potential Transit Routes



-  Potential Route A
-  Potential Route B
-  Potential Route C
-  Potential Transit Stop

Preserving Open Space

Throughout the community engagement process, the community has voiced a desire for more open space in the corridor. The design team worked with the City to determine the best possible locations for the preservation and potential enhancement of open spaces. Existing woodland corridors on the site provide developers great opportunities to create public amenities through the enhancement of green spaces.

Connecting Greenspaces

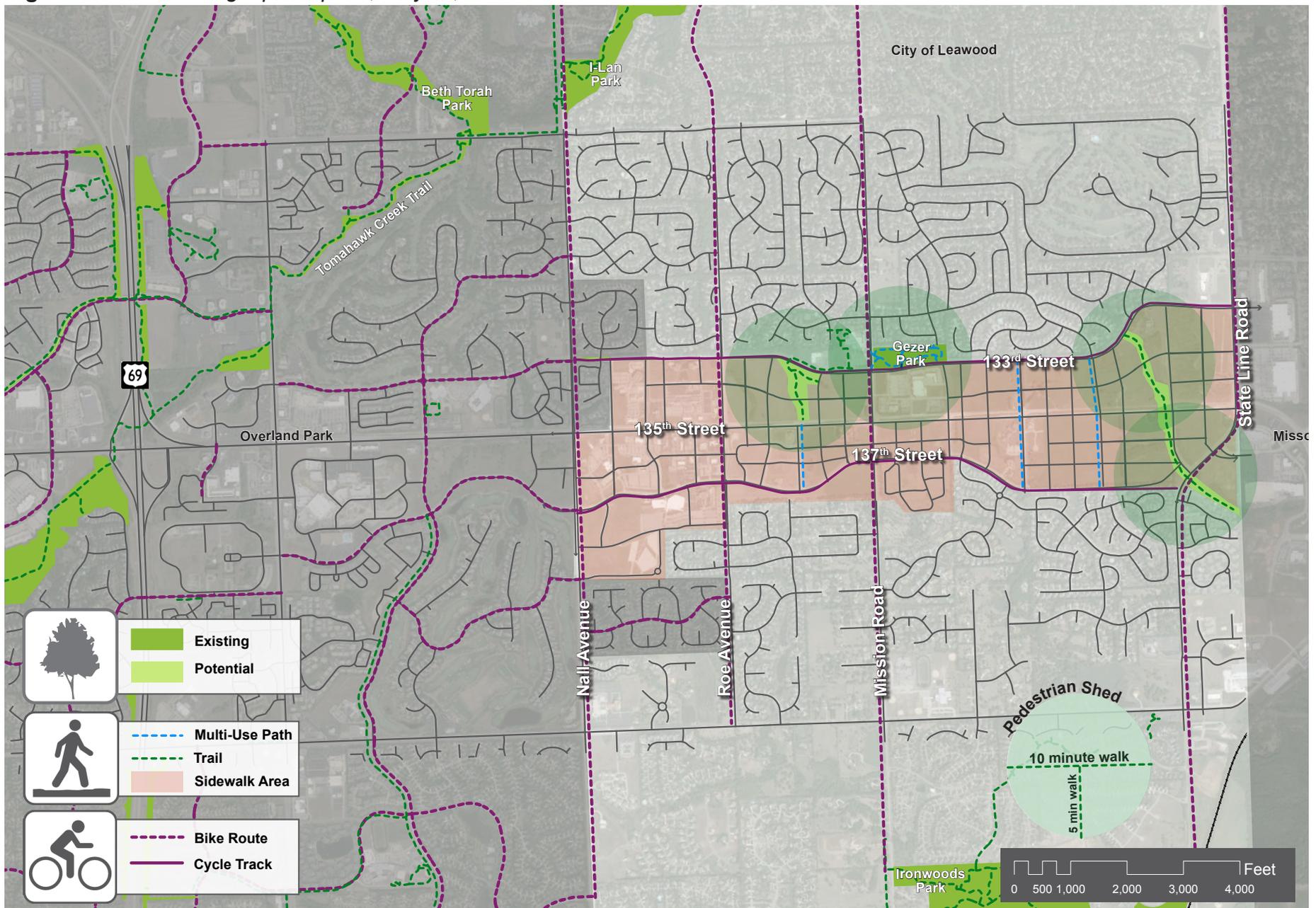
There are three parks in the City of Leawood that are within a mile of the 135th Street community: Gezer Park, Tomahawk Creek, and Ironwoods Park. Coordinating with ongoing efforts to complete the City of Leawood Bike and Pedestrian Master Plan, the design team has identified a number of potential routes where the provision of bike facilities could be considered in the future.

Future trails and open space should be planned with the City's Parks & Recreation Plan in mind.

Figure 5.6: *Gezer Park*



Figure 5.7: Connecting Open Space, Bicycle, and Pedestrian Routes



Parking in the Corridor

Parking is a key element in the success of development and the creation of new districts. Creating the optimal parking ratio ensures that parking is available to those who will need and use it, but prevents the creation of an oversupply. An oversupply of parking can result in loss of building area and can have negative impacts of stormwater drainage.

To provide property owners and developers with optimal ratios and high-quality, mixed-use development, the design team recommends a Shared Parking Model for Zones T4, T5, and T6 of the 135th Street study area. Shared parking is the use of a parking space to serve two or more individual building uses without conflict or encroachment. In a mixed-use development, building uses and their associated parking often require different amounts of space, at different times of day, during different seasons of the year. By adjusting each building's required parking to account for a shared parking model, the development can provide the optimal amount of effective parking.

Required Parking Ratios

Building Type	Ratio
Residential	2 spaces per dwelling unit
Commercial	3 to 3.5 spaces per 1,000sf of lease space

LDO Recommendations

16-4-5.4

The existing LDO sets parking ratio requirements for each zone within the city code. As development in the 135th Street corridor moves towards transect-based planning, new developments will use the MXD ratios and requirements outlined in sections 16-4-5.4, A through E, as base numbers for required parking. It is recommended to employ the *ULI/ICSC Shared Parking (2005)* model, following *ITE Parking Generation Report* land use codes.

ULI/ICSC Shared Parking Methodology (2005)

Designers, developers, and property owners should employ the following seven steps to determine the number of parking spaces required for new developments in the 135th Street corridor.

Step 1: Gather and review project data

- Determine the type and quantity of each land use.
- Survey existing conditions, local users, and facilities as appropriate.
- Research the modal split, ride-sharing programs, transit availability, and transportation demand management practices in the project's environment.
- Understand the physical relationships of the land uses.
- Discuss parking management strategies with all stakeholders, to ensure that shared parking can occur as assumed.

Step 2: Determine parking ratios

Select parking ratios for each significant land use within a development to represent what each of those land uses would need to accommodate the 85th percentile of peak accumulation of vehicles at the peak hour. The existing LDO outlines a number of ratios for potential land uses in the corridor in section 16-4-5.4B. Land uses not made explicit in this section, should follow ratios listed in *ITE Parking Generation, 4th Edition (2010)* or existing parking demand numbers may be used.

Step 3: Select factors and analyze differences in activity patterns

- Monthly activity patterns

- Time-of-Day patterns

Recommended default monthly and time-of-day adjustment factors for the accumulation of vehicles and separated parking ratios for weekend and weekday conditions can be found in the recommended *ULI/ICSC Shared Parking (2005)* book.

Step 4: Develop scenarios for critical parking need period

To identify the peak hour, several scenarios should be developed for modeling parking needs.

- Consider the demand that each land use would generate in a stand-alone mode.
- Determine times of year and days that could potentially experience a peak in need
- Test several times of day for each scenario

Step 5: Adjust ratios for modal split and persons per car

Parking ratios provided by the City should reflect local modal splits for land use types. To make any additional mode adjustments, the city should guide developers and property owners to any local surveys of similar properties or land use types to determine modal split and number of persons per car.

Step 6: Apply non-captive adjustments

In this step, the developer, designer, or property owner should evaluate what percentage of the users at one land use are already counted as being parked for another land use during a certain time of day. This allows for an evaluation of the non-captive ratio, or the potential number of people who are not already present in the immediate vicinity and will require parking.

Step 7: Calculate required parking spaces for each scenario

Total the parking needs for each land use to estimate the overall shared parking need.

Step 8: Submit a comprehensive parking plan

Proposed developments will submit a comprehensive parking plan that assures the success of shared parking scenarios.

Figure 5.8: Parking Layout Options



Interior Parking: Buildings front onto streets



Teaser Parking: Attracts drivers passing by



Structured Parking: Highly Recommended

Pedestrian Accommodations in Parking Lots

Parking in lots in and around the corridor should not only be efficient, but also accommodating for pedestrians living, shopping, and dining in the area. The following elements should supplement *Section 16-4-5.3 Design Standards*.

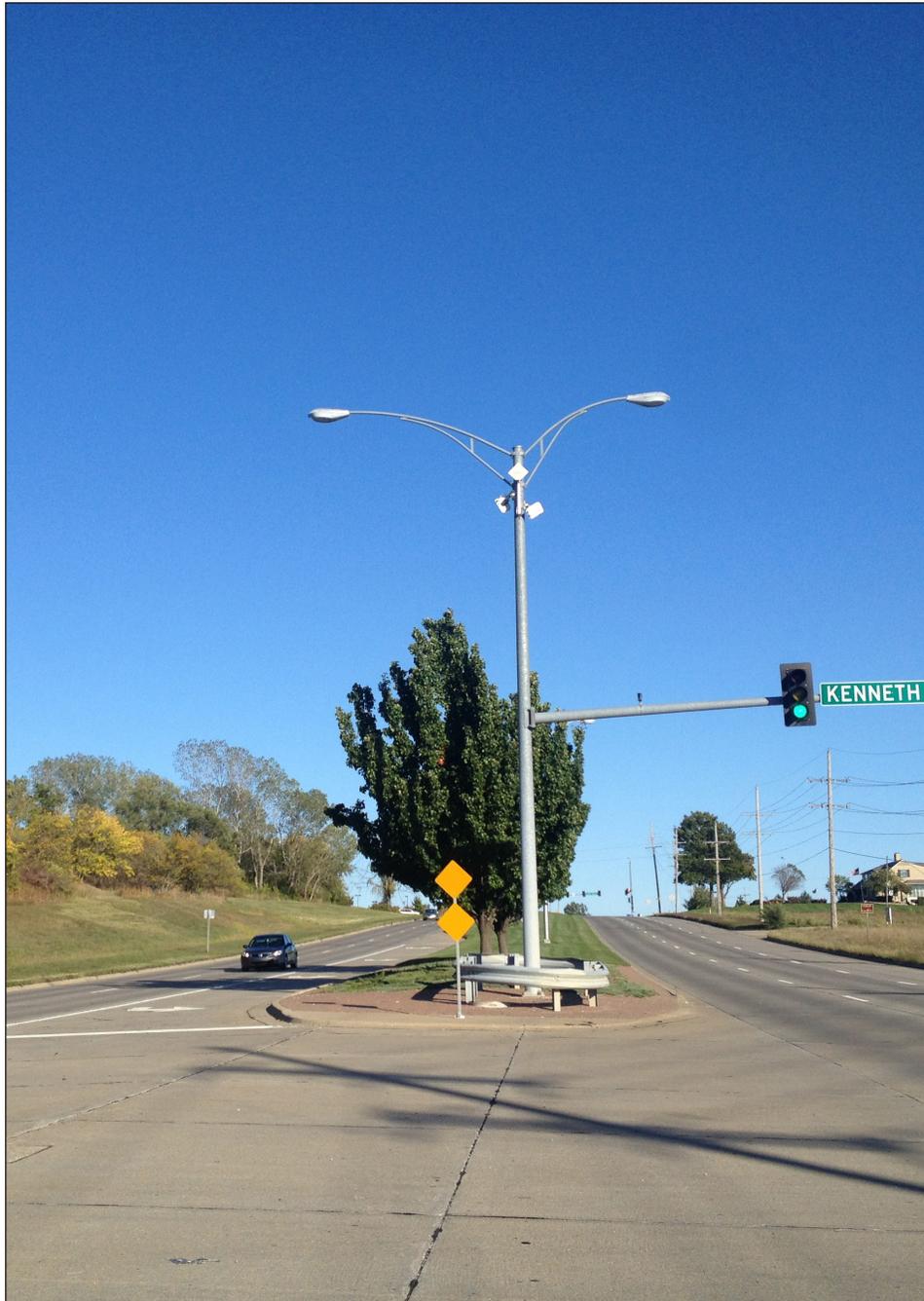
Pedestrian Walkways Highly visible, marked walkways should identify safe passage routes for pedestrians circulating through a parking area. Pedestrian walkways shall be free of barriers to persons with disabilities. Where the pedestrian walkway crosses vehicle travel lanes, the surface shall consist of textured or stamped paving to clearly designate pedestrian priority.

Lighting Corridor parking lots should be sufficiently lit to support pedestrian comfort and create a safe conditions for parked cars and passengers. Refer to page 46 for lighting recommendations and standards.

6

EXISTING CONDITIONS

The existing conditions within this chapter were collected from June to August 2013. The summaries provided reflect the existing data provided by the City of Leawood and original data collected by the consultant team comprised of Design Workshop, Nelson Nygaard, Burns and McDonnell, and Shockey Consulting.



Intersection at 135th Street and Kenneth Parkway

Context

135th Street is classified as an arterial road and runs in an east to west direction connecting residents and visitors to Overland Park to the west and Kansas City, Missouri to the east. The six-lane thoroughfare contains a large, sparsely planted median. The majority of current development is located between Nall and Roe Avenues and at the northeast corner of the Mission Road intersection. The remaining parcels in the corridor are either vacant or are currently used for agriculture.

The area is ripe for development but is in need of new and improved road infrastructure, community gathering spaces, and identity to help create great, walkable, mixed-use districts in this community.

Existing Land Use

- 83% of the existing land is currently vacant or used for agricultural practices.
- 13.3% of the community's land is occupied by private institutions, or places of worship. Churches serve as centers of communication and gathering for communities all over the country. Supporting these spaces in the corridor will help to foster community engagement and build identity for 135th Street.
- 4.7% is used for retail areas. Compared to other corridors in the area, the existing retail in the area is relatively limited. However, market projections, developer, City interests, and surrounding demand will dictate possibilities for future retail.
- Tuscan Reserve Village, a residential development, will make up 1% of the community's land area.
- While at the time of this study, this development was not yet complete, the residential community, named Milano, will occupy 4% of the land area within the project site.



Figure 6.1: *Corner feature at Parkway Plaza*



Figure 6.2: *133rd East of Mission*

Figure 6.3: Existing land use



Existing Zoning

The existing zoning allows for and indicates possible development opportunities for the corridor's future. The Leawood Development Ordinance provides specific guidelines for development character, building height, and setbacks that define the shape and feel of the corridor. While defining these elements is useful and can benefit the overall identity of the community, the missing piece to connect zoning regulations and the development ordinance is an element that guides the community's desired transition from residential areas north and south of the corridor, to the potentially higher-density mixed-used areas along 135th Street.

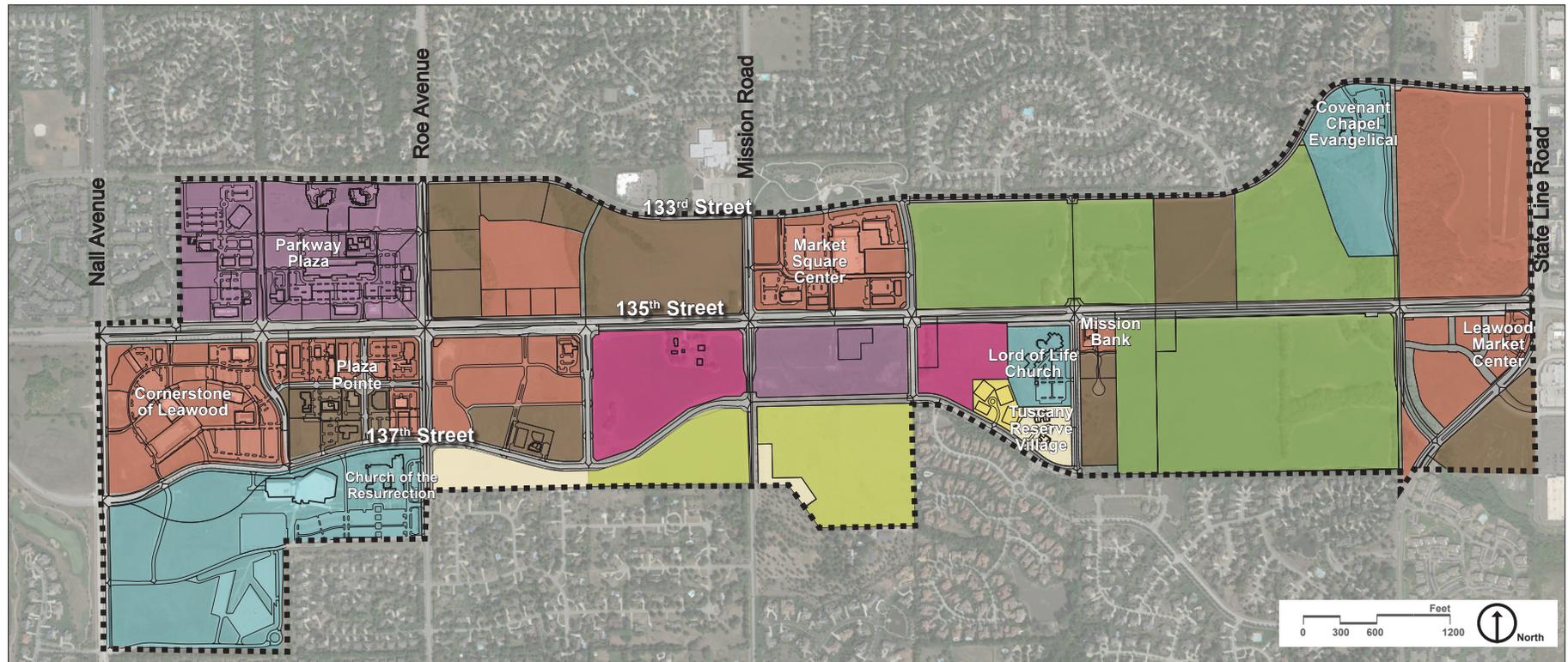
Figure 6.4 Footnotes

****sf/du is a reference to square feet per dwelling unit. This describes the area of a unit in a multi-family residential development.***

***** These numbers are without FAR bonusing. Maximum of 0.45 with bonuses, unless approved by 3/4 majority of Governing Body***

****** Height is based on Zoning District***

Figure 6.4: Existing Zoning



Current Regulations	AG:	SD-O:	SD-CR:	SD-NCR:	MXD:	RP-2:	RP-3:	RP-4:	SUP-Church
	Agricultural District	Planned Office District	Planned General Retail	Planned Neighborhood Commercial Retail	Mixed-Use Development District	Cluster Detached Residential	Cluster Attached Residential	Apartment Residential	***
MINIMUM AREA OF DEVELOPMENT	40 acres	10 acres	10 acres	10 acres	10 acres	6,000 sf/du*	6,000sf/du	4,000sf/du	N/A
HEIGHT LIMITS	35 feet	90 feet	50 feet	40 feet	90 feet	35 feet	40 feet	35 feet	N/A
FAR (Floor Area Ratio)**		0.25 Max	0.25 Max	0.20 Max	0.25 Max				
PERCENTAGE OF STUDY AREA	18.4%	6.2%	22.6%	4.5%	9.0%	0.4%	1.8%	5.2%	13.3%

Accommodations for Multi-Modal Transportation

Functions and Characteristics of Existing Roadways

135th Street

135th Street is a six-lane divided arterial, with access points located at roughly quarter mile intervals. The right-of-way is approximately 170 feet wide and includes a 40 foot median. For most of the length of the 135th Street corridor, the street accommodates three through travel lanes in each direction. However, this alignment narrows to two lanes in each direction east of Roe Avenue. The speed limit along the street is posted at 45 miles per hour.

Within the boundaries of Leawood, 135th Street has major signalized intersections at Nall Avenue, Briar Street, Roe Avenue, Mission Road, Pawnee Lane, Kenneth Road, Fontana Street, and State Line Road. Un-signalized intersections on 135th Street are at Birch, Linden, and Chadwick Streets. The three through travel lanes in each direction are augmented with dedicated left and right turning lanes approaching major intersections. Along the corridor, lanes are approximately 13 feet wide.

The presence of sidewalks on 135th Street is intermittent and varies throughout most of the corridor. Discontinuous sidewalks exist near the Lord of Life Lutheran Church and Mission Bank at the intersection of Chadwick and 135th Street. Sidewalks on 135th Street are generally set back from the roadways anywhere from five to 20 feet with landscaped buffers. There are no specific bicycle facilities on 135th Street.

Future plans for 135th Street include construction of a third lane in each direction based on development on adjacent parcels. Additionally, sidewalks and their connections will be constructed with future development along 135th Street. Bicycle access will be provided per the Leawood Bicycle & Pedestrian Master Plan.

133rd Street

133rd Street is an arterial road that runs east to west from Tomahawk Creek to State Line Road, where the road then changes to 131st Street east of State Line Road in Kansas City, Missouri. The roadway has one through lane in each direction with dedicated left and right turning lanes at major signalized intersections including Nall Avenue, Roe Avenue, Mission Road, and State Line Road. Un-signalized “T” intersections occur at a number of site driveways as well as collector streets such as Birch Street, Briar Street, and Pawnee Lane.

Sidewalks are generally present along the street, however do not exist on the northern segment of the road between High Drive and State Line Road. The northern segment of the sidewalk from Nall Avenue east to High Drive is designated as a shared use path for both bicycle and pedestrians. The 133rd Street roadway west of Birch Street is considered a shared roadway, allowing both bicycles and vehicles to share the lanes, however there are no marked signs indicating this designation. The posted roadway speed limit is 30 mph from Nall to Roe Avenue, and 35 mph from Roe to State Line Road.

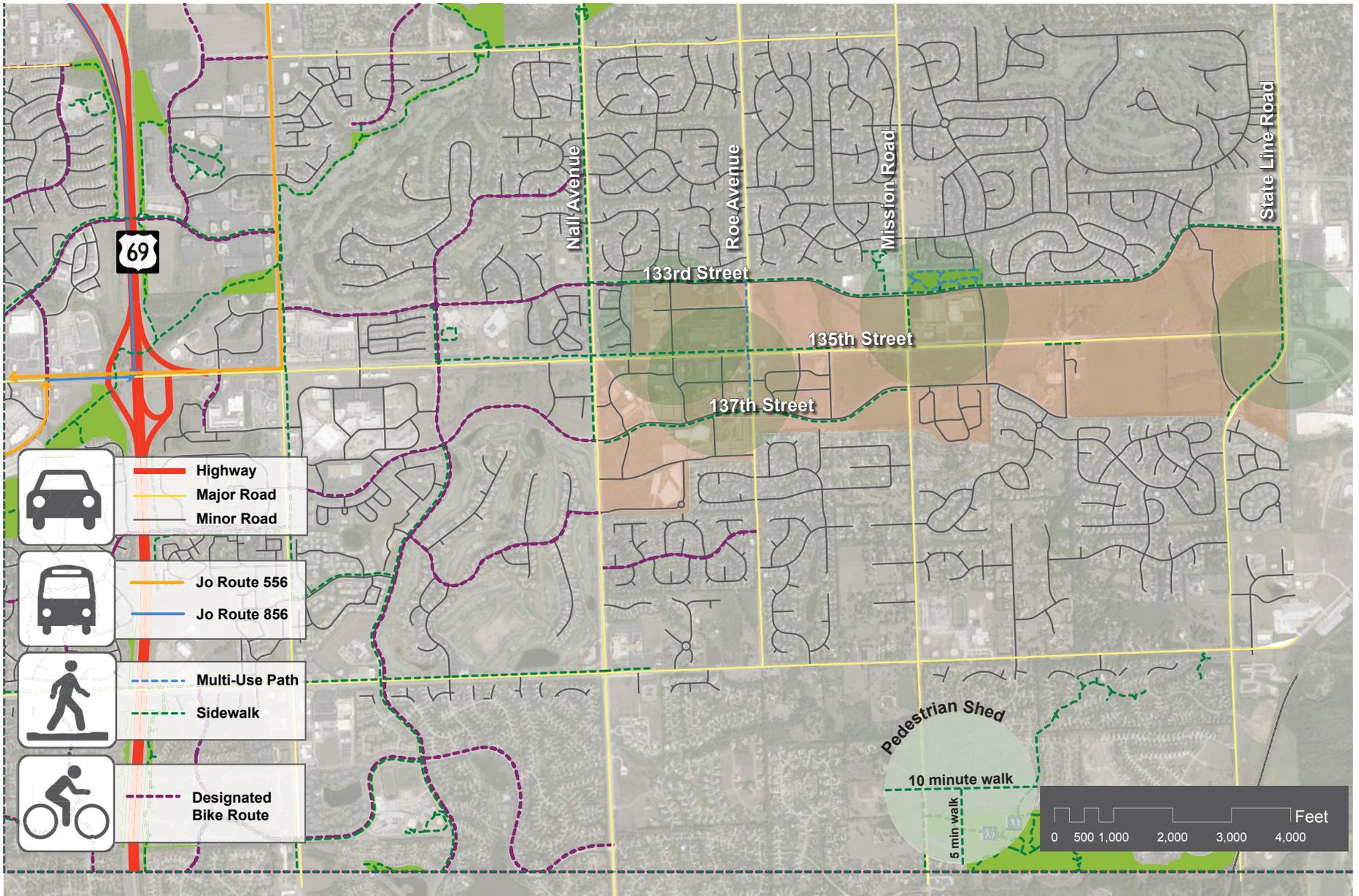
137th Street

137th Street is an arterial road parallel to but south of 135th Street that spans from Nall Avenue on the west to Chadwick to the east. This road serves as a buffer between the single family neighborhoods to the south and the retail and commercial areas along 135th Street to the north. A sidewalk with a landscaped buffer is generally present on both sides of the road. Most intersections along 137th Street are “T” intersections or site access driveways. However major intersections - with Nall Avenue, and Roe Avenue - are either yield or stop controlled. The posted speed limit along 137th Street is 30 mph from Nall to Roe Avenue and 35 mph from Roe to Chadwick.

State Line Road

State Line Road is an urban arterial that runs north to south from the heart of the metro area to the north to 135th Street in Leawood, before changing names to Kenneth Parkway south of 135th Street. The posted roadway speed limit along State Line Road is 40 mph. As its

Figure 6.5: Existing Transportation Options



name suggests, State Line Road borders the state lines between Kansas and Missouri. Within the boundaries of the 135th study area, State Line Road is a four lane divided arterial, carrying two lanes of travel in each direction with dedicated left and right turning movement lanes approaching major intersections. State Line Road has signalized intersections at 135th Street/Kenneth Parkway, 133rd Street, and 133rd / 131st . A continuous, buffered sidewalk network is provided on both sides of State Line Road within the boundaries of the study area. There are no designated bicycle facilities present along this roadway.

Nall Avenue

Nall Avenue is an urban arterial that extends from the north in Mission, Kansas to the south at 167th Street. The landscape and character of Nall Avenue varies within the boundaries of the study area, as Nall Avenue is bounded by retail and business establishments to the southeast in Leawood and suburban residential homes to northeast in Overland Park. Although sidewalks are present on both sides of Nall Avenue, the segments on the western edge are deteriorating. There are no bicycle facilities on this street. Nall Avenue contains three intersections, 137th Street and Golden Bear Drive are stop and yield controlled, and 135th Street which is signalized. The speed limit along Nall Avenue is 45 mph. Nall Avenue borders both the City of Leawood and Overland Park. Any future improvements will need a coordinated effort from both cities.

Roe Avenue

Roe Avenue is a north to south oriented street that extends south from 143rd Street to the northern neighborhoods of Leawood. Within the boundaries of the 135th study area, Roe Avenue is bordered by the Parkway Plaza and Plaza Pointe developments to the west, and vacant land parcels to the east. Roe Avenue is a four lane divided arterial that provides direct access from residential neighborhoods to the regional access points and retail businesses along 135th Street. Sidewalks are present on both sides of the roadway in the study area, with the western segment designated as a shared use path between 133rd and 137th Streets. In addition to site access, major signalized intersections include 135th Street and 133rd Street and an un-signalized yield intersection at 137th. The posted speed limit along Roe Avenue is 35 mph.

Mission Road

Mission Road is a north to south collector street that extends from 119th Street near the Tomahawk Creek Parkway in the north to 231st Street in Miami County. Within the Study Area boundary, Mission Road has one travel lane in each direction. The Mission Road sidewalk network is incomplete, most notably on the western edge between 133rd and 135th Streets, as well as most of both sides of the segment from 135th to 138th Streets. Most of Mission Road abuts vacant parcels, except for Market Square Center located at the northeastern corner of the 135th Street intersection within the study area. The posted speed limit along Mission Road is 35 mph.

Kenneth Road

Kenneth Road is a connector street that provides access between 135th Street and Kenneth Parkway. Kenneth Road has one lane of travel in each direction, with a signalized intersection at 135th Street and a stop-controlled intersection at Kenneth Parkway. Sidewalks are adequate and present along both sides of the road, however, no bicycle facilities are available.

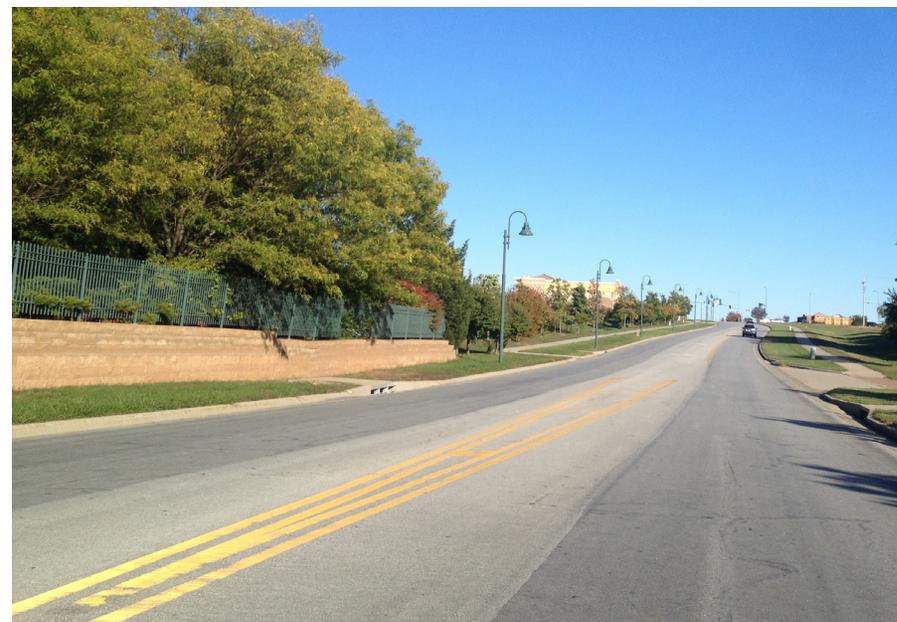
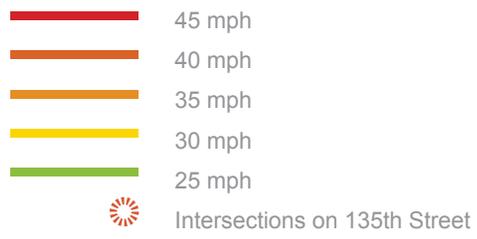


Figure 6.6: 2 lane road in the study area

Figure 6.7: Existing Speed Limits along the Corridor

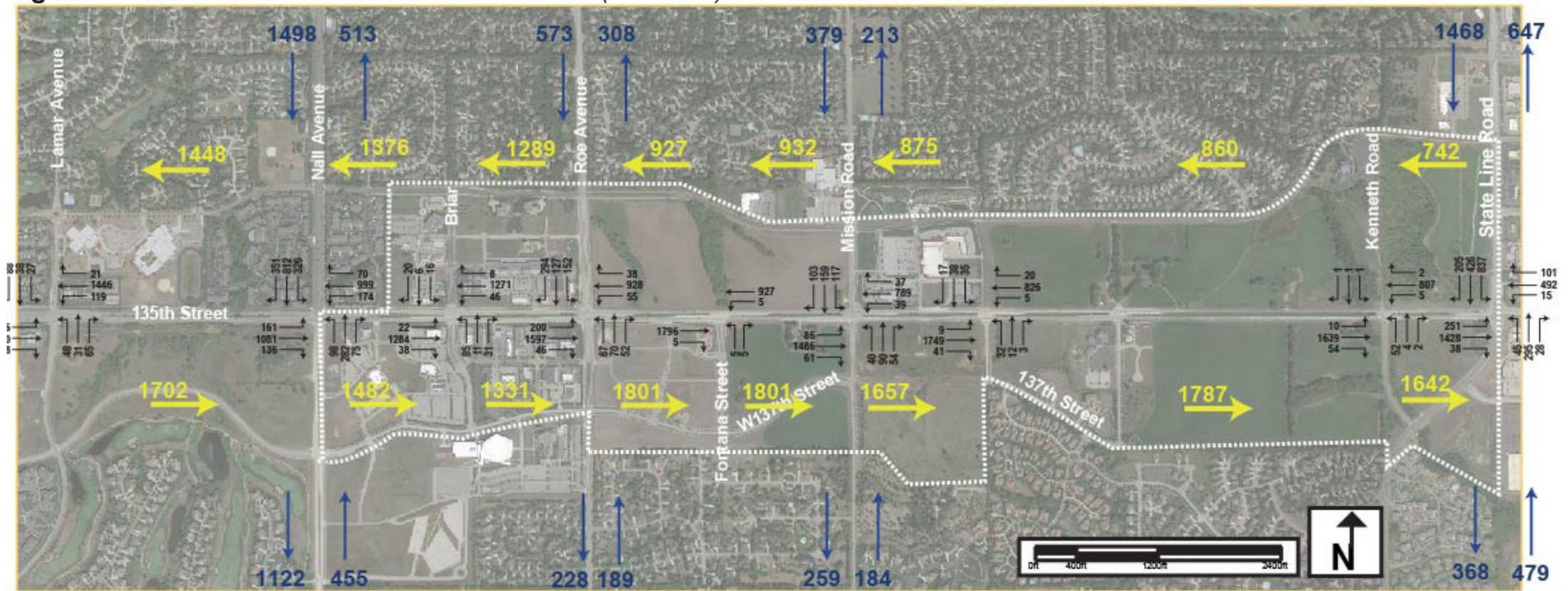


Traffic

Though comprehensive traffic count data is not fully available, 135th Street appears to carry between 30,000 and 35,000 vehicles a day. A comprehensive traffic network, which counts vehicles at major intersections, is available for the PM peak hour, and was used to interpret overall traffic patterns:

- Rush hour volumes are high relative to overall volumes (The PM peak represents 10% of overall daily volumes)
- Nall Avenue and State Line Road are the highest volume North/South intersecting streets
- Roe Avenue and Nall Avenue add a substantial amount of west-bound trips on 135th Street toward Highway 69.
- Bisecting roadways such as Nall Avenue and State Line Road both provide direct access to Interstate 435 north of the corridor.
- Cross Street volumes change substantively at 135th Street. A significant percentage of vehicles turn onto the corridor at most intersections, rather than connecting north-south.

Figure 6.8: 135th Street Corridor Vehicle Volumes (Peak PM)



LEGEND

- ➡ Turning Movement Counts
- ↕ North/ South Volumes
- ➡ East/West Volumes



Figure 6.10: *The Intersection of 135th Street and Roe Avenue provides little accommodations for pedestrian crossing.*



Figure 6.9: *An incomplete sidewalk along Mission Road*

Pedestrian Infrastructure

Pedestrian infrastructure and facilities vary throughout the 135th Street study area. Recent infill developments along 135th Street have helped to create, maintain, and upgrade existing sidewalks to city design standards, with attractive spaces and quality materials. However, on undeveloped or isolated parcels, sidewalks are often lacking. This sparse, uneven development pattern has created discontinuous sidewalks with an overall infrastructure that does not provide mobility or certainty of connectivity for anyone seeking to walk to, through or within the study area. Recent developments have built sidewalks, highly visible crosswalks, and accessible pedestrian ramps in the areas directly adjacent to their business. However, in most cases the parcel is left untouched, creating sidewalks and crosswalks that lead to vacant parcels or that are completely disconnected.

Some developments have created an integrated internal pedestrian environment, as required by the City. For example, Parkway Plaza has created a complete pedestrian system that ties together its retail businesses with a sidewalk network that makes it convenient for patrons to visit more than one business. Several developments have also created pedestrian plazas or amenities at the 135th Street intersections. However these tend to be isolated from the broader context of the corridor, making it difficult for pedestrians to travel between them, such as from Parkway Plaza to Market Square Center located directly to the east.

Many of the retail developments located along the corridor are set back from the roadway and buildings are not oriented toward the main street. These buildings are often built in clusters with the front door oriented toward parking lots, which often lack adequate pedestrian access and facilities from the main road. The isolated design along 135th makes it difficult for pedestrians to access destinations without having to cut through large parking lots to get to the front door. For more recent developments, it may be easy to walk and connect with retail businesses within the same parcel, however it is sometimes impossible to walk to other destinations along the corridor due to the lack of facilities at major intersections.

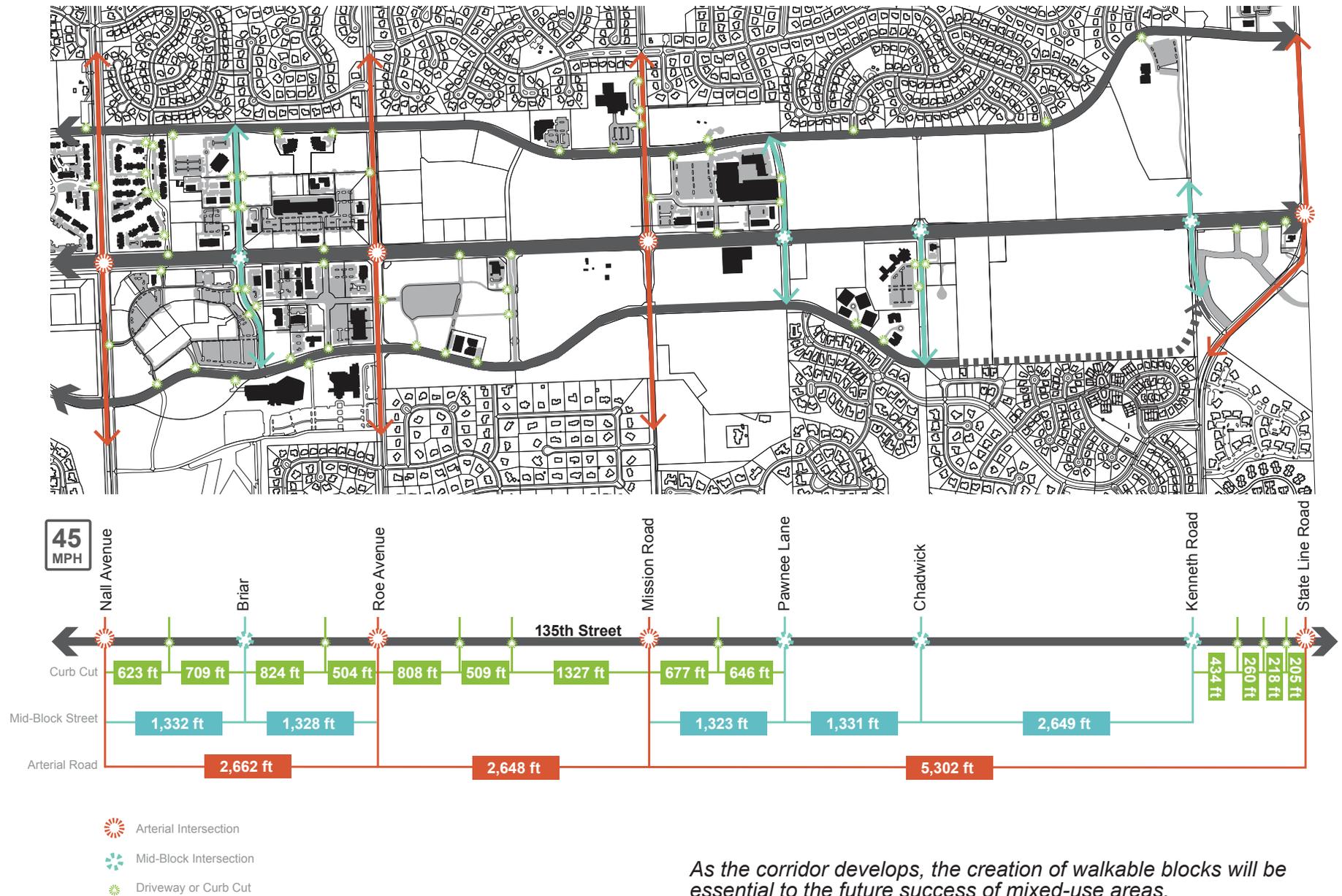
Sidewalks have been completed along most of the roadways that intersect 135th Street, and these often contain landscaped grass buffers separating walking space from the road. While the existence of the sidewalk is an important step, the quality, connectivity and design of the sidewalk and its presence at major intersections are critical to creating connectivity. There are 12 intersections - nine signalized and three un-signalized - along 135th Street. Nine of these (75%) contain an incomplete sidewalk network, lacking sidewalks on one or more of the legs. Half of the intersections, six of the twelve, do not have pedestrian crosswalks.

135th Street itself is a significant pedestrian barrier at major intersections, due to its width, character and traffic volume.

In addition, extended block lengths on 135th Street limit the potential connectivity and walkability of the corridor. The optimal block length to support pedestrian activity and accessible storefronts is 360 feet long. Most blocks extend well beyond this distance. Within the corridor, the smallest block length with a sidewalk is approximately 600 feet. The largest blocks, located on the east side of the corridor, do not contain sidewalks and range from approximately a quarter mile (1,320 feet) to a half mile (2,640 feet) in length.

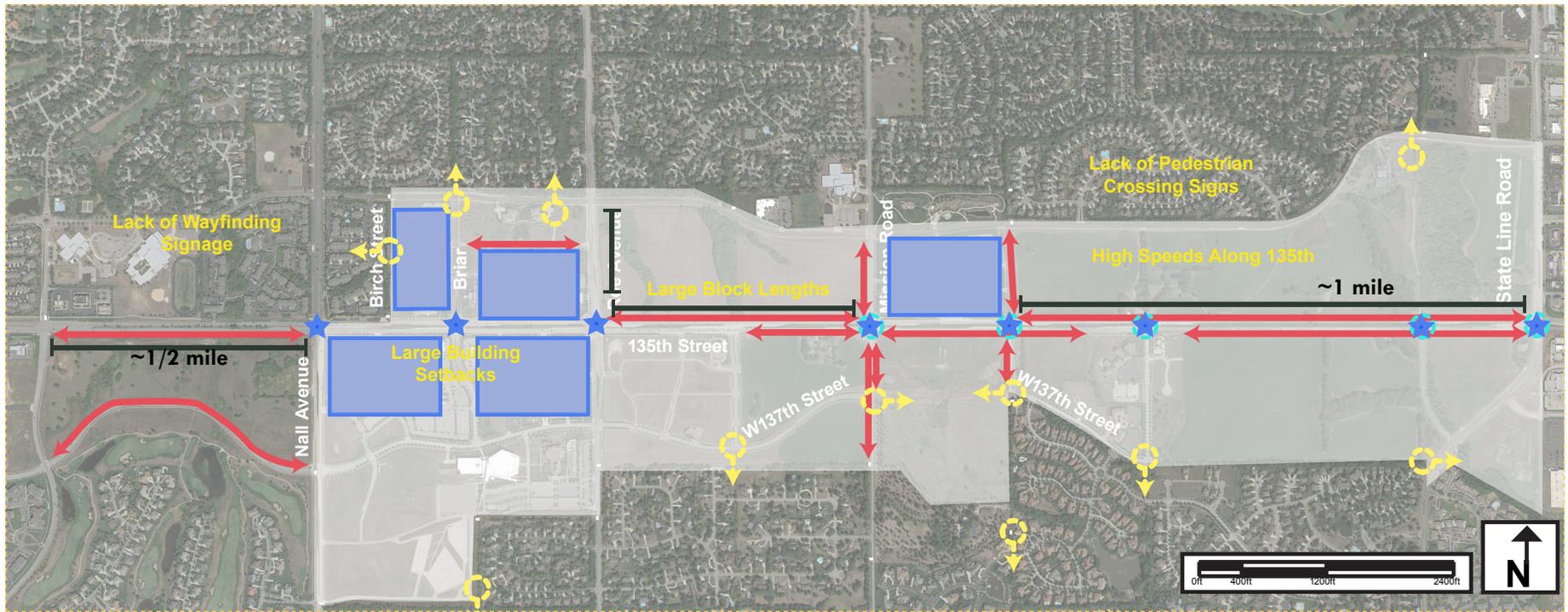
Because the project study area is largely undeveloped, many of the streets lack amenities that enhance the pedestrian experience. In some neighborhoods within the corridor, the sidewalks, crossings, and connections are not always conducive to the promotion of pedestrian activity. There is a lack of wayfinding signage throughout the study area to lead pedestrians to key destinations such as the shared-use path and retail locations. Field observations indicate that there were relatively low pedestrian volumes at major intersections along 135th Street. Improving these conditions and developing infrastructure to encourage pedestrian activity will benefit not only area residents but also businesses and local institutions.

Figure 6.11: Existing block dimension and access management.



As the corridor develops, the creation of walkable blocks will be essential to the future success of mixed-use areas.

Figure 6.12: Pedestrian Issues and Barriers



Legend

- Missing Sidewalks
- Large Block Lengths
- Buildings Setback and Limited Front Door Connectivity
- Incomplete Connections
- Long Crossing Widths
- Missing Crosswalks

Bicycling in the Corridor

The 135th Street study area does not have dedicated on-street facilities for bicycling. Bicycle parking facilities are also not present along the street. Bicycle counts are unavailable for most of the surrounding area facilities, and anecdotal evidence suggests that there are few bicycle commuters or retail customers. Without the critical connections needed to allow for fast, safe passage between residential neighborhoods and major destinations, commuting by bicycle around or through the 135th Street corridor can be difficult. Moreover, many of the nearby developments appear to lack bicycle specific accommodations - storage facilities, bicycle racks, shower and changing facilities - further discouraging employee and customer use of bicycling for everyday access.

The City of Leawood and the Mid-America Regional Council have designated multi-use and shared use paths along wider sidewalks and on certain streets as well as unmarked shared roadways, where vehicles and bicycles are allowed to share the road, on low traffic-volume roads. Shared-use pathways exist both within and surrounding the 135th Street corridor. These are often paved, wide sidewalks located on one side of the road, set back by a landscaped grass buffer. Existing shared-use paths that bisect the corridor branch off directly from the Tomahawk Creek Trail located to the northwest of the study area. This segment of the trail runs down Nall Avenue to 133rd Street and connects to Gezer Park. There is a trail head located just north of the corridor, with recreational vehicle parking for visitors and residents. Pathways within the corridor are located at:

- 133rd Street from Nall Street to High Drive
- 137th Street from Nall Street to Mission Road
- Roe Avenue from 133rd to 137th Streets

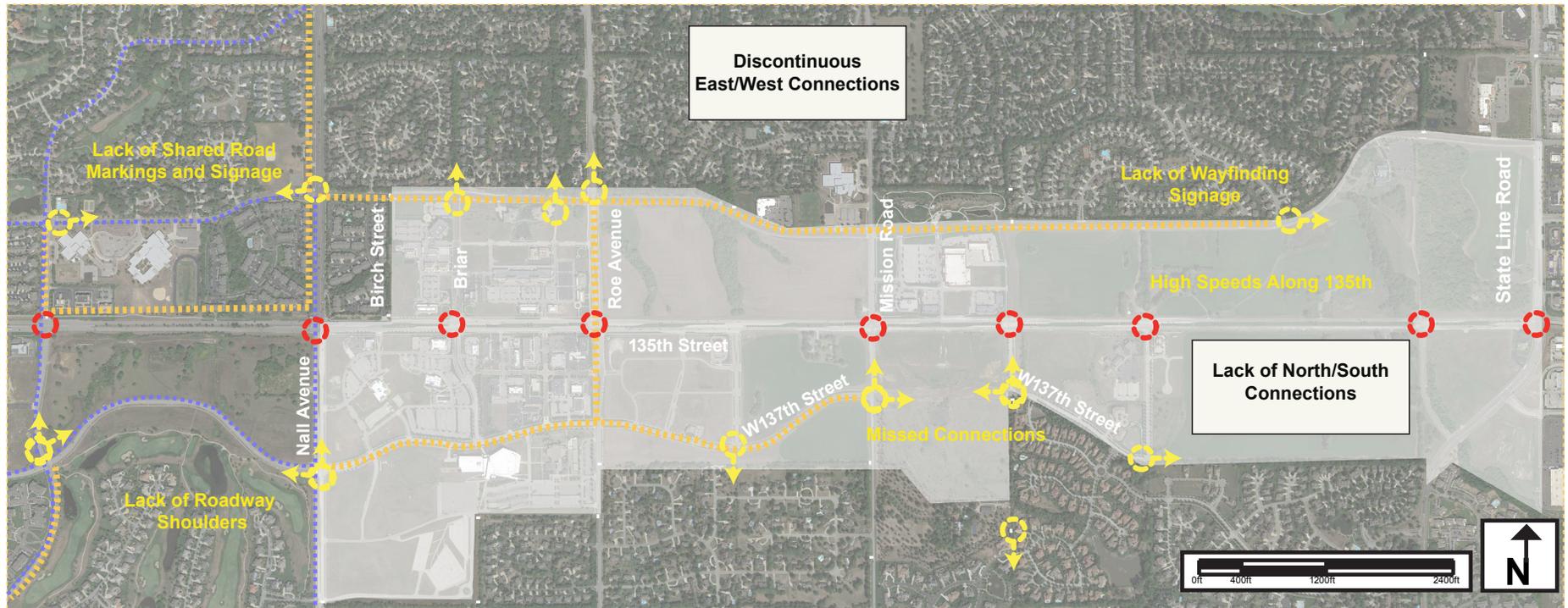
Although these off-road, shared-use path facilities can be found in the area, these facilities are sparse and the network is incomplete. Shared-use facilities located on 137th Street begin on Nall Avenue and end abruptly on Mission Road and bicyclists need to backtrack their routes in order to return to their original destination. Existing gaps in the network create conflicts for bicyclists who are unfamiliar with the

area and may compromise the safety of cyclists who are not comfortable sharing the road with cars.

Some low-volume streets within the corridor have been designated as shared roadways, where vehicles and bicycles are able to share travel lanes because of low traffic or speeds that allow for safe access. These streets do not have any on-road, shared-lane (sharrow) markings or signs. They are suggested routes for bicyclists who want to travel on the road within this corridor and through the city.

Leawood is currently conducting a Bicycle and Pedestrian Master Plan effort to enhance the bicycling environment in the corridor.

Figure 6.13: Bicycle Issues and Barriers



Legend

-  Incomplete Connections
-  Vehicle and Bicycle Conflict Points
-  Existing Shared Use Sidewalk
-  Designated Shared Roadway

Transit

Johnson County Transit is the public transit operator that services entire Johnson County region in Kansas, and is one of three transit providers in the Kansas City region. The Transit authority provides commuter fixed-route and flex-route public transit system, known as “The JO”, as well as a paratransit service called “Special Edition.” The system has a number local and express bus routes connecting Johnson County communities to Kansas City, MO, Kansas City, KS and Lawrence, KS. The agency provides services to Kansas City, MO where the Kansas City Area Transportation Authority (KCATA) provides local connectivity. However, the predominant customer pattern is characterized by commuters who ride “The JO” directly to their work-site with no need to transfer to KCATA service to finish their trip.

Existing Routes

Johnson County Transit does not currently operate any bus service within the 135th Street corridor; however there are several bus routes that run within close proximity. The closest route passes about one mile away from Nall Avenue on Metcalf Avenue. Many of these express routes provide limited service hours for commuters during weekdays only. The closest bus routes to the 135th corridor include Routes 556/856,664, and 673, which run along Metcalf Avenue and Antioch Road. These routes provide access to and from Leawood to Overland Park and Downtown Kansas City, with various destinations and stops along the way. Three park and ride locations within a three mile radius from the corridor allow passengers to park at the station free of charge and utilize transit services.

Transit Facilities

Bus Stops

The bus stops located near the study area often lack basic transit and pedestrian amenities. Although most locations are found at prominent intersections, stops are hard to identify because signage is small and hard to find. Some sites along Metcalf and Antioch lack signage com-

pletely. Pedestrian facilities and crosswalks are found at most locations, yet many places lack additional sidewalk or pedestrian amenities such as a bench or shelter to wait for the bus. There is a lack of accommodations for bike parking at these facilities and missing sidewalks and bike paths prohibit direct connections.

The JO has a policy allowing for passengers to “flag down” a bus along most streets, except at unsafe locations, along highways, and in right turn lanes. With recent and ongoing projects to improve basic passenger infrastructure, the JO has started to remove this policy from some routes and designate limited stop locations along their routes. This includes routes 556/856 and Route 664.

Park and Ride

There are a number of Park and Ride facilities located about a three-mile radius from the 135th corridor - Rosana Square at 119th and Metcalf in Overland Park, Palazzo 16, and Blue Valley Baptist Church (BVBC). Johnson County Transit has agreements with local businesses for commuters to use Park and Ride locations at no cost. Transit facilities have been recently upgraded to provide up to date real time information, new kiosks and bus shelters for commuters. Both the Palazzo and BVBC locations provide bus stops along the public street, with sidewalks connecting the park and ride lot to the new station locations. At Rosana Square, the station is located within the parking lot.

Johnson County Transit (JCT) has provided general estimates of boarding and alighting at these Park and Ride locations, through car counts. The Palazzo 16 Park and Ride at 135th and Antioch in Overland Park was estimated to have about 80-120 commuters a day with nearly all commuters utilizing Route 673. The BVBC Park and Ride facilities have about 30-40 commuters a day. Rosana Square estimates were not provided because the Park and Ride parking lot is shared with other businesses; however, general field observations from the JCT noted that there are a decent number of people that walk to the stop, (generally employees of surrounding businesses).

Figure 6.14: Johnson County Transit Map

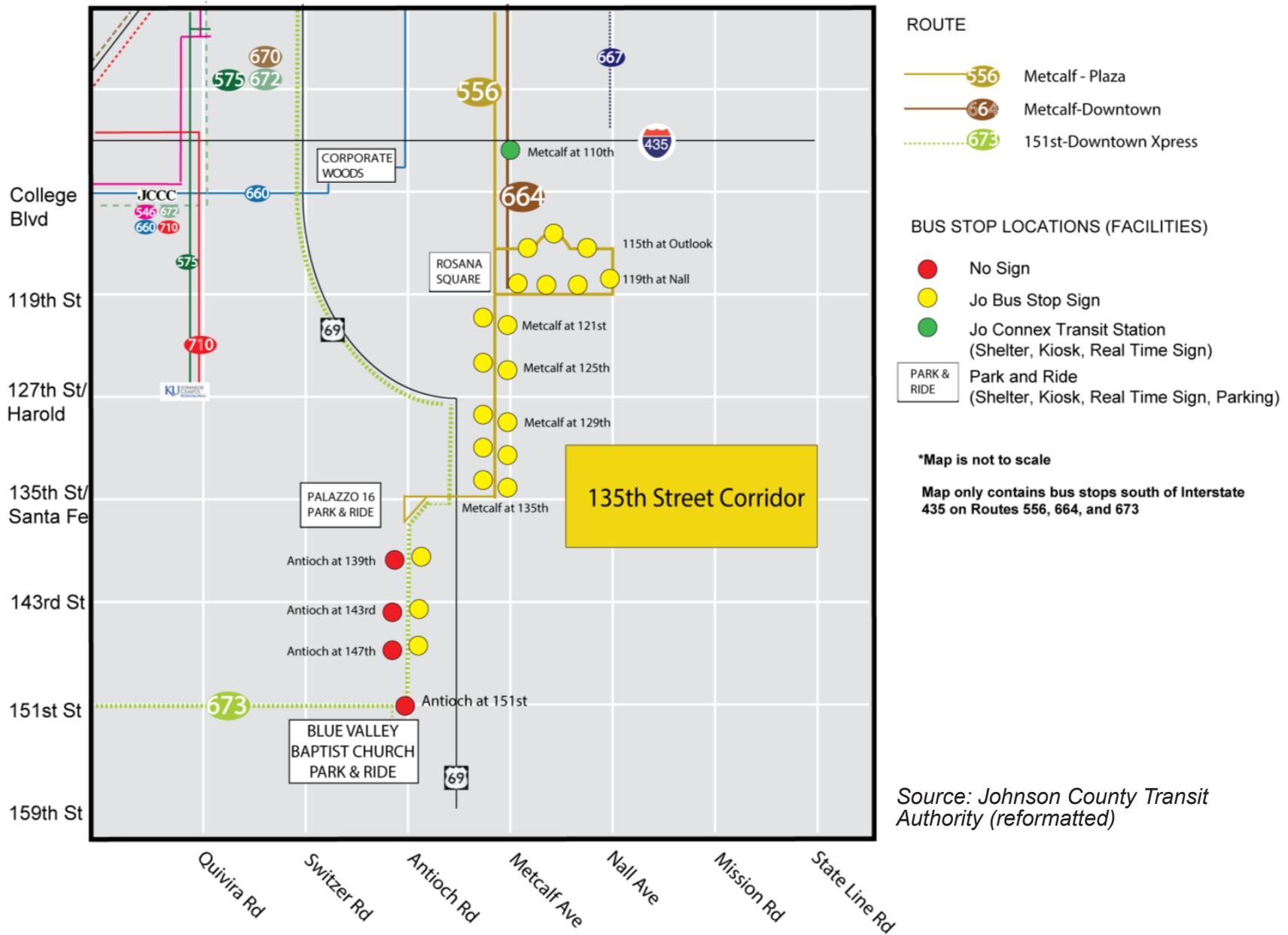
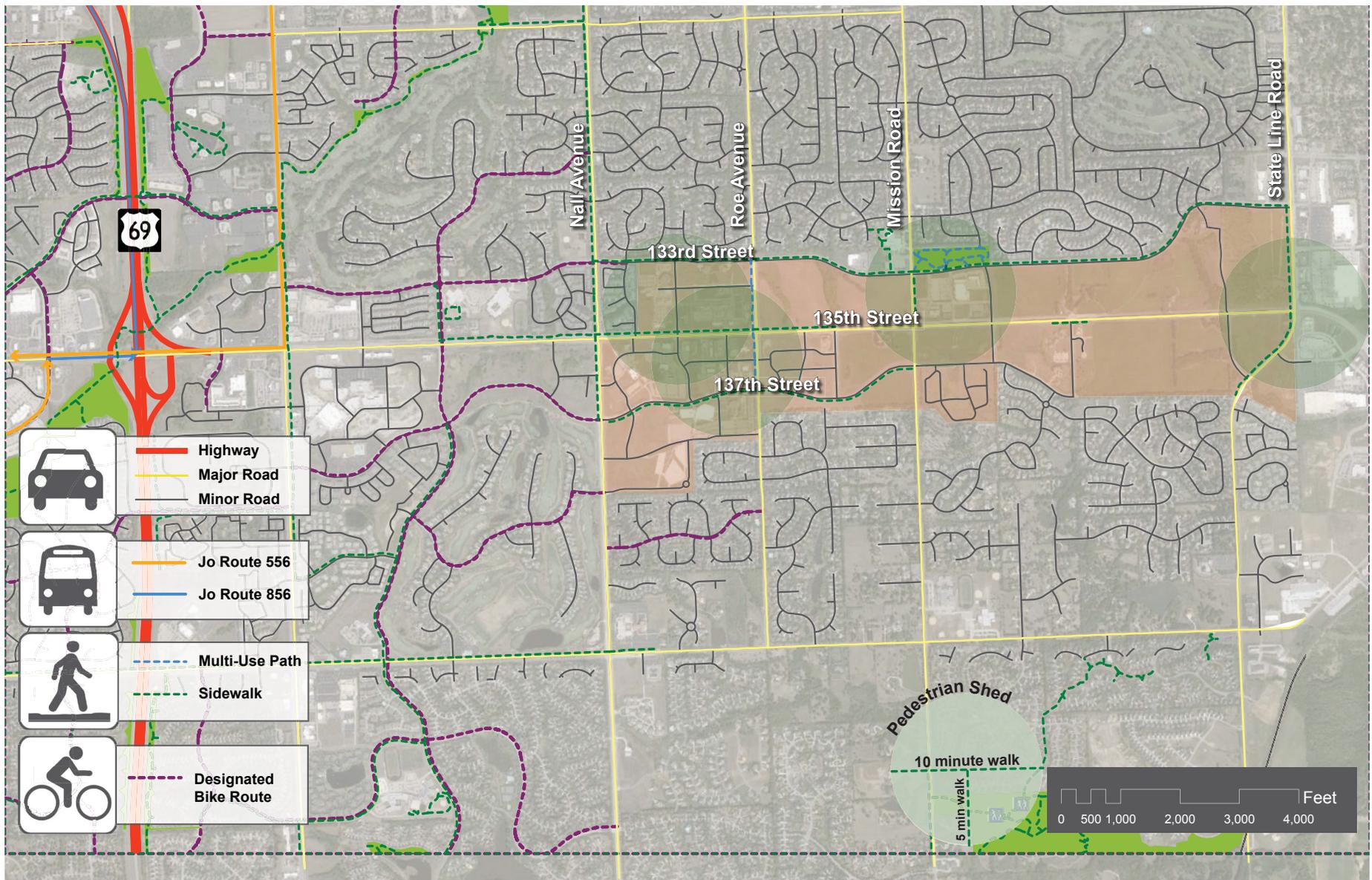


Figure 6.15: Existing Transportation Summary



Multi-Model Level of Service

The National Cooperative Highway Research Program (NCHRP) project 3-70, published in May 2008, developed a model for analyzing and evaluating the multi-modal level of service (MMLOS) of urban street designs and operations. The MMLOS model estimates the car driver, bus rider, bicyclist and pedestrian's perception of the quality of service and roadway environment together to show how these modes interact in the urban environment. This allows people using the model to understand how changes in the quality of service of one mode can positively or negatively influence the quality of service of the other modes.

The MMLOS model computes a single average level of service for each of the four modes, as opposed to one single, combined score. The scores for street segments and intersections are "A-F," using the standard levels established in the Highway Capacity Manual (HCM); where "A" represents free flowing traffic operations and "F" is completely congested. The MMLOS score for each mode is the average degree of satisfaction with the urban street reported by a large group of travelers using that mode of travel if they had traveled the full length of the study section of the street. There are a total of 37 variables used to predict perceived degree of satisfaction that fall into four main types of inputs: facility design, facility control, transit service characteristics, and volume of vehicle traffic on the facility.

This project applied the MMLOS model spreadsheets to analyze roadway segments, beginning and ending with a signalized intersection, along 135th Street between Lamar Avenue and State Line Road. As the MMLOS model spreadsheets analyze up to six intersections at a time, the corridor was divided into two sections, as shown here.

- Auto LOS is at a B or worse at segments.
- All segments along the corridor operate at a bicycle LOS of E or F, due to the lack of any on-street facilities. Pedestrian LOS is also at E or worse at all segments, except for those which feature sidewalks connecting the entire distance between intersections: Nall Avenue to Roe Avenue in both directions, as well as Roe Avenue to Fontana Street in the eastbound direction.
- At intersections, pedestrian LOS is poor due to high crossing exposure to traffic, and overall lack of dedicated crossing time and connecting pedestrian facilities.
- Transit LOS is not available for intersections or segments as no transit stop is accessible within walking distance of the corridor.
- The overall facility level of service, combining segment and intersection experience for the entire street, is a pedestrian and bicycle LOS of D or worse.

Auto Level of Service

- A** **Free-flow operations.** Traffic flows at or above the posted speed limit and all motorists have complete mobility between lanes. The average spacing between vehicles is about 550ft (167m) or 27 car lengths. Motorist have a high level of physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed. An example of LOS A occurs late at night in urban areas, frequently in rural areas, and generally in car advertisements.
- B** **Reasonable free-flow operations.** Free-flow (LOS A) speeds are maintained, maneuverability within the traffic stream is slightly restricted. The lowest average vehicle spacing is about 330ft (100m) or 16 car lengths. Motorist still have a high level of physical and psychological comfort.
- C** **At or near free-flow operations.** Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Minimum vehicle spacing is about 220ft (67m) or 11 car lengths. At LOS C most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents may still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident. This is the targeted LOS for some urban and most rural highways.
- D** **Decreasing free-flow levels.** Speeds slightly decrease as the traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160ft (50m) or 8 car lengths. Minor incidents are expected to create delays. Example of LOS D is perhaps the level of service of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require a prohibitive cost and societal impact in bypass roads and lane additions.
- E** **Decreasing free-flow levels.** Speeds slightly decrease as the traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160ft (50m) or 8 car lengths. Minor incidents are expected to create delays. Example of LOS D is perhaps the level of service of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require a prohibitive cost and societal impact in bypass roads and lane additions.
- F** **Breakdown in vehicular flow.** Flow is forced; every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Technically, a road in a constant traffic jam would be at LOS F. This is because LOS does not describe an instant state, but rather an average or typical service. For example, a highway might operate at LOS D for the AM peak hour, but have traffic consistent with LOS C some days, LOS E or F others, and come to a halt once every few weeks. However, LOS F describes a road for which the travel time cannot be predicted. Facilities operating at LOS F generally have more demand than capacity.

Pedestrian Level of Service

-  **These roadways are highly pedestrian oriented and will tend to attract pedestrian trips.** The roadways will be characterized by ample sidewalk space, pedestrian-friendly intersection designs, low-speed or low-volume motor-vehicle traffic, and plentiful amenities (e.g., shade, benches, and so forth). The roadway and sidewalk features will be designed at human scale for maximum pedestrian comfort. Roadways with this level of pedestrian accommodation may be expected in central-city, tourist, and college campus locations. Pedestrians can anticipate a low level of interaction with motor vehicles.
-  **These roadways provide many pedestrian safety and comfort features that can attract pedestrian trips.** These roadways will have many of the characteristics of an LOS A pedestrian facility, but there may be somewhat fewer amenities or pedestrian-friendly design elements. Pedestrians can anticipate a low to moderate level of interaction with motor vehicles.
-  **These roadways are adequate for pedestrian use, but may not necessarily attract pedestrian trips.** These roadways will provide a standard sidewalk, but will likely have some deficiencies in maintenance or intersection design, may be located on roadways with high-speed, high-volume motor-vehicle traffic, or may provide a sidewalk on one side of the street only. Pedestrians can anticipate moderate interaction with motor vehicles on these roadways.
-  **These roadways are adequate for pedestrian use, but will not attract pedestrian trips.** These roadways will have more frequent deficiencies in pedestrian safety and comfort features and are more likely to violate ADA requirements for width and clearance. Gaps in the sidewalk system may occur within this roadway corridor. Intersection crossings are likely to be more frequent and more difficult. Pedestrians can anticipate moderate to high levels of interaction with motor vehicles.
-  **These roadways are inadequate for pedestrian use.** These roadways may or may not provide a pedestrian facility. Even where a sidewalk is provided these roadways will not meet ADA requirements and will have frequent deficiencies in sidewalk width, clearance, continuity, and intersection design. Roadways in this category that do not provide a pedestrian facility may be characterized as urban fringe, rural section roadways with moderate motor-vehicle traffic. Pedestrians can anticipate a high level of interaction with motor vehicles.
-  **These roadways are inadequate for pedestrian use.** These roadways do not provide any continuous pedestrian facilities and are characterized by high levels of motor-vehicle use and automobile-oriented development. These roadways are designed primarily for high-volume motor-vehicle traffic with frequent turning conflicts and high speeds.

Figure 6.16: Section 1 Eastbound: Nall Avenue to Mission Road

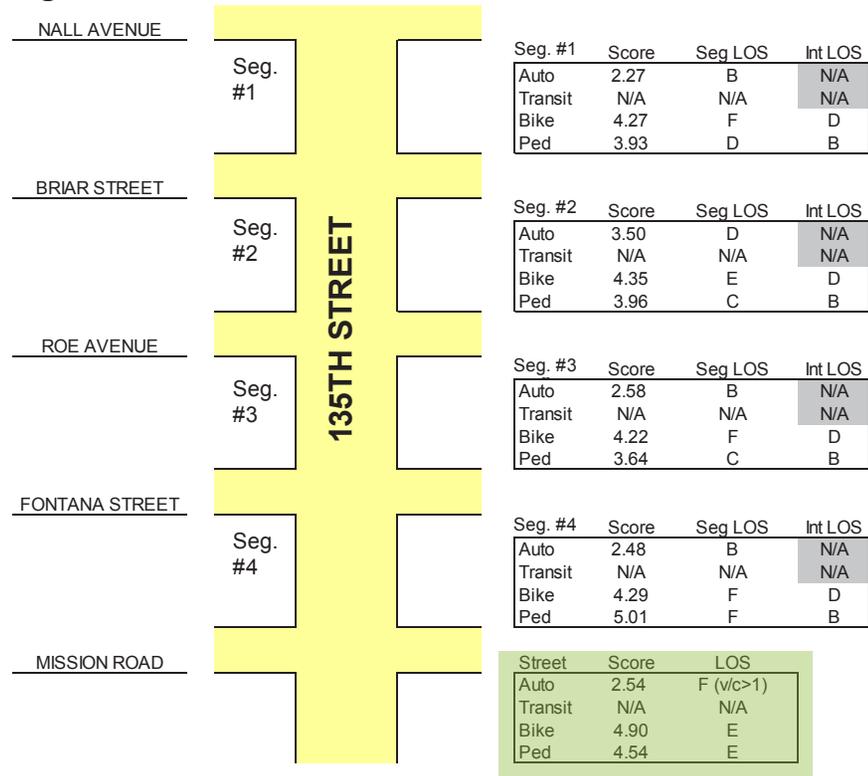
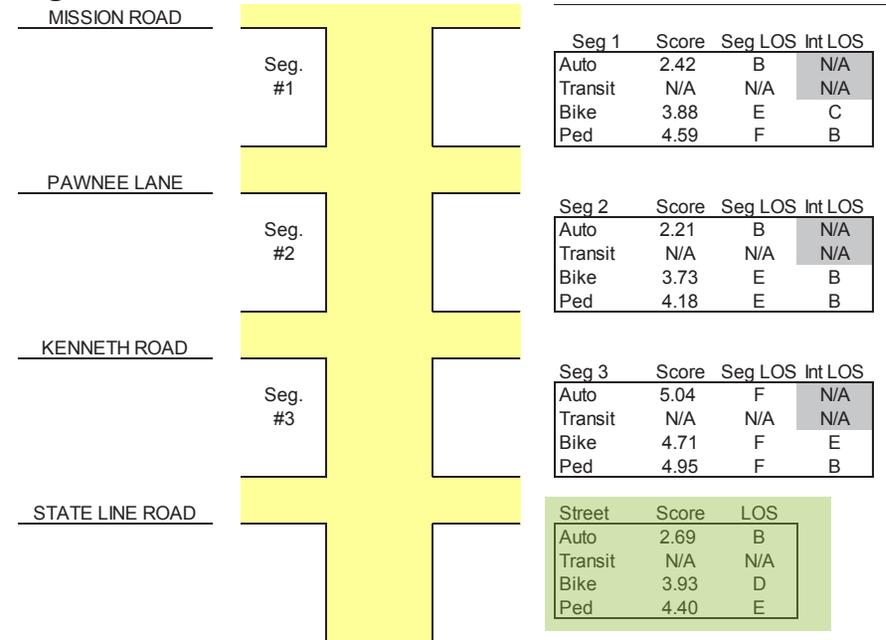


Figure 6.17: Section 1 Westbound: Mission Road to Nall Avenue



Large intersections and lack of pedestrian accommodations contribute to the corridor's low PedLOS scores.



135th Street does not provide adequate accommodations for bicyclists.

Bicycle Level of Service



These roadways are generally safe and attractive to all bicyclists. Unsupervised child riders should be anticipated because they will typically feel comfortable on these facilities. Bicyclists can anticipate a low level of interaction with motor vehicles. These roadways will provide both on- and off-street bicycle facilities.



These roadways are adequate for all bicyclists. Unsupervised child riders should be anticipated because they will typically feel comfortable on these facilities. Bicyclists can anticipate a low level of interaction with motor vehicles. These roadways may have either on- or off-street facilities. However, those without on-street facilities will have characteristics that dictate a low level of interaction with motor vehicles in the roadway, such as low-speed, low-volume motor-vehicle traffic, infrequent conflicts, and good surface conditions.



These roadways are adequate for most bicyclists. Bicyclists can anticipate a moderate level of interaction with motor vehicles. These roadways will typically have an on-street facility (bicycle lane or wide curb lane) dedicated for bicyclists. The roadway will generally be characterized by a combination of low-speed, low-volume motor-vehicle traffic, infrequent conflicts, and good surface conditions, although minor deficiencies in two or more of these areas will be present. An off-street bicycle facility may be present along this corridor when on-street conditions are less bicycle friendly.



These roadways are adequate for highly experienced riders. Bicyclists can anticipate a moderate to high level of interaction with motor vehicles. These roadways may or may not provide an on-street bicycle facility. When a bicycle facility is provided on an LOS D roadway its characteristics of high-volume, high-speed motor-vehicle traffic and frequent conflicts will make this roadway inadequate for most moderate and beginner riders. An off-street bicycle facility may be present along this corridor when on-street conditions are less bicycle friendly.



These roadways require cautious use by highly experienced riders. Bicyclists can anticipate a high level of interaction with motor vehicles. These roadways may or may not provide an on-street bicycle facility. When a bicycle facility is provided on this roadway its characteristics of high-volume, high-speed motor-vehicle traffic and frequent conflicts will make this roadway highly inadequate for moderate-level riders. An off-street bicycle facility may be present along this corridor when on-street conditions are less bicycle friendly.



These roadways do not provide any bicycle facilities. Due to the high level of motor-vehicle use and automobile-oriented development on these roadways bicyclists are greatly discouraged or even put at risk when using these roadways.

Figure 6.18: Section 2 Eastbound: Mission Rd to State Line Rd

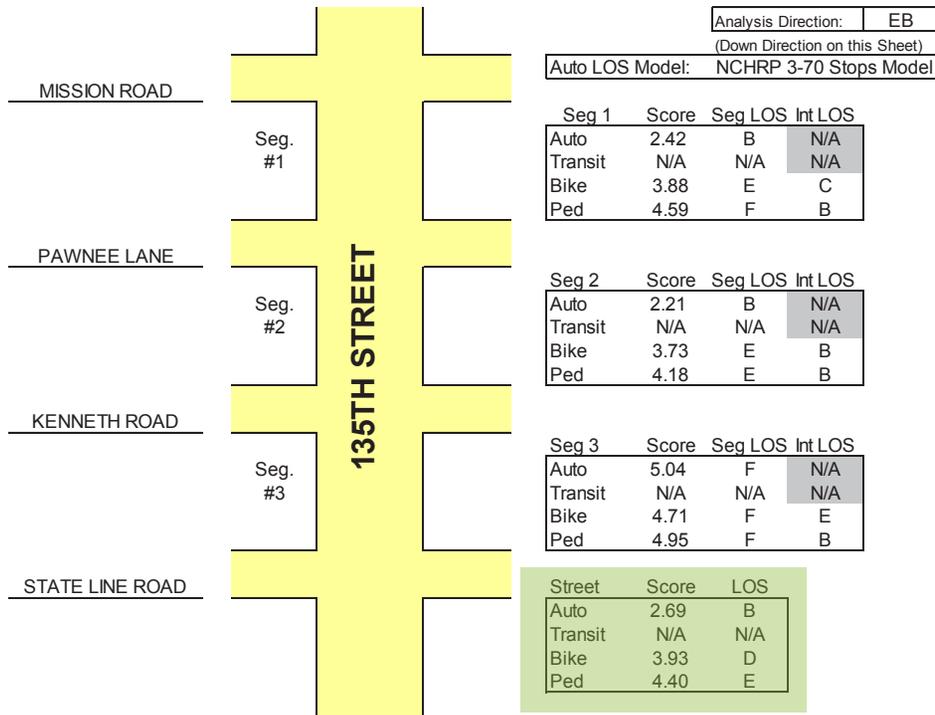
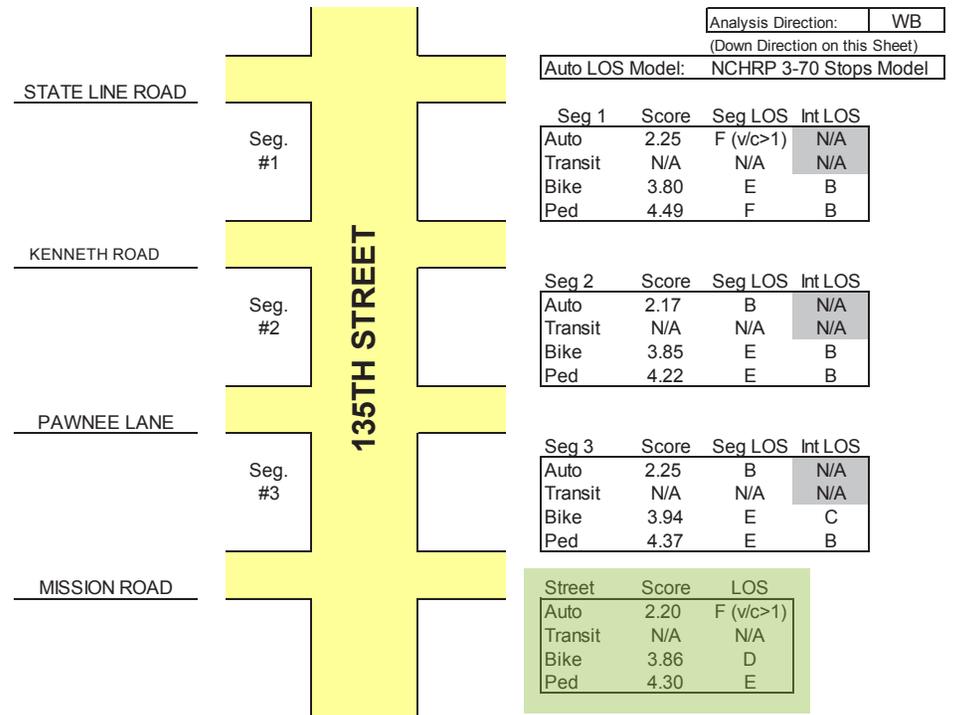


Figure 6.19: Section 2 Westbound: State Line Rd to Mission Rd



There are a number of key intersections that could provide signage and wayfinding to local bus routes. Adding these elements will help to make the corridor more transit-rider friendly.



There are some examples within the corridor of good pedestrian facilities. Continuous sidewalks, differentiated cross-walks, and tree-lined buffers can help to boost Pedestrian LOS scores.

Transit Level of Service

- A**
- Frequent service, passengers do not need schedules
- Night or “owl” service is provided
- Virtually all major origins and destinations are served

- B**
- Frequent service but passengers consult schedules
- Late evening service provided
- Most major origins and destinations are served

- C**
- Maximum desirable time to wait if bus/train is missed
- Early evening service provided
- About 3/4 of higher-density areas provided

- D**
- Service unattractive to choice riders
- Only daytime service provided
- About 2/3 of higher-density areas served

- E**
- Service available during the hour
- Peak hour service only or limited midday service
- At least 1/2 of the higher-density areas served

- F**
- Service unattractive to all riders
- Very limited or no service
- Less than 1/2 of higher-density areas served

Parks and Open Space

Open space, parks and trails provide many environmental, economic, aesthetic and recreational benefits to cities. They enhance property values, increase municipal revenue, bring in home buyers and workers, and attract retirees to settle in areas within walking distance of these assets.

Gezer Park serves those looking for recreation, rest, art, and culture in the 135th Street area. This approximately 10.2 acre space offers a multi-use trail, water features, play equipment, shelter, restrooms, benches, bike racks, and significant cultural elements to the nearby community. There is one access point for vehicles off of 133rd Street that leads to a lighted parking lot with twenty stalls. There are three access points for pedestrians and/or bikes off of 133rd and one access point off of Mission Road at the northwest end of the park. A fifth entry point into the park joins the neighborhood immediately to the north with a connection to the park's multi-use path.

Other nearby parks in Leawood include Ironwoods Park, which is located a little over a mile and half away from the southern end of the corridor along Mission Road. This 115-acre park contains the Prairie Oak Nature Center, the Lodge at Ironwoods, the historic Oxford School, a challenge course, playground, shelter and walking trails. Approximately two miles north of the corridor is I-Lan Park, another beautiful park with international cultural components, walking trails and a playground. While all of these parks serve as excellent amenities to the city, the biggest impediment to their use by the 135th Street community is easy, safe access for pedestrians and bicyclists.



Figure 6.20: *The shelter at Gezer Park provides an excellent space for community gathering.*



Figure 6.21: *Public art in the park enhances the cultural significance of this greenspace.*

Signage and Wayfinding

Wayfinding encompasses all of the ways in which people orient themselves in unfamiliar or new surroundings and “find their way” from place to place. Programs generally consist of signs, symbols, colors, messages and images. People find their way around a complex or unknown environment by a process known as cognitive mapping — creating a mental image of a place which improves over time.

Wayfinding can be part of the community’s identity. The visual representation of that identity is the thread of continuity from gateways to corridors to commercial centers to neighborhoods. A successfully designed sign program is not only functional and memorable; it also extends a welcoming gesture to visitors and residents. It reflects the community’s values that they care for everyone’s comfort and experience.

As visitors enter the corridor on 135th Street from the east, there is currently no signage to indicate that once crossing State Line Road, you have entered Kansas, Leawood, or the 135th Street corridor. The same is true for Eastbound visitors as they cross Nall Avenue. While the existing street light banners do indicate that Leawood is the residing city, the corridor is missing those signature gateway pieces that announce arrival into Leawood and give the first impression of the city’s identity and distinctive qualities to visitors or those passing through.



Figure 6.22: *This signage element at Plaza Pointe is one of the few wayfinding pieces in the corridor.*

Utilities

The 135th Street Corridor is located in the service areas of WaterOne, Johnson County Wastewater, Kansas Gas Service, and Kansas City Power & Light. According to Johnson County AIMS mapping, many eight-inch gravity active sanitary sewer connections are available between Nall Avenue and Roe Avenue.

Undeveloped areas currently lack sanitary sewer connections, but several main lines are in the vicinity. A ten-inch gravity active sanitary sewer line is present in the southeast quadrant of Mission Road and 135th Street, eventually connecting to an eighteen-inch gravity active sanitary sewer line running north-south on the western side of Kenneth Road across 135th Street. The sanitary sewer lines in this area run to the Blue River Wastewater Plant, located to the south in the southwest quadrant of 151st Street and Kenneth Road.

WaterOne service maps indicate that a 12-inch water main runs along the south side of 135th Street from Nall to Kenneth Road. The line is fed from a 20-inch transmission line along 135th west of Nall. Between Kenneth and State Line, the line increases in size to 20 inches. A 12-inch line extends south along Kenneth Road to close the system loop. A 16-inch line extends continuously along Mission Road and a 12-inch line runs along Roe south of 135th Street. 8-inch lines are looped at sporadic locations along 133rd Street and 137th Street to serve existing and near term planned development. This infrastructure would probably provide adequate domestic supply capacity for day-to-day operations of potential development. However, the fire flow needs is the governing factor with regards to residual pressures in the system under a design event. Fire flow needs vary depending on type of development, potential density, the type of construction, and various other factors. Future development will require an in-depth analysis to assess the adequacy of the system based on a more detailed development plan proposal.

Power, telephone and cable facilities are buried between Nall and Fontana. West of Fontana, the facilities are co-located on overhead poles on the south side of 135th Street. A Transportation Development Dis-



Figure 6.23: *Overhead utilities currently exist around 135th Street and Kenneth Road.*

trict (TTD) plan along 135th Street will ultimately bury these lines. For the future burial of these facilities, the City should consider long range plans to ultimately widen 135th Street west of Fontana.

7

NEXT STEPS

To move forward with development of the 135th Street corridor, there are a number of key steps and strategies the City and the community can take to turn the vision for this area into a reality, creating a successful and vibrant district in Leawood.



Communication and collaboration will be key to the corridor's success.

Implementing the Plan

This document outlines the menu of implementation items the City should consider completing as it moves forward with implementation in the 135th Street area going forward over the next few years. The menu of implementation items is outlined below.

Recommendations

Formal Adoption of the Plan

We recommend the Governing Body adopt this document as part of the Leawood Comprehensive Plan. Doing so would help to capture the vision and strategies of the community, resulting from this process, and articulate to all parties the expectations for future development in the study area.

Integration of Plan into Public Works Documents

The City should move forward to formally integrate the conclusions of the 135th Street Plan with formal documents executed by the Public Works department on a regular basis. These plans may include but not be limited to transportation plans, utility plans, and related infrastructure master plans held by the city for various sectors of the city.

Updates to the Zoning Code and Leawood Development Ordinance (LDO)

The City should move forward with any necessary changes to the zoning code pertaining to 135th Street in order to encourage the kinds of development envisioned in this document.

The Leawood Development Ordinance has helped to govern development in the community for many years. However, in some cases, the rules and regulations need to be explicit enough for developers and staff to communicate with the same expectations and a clear language about site and development plans. The rules and regulations in the ordinance are complex enough that many developers often move into a complex negotiation process with the City as they move forward with site plans.

In order to more seamlessly encourage the right kind of mixed-use development in the area, the City should consider making adjustments to the LDO that provide additional incentives to help attract the kind of mixed-use development the City would like to see going forward.

Refine and revise incentive and financing strategies for Mixed-Use Development

The City of Leawood can use various financing strategies or incentives to help guide developers to move forward with higher quality mixed-use developments that meet or exceed the expectations of the community for the 135th Street corridor. The City can tie any incentives or financing options for developers to definitive goals the community has concerning street design, architecture, site layout, and various other factors. The City should consider articulating policies for the following tools, geared to the 135th Street area.

Transportation Development District

A Transportation Development District (TDD) is a special taxing district whereby a petitioner of 100% of the landowners in an area request either the levy of special assessments or the imposition of a sales tax of up to 1% on goods and services sold within a given area. Upon creation of a TDD by a municipality, the revenue generated by TDD special assessments or sales tax under Kansas law may pay the costs of transportation infrastructure improvements in and around the new development.

STAR bonds

These are bonds that specifically allow for additional tax monies, beyond those allowed by TIF, to pay for improvements at projects that feature a regional draw or may bring tourism dollars into the state of Kansas. The Legends development in Kansas City, Kansas, for example, used STAR bonds to help finance public improvements given that the NASCAR track included in the project would bring outside tourism dollars to the state.

Density Bonuses

The City already has policies in place to allow a developer to create higher density projects on various portions of projects in exchange for leaving environmentally or aesthetically sensitive areas free from de-

velopment, as open space or pedestrian plaza space. To ensure that these programs are recognized and utilized, the City should revisit language in the LDO concerning density bonuses and their requirements to make them as effective and measurable as possible.

Revise Design Standards and Consider a Form Based Code

The City may wish to move beyond normal design guidelines and create and institute a formal Form Based Code for the study area (FBC). FBC would provide more specific urban design guidance for various types of transects along 135th Street.

Create a Marketing Plan and Strategy for the 135th Street Corridor

The City should move forward to develop and implement a more formal marketing plan for the area in order to attract and promote the kinds of development that the community desires for this portion of Leawood. In collaboration with the Leawood Bike and Pedestrian Master Plan, this marketing strategy would include the following components:

A process for developer recruitment

The City should articulate how it would attract the very best mixed-use developers, not only from the Kansas City area, but also from around the nation. This planning document, along with other marketing material, can help the community attract interest from the developers who have proven track records of implementing successful mixed-use developments. This recruitment process may include developing marketing material or even formally issuing a Request for Proposal for development of certain areas along or near 135th Street.

A process for developer facilitation

The City should outline a process to formally facilitate development agreements and buy-in on development plans with developers as projects move forward. This process would include any negotiation for incentives, discussions of design standards and site layout, and related items. Articulating this process clearly to developers at the outset will help streamline the development process and attract the highest quality developers to the area.

Creation of Business Improvement Districts

One way to organize and facilitate this process is through the creation of a Business Improvement District (BID). A Business Improvement District is a group of community retailers, property owners, tenants, and developers who work as a group to provide the best possible environment for their businesses and properties to prosper. In order to do this, the group may take on responsibilities for:

- Maintenance of some areas, parks, or streets
- Infrastructure development or improvements
- Aesthetic enhancement of the public realm through art, landscape, or signage programs
- Recruitment of new businesses
- Recruitment of developers
- Production of community events (such as art fairs or weekly farmer's markets)
- Marketing campaigns and advertisement

Development agreements

The city should pursue the creation of development agreements to secure the most responsible and effective development pattern for the 135th Street corridor. A development agreement would be a contract between the City and a property owner or developer. The purpose of a development agreement is to specify the conditions, standards and quality that will govern the development of a property. These kinds of agreements can be beneficial to both the developer and City by confirming the regulations of development and assuring that a project does not have any negative implications or impacts on its surrounding community or infrastructure. A development agreement holds both parties responsible to conditions and obligations outlined in the agreement and can provide the City with the best possible development while allowing the developer to proceed without the potential of changes in regulations.

Signage and Wayfinding Plan

This planning document outlines the need for the community to improve the signage and wayfinding within and entering the study area and the City of Leawood. The City should move forward with more formal design of signage and wayfinding components and articulate the locations for signage and wayfinding assets, in a standalone plan.

This plan will help guide public improvements for district, pedestrian, and bicyclist, signage and wayfinding going forward.

Measuring Outcomes

The 135th Street Community Plan outlines a series of potential updates to the Leawood Development Ordinance and the 135th Street Urban Design Guidelines. These updates will help the City move from Visions to Goals and eventually into an Implementable Strategy.

As developments take place throughout the corridor, the City should pursue measuring both the successes of development and the successful implementation of this plan. To do that there are a number of elements that can and should be measured:

- Percent increase in tree canopy. The protective and cooling effects of increased shade can significantly improve the pedestrian environment. Recommended canopy cover for urban districts is 30 percent of the total area.
- Increase in bike facilities. Measuring the mileage of new bicycle routes will support the city's vision of encouraging alternative modes of transportation. Additionally, cities around the country are now performing "Commuter Surveys," to determine how commuters are getting to and from work in their neighborhoods. These studies help cities continue to educate the public about alternative modes of transportation and measure where city facilities are either oversupplied or lacking in specific neighborhoods. In the future, Leawood may consider one of these surveys as a beneficial study for their continued development and improvement.
- Reduction in pedestrian-motorist collisions. Providing an excellent pedestrian environment is a top priority for development. Recommendations for traffic speeds, pedestrian amenities, the provision of street trees, and crosswalk amenities all collaborate to provide safe, comfortable pedestrian-friendly streets. Comparing the number of pedestrian-motorist collisions along major roads in the corridor, before and after the implementation of the recommendations laid out in this plan will give the City evidence that the new programs outlined here are either working, or could use more attention.

- Vacancy rates. As development in the corridor takes place, it will be important that the city track the vacancy rates of developments to assess how types of development are selling and what streetscape and pedestrian amenities are attracting which kinds of development.
- Stormwater capture. New development in the corridor is going to significantly impact the quantity and quality of stormwater entering Leawood's infrastructure. The recommendations outlined in this plan offer some best management strategies for dealing with this increase in runoff. The success of these strategies can be measured by comparing the amount of water that would typically enter a non-permeable, non-native streetscape versus the quality and types of streetscape materials outlined in this plan.

ECONOMY

Foster a positive investment climate.

- Provide a street framework that is attractive to investors and flexible enough to accommodate a mix of land uses.
- Provide clear and transparent communication among property owners, developers, city staff and residents.
- Use current demographics and market trends to predict the most optimal mix of land uses, building types and tenants.

ART

Establish a distinctive identity for the City of Leawood

- Provide guidance for the establishment of a community signage and wayfinding program.
- Identify trends in community visual preferences for corridor elements.
- Provide awareness of public art within the corridor.

COMMUNITY

Encourage a mix of quality housing types and residents.

- Plan for building heights, densities and characteristics that closely align with community interests and preferences.
- Plan for the physical and social needs of multi-generational constituents.

As development occurs, protect surrounding neighborhoods and home property values.

- Create smooth and harmonious transitions from district cores to surrounding residential properties.
- Create streetscapes that respond to traffic needs but also provide pleasant experiences and attractive environments for drivers, riders, pedestrians and bicyclists.

Provide and encourage alternative modes of transportation

- Improve comfort and safety for pedestrians and bicyclists.
- Expand the transportation network of routes and connections.
- Provide amenities for future transit opportunities.

Provide pedestrian-oriented districts

- Enhance streetscapes to allow for a variety of pedestrian activities that include walking, stopping, meeting, shopping, resting, and dining.
- Create district aesthetics that can be identified as pedestrian-friendly and give a sense of continuity throughout the corridor.

ENVIRONMENT

Promote environmentally sensitive development

- Reserve property for greenspace.
- Recommend progressive stormwater management technologies to improve water quality on site and at a regional scale.
- Utilize alternative materials to decrease impervious surfaces within project footprint.
- Provide recommendations for sensible energy use.



APPENDIX A TRANSPORTATION ANALYSIS



MEMORANDUM

To: Design Workshop

From: Nelson\Nygaard

Date: August 15, 2013

Subject: Leawood, KS 135th Street Corridor Plan – Accommodations for Multi-Modal Transportation

INTRODUCTION

The following chapter provides an overview of available existing conditions data throughout the corridor. This chapter documents and assesses existing street networks and infrastructure conditions including surrounding streets and developments. Vehicle, pedestrian, bicycle, and transit infrastructure conditions, including access and circulation are documented. This chapter concludes with a qualitative and quantitative analysis of the Multi-Modal Level of Service for all modes of transportation which helps to highlight the critical issues affecting mobility in the corridor, by mode. These conditions will help inform future recommendations for transportation improvements to this corridor.

EXISTING TRANSPORTATION INFRASTRUCTURE

Vehicles

Roadway Functions and Characteristics

135th Street

135th Street is a six lane divided arterial, formerly known as the K-150 highway that bisects Leawood, KS in the Southern half of the city. The street runs in an east to west direction connecting residents and visitors to Overland Park, KS to the west and Missouri to the east. The 135th Street right-of-way is approximately 200 feet, and has access points located at roughly quarter mile intervals. For most of the length of the 135th Street corridor, the street accommodates three through travel lanes in each direction. However, this narrows to two lanes in each direction east of Roe Avenue. The speed limit along the street is posted at 45 miles per hour.

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135th Corridor Plan

City of Leawood

Within the boundaries of Leadwood's 135th Street Corridor, there are major signalized intersections at Lamar Avenue, Nall Avenue, Briar Street, Roe Avenue, Mission Road, Pawnee Lane, Chadwick Street, Kenneth Rd, and State Line Road. Unsignalized intersections on 135th Street are at Birch, Fontana, Linden Streets. The three through travel lanes in each direction are augmented with dedicated left and right turning lanes approaching major intersections. Along the corridor, lanes are approximately 13 wide with no marked shoulders.

The presence of sidewalks on 135th Street is intermittent and varies throughout most of the corridor. Sidewalks are not present at various locations, including the southern portion of 135th between Lamar and Nall Ave, and most of the north and south segments of the street between Roe Ave and State Line Road, with the exception of a sidewalk located on the northern segment between Mission Rd and Pawnee Lane. Discontinuous sidewalks exist from the Lord of Life Lutheran Church and Mission Bank at the intersection of Chadwick and 135th Street. Sidewalks on 135th Street are generally set back from the roadways anywhere from five to 20 feet with landscaped buffers. There are no specific bicycles facilities on 135th Street, with the exception of the northern sidewalk segment between Lamar and Nall Street which is designated as a shared use path for both bicycles and pedestrians.

W 133rd Street

W 133rd Street is an arterial road that runs east to west from Tomahawk Creek to State Line Road, where the road then changes to 131st Street. The roadway has one though lane in each direction with dedicated left and right turning lanes at major signalized intersections including Nall Avenue, Roe Avenue, Mission Road, and State Line Road. Unsignalized "T" intersections occur at a number of site driveways as well as collector streets such as Birch Street, Briar Street, and Pawnee Lane. The intersection of Lamar Avenue and 133rd Street operates as a yield-controlled rotary.

Sidewalks are generally present throughout the street, however do not exist on the northern segment of the road between High Drive and State Line Road. The northern segment of the sidewalk from Nall Avenue to east to High Drive is designated as a shared use path for both bicycle and pedestrians. The W. 133rd Street roadway west of Birch Street to Metcalf Avenue is considered a shared roadway, allowing both bicycles and vehicles to share the lanes, however there are no marked signs indicating this designation. The posted roadway speed limit is 30 mph from Nall to Roe Avenue, and 35 mph from Roe to State Line Road.

W137th Street

W 137th Street is an arterial road parallel to but south of 135th Street that spans from Lamar Street to the west to Chadwick to the east. This road serves as a buffer between the densely settled single family neighborhoods to the south and the retail and commercial district along 135th Street to the north. W 137th Street is not a continuous roadway. One segment of the street begins at Lamar Avenue and ends at Mission Road. W. 137th Street resumes again at Pawnee Lane and ends at Chadwick Street. Similar to 133rd Street, part of the road is designated as a shared roadway, from Nall Avenue west to Lamar Avenue, while the southern portion of the sidewalk network between Nall Avenue and Mission Road is a shared use path. A sidewalk with a landscaped buffer is generally present on both sides of the road except for the northern segment between Lamar Avenue and Nall Avenue. Most intersections along W. 137th Street are "T" intersections and site access points. However major intersections - with Lamar Avenue, Nall Avenue, and Roe Avenue - are either yield of stop controlled. The posted speed limit along 137th Street is 30 mph from Nall to Roe Avenue and 35 mph from Roe to State Line Road.

State Line Road

State Line Road is an urban arterial that runs north to south from Easterly Avenue in Kansas City to 135th Street in Leawood, before changing names to Kenneth Parkway south of 135th Street. The posted roadway speed limit along State Line Road is 40 mph. As its name suggests, State Line Road borders the state lines between Kansas and Missouri. Within the boundaries of the 135th study area corridor, State Line Road is a four lane divided arterial, carrying two lanes of travel in each direction with dedicated left and right turning movement lanes approaching major intersections. State Line Road has signalized intersections at 135th Street/Kenneth Parkway, W 133rd Street, and W 133rd /W 131st. A continuous, buffered sidewalk network is provided on both sides of State Line Road within the boundaries of the study area. There are no designated bicycle facilities present along this roadway.

Lamar Avenue

Lamar Avenue is a north to south oriented collector street that spans and connects the densely populated neighborhoods north and south of 135th Street. The roadway carries one lane of travel in each direction with dedicated turning lanes approaching major intersections. Lamar Avenue runs from Russell Street to the north to the 151st Street, where the street ends and resumes from 151st to 159th Street. Within the boundaries of the study area, Lamar Avenue borders vacant parcels on both sides of the road, however the street provides direct access for single family homes in the south directly onto 135th. There is one signalized intersection at 135th Street, and an unsignalized yield controlled intersection on 133rd. Sidewalks are present on the eastern half of the road, but are set back with a pedestrian buffer.

Nall Avenue

Nall Avenue is an urban arterial that extends from the north in Mission, KS to the south at W 167th Street. The landscape and character of Nall Avenue varies within the boundaries of the Study Area, as Nall Avenue is bounded by retail and business establishments to the northeast and suburban residential homes to southeast, as well as vacant parcels. Although sidewalks are present on both sides of Nall Avenue, the segments on the western edge are deteriorating. There are no bicycle facilities on this street. Nall Avenue contains three intersections, W 137th Street and Golden Bear Drive are stop and yield controlled, and 135th Street which is signalized. The speed limit along Nall Avenue is 45 mph.

Birch Street

Birch Street is a north to south local street that bisects the predominantly residential neighborhoods on the western edge of the 135th Street corridor with the Parkway Plaza West development. This road is largely intended for residential travel, providing direct access to driveways and parking lots within the neighborhood developments. Birch Street carries two travel lanes, one in each direction, and has stop controlled “T” intersections with W 133rd and W 135th Streets allowing access to, but not across 135th Street. There is limited sidewalk presence along the stretch of this local roadway.

Briar Street

Briar Street is a divided two-way collector street that runs from 133rd Street to 137th Street. It provides direct access for the retail businesses along 135th Street and Briar Street, such as Parkway Plaza and CVS, helping to feed traffic either north or south onto W 133rd, W 135th, and W 137th. Roadways and sidewalk facilities are in generally good condition, with many of the

135th Corridor Plan

City of Leawood

intersecting driveway access points containing brick paved crosswalks and newly paved sidewalks. Decoratively paved crosswalks are located at the major stop controlled intersections - W 133rd Street and W 137th Street - as well as the signalized intersection at W 135th. The sidewalk is set back from the roadway and contains landscaped buffers with trees lining the entirety of the street.

Linden Avenue

Similar to Briar Street, Linden Avenue is a collector street that provides direct access to local retail businesses and shops in the Plaza Point area in the 135th Street corridor. The street runs north to south from 135th Street to 137th Street, with one lane of travel in each direction, and stop controlled intersections at these junctions. Recent developments adjacent to the street have helped to create a complete sidewalk network on both sides of the roadway as well as a landscaped pedestrian setback at the 136th and Linden Avenue intersection.

Roe Avenue

Roe Avenue a north to south oriented street that extends south from 143rd street to the northern neighborhoods of Leawood, where Roe Ave changes into S. 18th Street Parkway. Within the boundaries of the 135th Corridor Study Area, Roe Avenue is bordered by the Parkway Plaza and Plaza Pointe developments to the west, and vacant land parcels to the east. Roe Avenue is a four lane divided arterial serving to provide direct access from residential neighborhoods to the regional access points and retail businesses along 135th Street. Sidewalks are present on both sides of the roadway in the Study Area, with the western segment designated as a shared use path between W 133rd and W 137th Streets. In addition to site access, major signalized intersections include W 135th Street and W 133rd Street and an unsignalized yield intersection at W 137th. The posted speed limit along Roe Avenue is 35 mph.

Fontana Street

Fontana Street is a local collector street that only connects W 137th Street with 135th Street, providing site access to recent developments. Sidewalks are in good condition with buffered landscaped trees lining the entirety of the street. Brick paved crosswalks are present at all site access intersections, including W 135th and W 137th Streets. Curb cuts and crosswalks have been placed along the segment in anticipation of future site access development on parcels adjacent to the street.

Mission Road

Mission Road is a north to south collector street that extends from Fairway, KS to the north to W 231st Street in Leawood, KS. Within the Study Area boundary, Mission Road has one travel lane in each direction. The Mission Road sidewalk network is incomplete, most notably on the western edge between W 133rd and W 135th Streets, as well as most of both sides of the segment from W 135th to W 138th Streets. Most of Mission Road abuts vacant parcels, except for Market Square Center located at the northeastern corner of the street within the study area. The posted speed limit along Mission Road is 35 mph.

Pawnee Lane

Pawnee Lane is a north to south oriented street connecting W 133rd and 137th Streets. Pawnee contains one lane of travel in each direction and only one signalized intersection at W 135th Street. The W 133rd and W 137th Streets are stop controlled “T” intersections. Generally sidewalks are present, except for the eastern segment, north of W 135th Street and on the western segment south

of W 135th. There are no bicycle facilities on Pawnee Lane. Pawnee provides direct access to Market Square Center, which borders the northeastern segment of the street and serves as a collector street for the residential neighborhoods directly southwest of Pawnee.

Chadwick Street

Chadwick Street is a two way roadway running north to south and connecting W 135th and W 137th Streets. Chadwick provides direct site access to the Lutheran Church, Mission Bank, and the residential neighborhoods south of W 137th Street. Sidewalks are in good condition, with landscaped buffers and tree lined areas along the roadway. The Chadwick and W 135th Street intersection is stop controlled, however there is no signal at the W 137th intersection.

Kenneth Road

Kenneth Road is a connector street that provides access between W 135th Street and Kenneth Parkway. Kenneth Road has one lane of travel in each direction, with a signalized intersection at W 135th Street and stop-controlled intersection at Kenneth Parkway. Sidewalks are adequate and present along both sides of the road, but with no bicycle facilities present.

Pedestrian Infrastructure

Pedestrian infrastructure and facilities varies throughout the 135th Corridor Study Area. Recent infill developments along 135th Street have helped to create, maintain, and upgrade existing sidewalks to City design standards, with attractive, well designed spaces. However on undeveloped or isolated parcels, sidewalks are often lacking. This sparse, uneven development pattern has created discontinuous sidewalks with an overall infrastructure that does not provide mobility or certainty of connectivity for anyone seeking to walk to, through or within the Study Area. Recent developments have built sidewalks, highly visible crosswalks, and accessible pedestrian ramps in the areas directly adjacent to their business. However, in most cases the parcel is left untouched, creating sidewalks and crosswalks that lead to vacant parcels or that are completely disconnected.

Some developments have created an integrated internal pedestrian environment. For example, Parkway Plaza has created a complete pedestrian system that ties together its retail businesses with a sidewalk network that makes it convenient for patrons to visit more than one business. Developments have also created pedestrian plazas or amenities at the 135th Street intersections. However these tend to be isolated from the broader context of the corridor, making it difficult for pedestrians to travel between them, such as from Plaza Pointe to Market Square Center located directly to the east.

Sidewalks have been completed along most of the roadways that intersect W 135th Street, and these often contain landscaped grass buffers separating walking space from the road. While the existence of the sidewalk is an important step, the quality, connectivity and design of the sidewalk and its presence at major intersections are critical to creating connectivity. There are 12 intersections - nine signalized and three unsignalized - along 135th Street. Nine of these (75%) contain an incomplete sidewalk network, lacking sidewalks on one or more of the legs. Half of the intersections, six of the twelve, do not have pedestrian crosswalks.

W 135th Street itself is a significant pedestrian barrier at major intersections, due to its width, character and vehicular orientation. With two to three travel lanes in each direction, augmented by dedicated turning lanes at major intersections, W 135th Street can require a pedestrian to cross up to nine vehicular travel lanes (over 100') to walk between developments. With the current lack of accessible ramps, crosswalks, and continuous sidewalk network, this environment is unrealistic for the promotion of walking, as evidenced by the low level of current pedestrian activity.

Additionally, the extended block lengths on 135th Street degrade the potential connectivity and walkability of the corridor. Most blocks are fairly long, extending well beyond comfortable pedestrian distances of 250' - 400', with many also lacking or with limited pedestrian infrastructure. The smallest block length with a sidewalk along 135th Street is approximately 600 feet, while the largest blocks, located to the east of the corridor, without ant sidewalks are approximately a quarter (1,320 feet) to a half (2,640 feet) long.

Bicycles

The W 135th Street corridor does not have dedicated on-street facilities for bicycling. Bicycle parking facilities are also not present along the street. The City of Leawood and the Mid-America Regional Council have designated multi-use and shared use paths along wider sidewalks and on certain streets as well as unmarked shared roadways, where vehicles and bicycles are encouraged allowed to share the road, on lower volume roadways.

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Shared use pathways exist both within and surrounding the 135th corridor. They are often paved and wide sidewalks located on one side of the roadway, set back by landscaped grass buffer. These shared paths link to larger trails within the area such as the regional Indian/Tomahawk Creek Trail, directly northwest of the corridor. There is a trail head located just north of the corridor, with recreational vehicle parking for visitors and residents. Pathways within the corridor are located at:

- W 133rd Street from Nall Street to High Drive
- W 137th Street from Nall Street to Mission Road
- W 135th Street from Lamar Avenue to Nall Avenue
- Roe Avenue from W 133rd to W 137th Streets

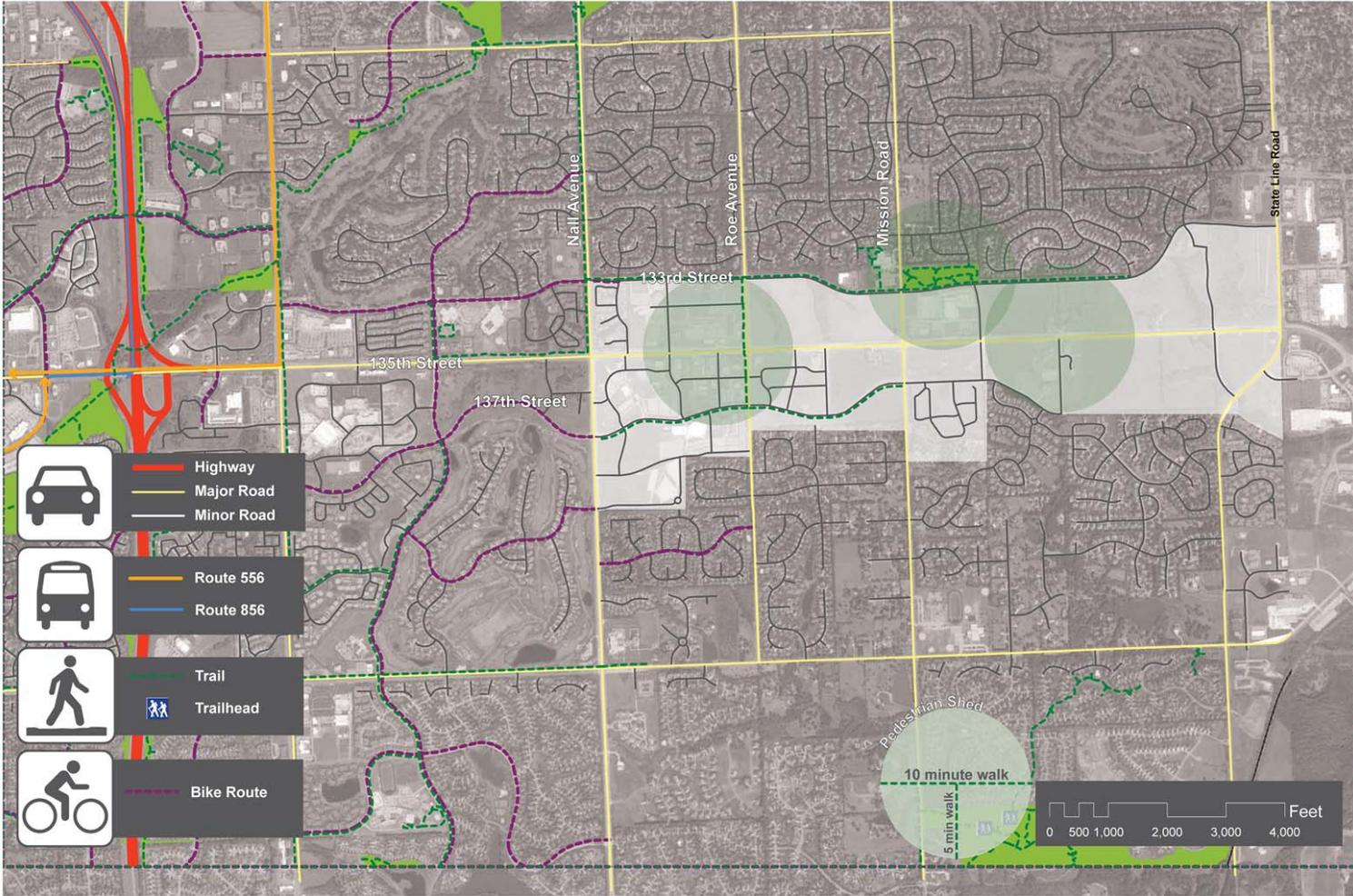
Low volumes streets within the corridor have been designated as shared roadways, where vehicles and bicycles are able to share travel lanes because of low volumes or speeds that allow for safe access. These streets do not have any on road shared lane markings or signs. They are suggested routes for bicyclists who want to travel on the road within this corridor and through the City. Lamar Avenue and W 137th Street from Lamar Avenue to Nall Avenue is designated a shared roadway.

With the exception to these facilities, field observations indicate that many developments within the corridor currently do not provide bicycle accommodations. A majority of area development do not provide bicycle facilities such as bicycle parking. In general, the somewhat wider lanes, and overall existing street widths on major roadways have sufficient right-of-way to add bicycle amenities.

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Figure 1 Infrastructure Network - 135th Corridor Study Area

Travelling Around 135th Street



Existing Circulation and Access Patterns

Vehicles

135th Street is a six lane divided arterial, formerly known as the K-150 highway that bisects Leawood, KS in the Southern half of the city. The street runs in an east to west direction connecting residents and visitors to Overland Park, KS to the west and Martin City, Missouri to the east. W 135th Street is an important regional connection, providing ease of connection to regional highways - Interstate 49 to the east, and Route 69 to the west. It likely also serves as an east west alternative to Interstate 435 which is located several miles to the north. W 135th Street is also a destination in itself with a mix of uses (retail, houses of worship, office) serving an extensive geographic area in this part of the Greater Kansas City area.

Though comprehensive traffic count data is not fully available, W 135th Street appears to carry between 30,000 and 35,000 vehicles a day¹. A comprehensive traffic network, with counts at major intersections, is available for the PM peak hour, and was used to interpret overall traffic patterns. Figure 2 shows both turning movement counts and segment volumes for the PM hour, with summary observations provided below:

- Peak hour volumes are high relative to overall volumes (PM peak represents 10% of overall daily volumes)
- Within the Study Area, W 135th Street primarily orients west, towards Route 69, as
 - Volumes on the western portion of the corridor are higher
 - Westbound volumes grow by segment in the PM peak
 - Eastbound volumes, coming from Route 69, are consistently high
 - With higher eastbound volumes in the PM, and assumed higher westbound in the AM, 135th Street, volumes may tend to be more residential in nature.
- Nall Avenue and State Line Road are the highest volume North South Intersecting streets
- Roe Avenue and Nall Avenue add a substantial amount of westbound trips toward Interstate 69.
- Bisecting roadways such as Metcalf Avenue, Nall Avenue, and State Line Road, all provide direct access to Interstate 435 north of the corridor.
- Cross Street volumes change substantively at W 135th Street, with a significant percentage of vehicles turning onto the corridor at most intersections, rather than connecting north-south.

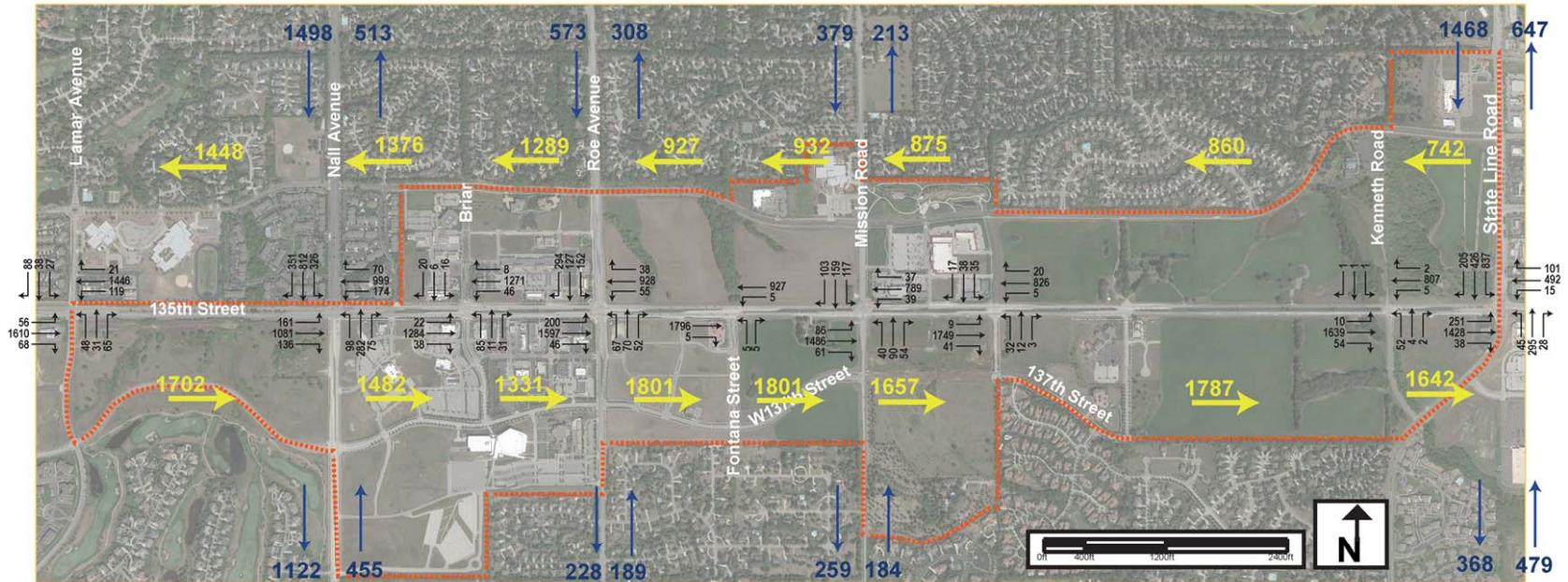
The current design of the street network appears to be intended to accommodate both the peak hour volumes, and the substantial number of turns at each intersection. With limited current connectivity and alternative circulation options, all vehicles are directed to the major roads and intersections.

¹ http://www.kssfuels.com/Solutions/Data_Intelligence/TrafficMetrix%20_Published_Counts.html

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Figure 2 135th Corridor Peak PM Vehicle Volumes

135TH CORRIDOR VEHICLE VOLUMES (Peak PM)



LEGEND

- Turning Movement Counts
- North/ South Volumes
- East/West Volumes

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Pedestrians

Ideally, the W 135th corridor could be a place where Leawood comes together. As a primary retail destination with a mix of additional complementary uses, lying between dense, successful residential areas, 135th Street could be a magnet for pedestrians. While many facilities have been required and built for pedestrians, anecdotal and intersection count data shows that these are not well used. With growing evidence of the benefits of walking for environmental and health reasons, and an expanding national desire for walkable environments, the 135th Street corridor has several opportunities to attract additional pedestrians:

- Connections to the adjacent neighborhoods could provide ease of access for residents
- Walking within or between developments would benefit patrons and employees, while reducing vehicular traffic
- Recreational pedestrian activity for Leawood residents and visitors would greatly enhance the character and usability of the 135th Street corridor

However, 135th Street's vehicular orientation has created an unwelcoming and hostile environment for pedestrian wishing to access destinations in the commercial areas along the corridor. The sometimes heavy and fast moving traffic along W 135th blunts the strong desire that would otherwise connect pedestrians to destinations along the corridor. While there are some crosswalks along W 135th Street, long block segments and lack of permeability between the north and south sides of the road make it difficult for pedestrians to travel between destinations. Similarly there are numerous conflict points with vehicles due to the lack of proper crosswalk designs, yield to pedestrian signage, and excessive crossing distances. However, opportunities to expand pedestrian access and connections from residential neighborhoods and regional shared use paths into this commercial district and corridor exist.

Many of the retail developments located along the corridor are set back from the roadway and buildings are not placed oriented toward the main street. These buildings are often built in clusters with the front door oriented toward parking lots, which often lack adequate pedestrian access and facilities from the main road. The reclusive design along W 135th makes it difficult for pedestrians to access destinations without having to cut through large parking lots to get to the front door. For more recent developments, it may be easy to walk and connect with retail businesses within the same parcel, however it is sometimes impossible to walk to other destinations along the corridor because the lack of facilities at major intersections.

Many of the streets within the corridor lack curbside parking or other streetscape amenities that enhance the pedestrian experience. Even within the neighborhoods within the corridor, the sidewalks, crossings, and connections are not always conducive to encourage pedestrian activity. There is a lack of wayfinding signage throughout the corridor that could help lead pedestrians to key destinations such as the shared use path as well as retail locations. Field observations indicate that there were relatively low pedestrian volumes at major intersections along the corridor. A more expansive pedestrian and bicycle issues and opportunities analysis subsequently in this chapter explores these issues further.

Bicycles

The City of Leawood and surrounding communities are blessed with an expansive multi-use trail system that extends throughout the region. Existing shared use pathways that bisect into the W

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135th corridor, branch off directly from the Tomahawk Creek Trail located to the northwest of the corridor. This segment of the trail runs down Nall Avenue to W 133rd Street connecting to Gezer Park in the study area.

Bicycle facilities seem mostly designated for recreational users. Bicycle counts are unavailable for most area facilities, and anecdotal evidence suggests that there are few bicycle commuters or retail customers. Without the critical connections needed to allow for fast, safe passage between residential neighborhoods and major destinations, commuting by bicycle around or through the 135th Street corridor can be difficult. Moreover, many of the developments appear to lack bicycle specific accommodations - storage facilities, bicycle racks, shower and changing facilities - further discouraging employee and customer use of bicycling for everyday access.

Although there are off-road shared use path facilities throughout the corridor, these facilities are sparse and network is incomplete. Shared use facilities located on W 137th Street begin on Nall Avenue and end abruptly on Mission Road and bicyclists need to backtrack their route in order to return back to their previous destination. Existing gaps in the network create conflicts for bicyclists who are unfamiliar with the area and may compromise the safety of cyclists who are not comfortable using sharing the road. Although there are roadways that are designated as shared facilities, they do not contain any shoulders or buffers to provide the safe cycling environment that novice bicyclists would need. Similarly the speed limit and capacity of these roadways are hostile to accommodate bicyclists.

In general most bicycle facilities are located to the west of Nall Street, however there is little connectivity or direct access to these facilities from segments along 135th Street. Existing facilities, such as the shared use path and trailways are not well advertised throughout most of the corridor. Field observations indicate that there is little to no bicycle activity along these shared use paths, and on roadways throughout the corridor because of the hostile bicycling environment. A more expansive pedestrian and bicycle issues and opportunities analysis subsequently in this chapter explores these issues further.

Existing Public Transportation Network

Johnson County Transit is the public, transit operator that services entire Johnson County region in Kansas, and is one of three transit providers in the Kansas City region. The Transit authority provides commuter fixed-route and flex-route public transit system, known as “The Jo”, as well as a paratransit service called “Special Edition”. The system has a number local and express bus routes connecting Johnson County communities to Kansas City, MO, Kansas City, KS and Lawrence, KS.

The agency provides services to Kansas City, MO that provide connectivity with services provided by Kansas City Area Transportation Authority (KCATA). However, the predominate customer pattern is characterized by commuters who ride “TheJO” directly to their worksite with no need to transfer to KCATA service to finish their trip.

As shown in Table 1, the Johnson County Transit system operates with a budget of about \$11.5 million dollars, with geographic coverage of over 160 square miles. All bus routes operate during the weekday with operating hours generally ranging from 5:00am to 7:00pm, and some routes providing limited night service. Fares range from \$2.25 for standard express routes, \$3.50 for commuter express routes, and \$1.10 for reduced fares. In 2012, TheJO reported the highest

annual ridership to date, with about 560,000 passengers. However recent budget cuts since 2012 and fare increases since 2013 have slightly decreased ridership compared to 2012 numbers to date.²

Table 1: Johnson County Transit Summary Information

	JCT
Primary City	Olathe / Overland Park, KS
Square Miles	162
Population	425,067
Current Year Operating Budget	\$11,688,709
Current Year Purchased Transportation	\$7,439,028
Current Year Capital Budget	\$9,349,528
Annual Unlinked Trips – FR	602,565
Annual Unlinked Trips – DR	99,181
Annual Revenue Hours – FR	64,545
Annual Revenue Hours - DR	40,129
Number of Routes	22
Days of Operation	Monday - Friday

Sources: Johnson County Transit, National Transit Database 2011 Data

Existing Routes

Johnson County Transit does not currently operate any bus service along the W 135th Street corridor, however there are several bus routes that run within close proximity. The closest route passes about one mile away from Nall Avenue on Metcalf Avenue. As shown in Table 2, many of these express routes provide limited service hours for commuters during weekdays only. The closest bus routes to the 135th corridor include Routes 556/856,664, and 673, which run along Metcalf Avenue and Antioch Street. These routes provide access to from Leawood to Overland Park and Downtown Kansas City, with various destinations and stops along the way. Three park and ride locations within a three mile radius from the corridor further allow passengers to park at no charge and utilize transit services.

² Strate, Shawn (Johnson County Transit), email message to Cynthia Lin (Nelson\Nygaard), July 31, 2013.

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Table 2: Johnson County Transit Routes (near Study Area)

Route	Origin/Destination	Hours of Operation	Frequency	Ridership
Route 556 Metcalfe- Plaza	Overland Park- Kansas City	5:23am to 9:41am 2:49pm to 7:11pm	30 minutes	164
Route 856* Metcalfe-Plaza FLEX	Overland Park- Kansas City	9:17 am to 3:47pm	60 minutes	N/A
Route 673 South Overland Park Express	Olathe- Downtown Kansas City	5:44am to 8:20am 3:38pm to 6:46pm	30-40 minutes	167
Route 664	Overland Park- Kansas City	5:48am to 8:37 am 3:12pm to 6:50pm	25-30 minutes	171

Source: Johnson County Transit Authority

*Route 856 is a flex route service that operates in conjunction with Route 556, however provides deviated routes up to ¼ mile from stops and curb to curb service with advanced notice.

Transit Facilities

Bus Stops

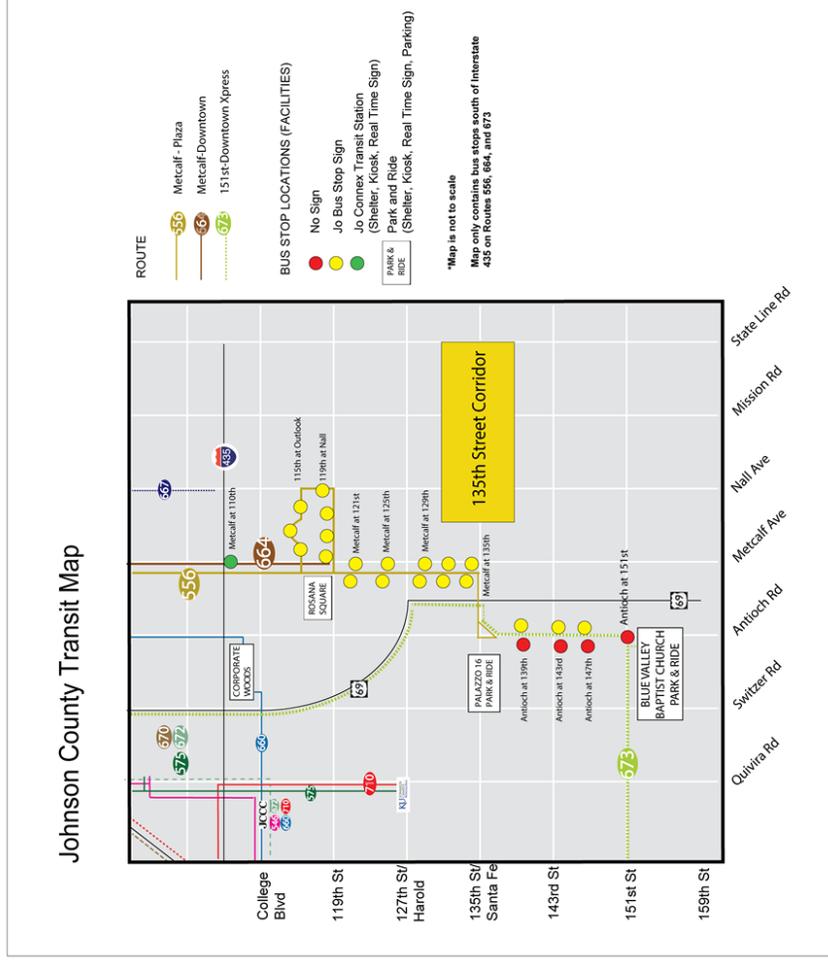
The bus routes located near the Study Area often lack basic transit and pedestrian amenities. Although most locations are found at prominent intersections, stops are hard to identify because signage is small and hard to find. Pedestrian facilities and crosswalks are found at most locations, yet many places lack additional sidewalk or pedestrian amenities such as a bench or shelter to wait for the bus. Some locations along Metcalfe and Antioch lack signage all together.

The JO also has a policy allowing for passengers to “flag down” a bus along most streets, except at unsafe locations, along highways, and in right turn lanes. With recent and ongoing projects to improve basic passenger infrastructure, the JO has started to remove this policy from some routes and designating limited stop locations along their routes. This includes routes 556/856 and Route 664.

As shown in Figure 3, there are a limited number of dedicated bus stops located in proximity to the corridor. Stops along Metcalfe that are closest are not readily accessible for pedestrians or bicyclists to the 135th Street corridor, as missing sidewalks and bicycle paths prohibit direct connections. Traveling to nearby Park and Ride locations appears to be the most convenient and accessible means of accessing transit from the corridor.

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Figure 3: Johnson County Transit Map with Bus Stop Locations



Source: Johnson County Transit Authority (reformatted)

Park and Ride

There are a number of Park and Ride facilities located about a three-mile radius from the 135th corridor - Rosana Square, Palazzo 16, and Blue Valley Baptist Church (BVBC). Johnson County Transit has agreements with local businesses for commuters to use Park and Ride locations at no cost. Transit facilities have been recently upgraded to provide up to date real time information, new kiosks and bus shelters for commuters. Both the Palazzo and BVBC locations provide bus stops along the public street, with sidewalks connecting the park and ride lot to the new station locations. At Rosana Square, the station is located within the parking lot.

Johnson County Transit has provided general estimates of boarding and alighting at these Park and Ride locations, through car counts.³ The Palazzo Park and Ride was estimated to have about 80-120 commuters a day with nearly all commuters utilizing Route 673. The BVBC Park and Ride facilities has about 30-40 commuters a day. Rosana Square estimates were not provided because the Park and Ride parking lot is shared with other businesses; however general field observations

³ Ibid

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from the JCT noted that there are a decent number of people that walk to the stop, generally employees of surrounding businesses).

Figure 4: Rosana Square Park and Ride Bus Stop



Source: Johnson County Transit Authority

MULTI-MODAL ANALYSIS

As part of the existing transportation conditions analysis for the 135th Street Corridor Plan, operations for vehicles, pedestrians, bicycles, and transit modes in the study area were analyzed. To support the overall planning effort, the transportation analysis was approached using both qualitative and quantitative methodologies to understand and respond to the existing conditions and potential development scenarios envisioned. Qualitative analysis that looks at challenges, barriers and integration opportunities is important to understanding how the transportation network should be altered to achieve desired outcomes. This is especially true given the low levels of existing pedestrian, bicycle and transit use as well as the limited source data available. This analysis has been supported by quantitative measures that looked at both the level of service for pedestrians and vehicles by intersection and segments locations along the corridor, where data was available to draw conclusions.

Qualitative Analysis

Vehicle

The W 135th Street corridor is well designed in terms of processing vehicular traffic, with little conflict issues or barriers associated with vehicle circulation and access around the study area. The corridor has largely been built to accommodate the needs of vehicle, with excessive roadway widths, a disproportionate number of lanes, and an expansive roadway network that provides direct access to local and regional destinations.

The current design of the street network appears intended to accommodate both the peak hour volumes, and the substantial number of turns at each intersection. With limited current connectivity and alternative circulation options, all vehicles are directed to the major roads and intersections. This funnels traffic onto major streets, requiring them to be larger and operate with longer cycle lengths to accommodate the high volumes of through and turning traffic.

This defines the character of the street and the corridor and comes at the expense of both pedestrians and bicyclists. As shown in Figure 5, there are a number of conflict points that exist between vehicles and pedestrians and cyclists at major intersections along the 135th corridor due to the lack of pedestrian warnings for vehicles. Both eastbound and westbound 135th street approaches to major intersections are designed with six lanes in each direction, making crossing distances extremely lengthy and unwelcoming for pedestrians. This a result of need to accommodate excessive roadway capacity dedicated to vehicles, and design of the street network which constricts most traffic throughout the corridor into these intersecting nodes.

This analysis recognizes the lack of connectivity and implications of the rigid street network. The existing street design concentrates vehicle volumes along 135th Street, and does not provide a way to disperse traffic more efficiently on a street grid to destinations surrounding the corridor. The issues and barriers map highlights incomplete connections throughout the corridor that could provide opportunities to better connect both residential neighborhoods directly north and south of the corridor to these retail and business developments along 135th Street. Creating a more flexible street grid would alleviate and disperse traffic through a more connected street network.

Pedestrian

Over the years, the focus and interest on vehicle access and circulation throughout this suburban corridor has created a hostile pedestrian environment. Recent initiatives and developments have helped to generate several high quality pedestrian facilities that are dispersed throughout the Study Area, especially in individual developments. However these facilities are placed without much regard to the broader context of this suburban and auto-centric corridor. There is a lack of connectivity and conversation between existing developments that create gaps and incomplete connections that could have created a more pedestrian oriented environment along the corridor.

Figure 6 identifies the pedestrian issues and barriers along the corridor. The most notable pedestrian barrier continues to be at the major intersections on 135th Street. Although some intersections contain crosswalks and dedicated pedestrian signals, there is still a large disconnect between these facilities and in general along the corridor. The high speeds, long crossings, inconsistent sidewalks, and long pedestrian wait times all contribute to this real and perceptual barrier.

In addition, the amount of discontinuous and missing sidewalk locations throughout the corridor generally constrains pedestrians. The areas between Roe Avenue and Nall Avenue is the most developed from a pedestrian perspective, but those in this section who want to visit other developments often have no other option but to drive. Even between these streets there is a combined walking distance of about ½ mile, and throughout the corridor most blocks contain a walking distance of 600 feet or more, which is not conducive for pedestrians. Lastly there are not many pedestrian connections from the residential neighborhoods into the developments. Nearby residents may be the most likely potential pedestrian patrons of the retail on 135th street, but even these people must often use the major north south streets to walk to developments in the Study Area, at least doubling their overall walking time and distance as compared to taking a more direct path.

Bicycle

An analysis of the bicycle environment along the 135th corridor shows similar findings as those of the pedestrian environment. One of the major barriers is the lack of direct access between 135th Street and the few roadways that contain bicycle facilities. As shown in Figure 7, two types of bicycle facilities exist in the Study Area, yet there are significant gaps and disconnects in each network that prohibit its connectivity and accessibility.

Within the Study Area, designated shared roadways are generally low volume streets and are located west of Nall Avenue. However, all of these streets lack both infrastructure and signage to distinguish to drivers that road space is being shared with cyclists. Off-street facilities are more common throughout the corridor and generally concentrated along both 133rd and 137th Streets. However the street network constrains cyclists and pedestrians along these shared paths without any direct connection to the retail and businesses along 135th Street. Generally, there is a lack of facilities to help support streets that provide north and south access, while east to west access roadways are not complete.

Transit

There are no transit routes that directly service the 135th corridor in Leawood, KS. The closest bus stop location is about one mile away from the edge of this corridor, located on Metcalf Avenue

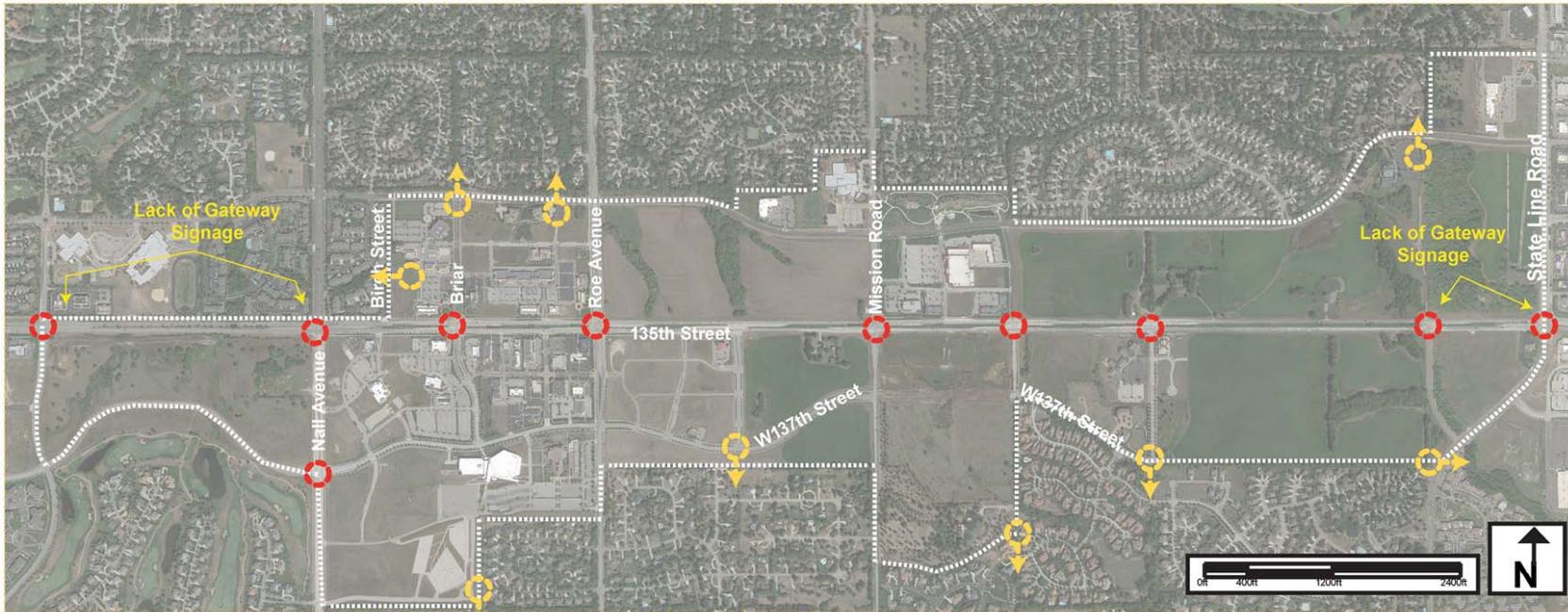
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and the closest Park and Ride location is almost three miles away. Pedestrian and bicycle infrastructure is both missing and incomplete along segments of 135th from Lamar to Metcalf, making access difficult for users to access these stop locations.

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Figure 5: Vehicles Issues and Barriers Map

VEHICLE ISSUES AND BARRIERS MAP



Legend

-  Incomplete Connections
-  Insufficient Pedestrian Warnings

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Figure 6: Pedestrian Issues and Barriers Map

PEDESTRIAN ISSUES AND BARRIERS MAP



Legend

- Missing Sidewalks
- Large Block Lengths
- Buildings Setback and Limited Front Door Connectivity
- Incomplete Connections
- Long Crossing Widths
- Missing Crosswalks

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Figure 7: Pedestrian Issues and Barriers Map

BICYCLE ISSUES AND BARRIERS MAP



Legend

- Incomplete Connections
- Vehicle and Bicycle Conflict Points
- Existing Shared Use Sidewalk
- Designated Shared Roadway

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Quantitative Analysis

Intersection Analysis

Vehicle Level of Service

To assess the quality of existing traffic flow at intersections, turning movement counts and volumes were evaluated utilizing the Synchro's intersection analysis. A peak PM Synchro network was provided for major intersections along the 135th Street corridor by the Johnson County Government. Utilizing this network, each major signalized intersection along the 135th Street corridor was analyzed for level-of-service (LOS), reporting the quality of traffic with a letter grade A to F and the stop time delay in seconds. As shown in Table 3, vehicle traffic operations at most intersections operate at a LOS C or better. Most intersections operate with minimum delay, which average less than 24-5 seconds.

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Table 3 Vehicle Level of Service Results

Intersection	VLOS	Delay (seconds)
Lamar Avenue and 135 th Street	C	23.9
EB left/ thru/ right	C	26.8
WB left/ thru/ right	B	14.2
NB left/ thru/ right	D	36.1
SB left/ thru/ right	D	36.9
Nall Avenue and 135 th Street	D	37.4
EB left/ thru/ right	B	16.7
WB left/ thru/ right	D	35.6
NB left/ thru/ right	D	45.9
SB left/ thru/ right	E	59.2
Briar Street and 135 th Street	B	18.8
EB left/ thru/ right	D	38.8
WB left/ thru/ right	D	37.6
NB left/ thru/ right	E	69.1
SB left/ thru/ right	D	42.9
Roe Avenue and 135 th Street	D	50.9
EB left/ thru/ right	E	65.5
WB left/ thru/ right	D	43.5
NB left/ thru/ right	D	39.3
SB left/ thru/ right	C	27.6
Fontana Street and 135 th Street	A	3.5
EB left/ thru/ right	A	4.1
WB left/ thru/ right	A	2
NB left/ thru/ right	D	45.6
Mission Road and 135 th Street	C	24.5
EB left/ thru/ right	B	15.4
WB left/ thru/ right	A	9.7
NB left/ thru/ right	D	47.8
SB left/ thru/ right	F	84.4
Pawnee Lane and 135 th Street	A	9.7
EB left/ thru/ right	A	5.7
WB left/ thru/ right	A	2.4
NB left/ thru/ right	E	59.2
SB left/ thru/ right	F	76.9

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Table 3 Vehicle Level of Service Results (continued)

Intersection	VLOS	Delay (seconds)
Kenneth Road and 135 th Street	A	6.1
EB left/ thru/ right	A	3.2
WB left/ thru/ right	A	4.3
NB left/ thru/ right	E	76.2
SB left/ thru/ right	D	47
State Line Road and 135 th Street	F	96.1
EB left/ thru/ right	F	101.9
WB left/ thru/ right	D	22.8
NB left/ thru/ right	F	135.4
SB left/ thru/ right	F	80.6

Pedestrian Delay Analysis

The existing Synchro network lacked pedestrian signal and timing phase data for most intersections along the 135th Street corridor. The pedestrian Level of Service analysis was restructured to analyze the pedestrian delay as well as delay score utilizing the Highway Capacity Manual 2010 methodology. The letter grades associated with the delay were derived from the 2000 HCM delay-letter grade conversion, as shown in Table 4. Intersections that operate at a higher delay receive a lower letter grade score, which correlates to a higher likelihood that pedestrians will not comply with existing crossing operations. Results of the pedestrian delay analysis are shown in Table 5. We note further that pedestrian volumes, where available, at these intersections were extremely low and thus conducive only to a delay based analysis.

Table 4 HCM 2000 Delay- Letter Grade Conversion

Level of Service (Delay)	Seconds	Likelihood of Noncompliance
A	<10	Low
B	10-20	
C	21-30	Moderate
D	31-40	
E	41-60	High
F	>60	Very High

Table 5 Pedestrian Delay Analysis

Intersection	Delay (Seconds)	Delay Score
Lamar Avenue and 135 th Street	52	E
Nall Avenue and 135 th Street	58	E
Briar Street and 135 th Street	51	E
Roe Avenue and 135 th Street	51	E
Fontana Street and 135 th Street	54	E
Mission Road and 135 th Street	53	E
Pawnee Lane and 135 th Street	54	E
Kenneth Road and 135 th Street	42	E
State Line Road and 135 th Street	69	F

Multimodal Level of Service Model

The National Cooperative Highway Research Program (NCHRP) project 3-70, published in May 2008, developed a model for analyzing and evaluating the multimodal level of service (MMLOS) of urban street designs and operations. The MMLOS model estimates the car driver, bus rider, bicyclist and pedestrian’s perception of the quality of service and roadway environment together to show how these modes interact in the urban environment. This allows people using the model to understand how changes in the quality of service of one mode can positively or negatively influences the quality of service of the other modes.

The MMLOS model computes a single average level of service for each of the four modes, not one single, combined score. The scores for street segments and intersections are “A-F,” using the standard levels established in the Highway Capacity Manual (HCM); where “A” is free flowing traffic operations and “F” is completely congested. The MMLOS score for each mode is the average degree of satisfaction with the urban street reported by a large group of travelers using that mode of travel if they had traveled the full length of the study section of the street. However, the model does not calculate auto or transit intersection LOS. The model was developed using video footage and field surveys to understand peoples’ perceptions of the quality of service of each mode, as well as data inputs commonly required to compute LOS. There are a total of 37 variables used to predict perceived degree of satisfaction that fall into four main types of inputs: facility design, facility control, transit service characteristics, and volume of vehicle traffic on the facility.

This project applied the MMLOS model spreadsheets to analyze roadway segments, beginning and ending with a signalized intersection, along West 135th Street between Lamar Avenue and State Line Road. As the MMLOS model spreadsheets analyze up to six intersections at a time, the corridor was divided into two sections, as shown below.

- Vehicle LOS is at a B or worse at segments, with six out of eight segments at a F in at least one direction.
- All segments along the corridor operate at a bicycle LOS of E or F, due to the lack of any on-street facilities, including road shoulders, to accommodate bicyclists.

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- Pedestrian LOS is also at E or worse at all segments, except for those which feature sidewalks connecting the entire distance between intersections: Nail Avenue to Roe Avenue in both directions, as well as Roe Avenue to Fontana Street in the eastbound direction.
- At intersections, pedestrian LOS is poor due to high crossing exposure to traffic, and overall lack of dedicated crossing time and connecting pedestrian facilities.
- Transit LOS is not available for intersections or segments as no transit stop is accessible within walking distance of the corridor.
- The overall facility level of service, combining segment and intersection experience for the entire street, is a pedestrian and bicycle LOS of D or worse. Vehicle LOS for the overall facility is a F due to overcapacity conditions, except for 135th Street from Mission Road to State Line Road.

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Table 6 Existing MMLOS – 135th Street from Lamar Avenue to Mission Road - Eastbound

Multimodal Level of Service for Urban Streets

Results

Street: 135th St, Leawood, KS
Limits: FROM LAMAR AVENUE to MISSION ROAD

Date: AUG. 6 2013
Observer: W. SHERMAN

		Analysis Direction:		EB	
		(Down Direction on this Sheet)			
		Auto LOS Model: NCHRP 3-70 Stops Model			
	Seg 1	Score	Seg LOS	Int LOS	
<u>LAMAR AVENUE</u>	Seg. #1	2.25	F (V/C>1)	N/A	
		N/A	N/A	N/A	
		6.15	F	F	
		5.35	F	C	
<u>NALL AVENUE</u>	Seg. #2	2.27	B	N/A	
		N/A	N/A	N/A	
		4.27	F	D	
		3.93	D	B	
<u>BRIAR STREET</u>	Seg. #3	3.50	D	N/A	
		N/A	N/A	N/A	
		4.35	E	D	
		3.96	C	B	
<u>ROE AVENUE</u>	Seg. #4	2.58	B	N/A	
		N/A	N/A	N/A	
		4.22	F	D	
		3.64	C	B	
<u>FONTANA STREET</u>	Seg. #5	2.48	B	N/A	
		N/A	N/A	N/A	
		4.29	F	D	
		5.01	F	B	
<u>MISSION ROAD</u>	Street	Score	LOS		
	Auto	2.54	F (V/C>1)		
	Transit	N/A	N/A		
	Bike	4.90	E		
	Ped	4.54	E		

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Table 7 Existing MMLOS – 135th Street from Mission Road to Lamar Avenue - Westbound
Multimodal Level of Service for Urban Streets

Results

Street: 135th St, Leawood, KS Date: AUG. 6.2013
Limits: FROM MISSION ROAD TO LAMAR AVENUE Observer: W. SHERMAN

		Analysis Direction: <u>WB</u>	
		(Down Direction on this Sheet)	
		Auto LOS Model: <u>NCHRP 3-70 Stops Model</u>	
	Seg	Score	Int LOS
<u>MISSION ROAD</u>	Seg. #1	2.23	N/A
	Auto	F (v/c>1)	N/A
	Transit	N/A	N/A
	Bike	F	C
	Ped	F	A
<u>FONTANA STREET</u>	Seg. #2	2.47	N/A
	Auto	F (v/c>1)	N/A
	Transit	N/A	N/A
	Bike	F	F
	Ped	F	B
<u>ROE AVENUE</u>	Seg. #3	2.25	N/A
	Auto	B	N/A
	Transit	N/A	N/A
	Bike	E	C
	Ped	C	B
<u>BRIAR STREET</u>	Seg. #4	2.28	N/A
	Auto	F (v/c>1)	N/A
	Transit	N/A	N/A
	Bike	E	D
	Ped	D	C
<u>NALL AVENUE</u>	Seg. #5	2.22	N/A
	Auto	B	N/A
	Transit	N/A	N/A
	Bike	F	E
	Ped	E	B
<u>LAMAR AVENUE</u>	Street	Score	LOS
	Auto	2.28	F (v/c>1)
	Transit	N/A	N/A
	Bike	5.16	F
	Ped	4.48	E

135th Corridor Plan
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Table 8 Existing MMLOS – 135th Street from Mission Road to State Line Road- Eastbound
Multimodal Level of Service for Urban Streets Results

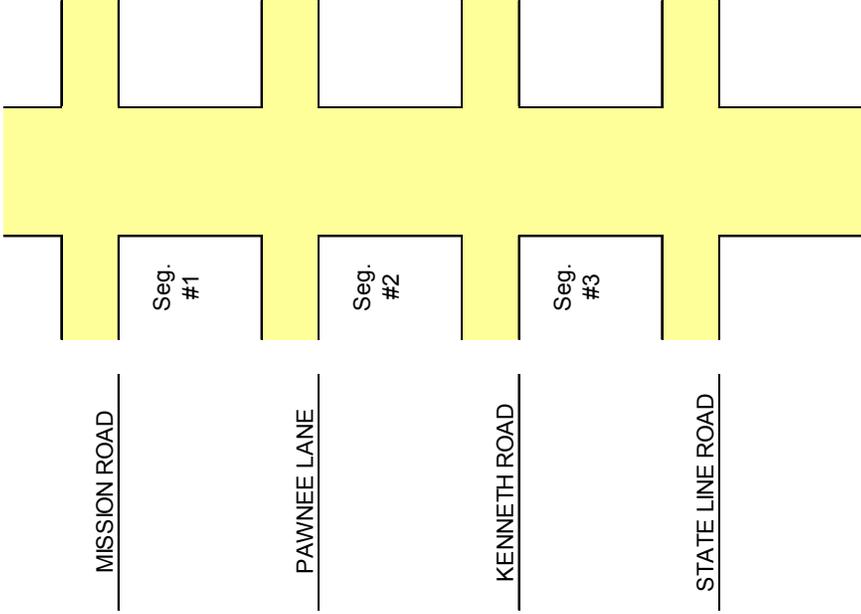
Street: 135th St, Leawood, KS Date: AUG. 6 2013
Limits: FROM MISSION ROAD TO STATE LINE ROAD Observer: W. SHERMAN

Analysis Direction:

EB

(Down Direction on this Sheet)

Auto LOS Model: **NCHRP 3-70 Stops Model**



Seg 1	Score	Seg LOS	Int LOS
Auto	2.42	B	N/A
Transit	N/A	N/A	N/A
Bike	3.88	E	C
Ped	4.59	F	B

Seg 2	Score	Seg LOS	Int LOS
Auto	2.21	B	N/A
Transit	N/A	N/A	N/A
Bike	3.73	E	B
Ped	4.18	E	B

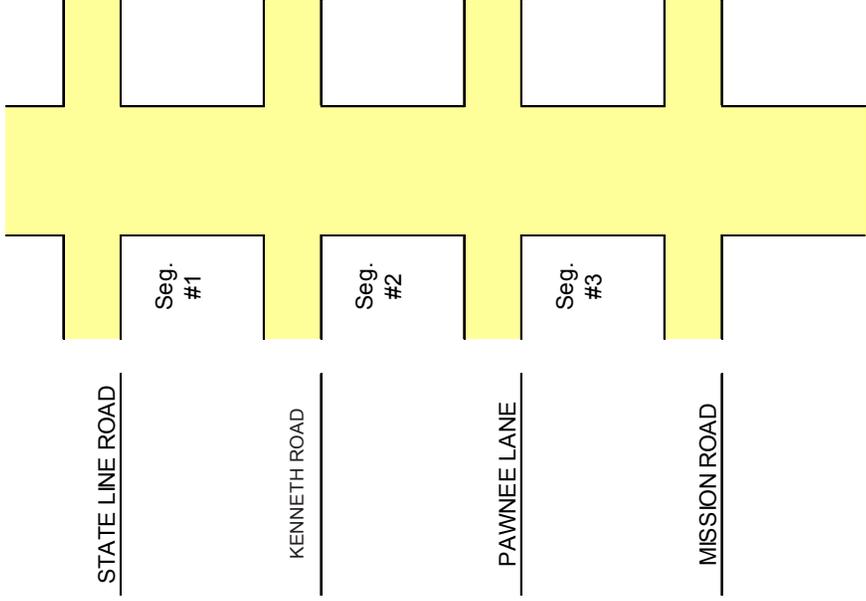
Seg 3	Score	Seg LOS	Int LOS
Auto	5.04	F	N/A
Transit	N/A	N/A	N/A
Bike	4.71	F	E
Ped	4.95	F	B

Street	Score	LOS
Auto	2.69	B
Transit	N/A	N/A
Bike	3.93	D
Ped	4.40	E

Table 9 Existing MMLOS – 135th Street from State Line Road to Mission Road - Westbound
Multimodal Level of Service for Urban Streets Results

Street: 135th St, Leawood, KS Date: AUG. 6 2013
Limits: FROM STATE LINE ROAD TO MISSION ROAD Observer: W. SHERMAN

Analysis Direction: WB
(Down Direction on this Sheet)
Auto LOS Model: NCHRP 3-70 Stops Model



Seg 1	Score	Seg LOS	Int LOS
Auto	2.25	F (v/c>1)	N/A
Transit	N/A	N/A	N/A
Bike	3.80	E	B
Ped	4.49	F	B

Seg 2	Score	Seg LOS	Int LOS
Auto	2.17	B	N/A
Transit	N/A	N/A	N/A
Bike	3.85	E	B
Ped	4.22	E	B

Seg 3	Score	Seg LOS	Int LOS
Auto	2.25	B	N/A
Transit	N/A	N/A	N/A
Bike	3.94	E	C
Ped	4.37	E	B

Street	Score	LOS
Auto	2.20	F (v/c>1)
Transit	N/A	N/A
Bike	3.86	D
Ped	4.30	E

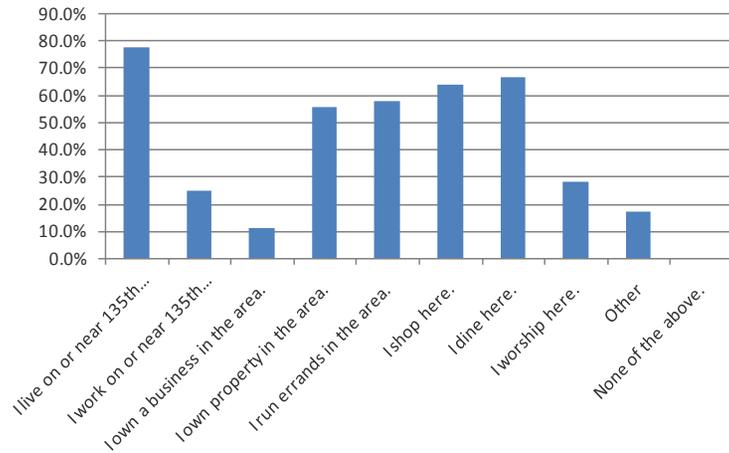
B

APPENDIX B PUBLIC INPUT

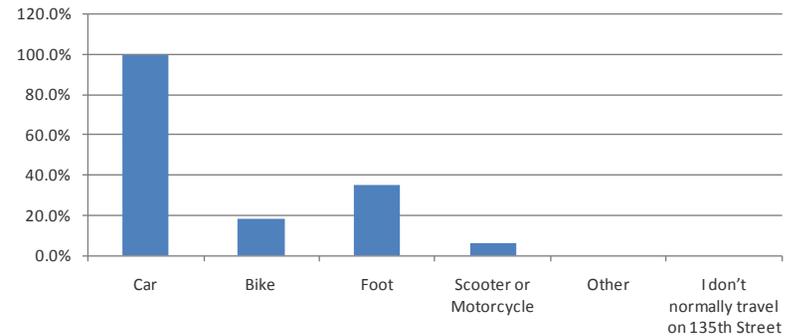
Keypad and online polling results
Public Comments - Mindmixer
Visual Preference Survey

WHAT YOU HAD TO SAY - Keypad Polling Results from the August 22, 2013 Public Meeting

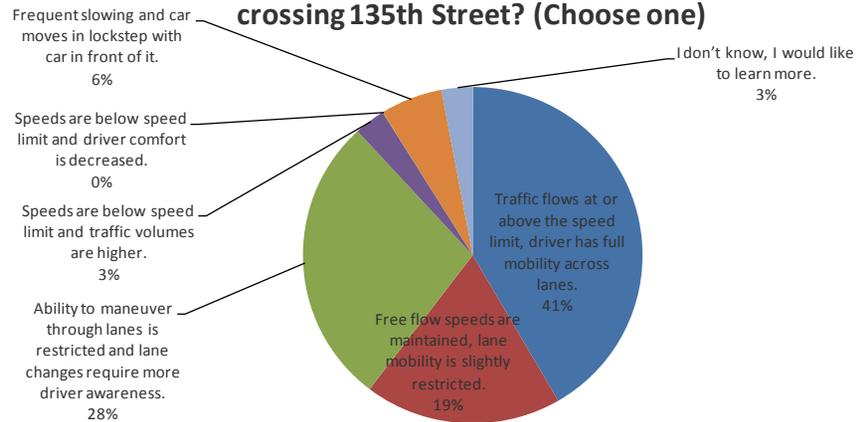
**Q1. My association with this project is....
(Select all that apply)**



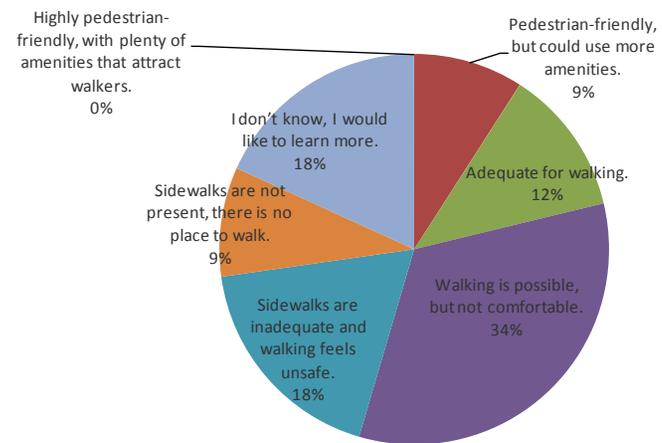
**Q2. I travel on or across 135th Street by...
(Select all that apply)**



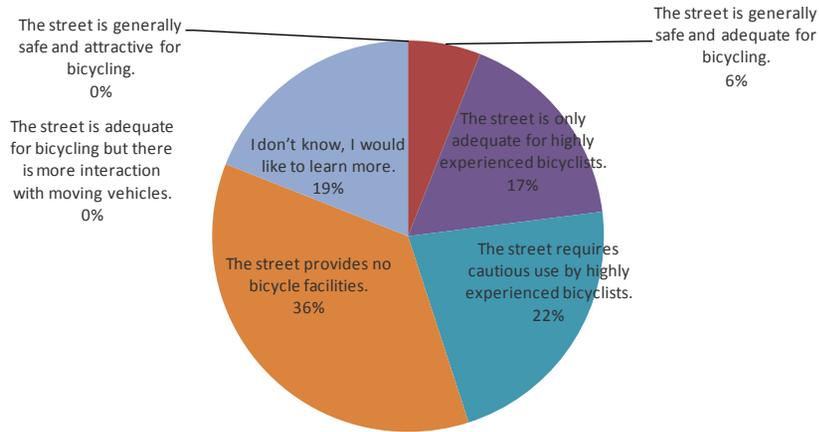
Q3. How would you rate traffic conditions on and crossing 135th Street? (Choose one)



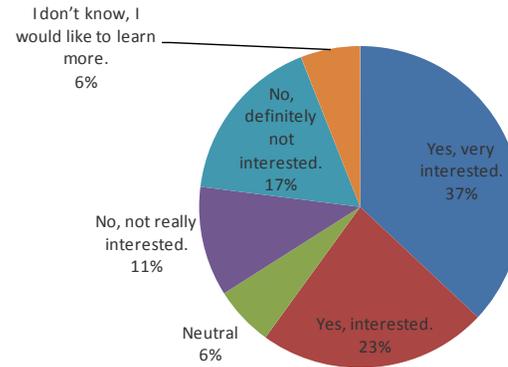
Q4. How would you rate walking conditions on and crossing 135th Street? (Choose one)



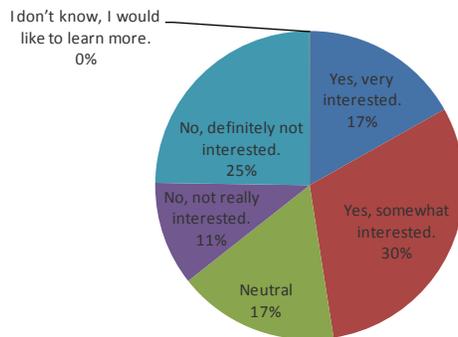
Q5. How would you rate biking conditions on and crossing 135th Street? (Choose one)



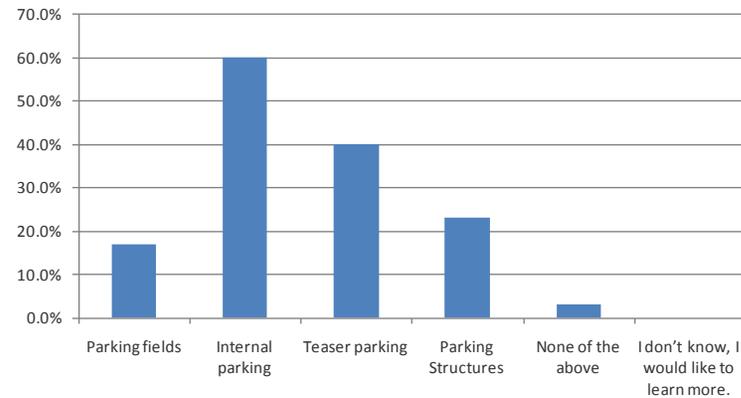
Q6. From what I have learned today, I am interested in exploring a multi-way option for 135th Street between Nall and State Line Road. (Choose one)



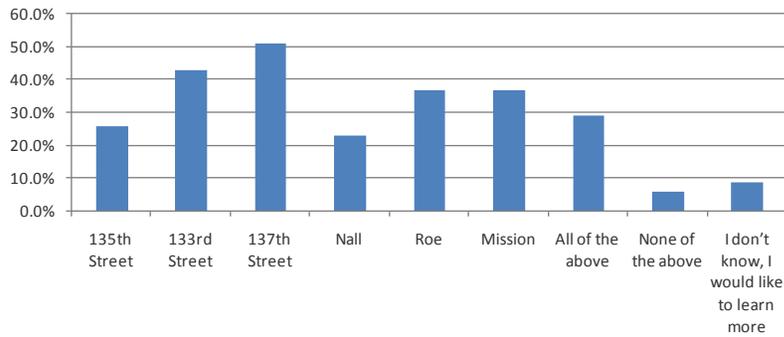
Q7. From what I have learned today, I am interested in expanding the street grid to include new north-south and east-west streets in the 135th Street area. (Choose one)



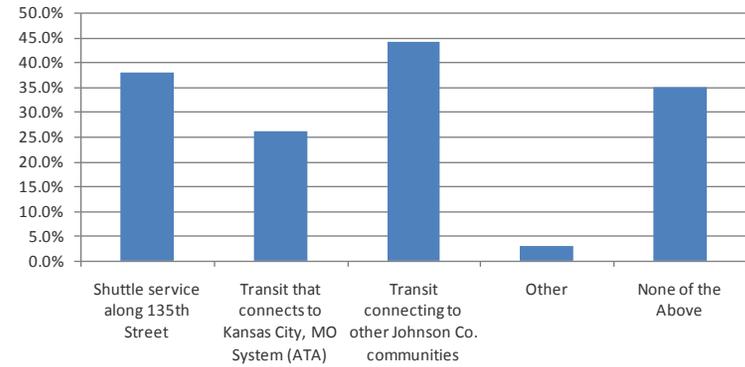
Q8. From what I have learned today, I think the best parking configuration for the 135th Street area is... (Select all that apply)



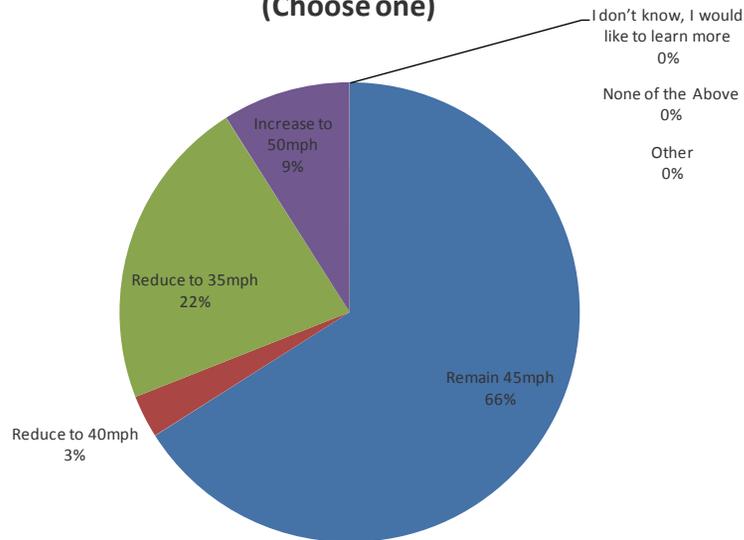
Q9. I would be interested in exploring bike routes on... (Select all that apply)



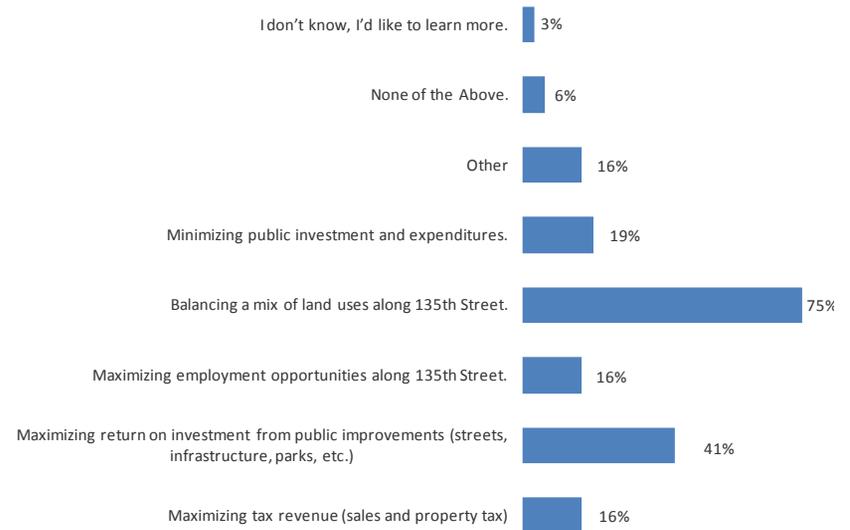
Q10. I would be most interested in the following types of public transit in the 135th Street area in the next 10-20 years... (select all that apply)



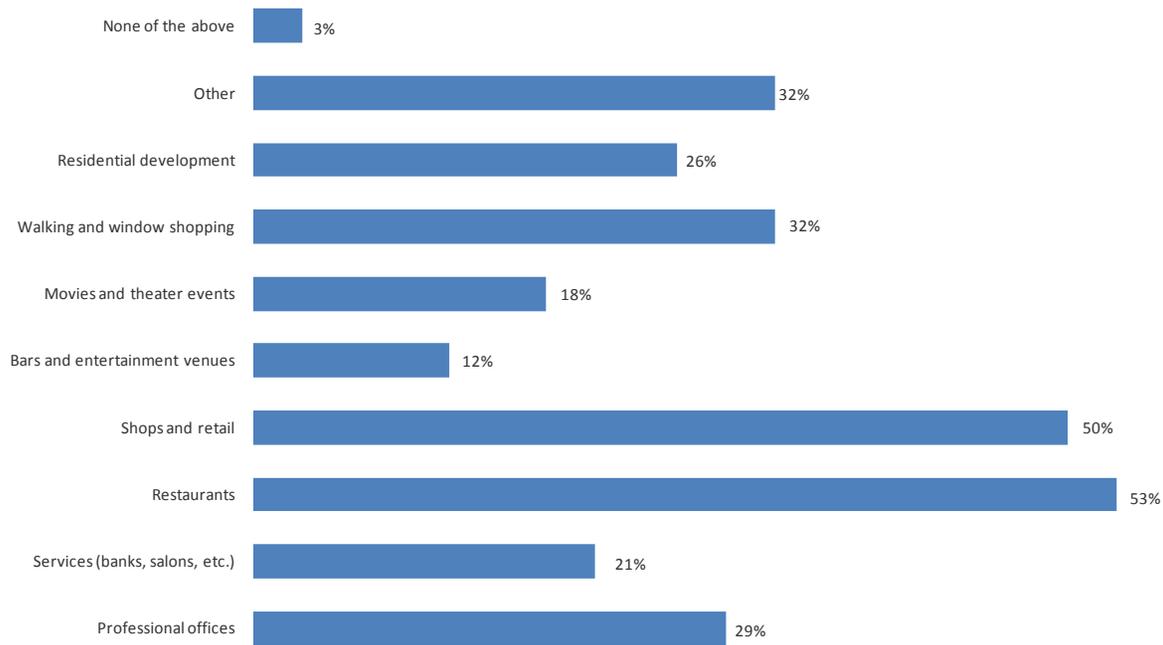
Q11. I think the speed limit on 135th Street should... (Choose one)



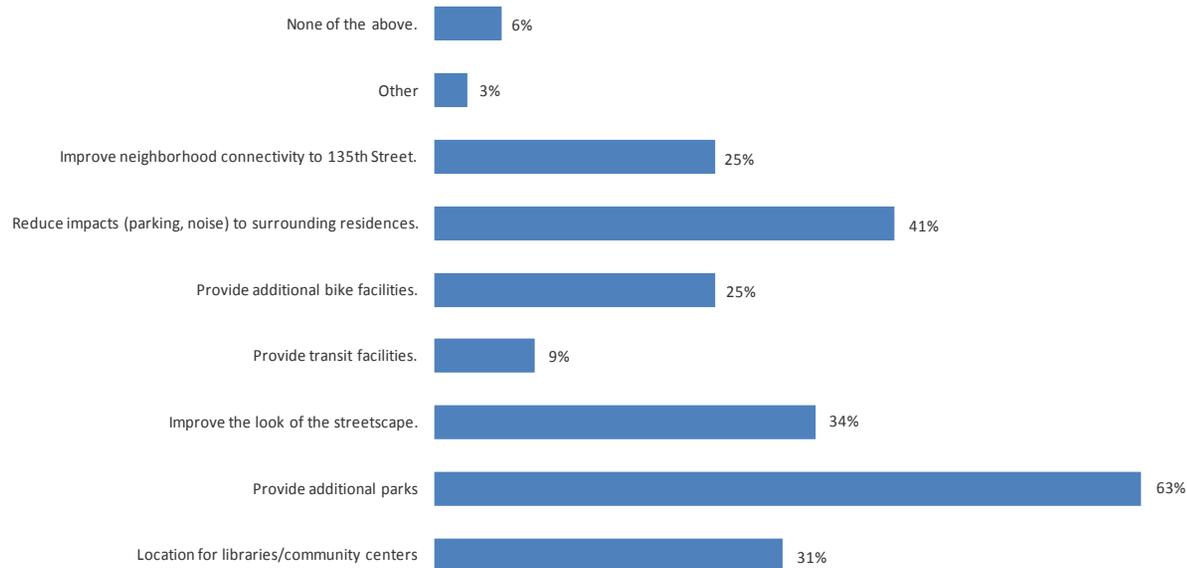
Q12. I believe the most important economic development goals for the 135th Street area are... (Rank top 3)



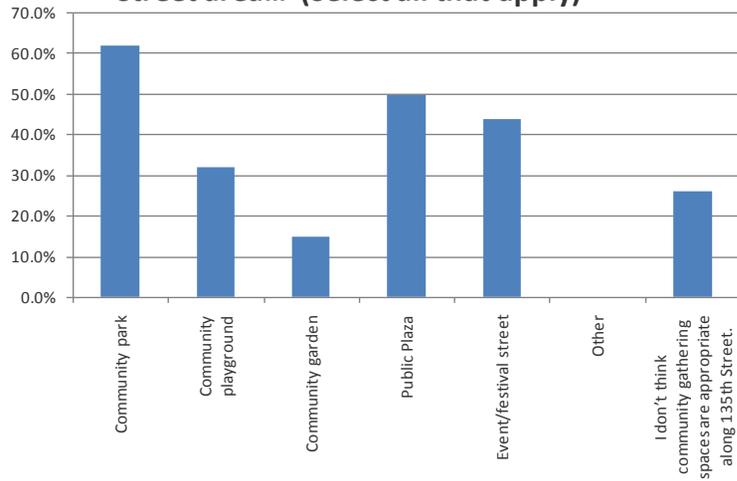
Q13. I think the 135th Street area is the ideal district for... (Rank top 3)



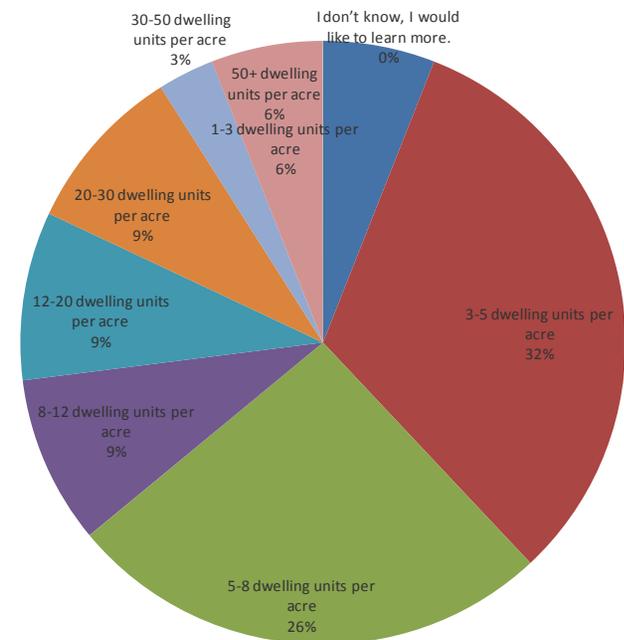
Q14. In addition to safety, I think these specific community considerations are most important to the development of the 135th Street area: (Rank top 3)



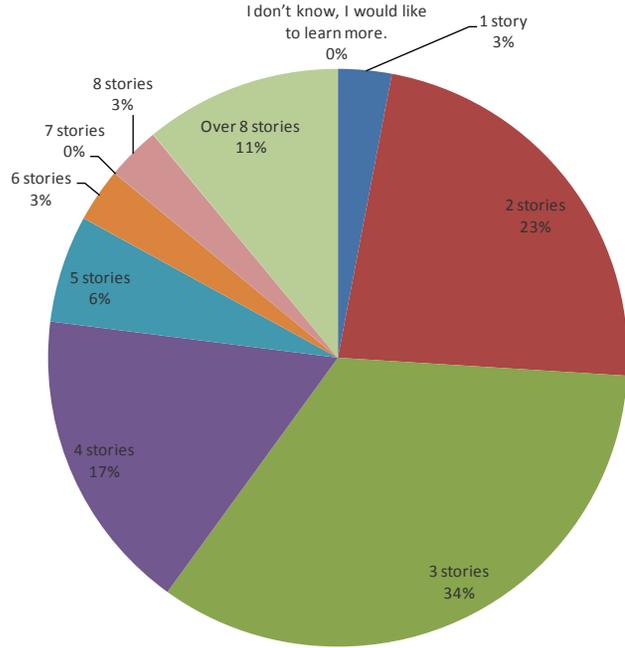
Q15. I think the following public spaces would be most appropriate in the 135th Street area... (Select all that apply)



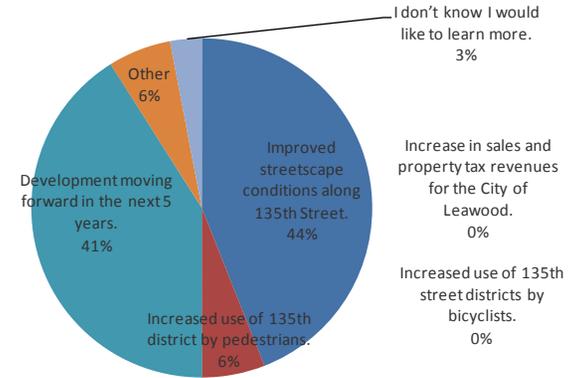
Q16. In order to encourage development in this area, I would be in favor of the following maximum residential density... (Choose one)



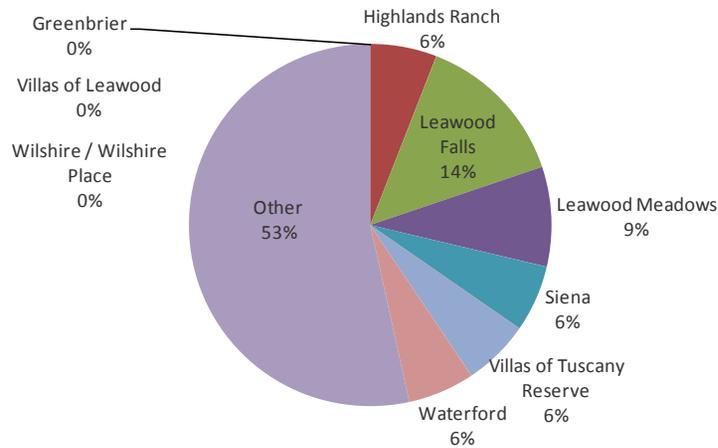
Q17. In order to encourage development in this area, I would be in favor of the following maximum building heights... (Choose one)



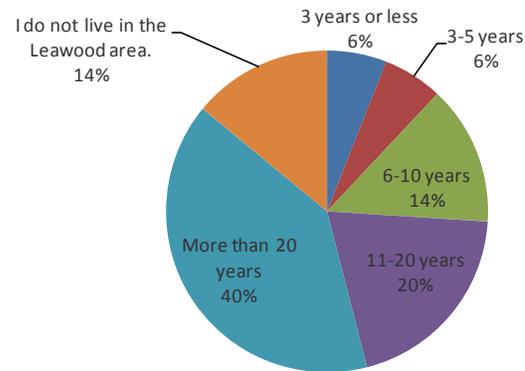
Q18. I would rate the future success of the 135th Street Community Plan by... (Choose top one)



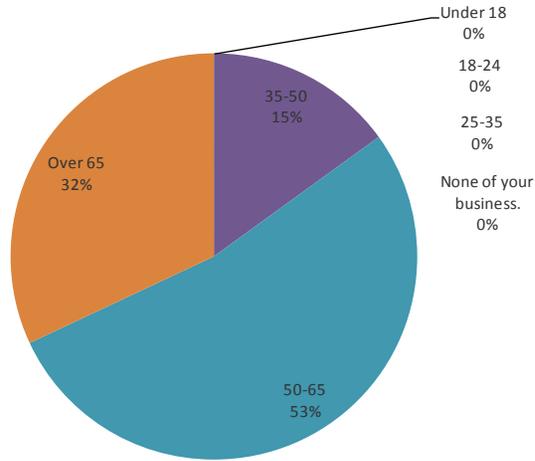
Q19. I currently live in ... (Choose one)



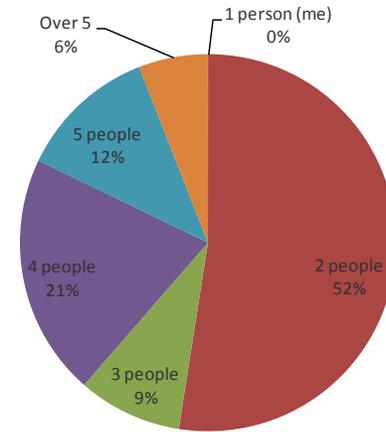
Q20. I have lived in the Leawood area for... (Choose one)



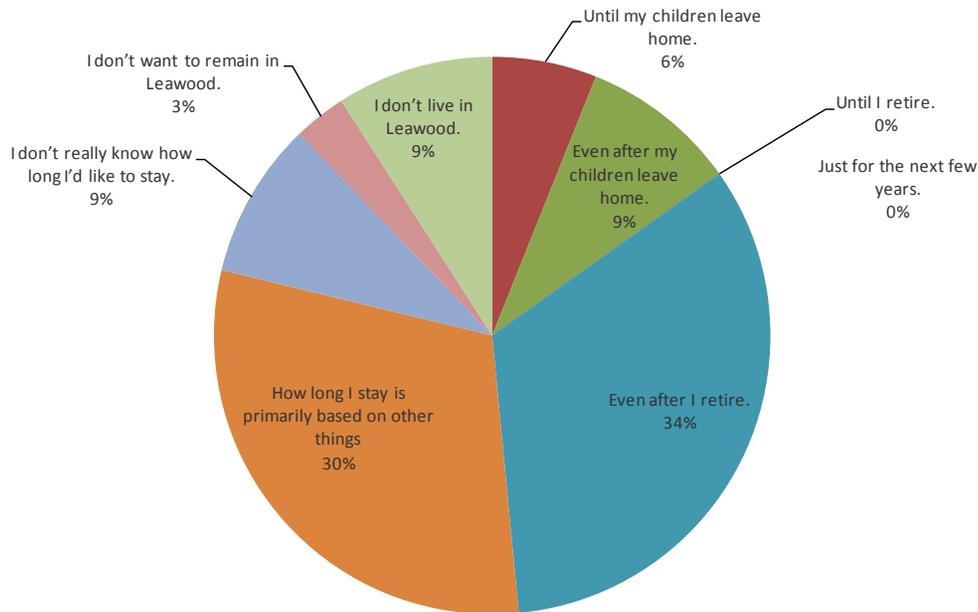
Q21. My current age is...



Q22. The number of people living in my household is... (select one)

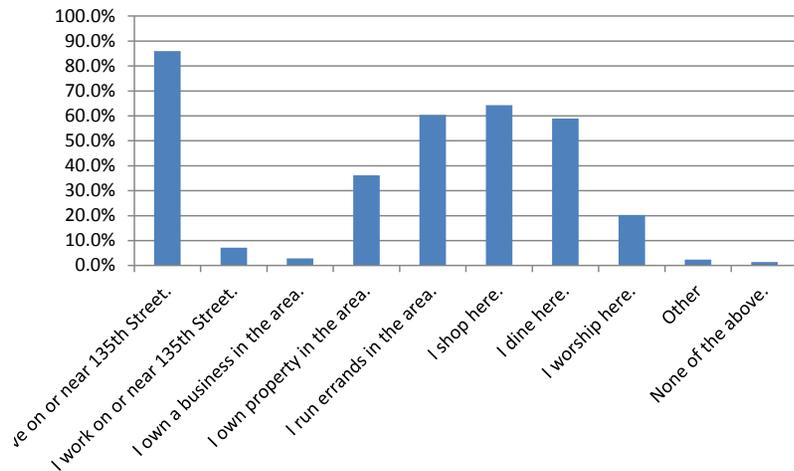


Q23. I would like to remain in Leawood ... (select one)

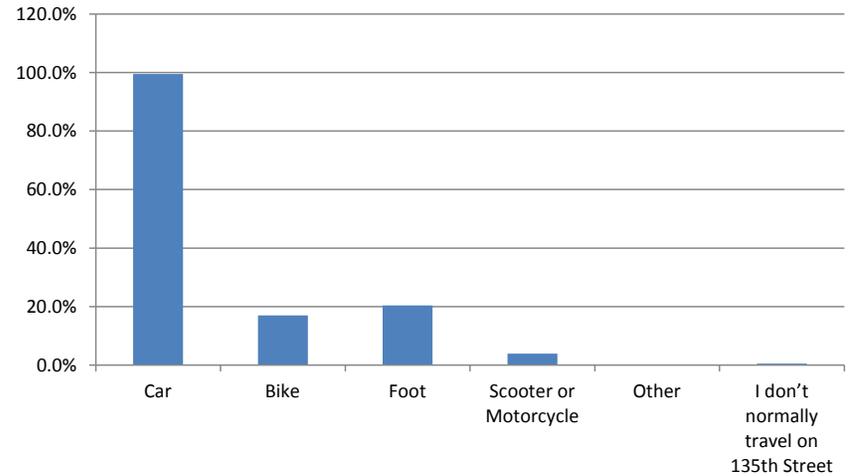


WHAT YOU HAD TO SAY - Online Survey Monkey Results (mid-August to mid-September, 2013)

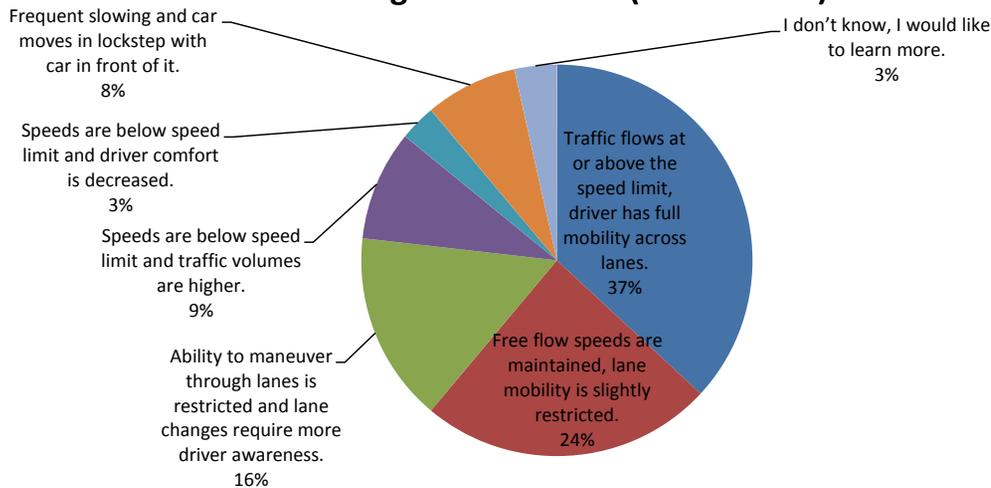
**Q1. My association with this project is....
(Select all that apply)**



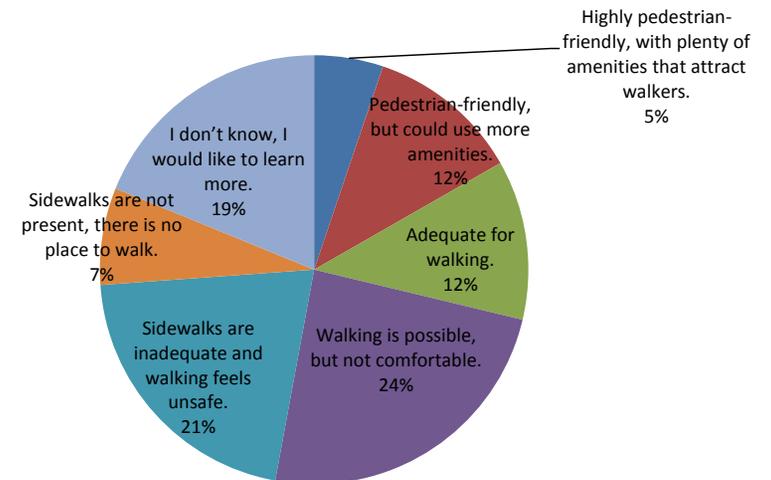
**Q2. I travel on or across 135th Street by...
(Select all that apply)**



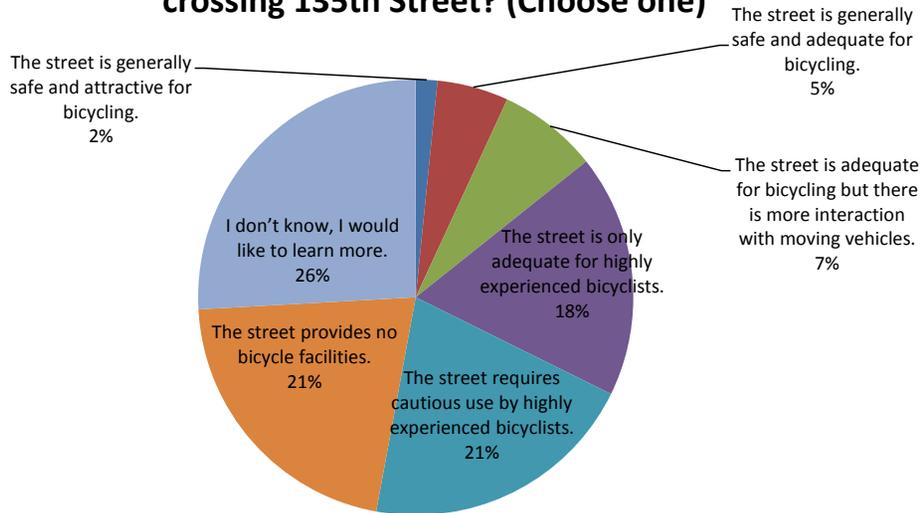
Q3. How would you rate traffic conditions on and crossing 135th Street? (Choose one)



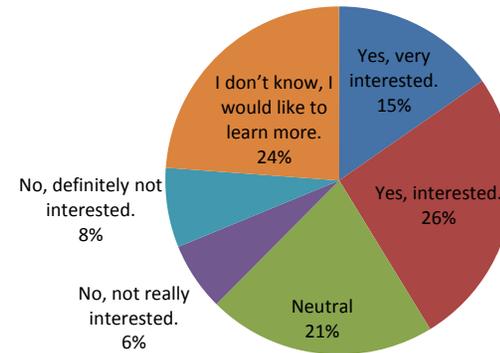
Q4. How would you rate walking conditions on and crossing 135th Street? (Choose one)



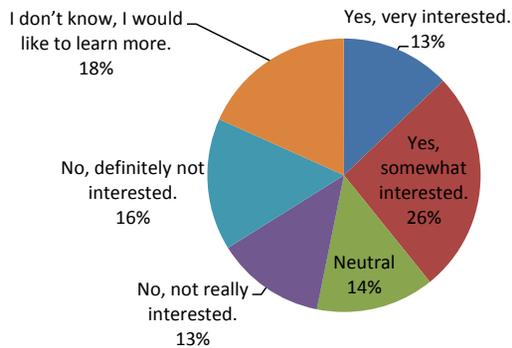
Q5. How would you rate biking conditions on and crossing 135th Street? (Choose one)



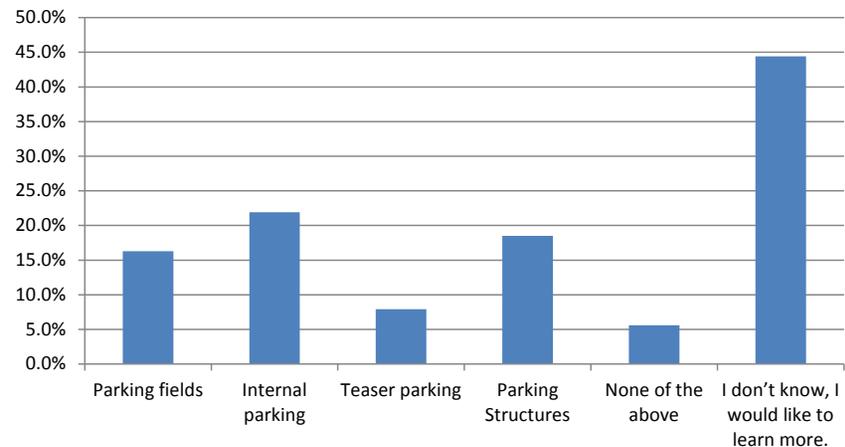
Q6. From what I have learned today, I am interested in exploring a multi-way option for 135th Street between Nall and State Line Road. (Choose one)



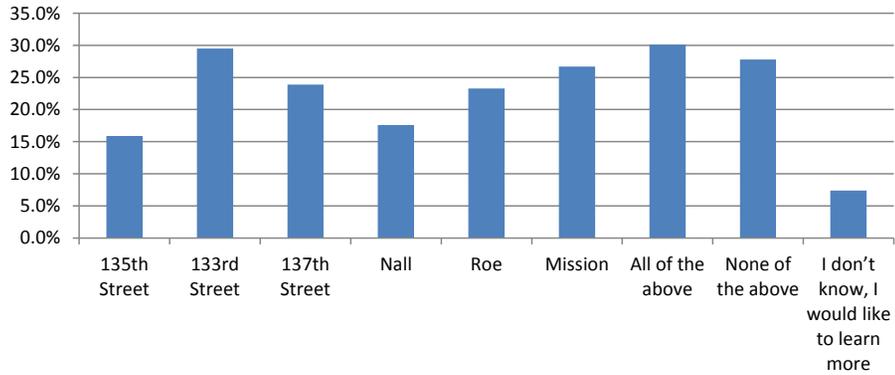
Q7. From what I have learned today, I am interested in expanding the street grid to include new north-south and east-west streets in the 135th Street area. (Choose one)



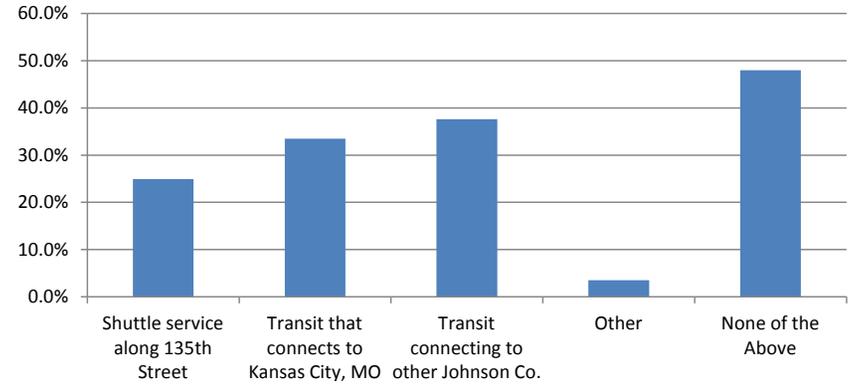
Q8. From what I have learned today, I think the best parking configuration for the 135th Street area is... (Select all that apply)



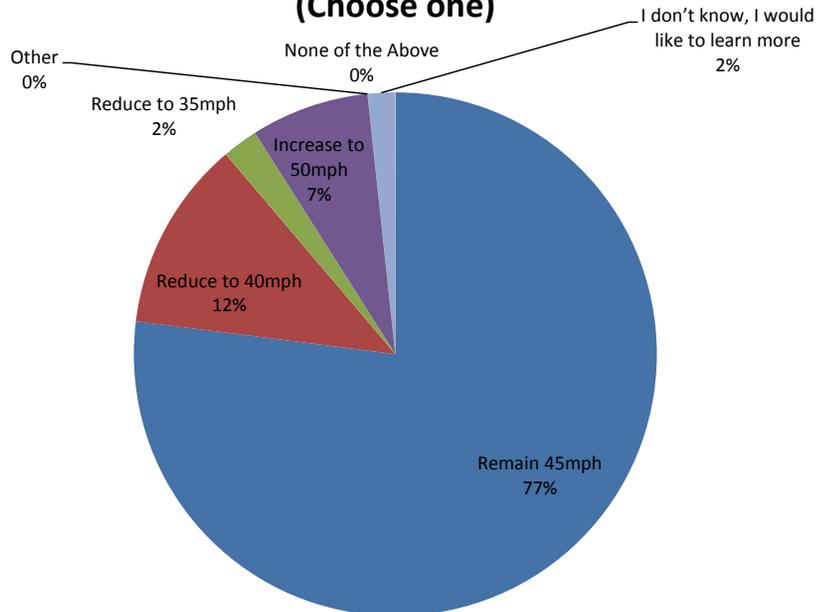
Q9. I would be interested in exploring bike routes on... (Select all that apply)



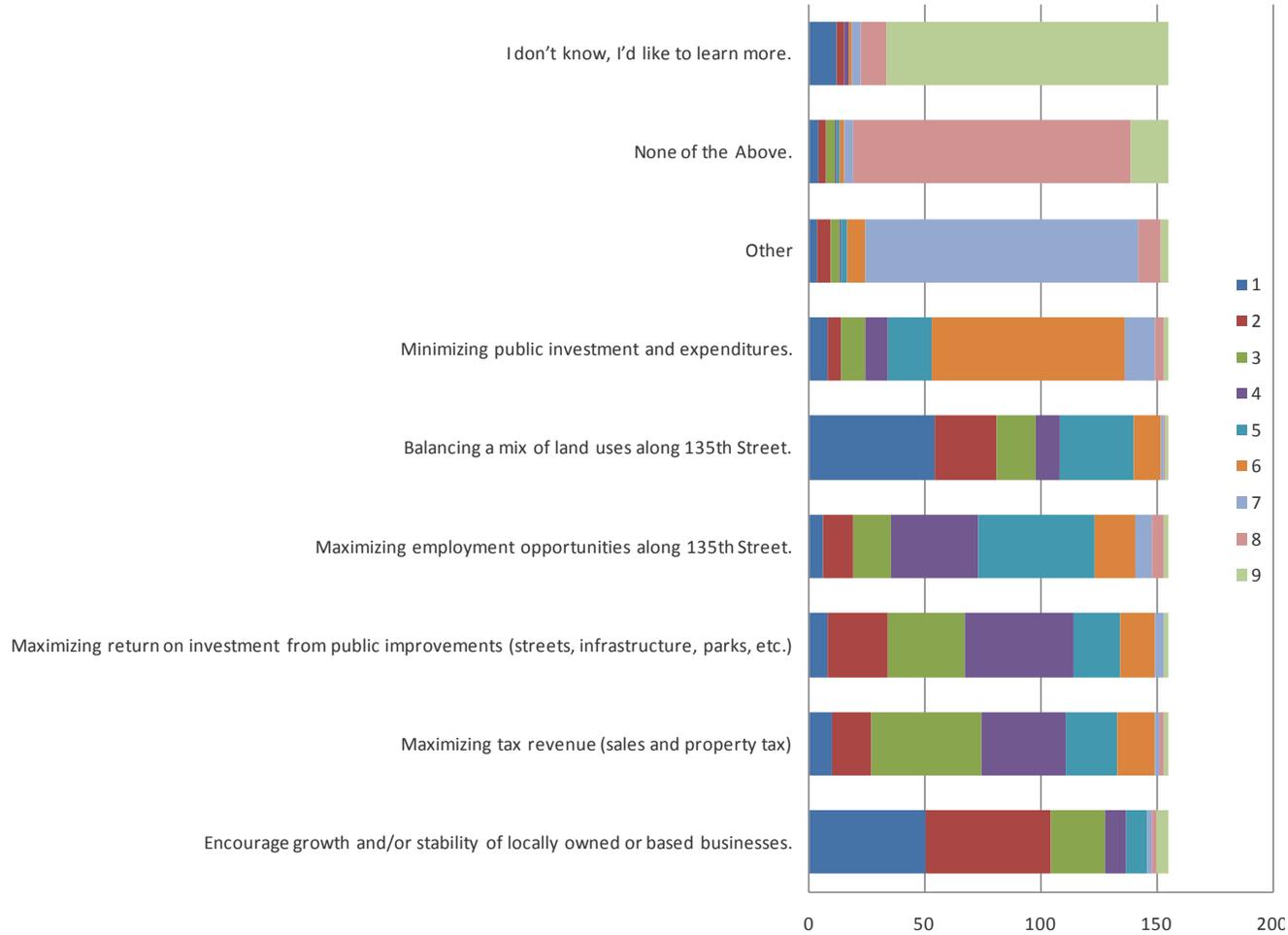
Q10. I would be most interested in the following types of public transit in the 135th Street area in the next 10-20 years... (select all that apply)



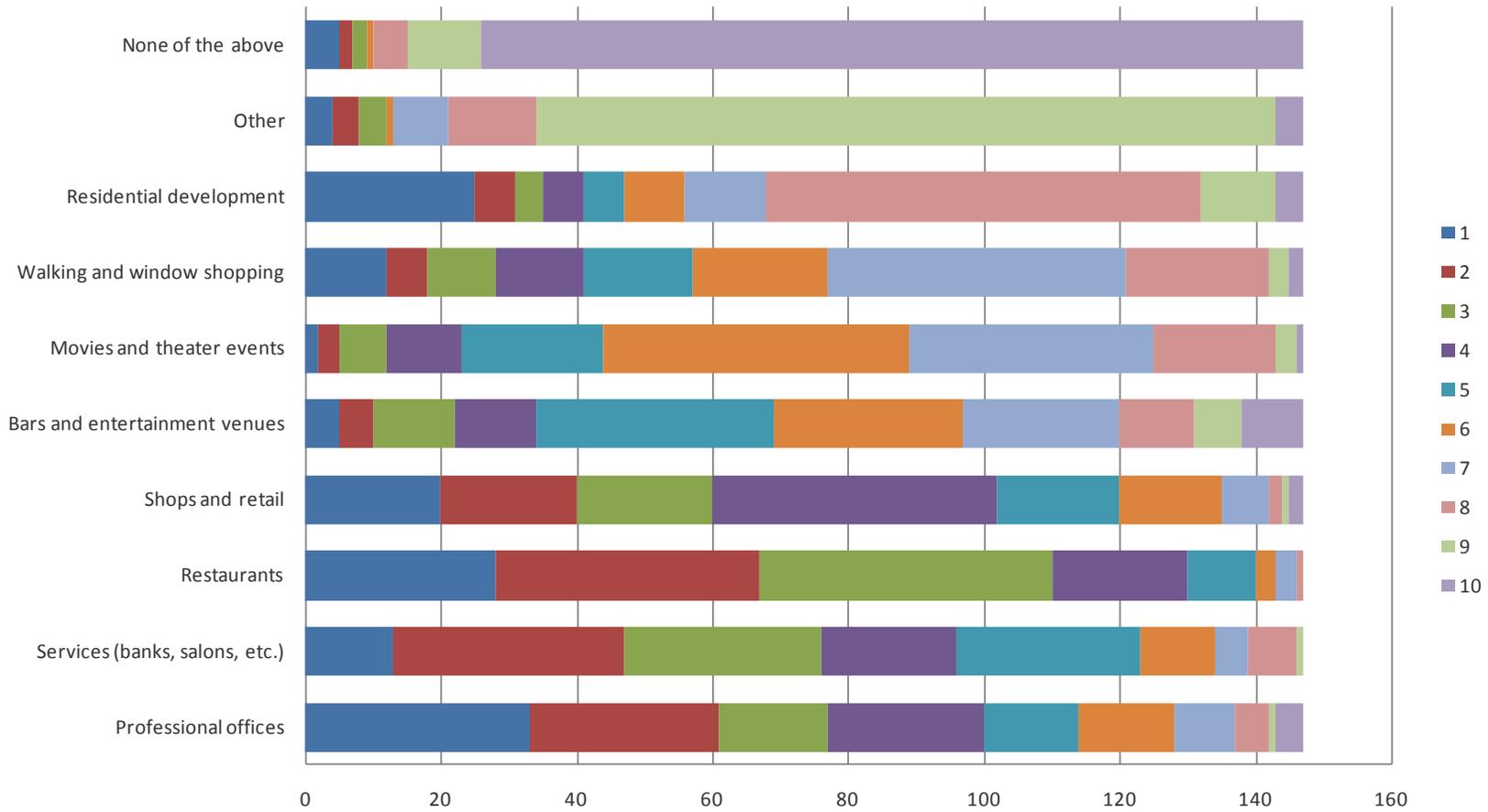
Q11. I think the speed limit on 135th Street should... (Choose one)



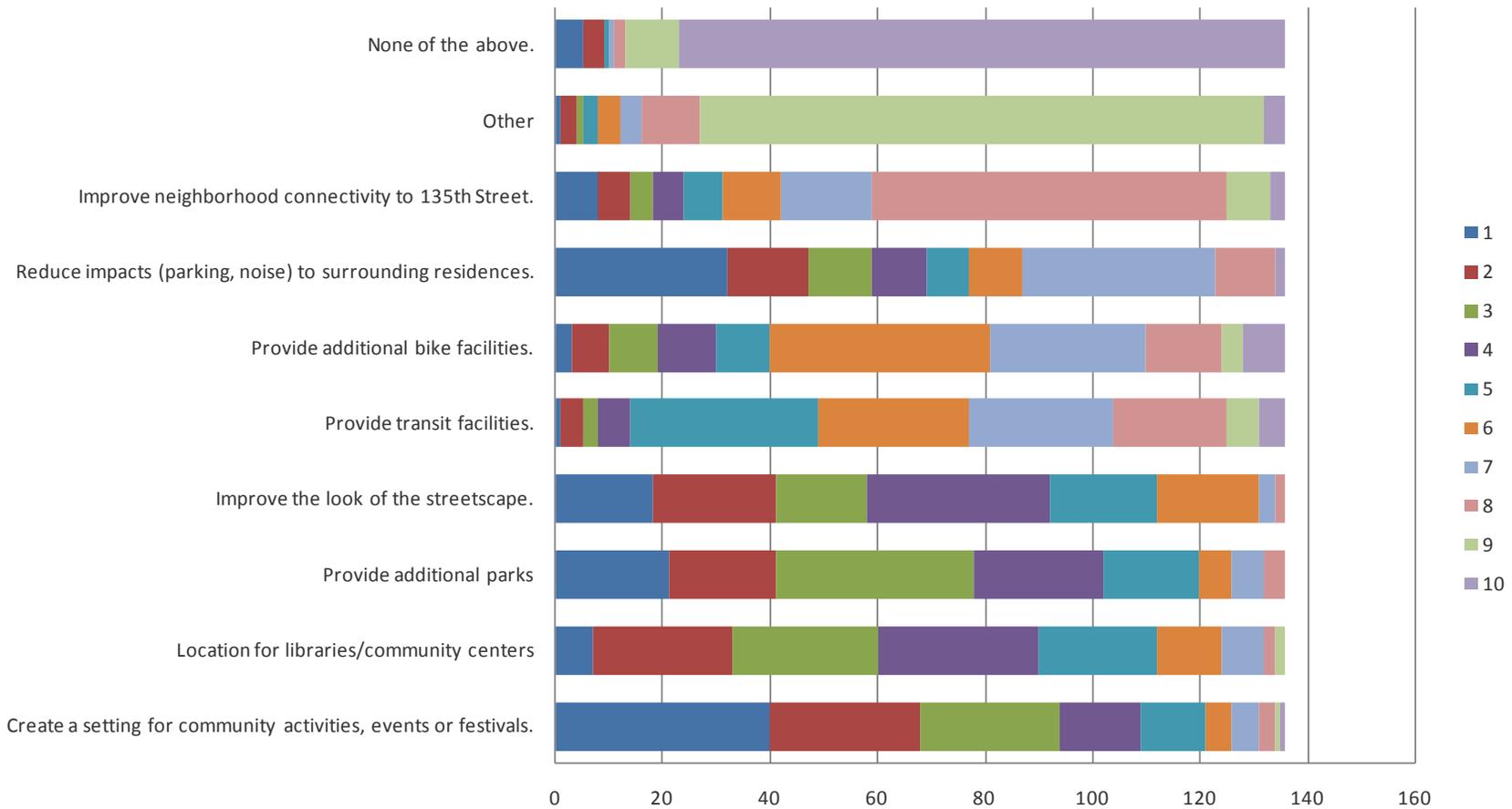
Q12. I believe the most important economic development goals for the 135th Street area are... (Rank in order of importance)



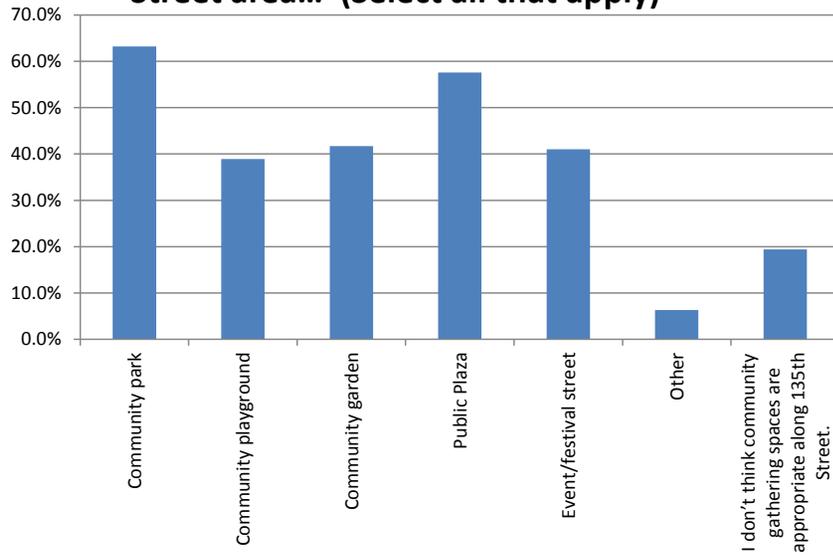
Q13. I think the 135th Street area is the ideal district for... (Rank in order)



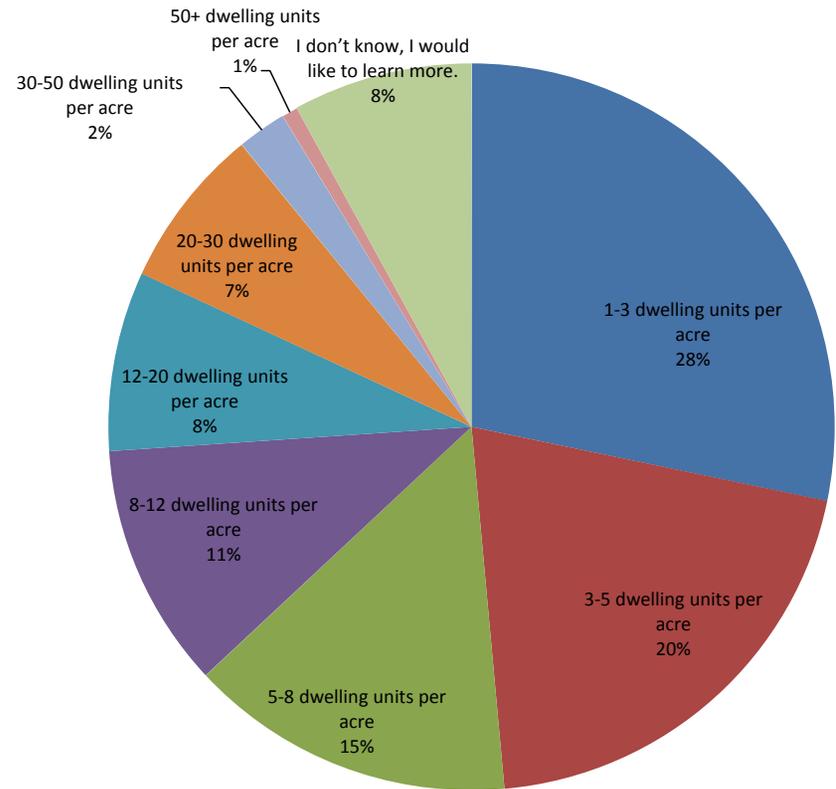
Q14. In addition to safety, I think these specific community considerations are most important to the development of the 135th Street area: (Rank in order of importance)



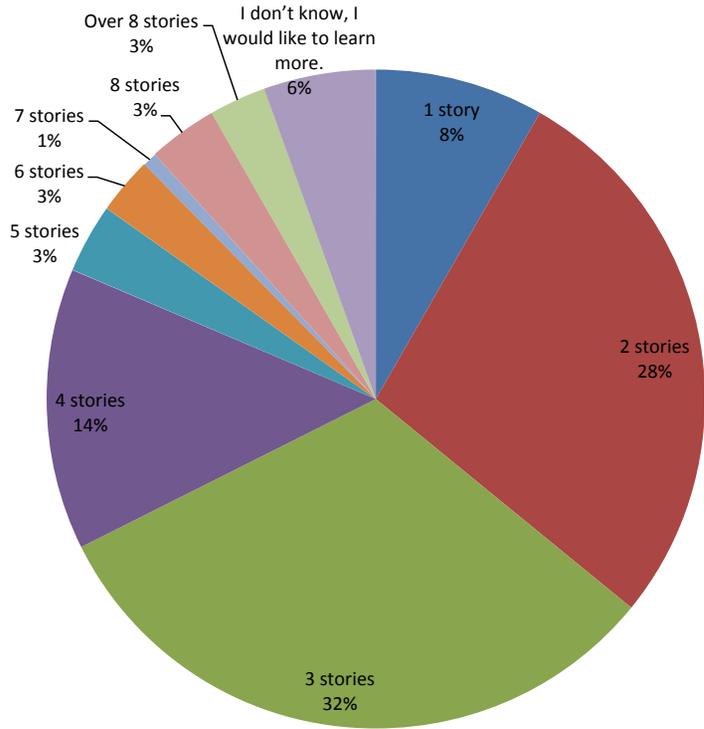
Q15. I think the following public spaces would be most appropriate in the 135th Street area... (Select all that apply)



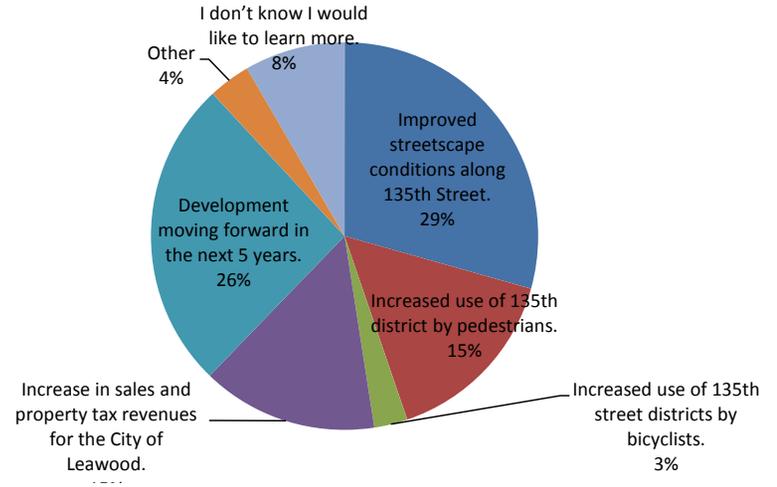
Q16. In order to encourage development in this area, I would be in favor of the following maximum residential density... (Choose one)



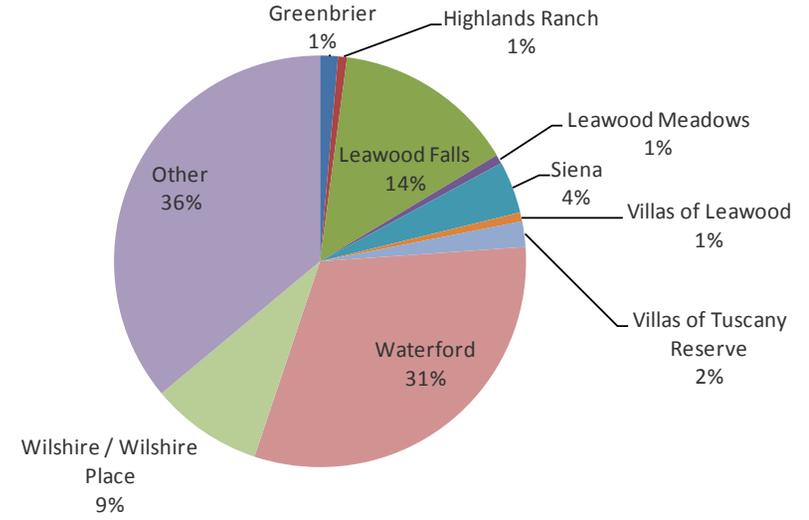
Q17. In order to encourage development in this area, I would be in favor of the following maximum building heights... (Choose one)



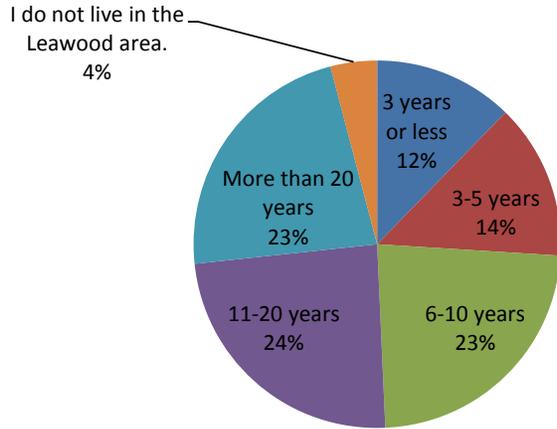
Q18. I would rate the future success of the 135th Street Community Plan by... (Choose top one)



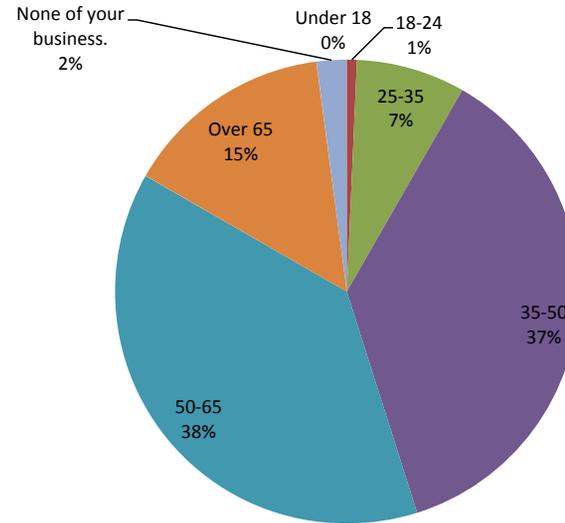
Q19. I currently live in ... (Choose one)



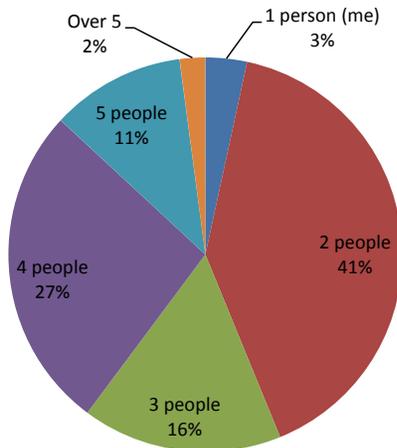
**Q20. I have lived in the Leawood area for...
(Choose one)**



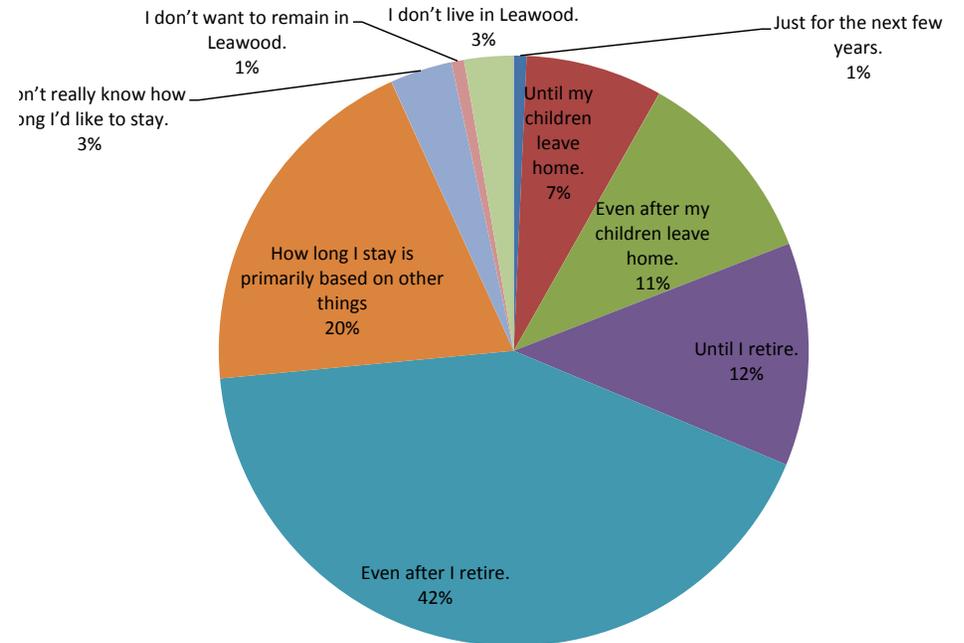
Q21. My current age is...



Q22. The number of people living in my household is... (select one)

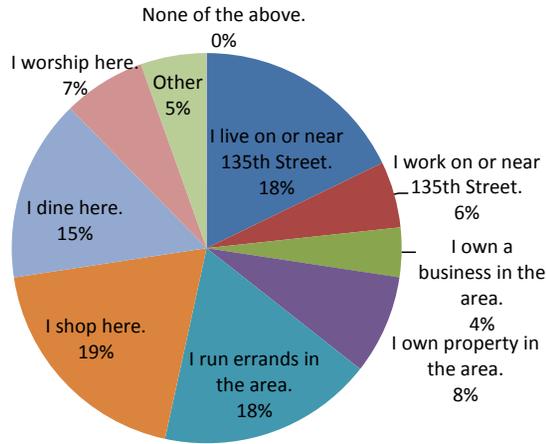


Q23. I would like to remain in Leawood ... (select one)

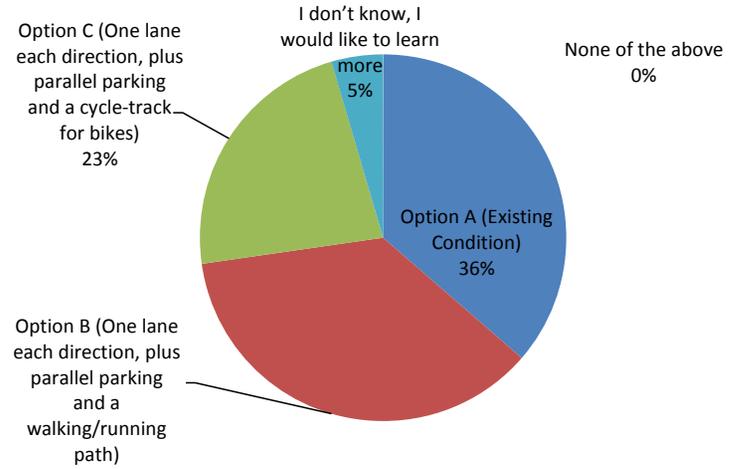


WHAT YOU HAD TO SAY - Keypad Polling Results from the September 18, 2013 Public Meeting

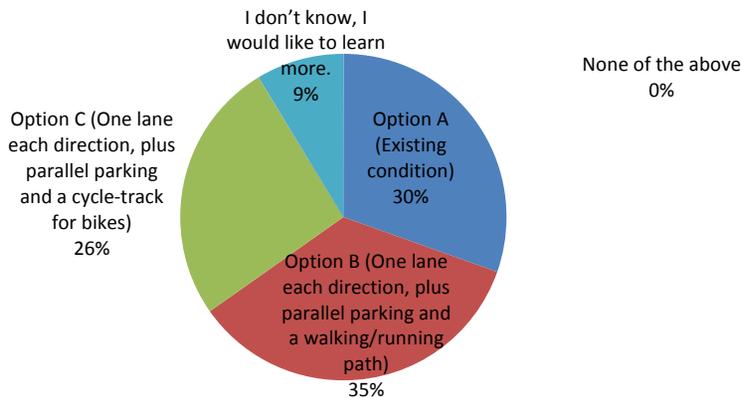
**My association with this project is....
(Select all that apply)**



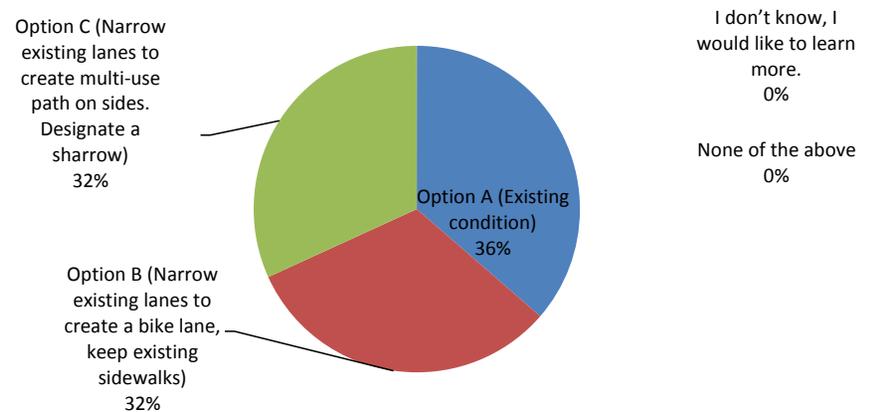
I would be in favor of the following option for 133rd Street: (Choose one)



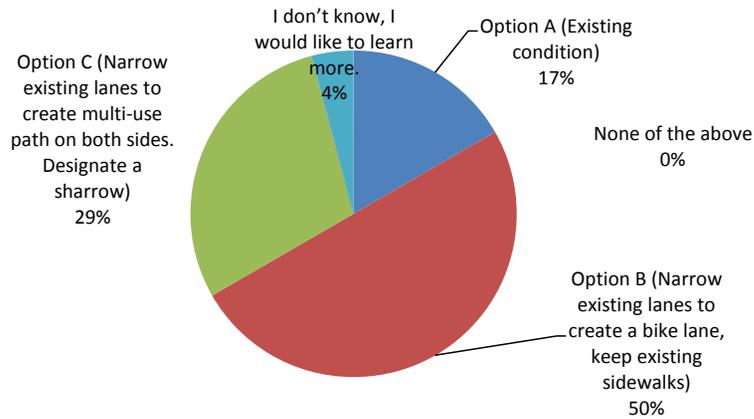
I would be in favor of the following option for 137th Street: (Choose one)



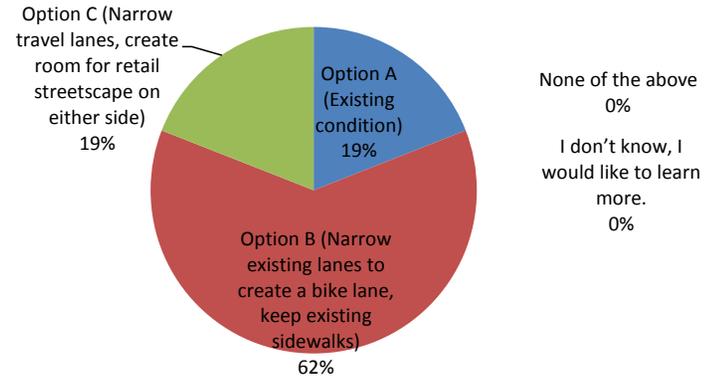
I would be in favor of the following option for Nall Avenue: (Choose one)



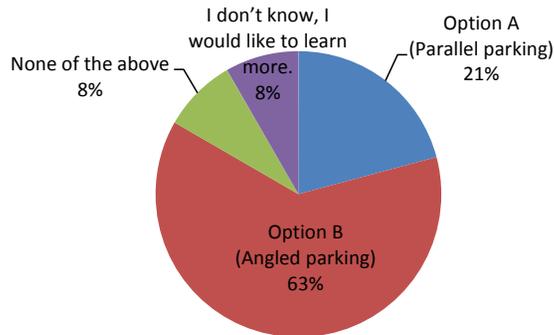
I would be in favor of the following option for Roe Avenue: (Choose one)



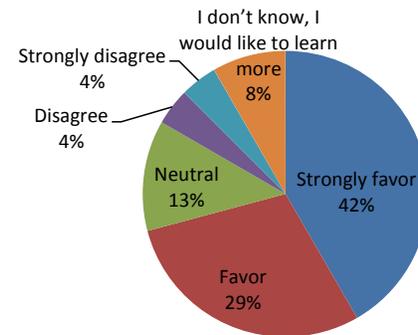
I would be in favor of the following option for Mission Road: (Choose one)



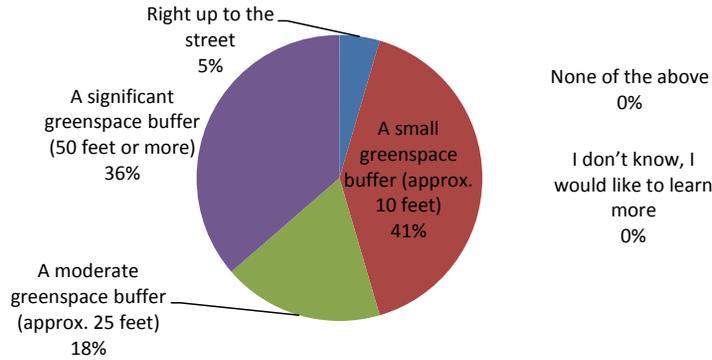
I would be in favor of the following option for the "Destination Streets" within the 135th Street area: (Choose one)



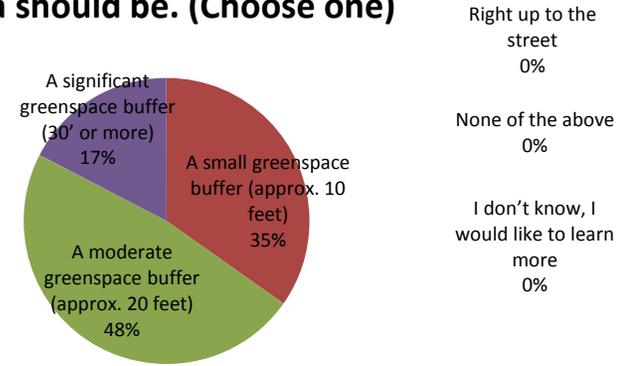
I would be in favor of creating walkable blocks (360 feet on average) within the 135th Street study area. (Choose one)



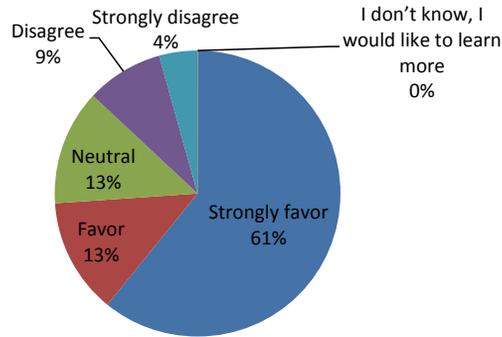
I think the orientation of buildings in mixed-use districts in the area should be.
(Choose one)



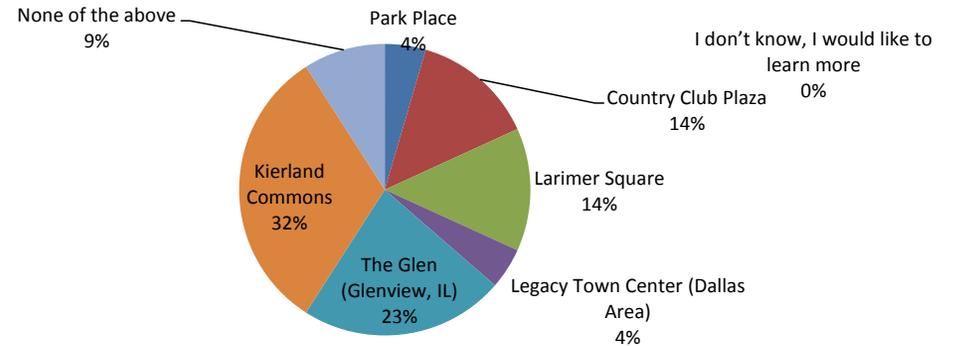
I think the orientation of buildings in residential areas in the 135th Street study area should be.
(Choose one)



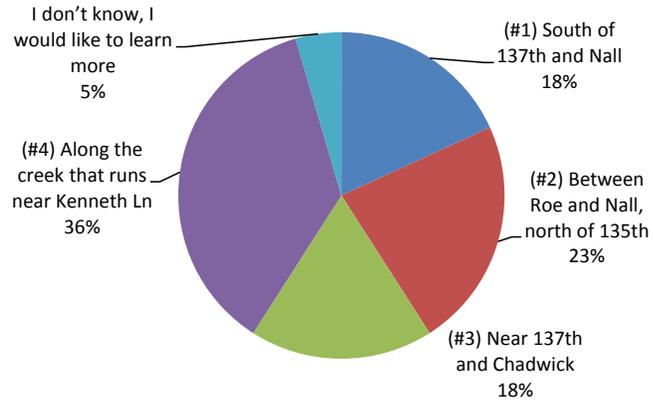
I would be in favor of increasing the tree canopy within the 135th Street study area.
(Choose one)



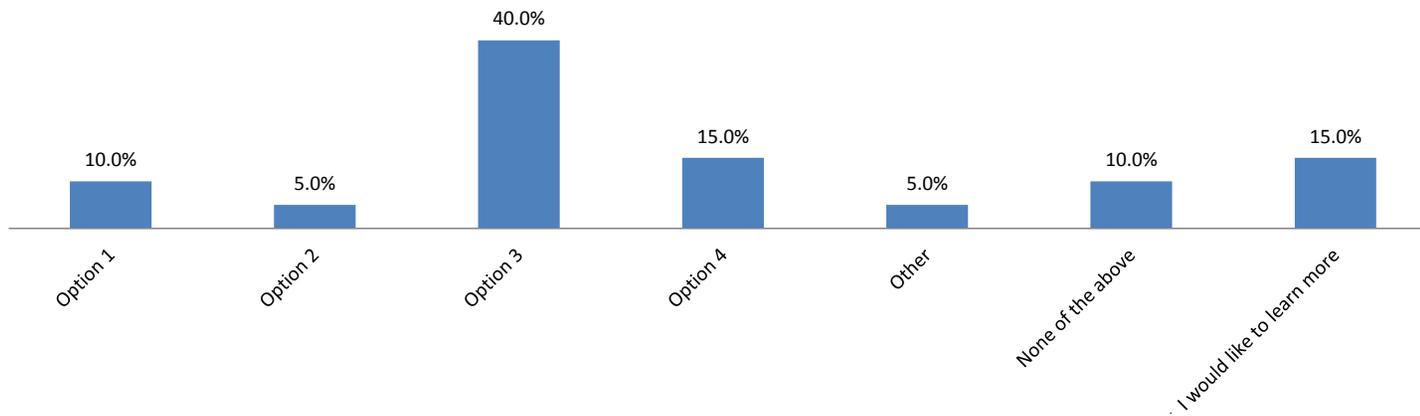
I would favor a potential "Destination Street" near 135th Street most closely resemble the following example district:
(Choose one)



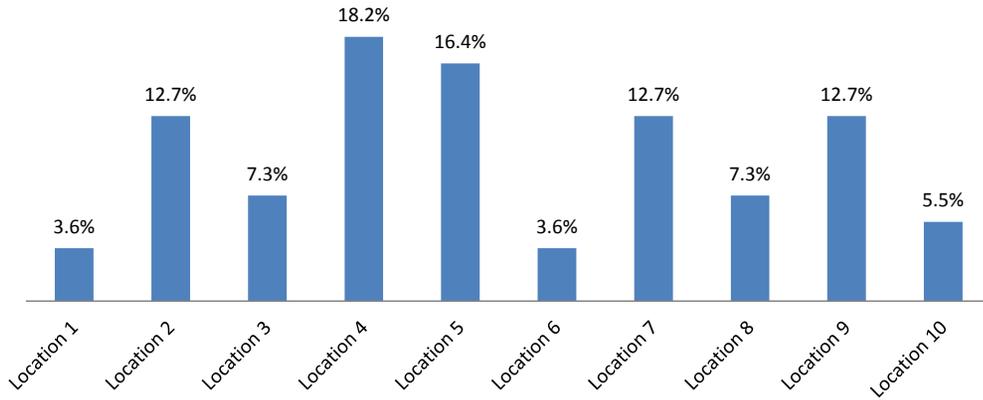
I would be in favor of a greenway or open space in the following location: (Choose one)



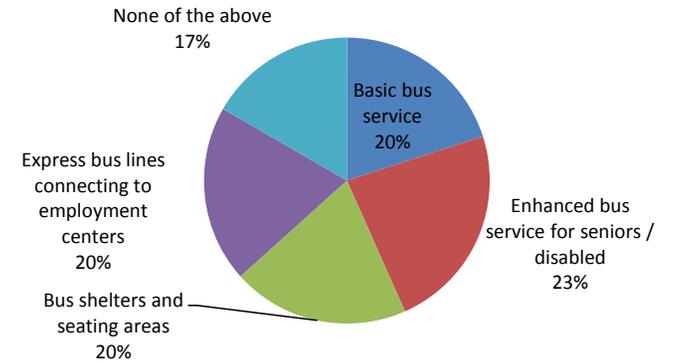
I would be in favor of which of the following land use options depicted for the 135th Street area (Choose one)



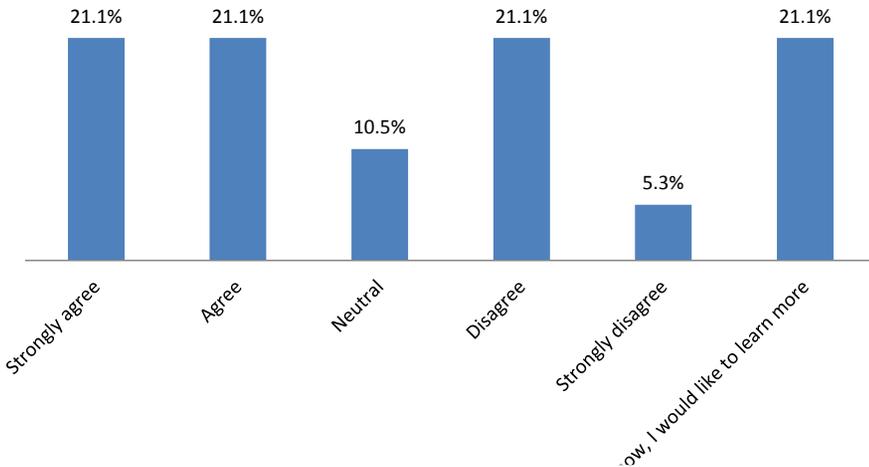
I would be in favor of the following locations for Destinations Streets (select your top three)



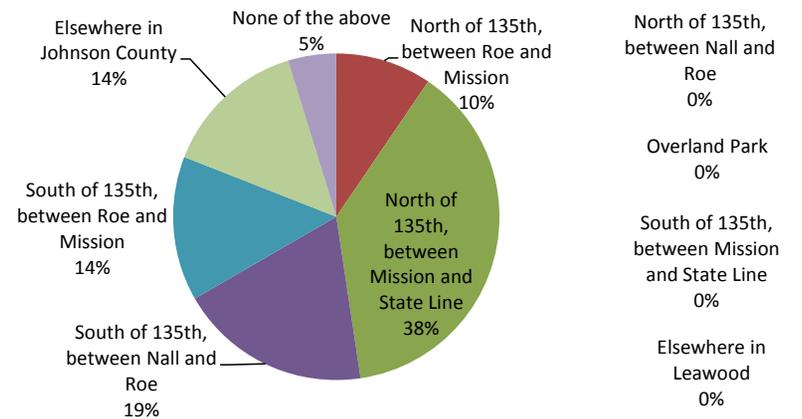
I would be in favor of 135th Street eventually including the following type of transit improvements... (Select all that apply)



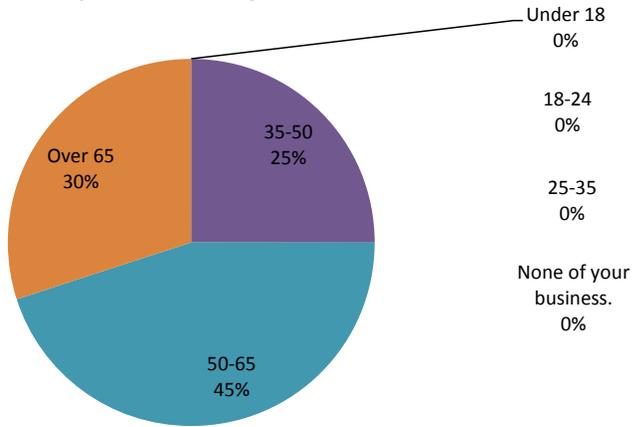
I would be in favor of rezoning this area if this would help to encourage redevelopment (Choose one)



I currently live in the following area ... (Choose one)

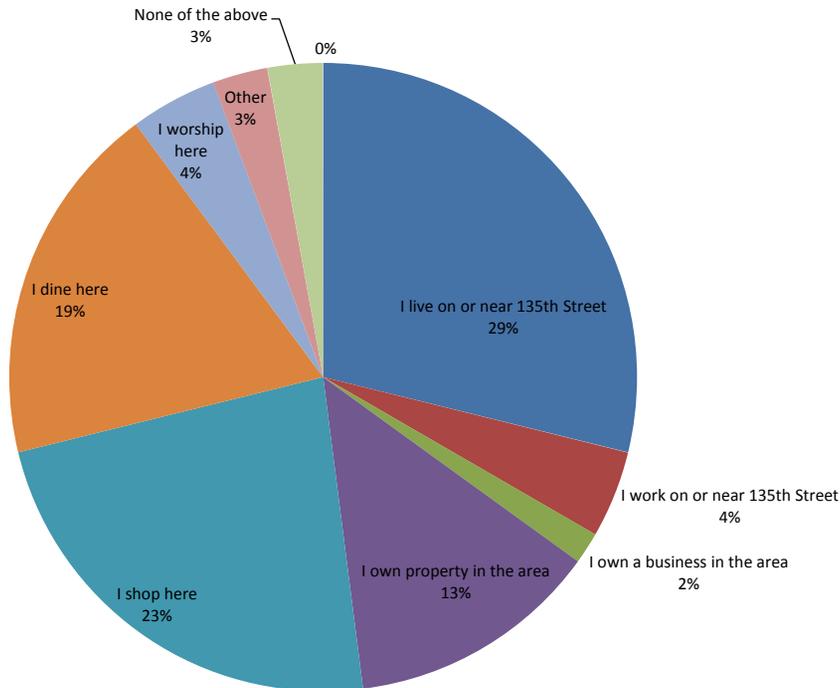


My current age is...

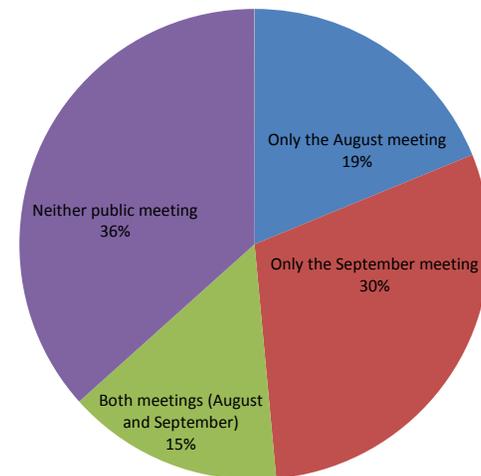


WHAT YOU HAD TO SAY - Keypad Polling Results from the October 17, 2013 Public Meeting

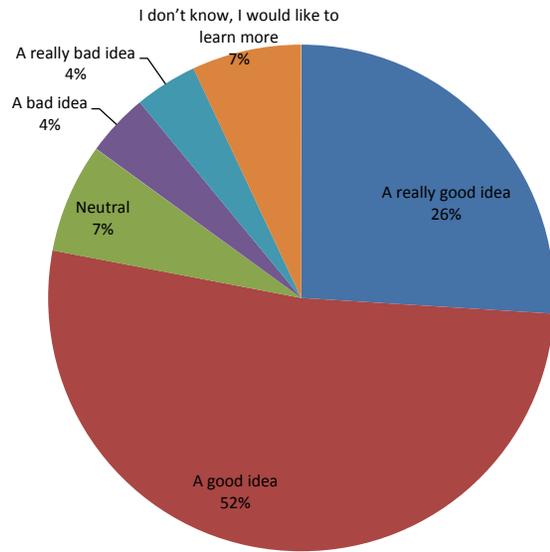
My association with this project is.... (Select all that apply)



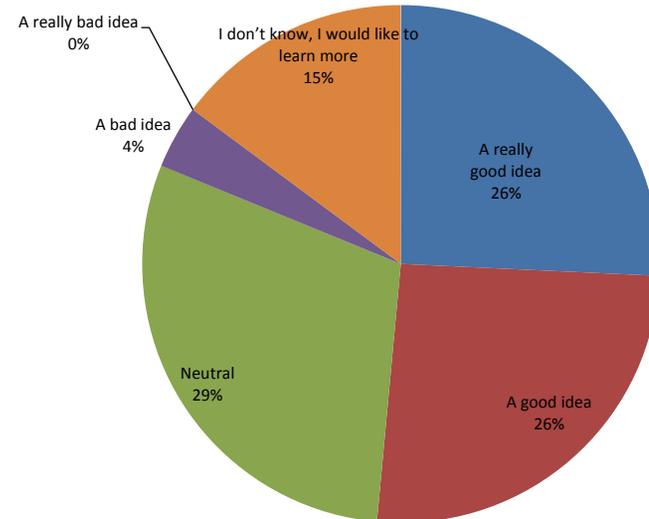
I have attended the previous public meetings for the 135th Street community plan (select one)



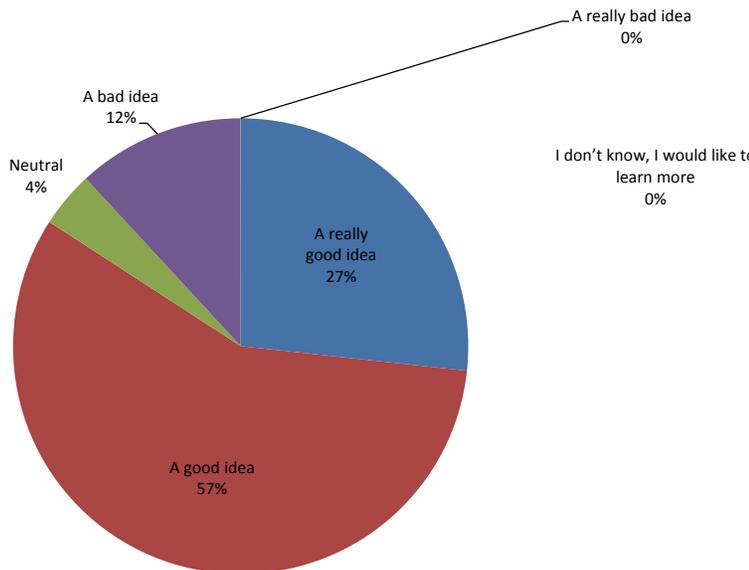
Implementing the potential street network to create walkable blocks and unified development is (select one)



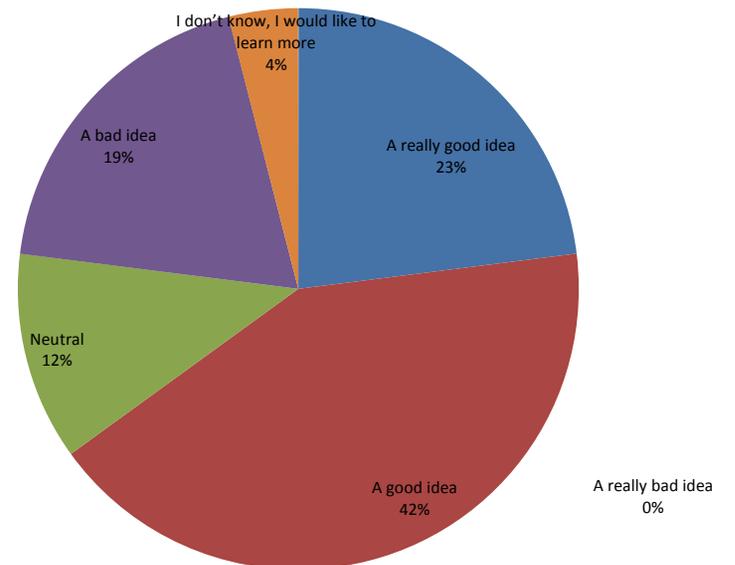
The “nodal model” of development for the 135th Street area, as described to me this evening, is (select one)



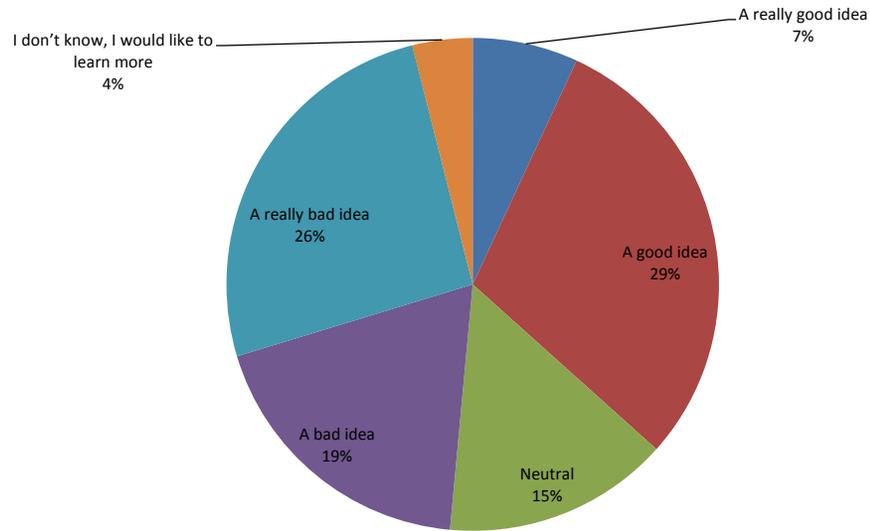
The various densities for the different parts of the 135th Street area as shown are (select one)



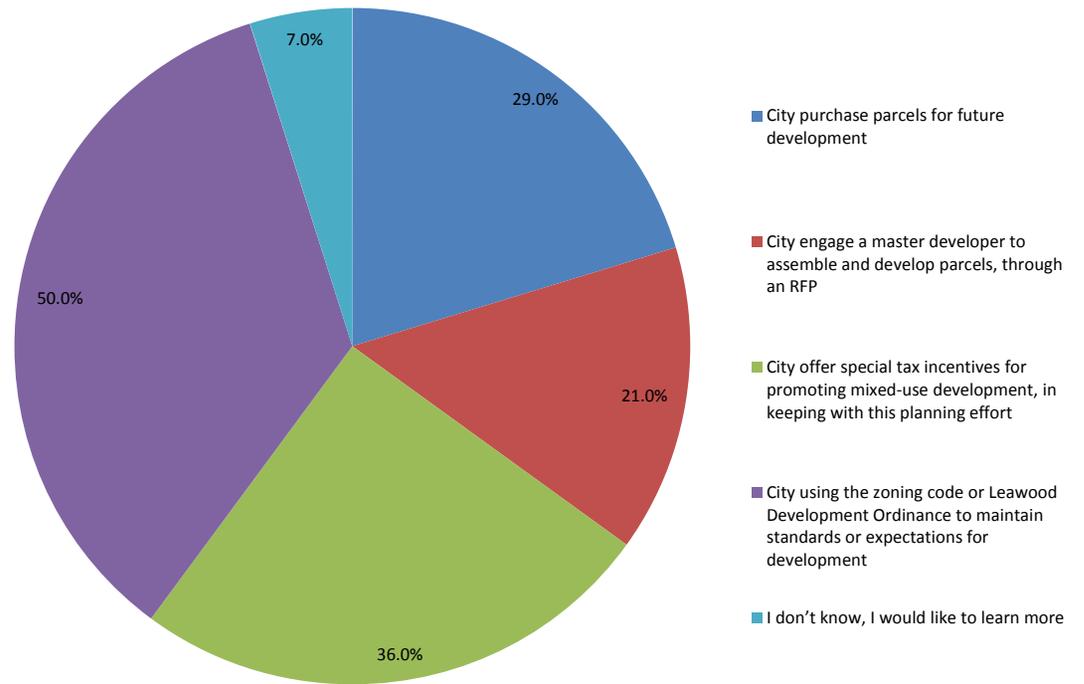
The transect idea for the 135th Street, as described tonight, is (select one)



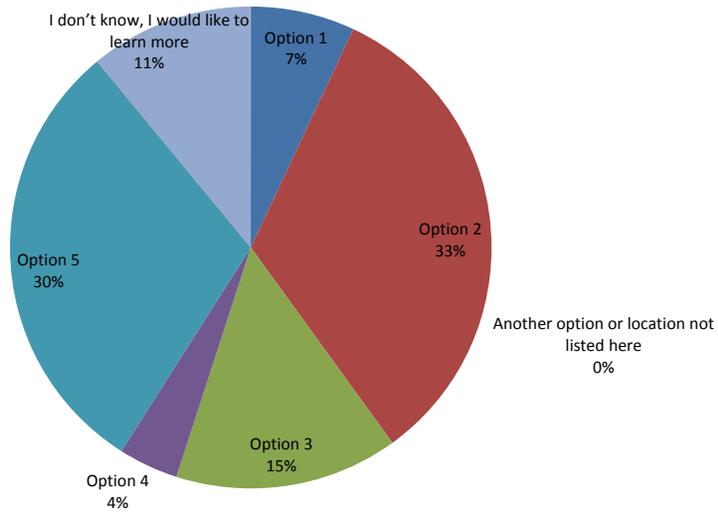
The option of installing a multiway “local lane” as shown along segments of 135th Street is (select one)



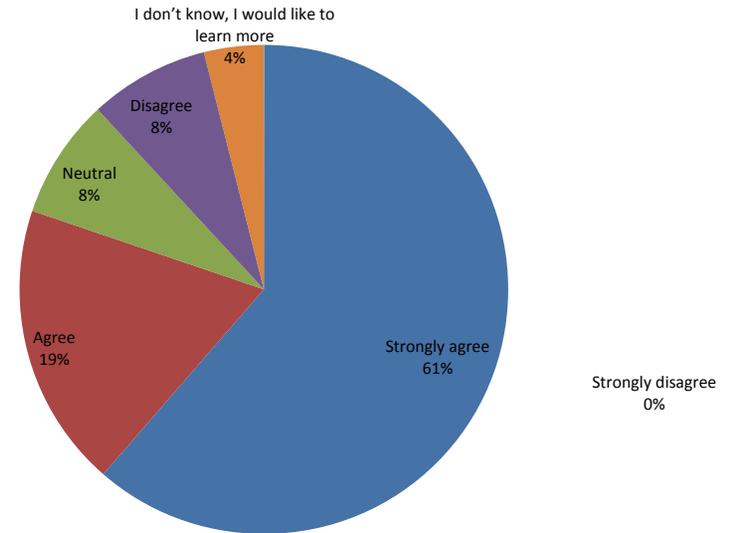
I would be in favor of the City exploring the following implementation tools to promote good mixeduse development in the study area (select all that apply)



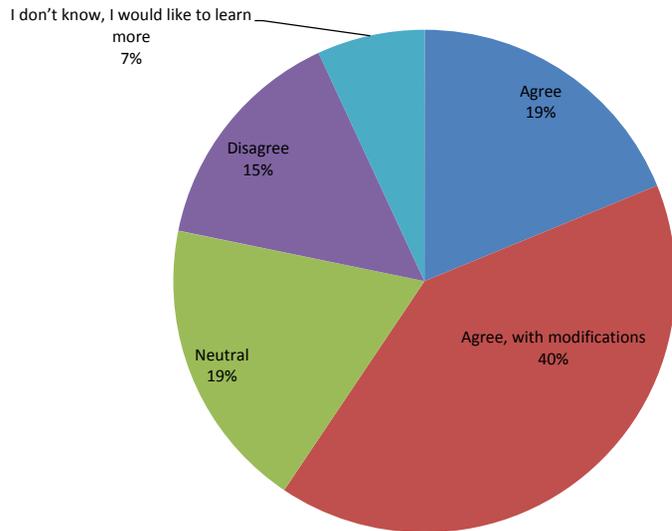
**Which of these nodal locations seem to make the most sense?
(choose one)**



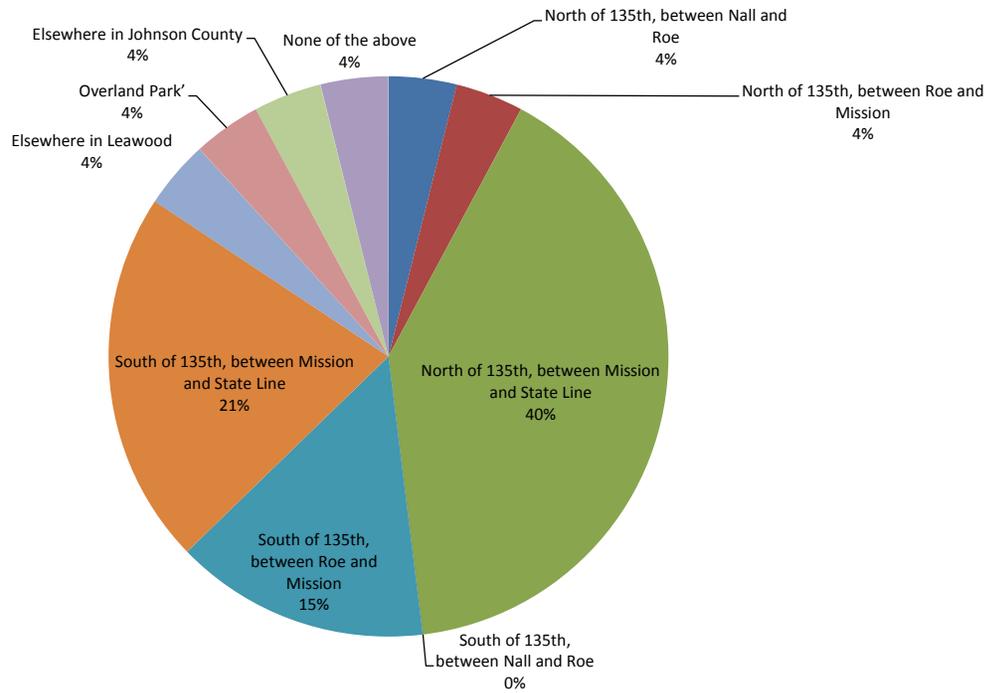
**I am in favor of the Open Space concept plan for the
135th Street area as shown. (select one)**



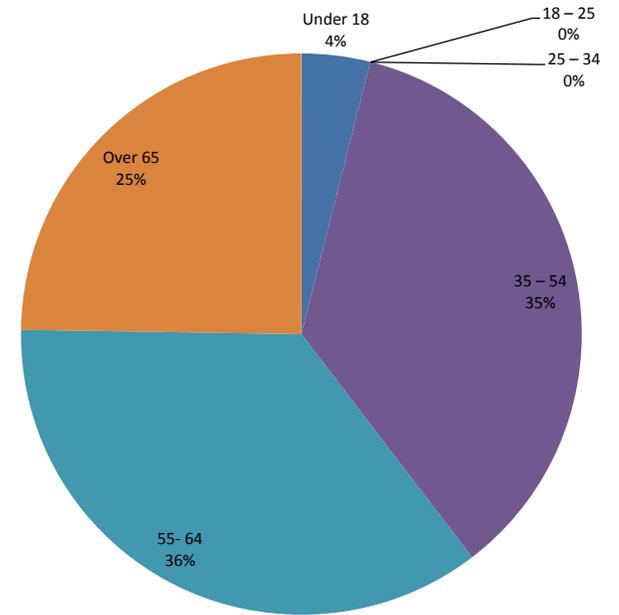
**I would be in favor of the City Council adopting the 135th Street Community
Plan, as outlined and described this evening. (select one)**



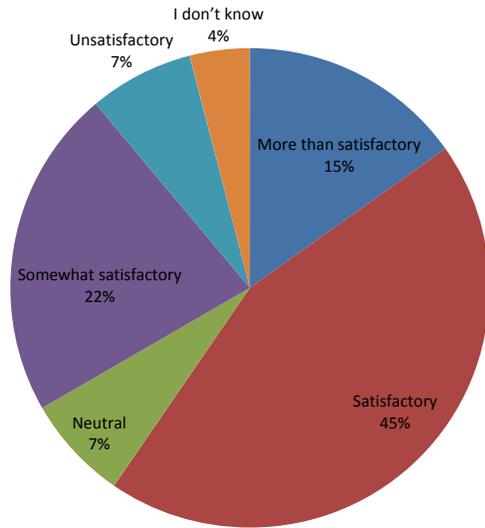
I currently live in (select one)



My current age is (select one)



**I have found the public engagement process for this project to be
(select one)**



MINDMIXER RESULTS: September 2013 - October 2013

[Home](#) | [Management](#) | [Reports](#)

[Dashboard](#) | [Traffic Report](#) | [Participant Overview](#) | [Participant Report](#) | [Idea Overview](#) | [Idea Report](#)

Welcome to City of Leawood 135th Street Plan's Reporting Interface

The Reporting Interface displays all of the activity from your project.

[Day](#) | [Week](#) | [Month](#)

TOTAL TRAFFIC

Visitors **608**

Page Views **4,000**

YOUR AVERAGE PARTICIPANT IS...

Female **50** Years Old

Living in these Postal Codes: **66224, 66209, 66211**

SHARING

[Facebook](#) **5** | [Google+](#) **0**
[Twitter](#) **0** | [Email](#) **0**
[LinkedIn](#) **0**

Top Shared Item <http://www.leawood13>



Topic Name: Walking and Biking

Idea Title: **Wide bike paths/trails along 135th on one side of street**

Idea Detail: Encourage bike riding and jogging and walking to these locations with wide, safe bike paths alone just one side of 135th St.

Idea Author: lisa H

** MINDMIXER POINTS SYSTEM*

Create an Account 50 points

Refer a Friend 25 points

Submit an Idea or Photo 10 points

Rate an Idea 2 points

Your Idea is Rated 10 points

Comment on an Idea 2 points

Vote in a Poll 2 points

Complete a Survey 50 points

Number of Seconds 0

Number of Points 22 *

Number of Comments 1

Comment 1: Connect this idea to bike paths along Mission, Roe and Nall. Biking has seen such a resurgence, but the high speeds and volume of cars makes for an unsafe combination!

| By Katie T

Idea Title: **Don't just focus on 135th but also other impacted streets**

Idea Detail: Improving safety and facilities for people walking, jogging and bicycling along or across 135th Street is a good idea... particularly crossing 135th Street. Pedestrian bridges would help keep 135th from becoming a permanent pedestrian dividing line between the north and south parts of Leawood at 135th Street.

However, just as important, maybe even more so, is to prevent the increased traffic from making it more difficult to use the paths that already exist on 133rd Street. Those jogging, walking and bicycling paths should be extended to both sides of the street to encourage more walking and biking to the development and other already built stores in the area. Also time and attention should be paid to mitigating the potential negative impacts of development to nearby neighborhoods and schools.

Idea Author: Gareth M

Number of Seconds 0

Number of Points 14

Number of Comments 2





Comment 1: The current plan to place a walking path and 137th st. almost directly on the property line of homes in the Villas of Highlands Ranch and Leawood Falls is not a good idea. 137th St. needs to be moved slightly north to give breathing room for these homes and to preserve the already tree lined back yards. This is a safety factor as well giving adventurous or mischievous people an entrance into the yards and homes already there. | By Steve T

Comment 2: I like this concept and based on the changing demographics I think Leawood should be much more aggressive in the approach to biking. I think a true, dedicated bike-way that connects this area to Town Center and North Leawood is going to help alleviate future traffic issues. And it's not bike lanes, you need to look at a true network in the city that makes it a no-brainer to do some bike commuting. | By Dylan G

Idea Title: Connectivity

Idea Detail: Connecting properties to one another via bike/walking paths is desired. Make use of natural amenities on any particular site to create common areas for the development and for the community.

Idea Author: John S

Number of Seconds 0

Number of Points 13

Number of Comments 0

Idea Title: 137th Street Completion to Kenneth Rd

Idea Detail: This is a great idea, but has its problems. The maps show the street approximately on the back yards of the Villas of Highlands Ranch homes and the Leawood Falls. These are quality homes in which the value could be diminished by close proximity of a major street through Leawood. A shift of several yards north would be of immense value for the homes already in place. There is no downside to making this shift. Please give the homeowners some reasonable relief from the immense development and stop the unnecessary removal of trees lining the back yards of these homes.

Idea Author: Steve T

Number of Seconds 0

Number of Points 7





Idea Author: Kevin J C

Number of Seconds 0

Number of Points 3

Number of Comments 0

Idea Title: Bike Trails and Safe Crossing for 135th Street

Idea Detail: The area needs to safely connect to bike trails and walking trails with lots of green space. It is important to have a dedicated and safe way to cross 135th Street such as an elevated walking bridge or tunnel so residents and guests can safely cross for shopping or for a walk to Gezer Park at 133rd and Mission.

Idea Author: Lelia T

Number of Seconds 0

Number of Points 3

Number of Comments 0

Idea Title: Create alternate and designated biking routes/lanes for safety

Idea Detail: 135th has become a throughfare for Missouri to Kansas travelers, creating heavy and high speed traffic. With the addition of further shops/entertainment, it is undeniable this trend will only increase. The city of Leawood needs to maintain the safety of it's residents, health activists and visitors. In attempt to do so, I would propose reducing speeds to 35mph for eased access in and out of this commerial destination area. Furthermore, it would be greatly beneficial to create designated biking lanes and sidewalks along Nall and Mission Roads, to provide bicyclists, joggers, walkers, etc. safe alternate routes for continuing their leisure pursuits. This effort would also aid in maintaining the picturesque and family friendly feel the community strives to uphold.

Idea Author: Shelene M

Number of Seconds 0

Number of Points 3





Number of Comments 0

Idea Title: Bicycle and Walking

Idea Detail: Provide plenty of room for bike and walking connecting with existing, this should not be done on 135th, only on side streets

Idea Author: Jay G

Number of Seconds 0

Number of Points 3

Number of Comments 0

Idea Title: No more interections or access to 135th

Idea Detail: Limit the number of interections and entrances to 135th, this allows traffic to flow and eliminate all the start and stop like between Metcalf and Roe.

Idea Author: Jay G

Number of Seconds 0

Number of Points 2

Number of Comments 0

Idea Title: 138th Street completion to Kenneth Rd.

Idea Detail: This is a great idea, but has its problems. The maps show the street approximately on the back yards of the Highlands Ranch homes and the Villas of Highlands Ranch. These are quality homes in which the value could be diminished by close proximity of a major street through Leawood. A shift of several yards north would be of immense value for the homes already in place. There is no downside to making this shift.

Idea Author: Steve T

Number of Seconds 0

Number of Comments 0





Idea Title: Safety of homes bordering 138th street

Idea Detail: The current plan to place a walking path and 138th st. almost directly on the property line of homes in the Villas of Highlands Ranch and Leawood Falls is not a good idea. 138th St. needs to be moved slightly north to give breathing room for these homes and to preserve the already tree lined back yards. This is a safety factor as well giving adventurous or mischievous people an entrance into the yards and homes already there.

Idea Author: Steve T

Number of Seconds 0

Number of Comments 0



could enjoy on their own or with children. Also limiting the height of buildings and shielding the "development" with trees and landscaping as well as directing traffic to 135th rather than to the smaller streets nearby would be important.

Idea Author: Gareth M

Number of Seconds 0

Number of Points 19

Number of Comments 0

Idea Title: Preserve Nature

Idea Detail: Keep it agricultural. Preserve one of the last easily seen farming operations in Johnson Co.

Idea Author: Carl H

Number of Seconds 0

Number of Points 18

Number of Comments 0

Idea Title: Green space.

Idea Detail: Green space - a park.

Idea Author: Mary P

Number of Seconds 0

Number of Points 16

Number of Comments 0

Idea Title: Gateway of green areas before the commercial blocks west of Roe.

Idea Detail: Leawood does NOT need to be a carbon copy of OPKS. We are a community of people that likely commute to another city daily. Keep Leawood as a clean well managed





community. Leawood should continue to be a unique environment: Greenspace, walking paths, parks, bike trails, nature trails, wildlife habitats.

Idea Author: Peggy Q

Number of Seconds 0

Number of Points 16

Number of Comments 0

Idea Title: STOP development

Idea Detail: Keep it agricultural.

Idea Author: Carl H

Number of Seconds 0

Number of Points 12

Number of Comments 0

Idea Title: Mixed Use - Lots of Green Space (Croquet Center)

Idea Detail: I am the USCA Communications Chair and President of the Midwest Croquet Association. I recently returned from a croquet tournament in Edina, MN located on courts in a mixed use area that featured a long stream between two lakes (Centennial Lakes Park). It was a great experience with restaurants, hotels and shopping all within walking distance. Links included.

I would like to see something similar here, but a bit more open.

I have already spoken to the city about croquet courts at the newly acquired Ironwoods park land and as part of that pitch this what I think is key. We are facing an era of massive growth for seniors due to the baby boomers. We need as city to address how those seniors are going to stay healthy and actively engaged as they will live longer creating a drag on city resources. Croquet can mentally, physically and socially allow seniors to be engaged as a true age and gender equal sport. I live in very close by and would love to work with the city on this program.

Idea Author: Dylan G



Number of Seconds 0

Number of Points 12

Number of Comments 0

Idea Title: Town Center with quality restaurants and unique shopping

Idea Detail: Similar spots around the country include Celebration, FL; Pearl Street in downtown Boulder, CO; Franklin, TN; and the Green Hills area near Nashville, TN. The key is to have unique shops and quality products and restaurants. It would also need plenty of flowers and greenery to make it attractive. Residents from the Tuscany community should be able to easily walk there. If it is nice, people will visit.

Idea Author: Lelia T

Number of Seconds 0

Number of Points 7

Number of Comments 0

Idea Title: Restaurants and shopping

Idea Detail: We need a restaurant area and place to gather, ride and walk... Maybe limited shopping but no large malls or large stores, there are already too many malls in the area, no car dealerships either

Idea Author: Jay G

Number of Seconds 0

Number of Points 5

Number of Comments 0

Idea Title: A green zone between State Line and Nail

Idea Detail: Drivers along 135th St should notice something different and unique when passing through the Leawood section of 135th St. Green, quiet, softer and special.





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PROJECT REPORTS

Idea Report

12

Number of Seconds 0

Number of Comments 0



Topic Name: Future Land Use

Idea Title: Creeks and Stream impact

Idea Detail: Development is inevitable, and I appreciate your efforts to receive input from the community. That said, it is also inevitable that this planned development will further impact the nearby creeks and streams that run north of this development. The creek that parallels our subdivision has already seen increased runoff due to development along 135th and Roe, and these new plans may affect this issue further. Please ensure that natural runoff is addressed thoroughly in your plans.

Idea Author: Katie T

Number of Seconds 0

Number of Points 17

Number of Comments 0

Idea Title: NO MORE STRIP MALLS!!

Idea Detail: There are dozens of empty retail spaces along 135th, some have been sitting empty for many years, never occupied. No more developments for retail or commercial sites. Greenspace, well planned community gardens areas (like Boston's Fenway Victory Gardens), Arboretums, parks. A Corporate Woods like setting for areas with established office park (between Mission and Nall), more native trees, more green areas.

Idea Author: Peggy Q

Number of Seconds 0

Number of Points 17

Number of Comments 0

Idea Title: Plenty of green space, sidewalks, trees and flowers.

Idea Detail: Be careful when making plans for extensive redevelopment! The Nall corridor is experiencing immense "heavy equipment" usage. Can we be assured that the contractors are encouraged to use other routes? 135th street? Alternate 69? State Line? Or even Roe now and then?





Idea Author: Jodie V

Number of Seconds 0

Number of Points 14

Number of Comments 0

Idea Title: Green space.

Idea Detail: We already have too many vacant buildings and ugly strip malls We don't need any more development.

Idea Author: Mary P

Number of Seconds 0

Number of Points 12

Number of Comments 0

Idea Title: Leawood needs a dog park

Idea Detail: Leawood needs a dog park. There is no great park for dogs to be off leash in Leawood. This is a great way to preserve nature while making the land useful.

Idea Author: Kristin H

Number of Seconds 0

Number of Points 11

Number of Comments 1

Comment 1: Leawood is getting a dog park near Leawood Park. I think it opens in 2015. Another one further south would be nice. | By Diana C

Idea Title: STOP development.





Idea Title: Mix of uses determined by demand

Idea Detail: The plan should be flexible allowing for uses based on demand. Demand may warrant high end apartments at one point in time, then office or retail at another point in time. Any plan should be fluid and allowed to be modified with changing market conditions.

Idea Author: John S

Number of Seconds 0

Number of Points 3

Number of Comments 0

Idea Title: Mixed use facilities

Idea Detail: Park Place and Mission Farms are doing very well, these are good examples of what we need on the 135 corridor. I too dislike the strip malls, but this area is privately owned so it won't be kept agricultural, follow the money. But we can direct the city as how to restrict the development. Limiting the height of buildings and managing the lighting is key. Also traffic flow is critical, keep the speed limit at 45, make the lights SYNCHRONIZED. Mandate certain amount of green space per sq foot development. Definitely encourage an area for a farmers market. Need fountains, plantings and outdoor seating areas at restaurants and in green space. Encourage parking structures that are "disguised" instead of huge open parking lots. Get the sustainability group for Leewood input. Mandate that all run off water be collected in underground tanks and use that water to keep the area green and prevent run off to surrounding neighborhoods. Mandate develop to build roof run off not same underground

Idea Author: Diana C

Number of Seconds 0

Number of Points 3

Number of Comments 0

Idea Title: Trees, trees and more trees.

Idea Detail: In many spots along 135th St, it would be nice to not see buildings and business.





Idea Author: Chuck S

Number of Seconds 0

Number of Points 3

Number of Comments 0

Idea Title: Make the best use.

Idea Detail: Has anyone counted the number of empty buildings and store fronts located just between Nall and State Line Road on 135th? Ride around and count them. It is such a waste of resources, land, money and not to mention aesthetically displeasing. And all of the apartments are horrendous. We moved to this area nine years ago because it was a nice mix of close enough to everything we needed and still offered nice wide open spaces. Now...every space is being consumed with structures. I am not opposed to progress. However, we, in Leawood, are in overkill. And the charm of the area is certainly dwindling away.

Idea Author: Lisa H

Number of Seconds 0

Number of Comments 0

Idea Title: Set aside some land for a large South Leawood park.

Idea Detail: About 25% of the area under consideration is currently zoned "agricultural." Rather than re-zoning it to "mixed use" as the developers would like, let's plan a large park for biking, walking, picnicking, and sports.

Idea Author: Fred G

Number of Seconds 0

Number of Comments 0





Topic Name: Community Amenities

Idea Title: Think about pedestrians, children and bicycles

Idea Detail: Most of the developments in Leawood are difficult to get to by bicycle or walking. In fact, they are downright dangerous to get to in some cases (Town Center being a case in point). I have two hopes with respect to the development:

- 1) I'd like for Leawood to find ways to calm the additional traffic that the development would generate - some of which would likely go through nearby neighborhoods as well as 133rd Street. One fear I have is that the extra traffic will make it more difficult for children to safely walk and bike to school (e.g. Mission Trail Elementary), nearby parks and when traveling in their own neighborhoods (as cars cut through neighborhoods to avoid traffic lights and congestion from the increased development).
- 2) It would be wonderful if there were green space, activities and/or cafes that families could walk or bike to in the new development. Having to drive everywhere in Leawood to avoid dangerous intersection crossings is kind of a drag.

Idea Author: Gareth M

Number of Seconds 0

Number of Points 14

Number of Comments 0

Idea Title: Don't do anything.

Idea Detail: We have over-developed the rest of the city. Keep this natural. Keep it agricultural.

Idea Author: Carl H

Number of Seconds 0

Number of Points 8

Number of Comments 0

Idea Title: Town Center with Unique Shopping and Quality Restaurants





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PROJECT REPORTS

Idea Report

20

Number of Comments 0

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Topic Name: Quality of Development

Idea Title: Develop Properties in Phases

Idea Detail: Most tracts of land along 135th Street are large ie. 20-40 acres. It is difficult, if not impossible, to develop the properties all at once. Phasing is important to begin quality development when it is needed/wanted, then have a fluid plan for future development depending on market conditions.

Idea Author: John S

Number of Seconds 0

Number of Points 13

Number of Comments 0

Idea Title: NO MORE STRIP MALLS. NO AUTO DEALERSHIPS.

Idea Detail: Why not have a unique and refreshing alternative: keep it agricultural.

Idea Author: Carl H

Number of Seconds 0

Number of Points 13

Number of Comments 1

Comment 1: Realistically, the area will get developed. It is so wise of the city to seek the neighbors input. Make sure you let your friends inLeawood know about his so we can make whatever is developed outstanding. I lived in the Waterford neighborhood when the Price Chopper was proposed. We have the park thanks to the neighbors work and input and one of the nicer Price Chopper stores in the area. | By Diana C

Idea Title: Promote Neighborhood Spirit

Idea Detail: I'd like this area to be a place where residents can easily visit on a regular basis...meeting friends for lunch and dinner and/or shopping while near home. It should be a relaxing and cordial meeting place for area residents. It should also be a destination where guests enjoy shopping for novel gifts and stop to enjoy a nice meal.





Idea Author: Lelia T

Number of Seconds 0

Number of Points 10

Number of Comments 1

Comment 1: We know it is not reasonable to keep the land in agricultural production. But please do not allow a busy road (137th St) and walking path so close to the homes in Villas of Highlands Ranch and Leawood Falls. Let's keep Leawood a very desirable place that gives a balance of priority to homeowners as well as merchants. I think this is what gives Leawood it's draw. | By Steve T

Idea Title: Please no commercial space, strip malls or other buildings

Idea Detail: I don't want to see any commercial development in that area. There are already too many empty ugly strip malls by Price Chopper and the corner of 133rd and Stateline. Please consider the residents that this development will impact. Mainly Wilshire Place where the average home has to have at least two children. Traffic flowing along High Drive is already busy and fast and we worry about our kids getting hit by cars daily. If that area gets built I can only imagine what the traffic on my street will look like.

Idea Author: Bridget L

Number of Seconds 0

Number of Points 6

Number of Comments 1

Comment 1: I agree. Leawood already has an abundance of shopping and eating areas. We don't need any more retail space. Some sort of green space would be ideal. | By Sara J

Idea Title: Rent and over saturation

Idea Detail: There are too many strip malls sitting half empty in southern Leawood. (133rd & State Line, 133rd and Mission, 133rd and Roe.) Before more is built, I'd like to see these developers get some encouragement to lower their rent so they can fill a few of these spaces.



Number of Seconds 0

Number of Points 2

Number of Comments 0

Idea Title: Baby Boomers

Idea Detail: Smaller, newer, latest medical and fitness centers with walking indoors and outdoors paths based on weather... Covered bus pickup and drop off points. Make sidewalks wide and long with benches and points of interests with reasons to be there and spend time...

Idea Author: Jay G

Number of Seconds 0

Number of Points 2

Number of Comments 0

Results of Visual Preference Survey: Public Meeting September 18, 2013

MIXED-USE RESIDENTIAL

+



+2 - 0 = +2



+2 - 0 = +2



+1 - 0 = +1



+1 - 0 = +1

±2 - 1 = ±1

±1 = 1 = 0



+0 - 1 = -1



+0 - 1 = -1

-

STOREFRONTS

+



+4 - 0 = +4



+4 - 0 = +4



+2 - 0 = +2



+1 - 0 = +1



+1 - 0 = +1



+1 - 1 = 0



+0 - 1 = -1



+0 - 1 = -1

-

STREET FURNISHINGS

+



+2 - 0 = +2



+1 - 0 = +1



+1 - 0 = +1



+0 - 1 = -1



+0 - 1 = -1



+0 - 1 = -1

-

+



+3 - 0 = +3



+2 - 0 = +2



+2 - 0 = +2



+1 - 0 = +1



+0 - 1 = -1



+0 - 1 = -1



+0 - 1 = -1

-

LIGHTING

+



+5 - 0 = +5



+3 - 0 = +3



+2 - 0 = +2



+1 - 0 = +1



+1 - 0 = +1



+0 - 1 = -1



+0 - 1 = -1



+0 - 1 = -1

-

SIGNAGE / IDENTITY

+



+1 - 0 = +1



+0 - 1 = -1



+0 - 1 = -1



+0 - 1 = -1

-

Note: + Votes For - Votes Against = Final Score

C

APPENDIX C LDO RECOMMENDATIONS

Leawood Development Ordinance (LDO) Recommendations

The implementation of the future street network is imperative to the infrastructural and transportation needs for future development and density in the corridor. The city should coordinate the development of various parcels within the corridor to ensure new development plans include the implementation of a fair percentage of street network infrastructure. That is to say, if simultaneous development takes place on two adjacent parcels, each developer is responsible for 50% of shared road building costs. The city can determine these percentages based on a variety of factors including but not limited to: amount of street frontage; primary and secondary access needs; traffic requirements as they respond to proposed densities.

LDO Recommendations

The elements of streetscape character will help distinguish districts and bring identity to neighborhoods. The street sections provided in this document present a unified character for the corridor but allow for flexibility in material and design to help the City and developers work together to build unique and distinct places in Leawood.

Development plans should identify any proposed street character types and their associated elements. The implementation of particular street character elements, which include but are not limited to: rain gardens, seating amenities, bicycle facilities, can qualify development plans for density bonuses defined by the City.

Potential LDO Revisions

The existing development ordinance works to ensure that all buildings will have “street frontages” but the series of associated regulations doesn’t clearly define what a street frontage is or should be. The following points could be revised to help better explain this term and further establish street character throughout the corridor:

16-1-6

Use the below definition to help explain what it means for buildings to “front” upon a public street or approved private street.

16-2-9.2D1;3;4

Combine points D1, D3 and D4 into one comprehensive section to help define what a building frontage is and should be. All buildings shall be designed to create a strong physical relationship with their adjacent streets by:

- Providing a clearly defined, highly visible entrance
- Orienting the entrance toward the street-side of the building
- Connecting the entrance and the street with a sidewalk.

LDO Recommendations: The Kit of Parts

The existing development ordinance offers developers and their associated projects a number of bonuses for the inclusion of elements that exceed the minimum requirements. However, these helpful ingredients that encourage exceptional design and building are buried throughout the document. Providing developers with a “Kit of Parts,” or an easy-to-follow menu of elements and their associated bonuses could expedite both the communication and application processes for future development projects. The following is a list of potential elements recommended for inclusion in this kit:

Pedestrian Accommodations

Sidewalk Width

16-2-9.1 Performance Criteria-Public Sidewalks

The following represent minimum recommended widths per street character type. These widths respond to the needs of each street type and best management practices for pedestrian design.

Neighborhood Street	6’
Active Pedestrian Street	8’
Destination Street	16’

16-2-9.2 E-5 Pedestrian/Bicycle Circulation

This ordinance requires that non-residential sidewalks be placed a minimum of six feet from the façade of a building in order to provide landscaping between buildings and sidewalk. This requirement limits the possible activities that could take place on an active sidewalk or Destination Street. The city should work with property owners and developers to determine the best placement of sidewalk facilities to create active pedestrian environments while maintaining a distinct quality of design throughout the corridor.

Sidewalk Material

In recent years there have been numerous advancements made to paving material technology. Some of the latest advancements include attractive options for porous pavement (concrete) and permeable pavers. Porous pavement is a type of paving that can bear traffic loads but has a high enough porosity and permeability to significantly influence hydrology, rooting habitat, and other environmental effects. Permeable pavers consist of a layer of concrete (or other material) pavers separated by joints which are filled with small stones. Water enters joints between the solid pavers and flows through an open-graded base back into the soil.

As development occurs in the 135th Street corridor, the amount of impervious surfaces (which include elements such as pavements and rooftops) will significantly increase. This increase impacts the quantity and quality of surface runoff water. Surface runoff from dense development of impervious areas can contribute to water pollution, flooding, erosion, and loss of groundwater recharge.

Through bonuses and/or incentives, the City should work with developers to select and install permeable materials for sidewalks that meet the U.S. Environmental Protection Agency (EPA) stormwater performance criteria as a structural best management practice. In addition to reducing the negative environmental impacts of development, use of this material can help bring attention and possible marketing opportunities to new developments through the pursuit of LEED certification and/or Sustainable SITES certification.

Crosswalk Features

To meet the City's goals of creating a truly pedestrian-friendly environment, the following features represent some best practices for crosswalk design and implementation that should be included in the creation of new intersections:

16-2-9.2 E-4 Pedestrian/Bicycle Circulation

The current LDO recommends differentiating the pedestrian route from the vehicular route at all intersections. This helps to protect pedestrians and gives clear signals to both pedestrians and drivers that safe passage is preserved at these locations throughout the corridor. The City should work with developers to ensure that crosswalk material is either uniform or similar at all crosswalks throughout the corridor. Uniformity and regularity in visual cues helps to reinforce the idea of safe passage to drivers and pedestrians alike. Permeable materials at crosswalks should be considered as best practices for stormwater management in the area.

Vision Impairment Accessibility.

There are a number of ways to ensure that those with vision impairments can access and use crosswalks in the corridor:

- Detectable crosswalk warnings (truncated domes) at both ends of a crosswalk
- Consider audible pedestrian signals to alert those who cannot see a signal

ADA Compatible Curb Ramps

Curb ramps should be placed to enable a person with a mobility disability to travel from a sidewalk on one side of the street, over or through any curbs or traffic islands, to the sidewalks on the other side of the street.

Pedestrian Push Buttons

Well-marked, visible, and accessible to all from a flat surface at crosswalk signals. Push buttons should be consistent with recommendations from the U.S. Department of Transportation's Designing Sidewalks and Trails for Access.

Crosswalk Timing

The city should work to coordinate adequate crossing times for each crosswalk. Target crossing speed for visually impaired and elderly is 2.5 feet per second.

Differentiated Crosswalks

Crosswalk material should be visually differentiated from driving lanes.

Street Furniture

16-3-9-A-4.d Pedestrian Amenities

The existing LDO offers a 10% increase in applicable maximum FAR for projects with substantial pedestrian amenities. Providing developers with a more comprehensive list of what these amenities could include will help developers and property owners better understand how to achieve the City's goals of creating excellent pedestrian-oriented spaces, and acquire the potential bonus.

Seating is an important part of vibrant public spaces. It allows pedestrians to rest, socialize, read and people-watch. The three street character types (Destination, Active Pedestrian, and Neighborhood) represent different levels of potential pedestrian activity. Urban design standards recommend one linear foot of seating for every 21 linear feet of street frontage. The recommended block size of 360 feet would require, at a minimum, 17 feet of seating. In addition to traditional benches, the City should work with developers and designers to produce creative seating opportunities, such as seat walls, multi-functional art pieces and raised planters.

Like seating, locations and amenities that allow for outdoor dining provide excellent opportunities for community members to meet, greet, and eat. While wider sidewalks will allow restaurants to pursue expanding their space with outdoor dining options, developers and property owners could work with the City to create outdoor dining spaces in key locations or plaza spaces throughout the corridor. Either temporary or permanent outdoor dining amenities can create inviting and active spaces for community gathering and social interaction in the area.

Shade also plays a key role in human comfort and pedestrian activity in urban environments. Street trees will be the main element to produce

shade for pedestrians, but other opportunities for shade structures, art pieces and building amenities should be pursued to create the best possible pedestrian experience for the community.

Street Trees

16-4-7.3 Landscaping Requirements – Other Districts

Regulations require developers to install street trees. Developers and cities could work together to select optimal tree species for development that responds positively to surrounding species and meets current city regulations for size and shade.

16-4-7.4 Installation and Maintenance of Landscaping and Screening

New technologies in tree installation and design help to protect trees, can extend their life cycle and significantly reduce the impacts of sidewalk upheaval. In urban environments, tree soil volume is most commonly the deciding factor of street tree health. The recommendation of the design team is that all street trees be planted with a 1000 cubic feet of soil. Soil that may be counted in this calculation includes uncompacted soil with an organic matter percentage of at least three percent. There are several methods for achieving this goal.

In areas where flush walking surfaces must be maintained, the design team recommends several methods including suspended pavers and underground drainage cells. Suspended pavement utilizes a structural sound steel frame that is anchored to slabs and supports the above pavers while leaving the soil below untouched. This system is used for newly planted trees and can come in various sizes to fit necessary requirements. These systems can be coupled together to provide a continuous soil trench between street trees allowing trees to share soil. They can support both concrete and pavers and the full load of cars and trucks. These systems can be used in tight areas where the surface material is irregular. For best results these systems should be used in conjunction with proper subsurface drainage and permeable pavers to allow for air and water flow between the soil and the atmosphere.

Lighting

16-2-9.2B Non-Residential Uses: Lighting

While the existing lighting guidelines described in the LDO do set standards for the lighting of parking lots and building entries, there are a number of other lighting areas and elements that should be considered in the design and development of urban spaces. Setting some minimum standards for lighting along the 135th Street corridor will allow development in the area to meet the following goals:

- **Promote Safety** “More light” is not necessarily “better.” Unsafe glare reduces the effect of lighting, contributing to accidents and hindering visibility.
- **Reduce Costs** Following professionally recommended light levels to provide adequate illumination and efficient luminaires will be more cost-effective and reduce energy usage.
- **Conserve Natural Resources** Inappropriate or excessive lighting wastes energy sources and pollutes the air and water by unnecessarily burning fossil fuels.
- **Retain Community’s Character** while reducing “Skyglow,” Leawood’s ability to see a dark, star-filled sky should be preserved and protected. Stray and excessive lighting contributes to light pollution, clutter and unnatural “sky glow.”
- **The design team recommends the use of Light-emitting diode (LED) luminaires.** The following table provides standards for lamp type, uniform ratio and average footcandle to safely and responsibly light the corridor:

By Area or Type			
	Lamp Type	Uniform Ratio	Footcandle
Parking	Light-emitting diode	4:1	1.0 Average
Main Trafficways	Light-emitting diode	4:1	2.0 Average
Main Pedestrian Routes	Light-emitting diode	4:1	3.0 Min/5.0 Max
Pedestrian Connections	Light-emitting diode	N/a	5.0 Average
Signage	Light-emitting diode	N/A	2.0 Min/5.0 Max

Bike Accommodations

The City of Leawood is currently engaged in a process to produce the Leawood Bicycle and Pedestrian Master Plan. In order to realize this plan within the corridor, the City should work with property owners and developers to install bike amenities that will make this plan a reality. To

encourage these entities to take on bike amenities, the city may offer density bonuses or similar compensation.

On-Street Bike Lane

Bike lanes are a portion of the roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use by bicyclists. Bike lanes help make both bicyclists and motorists aware of each other and provide safer conditions for both users of the roadway.

Minimum width of bike lanes in the corridor (as recommended by the American Association of State Highway and Transportation Officials (AASHTO) is five feet. The design team recommends a six foot bike lane which includes the six inch paint stripe separating the bike lane from the car lane.

Sharrows

In some cases a sharrow, or shared roadway bicycle marking, may be the appropriate choice to accommodate bicyclists in the corridor. A sharrow marking designates a lane within the roadway as a shared route for both vehicles and cars. Sharrows are most commonly used on bicycle routes in travel lanes whose right-of-way is too narrow to accommodate both a travel and bicycle lane, or along roads with adjacent to on-street parallel parking.

Bicycle Parking

In order to welcome bicyclists and bicycle activity into the corridor, sufficient bike parking must be provided along community streets. The City may work with developers and designers to select and install bike parking accommodations.

Design guidelines recommend two bike racks for every 2,000 feet of plaza space. Studies have found that the most accommodating bicycle racks are inverted “U” racks, or variations of this form. Wave racks have been found to limit parking capacity. Inverted “U” rack elements mounted in a row should be placed on 30 inch centers.

In some scenarios, potentially a plaza or park space, a bicycle “parking lot” may be appropriate. A bicycle parking lot is an area where

more than one rack is installed. Aisles separate the racks. An aisle is measured from tip to tip of bike tires across the space between racks. The minimum separation between aisles should be 48 inches. This provides enough space for one person to walk one bike. Seventy-two inches (six feet) of depth should be allowed for each row of parked bicycles (conventional bikes upright bicycles are just less than 72 inches long).

Bike parking location

The location of a rack area in relationship to the building it serves is very important. The best location for a rack area is immediately adjacent to the entrance it serves. Racks should not be placed so that they block the entrance or inhibit pedestrian flow in or out of the building. Racks that are far from the entrance, hard to find, or perceived to be vulnerable to vandalism will not be used by most cyclists.

The rack area should be located along a major building approach line and clearly visible from the approach. The rack area should be no more than a 30-second walk (120 feet) from the entrance it serves and should preferably be within 50 feet.

Bicycle Sharing Programs

A bicycle sharing program is community service in which bicycles are made available for shared use to individuals on a short-term basis. Parking stations are located throughout a city and allow people to travel from one destination to the next, without the worry of parking, ownership, or maintenance. There are examples around the world of bike-sharing programs that Leawood could potentially model in the 135th Street corridor. Some programs are organized by local community groups or non-profits and others have formed through public-private partnerships.

The Multi-way: 135th Street

During the planning process, the design team has worked with staff to create a multi-way boulevard option for developers and property owners as new projects develop along 135th Street. To peak the interest of developers, the multi-way option should present the following benefits:

Street frontage for projects located along the multi-way is activated by slower moving traffic and a comfortable pedestrian realm.

Easy-in, easy-out “teaser” parking located along the multi-way frontage road provides more sales opportunities for retailers and restaurants located along the multi-way.

Development bonuses should be made available to developers for the installation of multi-way elements along an entire block. Throughout the design process of the multi-way, design discussions should be sure to include traffic engineers, civil engineers, landscape architects, and public works representatives to insure the successful design and implementation of the boulevard. Some components to discuss will include:

Additional median/buffer

A planted median will separate the high speed travel lanes located in the center of 135th Street from the local, slower speed frontage lane and parking. Derived from studies of the existing right-of-way, a desire to create a separated pedestrian realm, and the provision of adequate soil volumes for tree planting, the design team recommends an eight foot planted median.

On-Street “Teaser” Parking

The on-street parking is an essential element to the success of this multi-way. The design team recommends angled on-street parking, for easy-in, easy-out access. The recommended dimensions are 45 degree angles, nine foot space width and a 20 foot space depth.

Gathering Spaces

16-3-9-A-4

The existing LDO offers a ten percent increase in applicable maximum FAR for projects with substantial pedestrian amenities. Providing developers with a more comprehensive list of what these amenities could include will help developers and property owners better understand how to achieve the city’s goals of creating excellent pedestrian-oriented spaces, and acquire the potential bonus. Article 16-2-9-2F outlines some guidelines for plaza spaces. Listed here are other gathering spaces that should be provided to developers as options.

Pocket Park

Pocket parks are small park-like spaces that invite pedestrians to pause, and give urban dwellers a respite from the indoors. Seating areas and enhanced plantings can help give corridor pocket parks their own character. These features could enhance new streetscapes and contribute to the area's developing identity.

Flexible/Festival Street

Festival streets give neighborhoods the opportunity to host tailgates, art fairs, food festivals and other large events to promote the city and celebrate its culture. A festival street expands the pedestrian environment into the street on event days, providing space for retailers, food trucks, tailgates, musicians and vendors. A festival street can attract pedestrians from all over the region and make the 135th Street Corridor stand out as a destination in Leawood. The wide variety of possible flexible events can also give corridor retailers exposure to new clientele.

Outdoor Farmers Market

Designating space for an outdoor farmer's market has proven to be a great city amenity for developing community relationships, building activity on streets and in neighborhoods, and boosting local businesses.

Mobile Food Vending Space

Food Trucks and Carts (Mobile Food Vending) can be a vital part of more successful streetscapes. They offer seasonally changing attractions for daytime use by office workers and nighttime use by nightlife patrons. They also encourage local entrepreneurship by offering an avenue for budding chefs to build up a food and beverage business without the high expense of opening a restaurant. Many U.S. cities, like Cincinnati, Chicago and Denver, now offer programs to permit these small business owners with regulated licenses. Food trucks could represent a great asset for gathering spaces like Gezer Park. They also have the potential to create mutually beneficial relationships with local bars and other night-life venues.

Public Art

The Leawood Arts Council (LAC) supported enhancements to Gezer Park within the plan area. Coordination with the Art in Public Places

Initiative (APPI) and the Leawood Arts Council for the private installation of future public art should be pursued by developers.

Signage and Wayfinding

The City of Leawood has a comprehensive set of Permanent Signage Development Guidelines to insure the aesthetic quality and character of corridor neighborhoods. The missing element of the City's signage program is Wayfinding. Wayfinding is a series of elements, which can include but are not limited to: signage, art works, or natural features in the landscape, that improve and help to promote visitor experiences by providing essential information needed to navigate an area. A Wayfinding program for the corridor would be an excellent addition to help brand and promote the area into the future.

LDO Recommendations: Transect Zones

Developing responsible and successful densities in the corridor is key to the corridor's future and the integration of new properties with existing neighborhoods. Including language to guide developers in planning for transitional densities and development will benefit both the corridor and the City of Leawood.

The City should work towards establishing a system for the gradual Transition of Development Rights (TDR). A TDR system would be administered by the City for the purpose of transferring development rights from open space and other amenitized areas to areas for development.

T4 General Development Zone

This zone consists of a mixed-use but primarily residential urban fabric. It may have a wide range of building types such as rowhomes, townhouses, condominiums, and small apartment buildings sprinkled with ground-floor commercial activity. Typical building heights in this zone are two to three stories to buffer existing residential from taller buildings in the denser, adjacent zone. Building frontages are a mix of landscaping, porches, dooryards, and commercial storefronts.

Suggested Residential Density

12du (dwelling units) per acre

Building Height Range
24ft minimum - 42ft maximum

Frontyard Setback
6ft minimum - 20ft maximum

Backyard Setback
12ft minimum from property line.

Other considerations

- Units could have direct access to a semi-private backyard or shared courtyard.
- The provision of private parking spaces would help entice families and older residents to living in these homes.
- Appropriate commercial tenants or buildings would include cafes, coffee shops, corner convenience stores, wine shops, delis, general stores, salons, dry cleaners, and other small-scale options convenient to near-by residents.

T5 Development Center Zone

The Development Center Zone is composed of higher density mixed-use buildings that accommodate retail, offices, condominiums and apartments. Buildings are set close to the sidewalks to create an intimate streetscape atmosphere. Typical building heights are three to five stories high. These zones have substantial pedestrian activity so building frontages support their interests and curiosities with storefronts, galleries, high-quality dooryards and residential stoops. This zone is a transition from the General Development Zone to the Development Core Zone and will therefore have characteristics from both.

Suggested Residential Density
24 du per acre

Building Height Range
24ft minimum – 72ft maximum

Frontyard Setback
18ft maximum

Backyard Setback
3ft minimum from property line

Build-to Line
18ft from property line.

Other considerations

- Pedestrian activity will play a key role in the success of this zone. As such, it will be important to provide ground-floor tenants that will interest these patrons. Offices are more appropriately placed on the second floor of these developments.
- Developments in this zone present an opportunity for Shared-Parking (refer to page 62).
- Rooftop gardens, restaurants or event space are appropriate for this zone as it creates visual interest for taller buildings in the adjacent urban core zone and brings additional activity to this more vibrant district.

T6 Development Core Zone

The Development Core Zone has the highest density and building heights in the corridor. This zone also carries the greatest variety of land uses and project types with medium to high-density mixed-use buildings, entertainment and dining, and office. This zone may also be appropriate for future civic or cultural institutions. Attached buildings in this zone form a continuous street-front of storefronts, galleries, forecourts, and dooryards. Buildings in this zone are a minimum of four stories and can reach heights of eight stories. This zone should prepare for the highest level of traffic, a need for parking, and possible transit opportunities.

Suggested Residential Density
96 du per acre

Building Height Range
48ft minimum – 115ft maximum

Frontyard Setback
16ft maximum

Backyard Setback

6ft maximum from property line

Build-to Line

14ft from property line.

Other considerations

- Strategic planning for parking will help make this zone successful. Consider parking structures and underground parking as opposed to surface parking to maximize developable area and reduce surface parking.
- This zone is a great area for urban plazas and festival streets.

T1 Natural Zone

The Natural Zone is composed of lands approximating or reverting to their natural condition, including lands unsuitable for development due to topography, hydrology, or vegetation. This zone identifies opportunities for greenways and potential trail systems.

Trails could be permeable, suitable for hiking, running and biking or could be paved and more suitable for strollers and wheelchairs. Trails should have appropriate signage. This system could include educational components and/or art elements so long as these features do not disturb wildlife habitats or native species.

LDO Recommendations

16-4-5.4

The existing LDO sets parking ratio requirements for each zone within the city code. As development in the 135th Street corridor moves towards transect-based planning, new developments will use the MXD ratios and requirements outlined in sections 16-4-5.4, A through E, as base numbers for required parking. It is recommended to employ the ULI/ICSC Shared Parking (2005) model, following ITE Parking Generation Report land use codes.

ULI/ICSC Shared Parking Methodology (2005)

Designers, developers, and property owners should employ the following seven steps to determine the number of parking spaces required for new developments in the 135th Street corridor.

Step 1: Gather and review project data

- Determine the type and quantity of each land use.
- Survey existing conditions, local users, and facilities as appropriate.
- Research the modal split, ride-sharing programs, transit availability, and transportation demand management practices in the project's environment.
- Understand the physical relationships of the land uses.
- Discuss parking management strategies with all stakeholders, to ensure that shared parking can occur as assumed.

Step 2: Determine parking ratios

Select parking ratios for each significant land use within a development to represent what each of those land uses would need to accommodate the 85th percentile of peak accumulation of vehicles at the peak hour. The existing LDO outlines a number of ratios for potential land uses in the corridor in section 16-4-5.4B. Land uses not made explicit in this section, should follow ratios listed in ITE Parking Generation, 4th Edition (2010).

Step 3: Select factors and analyze differences in activity patterns

- Monthly activity patterns
- Time-of-Day patterns
- Recommended default monthly and time-of-day adjustment factors for the accumulation of vehicles and separated parking ratios for weekend and weekday conditions can be found in the recommended ULI/ICSC Shared Parking (2005) book.

Step 4: Develop scenarios for critical parking need period

To identify the peak hour, several scenarios should be developed for modeling parking needs.

- Consider the demand that each land use would generate in a stand-alone mode.

- Determine times of year and days that could potentially experience a peak in need
- Test several times of day for each scenario

Step 5: Adjust ratios for modal split and persons per car

Parking ratios provided by the City should reflect local modal splits for land use types. To make any additional mode adjustments, the city should guide developers and property owners to any local surveys of similar properties or land use types to determine modal split and number of persons per car.

Step 6: Apply non-captive adjustments

In this step, the developer, designer, or property owner should evaluate what percentage of the users at one land use are already counted as being parked for another land use during a certain time of day. This allows for an evaluation of the non-captive ratio, or the potential number of people who are not already present in the immediate vicinity and will require parking.

Step 7: Calculate required parking spaces for each scenario

Total the parking needs for each land use to estimate the overall shared parking need.

Step 8: Submit a comprehensive parking plan

Proposed developments will submit a comprehensive parking plan that assures the success of shared parking scenarios.

Required Parking Ratios

<i>Building Type</i>	<i>Ratio</i>
Residential	2 spaces per dwelling unit
Commercial	3 to 3.5 spaces per 1,000sf of lease space

