City of Lawrence

TRANSPORTATION COMMISSION STUDY SESSION
Monday, October 7, 2019 5:00 PM
City Commission Room, City Hall, 6 E. 6th Street

- Update on sidewalk maintenance program
- Micromobility subcommittee update on E-scooters

TRANSPORTATION COMMISSION REGULAR MEETING
Monday, October 7, 2019 6:00 PM
City Commission Room, City Hall, 6 E. 6th Street

1. **Approve Regular Meeting minutes for September 9, 2019**

2. **General Public Comment**
   The public is allowed to speak to any items or issues that are not scheduled on the regular agenda. Public comment will not be received for Staff Items, Commission Items, or Calendar. Each person or organization will be limited to three (3) minutes. As a general practice, the Commission will not discuss/debate these items, nor will the Commission make decisions on items presented at this time. Individuals are asked to come to the microphone, sign in, and state their name and address. Speakers should address all comments to the Commission.

3. **E. 19th Street – Haskell to O'Connell design options**
   E. 19th Street is in the city's capital improvement plan to reconstruct (waterline 2020 & street 2021). The City selected BG Consultants to produce up to five typical street section alternatives to evaluate.
   Action: Review design alternatives and provide feedback.

4. **2021 KDOT Transportation Alternative Program Application**
   The Kansas Department of Transportation (KDOT) is receiving project applications for the 2021 Transportation Alternatives (TA) Program. TA Projects include: construction of pedestrian and bicycle facilities and infrastructure for non-driver access to public transportation, projects that enhance safety and mobility for pedestrians, bicyclists and transit riders, projects that improve scenic or environmental assets in the state, Safe Routes to School projects and more. Applications are due November 1, 2019.
   Action: Provide recommendations on project applications and provide feedback on prioritizing the projects.

5. **Article 9, Parking, Loading and Access Standards of the Land Development Code Text Amendment, TA-13-00235**
   TA-13-00235, a text amendment revising Article 9, Land Development Code: Parking, Loading, and Access. This amendment proposes a reorganization of the article in addition to revisions throughout the article. The major changes are noted in the attached list of proposed revisions. The amendment was made available for public comment through distribution to a stakeholder list and posting on the Planning website, www.lawrenceks.org/pds. Staff provided an update on the amendment to the Planning Commission at their September 25th meeting and the commission suggested that the revisions be presented to the Transportation Commission for their review and comments.
   Action: Review draft language and provide feedback.

6. **Staff Items**

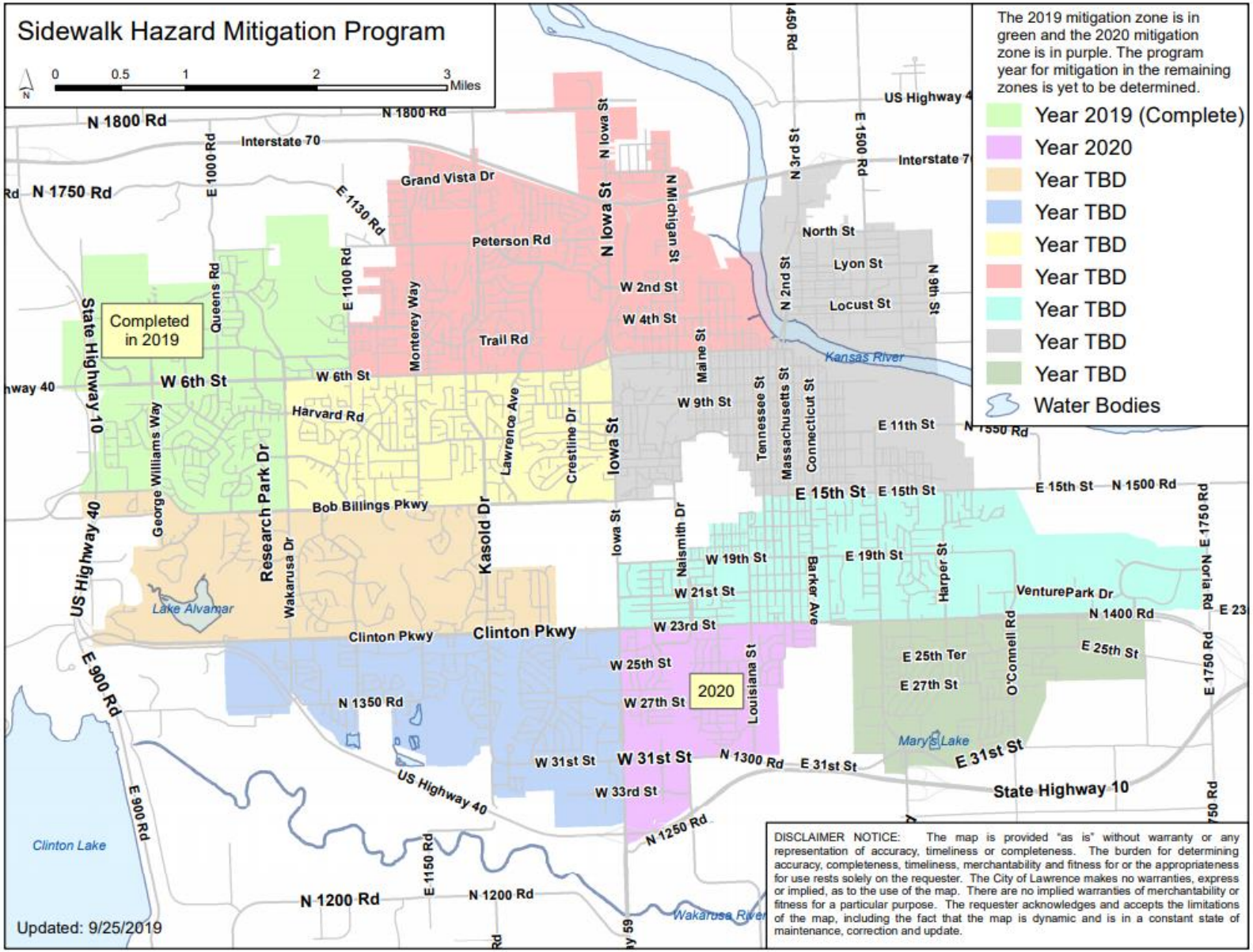
7. **Commission Items**
   - Update from Commissioner Kuzmyak on PTAC

8. **Calendar**
   - **Next Meeting November 4, 2019**
   - 5p Study Session: TBD
   - 6p Regular Meeting:
     - 2020-2024 Bike/Ped Funding Plan
     - Kasold – 22nd St. to Clinton Parkway design review

9. **Adjournment**

2019 SHMP

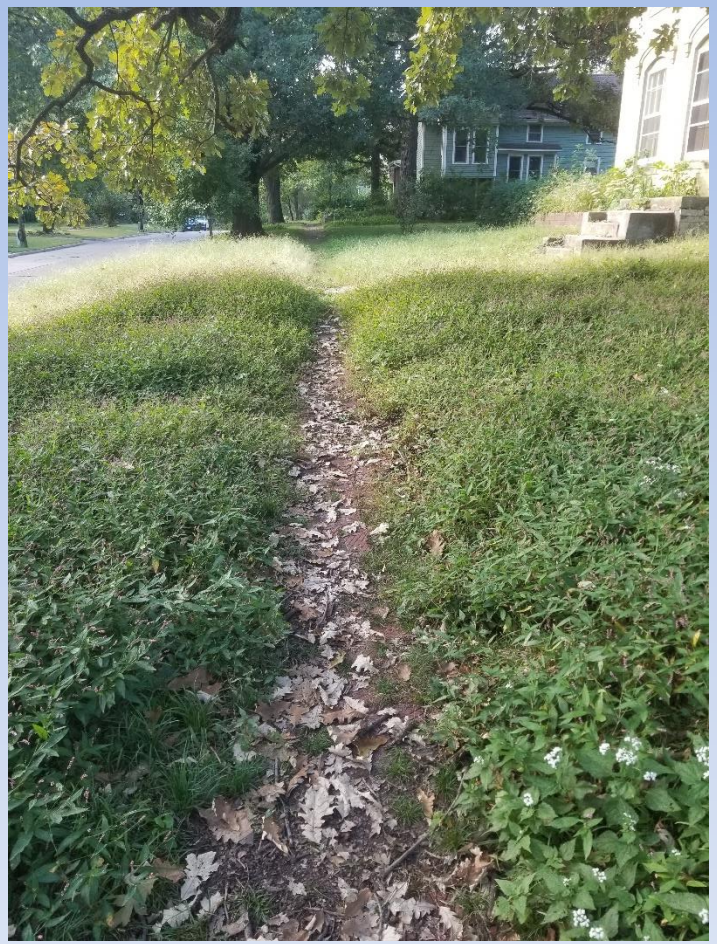

43,000 SF
Repaired
23,000 SF
City
59 ADA
Ramps
20,000 SF
Private



City of Lawrence

2020 Program Changes

- Two Options for repair
  1. Self-repair by end of April – Hire a contractor or fix it yourself (if capable)
  2. Do nothing. The City repairs with their contractor and administers the contract
- Payment
  - No longer assess 10% administrative fee
  - 9 months to pay bill
  - After 9 months, assessed to property tax over four years

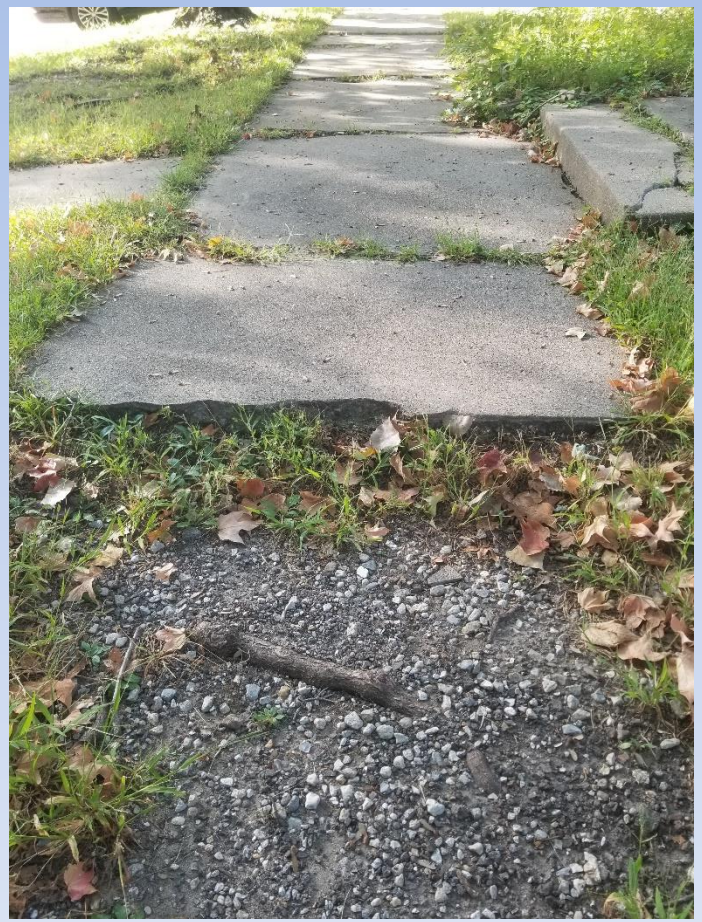


2020 Program Changes

- Smaller areas
  - More accurately predict and manage costs
  - Better communication with residents
- Communication
  - Public Information Meetings
  - Door Hangars
  - Website Improvements

2020 Program Changes

- Inspection Criteria
  - Measurable or visually observable
  - More clearly defined
  - Include brick hazards
- Appeals process
  - CM office to designate
  - Online form
  - Based solely on the hazard definitions



2020 What's Next?

- October 10th & 14th – Public Information meetings from 5:30-6:30 at Billy Mills Middle School Auditorium
- October, November - Sidewalk Inspections

Micromobility Subcommittee

Progress and Status Update

General history

- At the August 5th meeting, the Transportation Commission elected to form the Micromobility Subcommittee to address the potential future introduction of e-scooters and other forms of Micromobility to Lawrence.
- We had a kickoff meeting on August 22nd, where we defined "shared micromobility" and our purpose:
    - Micromobility is a broad and vague definition, while "shared micromobility" refers to docked and dockless bikeshare and shared electric scooters (e-scooters).
    - Focused on *shared* version to be ready to begin a potential roll-out pilot in spring of 2020.
    - Purpose:
        - Conduct research into other cities' experiences and develop issues that need to be addressed, as well as pros and cons.
        - Bring issues to Transportation Commission for Commission and public input.
        - Work with staff to develop a draft Request for Proposal, which will also gather public input.
        - Aim to release RFP for spring 2020 rollout of e-scooters (and dockless e-bike share)

Progress

- Two more half-day meetings to share research and hammer out the most important issues that need considered when introducing shared micromobility.
- Some members had a scooter test drive as well.
- Research conducted:
    - Analyzing RFPs and pilot programs from other cities (KCMO, Omaha, Knoxville, Fort Collins, Madison, Cedar Rapids, Waco, Columbia, Spokane)
    - Interview with Omaha officials regarding their rollout of dockless bikeshare and e-scooters.
- What we learned:
    - Limitations of scooter GPS
    - How to determine breadth and quantity of deployed scooters
    - Balancing of increased mobility and access with safety and clutter
    - Ability to enforce rules
- Developed a list of items that must be considered when drafting an RFP.

Issues for Scooter Rollout

Note that this list represents the Subcommittee's and staff's opinions based on research, interviews, and discussion. At this point, this list will be refined with input from Transportation Commission, public attendees, and stakeholder groups that we will reach out to.

Issue	Decision - Clarification
Speed limit of shared scooters	15 mph. Could re-evaluate this later, perhaps raise to 20 mph if behavior is acceptable. Certain areas may have lower speed limits (downtown? KU?)
Area of operation, geofencing	In general, we will not designate any overall geofenced operation limit. Other possibilities (need further input/discussion): No riding on streets with speed limits of over 35 mph (crossing is ok). Other areas can be closed off if needed, but not at roll-out.
Sidewalks vs streets/shared use paths	Scooters shall be ridden on paved streets, paved bike paths, and paved shared-use paths. Pedestrians have right of way.
Age requirement	18+ (operator must explain how they will enforce). Input could be helpful for determining how to potentially allow high-school aged students.
Helmet requirement	Advised, but not required
Time of operation	Two options: 1. No restrictions to operation time 2. Initially restrict hours from 7 am to 8 pm (example), then expand hours if data show it is reasonable. Ask for plans for operations during emergency, inclement weather, winter, special events, etc.
Parking	Included in sign-up and education. For downtown, consider designating obvious parking locations. Could be done by charging rent to the operators and requiring them to provide signage. Scooters cannot block right-of-ways (sidewalks/paths/egress routes) .
Lights	All scooters must have front/back lights on at night, visible from 300 ft. Reference STO language for bike lights. Reflective upright posts or wheels?
Vehicle specs	Design scooters to address rider safety, durability, convenience, and compliance with operation restrictions.
Temporary ordinance	A temp ordinance will be put into effect to cover all these issues.
Enforcement (vendor to rider)	Hotlines on all scooters. Proposers should explain how they will enforce compliance with operating rules.
Enforcement (City to vendor)	Set performance expectation (based on operating requirements and vendor's enforcement of rider issues), and allow City latitude to end vendor's participation if they can't comply.
Enforcement (City to riders)	Covered in temporary ordinance (penalties TBD)
Public education + outreach	Ensure marketing to demographics beyond students
Fees, profit sharing	City will determine – should be based on cost to manage programs + enforcement.
Operations (incl. moving and charging)	Set performance expectation and reasonable response times (TBD). Require abandoned/mis-parked scooters to be moved within XX hours (subject to further refinement). To ensure City doesn't expend lots of resources dealing with this, attach some kind of penalty/fee (mechanism TBD) to ensure reimbursement.

Electric Scooter (E-Scooter) Fact Sheet

Introduction

Scooters are not new, but for many years they were seen as toys rather than a legitimate form of transportation. In recent years, however, electric versions of the scooter (electronic, or e-scooters) have become popular in some cities as an inexpensive, efficient mode of transportation. It is easy to envision e-scooters becoming popular in a "university town" like Lawrence. As such, policy makers have already begun to look at appropriate ways to encourage safe, appropriate e-scooter use. Recently the Lawrence Transportation Commission proposed a pilot for e-scooter rentals, and two companies are interested in bringing e-scooters to town. Given this interest, LiveWell Douglas County's Healthy Built Environment Work Group has prepared this fact sheet to provide interested community members with some background on this emerging transportation form.

Why the popularity of e-scooters?

- Good option for short to medium-length trips
- Low cost to operate
- Avoids some of the challenges associated with automobiles (congestion, parking, etc.)

Potential community benefits of e-scooters

- Reduce demand for automobile parking (university and community-wide)
- Potential to improve air quality by reducing auto use
- Decrease automobile congestion

Potential challenges of e-scooters

- Potential conflicts with pedestrians when used on sidewalks and with automobiles on roadways
- Potential abandonment of scooters
- Lack of clarity around issues of liability in case of crashes

Issues to consider if launching local e-scooter rental program

- Addressing liability concerns
- Addressing safety issues:
    - Helmet use
    - Use by multiple individuals and carrying cargo
    - Maintenance
    - Allowable right-of-way for scooter use and speed limit
    - Night use and light requirements (headlights, indicator lights)

Prepared for the LiveWell Healthy Built Environment Work Group
Prepared by: Alvin Gitau, KU Community Health Intern
Date: October 2, 2019

City of Lawrence
Transportation Commission
September 9, 2019 Minutes

MEMBERS PRESENT:	Charlie Bryan, Steve Evans, Ron May, John Ziegelmeyer, Carol Bowen, Nick Kuzmyak, Erin Paden, Kathryn Schartz
MEMBERS ABSENT:	Donna Hultine, Nick Kuzmyak
STAFF PRESENT:	Charles Soules, MSO Department Jessica Mortinger, Planning Department Ashley Myers, Planning Department Dustin Smith, MSO Department Jacob Baldwin, MSO Department

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A complete video recording of the meeting is available on the City's website at https://lawrenceks.org/boards/transportation-commission/

STUDY SESSION

- Transportation/Land-Use Relationship

REGULAR MEETING

The meeting was called to order by Commissioner Evans at 6:18 p.m. in the City Commission Room, City Hall, 6 E. 6th Street.

ITEM NO. 1:

Approve Regular Meeting minutes for July 1, 2019
Moved by Commissioner Ziegelmeyer to approve the minutes, seconded by Commissioner Bryan. Motion passed 7-0.

ITEM NO. 2:

General Public Comment

Public Discussion: N/A

ITEM NO. 3:

E. 23rd Street Corridor Study

https://assets.lawrenceks.org/mpo/23Study/DraftPlan.pdf
Jessica Mortinger introduced Tresa Carter Hill and Jeff McKerrow, consultants with Olson, who presented feedback on E. 23rd Street Corridor Study.

Public Comments: Bill Schulteis, Courtney Shipley, Scott Zaremba,

ITEM NO. 4:

K-10/27th St./Wakarusa Dr. Interim Safety Improvements
Aaron Frits with the Kansas Department of Transportation provided an update on intersection improvements.

Public Comments: Debra Zehr

ITEM NO. 5:

Non-Motorized Project Prioritization
Moved by Commissioner Bryan to approve Non-Motorized Project Prioritization Policy (TC19-001) and recall Non-Motorized Project Prioritization Policy (TC19-001), seconded by Commisioner Schartz. Motion passed 7-0.

Public Comments: Tresa Hill, Courtney Shipley

ITEM NO. 6:

Lawrence Multi-Modal Transportation Commission
Moved by Commissioner Ziegelmeyer to approve Lawrence Multi-Modal Transportation Commission, seconded by Commissioner Bowen. Motion passed 7-0.

Public Comments: N/A

ITEM NO. 7:

Staff Items

- Deadline to apply for next round of KDOT Transportation Alternatives Program Grant funds due November 1st. Discussion for recommended funding project initiatives under consideration for October meeting.

ITEM NO. 8:

Commission Items

- Micromobility Subcommittee to study various RFP elements to provide recommendations to staff for an e-scooter pilot program.
- Transit items/search for new manager, preferably one with connection with transit.

- Commissioner Bowen concerned about equity issues pertaining to assisting Lawrence residents with transit.

ITEM NO. 9:

Calendar

- **Next Meeting October 7, 2019**
- 5p Study Session:
  - Update on sidewalk maintenance program
- 6p Regular Meeting:
  - Kasold – 22nd St to Clinton Parkway
  - E. 19th St – Haskell to O'Connell design options

ITEM NO. 10:

Adjournment

Meeting was adjourned at 8:05 pm.

Transportation Commission Study Session
September 9, 2019

Name	Initials
Members	
Charlie Bryan Lawrence DGCO Health Dept. Representative	CWB
Donna Hultine University of Kansas	
Kathryn Schartz Multi-Modal Transportation / Planning Eng Rep	KS
Nick Kuzmyak PTAC representative	
Carol Bowen Pedestrian Representative	CB
Steve Evans Planning/Engineering Field Representative	SE
Erin Paden Bicyclist Representative	EP
John Ziegelmeyer Local Business Representative	
Ron May USD-497	
City Staff	
David Cronin City Engineer	DC
Jessica Mortinger ~~Senior~~ Transportation Planning Manager	JM
Ashley Myers Transportation Planner	
Charles Soules Assistant Director, MSO	CS
Dustin Smith Sr. Project Engineer	
Jacob Baldwin Sr. Project Engineer	

Transportation Commission Study Session
September 9, 2019
Public Sign In Sheet

Name	Contact Info
Bill Shultz	(ph) 785-766-6217 (e-mail)
[signature]	(ph) 316-258-5026 (e-mail)
County Shuffly	(ph) (e-mail) 785-764-8998
Debra Zehr	(ph) (e-mail) 785 550 1325
Tresa Hill	(ph) (e-mail) 842-9938
Cowt shuffly	(ph) (e-mail)
	(ph) (e-mail)
	(ph) (e-mail)
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Transportation Commission Meeting
September 9, 2019

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Jessica Mortinger Senior Transportation Planner	JM
Ashley Myers Transportation Planner	
Charles Soules Assistant Director, MSO	
Dustin Smith Sr. Project Engineer	
Jacob Baldwin Sr. Project Engineer	

Transportation Commission Meeting
September 9, 2019
Public Sign In Sheet

Name	Contact Info
Pastor Jesse L. Hunter	(ph) 785-917-9230 (e-mail) Jalen509@hotmail.com
Linda M Hunter	(ph) 785-218-4591 (e-mail) Rozzie dozzie@gmail.com
Courtney Shipley	(ph) 785-764-8998 (e-mail) shipleyc@gmail.com
Elaine Engstrom	(ph) 785.331-6186 (e-mail) elaine.engstrom1223@gmail.com
Melvin Mauguin	(ph) 785-830-8072 (e-mail) melmauguin@gmail.com
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Debra Harmon Zehr	(ph) 785-550-1325 (e-mail) pdjdzehr@sunflower.com
Philip J. Zehr	(ph) 785-550-1031 (e-mail) pdjdzehr@sunflower.com
Luke Smith	(ph) 316-258-5026 (e-mail) lukesmith168@gmail.com
	(ph) (e-mail)
	(ph) (e-mail)

Introduction

The purpose of this concept design summary is to identify options available to the City of Lawrence to improve 19th Street between Harper Street and O'Connell Road (Venture Park). This segment of 19th Street is currently classified as a Collector Street and is an unimproved roadway with open ditches, numerous roadway patches, an aging water main, and lacking pedestrian and bicycle facilities. The project is listed in the community's capital improvement plan and is currently scheduled for reconstruction of the water main in 2020 and the street in 2021. Additional project considerations included in the concept evaluation include possible traffic calming measures on 19th Street (Haskell Avenue to Harper Street), sidewalk gap closures on the south side of 19th Street (Haskell Avenue to Harper Street), and evaluation of improvements to the 19th/Harper intersection. The City of Lawrence retained BG Consultants, Inc. to perform engineering design services to prepare for the planned projects.

Summary of Options Analyzed

Five concept designs were evaluated for the reconstruction of 19th Street (Harper to O'Connell).

Concept 1: 47' wide 3-lane street with On-Street Bike Lanes and with (2) 5' sidewalks
Concept 2: 31' wide 2-lane street with (2) 5' sidewalks (City Standard Collector Street)
Concept 3: 37' wide 2-lane street with On-Street Bike Lanes and (2) 5' sidewalks
Concept 4: 31' wide 2-lane street with Separated Cycle-Track and (2) 5' sidewalks
Concept 5: 31' wide 2-lane street with Separated, Elevated Bike Lanes and (2) 5' sidewalks

Concept 1 begins the analysis of cross section options by continuing the same street/right-of-way cross section as the O'Connell Road extension through Venture Park. Concept 2 then reduces the overall transportation infrastructure size to the City's minimum standards for Collector Streets. As this portion of 19th Street is classified as a Collector Street, we suggest improvements meet or exceed the City's minimum standards. Concept 3 expands upon Concept 2 by providing on-street bicycle facilities within the curb-lines. Concept 4 and Concept 5 deviate from Concepts 2 and 3 by providing a minimum Collector Street width but with variations of separated bicycle facilities through the corridor.

A copy of each concept design graphic is included with this design summary.

Vehicle facilities currently in the project corridor consist of a 2-lane asphalt surfaced road, ±22-feet wide, with open ditches. The cross section does not comply with current City design standards for improved streets within the city limits. The pavement is in poor condition, likely due to an insufficient pavement structure as well as a lack of subgrade stabilization. Pavement patches are present throughout. The patches are resulting from pothole repairs and utility repairs (water main breaks).

All five concepts analyzed in the concept design phase have been evaluated utilizing a City standard pavement design for the replacement structure. This type of pavement consists of an appropriately determined asphalt pavement thickness placed on a stabilized subgrade. Pavement widths were determined primarily based upon the types of on-street facilities provided, but in no case were the overall pavement widths reduced below the City's minimum standard 31-feet for a Collector Street. Two lanes of thru traffic (one in each direction) are required for the current and estimated future traffic demands. Although a center two-way left-turn lane is not necessary for a low-speed corridor with traffic characteristics such as 19th Street, the presence of a left-turn lane could be beneficial for a few of the entrances accessing 19th Street.

Bicycle facilities exist to the west and to the east of the project in the form of on-street bike lanes. Continuity of bicycle facilities should be maintained through the improved corridor. Bicycle facilities

can be provided by way of on-street facilities or off-street facilities. On-street facilities commonly used in Lawrence consist primarily of bike lanes marked with pavement markings or shared lanes marked with Sharrows. Off-street facilities commonly used in Lawrence are Shared Use Paths (SUP's). SUP's are typically a 10-foot wide path for use by pedestrians and bicyclists.

Separated bicycle facility options considered in the concept design phase included a cycle-track and elevated bike lanes. The cycle-track concept provides an off-street, paved surface on one side of 19th Street for head-to-head (two-way) bicycle traffic. The south side of 19th Street provides fewer entrance crossings and fewer utility conflicts to implement this concept. However, the cycle-track concept places bicyclists head-to-head on one side of the street for this one-half mile segment, presenting challenges for connecting the riders to existing on-street bike lanes to the east and west of the project. The elevated bike lanes concept provides a separated facility and compliments existing on-street bike lanes abutting the corridor but presents maintenance challenges for snow removal and street sweeping.

Pedestrian facilities exist adjacent the corridor and or sporadically through the corridor. Sidewalks should be incorporated throughout the project to provide pedestrian continuity and bring the corridor into compliance with the City's public street standards for pedestrian ways on both sides of the street. All five concepts analyzed incorporated 5-foot wide sidewalks on both sides of 19th Street.

Transit considerations were discussed with Bob Nugent of the Lawrence Transit. Future bus route plans consist of an east/west route along 19th Street after this project completes the necessary street connectivity. This will allow for an improved east/west bus route in lower-speed traffic relative to the current 23rd Street alignment. One bus stop, likely near the west entrance to the Brookwood neighborhood, will incorporated into the route. Mr. Nugent indicated a bus turnout lane is not necessary for this facility and their future route plans. All five concept designs considered incorporate an improved crosswalk on 19th Street on the east side of the intersection for pedestrian traffic and reduced pedestrian-vehicle conflicts.

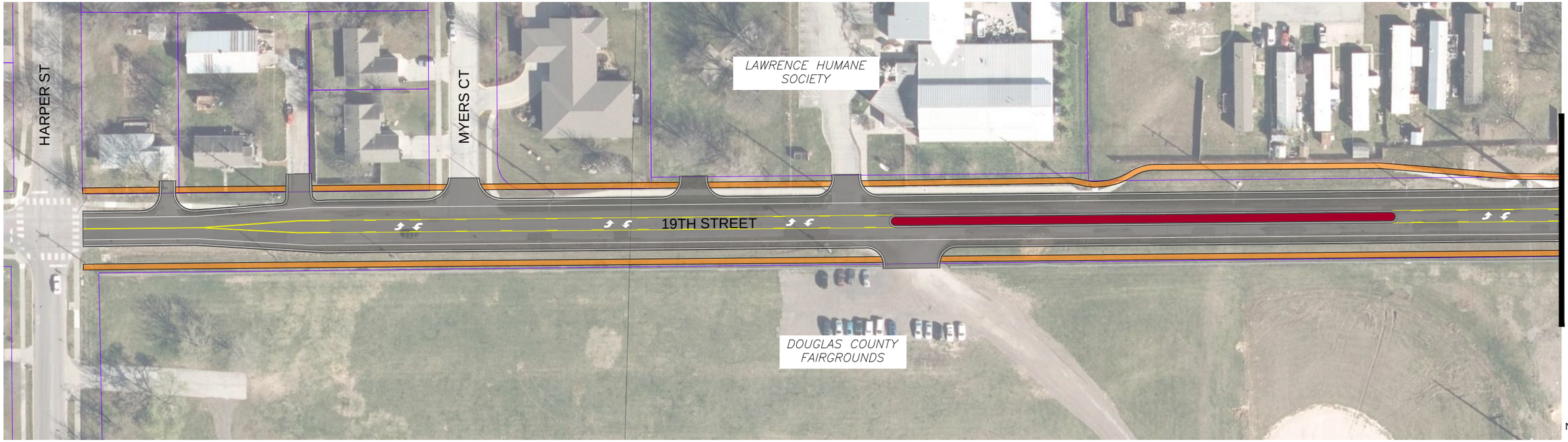
Access Management considerations were evaluated during the concept design. Three adjacent properties present opportunities for driveway consolidation and/or realignment for improved geometric characteristics and reduced pedestrian/bicyclist conflict with motorized vehicles. Access management opportunities are shown on the attached concept graphics and will be further pursued with adjacent property owners during engineering design.

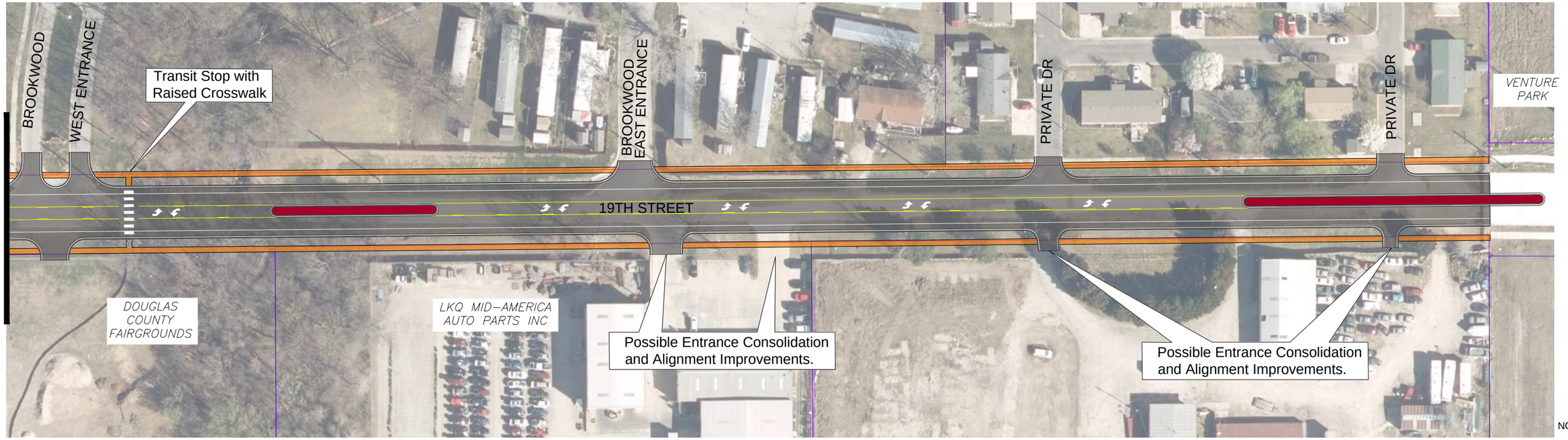
Complete Streets Checklist: A copy of the City of Lawrence's Complete Streets Checklist is included with the 5 Concept Design graphics.

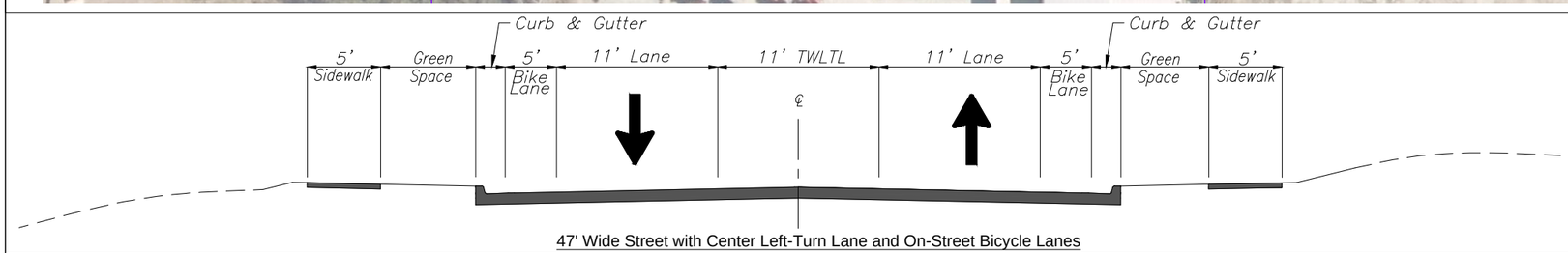
Construction Cost opinions are provided in the Pros/Cons table for each of the 5 concept designs. The opinions of probable construction costs are for the street and storm sewer construction only and include a contingency for unknown issues that may arise during design. The costs do not include items such as water main construction, utility relocations, inspection, and right-of-way acquisition as those cost would be expected to be similar across all 5 concepts.

Recommended Concept Design for 19th Street Reconstruction

A recommendation is not provided at this time. This summary should be presented to the Transportation Commission for public input prior to providing the City Commission a recommendation.







LEGEND

- PROPOSED SIDEWALK
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED MEDIAN / LANDSCAPING

CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 1 OF 5

BG CONSULTANTS
ENGINEERS · ARCHITECTS · SURVEYORS

HARPER ST

MYERS CT

LAWRENCE HUMANE SOCIETY

19TH STREET

MATCH LINE

DOUGLAS COUNTY FAIRGROUNDS

N

NOT TO SCALE

MATCH LINE

BROOKWOOD

WEST ENTRANCE

Transit Stop with Raised Crosswalk

BROOKWOOD EAST ENTRANCE

PRIVATE DR

PRIVATE DR

VENTURE PARK

19TH STREET

DOUGLAS COUNTY FAIRGROUNDS

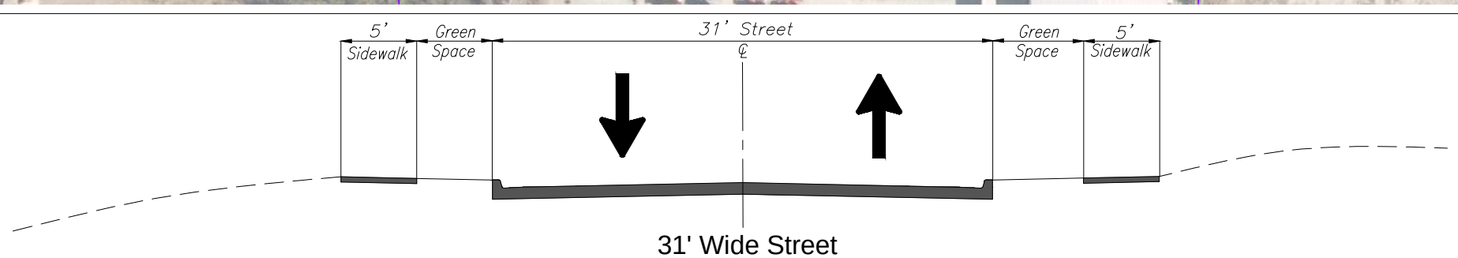
LKQ MID-AMERICA AUTO PARTS INC

Possible Entrance Consolidation and Alignment Improvements.

Possible Entrance Consolidation and Alignment Improvements.

N

NOT TO SCALE



31' Wide Street

LEGEND

PROPOSED SIDEWALK

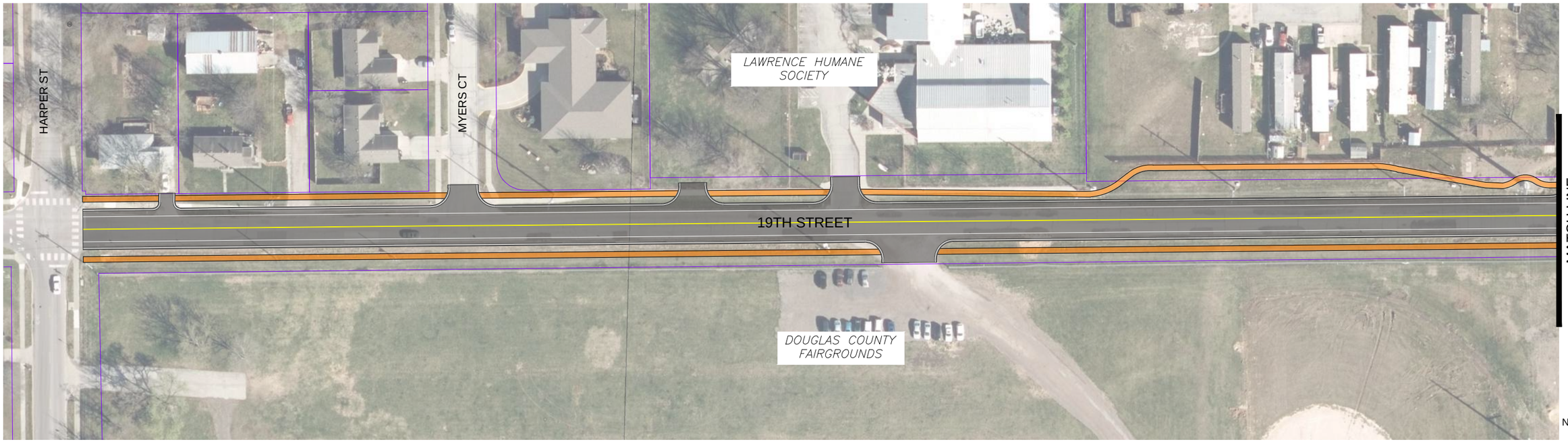
PROPOSED ROADWAY IMPROVEMENTS

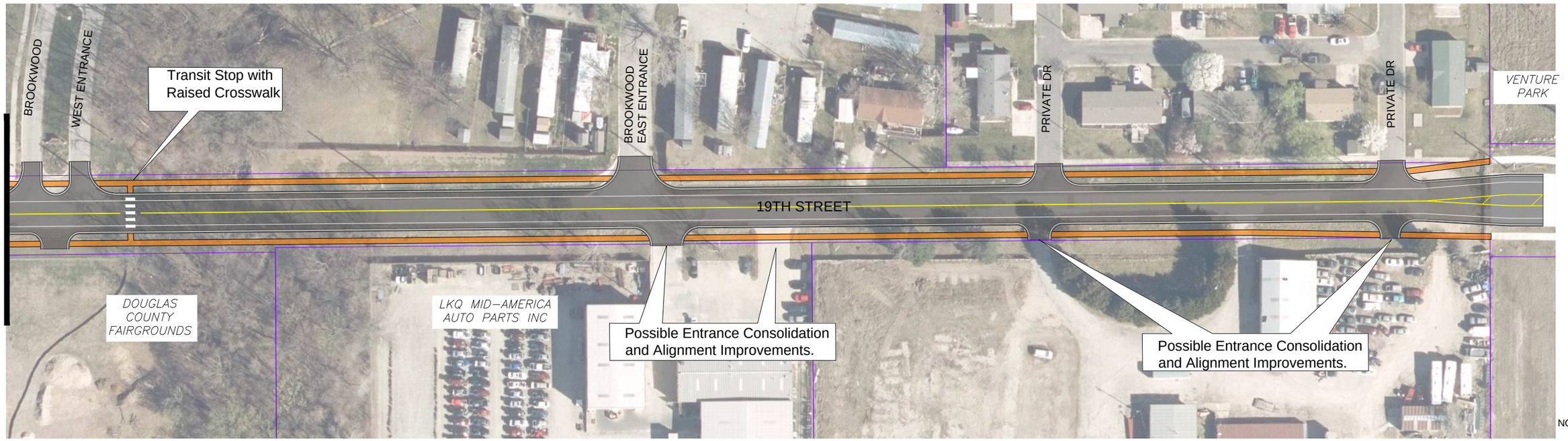
PROPOSED MEDIAN

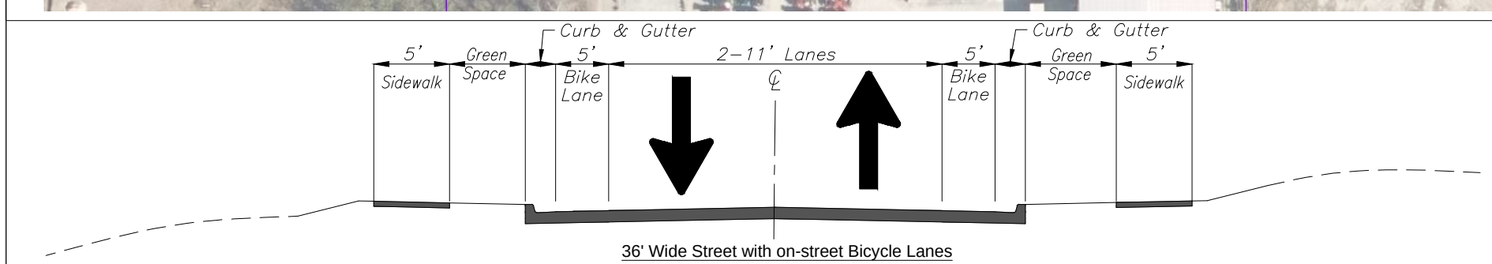
CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 2 OF 5

BG CONSULTANTS
ENGINEERS · ARCHITECTS · SURVEYORS







36' Wide Street with on-street Bicycle Lanes

LEGEND

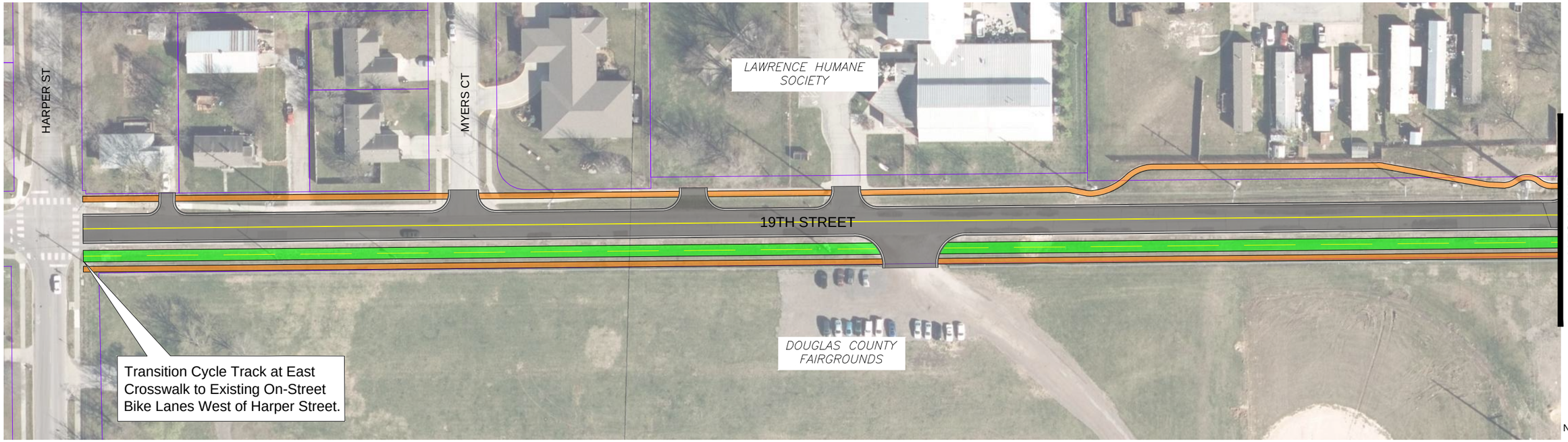
PROPOSED SIDEWALK

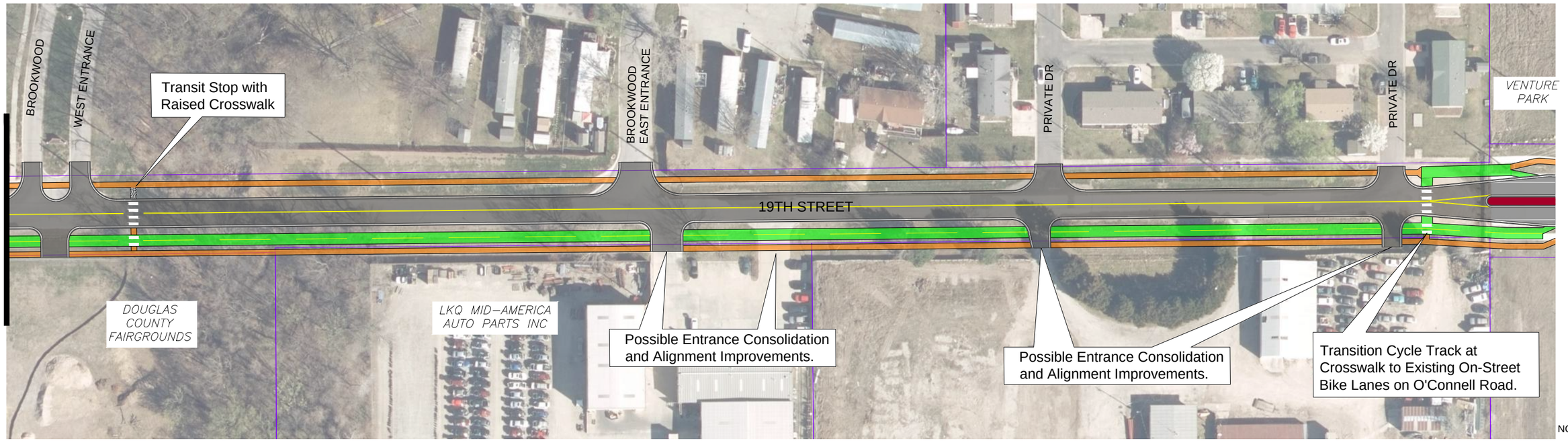
PROPOSED ROADWAY IMPROVEMENTS

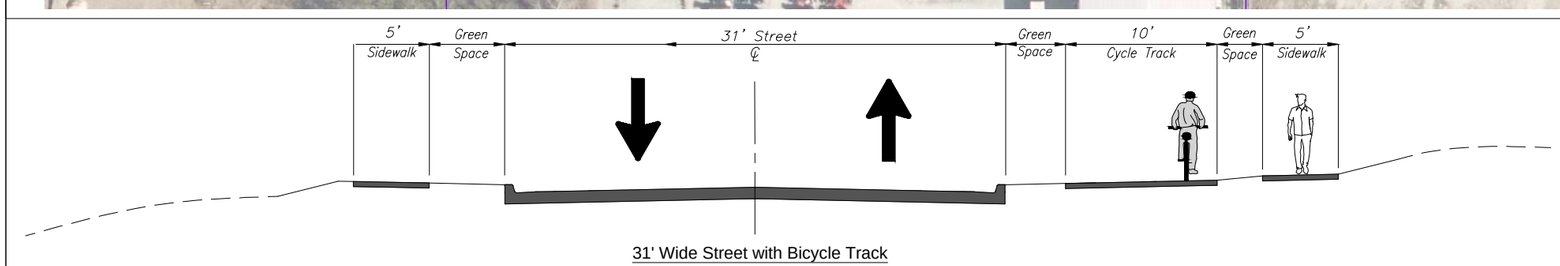
CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 3 OF 5

BG CONSULTANTS
ENGINEERS · ARCHITECTS · SURVEYORS







31' Wide Street with Bicycle Track

LEGEND

- PROPOSED CYCLE TRACK
- PROPOSED SIDEWALK
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED MEDIAN

CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 4 OF 5

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HARPER ST

MYERS CT

LAWRENCE HUMANE SOCIETY

19TH STREET

MATCH LINE

DOUGLAS COUNTY FAIRGROUNDS

N

NOT TO SCALE

MATCH LINE

BROOKWOOD

WEST ENTRANCE

Transit Stop with Raised Crosswalk

BROOKWOOD EAST ENTRANCE

PRIVATE DR

PRIVATE DR

VENTURE PARK

19TH STREET

DOUGLAS COUNTY FAIRGROUNDS

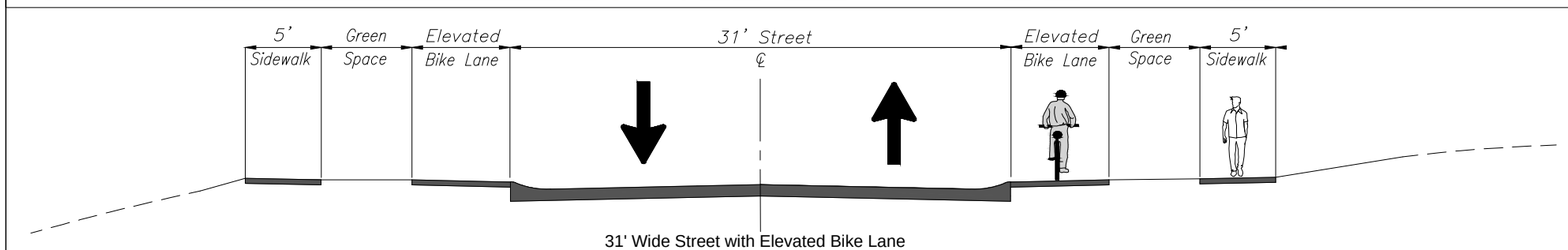
LKQ MID-AMERICA AUTO PARTS INC

Possible Entrance Consolidation and Alignment Improvements.

Possible Entrance Consolidation and Alignment Improvements.

N

NOT TO SCALE



31' Wide Street with Elevated Bike Lane

LEGEND

- PROPOSED ELEVATED BIKE LANE
- PROPOSED SIDEWALK
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED MEDIAN / LANDSCAPING

CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 5 OF 5

BG CONSULTANTS
ENGINEERS · ARCHITECTS · SURVEYORS

19th Street Reconstruction (Harper Street to O'Connell Road) – TABLE OF PROS/CONS

	Concept 1 Match Venture Park	Concept 2 City Standard Collector	Concept 3 On-Street Bike Lanes	Concept 4 Cycle-Track	Concept 5 Elevated Bike Lanes
Vehicles	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)
Access / Turning	**Solution:** Good **Pros/Cons:** TWLTL provides a separate lane for turning traffic, thus improving operations and enhancing motorized vehicle safety.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.
Bicyclists	**Solution:** Fair to Good **Pros/Cons:** Concept connects existing, similar on-street facilities to the west and east of the project, but no separated facility provided.	**Solution:** Fair to Poor **Pros/Cons:** No facilities provided. Bicyclists must travel within motorized vehicle driving lanes.	**Solution:** Fair to Good **Pros/Cons:** Concept connects existing, similar on-street facilities to the west and east of the project.	**Solution:** Fair **Pros/Cons:** Separated facility is provided, but difficult transitions at east end and west end to connect to existing on-street facilities.	**Solution:** Good **Pros/Cons:** Separated facility is provided.
Pedestrians	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.
Aesthetics / Landscape	**Solution:** Fair to Good **Pros/Cons:** Raised median opportunities within the TWLTL area at locations with no access.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities but the overall narrower street width provides larger green spaces along the curb.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities.
Transit	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.
Storm Drainage	**Solution:** Good to Fair **Pros/Cons:** City standard storm drainage infrastructure required. Additional pavement width requires slightly larger/longer system.	**Solution:** Good **Pros/Cons:** City standard storm drainage infrastructure required.	**Solution:** Good **Pros/Cons:** City standard storm drainage infrastructure required.	**Solution:** Fair **Pros/Cons:** City standard storm drainage infrastructure required.	**Solution:** Fair **Pros/Cons:** Mountable curb between motorized traffic and elevated bike lane requires additional, non-standard gutter-inlet structures.
Utilities	**Solution:** Fair **Pros/Cons:** Wider overall street width reduces space available for utility construction & maintenance.	**Solution:** Good **Pros/Cons:** Narrower street width provides ample greenspace for utility construction & maintenance.	**Solution:** Good **Pros/Cons:** Narrower street width provides greenspace for utility construction & maintenance.	**Solution:** Fair **Pros/Cons:** Additional pavement and space for Cycle-Track limits utility construction & maintenance in the south right-of-way.	**Solution:** Fair to Good **Pros/Cons:** Narrower street width provides greenspace for utility construction & maintenance.
Cost	**$2.39 million**	**$2.00 million**	**$2.19 million**	**$2.27 million**	**$2.37 million**
Maintenance	**Solution:** Fair to Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets. Additional pavement width and lane striping requires increased maintenance efforts compared to Concepts 2-5.	**Solution:** Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets.	**Solution:** Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets.	**Solution:** Fair to Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets. Cycle Track presents additional efforts similar to maintenance of SUP's.	**Solution:** Fair **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets. Elevated bike lanes present snow removal challenge.

Cost is construction cost only (street, storm sewer, and ped/bike facilities from Harper to O'Connell) for comparison purposes. Construction contingency is included.
TWLTL = Two-Way Left-Turn Lane
SUP = Shared Use Path (also commonly referred to as side-path, multi-use path, trail, etc.)

COMPLETE STREETS CHECKLIST

PROJECT NAME	19th Street Reconstruction (Harper to O'Connell)
LOCATION	Reconstruction of 19th Street (Harper to O'Connell) and Sidewalk/Traffic Calming measures on 19th Street (Haskell to Harper)

PROJECT INFORMATION

	Explanation
Classification	Major Collector
Speed limit	30 MPH
AADT	±4,000 veh. per day
Right-of-way width	70 ft. Average
Safe Route to School	Yes, Harper Street at 19th Street (Crossing Guard present)
Bus/Transit route	Future
On planned bikeway network	Yes
Existing bicycle accommodations	None
Existing sidewalk	Limited and disconnected

Checklist Consideration		***Concept 1***	***Concept 2***	***Concept 3***	***Concept 4***	***Concept 5***	***Explanation***
Does the project provide a main route to a significant destination?	Park/Recreation area	N	N	N	N	N	
	School	N	N	N	N	N	
	University	N	N	N	N	N	
	Shopping/Commercial area	N	N	N	N	N	
	Employment center	Y	Y	Y	Y	Y	Venture Park
	Community facility	N	N	N	N	N	
	Other:	Y	Y	Y	Y	Y	Fairgrounds
Does the project provide access across a natural or human-made barrier?		Y	Y	Y	Y	Y	
Are there nearby parallel routes that provide a similar level of convenience &		N	N	N	N	N	
Pedestrian and bicycle demand	Is there a high amount of bicycle and pedestrian traffic along route	High/Moderate					
	Is there a high amount of bicycle and pedestrian crossings	School Crossing at Intersection of 19th and Harper					
	Is there a history of bicycle or pedestrian crashes (last 3 yrs)						

CONSTRAINTS

Are there constraints to consider in reviewing this project for possible inclusion of Complete Streets elements?

Constraint Type	***Concept 1***	***Concept 2***	***Concept 3***	***Concept 4***	***Concept 5***	***Explanation***
Right-of-Way	Y	N	N	N	N	
Utilities	Y	Y	Y	Y	Y	Power Pole
Environmental	Y	Y	Y	Y	Y	Drainageway
Funding	Y	Y	Y	Y	Y	
Maintenance	Y	Y	Y	Y	Y	
Other Existing Condition						
Other:						

COMPLETE STREETS ELEMENT REVIEW

For each of the sections below, indicate whether a Complete Streets Element is/is not included. Provide an explanation of the element to be used or rationale why the element is not being included.

Complete Streets Element	***Checklist Consideration***	***Concept 1***	***Concept 2***	***Concept 3***	***Concept 4***	***Concept 5***	***Explanation***
Traffic Calming							
Does the roadway design consider elements to improve safety for pedestrians, bicyclists, and motorists?	Narrower driving lanes	Y	Y	Y	Y	Y	11' Lanes
	Lane reduction	N	N	N	N	N	
	Other:						
Pedestrian and Bicycle Facilities:							
Reduce pedestrian crossing distance at intersections where high motor vehicle counts and high pedestrian counts are expected.	Pedestrian island						
	Curb bump-outs	N	N	N	N	N	
	Other:						
Does it provide appropriate pedestrian accommodations?	Sidewalks	Y	Y	Y	Y	Y	
	Crosswalks	Y	Y	Y	Y	Y	
	Mid-block crosswalks	Y	Y	Y	Y	Y	
	Buffers between roadway and sidewalks	Y	Y	Y	Y	Y	
	Lighting	Y	Y	Y	Y	Y	
	Street furniture	Y	Y	Y	Y	Y	
	Other:						
Does it provide appropriate accommodations in accordance with bikeway plan?	Bike lane	**Y**	N	**Y**	N	N	
	Buffered bike lane	N	N	N	N	N	
	Protected bike lane	N	N	N	N	**Y**	
	Shared use path	N	N	N	N	N	
	Bike boulevard	N	N	N	**Y**	N	
	Bike Sharrow	N	**Y**	N	N	N	
	Bike Racks						
	Other Bike Parking						
	Other:						

Transit Facilities							
Does it provide appropriate transit accommodations?	Transit shelters	N	N	N	N	N	
	Accessible location (sidewalk, pad)	Y	Y	Y	Y	Y	
	Bus turnout	N	N	N	N	N	
	Public seating	Y	Y	Y	Y	Y	
	Signage/maps	Y	Y	Y	Y	Y	
	Trash/recycling receptacles	Y	Y	Y	Y	Y	
	Other:						
On-Street Parking							
Existing Parking	One side	None					
Planned Parking	No change	No Change					
Streetscaping							
Does the project include streetscaping along newly constructed or reconstructed roadways?	Street trees						
	Landscape plantings						
	Planters						
	Buffer strips						
	Other:						
ADA Accessibility							
Does it include appropriate ADA design features?	Curb ramps	Y	Y	Y	Y	Y	
	Detectable warning surface	Y	Y	Y	Y	Y	
	Crossing distance consideration	Y	Y	Y	Y	Y	
	Signal timing						
	Other:						

IMPLEMENTATION AND EVALUATION

Checklist Consideration		*Concept 1*	*Concept 2*	*Concept 3*	*Concept 4*	*Concept 5*	*Explanation*
Have you provided advance notification and/or opportunity for review to key groups impacted by the project?	Parks and Recreation	Project Concepts were provided to the Multi-Modal Team at September 18, 2019 meeting for initial discussion and feedback. Project has been discussed individually with Transit for bus stop considerations. Project concept has been provided to Historic Resources for comment on the Historic Environs for the Sidewalk Gap Closures.					
	Historic Resources						
	Transit						
	Fire/Med						
	Other City Departments						
	Neighborhood Association						
	School Districts						
	University						
Maintenance							
Are there any added maintenance projections for this project?	Pavement rehabilitation	N	N	N	N	N	Exist. pvm't needs replaced
	Pavement marking	Y	Y	Y	Y	Y	
	Street sweeping	Y	Y	Y	Y	Y	
	Snow removal	N	N	N	Y	Y	
	Street trees	N	N	N	N	N	
	Site furnishings	N	N	N	N	N	
	Pavers	N	N	N	N	N	
	Other:						

19th Street Traffic Calming (Haskell Avenue to Harper Street)

Traffic Calming measures on 19th Street (Haskell to Harper) were evaluated as a retrofit to the current street cross section. This segment of the corridor is functionally classified as a Collector Street with an Average Daily Traffic Count of 3,840 vehicles per day (vpd). Therefore, Speed Cushions may be installed per the City of Lawrence's Speed Hump/Speed Cushion Policy (Resolution No. 6482). Due to the cross-sectional geometry and the spacing of the 19th/Haskell, 19th/Maple, and 19th/Harper intersections, the most feasible traffic calming solution is the installation of Speed Cushions located midway between the aforementioned intersections. Some minor modifications of the curb line will be necessary at the locations of the speed cushions to maintain drainage and the on-street bike lanes.

Our opinion of probable construction costs for two (2) Speed Cushions on 19th Street is $25,000. The exhibit titled "*Traffic Calming & Sidewalk Gap Closures*" on the following page graphically depicts the potential locations of the traffic calming devices.

19th Street Sidewalk Gap Closures (Haskell Avenue to Harper Street)

Although a continuous sidewalk is present on the north side of 19th Street, the sidewalk is only partially present on the south side of the street. Right-of-way is available for completion of a continuous sidewalk between Haskell Avenue and Harper Street along with ADA accessibility improvements at intersections. Most of the residential driveways to be crossed exceed current sidewalk cross slope requirements and will therefore require reconstruction of the driveway apron to the curb as well. The sidewalk should incorporate a slightly winder location just east of Haskell Avenue for the Transit Route #1, Bus Stop #102.

The sidewalk gap closure will require coordination with utilities present in the south right-of-way as well as coordination with the Lawrence Historic Resources Commission around the environs of the Robert H. Miller House at 1111 E. 19th Street (just east of 19th/Haskell).

Our opinion of probable construction costs for the sidewalk gap closure improvements is $225,000 which includes a 10% contingency. The exhibit titled "*Traffic Calming & Sidewalk Gap Closures*" on the following page graphically depicts the potential locations of the sidewalk gap closures on the south side of 19th Street.

HASKELL AVENUE

19th STREET

TRAFFIC CALMING
Speed Cushion

Vegetation Removal

Vegetation Removal

Vegetation Removal

19th STREET

MATCHLINE

Transit Stop
Route #1, Stop 102

National Register of Historic Places
Robert H. Miller House

MATCHLINE

19th STREET

TRAFFIC CALMING
Speed Cushion

Vegetation Removal

Existing Safe Route to School with
Crossing Guard at 19th/Harper.

19th STREET

MAPLE LANE

CLARE ROAD

EDGELEA ROAD

HARPER ST

LEGEND

PROPOSED CONCRETE SIDEWALK

CONCRETE DRIVEWAY RECONSTRUCTION

PROPOSED CONCRETE SPEED CUSHION

SAFE ROUTE TO SCHOOL

N

NOT TO SCALE

CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
TRAFFIC CALMING & SIDEWALK GAP CLOSURES

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19th Street/Harper Street Intersection Summary

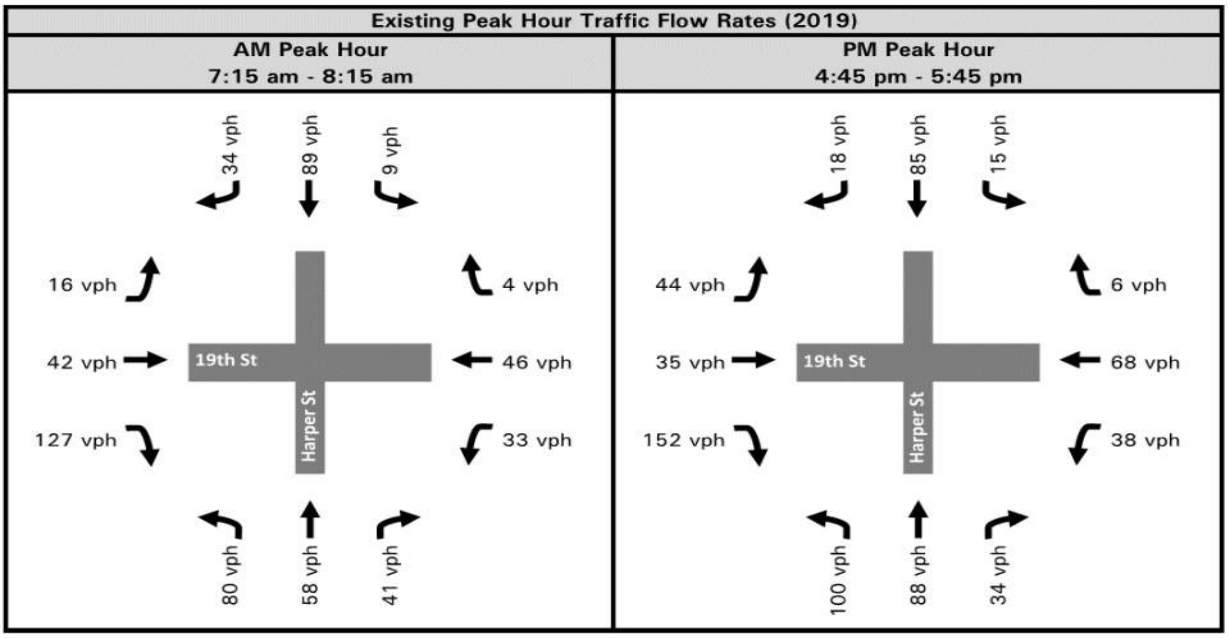
The intersection of 19th Street/Harper Street currently operates as an ALL-WAY STOP controlled, 4-leg intersection. Both 19th Street and Harper Street are classified as Collector Streets and each of the four approaches consist of a single lane approach. During the concept design phase of this project, the traffic operations were analyzed in their current configuration of an ALL-WAY STOP as well as improvement to a single-lane roundabout.

The traffic operations summarized in this study were completed using the methodologies of the *Highway Capacity Manual 6th Edition (HCM 6)*. The *HCM 6* outlines various approaches to estimate traffic operations for free flow and interrupted flow facilities. The quality of traffic operations are categorized in the form of Levels-of-Service (LOS). LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A-D are generally accepted as adequate traffic operations. The upper limit of LOS E is considered "capacity" of the roadway segment or intersection being analyzed. LOS F generally indicates demand exceeds the capacity of the specific movement. Table 1 summarizes the delay criteria.

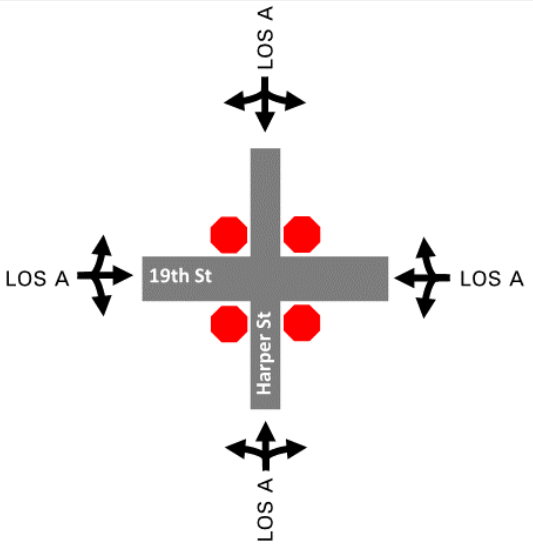
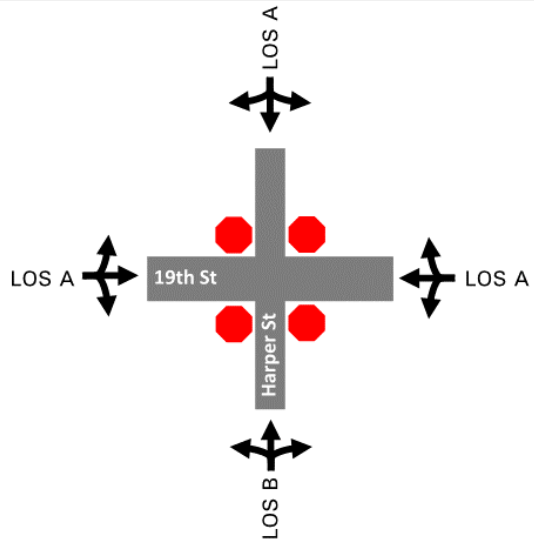
Table 1: LOS Criteria for Interrupted Flow (Intersections)

Level of Service	Signalized Intersection Avg. Control Delay (sec/veh)	Unsignalized Intersection Avg. Control Delay (sec/veh)
A	0-10	0-10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

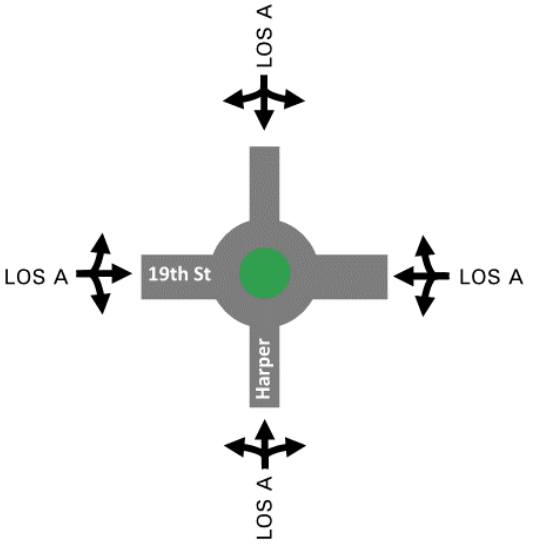
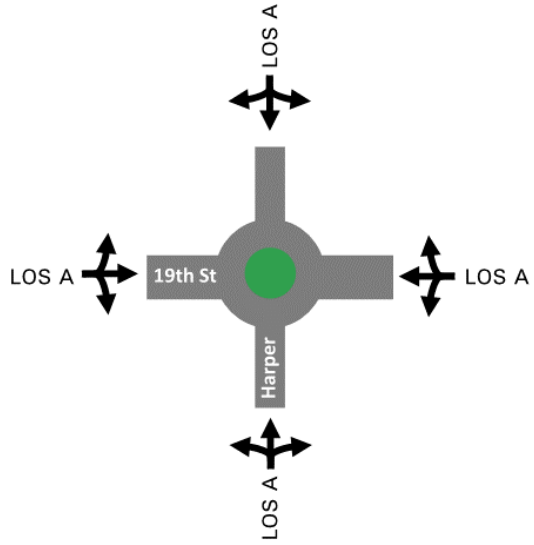
Existing peak hour traffic counts were collected for the 19th Street/Harper Street intersection. The AM Peak Hour spanned a period from 7:15 am to 8:15 am and the PM Peak Hour spanned a period from 4:45 pm to 5:45 pm. The peak hour data was analyzed for traffic operations performance using the *Synchro 10* software program. A summary of existing traffic flow rates data and 19th/Harper traffic operations is below.



Existing Peak Hour Traffic Operations (2019) - ALL-WAY STOP CONTROL

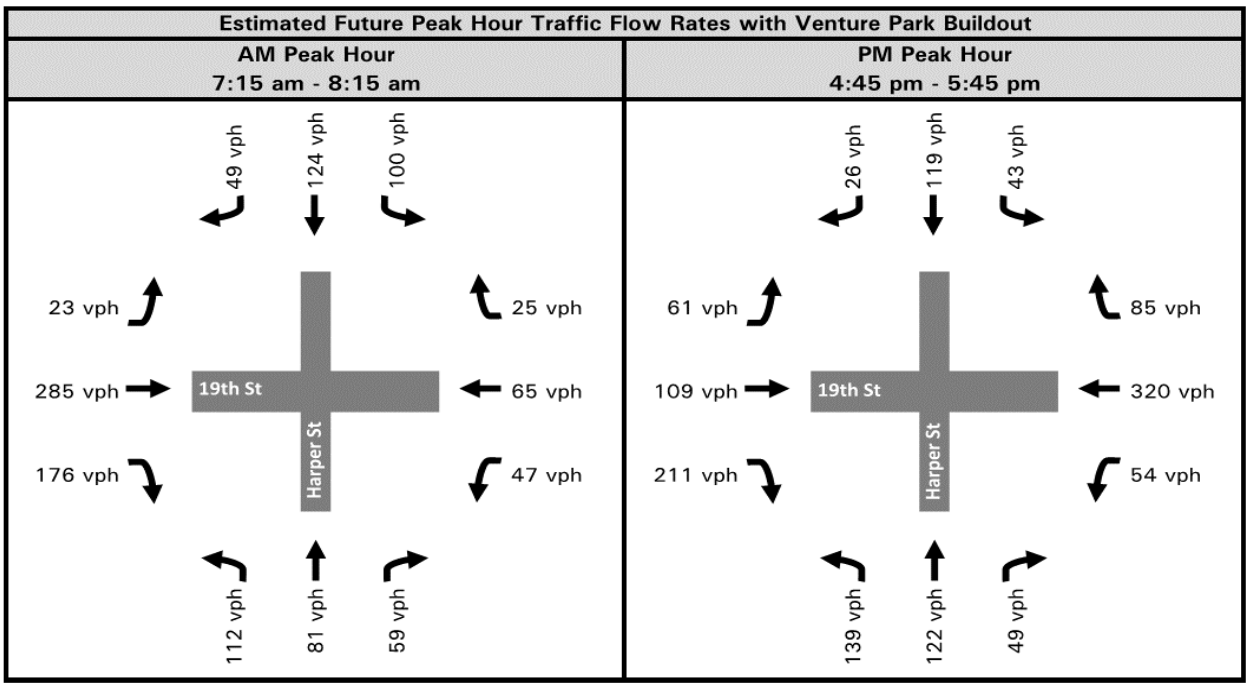
AM Peak Hour 7:15 am - 8:15 am	PM Peak Hour 4:45 pm - 5:45 pm
	
Intersection Performance: LOS A (Delay: 9.1 sec/veh)	Intersection Performance: LOS A (Delay: 10.0 sec/veh)

Existing Peak Hour Traffic Operations (2019) - ROUNDABOUT

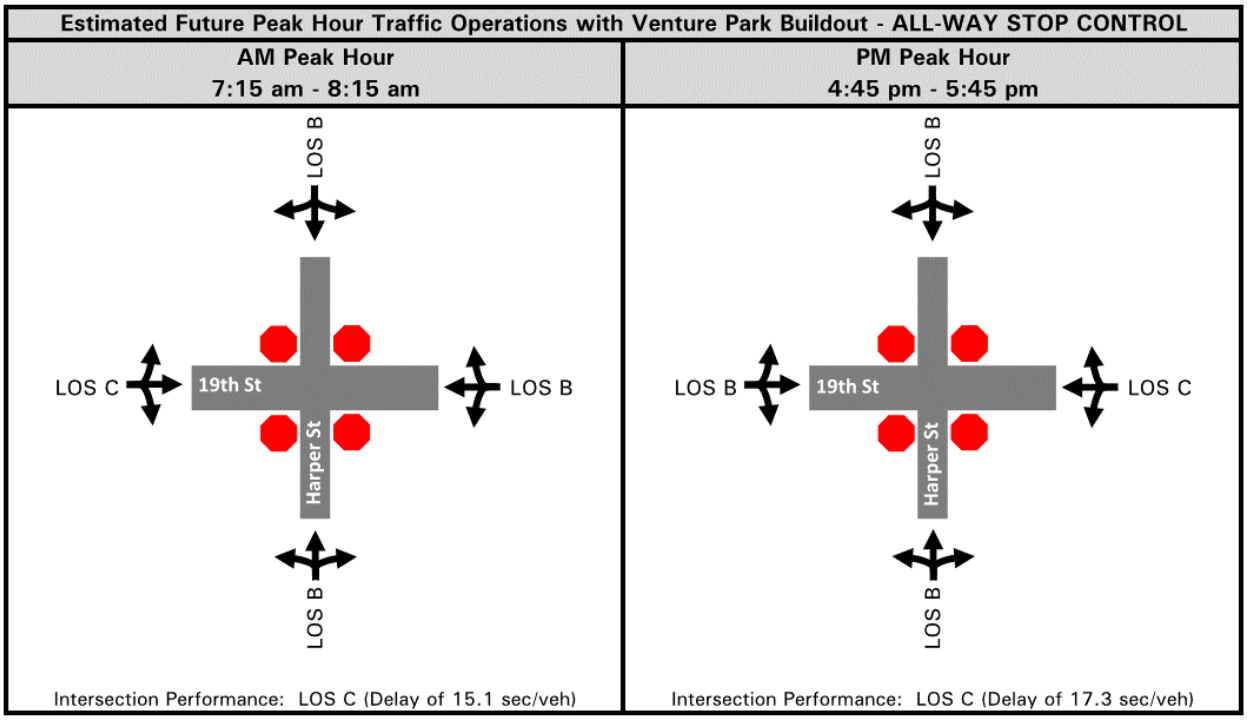
AM Peak Hour 7:15 am - 8:15 am	PM Peak Hour 4:45 pm - 5:45 pm
	
Intersection Performance: LOS A (Delay: 4.7 sec/veh)	Intersection Performance: LOS A (Delay: 4.3 sec/veh)

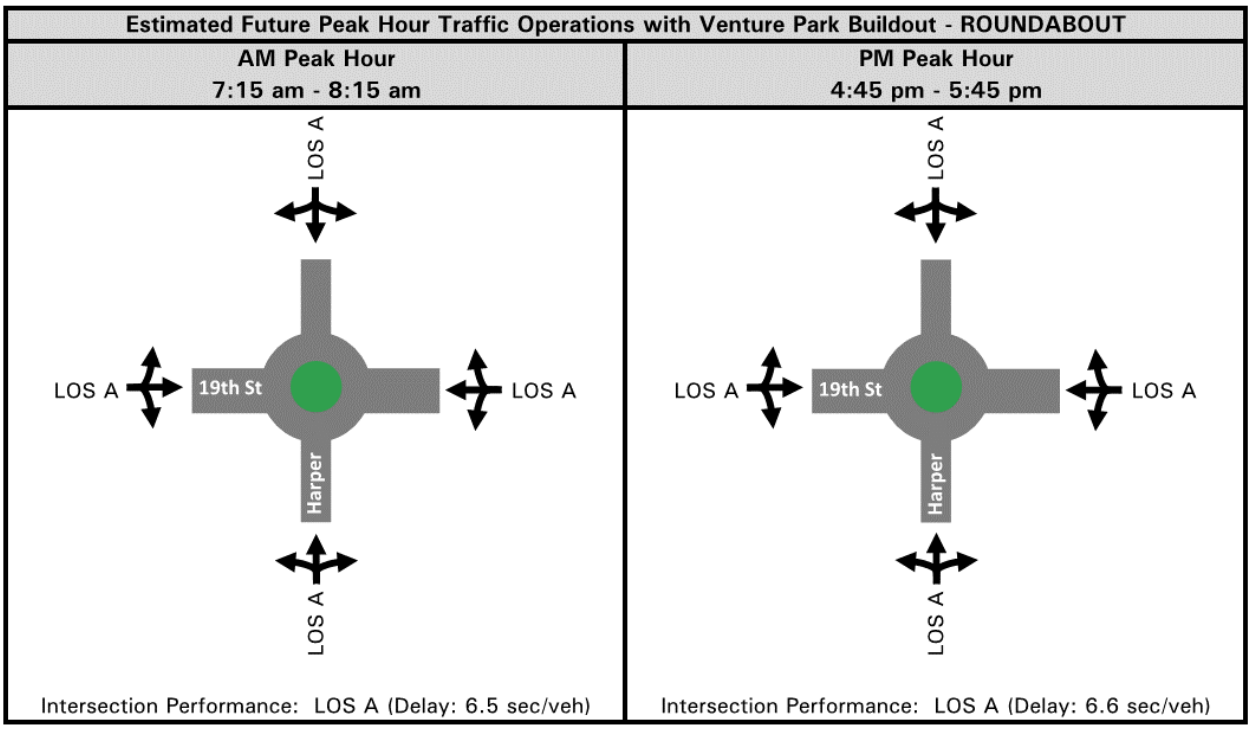
Future peak hour traffic flow rates were estimated based on the current traffic data and City provided data from the Venture Park Traffic Impact Study. A slight change in traffic patterns is anticipated upon completion of the 19th Street Reconstruction Project due to improved east/west street connectivity. Additional increases in traffic flow are anticipated in future years as new businesses/industries develop within Venture Park. It should be noted that a uniform annual percentage increase in existing traffic was not applied to the existing data. This corridor is in a well-established neighborhood with very little surrounding development opportunities which would cause annual increases in traffic volume. A summary of the estimated future traffic flow rates and 19th/Harper traffic operations is below.

Estimated Future Peak Hour Traffic Flow Rates with Venture Park Buildout



Estimated Future Peak Hour Traffic Operations with Venture Park Buildout - ALL-WAY STOP CONTROL



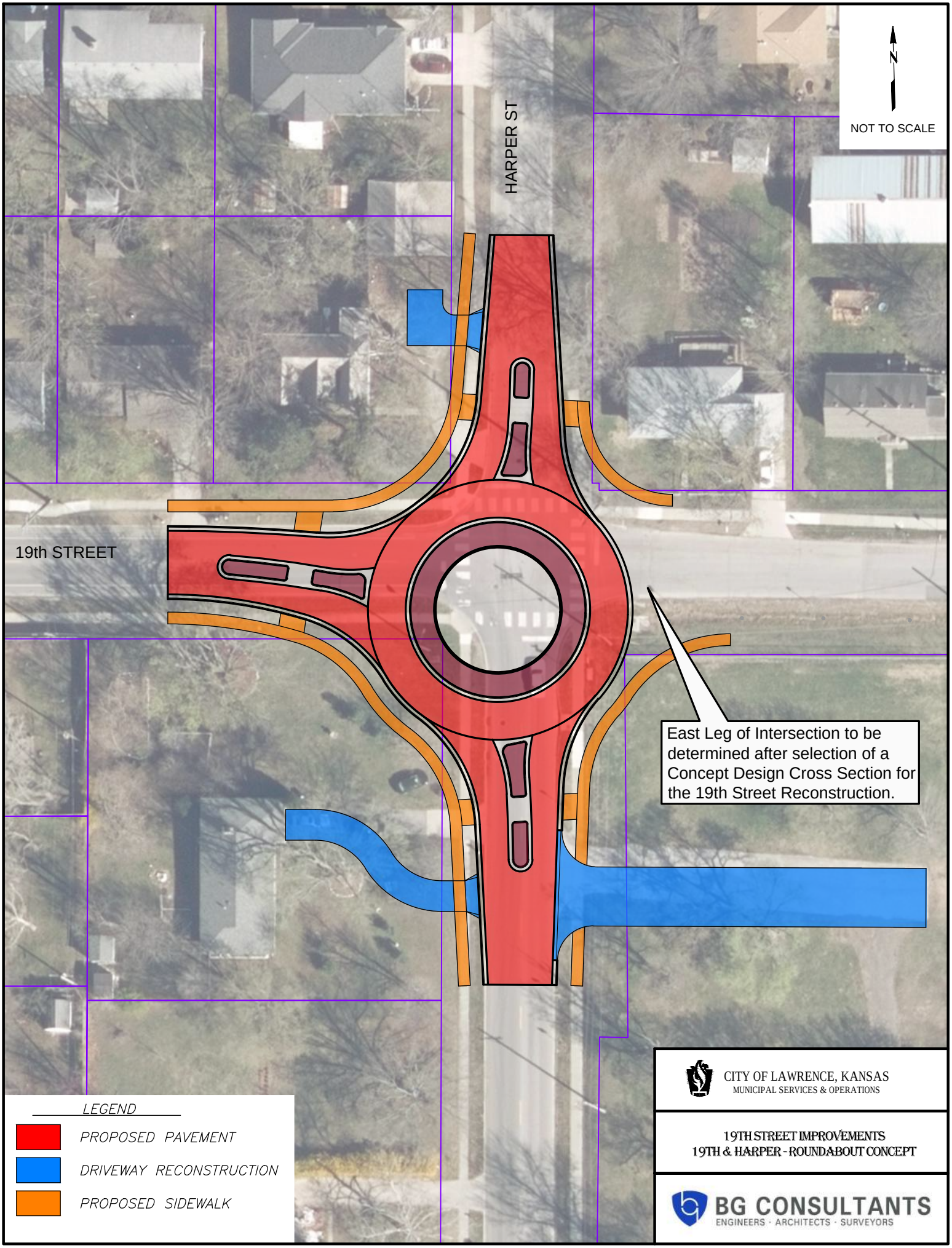


Construction Cost: Our opinion of the probable construction cost to reconstruct the 19th Street/Harper Street intersection as a single-lane roundabout is $425,000. This opinion includes street, sidewalk, and driveway construction along with street lighting and storm sewer realignment.

Recommended for 19th Street/Harper Street Intersection

A recommendation is not provided at this time. This information should be presented to the Transportation Commission to receive public input prior to providing a recommendation to the City Commission.

The exhibit titled "*19th & Harper – Roundabout Concept*" on the following page graphically depicts the potential intersection configuration as a single-lane roundabout.


N
NOT TO SCALE
HARPER ST
19th STREET
East Leg of Intersection to be determined after selection of a Concept Design Cross Section for the 19th Street Reconstruction.
LEGEND
PROPOSED PAVEMENT
DRIVEWAY RECONSTRUCTION
PROPOSED SIDEWALK
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19TH STREET IMPROVEMENTS
19TH & HARPER - ROUNDABOUT CONCEPT
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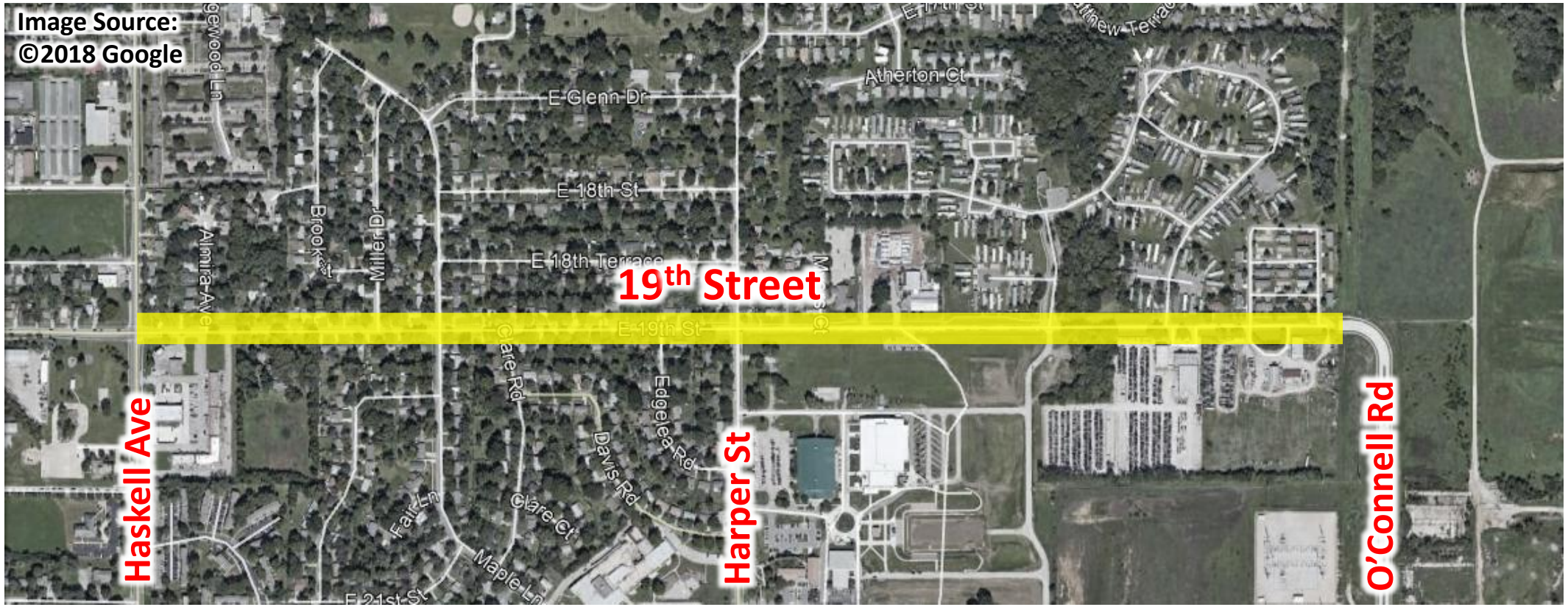
19th Street Improvements



City of Lawrence – Transportation Commission Meeting

October 7, 2019

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Discussion Topics

- 19th Street Corridor Reconstruction (Harper St to O'Connell Rd)
  - Water Main Replacement (programmed for 2020)
  - Transportation Improvements (programmed for 2021)

- Traffic Calming and Sidewalk Gap Closures (Haskell Ave to Harper St)

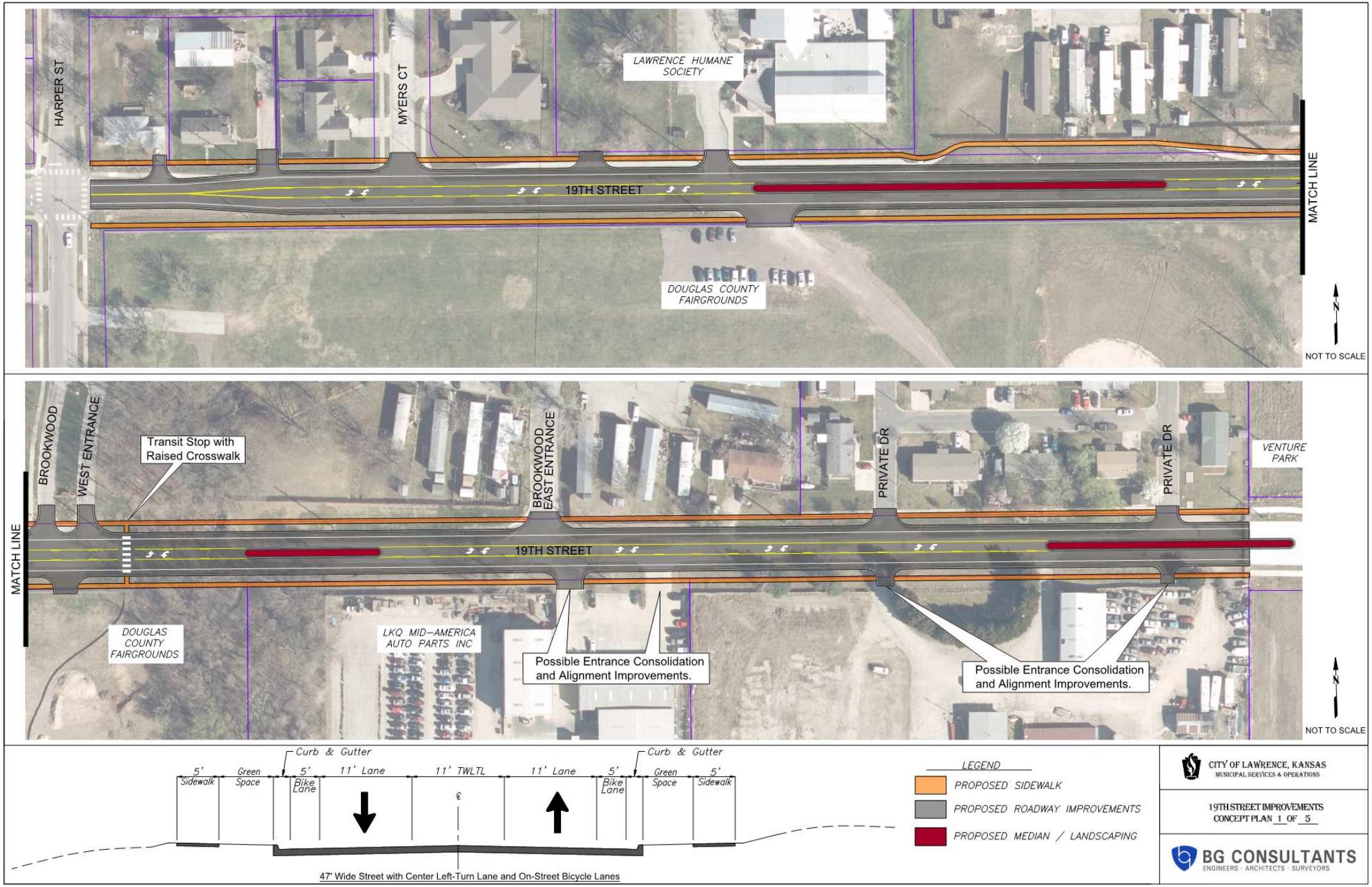
- 19th Street/Harper Street Intersection Evaluation

19th Street Reconstruction – Existing

- Existing Transportation Conditions (Harper St to O'Connell Rd)
  - Non-Standard Roadway
  - Limited and Disconnected Sidewalks and No Bicycle Facilities

19th Street Reconstruction – Proposed

- Five Concept Designs Evaluated
  - Concept 1 – 47’ Street, On-Street Bike Lanes, Sidewalks
  - Concept 2 – 31’ Street with Sidewalks (City’s Std. Collector)
  - Concept 3 – 36’ Street, On-Street Bike Lanes, Sidewalks
  - Concept 4 – 31’ Street, Separated Cycle-Track, Sidewalks
  - Concept 5 – 31’ Street, Separated Elevated Bike Lanes, Sidewalks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NOT TO SCALE
Curb & Gutter
Curb & Gutter
5' Sidewalk
Green Space
5' Bike Lane
11' Lane
11' TWLTL
11' Lane
5' Bike Lane
Green Space
5' Sidewalk
47' Wide Street with Center Left-Turn Lane and On-Street Bicycle Lanes
LEGEND
PROPOSED SIDEWALK
PROPOSED ROADWAY IMPROVEMENTS
PROPOSED MEDIAN / LANDSCAPING
CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS
19TH STREET IMPROVEMENTS
CONCEPT PLAN 1 OF 5
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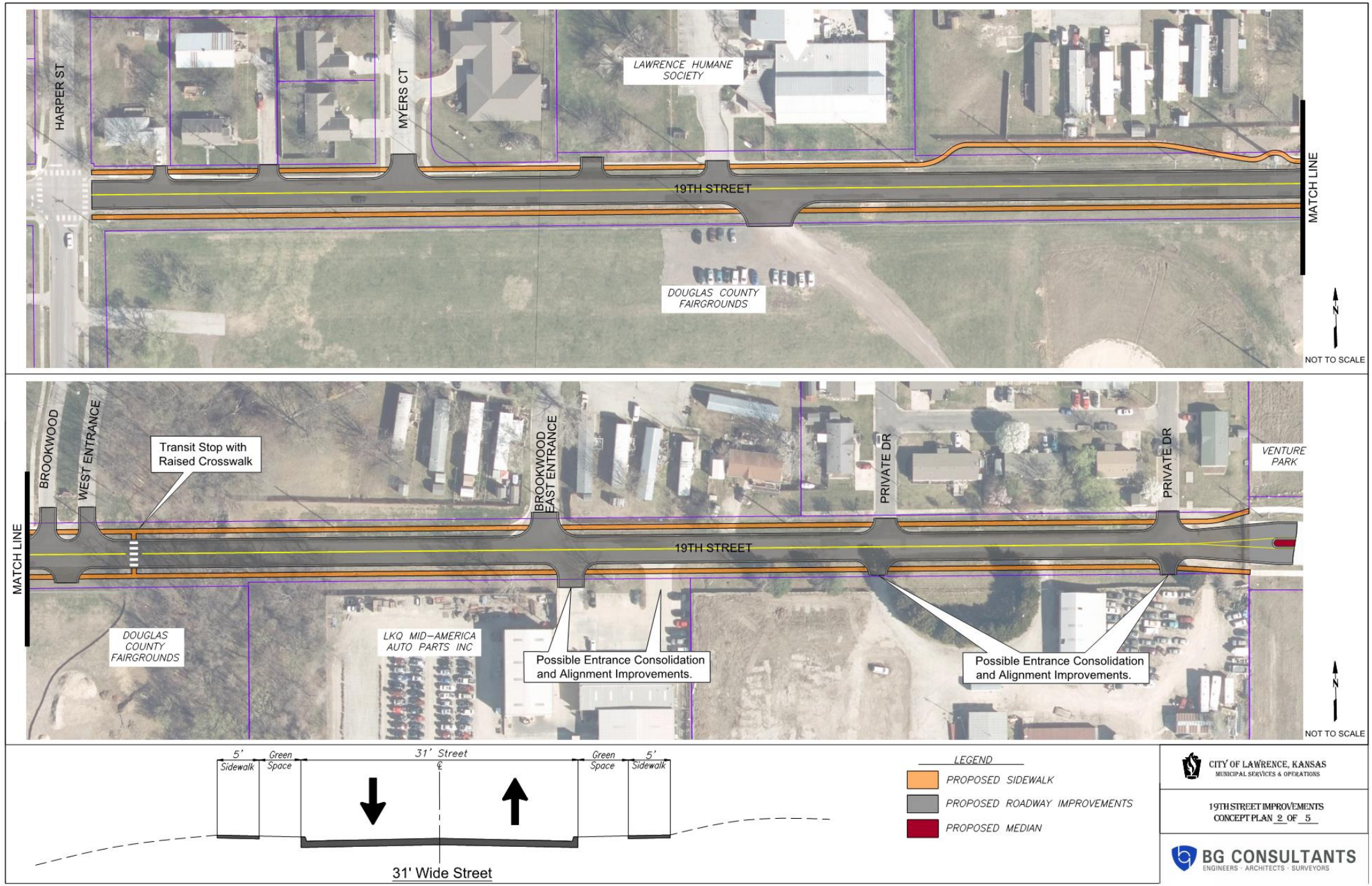
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NOT TO SCALE
5' Sidewalk
Green Space
31' Street
℄
Green Space
5' Sidewalk
31' Wide Street
LEGEND
PROPOSED SIDEWALK
PROPOSED ROADWAY IMPROVEMENTS
PROPOSED MEDIAN
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19TH STREET IMPROVEMENTS
CONCEPT PLAN 2 OF 5
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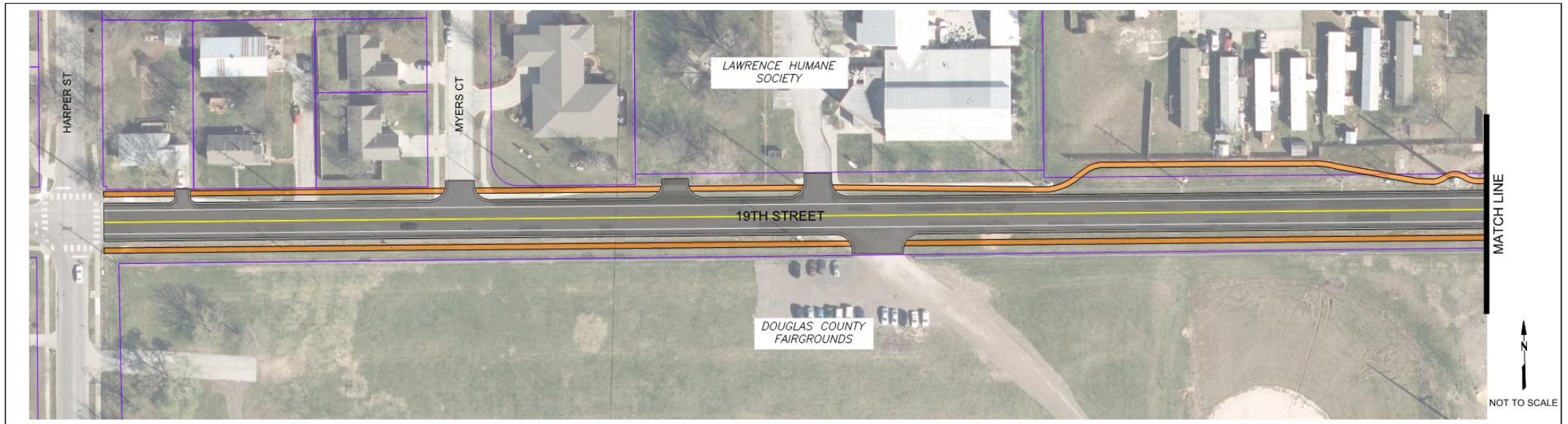

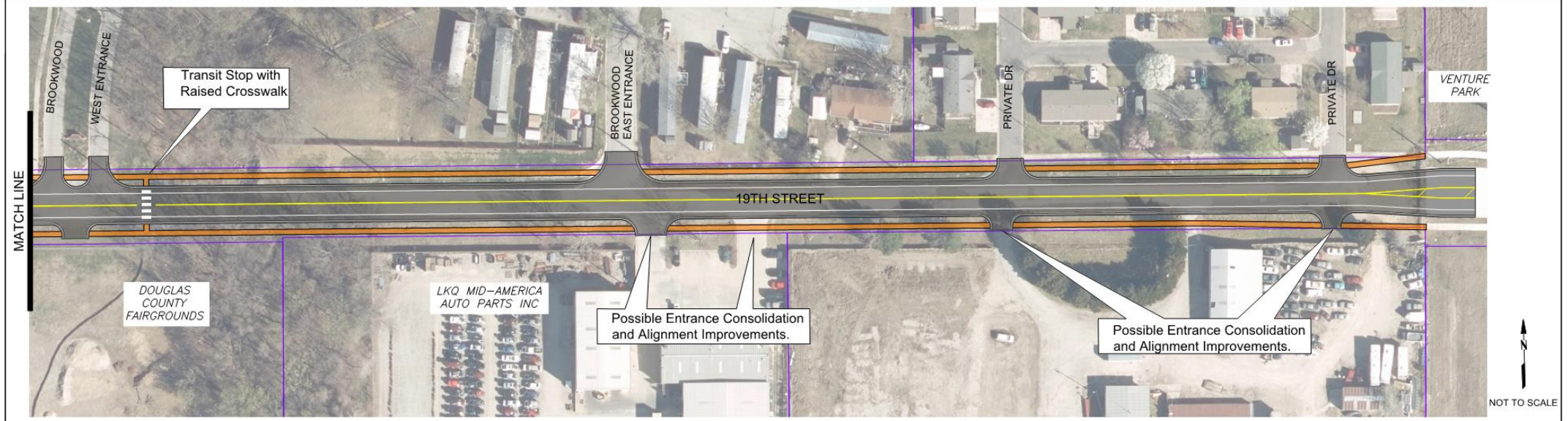

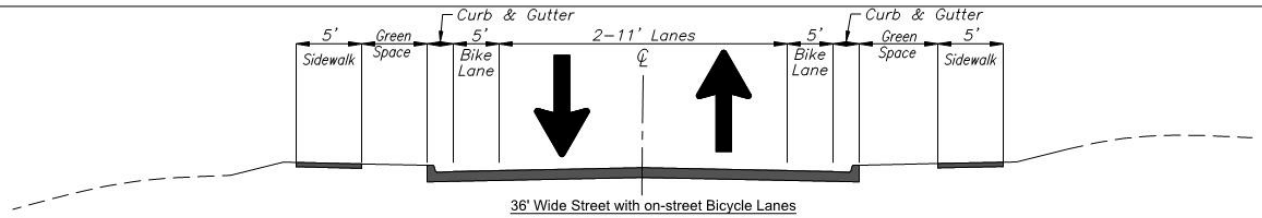

LEGEND

PROPOSED SIDEWALK

PROPOSED ROADWAY IMPROVEMENTS

CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 3 OF 5

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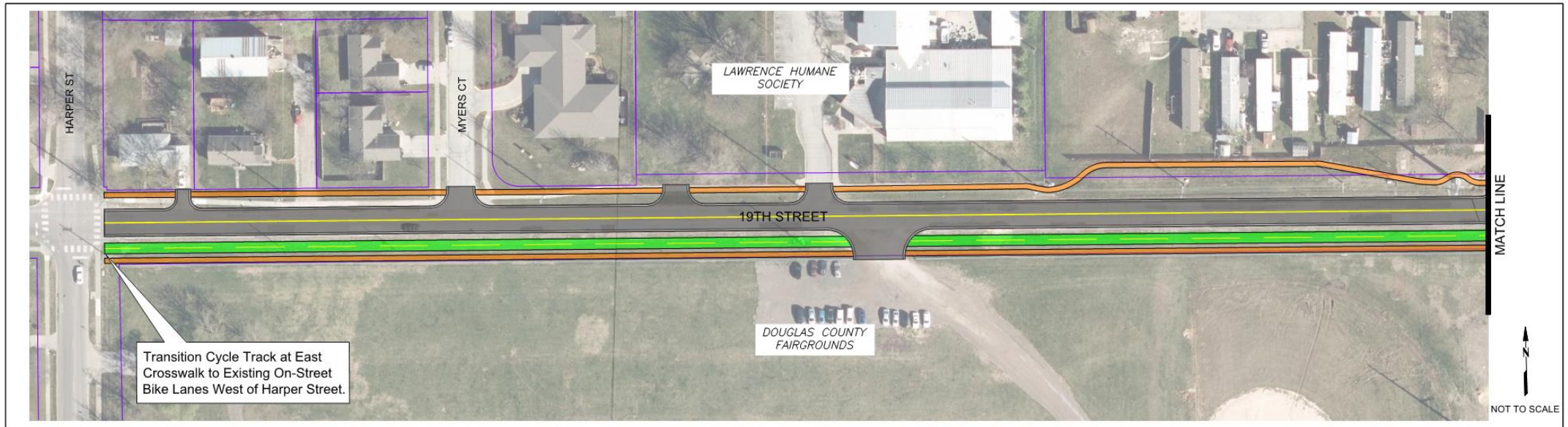

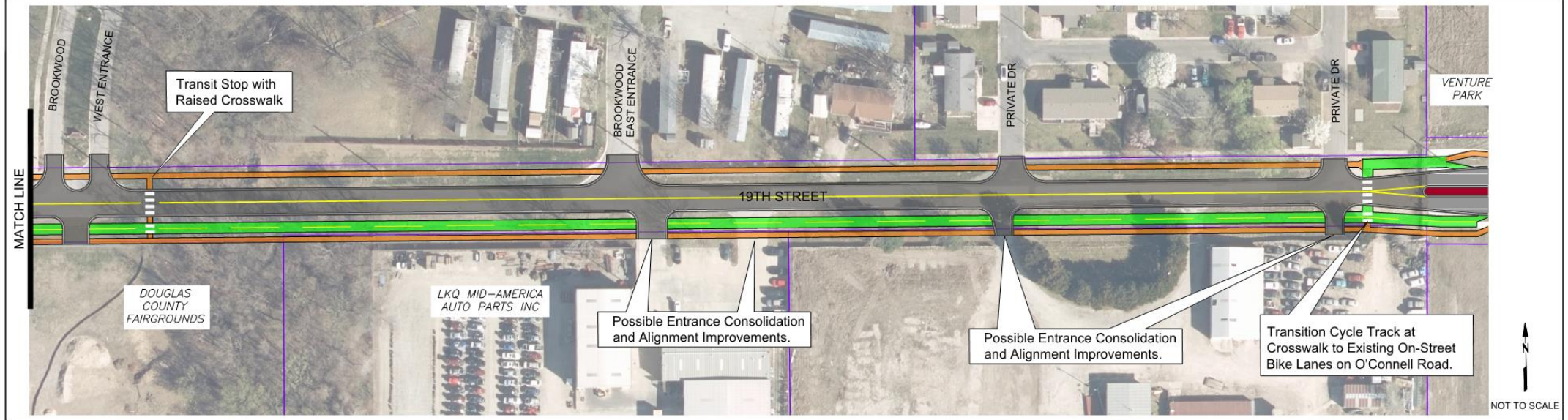

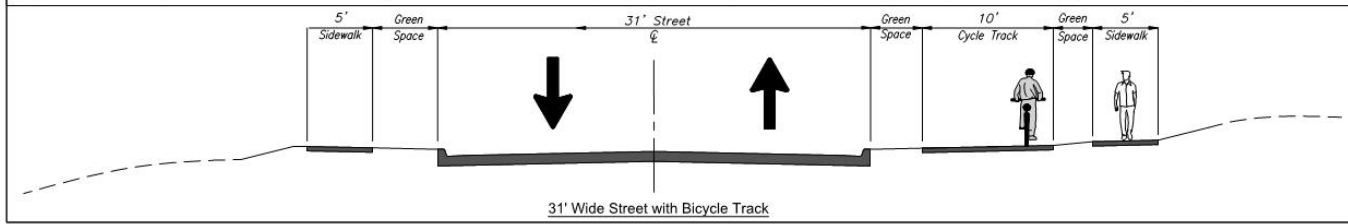

LEGEND

- PROPOSED CYCLE TRACK
- PROPOSED SIDEWALK
- PROPOSED ROADWAY IMPROVEMENTS
- PROPOSED MEDIAN

CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS

19TH STREET IMPROVEMENTS
CONCEPT PLAN 4 OF 5

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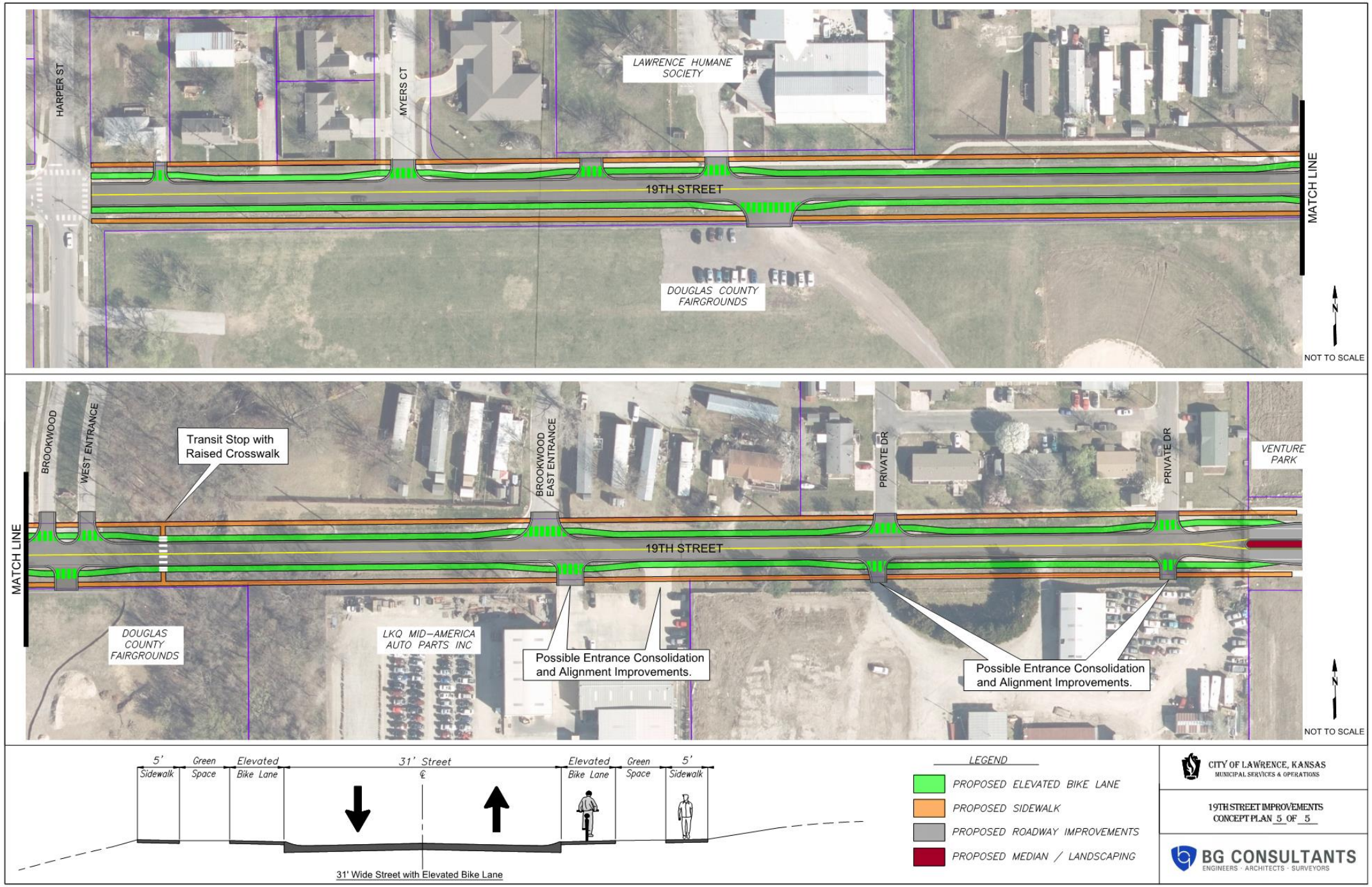
HARPER ST
MYERS CT
LAWRENCE HUMANE SOCIETY
19TH STREET
MATCH LINE
DOUGLAS COUNTY FAIRGROUNDS
NOT TO SCALE
BROOKWOOD
WEST ENTRANCE
Transit Stop with Raised Crosswalk
BROOKWOOD EAST ENTRANCE
PRIVATE DR
PRIVATE DR
VENTURE PARK
MATCH LINE
19TH STREET
DOUGLAS COUNTY FAIRGROUNDS
LKQ MID-AMERICA AUTO PARTS INC
Possible Entrance Consolidation and Alignment Improvements.
Possible Entrance Consolidation and Alignment Improvements.
NOT TO SCALE
5' Sidewalk
Green Space
Elevated Bike Lane
31' Street ℄
Elevated Bike Lane
Green Space
5' Sidewalk
31' Wide Street with Elevated Bike Lane
LEGEND
PROPOSED ELEVATED BIKE LANE
PROPOSED SIDEWALK
PROPOSED ROADWAY IMPROVEMENTS
PROPOSED MEDIAN / LANDSCAPING
CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS
19TH STREET IMPROVEMENTS
CONCEPT PLAN 5 OF 5
BG CONSULTANTS
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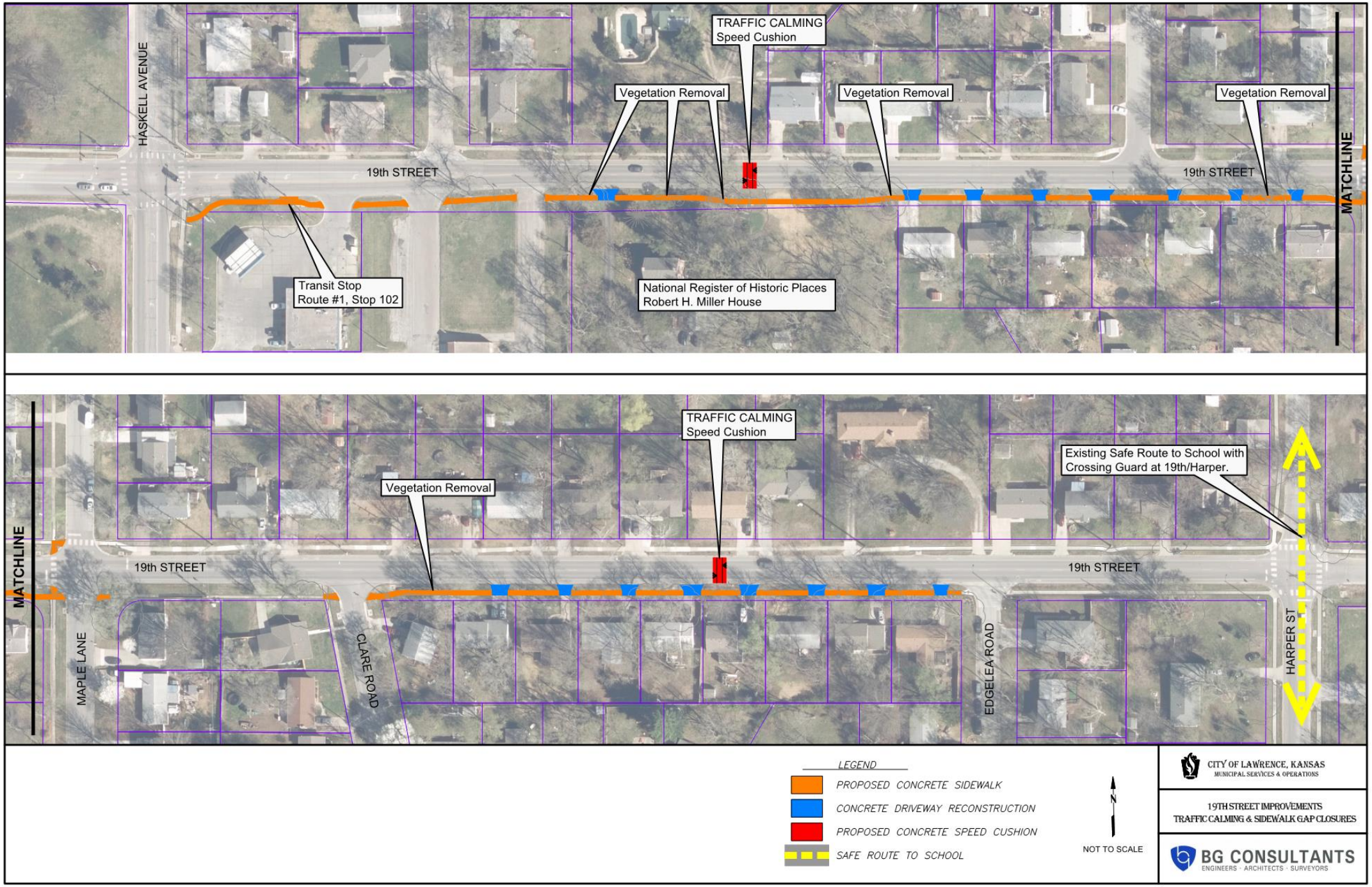
19th Street Reconstruction (Harper Street to O'Connell Road) – TABLE OF PROS/CONS

	Concept 1 Match Venture Park	Concept 2 City Standard Collector	Concept 3 On-Street Bike Lanes	Concept 4 Cycle-Track	Concept 5 Elevated Bike Lanes
Vehicles	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)	**Solution:** Good (2 thru-lanes)
Access / Turning	**Solution:** Good **Pros/Cons:** TWLTL provides a separate lane for turning traffic, thus improving operations and enhancing motorized vehicle safety.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.	**Solution:** Fair **Pros/Cons:** No TWLTL provided, but preliminary analysis indicates TWLTL is not necessary.
Bicyclists	**Solution:** Fair to Good **Pros/Cons:** Concept connects existing, similar on-street facilities to the west and east of the project, but no separated facility provided.	**Solution:** Fair to Poor **Pros/Cons:** No facilities provided. Bicyclists must travel within motorized vehicle driving lanes.	**Solution:** Fair to Good **Pros/Cons:** Concept connects existing, similar on-street facilities to the west and east of the project.	**Solution:** Fair **Pros/Cons:** Separated facility is provided, but difficult transitions at east end and west end to connect to existing on-street facilities.	**Solution:** Good **Pros/Cons:** Separated facility is provided.
Pedestrians	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.	**Solution:** Good **Pros/Cons:** Concept provides sidewalks separated from both motorized traffic and bicycle traffic.
Aesthetics / Landscape	**Solution:** Fair to Good **Pros/Cons:** Raised median opportunities within the TWLTL area at locations with no access.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities but the overall narrower street width provides larger green spaces along the curb.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities.	**Solution:** Fair **Pros/Cons:** Few landscaping opportunities.
Transit	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.	**Solution:** Good **Pros/Cons:** Planned east/west transit route along 19th Street with future bus stop at Brookwood Entrance.
Storm Drainage	**Solution:** Good to Fair **Pros/Cons:** City standard storm drainage infrastructure required. Additional pavement width requires slightly larger/longer system.	**Solution:** Good **Pros/Cons:** City standard storm drainage infrastructure required.	**Solution:** Good **Pros/Cons:** City standard storm drainage infrastructure required.	**Solution:** Fair **Pros/Cons:** City standard storm drainage infrastructure required.	**Solution:** Fair **Pros/Cons:** Mountable curb between motorized traffic and elevated bike lane requires additional, non-standard gutter-inlet structures.
Utilities	**Solution:** Fair **Pros/Cons:** Wider overall street width reduces space available for utility construction & maintenance.	**Solution:** Good **Pros/Cons:** Narrower street width provides ample greenspace for utility construction & maintenance.	**Solution:** Good **Pros/Cons:** Narrower street width provides greenspace for utility construction & maintenance.	**Solution:** Fair **Pros/Cons:** Additional pavement and space for Cycle-Track limits utility construction & maintenance in the south right-of-way.	**Solution:** Fair to Good **Pros/Cons:** Narrower street width provides greenspace for utility construction & maintenance.
Cost	**$2.39 million**	**$2.00 million**	**$2.19 million**	**$2.27 million**	**$2.37 million**
Maintenance	**Solution:** Fair to Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets. Additional pavement width and lane striping requires increased maintenance efforts compared to Concepts 2-5.	**Solution:** Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets.	**Solution:** Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets.	**Solution:** Fair to Good **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets. Cycle Track presents additional efforts similar to maintenance of SUP's.	**Solution:** Fair **Pros/Cons:** Street maintenance requirements is typical of Lawrence Collector Streets. Elevated bike lanes present snow removal challenge.

Cost is construction cost only (street, storm sewer, and ped/bike facilities from Harper to O'Connell) for comparison purposes. Construction contingency is included.
TWLTL = Two-Way Left-Turn Lane
SUP = Shared Use Path (also commonly referred to as side-path, multi-use path, trail, etc.)

Traffic Calming and Sidewalk Gap Closures

- 19th Street (Haskell Ave to Harper St)
- Traffic Calming
  - Speed Cushions meet City's Traffic Calming Policy
  - $25,000 estimated construction cost
- Sidewalk Gap Closures
  - South side of 19th Street
  - Connection to a Safe Route to School
  - Existing Transit Stop (19th/Haskell)
  - $225,000 estimated construction cost


HASKELL AVENUE
19th STREET
TRAFFIC CALMING
Speed Cushion
Vegetation Removal
Vegetation Removal
Vegetation Removal
19th STREET
MATCHLINE
Transit Stop
Route #1, Stop 102
National Register of Historic Places
Robert H. Miller House
MATCHLINE
19th STREET
TRAFFIC CALMING
Speed Cushion
Vegetation Removal
Existing Safe Route to School with
Crossing Guard at 19th/Harper.
19th STREET
MAPLE LANE
CLARE ROAD
EDGELEA ROAD
HARPER ST
LEGEND
PROPOSED CONCRETE SIDEWALK
CONCRETE DRIVEWAY RECONSTRUCTION
PROPOSED CONCRETE SPEED CUSHION
SAFE ROUTE TO SCHOOL
N
NOT TO SCALE
CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS
19TH STREET IMPROVEMENTS
TRAFFIC CALMING & SIDEWALK GAP CLOSURES
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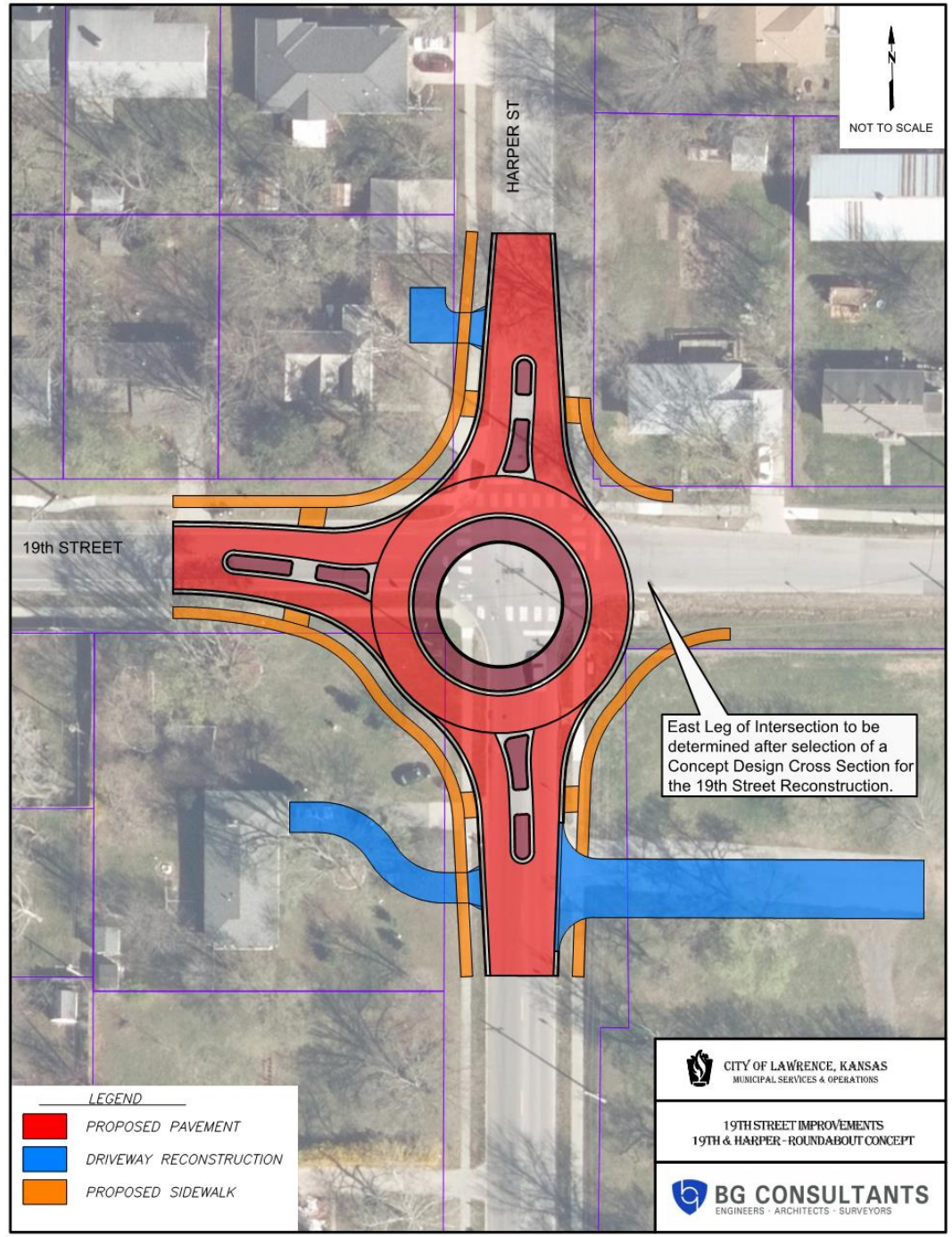
19th Street/Harper Street Intersection

- Existing Traffic Characteristics
  - All-Way STOP: Level of Service = A (A) *{ AM Peak Hour (PM Peak Hour) }*
  - Single-Lane Roundabout: Level of Service = A (A)
    - Delay reduced from ±10 sec/veh to ± 4 sec/veh in Peak Hours

- Estimated, Future Traffic Characteristics w/Venture Park
  - All-Way STOP: Level of Service = C (C)
  - Single-Lane Roundabout: Level of Service = A (A)
    - Delay reduced from ±16 sec/veh to ± 7 sec/veh in Peak Hours

- Roundabout Option: $425,000 estimated construction cost


HARPER ST
19th STREET
N
NOT TO SCALE
East Leg of Intersection to be determined after selection of a Concept Design Cross Section for the 19th Street Reconstruction.
LEGEND
PROPOSED PAVEMENT
DRIVEWAY RECONSTRUCTION
PROPOSED SIDEWALK
CITY OF LAWRENCE, KANSAS
MUNICIPAL SERVICES & OPERATIONS
19TH STREET IMPROVEMENTS
19TH & HARPER - ROUNDABOUT CONCEPT
BG CONSULTANTS
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19th Street Improvements

- Next Steps
  - Questions / Discussion Tonight
  - Incorporate Public Input and Transportation Commission Input
  - Present Recommendation to City Commission (*date to be determined*)

November 2, 2019

John & Judy Inverarity
1718 E 19th Street
Lawrence, KS 66046

To the Lawrence Transportation Commission:

We are very concerned about the proposals for 19th street.

The speeds at which people drive on this street are ridiculous and we fear it will get much worse when there is a nice new street. We would like to see speed bumps incorporated into the new street.

Please keep the street at 22 feet in width. This is a residential street with about 250 homes between Harper & O'Connell. The pedestrian traffic is substantial, many being children walking to & from school. We don't need a boulevard.

The drainage ditch works very nicely for storm water and do not see the need for a sewer/storm on the fairground side of the street.

The last thing we need is for 19th to be a through street to Venture Park. People already use Harper to 19th & 15th to avoid 23rd street. We can't imagine the increase in traffic if it were a through street and wider. If anything, maybe an exit only at O'Connell, in other words partial closure. If you do make this a through street, please make it so that trucks are not allowed. The large trucks that have business close to the Venture Park should only enter & exit from the Venture Park.

Lastly, we feel that narrowing 23rd street as you enter Lawrence, making 19th street a through street at Venture Park and making 19th Street wider is just not good planning.

Sincerely,

John & Judy Inverarity

October 7, 2019

Dear Mr. Evans and Mr. Cronin and the Transportation Commission members:

I am writing as a member of the 19th Street Neighborhoods Coalition, which consists of residents of three neighborhoods, Brook Creek, Barker and University Place. For several years we have tried to get the city to change the configuration of the proposal for E. 19th Street between Harper and O'Connell Road. This matter is on the agenda for tonight's meeting and we again urge you consider our requests. We live near 19th Street, it is our neighborhood street, we walk along it, we walk across it, we back our cars out of driveways onto it, and we send our children to school on it. We do not want 19th Street to become a traffic-laden, through-way for commuters. A perfectly good option for commuters is 23rd Street.

Specifically, we request that the city live up to its promise of last year to offer a design option of a 22 feet wide street for that section of 19th between Harper and O'Connell Rd, which would match the width of the rest of 19th St. And we urge the Transportation Commission to support this 22 foot wide option. We also request that the entrance onto O'Connell Rd allow only east bound traffic onto O'Connell Rd, using either a partial closing or a gate (like the gate that the new police station is using) excluding west bound traffic, from O' Connell. We request that the open storm drainage be maintained for better storm water control. We support the construction of a 10 foot shared bike and pedestrian path on the south side of the road and a 6 foot sidewalk on the north side.

The Transportation Commission is studying the narrowing of E. 23rd Street, while at the same time considering widening a neighborhood street, E. 19th Street. Why are these contradictory studies and plans going on? The attempt to lure businesses to Venture Park by offering them a quick outlet via E. 19th would result in negatively impacting all the neighborhood residents that live along 19th Street, by introducing excessive traffic. Please reconsider the proposal for East 19th Street between Harper and O'Connell Rd. and design and build a 22 foot wide street, with bike and walking paved paths.

Sincerely,

Pat Kehde and the 19th Street Neighborhoods Coalition

1636 Learnard,

Lawrence 66044

Brook Creek Neighborhood Association

Jesse Brinson, President
1502 East Glenn Dr., Lawrence KS 66044
Telephone: (785)218-8684
E-mail: jesse@calledtogreatness.com
Coordinator: brookcreekna@gmail.com

Multi-Modal Transportation Commission
Chair Steve Evans
City Hall
Lawrence KS 66044

7 October 2019

Mr. Evans and Commission:
Thank you for instructing City staff at your 29 March 2018 meeting to bring you more width options. Brook Creek Neighborhood Association has requested since 2011 consideration of a 22 foot wide option, and a traffic limiting device at O'Connell Rd. Now after 8 years of discussion, we are astounded that staff has presented no option for a 22 foot wide street.

We have struggled for many years to curtail speeding cut-through traffic, game day traffic, and K-10 commuter traffic. Widening 19th St. to 31 feet (15 foot wide lanes) will induce more speeding. Connecting to O'Connell Rd. will add 3880 vehicle trips per day from Venture Business Park (VBP) alone. And every width option from staff eliminates the open drainage, which has about five times the storm water capacity of enclosed pipes. These practical concerns have been consistently ignored by City staff.

As one of the members in the 19th Street Neighborhoods Coalition, Brook Creek Neighborhood Association supports these following solutions:

1. Repave the street with only two 11 foot lanes, the current width, an ideal traffic calming size. 15 foot lanes (31 foot street) are absurdly wider than 12 foot federal highway lanes. There will be no curb-side parking to prompt traffic calming, because nothing on 19th St. needs on-street parking. There will be no traffic calming from bicycle lanes, considering that Stuart Boley said on 1 May 2018, "I'd like to see that separation of bicycles instead of bike lanes". The intent, and actual statements, by officials was a promise for three width options: 47 feet, 31 feet, and 22 feet.
2. Install a 10 foot shared use path on the south side. This is what the Transportation Commission discussed in March 2018. For staff to call it a "bicycle track" excludes pedestrians. A shared use path plus an additional 6 foot sidewalk on the south is redundant and wasteful.
3. Put a partial closure at O'Connell allowing east-bound entry into VBP. West-bound traffic would be blocked to cut-through traffic. Fire and medical are free to pass either direction, no transponder needed.
4. Keep the open storm drainage for better flood control. A crown-and-ditch street is not sub-standard, regardless of staff claims, but much superior for five-times the flood water capacity than enclosed pipes. Lawrence maintains miles and miles of crown-and-ditch streets in Brook Creek, East Lawrence, North Lawrence, north Michigan area, and Western Hills, to name just a few.
5. Install a 6 foot sidewalk on the north side. This complements the shared use path on the south.

Our concerns have been disregarded by City staff many times: by David Corliss in 2011 and 2014, at a Public Works open house in 2015, by Transportation Planners at the Metropolitan Planning Organization, and numerous times by Public Works staff at the Planning Commission, at the City Commission, and at last March's Transportation Commission.

Last March, you had thankfully asked for options at a point well before the 50% design stage. Nothing before you is beyond revision, the promised 22 foot option as well. Please direct staff to issue a change order, and obtain a 22 foot crown and ditch design option from BG Consultants.

Sincerely,

Jesse Brinson, President

19th St. east of Harper St. is 22 foot residential width

City staff wants to widen 19th St. to a 47 foot arterial width

and connect it to O'Connell Road in Venture Business park.

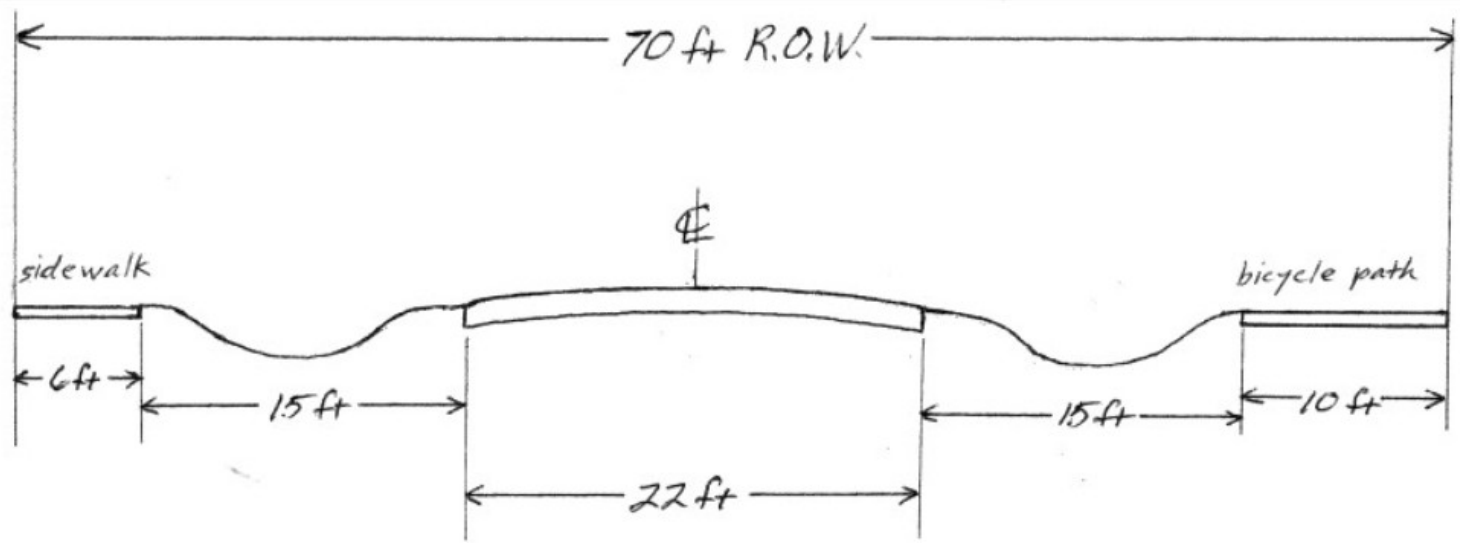
This would add cut-through traffic into the heart of 19th Street neighborhoods
- commuters, game day traffic, business park traffic -

The 19th Street Neighborhoods Coalition proposes these solutions:

1) Partial closure at O'Connell - bus, fire, medical free to pass
2) Replace the water line, as routinely done all over town
3) Install a continuous 6 foot sidewalk on the north side
4) Install a 10 foot shared use path on the south side
5) Pave it at 22 feet wide, like our other streets
6) Keep open ditches for better flood control

Historic 19th Street
22 foot wide crown and ditch complete street

Preferred solution by the 19th Street Neighborhoods Coalition



Memorandum
City of Lawrence
Municipal Services & Operations Department

TO: Transportation Commission
FROM: Jake Baldwin, Senior Project Engineer
Dustin Smith, Senior Project Engineer
DATE: October 1, 2019
RE: Agenda Item for Transportation Commission October 7, 2019:
2021 KDOT Transportation Alternatives (TA) Grant Project List

Background

At the September 9, 2019 Transportation Commission meeting, the Commission was informed of the current KDOT call for projects under the Transportation Alternatives (TA) program. Eligible project categories include Pedestrian/Bicycle/Non-motorized Transportation, Safe Routes to School, Historic/Archaeological Transportation Activities and Scenic and Environmental. The City will need to develop detailed grant applications for projects that best meet funding criteria and align with City priorities. Grant applications are due November 1, 2019 and will be awarded in the spring of 2020.

Details

Due to the effort involved in developing applications and resources available to fund winning applications, staff recommends that three projects be developed for the grant application. Applications should be developed for projects that are likely to score high in regards to the scoring criteria.

Key factors for the scoring of all projects include:

- Narrative: Description of the existing conditions, project need, project scope, project benefits.
- Detailed Maps & Photos: Identify project location, boundaries and existing conditions that correspond clearly to the narrative.
- Preliminary Design/Sketch: Alignments and cross-sections that illustrate the completed project.
- Cost Estimate: Detailed and reasonable cost estimate based on the estimated total project costs.
- Project Timeline: Timeline for the total duration of the project that is reasonable and realistic.
- Letters of Support: Representation of support from key partners and stakeholders involved in the project.
- Past performance: Record of satisfactory project delivery and maintenance from previous project sponsor.
- Project Potential and readiness: Demonstration that no known physical or political obstacles exist, that the public has been informed of the project through various methods with little or no opposition, and that the project is an enhancement to the existing transportation infrastructure and has been previously identified in an approved long-range planning document.

Factors that award additional points to Bike/Pedestrian projects include:

- Inclusion in a regional bicycle or pedestrian plan (i.e. Horizon 2020, MPO TIP, Bike/Ped Priority Policy)
- Complete missing links on a national or statewide facility (e.g. US-40/6th Street is partially on the National Highway System)
- Provide access to schools, shops, transit, community facilities
- Enhancements to a facility (e.g. benches, lighting)
- Address higher speed facilities
- Provide safer crossings of railroads/roadways/rivers
- Provide safer parallel access by railroads, freeways, or rivers

Factors that award additional points to Safe Routes to School projects include:

- Availability and detail of walking data and barriers
- Number of partners identified as working together toward solutions
- Initiatives for and collaboration addressing all 5 Es (Education, Enforcement, Encouragement, Evaluation, Engineering)
- Addresses existing or future safety problems for bicyclists/pedestrians along corridor
- Evidence of Long Term Community Commitment

Staff has worked to shortlist projects believed to align with both the City's priorities and TA scoring criteria. These projects all have some level of study and public involvement. Projects with significant known barriers (cost, right-of-way, lack of public consensus, etc.) or vague scopes are not anticipated to score well on KDOT's review. Projects which may be a priority but are anticipated to be addressed in future years are also less logical to include in the current grant application process. The shortlist of projects include:

- 6th Street Shared Use Path
- Safe Routes to School Phase 2
- Lawrence Loop: Peterson Rd. to Michigan St. or Loop Crossing on South Iowa

The segment of the Lawrence Loop between the 8th Street and Constant Park is not recommended for a grant application at this time as ongoing discussions with the BNSF Railway has indicated that the preferred alignment for this segment, which requires BNSF consent, may not be approved.

These projects may have multiple phases, which would stand alone as fully functioning projects in their own right. The City can apply for the full project, but breakdown priorities and sub-projects to give KDOT more flexibility in awarding funds. City matching funds are anticipated to come from 2020 and/or 2021 bike/ped funds. Additional estimate and scope details regarding the above project list are included in the following table:

Project Estimates and Anticipated Required Local Match:

Project	Location	Project Type	Grant Request (80% CE & Construction)	Local Match (20% + Design, ROW, Utilities)	Total
6th Street Shared Use Path		Bike/Ped	**$1,468,000**	**$706,000**	**$2,174,000**
	Iowa to Wisconsin		$184,000	$128,000	$312,000
	Lawrence to Iowa		$542,000	$214,000	$756,000
	Kasold to Lawrence		$350,000	$136,000	$486,000
	Monterey to Kasold		$392,000	$228,000	$620,000
Safe Routes to School		Safe Routes to School (Phase 2)	**$400,000**	**$188,000**	**$588,000**
	See attachment for locations				
Lawrence Loop		Bike/Ped	**$1,075,000**	**$625,000**	**$1,700,000**
	Peterson Rd. to Michigan St.				

NOTE: Estimates are conceptual in nature and are based on the current information available. Detailed project estimates will be developed for projects selected for grant applications.

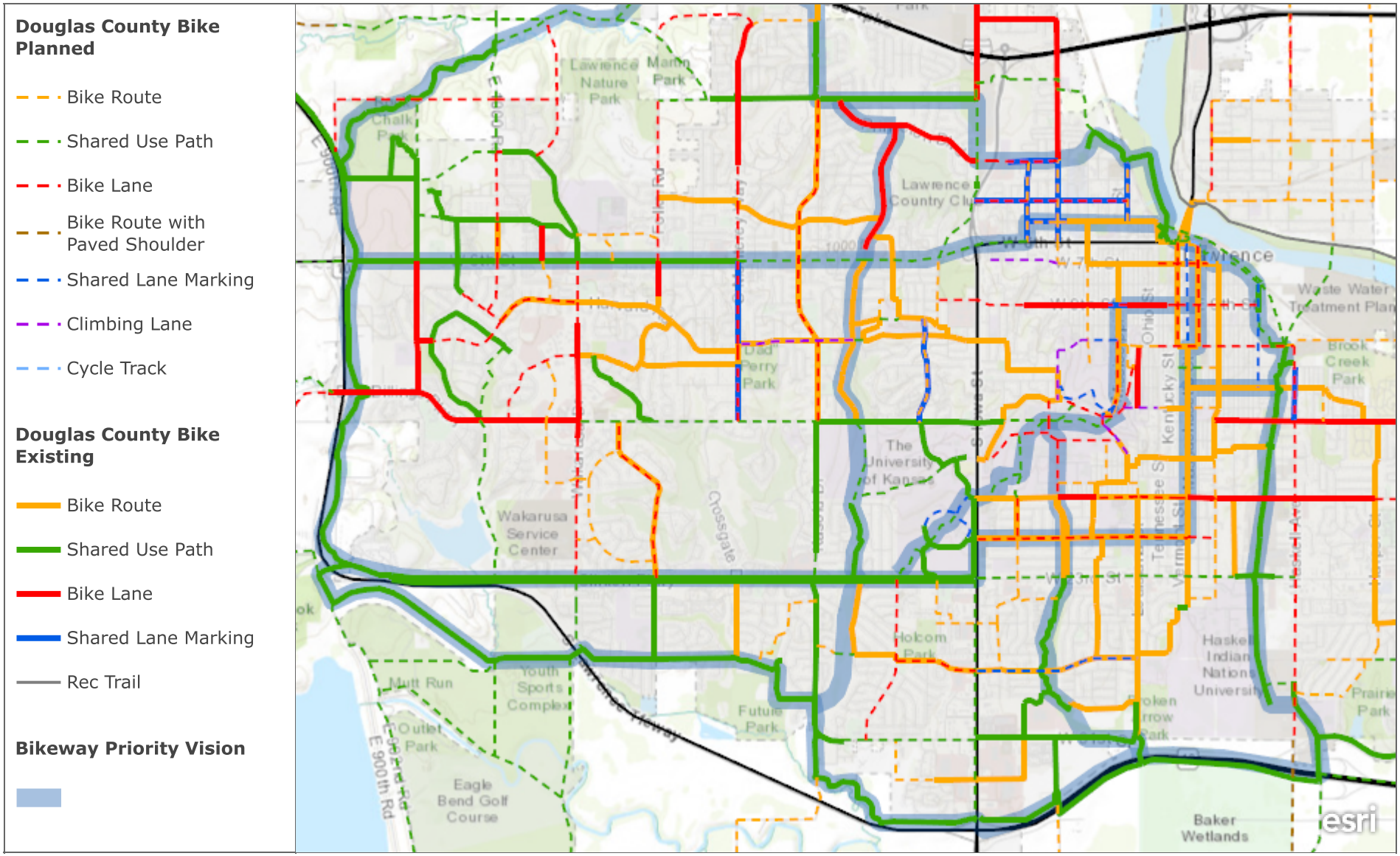
Action Request

Approve the Transportation Alternative grant application project list and provide recommendation on project application priority.

Attachments:

Priority Bikeway Network Map
Bike Projects – Prioritized per Non-motorized Prioritization Policy
Exhibit: Safe Routes to School Project List and Maps
Exhibit: Lawrence Loop Peterson Rd. to Michigan St., Lawrence Loop S. Iowa Crossing

Bikeways - Lawrence Bikeways on the Priority Network

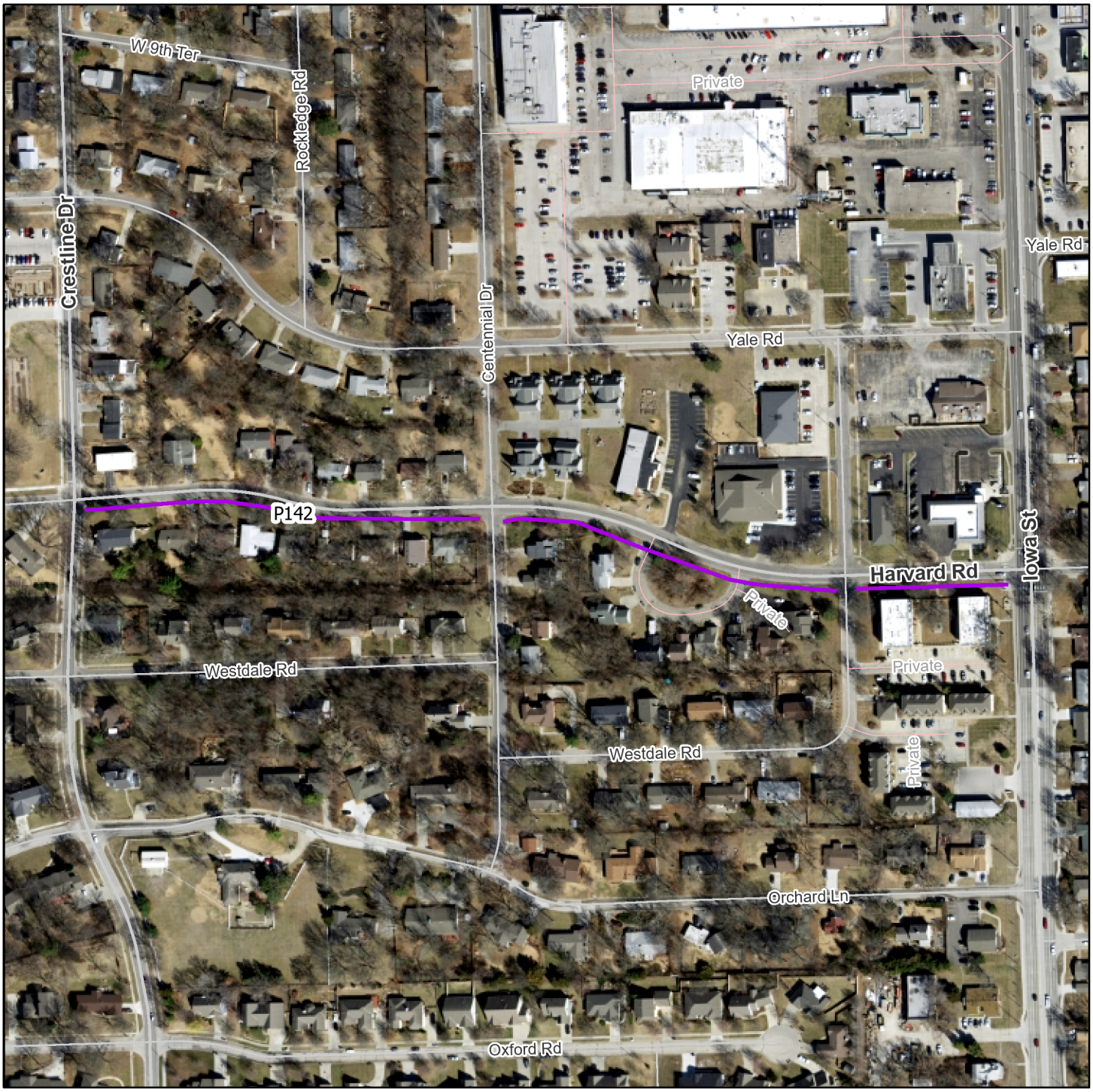


Lawrence Priority Network Bikeway System

City of Lawrence, Kansas, Missouri Dept. of Conservation, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA

PROJECTID	FULLNAME	BIKE_TYPE	Total_Poin
B155	SLT Path at Iowa Street	Crossing	19
B118	Lawrence Loop - Burcham Park to New York	Shared Use Path	18
B027	Massachusetts Street - 14th to 21st	Bike Lane	16
B033	9th Street - at Mississippi	Bike Lane	16
B116	6th Street - Lawrence to Iowa	Shared Use Path	16
B121	Lawrence Loop - Peterson to Michigan	Shared Use Path	16
B128	6th Street - Iowa to Wisconsin	Shared Use Path	16
B002	5th Street - Wisconsin to Tennessee	Bike Boulevard	15
B005	Mississippi St - Fambrough to Jayhawk	Bike Lane	15
B006	New Hampshire Street - 6th to 9th	Shared Lane Marking	15
B008	Naismith Drive - On KU Campus	Bike Lane	15
B016	9th Street - Kentucky to New Hampshire	Shared Lane Marking	15
B022	Wisconsin Street - 5th to 6th	Bike Boulevard	15
B024	New Hampshire Street - 9th to 11th	Shared Lane Marking	15
B025	11th Street - Mass to Kentucky	Shared Lane Marking	15
B127	Mississippi St - 9th to Fambrough	Bike Lane	15
B029	6th Street - Monterey to Kasold	Shared Use Path	14
B030	6th Street - Kasold to Lawrence	Shared Use Path	14
B131	Massachusetts Street - 21st to 23rd		14
B140	Massachusetts Street Bridge		14
B141	Vermont Street Bridge		14
B132	Massachusetts St - 23rd to Indian Ave		13
B133	23rd Street - Barker to Burrough's Creek Trail		13
B136	Maine Street - 9th to Fambrough		13
B137	Maine Street - 7th to 9th		13
B138	W 7th Street - Wisconsin to Maine		13
B145	W 27th Street - Naismith Valley Trail to Lousiana		13
B146	W 27th Street - Iowa St to Naismith Valley Trail		13
B151	Wakarusa Drive - Clinton to W 27th/SLT		13
B003	Lawrence Ave - Mesa to Harvard	Bike Boulevard	12
B028	Lawrence Avenue - Harvard to BBPW	Bike Boulevard	12
B147	W 27th Street - Lawrence Ave to Iowa Street		12
B148	Lawrence Avenue - Clinton to W 27th St		12
B156	Kasold at K-10		12
B004	KU Central District	Shared Use Path	11
B017	KU West Campus	Shared Use Path	11
B018	KU Main Campus - Jayhawk to Naismith	Shared Use Path	11
B032	Lawrence Loop B - Kasold	Shared Use Path	11
B123	Lawrence Loop - New York to 8th	Shared Use Path	11
B129	21st Street -Iowa to Ousdahl		11
B150	W 31st Street - Atchison Ave to Lawrence Ave		11
B152	Wakarusa Drive - Bob Billings to Clinton Pkwy		11
B153	Wakarusa Drive - south of 6th Street		11
B120	Lawrence Loop - Michigan to Shandra Shaw	Shared Use Path	10
B134	21st Street - Massachusetts to Barker		9
B135	Barker Ave - 21st to 23rd		9
B139	Wisconsin Street - 6th to 7th		9
B143	N 3rd Street - North Street to Elm Street		9
B144	Park Hill Terrace/Montana Street/Vermont Street		9
B019	Lawrence Ave - on KU West Campus	Shared Use Path	8
B142	Elm Street - N 2nd St to N 3rd St		8
B149	Lawrence Ave - W 27th St to W 31st St		8
B010	Lawrence Loop - Kasold to Queens	Shared Use Path	7
B154	Monterey Way from Stetson to 6th		6
B130	Queens Rd - Wakarusa to Baldwin Creek		5

2021 Transportation Alternatives (TA) Safe Routes to School (SRTS) Project Locations								
Project ID	**Road**	**Side**	**From**	**To**	**Street Classification**	**SRTS**	**CDBG**	**Sidewalk (ft)**
P142	Harvard Rd	South	Crestline Dr	Iowa St	Collector	Yes	Yes	1,630
P236	W 19th Street Crossing		Alabama St		Arterial	Yes	Yes	40
P090	Belle Haven Drive	Both	W 27th St	W 27th Ter	Street	Yes	Yes	671
P134	E 21st Street	Both	Miller Dr	E 21st Ter	Street	Yes	Yes	592
P050	Lincoln St	Both	N 2nd St	N 4th St	Street	Yes	No	2,130
P070	W 20th St	South	Tennessee St	Vermont St	Street	Yes	No	547
P098	Wakarusa Dr	West	Stoneback Dr	440 LF North of W 27th St	Arterial	Yes	No	723
P135	E 21st Ter	Both	E 21st St	120 LF South of E 21st St	Street	Yes	Yes	237
P071	Tennessee St	East	W 21st St	W 20th St	Street	Yes	No	561



Pedestrian Project P142: Harvard Rd from Crestline Dr to Iowa St

N

0 100 200 400 600 800 1,000

Feet

Pedestrian Prioritization Score

Priority Network Score:	4
Pedestrian Access Score:	5
Roadway Volume Score:	3
Crossing Score:	0
Total Score:	12

Engineer's estimate: $99838
Funding source:
Sidewalk missing 1 side(s).
Adjacent road class is Collector.
Safe Routes to School? Yes
CDBG eligible? Yes

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P236: W 19th Street Crossing from Alabama St to

N 0 100 200 Feet

Pedestrian Prioritization Score

Priority Network Score:	4
Pedestrian Access Score:	4
Roadway Volume Score:	3
Crossing Score:	1
Total Score:	12

Engineer's estimate: $30000
Funding source:
Sidewalk missing 1 side(s).
Adjacent road class is Arterial.
Safe Routes to School? Yes
CDBG eligible? Yes

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P090: Belle Haven Drive from W 27th St to W 27th Ter

N 0 100 200 Feet

Pedestrian Prioritization Score

Priority Network Score:	6
Pedestrian Access Score:	4
Roadway Volume Score:	1
Crossing Score:	0
Total Score:	11

Engineer's estimate: $36495
Funding source:
Sidewalk missing 2 side(s).
Adjacent road class is Street.
Safe Routes to School? Yes
CDBG eligible? Yes

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P134: E 21st Street from Miller Dr to E 21st Ter

N 0 100 200 Feet

Pedestrian Prioritization Score

Priority Network Score:	6
Pedestrian Access Score:	3
Roadway Volume Score:	2
Crossing Score:	0
Total Score:	11

Engineer's estimate: $19537
Funding source:
Sidewalk missing 2 side(s).
Adjacent road class is Street.
Safe Routes to School? Yes
CDBG eligible? Yes

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P050: Lincoln St from N 2nd St to N 4th St

N 0 100 200 400 600 Feet

Pedestrian Prioritization Score

Priority Network Score:	6
Pedestrian Access Score:	3
Roadway Volume Score:	0
Crossing Score:	0
Total Score:	9

Engineer's estimate: $191642
Funding source:
Sidewalk missing 2 side(s).
Adjacent road class is Street.
Safe Routes to School? Yes
CDBG eligible? No

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P070: W 20th St from Tennessee St to Vermont St

0 100 200 400 Feet

N

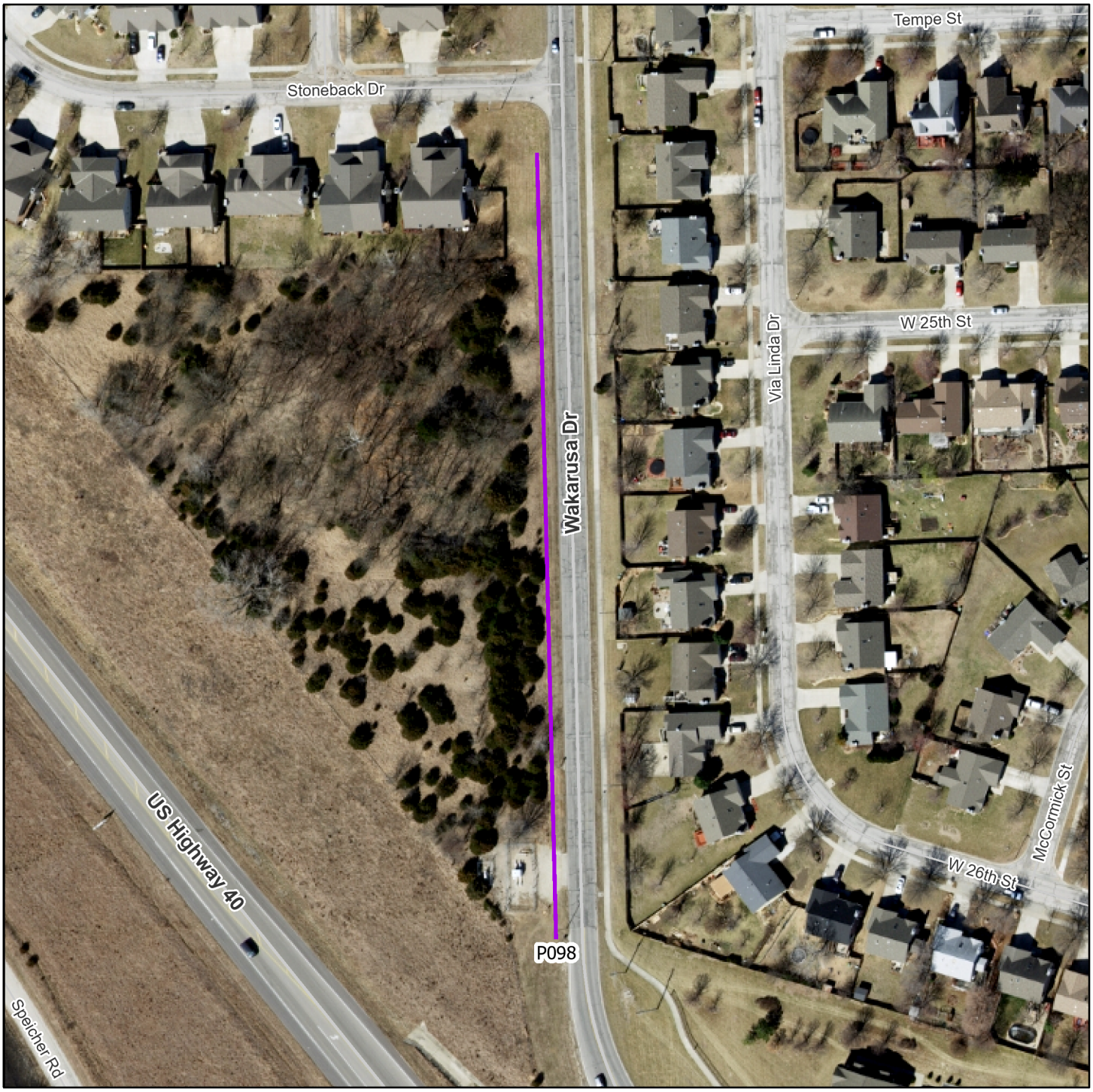
Pedestrian Prioritization Score

Priority Network Score:	3
Pedestrian Access Score:	5
Roadway Volume Score:	1
Crossing Score:	0
Total Score:	9

Engineer's estimate: $32201
Funding source:
Sidewalk missing 1 side(s).
Adjacent road class is Street.
Safe Routes to School? Yes
CDBG eligible? No

City of Lawrence

Date Printed: 9/13/2019



Pedestrian Project P098: Wakarusa Dr from Stoneback Dr to 440 LF North of W 27th St

N 0 100 200 400 Feet

Pedestrian Prioritization Score	
Priority Network Score:	4
Pedestrian Access Score:	2
Roadway Volume Score:	3
Crossing Score:	0
Total Score:	9

Engineer's estimate: $36472
Funding source:
Sidewalk missing 1 side(s).
Adjacent road class is Arterial.
Safe Routes to School? Yes
CDBG eligible? No

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P135: E 21st Ter from E 21st St to 120 LF South of E 21st St

N 0 100 200 Feet

Pedestrian Prioritization Score

Priority Network Score:	6
Pedestrian Access Score:	3
Roadway Volume Score:	0
Crossing Score:	0
Total Score:	9

Engineer's estimate: $17410
Funding source:
Sidewalk missing 2 side(s).
Adjacent road class is Street.
Safe Routes to School? Yes
CDBG eligible? Yes

City of Lawrence

Date Printed: 9/13/2019

Pedestrian Project P071: Tennessee St from W 21st St to W 20th St

N

0 100 200 400

Feet

Pedestrian Prioritization Score

Priority Network Score:	3
Pedestrian Access Score:	5
Roadway Volume Score:	0
Crossing Score:	0
Total Score:	8

Engineer's estimate: $35263
Funding source:
Sidewalk missing 1 side(s).
Adjacent road class is Street.
Safe Routes to School? Yes
CDBG eligible? No

City of Lawrence

Date Printed: 9/13/2019

Bikeway Project B121: Lawrence Loop - Peterson to Michigan

0 200 400 800 1,200 Feet

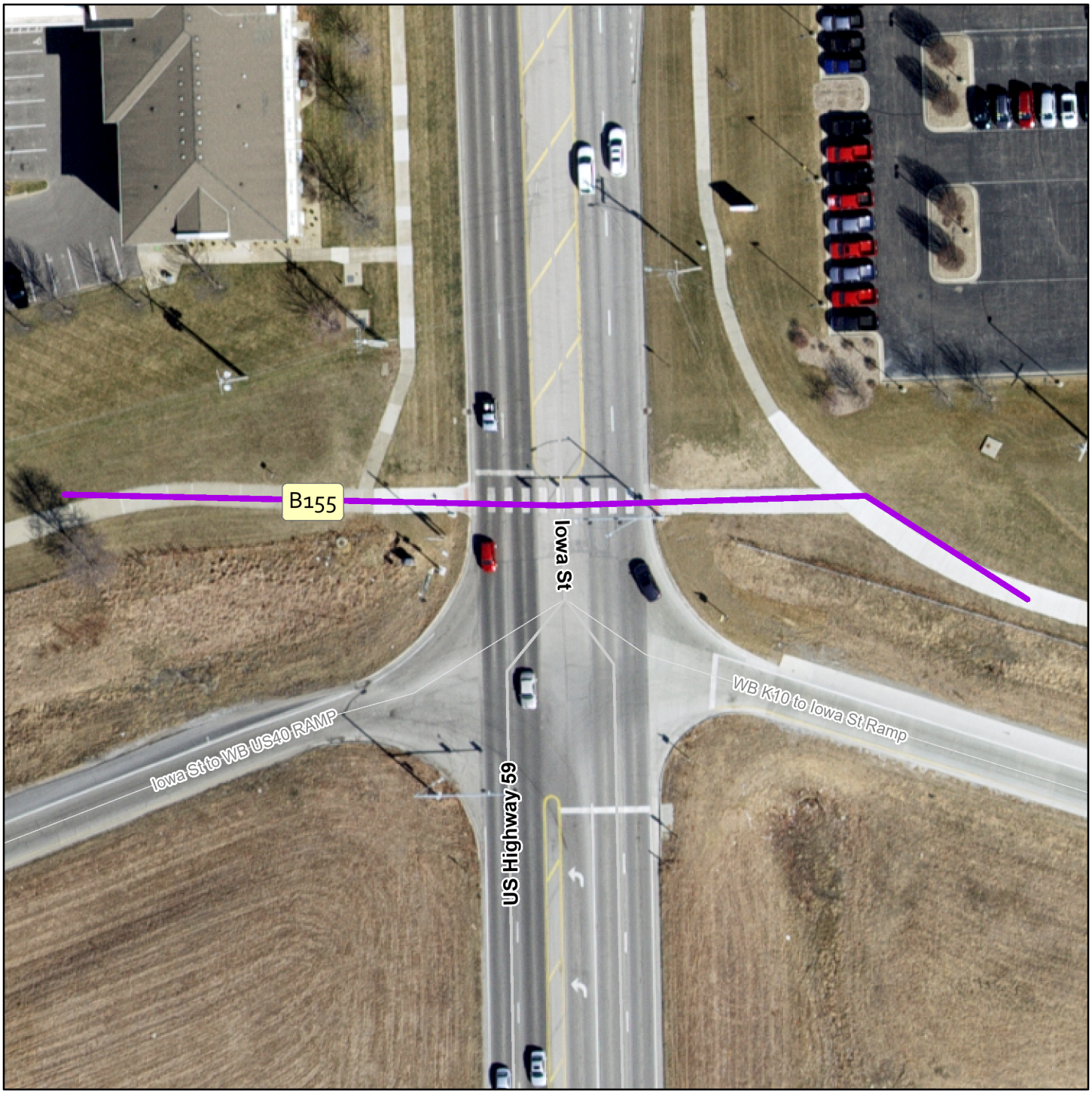
Bikeway Prioritization Score	
Adopted Plan Score:	6
Bicycle Demand Score:	3
Roadway Volume Score:	4
Crossing Score:	3
Total Score:	16

Project

N

City of Lawrence

Date Printed: 9/27/2019



Bikeway Project B155: SLT Path at Iowa Street

0 200 400 Feet

Project

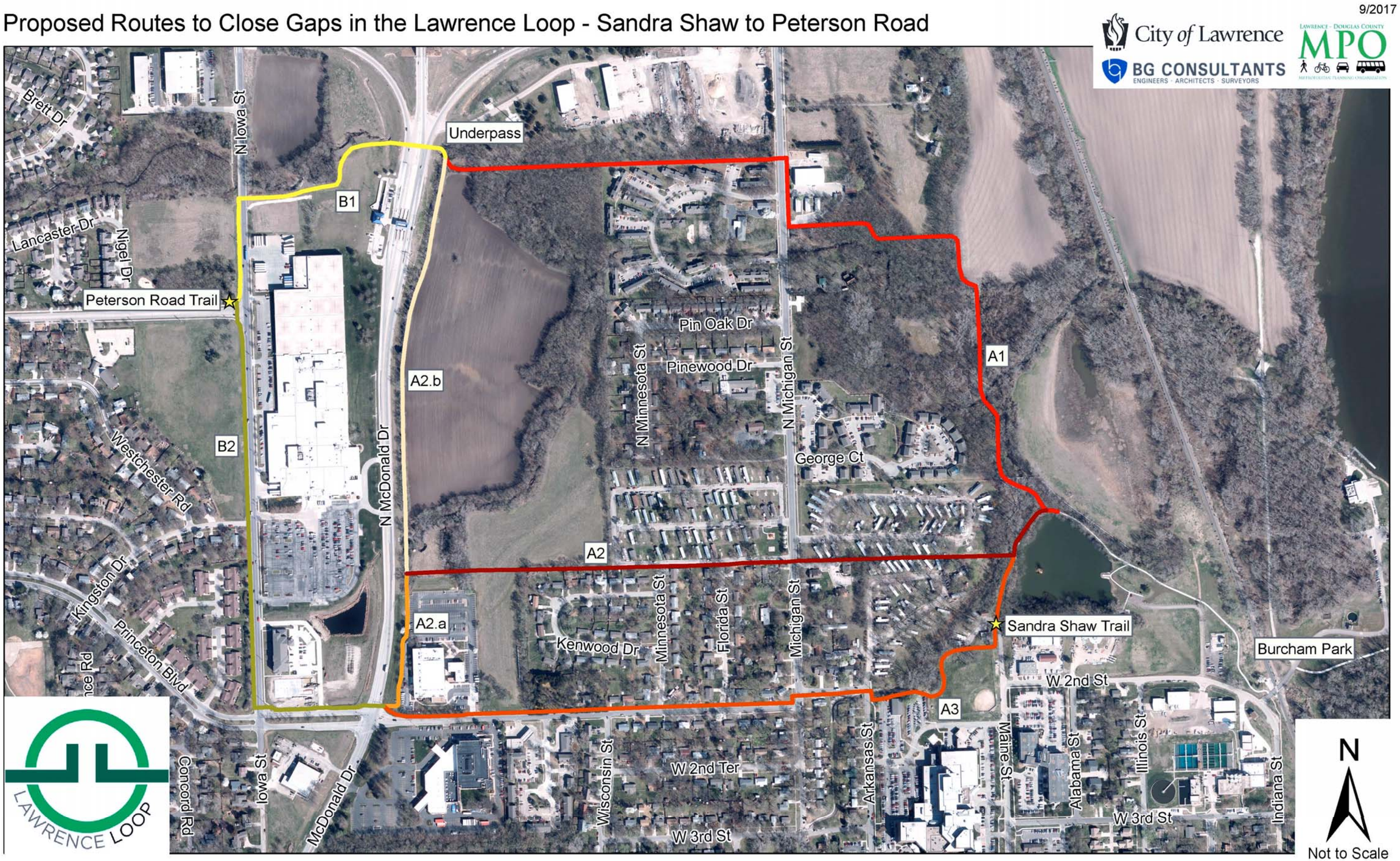
Bikeway Prioritization Score	
Adopted Plan Score:	6
Bicycle Demand Score:	3
Roadway Volume Score:	5
Crossing Score:	5
Total Score:	19

N

City of Lawrence

Date Printed: 9/27/2019

Figure 13


Proposed Routes to Close Gaps in the Lawrence Loop - Sandra Shaw to Peterson Road
9/2017
City of Lawrence
BG CONSULTANTS
ENGINEERS · ARCHITECTS · SURVEYORS
Lawrence - Douglas County MPO
Brett Dr
N Iowa St
Underpass
B1
Lancaster Dr
Nigel Dr
Peterson Road Trail
Pin Oak Dr
Pinewood Dr
N Minnesota St
N Michigan St
A1
A2.b
George Ct
B2
Westchester Rd
N McDonald Dr
A2
Kingston Dr
Princeton Blvd
A2.a
Kenwood Dr
Minnesota St
Florida St
Michigan St
Sandra Shaw Trail
Burcham Park
W 2nd St
A3
Maine St
Alabama St
Illinois St
Indiana St
Concord Rd
Iowa St
McDonald Dr
Wisconsin St
W 2nd Ter
W 3rd St
Arkansas St
W 3rd St
LAWRENCE LOOP
N
Not to Scale

Project Location	Project Type	Grant Request (80% CE & Construction)	Local Match (20% + Design, ROW, Utilities)	Total
6th Street Shared Use Path	Bike/Ped	**$1,038,960**	**$558,040**	**$1,597,000**
Iowa to Wisconsin		$126,080	$107,620	$233,700
Lawrence to Iowa		$374,960	$156,090	$531,050
Kasold to Lawrence		$246,960	$100,340	$347,300
Monterey to Kasold		$290,960	$193,990	$484,950
Safe Routes to School	Safe Routes to School (Phase 2)	**$400,000**	**$188,000**	**$588,000**
See attachment for locations				
Lawrence Loop	Bike/Ped	**$452,800**	**$411,200**	**$ 1,244,920.00**
Peterson Rd. to Michigan St.		$181,600	$95,400	$277,000
		$271,200	$315,800	$587,000

2019 ESTIMATE FOR 2021 TA GRANT APPLICATION

	Work Item	Quantity	Unit	Unit Price	Total Price
1	Mobilization	1	LS	$ 40,000.00	$ 40,000.00
2	Clearing, Grubbing	1	LS	$ 30,000.00	$ 30,000.00
3	Earthwork	1	LS	$ 30,000.00	$ 30,000.00
4	10'x6" Concrete Path	3450	LF	$ 70.00	$ 241,500.00
5	ADA Ramp	4	EA	$ 1,500.00	$ 6,000.00
6	4" Ab-3 Subgrade	3348	SY	$ 7.00	$ 23,436.00
7	12'x10' Underpass	1	EA	$ 400,000.00	$ 400,000.00
8	Storm Sewer Pipe Crossing	1	EA	$ 4,000.00	$ 4,000.00
9	Concrete Pavement (12"AE)	310	SY	$ 100.00	$ 31,000.00
10	PHB	2	EA	$ 60,000.00	$ 120,000.00
11	Erosion Control	1	LS	$ 20,000.00	$ 20,000.00
12	Construction Staking	1	LS	$ 20,000.00	$ 20,000.00
13	Traffic Control	1	LS	$ 20,000.00	$ 20,000.00
14	Seed, Fertilize, Mulch	1	LS	$ 10,000.00	$ 10,000.00

Subtotal =	$	995,936.00
Construction Contingency (25%) =	$	248,984.00
Total =	$	1,244,920.00
Design =	$	248,984.00
Utilities =	$	-
R/W & Easements =	$	100,000.00
Construction Engineering =	$	99,593.60
TOTAL =	$	1,693,497.60

KDOT	80% (const & ce)	$	1,075,610.88
COL Match	20% (const & ce) + design, utilities, easements	$	617,886.72
		$	1,693,497.60

2017 ALIGNMENT STUDY ESTIMATE

	Work Item	Quantity	Unit	Unit Price	Total Price
1	Mobilization	1	LS	$ 20,000.00	$ 20,000.00
2	Clearing, Grubbing	1	LS	$ 20,000.00	$ 20,000.00
3	Earthwork	1	LS	$ 30,000.00	$ 30,000.00
4	10'x6" Concrete Path	3450	SY	$ 50.00	$ 172,500.00
5	ADA Ramp	24	SY	$ 100.00	$ 2,400.00
6	4" Ab-3 Subgrade	3348	SY	$ 7.00	$ 23,436.00
7	12'x10' Underpass	1	EA	$ 400,000.00	$ 400,000.00
8	Storm Sewer Pipe Crossing	1	EA	$ 4,000.00	$ 4,000.00
9	Concrete Pavement (12"AE)	310	SY	$ 100.00	$ 31,000.00
10	HAWK Signal	1	EA	$ 55,000.00	$ 55,000.00
11	Erosion Control	1	LS	$ 5,000.00	$ 5,000.00
12	Construction Staking	1	LS	$ 7,500.00	$ 7,500.00
13	Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
14	Seed, Fertilize, Mulch	1	LS	$ 5,000.00	$ 5,000.00

Subtotal =	$ 785,836.00
Construction Contingency (25%) =	$ 196,459.00
TOTAL =	$ 982,295.00

2021 TA GRANT APPLICATION ESTIMATE

			MONTEREY TO KASOLD		KASOLD TO LAWRENCE		LAWRENCE TO IOWA		IOWA TO WISCONSIN		TOTAL
DESCRIPTION	**UNITS**	**$/UNIT**	**QTY**	**COST**	**QTY**	**COST**	**QTY**	**COST**	**QTY**	**COST**	
10'X6" CONCRETE OVER 4" AB-3 SHARED USE PATH	LF	$70	1,655	$115,850	2,070	$144,900	2,674	$187,180	835	$58,450	$506,380
TWO WAY ACCESS RAMP (W/WARNING PANELS)	EA	$6,000	8	$48,000	4	$24,000	8	$48,000	0	$0	$120,000
ONE WAY ACCESS RAMP (W/WARNING PANELS)	EA	$2,500	4	$10,000	6	$15,000	6	$15,000	7	$17,500	$57,500
ONE WAY ACCESS RAMP (W/O WARNING PANELS)	EA	$2,000	6	$12,000	4	$8,000	14	$28,000	6	$12,000	$60,000
CONCRETE RETAINING WALL	SF	$85	400	$34,000	200	$17,000	400	$34,000	0	$0	$85,000
6' WOOD FENCE	LF	$55	1,000	$55,000	0	$0	0	$0	0	$0	$55,000
CITY UTILITY RELOCATION	LS	varies	1	$7,000	1	$20,000		$28,000		$14,000	$69,000
8" COMMERCIAL DRIVE	SF	$12	1,100	$13,200	2,400	$28,800	4,000	$48,000	2,000	$20,000	$110,000
PLANTINGS AND DRAINAGE	LS	varies		$7,500	1	$12,000		$30,000		$20,000	$69,500
MOB, SEEEDING, TRAFFIC CONTROL, CLEARING/GRUBBING	20%			$60,510		$53,940		$83,636		$28,390	$226,476
SUBTOTAL				$302,550		$269,700		$418,180		$141,950	$1,132,380
CONSTRUCTION TOTAL			**$363,060**		**$323,640**		**$501,816**		**$170,340**		**$1,358,856**
CONTINGENCY	**25%**			**$90,765**		**$80,910**		**$125,454**		**$42,585**	**$339,714**
ROW/EASEMENTS	**SF**	**$15**	**5,050**	**$75,750**		**$0**	**250**	**$3,750**	**3,760**	**$56,400**	**$135,900**
DESIGN	**LS**	**15%**		**$54,459**		**$48,546**		**$75,272**		**$25,551**	**$203,828**
INSPECTION	**LS**	**10%**		**$36,306**		**$32,364**		**$50,182**		**$17,034**	**$135,886**
TOTAL COST			**$620,340**		**$485,460**		**$756,474**		**$311,910**		**$2,174,184**

Eligible	392,104	349,531	541,961	183,967	$1,467,563
Match	228,236	135,929	214,513	127,943	$706,621

2020 TA GRANT APPLICATION ESTIMATE

			MONTEREY TO KASOLD		KASOLD TO LAWRENCE		LAWRENCE TO IOWA		IOWA TO WISCONSIN		TOTAL
DESCRIPTION	**UNITS**	**$/UNIT**	**QTY**	**COST**	**QTY**	**COST**	**QTY**	**COST**	**QTY**	**COST**	
10'X6" CONCRETE OVER 4" AB-3 SHARED USE PATH	LF	$65	1,655	$107,575	2,070	$134,550	2,674	$173,810	835	$54,275	$470,210
TWO WAY ACCESS RAMP (W/WARNING PANELS)	EA	$6,000	8	$48,000	4	$24,000	8	$48,000	0	$0	$120,000
ONE WAY ACCESS RAMP (W/WARNING PANELS)	EA	$2,500	4	$10,000	6	$15,000	6	$15,000	7	$17,500	$57,500
ONE WAY ACCESS RAMP (W/O WARNING PANELS)	EA	$2,000	6	$12,000	4	$8,000	14	$28,000	6	$12,000	$60,000
CONCRETE RETAINING WALL	SF	$85	400	$34,000	200	$17,000	400	$34,000	0	$0	$85,000
6' WOOD FENCE	LF	$55	1,000	$55,000	0	$0	0	$0	0	$0	$55,000
CITY UTILITY RELOCATION	LS	varies	1	$7,000	1	$20,000		$28,000		$14,000	$69,000
8" COMMERCIAL DRIVE	SF	$10	1,100	$11,000	2,400	$24,000	4,000	$40,000	2,000	$20,000	$95,000
PLANTINGS AND DRAINAGE	LS	varies		$7,500	1	$12,000		$30,000		$20,000	$69,500
MOB, SEEEDING, TRAFFIC CONTROL, CLEARING/GRUBBING	15%			$43,811		$38,183		$59,522		$20,666	$162,182
SUBTOTAL				$292,075		$254,550		$396,810		$137,775	$1,081,210
CONSTRUCTION TOTAL			**$335,886**		**$292,733**		**$456,332**		**$158,441**		**$1,243,392**
CONTINGENCY	**20%**			**$67,177**		**$58,547**		**$91,266**		**$31,688**	**$248,678**
ROW/EASEMENTS	**SF**	**$15**	**5,050**	**$75,750**		**$0**	**250**	**$3,750**	**3,760**	**$56,400**	**$135,900**
DESIGN	**LS**	**15%**		**$50,383**		**$43,910**		**$68,450**		**$23,766**	**$186,509**
INSPECTION	**LS**	**10%**		**$33,589**		**$29,273**		**$45,633**		**$15,844**	**$124,339**
TOTAL COST			**$562,785**		**$424,462**		**$665,431**		**$286,140**		**$1,938,818**

Eligible	349,321	304,441	474,584	164,778	$1,293,124
Match	213,464	120,021	190,847	121,362	$645,694
					$1,938,818

City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

TA-13-00235
Parking, Loading, & Access Standards
Article 9, Land Development Code

September 25, 2019 *Planning Commission*

901 General

902-904 Sections with numbers of parking spaces (all schedules, ADA req, and stacked parking spaces)

905-907 Location of parking (setbacks and locations; shared/off-site, valet parking)

908-909 Design standards, vehicle and bicycle

910 Loading

911-912 Driveways, alleys, access management

913 Traffic Impact Study

ORGANIZATIONAL CHANGES

Nonconforming Parking, clarification 901(b)(4)

Parking Range Permitted, 901(d)(2-3)

Downtown/CD Parking Payment in lieu of parking/major project, 901(e)

Strip Center Parking/ Schedule B except for eating and drinking, 901(h)(1)

MAJOR CHANGES– 20-901 General

Current standards are minimums,

a. Providing more requires stormwater mitigation
b. Providing less requires admin. waiver or BZA Variance

90% to 110%

30 spaces required, 27 to 33 may be provided.

Less: waiver or variance

More: waiver or variance PLUS stormwater

Parking Range

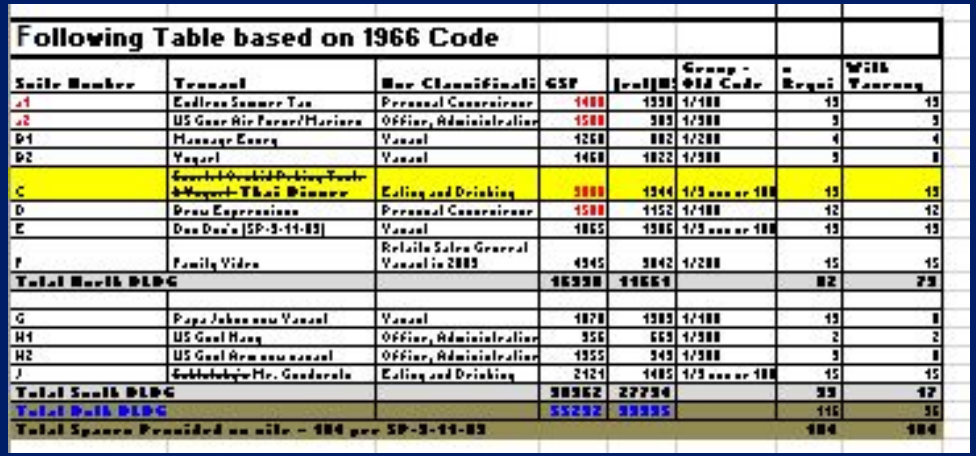
Nonconforming Parking, clarification 901(b)(4)

Parking Range Permitted, 901(d)(2-3)

Downtown/CD Parking Major Project: 50% of parking is required; payment in lieu of parking 901(e)

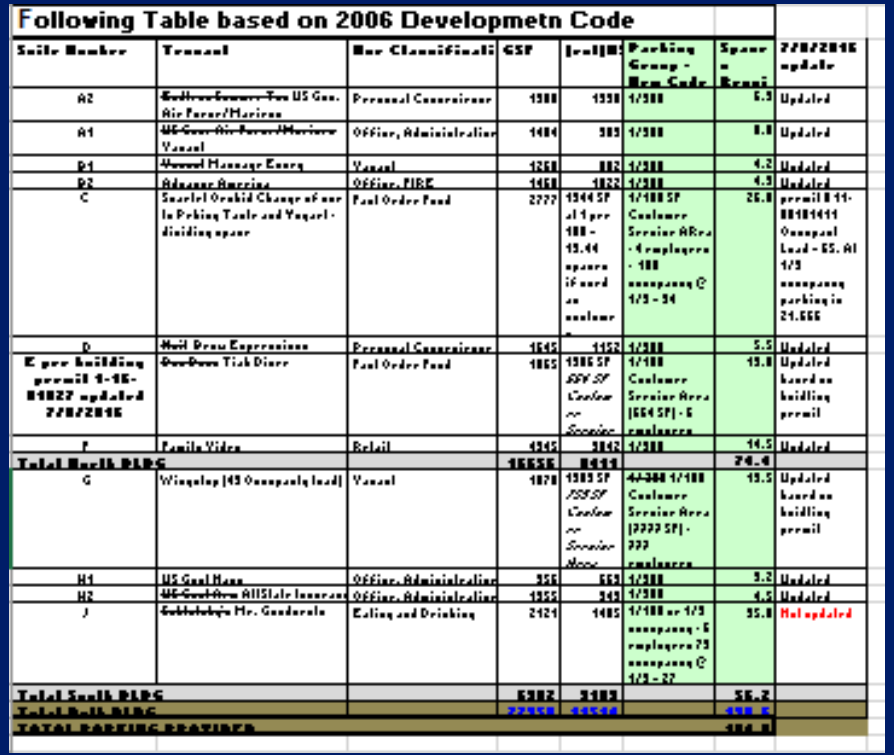
Strip Center Parking/ Schedule B except for eating and drinking, 901(h)(1)

MAJOR CHANGES– 20-901 General



Following Table based on 1966 Code

Suite Number	Tenant	Use Classification	GSF	[illegible]	Group - Old Code	# Req'd	With Variance
A1	Endless Summer Tan	Personal Convenience	1400	1338	1/300	15	15
A2	US Gear Air Force/Marines	Office, Administrative	1500	585	1/300	5	5
B1	Massage Envy	Vacant	1250	882	1/200	4	4
B2	Yogurt	Vacant	1450	1822	1/300	5	8
C	~~Scarlet Orchid Poking Tools & Yogurt~~ Thai Dinner	Eating and Drinking	2800	1344	1/3 occ or 100	15	15
D	Dress Expressions	Personal Convenience	1500	1152	1/300	12	12
E	Doo Doo's [SP-3-11-83]	Vacant	1865	1386	1/3 occ or 100	15	15
F	Family Video	Retails Sales General Vacant in 2003	4345	3842	1/200	15	15
Total South BLDG			15558	11654		82	79
G	Papa Johns now Vacant	Vacant	1870	1385	1/100	13	8
H1	US Coast Guard	Office, Administrative	556	663	1/300	2	2
H2	US Coast Guard now vacant	Office, Administrative	1555	945	1/300	5	8
J	~~Subway's~~ Mr. Gandorals	Eating and Drinking	2121	1485	1/3 occ or 100	15	15
Total South BLDG			30362	27734		99	97
Total Both BLDG			55292	39335		116	96
Total Spaces Provided on site - 184 per SP-3-11-83						184	184



Following Table based on 2006 Developmetn Code

Suite Number	Tenant	Use Classification	GSF	[illegible]	Parking Group - New Code	Spaces Req'd	7/28/2015 update
A2	~~Endless Summer Tan~~ US Gear Air Force/Marines	Personal Convenience	1500	1338	1/300	5.0	Updated
A1	~~US Gear Air Force/Marines~~ Vacant	Office, Administrative	1484	585	1/300	2.0	Updated
B1	~~Vacant~~ Massage Envy	Vacant	1250	882	1/300	4.2	Updated
B2	Advance America	Office, FIRE	1450	1822	1/300	4.9	Updated
C	Scarlet Orchid Change of use to Poking Tools and Yogurt - dividing space	Food Order Food	2222	1344 SF at 1 per 100 - 13.44 spaces if used as another	1/100 SF Customer Service ARea - 4 employees - 100 occupancy @ 1/3 - 34	26.8	permit # 11-00101411 Occupant Load - 65. At 1/3 occupancy parking is 21.666
D	Nail Dress Expressions	Personal Convenience	1545	1152	1/300	5.5	Updated
E per building permit 1-15-01827 updated 7/28/2015	~~Doo Doo's~~ Tick Diner	Food Order Food	1865	1386 SF SAY SF Customer Service	1/100 Customer Service Area (664 SF) - 6 employees	15.8	Updated based on building permit
F	Family Video	Retail	4345	3842	1/300	14.5	Updated
Total North BLDG			15556	8411		74.4	
G	Wingstop [45 Occupancy load]	Vacant	1870	1385 SF 555 SF Customer Service Area	~~1/100~~ 1/100 Customer Service Area (2222 SF) - 222 employees	15.5	Updated based on building permit
H1	US Coast Guard	Office, Administrative	556	663	1/300	2.2	Updated
H2	~~US Coast Guard~~ Allstate Insurance	Office, Administrative	1555	945	1/300	4.5	Updated
J	~~Subway's~~ Mr. Gandorals	Eating and Drinking	2121	1485	1/100 or 1/3 occupancy - 6 employees 79 occupancy @ 1/3 - 27	35.8	Not updated
Total South BLDG			6362	3183		56.2	
Total Both BLDG			22558	11594		130.6	
TOTAL PARKING PROVIDED						184.0	

STRIP CENTER PARKING

1 Parking Space required for each 300 sq ft of building up to 45,000 sq ft

EXCEPT FOR EATING AND DRINKING ESTABLISHMENTS

These are calculated separately as they are the most intense uses.

STRIP CENTER PARKING

1. Reorganized. Included all parking schedules in this section (combined 902-905)

Revised Bicycle Parking Requirements, Sch. A

Added Long Term Bike Parking Sch. A

Grade School:assembly area; mental health (diff between those with beds and those without)

MAJOR CHANGES– 20-902 Schedules

Multi-Dwelling Structure

Current:

1 bike space per 4 auto spaces

Proposed:

Short term: 1 per 20 bedrooms, (2 minimum)

Long term: 1 space per 6 bedrooms (2 minimum)

Bike Parking Requirements

Multi-Dwelli

Current:

1 bike space

Proposed:

Short term: 1 p imum)

Long term: 1 sp (2 minimum)^

Apartment -- 60 one-bedroom units

Today:
auto spaces: 66
(1 per bedroom plus 1 per 10 dwelling units)
Bicycle: 17 (1 per 4 auto)—all short term

Proposed: 3 short term 1 per 20 bdrm
10 long term 1 per 6 bdrm

Bike Parking Requirements

Updated. To reflect current ADA requirements

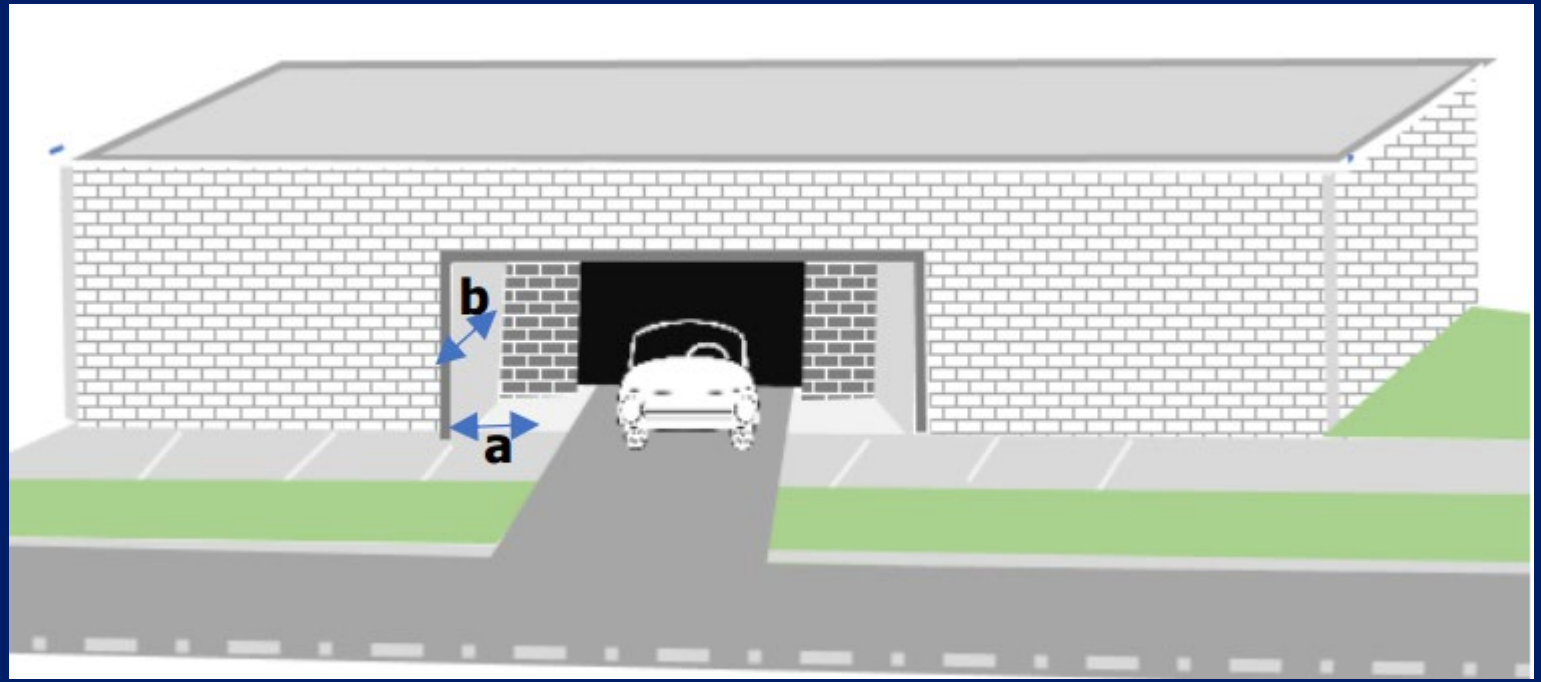
MAJOR CHANGES– 20-903 ADA

Updated. Added standards for retail sales pick-up window, child care center, hospital, motel, valet

MAJOR CHANGES– 20-904; Stacking

1. Clarified that the parking setback is a ‘greenspace’.
2. Added 2’ setback from Res. property lines.
3. Non-res uses in Res. District, 10’ setback from property lines.
4. Added setback for exit of parking structure

MAJOR CHANGES– 20-905; Setbacks/Location



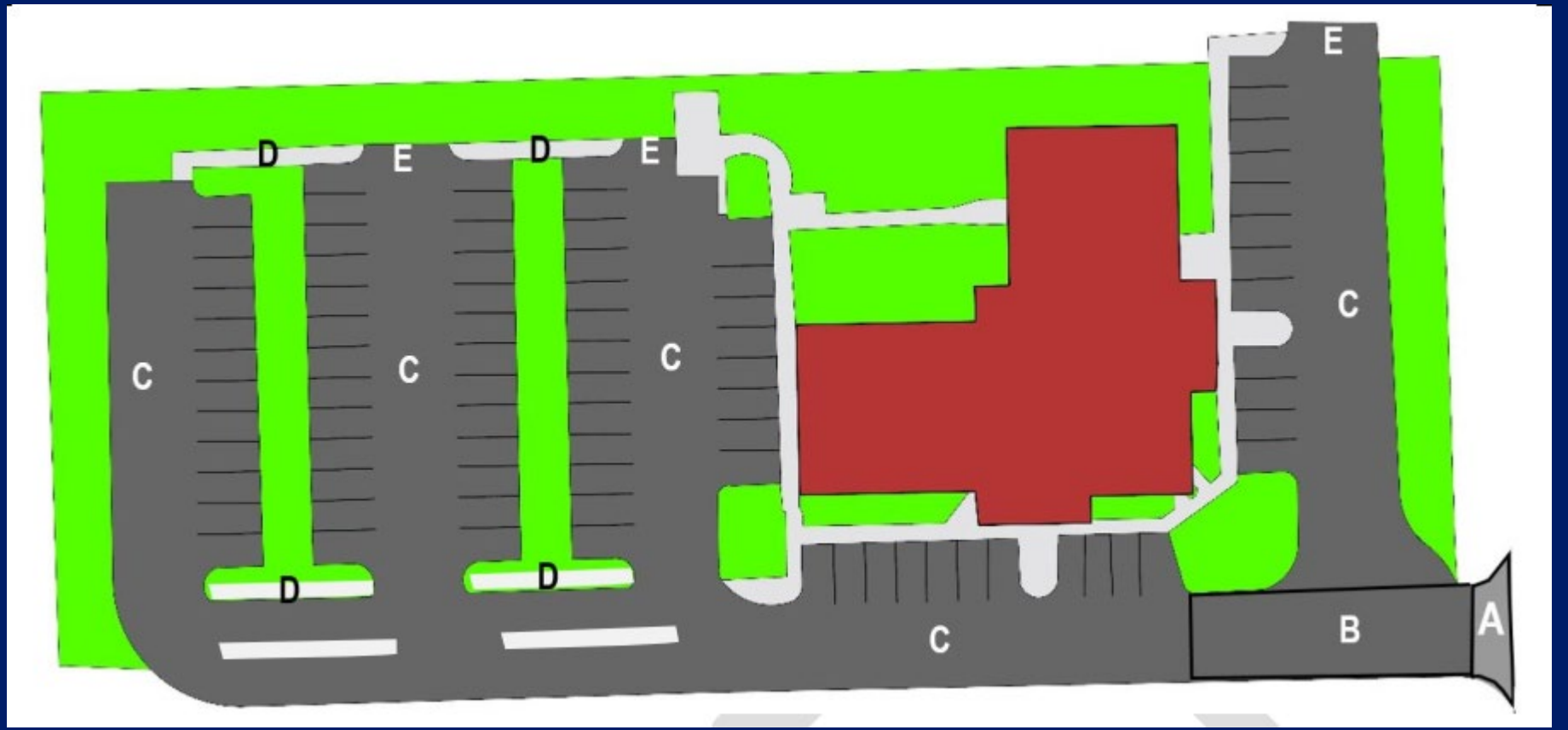
MAJOR CHANGES– 20-905; Setbacks/Location

1. Shared parking---added unique mix of uses
2. Shared parking agreements, noted on site plans for both properties.
3. Location -- convenient and suitable
4. Prohibition in single-dwelling districts /res. uses
5. Removed the shared parking table, require study.

MAJOR CHANGES– 20-906; Shared/Off-Site

1. Surfacing Options
    a. Removed 7” granular rock with double asphaltic prime and seal
    b. Removed gravel in the floodplain
    c. Added concrete strips with grass
2. Revised dimension tables
3. Added overhang, turnaround, and pedestrian walkway standards

MAJOR CHANGES– 20-908; Design Standards



MAJOR CHANGES– 20-908; Design Standards

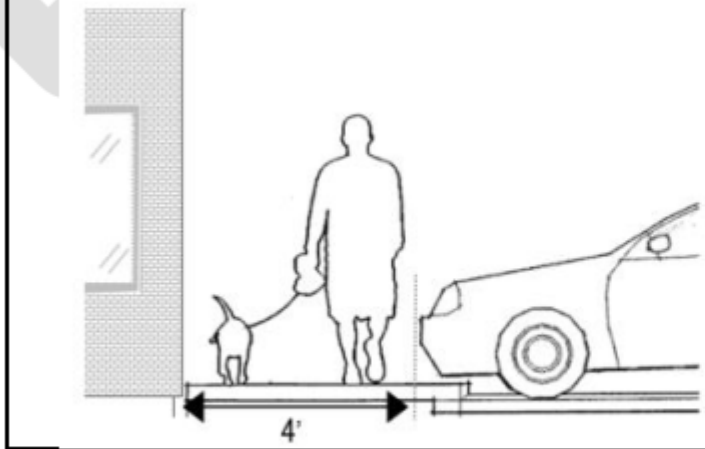


Figure 1. Vehicle overhang along Pedestrian Walkway

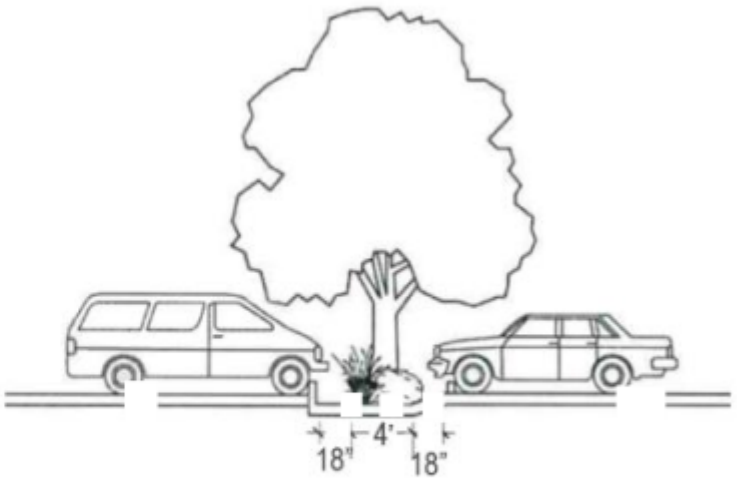


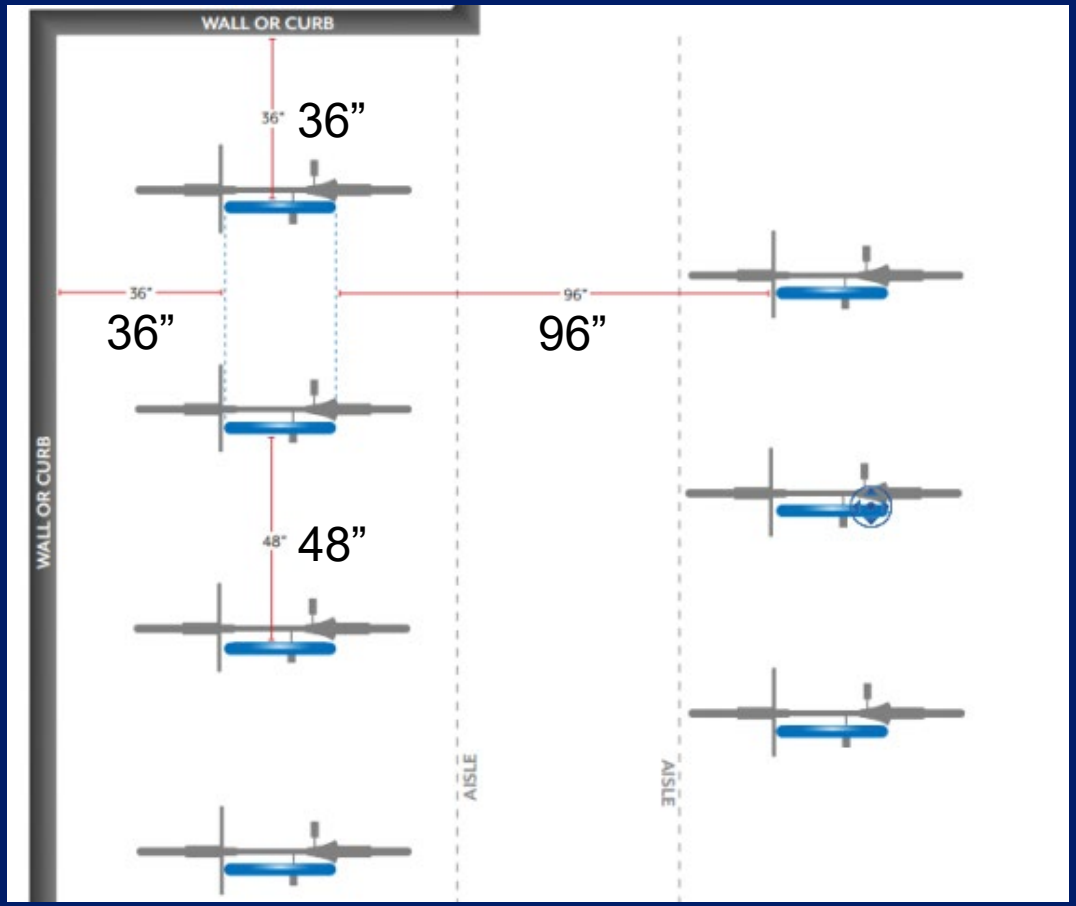
Figure 2. Vehicle overhang along landscaped area

MAJOR CHANGES– 20-908; Design Standards

1. Established Standards---short and long term

2. Added standard for special event permits

MAJOR CHANGES– 20-909; Bicycle Standards



MAJOR CHANGES– 20-909; Bicycle Standards

1. Clear Sight Area for non-residential driveways and alleys
2. Revised driveway width requirements for RS3 and RS5
3. Set standards for parking off alleys

MAJOR CHANGES– 20-911; Driveways and Alleys

1. Driveways—max. 26 feet

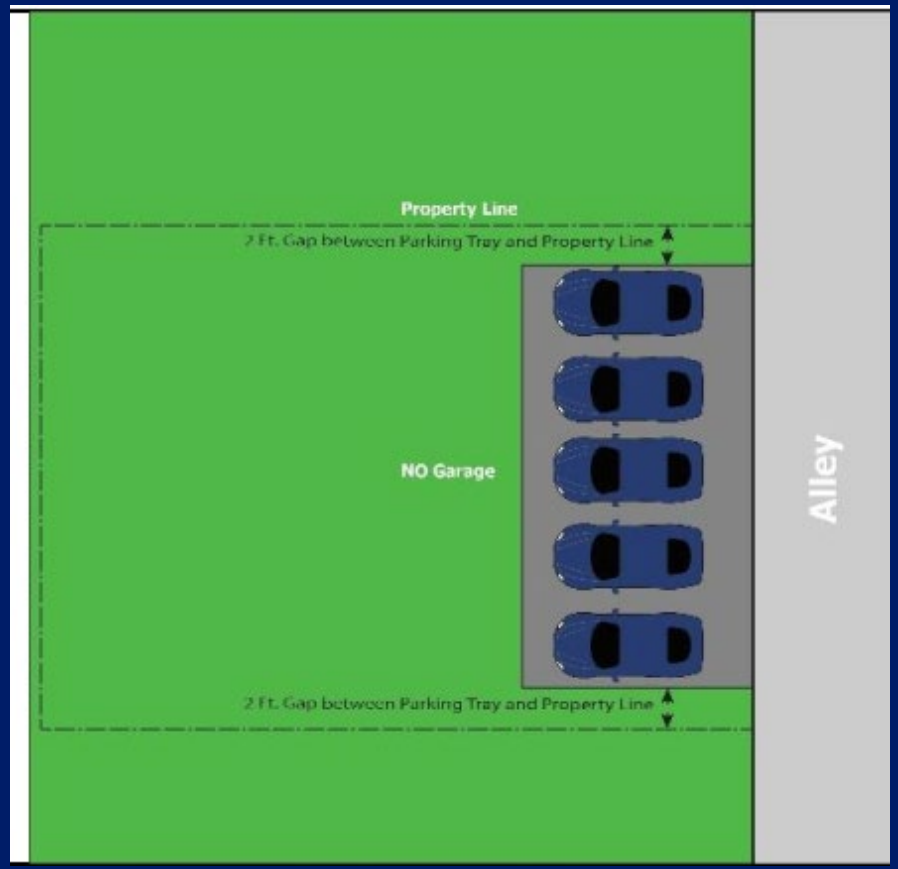
   a. RS3 and RS5, max width of 12 feet.

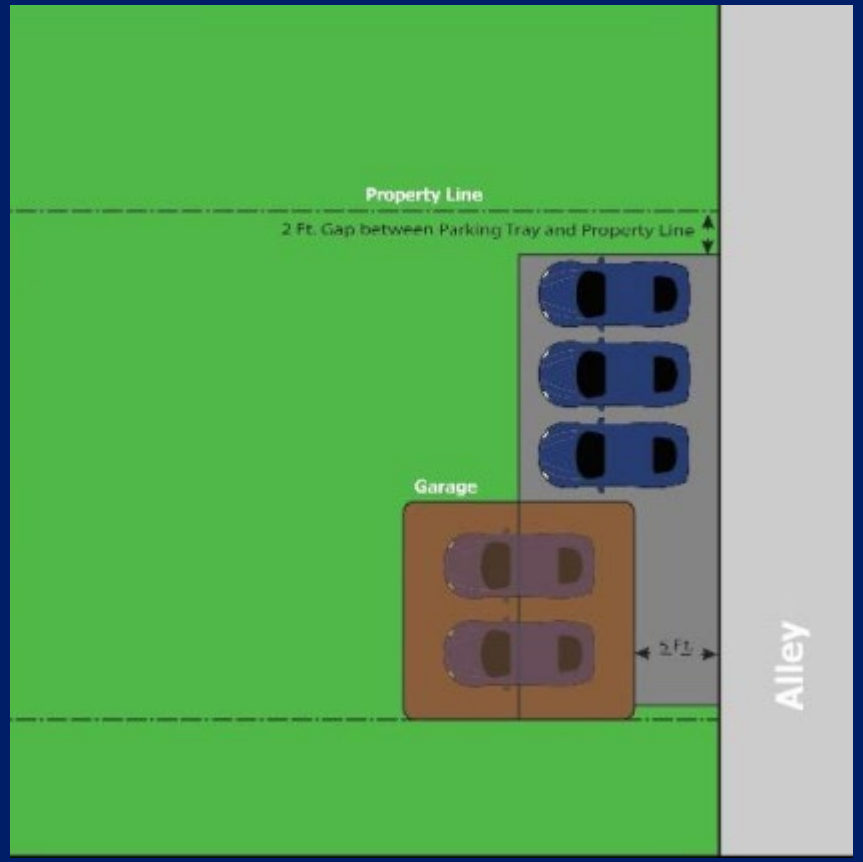
      Proposed:

      RS3: 12 feet or 25% of the lot frontage up to 20 feet

      RS5: 20 feet or 25% of the frontage up to 26 feet

RS3 and RS5 Driveways



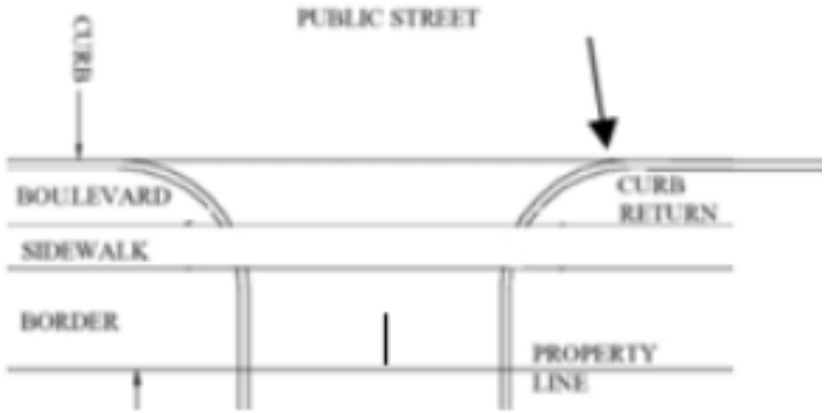


Parking off Alleys

1. Graphic to clarify term
2. 300 foot separation---included distance in TIS
3. Added Local Street Section
    a. Revised # curb cuts: 1/200 feet to 1/100 feet
    b. Added driveway info from other sections of City Code
c. Clear Sight Area

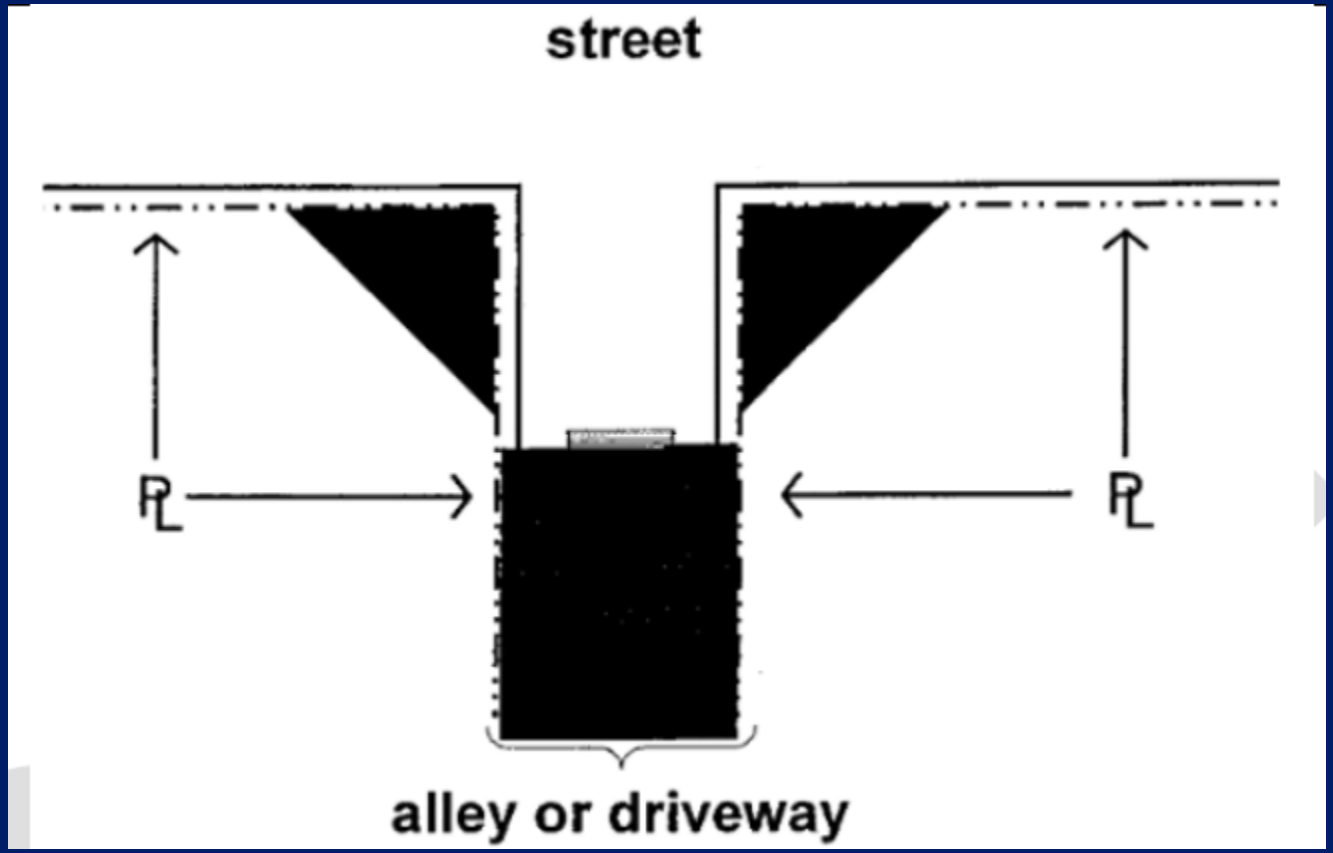
MAJOR CHANGES–20-912; Access Management Standards

1. Graph
2. 300 fo nce in TIS
3. Added
   a. Rev 1/100 feet
   b. Add ections of
      City
c. Clear



Point of tangency of curb return radius

MAJOR CHANGES–20-912; Access Management Standards



CLEAR SIGHT AREA

1. Removed sub-sections (B)(2 - 4)

This will be covered in other portion of City Code

MAJOR CHANGES–20-913; Traffic Impact Study

1. 20-535 Accessory and Commercial Parking

   Removed. Provided standards in the parking chapter, off-site parking requirements. (remove standard from use table 20-402)

2. 20-522(I) Supplemental Design Standards for Religious Institutions

   Included these standards with standards for non-residential uses in a residential district.

OTHER CHANGES –

1. Public Comment Period
2. Review comments, make revisions, and place amendment on Planning Commission agenda for discussion/vote (may need more than 1 meeting)
3. Place on City Commission agenda
4. Adoption on 2nd reading and publication of ordinance

NEXT STEPS–

Draft Revised Article 9, Parking, Loading and Access
Summary of Proposed Revisions

With these revisions the sections were rearranged, the loading standards were separated from the parking standards, and definitions were revised. The following list outlines the changes which are being proposed with this draft.	
20-901 General	Sub-section (b)(1) Note that standards for storage of RVs and trailers are in Ch. 9 Ar.t 6 of City Code
	Sub-section (b)(4): clarified the nonconforming parking provisions and added a 24 month vacancy or lack of use provision where either adequate parking must be provided for use to begin, or expansion or change of use or variance from BZA be obtained.
	Sub-section (c) Noted that the required parking spaces may be used for other purposes when approved with a SE permit or Site Plan
	Sub-section (d) Set a range for non-residential parking: 90% to 110% of that listed in the schedule Parking below or over the range requires waiver from Planning Director or variance from Board of Zoning Appeals.
	Sub-section (e): Parking exemption for CD District revised so that any project requiring major site plan approval must meet 50% of the parking requirement. An in-lieu fee, as established by the CC, would be accepted if some or all of this parking is not provided.
	Sub-section (h)(iii): added the 'strip center' parking calculation : Schedule B except for eating and drinking establishments and individual pad sites
20-902 Off-Street Parking Schedules	SCHEDULE A Short term bicycle parking revised. Long term bicycle parking added. Revised grade school parking to require parking based on size of main assembly area Set parking requirement for mental health facility based on those with beds and those with only daytime facilities Added employee parking to kennel parking req. SCHEDULE B: Include employees in retail parking calculations. SCHEDULE C: Clarified the parking calculations, no substantive change
20-903 Accessible Parking for People with Disabilities	Revised to match current ADA regulations
20-904 Vehicle Stacking Areas	Sub-section (a) : added retail sales pick-up windows, child care center, hospital/outpatient, motel, valet,

	Revised gasoline pump island, automatic and self-service car wash
20-905 Parking Setbacks and Location	Sub-section (b)RESIDENTIAL: added language about the parking setback to note it's intended to be greenspace and to clarify what is considered the 'immediate access drive' Added 2 foot setback for parking areas from property lines For non-residential use in RS Districts, setback 10 feet from property line and landscaped. Added setback for exit of parking structure Sub-section (c): NONRESIDENTIAL: Footnote added to the table indicating that the setback area is to be a greenspace buffer. Setback added for exit of parking garage.
20-906 Shared and/or Off-Site Parking	Sub-section (a)(1): added a provision for uses which may result in a visit to a number of uses, rather than just uses that are open at different times. Sub-section (c): Additional information provided for parking agreement and termination of agreement. Must be noted on site plans (or in site plan files) for both properties. Sub-section (d): • Added language that the location of the shared and/or off-site parking must be determined to be convenient and suitable. • Combined the location information from Art 9 and section 20-535 Added prohibitions on use of shared and/or off-site parking in single-dwelling residential districts or single-dwelling residential uses Sub-section (e): Removed the shared parking table. Parking study required for use of shared parking. Non-competing uses (different peak hours) or Competing uses (vehicle trips may result in trips to several businesses/uses in the development)

20-908 Vehicle Parking Design Standards	Added graphic illustrating various components of a parking area <u>Sub-section (d):</u> • removed surfacing: 7" of granular rock with a double asphaltic prime and seal • removed compacted gravel as a surfacing option in the floodplain. Use of gravel would require a variance • Added concrete strips with grass as surfacing • Noted driveway approaches shall comply with Chapter 16, City Code <u>Sub-section (e):</u> • Revised parking graphics • Revised dimension tables: o Parking spaces increased from 8.5 to 9 feet wide, minimum. o One way access aisle increased from 12 to 14 feet o Standards for reverse angle parking added o Note setting minimum width for fire lanes added <u>Sub-section (f):</u> • (1)Added a standard for a turnaround in dead-end parking areas • (2)Added standards for vehicle overhang • (7)Added requirement for dedicated pedestrian walkway when the pedestrian route crosses multiple access drives or more than 220 parking spaces are provided.
20-909 Bicycle Parking Design Standards	<u>Sub-sections (a)-(c):</u> Established general standards, as well as specific standards for short-term and long-term parking. • Sub-section (d): Established requirement for special event parking
20-911 Driveways and Alleys	<u>Sub-section (a)(3):</u> note city permit is required <u>Sub-section (a)(4),</u> Driveways intersect roads at right/angle unless City Engineer approves otherwise <u>Sub-section (a)(8)</u> changed circulation between adjacent parcels from 'should' to 'shall' be provided, when determined to be reasonable. (a waiver would be required to not provide it) Sub-section (a)(11) Reference a clear sight area for non-residential driveways and alleys established in later section <u>Sub-section (b):</u> revised driveway width requirements for RS3 and RS5 <u>Sub-section (c)</u> Set standards for parking areas off alleys <u>Sub-section (d)(8)</u>: removed the sight distance figures and replaced with 'determined by engineer using the most recent AASHTO Green Book Criteria' and added a requirement for a clear sight area (established in later section)
20-912 Access Management Standards	<u>Access Management</u> <u>Sub-section (a):</u> • Provided a graphic to illustrate the 'point of tangency of driveway curb radius'

	• In addition to 300 foot separation, added 'or beyond limits of the area of influence of the intersection as defined by the TIS, whichever is greater' <u>Sub-section (c):</u> Added a section regarding access on Local Streets • Revised the number of curb cuts per length of road from 1 per 200 feet of road frontage to 1 per 100 feet of frontage • Included some driveway info from other portions of City Code: (3) duplex, (4) cul-de-sac lots <u>Sub-section (d) Clear Sight Area</u> • Established small area (triangle with 15' along road and 15' along driveway) next to an alley or a non-residential driveway that must be kept clear of obstructions.
20-913 TIS	<u>Sub-section (a):</u> Removed (2) (3) and (4) which explained the requirements of the TIS as engineers noted this would be in the City Code section regarding TIS <u>Sub-section (d):</u> Removed (1): owner doesn't have to pay for TIS if not required to pay a filing fee in 20-1301

Changes to other sections of the Code:

20-535 Accessory and Commercial Parking Section was removed. The standards were added to Article 9

20-522(I) Supplemental Design Standards for Religious Institutions. Removed parking standards, these will be included in Article 9 and removed lighting standards as these are provided in Article 11.

ARTICLE 9. PARKING, LOADING AND ACCESS

20-901 GENERAL

(a) Purpose

The regulations of this article are intended to ensure that the off-street parking, loading, and Access demands of various land uses will be met without adversely affecting surrounding areas. The regulations are also intended to help maintain a safe and efficient transportation system and advance other planning goals related to land use and the environment. In recognition of the fact that different approaches may be appropriate in different settings, the regulations allow flexibility in addressing vehicle parking, loading, and Access demand.

(b) Applicability

(1) The standards of this section apply to the parking of vehicles within the City of Lawrence. The storage of Recreational Vehicles (RVs) and trailers is regulated by Chapter 9, Article 6 of the City Code.

(2) New Development

Unless otherwise expressly stated, the standards of this article shall apply to all new Structures built and all new uses established on a property in all Zoning Districts.

(3) Enlargements and Expansions

Unless otherwise expressly stated, the standards of this article shall apply whenever an existing Building or use is enlarged or expanded to include additional Dwelling Units, Floor Area, seating capacity, employees or other units of measure used for establishing off-street parking and loading requirements.

(4) Nonconforming Parking

Parking that was established legally, but that no longer complies with the standards of the Development Code, is considered 'nonconforming' provided the building or property has not been unused or vacant for a period of 24 continuous months or more.

(i) In the case of enlargements or expansions of lawfully created Buildings or uses triggering requirements for additional parking or

loading, additional off-street parking and loading spaces, compliant with the design standards of this Article, are required only to serve the enlarged or expanded area or use, not the entire existing Building or use. There is no requirement to address lawfully created non-conforming existing parking or loading deficits.

(5) Loss of Nonconforming Status

Nonconforming parking associated with a Building or property that has been unused or vacant for 24 contiguous months or more is no longer considered nonconforming, and all parking requirements must be met if the former use commences or the building or use are changed, expanded, or enlarged.

(c) Use of Required Off-Street Parking Spaces

Required off-street Parking Spaces are to be used solely for the parking of licensed motor vehicles in operating condition.

(1) Required off-street Parking Spaces may not be used for the display of goods for sale or lease or for long-term storage of vehicles, boats, truck trailers, motor homes, campers, Mobile Homes, Manufactured Homes, or components thereof, or Building materials unless approved with a site plan or special event permit.

(d) General Parking Requirements

(1) Required Parking Spaces shall be provided in accordance with the appropriate schedule in Section 20-902 except when:

a. The requirements are waived by the Planning Director for good cause shown as part of Site Plan approval in accordance with Section 20-1305 or part of Special Use Permit approval in accordance with Section 20-1306,

b. The requirements are decreased or increased by the City Commission with Development Plan approval in accordance with Section 20-71(i); or

c. A variance from the parking requirements is granted by the Board of Zoning Appeals based on the criteria in Section 20-1309.

(2) The number of Parking Spaces required in the parking schedules represents a range rather than a minimum or maximum amount. The amount of Parking Spaces provided per use may range from 90% to 110% with the exception of uses listed in the Residential Use Group in Section 20-902, which are required to provide the full number of Parking Spaces, and uses located within the CD Zoning District, which are regulated by Section 20-901(d)(1).

(3) When parking is provided in excess of 110% of the requirement in Section 20-902, the impacts of the increased Impervious Surface shall be mitigated through use of storm drainage Best Management Practices (BMPs) as provided in the City's adopted BMP manual. [Mid-America Regional Council and American Public Works Association Manual for Best Management Practices for Stormwater Quality – Sept. 2003 October 2012 and subsequent updates].

(i) Detached Dwellings, Residential Design Manufactured Homes, Attached Dwellings, Duplexes, and Group Homes, Limited, (in general, uses that are exempt from the site planning requirement) shall be exempt from the requirement to mitigate excess parking with the use of storm drainage Best Management Practices.

(e) Parking Requirement in the CD District

Due to the unique characteristics of the Downtown Commercial (CD) District, permitted uses in the CD Zoning District are required to provide off-street parking and loading spaces only in the following instances:

(1) Any change in use or development that meets the criteria for Major Development Project review (Section 20-1305(b)(3)) shall provide 50% of the required parking.

(i) If some or all of this parking is not provided, an in-lieu fee per Parking Space not provided, as established by the City Commission, is required. This fee shall be placed in a dedicated fund to be used by the City for providing parking for uses within the CD District.

(f) Parking Requirements in PRDs, PCDs and PIDs established before July 1, 2006

Parking requirements for uses listed in Sections 20-902 or 20-903 of this Development Code shall be applied when establishing minimum requirements for new developments, expansions or enlargements, or change of use or occupancy in established Planned Development Districts identified in Section 20-222.

(g) Issuance of Certificates of Occupancy

No certificates of occupancy shall be issued unless the development is in compliance with these parking requirements.

(h) Rules for Calculating Parking and Loading Requirements

The following rules apply when calculating off-street parking and loading requirements.

(1) Multiple Uses

Unless otherwise approved, Lots containing more than one use shall provide parking and loading in an amount equal to the total of the requirements for all uses with the following exceptions:

(i) The amount of parking required may be reduced when the uses have staggered peak operating hours, provided the Shared Parking standards of Section 20-907 are met;

(ii) Required parking may be provided off-site, provided the Off-Site Parking standards in Section 20-907 are met;

(iii) Parking may be calculated for a commercial development with multiple tenant suites (commonly referred to as a 'strip center') using Schedule A, Section 20-902(a) for each individual use or using the following standards:

a. The parking requirement for a use that is not included in the *Eating and Drinking Establishment* use category in Section 20-403 shall be calculated utilizing Schedule B (Section 20-902(b)).

b. The parking requirement for a use that is included in the *Eating and Drinking Establishment* use category in Section 20-403 shall be calculated based on Schedule A (Section 20-902(a)).

c. The parking requirement for a use in any individual pad site Building (without multiple tenant suites) shall be based on Schedule A (Section 20-902(a)).

(2) Fractions

When calculating the required parking ratio results in a fractional number, any fractional result shall be rounded up to the next consecutive whole number. For example, if a minimum requirement of 1 space per 200 square feet is applied to a 900 square foot Building, 5 spaces are required, since the fraction of 4.25 is rounded up to 5 spaces.

(3) Area Measurements

(i) Unless otherwise specifically noted, all parking and loading standards given in square feet shall be computed on the basis of Gross Floor Area, which is to be measured using all of the Floor Area on each floor of the Building whether or not such area is enclosed by walls or roof.

(ii) For outdoor areas, calculations shall be based on the portion of the Lot actually being used for the specified purpose.

(iii) Interior areas used for off-street parking or off-street loading facilities are not counted in calculating the number of Parking Spaces required.

(4) Occupancy- or Capacity-Based Standards

For the purpose of calculating parking requirements based on employees, students, residents or occupants, calculations are to be based on the greatest number of persons working on any single shift, the maximum enrollment, the maximum number of lawful residents/occupants permitted on the property, or the maximum fire-rated capacity based on the building's design, whichever is applicable

(5) Bench Seating

When seating consists of benches, pews or other similar seating facilities, each 24 linear inches of seating space counts as 1 seat.

(6) Unlisted Uses

Upon receiving a development application for a use not specifically listed in an off-street parking schedule, the Planning Director shall apply the off-street parking standard specified for the listed use that the Planning Director deems most similar to the proposed use or the requirements of off-street parking Schedule D, Section 20--902.

20-902 OFF-STREET PARKING SCHEDULES

(a) Schedule A

Off-street Parking Spaces for Schedule A uses shall be provided in accordance with the following standards with the range of variation of 90% to 110% except for uses within the Residential Use Group and uses within the CD Zoning District per Section 20-901(d)(1). Variances outside of this range require the variance/waiver measures noted in Section 20-901(d)(2) and provision of parking above this range are subject to stormwater mitigation measures noted in Section 20-901(d)(2).

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
RESIDENTIAL USE GROUPS		
HOUSEHOLD LIVING		
Accessory Dwelling Unit	See 20-534 for standards	Short-Term: None Long-Term: None
Attached Dwelling	2 per Dwelling Unit	
Cluster Dwelling		
Detached Dwelling		
Duplex	1 per bedroom	
Manufactured Home	2 per Dwelling Unit	
Manufactured Home, Residential-Design		
Mobile Home	2 per Dwelling Unit (1 may be located in common area)	
Mobile Home Park		
Multi-Dwelling Structure	1 per bedroom, plus 1 per 10 units (visitors and guests)	Short Term: 1 space per 20 bedrooms (Minimum of 2) Long Term: 1 space per 6 bedrooms (Minimum of 2)
Non-Ground Floor Dwelling	1 per bedroom	None
Work/Live Unit	1 per Dwelling Unit	
Zero Lot Line Dwelling	2 per Dwelling Unit	
Home Occupation, Type A or B	See 20-537 for standards	
GROUP LIVING		
Assisted Living	1 per assisted living unit plus 1 per employee on largest shift	Short Term: 1 space for each 20,000 sq ft of Building area (Minimum of 2) Long Term: 1 space for each 20 employees (Minimum of 2)
Congregate Living	1 per bedroom [2]	Short Term: 1 per 15 occupants (Minimum of 2) Long Term: 1 per 4 Occupants (Minimum of 2)
Dormitory and Scholarship Halls	0.75 per lawful occupant	
Fraternity and Sorority Houses	1 per lawful occupant plus 1 per 10 occupants for visitor spaces	
Group Home, General	1 per employee plus 0.5 space per bedroom	None
Group Home, Limited	2 per Dwelling Unit	

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
PUBLIC AND CIVIC USE GROUPS		
COMMUNITY FACILITIES		
Adult Day Care	1 per employees plus 4 spaces	Short Term: None Long Term: 1 per 5 employees (Minimum of 2)
College / University	Per Schedule D	Short Term: 1 per 5 students Long Term: 1 per 20 students (Minimum of 2)
Cultural Center / Library	1 per 500 square feet	Short Term: 1 per 2,500 square feet (Minimum of 2) Long Term: 1 per 10,000 square feet (Minimum of 2)
Day Care Center	1 per employee plus 4 spaces	Short Term: 0 Long Term: 1 per 4 employees (Minimum of 2)
Day Care Home, Class A Day Care Home, Class B	1 per 1.5 employees	None
Detention Facilities	per Schedule D (Section 20-903)	Short term: 1 per 20 occupants based on maximum occupancy (Minimum of 2) Long term: 1 per 20 employees (Minimum of 2)
Event Center, Small	1 per 3 occupants at maximum design occupancy, including staff	Short Term: 1 per 500 square feet (Minimum of 4) Long Term: None
Event Center, Large	1 per 4 occupants at maximum design occupancy, including staff	Short Term: 1 per 500 square feet (Minimum of 4) Long Term: None
Lodge, Fraternal and Civic Assembly	1 per 500 square feet	Short Term: 1 per 2000 square feet (Minimum of 4) Long Term: None
Postal Service	per Schedule D (Section 20-903)	Short Term: 1 per 2000 square feet of Building area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
Public Safety	per Schedule D (Section 20-903)	Short Term: 1 per 2000 square feet of Building area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
School, Grades Elementary and Middle School	1 per each employee plus 1 space for every 5 seats in largest assembly room(visitors)	Short Term: 1 per 5 students (Minimum of 4) Long Term: 1 per 25 students (Minimum of 2)
Grades High School	1 per each employee + 1 per 3 students	Short Term: 2 per 25 students (Minimum of 2) Long Term: 1 per 25 students (Minimum of 2)
Active Funeral and Interment	1 per vehicle used in the business, plus 1 per employee on largest shift, plus 1 per 4 seats of sanctuary, chapel, or gathering area	Short Term: 2 Long Term: 1 per 20 employees (Minimum of 2)
Passive Funeral and Interment	per Schedule D (Section 20-903)	None
Temporary Shelter	1 per 1.5 employees	Short Term: 1 per 20 beds/occupants (Minimum of 4) Long Term: 1 per 6 beds/occupants (Minimum of 2)
Social Service Agency	1 per 300 square feet	Short Term: 1 per 3000 square feet (Minimum of 4) Long Term: 1 per 10 employees (Minimum of 2)
Community Meal Program	1 per 1.5 employees + 1 per 5 seats	Short Term: 1 per 10 seats (Minimum of 4) Long Term: 1 per 20 employees (Minimum of 2)
Utilities, Minor	1 space or 1 per employee on largest shift, whichever is larger	Short term 1 per 15 employees (Minimum of 2) Long Term: 1 Per 25 employees (Minimum of 1)
Utilities and Service, Major	1 per employee on largest shift	
MEDICAL FACILITIES		
Community Mental Health Facility	For overnight facilities: 1 per 3 beds, plus 1 per 300 square feet for non-sleeping unit areas, plus 1 per employee on largest shift For daytime only facilities: 1 per 300 square feet, plus 1 per employee on largest shift.	Short Term: 1 per 25 employees (Minimum of 2) Long Term: 1 per 5 employees (Minimum of 2)
Extended Care Facilities, General and Limited	1 per 3 beds plus 1 per employee based on largest shift	Short Term: 1 per 20,000 sq ft of Building area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
Health Care Office; Health Care Clinic	1 per 300 square feet plus 1 per employee on largest shift	Short Term: 1 per 20,000 sq ft of Building area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
Hospital	1 per 3 beds plus parking for additional uses plus 1 per employee on largest shift	Short Term: 1 per 20,000 sq ft of Building area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
Outpatient Care Facilities	1 per 300 square feet plus 1 per employee on largest shift	Short Term: 1 per 20,000 sq ft of Building area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
RECREATIONAL FACILITIES		
Active Recreation	Per Schedule D (Section 20-903)	Short Term: 1 per 10 auto spaces, (Minimum of 2) Long term: 1 per 20 employees (Minimum of 2)
Entertainment & Spectator Sports, General	1 per 3 seats plus 1 per employee	Short Term: 1 per 10 seats (Minimum of 2) Long term: 1 per 20 employees (Minimum of 2)
Entertainment & Spectator Sports, Limited	1 per 4 seats plus 1 per employee	Short Term: 1 per 10 seats (Minimum of 2) Long term: 1 per 20 employees (Minimum of 2)
Participant Sports & Recreation, Indoor	1 per 400 square feet of customer/activity area	Short Term: 1 per 4,000 sq ft of customer/activity area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
Participant Sports & Recreation, Outdoor	1 per 500 square feet of customer/activity area	
Nature Preserve / Undeveloped	Per Schedule D (Section 20-903)	
Passive Recreation		
Private Recreation		
RELIGIOUS ASSEMBLY		
Campus or Community Institution		

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
Neighborhood Institution	1 per 4 seats in sanctuary or principal worship or assembly space plus spaces required for permitted Accessory Uses	Short Term: 1 per 12 seats in sanctuary or principal worship space plus spaces required for permitted accessory uses (Minimum of 4) Long Term: None, except as required for accessory uses
COMMERCIAL USE GROUPS		
ANIMAL SERVICES		
Kennel	1 per 500 square feet plus 1 per employee on largest shift	Short Term: 0 Long Term: 1 per 20 employees based on largest shift (Minimum of 2)
Livestock Sales	1 per 600 square feet	
Sales and Grooming	1 per 300 square feet	Short Term: 0 Long Term: 1 per 20 employees based on largest shift (Minimum of 2)
Veterinary	1 per 400 square feet	Short Term: 0 Long Term: 1 per 20 employees based on largest shift (Minimum of 2)
EATING AND DRINKING ESTABLISHMENTS		
Accessory Bar	1 per 3 persons based on maximum design occupancy plus 1 per employee based on the largest shift	Short Term: 1 per 1,000 sq ft of customer service area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
Accessory Restaurant	1 per 100 square feet of customer service area plus 1 per employee based on the largest shift	
Bar or Lounge	1 per 3 persons based on maximum design occupancy plus 1 per employee based on the largest shift	Short Term: 1 per 1,000 sq ft of customer service area (Minimum of 2) Long Term: 1 per 20 employees (Minimum of 2)
Brewpub		
Fast Order Food	1 per 100 square feet of customer service area plus 1 per employee based on the largest shift	
Fast Order Food, Drive-In		
Nightclub	1 per 3 persons based on maximum design occupancy plus 1 per employee based on the largest shift	
Private Dining Establishment	Per Section 20-539	Per Section 20-539

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
Restaurant, Quality	1 per 100 square feet of customer service area plus 1 per employee based on the largest shift	Short Term: 1 per 1,000 sq ft of customer service area ((Minimum of 2) Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
OFFICE		
Administrative and Professional	1 per 300 square feet	Short Term: 1 per 5,000 sq ft of Building area (Minimum of 2) Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
Financial, Insurance and Real Estate		
Payday Advance, Car Title Loan Business		
Other		
PARKING FACILITIES		
Accessory	None	Short Term: 1 per 10 vehicle spaces (Minimum of 4) unless the parking serves a particular use, then parking is determined by that use Long Term: None, unless the parking serves a particular use, then parking is determined by that use
Commercial		
RETAIL SALES AND SERVICE		
Building Maintenance Service	1 per 500 square feet	Short Term: None Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
Business Equipment Sales and Service	1 per 300 square feet	
Business Support Service	1 per 400 square feet	
Construction Sales and Service	1 per 500 square feet of Building area plus 1 space for each vehicle used in the business plus 1 space per acre of outdoor storage or assembly	
Food and Beverage Retail Sales	1 per 300 square feet	Short Term: 1 per 4,000 sq ft (Minimum of 2) Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
Mixed Media Store	1 per 300 square feet	
Personal Convenience Services	1 per 300 square feet	
Personal Improvement Services	1 per 200 square feet	

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
		Short Term: 1 per 3,000 sq ft (Minimum of 2) Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
Repair Service, Consumer	1 per 400 square feet plus 1 per vehicle used in the business	Short Term: None Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
Retail Sales, General Retail Establishment, Large Retail Establishment, Medium Retail Establishment, Specialty	per Schedule B (Section 20-902)	Short Term: 1 per 4,000 sq ft (Minimum of 2) Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
SEXUALLY ORIENTED BUSINESSES		
Sexually Oriented Media Store Physical Sexually Oriented Business Sex Shop	1 per 300 square feet	Short Term: 1 per 4,000 sq ft (Minimum of 2) Long Term: 1 per 10 employees based on largest shift (Minimum of 2)
Sexually Oriented Theater	1 per 4 seats	Short Term: 1 per 10 seats (Minimum of 2) Long term: 1 per 20 employees (Minimum of 2)
TRANSIENT ACCOMMODATION		
Bed and Breakfast	1 per guest room plus 1 per 1.5 employees	None
Campground	1 per camp space	None
Elderhostel Hotel, Motel, Extended Stay	1 per guest room plus 1 per 1.5 employees	Short Term: 1 per 20 guest rooms (Minimum of 2) Long Term: 1 per 20 employees based on largest shift (Minimum of 2)
VEHICLE SALES AND SERVICE		
Cleaning (Car Wash)	2 plus Stacking Spaces per Section 20-904	None
Fleet Storage	1 per 1.5 employees	
Gas and Fuel Sales	1 per 300 square feet plus stacking as required in Section 20-904	Short Term: 1 per 4,000 square feet (Minimum of 4) Long Term: 1 per 10 employees (Minimum of 2)

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
Truck Stop	1 per 300 square feet plus 1 per 100 square feet of customer service area for eating establishment areas plus stacking as required in Section 20-911	Short Term: None Long Term: 1 per 10 employees (Minimum of 2)
Heavy Equipment Repair	2 per service bay, not counting the bay or Access way to the bay	
Heavy Equipment Sales/Rental	1 per 5,000 square feet of open sales area plus 1 per 500 square feet of enclosed sales area plus 2 per service bay	
Inoperable Vehicles Storage	1 per 1.5 employees	
Light Equipment Repair	2 per service bay, not counting the bay or Access way to the bay	
Light Equipment Sales/Rental	1 per 5,000 square feet of open sales area plus 1 per 500 square feet of enclosed sales area plus 2 per service bay	
Recreational Vehicle and Boat Storage	1 per 25 storage spaces	
INDUSTRIAL USE GROUPS		
INDUSTRIAL FACILITIES		
Explosive Storage Industrial, General Industrial, Intensive Laundry Service	per Schedule C (Section 20-902(c))	Short Term: None Long Term: The greater of 1 per 10,000 square feet or 1 per 20 employees (Minimum of 2)
Maker Space, Limited	Per Schedule B (Section 20-902(b))	Short Term: Maker Spaces: 1 per 10 cars Other: None Long Term: 1 per 20 employees, or members/clients for maker spaces (Minimum of 2)
Maker Space, Intensive	Per Schedule C (Per Section 20-902(c))	
Manufacturing and Production, Limited Manufacturing and Production, Technological	per Schedule C (Section 20-902(c))	
Research Service	per Schedule C (Section 20-902(c))	
Scrap and Salvage Operation	1 per acre plus 1 per employee on largest shift	Short Term: None Long Term: 1 per 20 employees, (Minimum of 2)
WHOLESALE, STORAGE AND DISTRIBUTION		
Exterior Storage Heavy Light	per Schedule C (Section 20-902(c))	Short Term: None Long Term: 1 per 20 employees (Minimum of 2)

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]
Mini-Warehouse, Exterior or Self-Storage Containers	4 plus 1 per 100 rental spaces	Short/Long Term: None
Mini-Warehouse, Climate-Controlled **Garage Condos**	4 plus 1 per 25 rental spaces Schedule D	None
OTHER USE GROUPS		
ADAPTIVE REUSE		
Designated Historic Property Greek Housing Unit	As established at time of Special Use approval per Section 20-501	As established at time of Special Use approval per Section 20-501
AGRICULTURE		
Agriculture, Crop Agriculture, Large Animal Agriculture, Small Animal	None	None
Farmers Market	per Schedule D (Section 20-902(d))	Short Term: 1 per 10 required vehicle spaces (Minimum of 2) Long Term: none
On-Site Agricultural Sales	1 per employee on largest shift	None
Urban Farm	1 per employee on largest shift	Short Term: 0 Long Term: 1 per 20 employees (Minimum of 2)
COMMUNICATIONS FACILITIES		
Amateur and Receive Only Antennas	None	None
Broadcasting Tower	1 space	
Communications Service Establishment	1 per 400 square feet	Short Term: 1 per 3,000 sq ft (Minimum of 2) Long Term: 1 per 20 employees ((Minimum of 2)
Telecommunications Antenna	None	None
Telecommunications Tower	1 space	
Satellite Dish	None	
MINING		
Mining	per Schedule D (Section 20-902(d))	None
RECYCLING FACILITIES		
Large Collection Small Collection Processing Center	per Schedule C (Section 20-902(c))	Short Term: None Long Term: 1 per 20 employees (Minimum of 2)

Use Category	Vehicle Parking Spaces Required	Bicycle Parking Spaces Required[1]

Footnotes:

[1] The full ratio applies up to a requirement of 50 long-term Bicycle Parking Spaces, long-term parking above 50 spaces is required at 50% the regular ratio.

[2] Whenever a structure 4,500 gross square feet or larger as of April 28, 2012 on a property 8,775 square feet in size or less is renovated as a Multi-Dwelling Structure or Congregate Living use, parking shall be provided at the overall rate of 0.5 spaces per one (1) bedroom. For purposes of calculating the structure's gross square feet, the following shall be considered to be included and in existence at the time of making application for use of the parking standard:

1. Finished and unfinished area that is able to comply with the Building code standard for livable space ceiling height without structural alterations, including the following:
   a. Attic space when it is accessed by a permanent stairway.
   b. Basement space.
   c. Enclosed space such as enclosed porches, sunrooms, and breezeways that are seasonal in nature and that may or may not be connected to the structure's heating, ventilation, and air conditioning system.

MAKE SURE ALL THE NEW USES ARE IN THE TABLE…..

(b) SCHEDULE B

Off-street Parking Spaces for Schedule B uses shall be provided in accordance with the following standards with the range of variation of 90% to 110%. Variations outside of this range require the variance/waiver measures noted in Section 20-901(d). Variations above this range are also subject to the stormwater mitigation measures noted in Section 20-901(d)(3).

Gross Floor Area (Sq. Ft.)	Off-Street Parking Spaces Required ~~add Food & Beverage to Sch B?~~
1–45,000	1 per 300 square feet of customer service space plus 1 per employee on largest shift
45,001–100,000	150 plus 1 per 400 square feet of Gross Floor Area between 45,001 and 100,000 square feet
100,001 and above	288 plus 1 per 500 square feet of Gross Floor Area above 100,000 square feet

(c) SCHEDULE C

Off-street Parking Spaces for Schedule C uses shall be provided in accordance with the following standards with the range of variation of 90% to 110%. Variations outside of this range require the variance/waiver measures noted in Section 20-901(d)(1). Variations above this range are also subject to the stormwater mitigation measures noted in Section 20-901(d)(2).

Gross Floor Area (Sq. Ft.)	Off-Street Parking Required		
		Warehousing Floor Area Manufacturing or Other Floor Area	Outdoor Storage Area
1–20,000	1 per vehicle used in the business plus	1 per 1,000 square feet [1]	1 per acre
20,001 – 120,000		20 plus 1 per 5,000 square feet above 20,000 square feet [1]	
120,001 and above		40 plus 1 per 10,000 square feet above 120,000 square feet [1]	

Gross Floor Area (Sq. Ft.)	Off-Street Parking Required		
		Warehousing Floor Area Manufacturing or Other Floor Area	Outdoor Storage Area
If business is employee intensive, parking may be based on ratio of employees		per 1.5 employees on largest shift [1]	

[1] Businesses which operate with shifts shall provide information to determine the number of Parking Spaces needed to accommodate employee overlap at shift change.

(d) SCHEDULE D

Schedule "D" uses have widely varying parking demand characteristics, making it difficult to specify a single off-street parking standard.

(1) Standards

Upon receiving a development application for a use subject to "Schedule D" standards, the Planning Director shall apply the off-street parking standard specified for the listed use that is deemed most similar to the proposed use, shall establish minimum off-street parking requirements, or may waive the parking requirements for very low intensity uses.

(2) Parking Demand Study

The Planning Director may require a parking demand study prepared by the applicant to assist in this decision.

(i) The study, if required**,** shall include estimates of parking demand based on recommendations of the Institute of Traffic Engineers (ITE), or other acceptable estimates as approved by the Planning Director, and include other reliable data collected from uses or combinations of uses that are the same as or comparable with the proposed use.

(ii) Comparability will be determined by Density, Scale, bulk, area, type of activity, and location.

(iii) The study shall document the source of data used to develop the recommendations.

20-903 ACCESSIBLE PARKING FOR PEOPLE WITH DISABILITIES

A portion of the total number of provided off-street Parking Spaces in each off-street Parking Area shall be specifically designated, located and reserved for use by persons with physical disabilities in accordance with the referenced standards for technical provisions as outlined in ICC A117.1-2009, Accessible and Usable Buildings and Facilities.

(a) Required Number of Accessible Parking Spaces

The following table shows the minimum number of accessible Parking Space that shall be provided. Parking Spaces designed for persons with disabilities are counted toward fulfilling off-street parking standards. These standards may not be varied or waived.

Total Parking Spaces Provided	Required Number of Accessible Parking Spaces		
	Auto	Van	Total
1 – 25	0	1	1
26 – 50	1	1	2
51 – 75	2	1	3
76 – 100	3	1	4
101 – 150	4	1	5
151 – 200	5	1	6
201 – 300	5	2	7
301 – 400	6	2	8
401 – 500	7	2	9
501 – 1,000	5 per 6 accessible spaces	1 per 6 accessible spaces	2% of total spaces
1,001+	5 per 6 accessible spaces	1 per ~~8~~ 6 accessible spaces	20, plus 1 per 100 spaces over 1,000

(b) Parking Requirements for Hospital Outpatient Facilities, Rehabilitation Facilities and Outpatient Physical Therapy Facilities

(1) All hospital outpatient facilities that provide regular and continuing medical treatment without an overnight stay shall provide at least one accessible Parking Space, or spaces equal to ten percent (10%) of the total number of Parking Spaces provided, whichever is greater.

(i) Doctors' offices, independent clinics, or other facilities not located in hospitals are not considered hospital outpatient facilities for the purpose of requiring 10% of the total number of Parking Spaces to be accessible.

(2) All rehabilitation and outpatient physical therapy facilities that specialize in treating conditions that affect mobility impairments shall provide at least one accessible Parking Space, or spaces equal to 20% of the total number of Parking Spaces provided, whichever is greater.

(i) Mobility impairments are conditions that require the use or assistance of a brace, cane, crutch, prosthetic device, wheel chair, or powered mobility aid; arthritic, neurological or orthopedic conditions that severely limit one's ability to walk; respiratory diseases and other conditions that may require the use of portable

oxygen; and cardiac conditions that impose significant functional limitations.

(c) Special Requirements for Congregate Living and Multiple-unit Residential
New construction, additions to, or alterations of Congregate Living residences containing 4 or more sleeping units, as defined by the International Building Code, shall comply with the accessibility requirements of both the Fair Housing Act and the International Building Code as adopted by the City of Lawrence. Multiple-unit residential Buildings containing 4 or more Dwelling Units shall provide accessible Parking Spaces as follows:

(1) Designated accessible Parking Spaces shall be provided for at least two percent (2%) of the Dwelling Units.

(2) Designated accessible Parking Spaces shall be provided at facilities that serve accessible Buildings, such as swimming pools and clubhouses.

(3) Additional designated accessible Parking shall be provided at the request of residents with disabilities, on the same terms and with the full range of choices that are provided for other residents of the project.

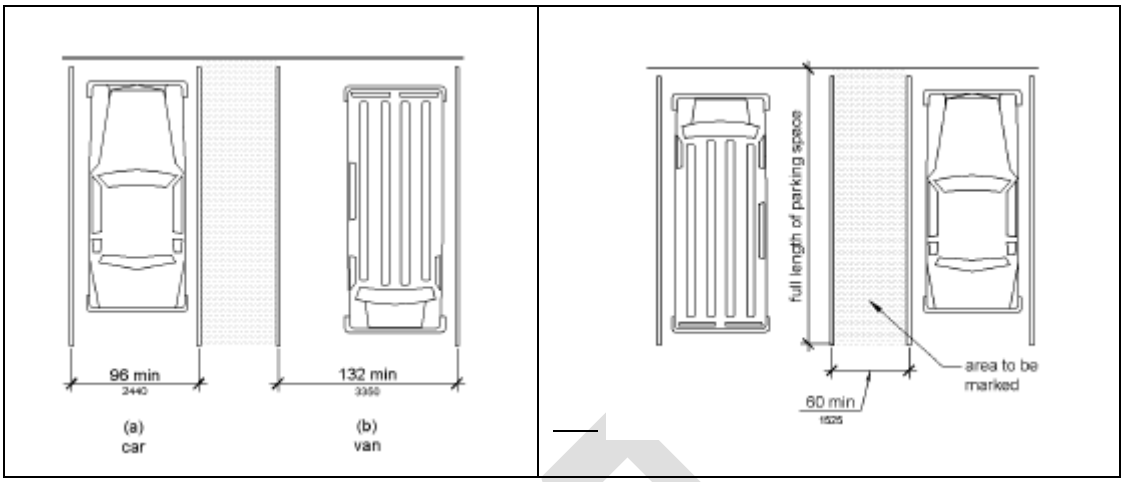
(4) Designated accessible Parking Spaces shall comply with the 2010 ADA Standards for Accessible Design and subsequent revisions.

(d) Exemptions
Detached Dwellings, *Attached Dwellings*, Residential Design Manufactured Homes, Group Homes, Limited**,** and Duplexes which are exempt from the requirement to site plan are exempt from the requirements to provide accessible Parking Spaces. However, accessible parking shall be provided at the request of residents with disabilities.

(e) Minimum Dimensions
All Parking Spaces reserved for people with disabilities shall comply with the Parking Space dimensional standards below, and Access aisles shall be provided immediately abutting such spaces, as follows:

(1) Car-Accessible Spaces
Car-accessible spaces shall be a minimum of 96 inches (8 feet) wide and shall be marked to define the width of the spaces.

(2) Van-Accessible Spaces
Van-accessible spaces shall be a minimum of 132 inches (11 feet) wide and shall be marked to define the width of the spaces.



https://www.ada.gov/2010ADAstandards_index.htm

(3) Access Aisles

(i) Access aisles serving car and van Parking Spaces shall be a minimum of 60 inches (5 feet) wide.

(ii) Where the adjacent access aisle is a minimum of 96 inches (8 feet) wide, a van-accessible Parking Space shall be permitted to be a minimum of 96 inches (8 feet) wide. **(Total of 192 inches required for van and access aisle.)**

(iii) Two Parking Spaces may share a common access aisle.

(iv) Access aisles shall adjoin an accessible route.

(v) Where possible, an accessible route should not pass behind parked vehicles.

(vi) Where an accessible route crosses vehicular traffic lanes, marked crosswalks shall be provided.

(vii) Access aisles shall extend the full length of the Parking Spaces they serve.

(viii) Access aisles shall be clearly marked so as to discourage parking in them.

(ix) Access aisles for angled van Parking Spaces shall be located on the passenger side of the van space.

(f) Ground Surfaces

(1) Access aisles shall be at the same level as the Parking Spaces they serve.

(2) Slopes not steeper than 1:48 shall be permitted to allow sufficient slope for drainage.

(g) Vertical Clearance

Parking Spaces for vans, access aisles and vehicular routes serving them shall provide a minimum clearance of 98 inches (8 feet-2 inches).

(h) Location of Spaces

Required accessible Parking Spaces for people with disabilities shall be located on the shortest accessible route of travel from adjacent parking to an accessible Building entrance.

(1) Curb ramps shall be provided whenever an accessible route crosses a curb in the Parking Area.

(2) Curb ramps may not be located within Access aisles.

(3) Parking Spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of the adjacent accessible routes.

(i) Signs

Required spaces for people with disabilities shall be identified with signs identifying them as reserved for people with disabilities.

(1) Signs shall be posted directly in front of the Parking Space at heights that will be visible to the types of vehicles for which they are designed, a minimum of 60 inches above the ground surface measured to the bottom of the sign.

(2) Signs identifying van Parking Spaces shall contain the designation "Van-Accessible".

(3) Signs shall include the International Symbol of Accessibility and comply with the Manual on Uniform Traffic Control Devices issued by the Federal Highway Administration.

20-904 VEHICLE STACKING AREAS

(a) Minimum Number of Spaces

Off-Street stacking spaces shall be provided as follows:

Activity Type	Minimum Number of Stacking Spaces
Bank teller lane	4 per teller window
Automated teller machine	2 per machine
Retail Services drive-through pick-up windows Dry Cleaners, Pharmacies	 2 at each pick-up window 3 at each pick-up window
Fast Order Food, drive-through	4 at each order box and 4 at each pick-up window
Retail Sales pick-up windows (such as food and beverage/liquor stores)	4 at each pick-up window
Car wash stall, automatic	Stacking spaces to be provided at twice the capacity of the car wash facility
Car wash stall, self-service	2 at each bay entrance and 1 at each bay exit
Gasoline pump island	1 at end of each fueling lane
Schools	10 on each elementary and junior high school Driveway; 5 on each senior high school Driveway
Child Care Centers	4 at primary entrance
Hospital / Outpatient Care Facility	2 at primary entrance
Hotel/Motel/ Extended Stay	
Valet Parking Service	
Other	As determined by the City Engineer based on a **parking demand study. (as outlined in Section 20-902(d)(2))**

(b) Design and Layout

Stacking spaces are subject to the following design and layout standards.

(1) Size

Each stacking space shall be a minimum of 8 feet by 20 feet in size.

(2) Location

Stacking spaces may not impede on-site or off-site traffic movements or movements into or out of off-street Parking Spaces.

(3) Design

Stacking spaces shall be separated from Driveways and/or Access Drives by raised medians, or other traffic device, if deemed necessary by the City Engineer for traffic movement and safety.

20-905 PARKING SETBACKS AND LOCATION

(a) General

Except as otherwise expressly provided in this section, required off-street Parking Spaces shall be located on the same Lot as the Principal Use (See Section 20-907 for Off-Site Parking standards).

(b) Residential Districts (RS, RSO, RM, RMG, RMO per Section 20-201(b))

A minimum 10 foot wide parking setback shall provide a greenspace buffer in residential districts between street right-of-way and Parking Areas including Parking Spaces, and Access Drives with the exception of the Driveway leading into the property (typically the portion that is perpendicular to the street, including the Driveway Apron.)

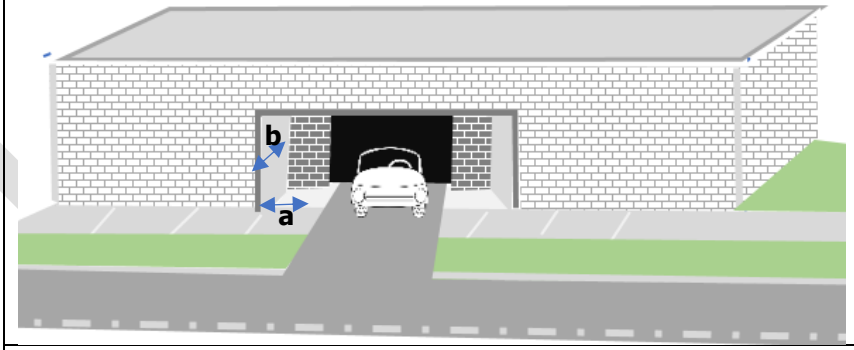
(1) Single or double Driveways and turnarounds may not be used to provide required off-street parking within the required Front or Exterior Side Setback with the exception of when they are serving a Duplex, Detached Dwelling, Group Homes, Limited, or Manufactured Home, Residential Design.

(2) Parking Areas serving residential uses in RS Zoning Districts shall be setback a minimum of 2 feet from side or rear property lines.

(3) Parking Areas serving nonresidential uses permitted in RS Zoning Districts shall be setback a minimum of 10 feet from side or rear property lines when adjacent to residentially-zoned property.

(i) This setback area shall be landscaped with trees and/or shrubs to provide a Type 1 Bufferyard as set out in Section 20-1005.

(4) A structured parking facility shall be setback a minimum of 10 feet from the property line at the exit for a width of 10 feet on both sides of the exit opening, to provide adequate sight distance for pedestrians. An alternative Building design may be approved in lieu of this required setback, if the City Engineer determines it provides adequate sight distance for vehicles and pedestrians.



Setback for structure parking exit: a: 10 feet either side of exit lane; b: 10 foot setback

(5) Parking Area setbacks may be further impacted by the Bufferyard standards set out in Section 20-1005.

(c) Nonresidential Districts (C, I, GPI, H, OS, and MU and Special Purpose Districts per Section 20-201(b))

The location of off-street Parking Areas in non-residential Zoning Districts shall comply with the design standards in Section 20-908 and the following:

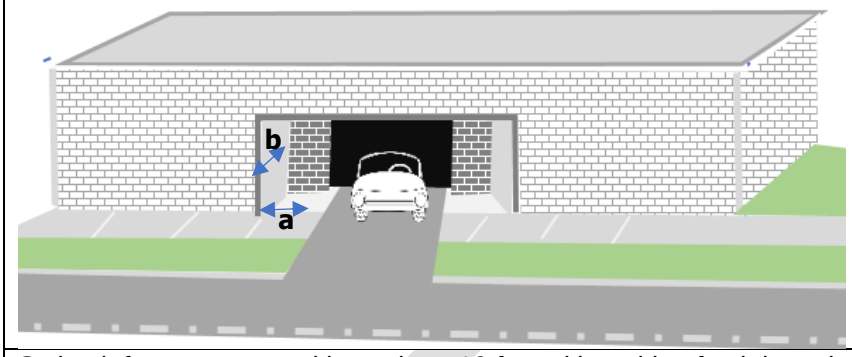
(1) Surface Parking

District	Allowed Location	Minimum Setback (feet)		
		From Right-of-Way	From Residentially zoned Lot Lines	From Non-residentially zoned Lot Lines
CN1 CO CN2	Not allowed between the Facade of the Building with the main entrance and the Street when Major Development Projects are proposed.			
CD	Prohibited between a Building and any Street			
CC CR CS IBP IL IM IG H GPI OS	As specified in use specific standards in Article 5 and the Community Design Manual.	15 [1]	10	0
MU	Prohibited in the Primary Development Zone, except for on-street parking when approved by the City Commission with a license for the use of the right-of-way. Prohibited between a Building and any Street right-of-way in a Secondary Development Zone. No restriction in a Tertiary Development Zone.			

[1] The parking setback from the right-of-way shall provide a greenspace buffer between streets, Parking Areas, and Access Drives, with the exception of the immediate Access Drive/Driveway leading into the property (typically the portion that is perpendicular to the street including the Driveway Apron.)

(2) Structured Parking

A structured parking facility shall be setback a minimum of 10 feet from the property line at the exit for a width of 10 feet on both sides of the vehicular exit opening, to provide adequate sight distance for pedestrians. An alternative Building design may be approved in lieu of this required setback, if the City Engineer determines it provides adequate sight distance for vehicles and pedestrians.



Setback for structure parking exit: a: 10 feet either side of exit lane; b: 10 foot setback

20-906 SHARED AND/OR Off-Site Parking

(a) Purpose

The provisions of this section are intended to encourage the efficient use of land and resources by:

(1) Allowing users to share Parking Spaces in situations where a mix of uses creates staggered peak periods of parking demand and/or the arrangement of the uses results in visiting multiple land uses on the same trip.

(2) Allowing Parking Areas to be located on a different site than the uses being served by the parking.

(b) Approval Procedure

Shared and/or Off-Site Parking arrangements require review and approval, in accordance with the Site Plan Review procedures of Section 20-1305, the Special Use Permit procedures of Section 20-1306, or the Planned Development procedures of Section 20-1304, and shall be documented in the approved plan files for each property that is a party to the Shared and/or Off-Site Parking agreement.

(c) Parking Agreement

The sharing and/or off-site location of required Parking Spaces shall be guaranteed by a legally binding agreement, duly executed and acknowledged, between the Owner(s) of the Parking Spaces and the Owner(s) of all uses that are served by the Parking Spaces.

(1) The agreement shall be properly drawn and executed by the parties concerned and approved as to form and execution by the City Attorney.

(2) Approved Shared Parking agreements shall be recorded with the Register of Deeds with the recording fees paid by the applicant.

(3) The recording book and page number of the recorded parking agreement shall be noted on the approved plan for the properties utilizing the Shared and/or Off-Site Parking.

(4) Termination of the parking agreement requires submittal and approval of a site plan showing that the Shared and/or Off-Site Parking is no longer required for the mix of uses.

(5) The applicant for a Building Permit or certificate of occupancy for a use that is served by Shared and/or Off-Site Parking Spaces shall submit a copy of such agreement along with the application for the permit or certificate.

(i) Any violation of the agreement required under this subsection constitutes a violation of this Development Code.

(d) Location

(1) All Shared and/or Off-Site Parking Spaces shall be located no farther than 600 feet from the main entrance of the Buildings or uses they are intended to serve, measured along the shortest legal, practical walking route.

(i) This distance limitation may be waived as part of the Site Plan, Special Use Permit Plan, or Development Plan Review process by the Planning Director if sufficient assurances are offered that adequate van or shuttle service will be operated between the Shared Parking Spaces and the uses being served.

(ii) Shared and/or Off-Site Parking Spaces are permitted when the Planning Director determines the location of the Shared and/or Off-Site Parking Spaces is convenient and suitable for the use being served. If streets need to be crossed to utilize the Off-Site Parking, the type of crossing and classification of the street will be considered.

(iii) Uses sharing Off-Site Parking shall provide for safe, convenient walking between uses and parking, including safe, well-marked pedestrian crossings, signage, and adequate lighting.

(2) Shared and/or Off-Site Parking Spaces are intended be located in the same or a more intensive Zoning District than that required for the most intensive of the uses served by the Shared Parking Spaces. If the Shared or Off-Site Parking Spaces are provided in a less intensive Zoning District the following standards apply:

(i) Shared and/or Off-Site Parking for a use permitted in a Commercial Zoning District may be permitted in a RSO, RMO or RM Zoning District, provided that the total area of such Parking shall not be greater than 10,000 square feet.

(ii) Approval of any Shared and/or Off-Site Parking in a less intensive Zoning District shall be subject to an appropriate Bufferyard or other Screening requirements, as necessary to limit the impact of the Off-Site Parking on adjacent land uses.

(iii) Shared and/or Off-Site Parking for a nonresidential use shall in no case be allowed on a residentially developed property in an RS or RSO Zoning District.

(iv) Shared and/or Off-Site Parking Spaces shall be prohibited on properties used for Detached Dwelling, Duplex, Attached Dwelling, Residential Design Manufactured Home, Group Homes, Limited, or Congregate Living uses.

(e) Shared Parking Calculations

To implement Shared Parking, the applicant shall provide analyses as part of site plan, sup, or development plan review to demonstrate that proposed uses are either competing (uses with the same Peak Hour parking) but would result in multiple visits to various uses on one trip or non-competing (uses with varied Peak Hour parking). The number of required Parking Spaces may be reduced, or placed in a parking bank (area designated on the site where future parking could be installed, if needed) based on the results of this study and the possibility of a future change in the uses.

(1) Non-competing Uses. Applicants may propose a reduction in parking requirements based on an analysis of peak demands for non-competing uses. The Planning Director may reduce the overall parking requirement, and/or permit designation of a future Parking Area if the analysis demonstrates that the peak demand for two or more uses do not overlap. The applicant may use the latest peak demand analyses published by the

Institute of Traffic Engineers (ITE) or other source acceptable to the Planning Director.

(2) Competing Uses. Applicants may propose a reduction in parking requirements where peak demands do overlap. The Planning Director may waive a portion of the total parking requirements and/or permit designation of a future Parking Area based on an independent parking analysis which takes into account the following, at a minimum:

- the location of the site;
- availability and use of other forms of travel;
- relationships between uses resulting in the patronage of multiple uses with one visit; and
- the individual operating characteristics of uses.

20-907 Valet Parking

Valet Parking does not require individual striping and may take into account the tandem or mass storage of vehicles. Use of Valet Parking is permitted in the following instances:

(a) When proposed as part of a development project and in conformance with the dimensional standards of Section 20-908(e) without variances or exceptions may be permitted administratively as part of a site plan, special use permit plan, or development plan.

(b) When proposed as part of a development project and not in full compliance with the dimensional standards of Section 20-908(e) the use of Valet Parking shall require the submission of a Valet Parking Plan and shall require City Commission approval.

(c) Valet Parking Plan shall include the following:

(1) Layout and dimensions of the Parking Spaces and drive aisles showing sufficient parking and maneuverability for a variety of passenger automobiles, motor vehicles, and light trucks.

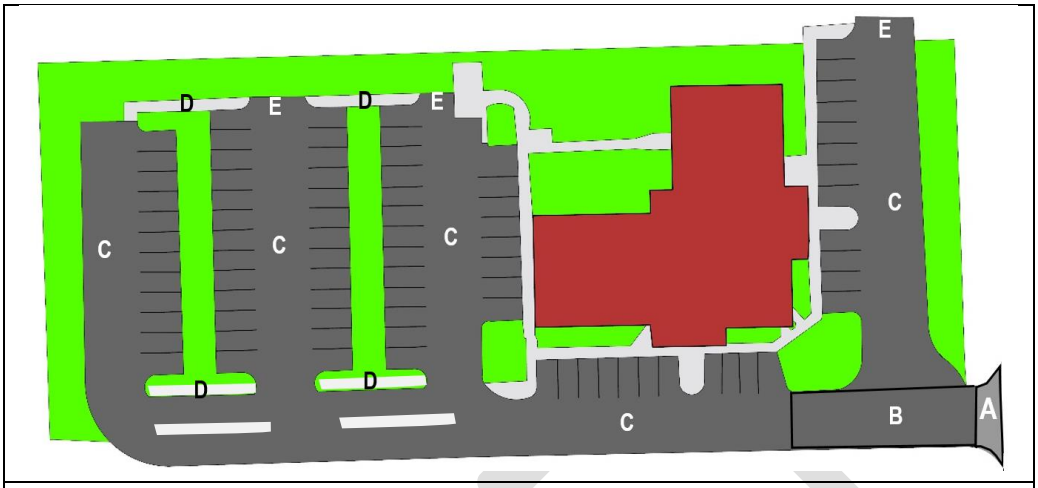
(2) On-site drop-off for vehicles using the parking services with sufficient queuing for vehicles that do not block the public right-of-way.

(3) If Valet Parking Plan includes Parking Spaces that are required for a specific use, Valet Parking services must be provided for those Parking Spaces during all operating hours of the use.

(d) Changes to a Valet Parking Area or facility to a Self-Parking Area or facility: Changes to a Parking Area or facility with Valet Parking that are changed to be self-parking shall require a revised site plan per Section 20-1305 to show compliance with the Parking Area dimensional standards of Section 20-908(e).

20-908 VEHICLE PARKING DESIGN STANDARDS

The design standards of this section apply to all Parking Areas, including Commercial Parking Areas.



Parking Area **components.** A: Driveway Apron; B: Driveway; C: Access Drive; D: Pedestrian Walkway; E:Turn around area

(a) General Layout Principles

The general layout principles in this sub-section do not apply to Detached Dwellings, Duplexes, Residential Design Manufactured Homes, Group Homes, Limited, or other uses which are exempt from the requirement to site plan.

(1) Parking Areas shall be lighted in compliance with the lighting standards provided in Article 11.

(2) Parking Areas shall provide a safe and convenient arrangement of Pedestrian Walkways, Access Drives, and off-street Parking Spaces. Pedestrian Walkways, and Parking Areas shall be designed as integral parts of an overall site design, which shall be properly related to existing and proposed Buildings, adjacent uses and landscaped areas.

(3) There shall be defined Pedestrian Walkways connecting all public entrances of Buildings to the required Bicycle Parking Area, to any adjacent bus stop, and to the nearest public sidewalks. Such Pedestrian Walkways shall, to the maximum extent practicable, be separated from Access Drives with curbs or other devices. At locations where walkways cross Driveways or Access Drives, the crossings shall be clearly marked with both signage and pavement markings.

(b) Approval

(1) The layout and design of all off-street Parking Areas shall be approved as part of the special use permit plan, development plan, or site plan.

(2) The layout and design of off-street Parking Areas for projects that do not require a special use permit, development plan, or site plan, (Detached Dwellings, Duplexes, Group Home, Limited, Residential Design Manufactured Homes, etc.) shall be approved with a Building Permit.

(c) Appearance and Maintenance

(1) The materials used in the design of paving, lighting fixtures, retaining walls, fences, and curbs shall be easily maintained and designed to be indicative of their function.

(2) Parking Areas shall be maintained in a safe operating condition so as not to create a hazard or nuisance. All Parking Areas shall be regularly maintained and kept free of debris and hazards. Striping and other pavement markings shall be maintained in an easily readable condition.

(d) Surfacing

(1) All off-street Parking Areas and Driveways, including those serving Attached Dwellings, Detached Dwellings and Duplexes, and other uses which do not require site planning, shall be surfaced with a minimum of one of the following, with the alternative for residential districts or areas of low off-street parking use noted in Subsection (2):

(i) 4 inches of reinforced Portland cement concrete;

(ii) 5 inches of granular rock base with 2 inches of asphalt;

(iii) 5 inches of full depth asphalt;

(2) As an alternative to the surfacing required in the preceding paragraph, all off-street parking for uses allowed within residential districts that are exempt from the requirement to site plan (Detached Dwellings, Duplexes, Group Homes, Limited, etc.) or areas of low off-street parking use as determined by the City Engineer, may be surfaced with the alternative methods of paving listed in this section. The surfacing shall be installed per the manufacturer's recommendations, with the pavement and base designed by a professional engineer licensed in the State of Kansas. The pavement cross-section shall demonstrate the structural ability to support the anticipated vehicle loads for the use. The pavement design shall be reviewed and approved by the City Engineer.

(i) Grid unit pavers with grass;

(ii) 18" wide concrete strips to support vehicles' wheels, separated with grass in between the strips;

(iii) Concrete, brick, or clay interlocking paver units.

(3) Driveway Approaches (Aprons) shall comply with the standards of Chapter 16, Article 3 of the City Code and be maintained by the Landowner.

(e) Dimensions

(1) Automobile Parking

(i) All off-street Parking Areas shall meet or exceed the dimensional standards in this section.

(ii) The standards in this section also apply to on-street parking that is approved with a development plan, special use permit, site plan, or a license for the use of right-of-way, or other measure with the following additional provisions for reverse-angle parking:

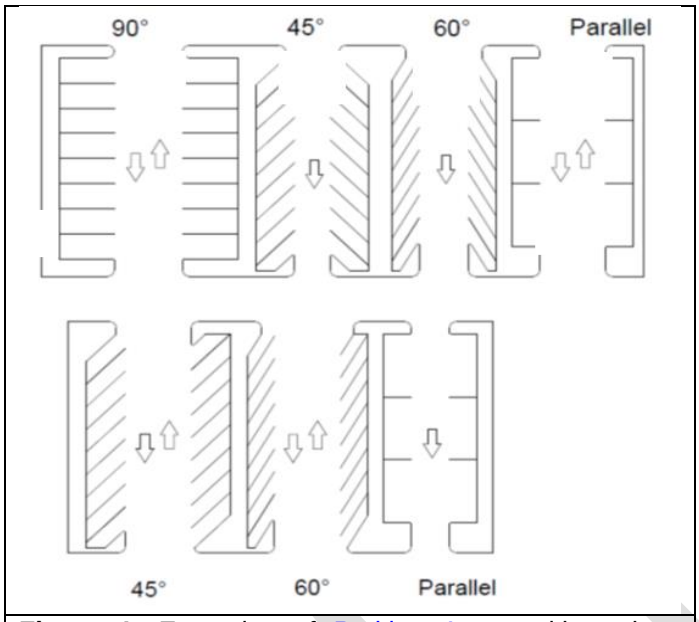


Figure 1. Examples of Parking Areas with various degrees of angle parking

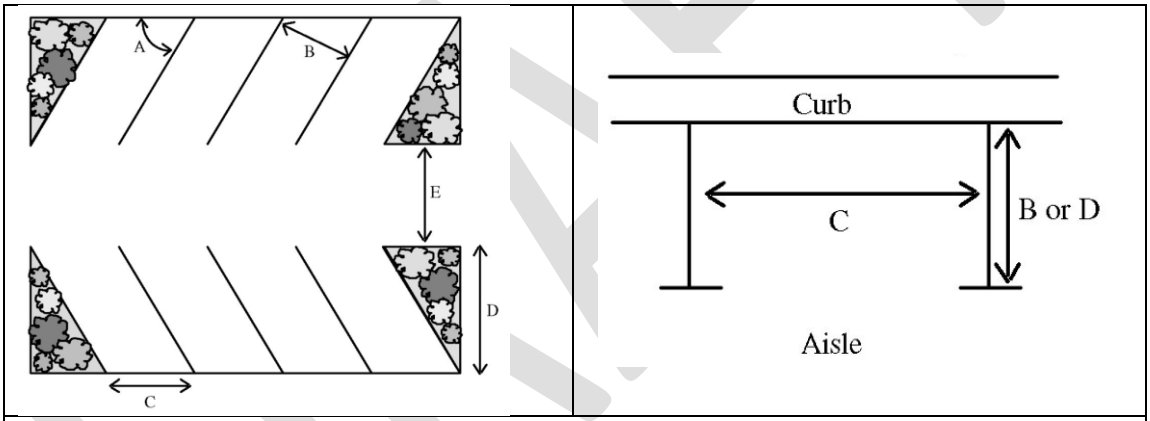


Figure 2. Components of Parking Spaces and Parking Areas. 45°, 60°, and 90° as shown on left, 0° (parallel) on right.

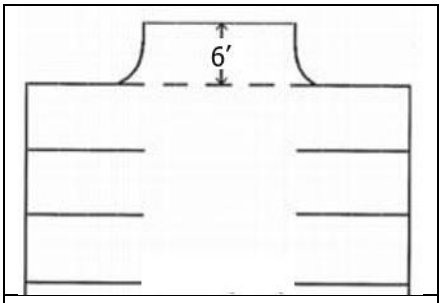
PARKING ANGLE (A)	PARKING SPACE WIDTH (B)	CURB LENGTH (C)	PARKING SPACE LENGTH (D)	AISLE WIDTH (E)
0° (Parallel)	10'	22' for end space 24' for middle spaces	10'	14' [1] (one-way) 24' (two way)
45°	9.0'	12.7'	24.5'	
60°	9.0'	10.4'	21.4'	
90° (Perpendicular)	9.0'	9.0'	18.0'	

60° REVERSE-ANGLE PARKING	9.5'	13.5'	15'	14' [1] (one-way) 24' (two way)

[1] Designated fire lanes shall comply with the IFC (International Fire Code) as amended and adopted.

f. Additional Standards

(1) Turnarounds.
Turnarounds shall be provided for dead-end parking bays. Turnarounds must be identified with a sign or surface graphic and marked 'no parking'. Accessible Parking Spaces or access aisles may not be used as the required turnaround.



Parking turnaround

(i) Minimum 6 foot depth required for turnaround areas

(2) Parking Islands.
Each row of parking shall terminate in a curbed, landscaped parking island.

(3) Vehicle Overhang.
All required Landscaping, streets, Alleys, sidewalks, and other public rights-of-way must be protected from vehicular overhang by wheel stops, curbs, spacing between the right-of-way line and the Parking Area, or other method approved by the Planning Director.

(i) The vehicle overhang may count toward the length of the Parking Spaces.

(ii) The vehicle overhang may not be more than 18 inches in depth.

(iii) The vehicle overhang may not encroach upon any on-site Pedestrian Walkway to the point that the walkway does not provide a minimum of 4 feet of travel width.

(i) The vehicle overhang shall not encroach upon any adjacent sidewalk along a street right-of-way.

(ii) The vehicle overhang shall not encroach upon a landscaped area that would reduce the area reserved for landscaping to less than 4 feet in width, or is determined by the Planning Director to impact existing landscaping.

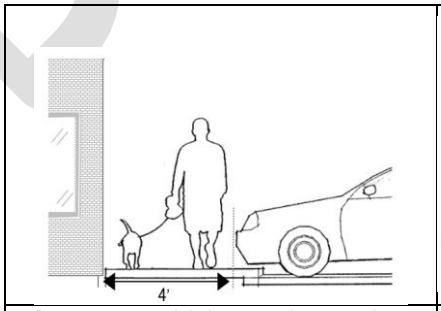


Figure 1. Vehicle overhang along Pedestrian Walkway

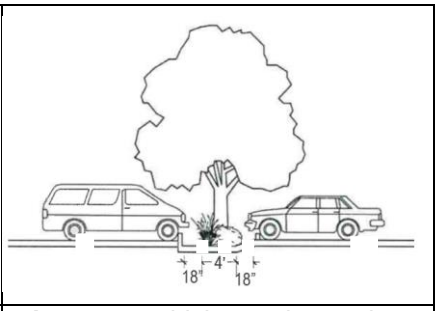


Figure 2. Vehicle overhang along landscaped area

(3) Dimensional Reductions

Where natural and/or man-made obstacles, obstructions or other features such as, but not limited to, Landscaping, support columns or Grade differences exist, the City Engineer may approve a reduction in Parking Space and Access Drive dimensions. In all instances where a reduction is requested, attention to emergency vehicle Access shall be considered and incorporated into the Parking Area design.

(4) Striping

To facilitate movement and to help maintain an orderly parking arrangement, all Parking Spaces shall be clearly striped, with a minimum width of 4 inches. The width of each Parking Space shall be computed from the centers of the striping.

(5) Curbs

The perimeter of the Parking Area shall have a curb and gutter constructed in accordance with City standards for concrete curbs.

(i) An administrative exception to perimeter curb requirements may be provided for stormwater mitigation projects per the Best Management Practices manual with approval from the City Stormwater Engineer.

(6) Large Parking Areas

(i) Parking Areas in excess of 220 Parking Spaces shall be designed to include additional landscape strips, peninsulas, or Grade separations to reduce the adverse visual impacts of large expanses of paving; to direct vehicular traffic through the Parking Area; and to provide a location for Pedestrian Walkways.

(7) Pedestrian Connections

(i) Parking Areas shall be designed to provide designated Pedestrian Walkways that connect Building entrances with Parking Areas and with public sidewalks along adjacent streets.

(ii) A dedicated Pedestrian Walkway is required through any Parking Area when the pedestrian route crosses 2 or more Access Drives

(8) LANDSCAPING

Parking Area Landscaping shall be provided in accordance with Article 10, except where additional landscaping is required in this section.

20-909 Bicycle Parking Standards

(a) General Standards

The following standards apply to all Bicycle parking:

(1) Surfacing

A Bicycle Parking Space shall be surfaced with a minimum of:

(i) 4 inches of concrete,

(ii) 4 inches of asphalt, or

(iii) 2 inches of concrete with a 2-inch brick overlay, or similar material for overlay.

(2) Lighting

Bicycle Parking Spaces shall be lighted in compliance with the lighting standards provided in Article 11.

(3) Barriers

If Bicycle Parking Areas and automobile Parking Areas or Access Drives abut each other, a physical barrier such as a curb, short wall, or bollard shall be provided between the Bicycle and automobile areas to prevent a Bicycle or its operator from being hit by a motor vehicle.

(4) Design

(i) All bike racks, lockers, or other parking facilities shall be anchored so that they are not easily removed.

(ii) Bike racks or other locking devices must allow the Bicycle frame to be locked using a standard U-lock.

(iii) Each bike space must be 2 feet x 6 feet with a minimum overhead vertical clearance of 7 feet.

a. Area standards for vertical bike parking will be determined by the Planning Director based on the style of vertical parking utilized.

ARTICLE 13. Short Term Bicycle Parking Standards

Short Term Bicycle Parking is typically unsheltered, unenclosed parking intended for guests or customers, where the parking duration will generally not exceed two to three hours. Every Short Term Bicycle Parking Space, whether used publicly or privately, shall be designed, built and maintained in accordance with the following specifications:

(1) Structure

Each Short Term Bicycle Parking Space shall provide for a secure method of locking a Bicycle and be located to accommodate Bicycle parking in a manner that is convenient to use and does not interfere with other uses of the property. Racks shall comply with the *APBP (Association of* Bicycle *and Pedestrian Professions) Bike Guide* standards, as amended.

(2) Location

Each Short Term Bicycle Parking Space shall be:

(i) Easily accessed from the street and protected from motor vehicles.

(ii) Located no farther than 50 feet from the entrance of the principal Building.

(iii) Visible to passers-by to promote usage and enhance security.

(iv) Located to not impede or interfere with pedestrian traffic or routine maintenance activities.

(v) Located in areas that do not block access to Buildings.

(vi) Located to allow reasonable clearances for opening doors of vehicles parked nearby.

(3) Dimensions

To insure Short term Bicycle Parking provides an adequate area to serve the user the following standards apply:

(i) Distance to other racks:

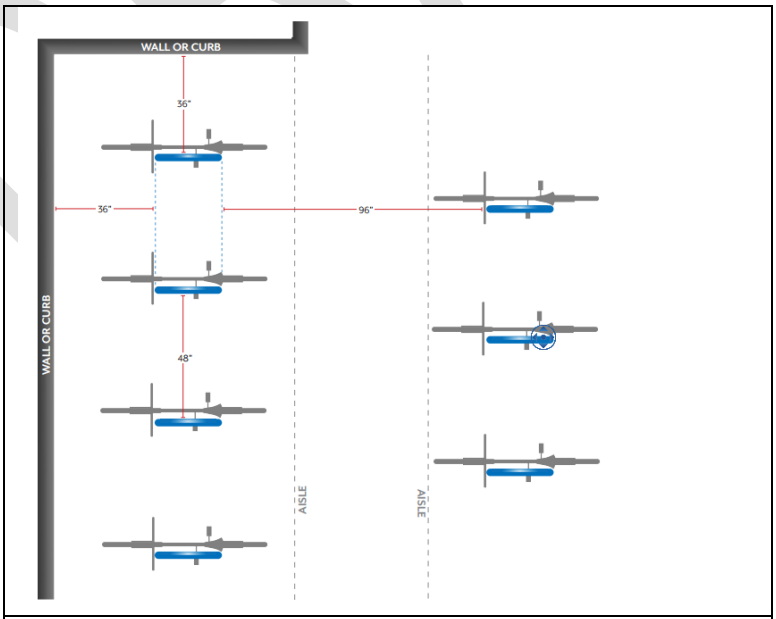
a. Rack units aligned end-to-end shall be placed a minimum of 96 inches apart.

b. Rack units aligned side-by-side shall be placed a minimum of 48 inches apart.

(ii) Distance from a curb or wall:

a. Assuming access is needed from both sides, bike racks located parallel to a wall or curb shall be a minimum of 36 inches from the wall or curb.

b. Racks located perpendicular to a wall or curb shall be a minimum of 36 inches from the wall.



Bike parking dimensions

(4) Signage
Directional signage used to indicate the location of Bicycle Parking shall comply with the Manual on Uniform Traffic Control Devices (MUTCD).

(c) Long Term Bicycle Parking Standards
Long Term Bicycle Parking is typically covered, enclosed parking for tenants, employees, customers, and others who will park their bike for more than three or four hours.

(1) General
(i) The long term Parking Area must facilitate easy locking without interference from or to adjacent Bicycles.

(ii) A method of securing parked Bicycles must be provided.

(2) Location
Long term Bicycle Parking Spaces shall be within 200 feet of the Building's principal entrance and may be provided in one of the following:
(i) Locked room;

(ii) Storage area, individual or community;

(iii) Bicycle locker;

(iv) Locked area enclosed by fence or wall: minimum 8 feet in height; or

(v) Private garage serving Multi-Dwelling Units.

(3) Cover
Outdoor long-term Bicycle Parking Spaces must be covered by a roof or roof overhang, canopy, awning, or similar structure or be enclosed within a Bicycle locker.

(4) Access
(i) Long term facilities shall open into, or connect with, a Parking Area or Pedestrian Walkway to allow bikes to be removed or added from a paved surface.

(ii) The entrance to a long term parking facility must be at least 3 feet from any wall or other obstruction to allow space to maneuver the Bicycles into the facility.

(d) Special Event Parking
Portable bike corrals or staffed Bicycle Parking Areas shall be provided for Special Events which require approval of a Special Event Permit per Chapter 6, Article 15 of the City Code if Bicycle traffic exceeding that which can be accommodated with the existing bike parking facilities is anticipated.

20-910 OFF-STREET LOADING AREAS

(a) General

(1) Off-street loading areas shall be designed so that goods shall not be loaded or unloaded from the right-of-way of any Street and no part of any vehicle may extend into the right-of-way of a Street while being loaded or unloaded; provided that, routine deliveries, such as U.S. Mail, Federal Express, Parcel Post and similar services, for reasonable durations, are not hereby prohibited.

(2) Loading and unloading from Alleys will be determined on a case by case basis depending on the surrounding development and intensity of uses in the area.

(b) USE OF LOADING AREAS

Required loading areas are to be used solely for loading and unloading activities.

(c) DESIGN STANDARDS

(1) Safe, adequate, and well lit loading spaces shall be provided as required. Loading spaces shall comply with the lighting standards in Section 20-1103.

(2) Required loading spaces shall have a minimum vertical clearance of 15.5 feet.

(b) Location

(1) Loading areas shall be located and designed to reduce conflicts with vehicular ingress and egress routes.

(2) Loading areas shall be located on the same Lot as the Principal Use.

(c) Loading Schedule

Loading spaces shall be provided in accordance with the minimum ratios shown in the following table.

(1) Developments in the CD District shall be exempt from these requirements.

(2) Off-street loading schedule:

Use	Building Floor Area (gross sq. ft.)	Required Loading Spaces	Space Size (feet)
Public and Civic	1–9,999	None	N/A
	10,000+	1 per 50,000 sq. ft	10 x 25
Commercial (except Retail Sales, General)	1–9,999	None	N/A
	10,000+	1 per 50,000 sq. ft.	10 x 25
Retail Sales, General	1–4,999	None	N/A
	5,000--10,000	1	10 x 25 to 25,000
	10,001 – 40,000	2	

Use	Building Floor Area (gross sq. ft.)	Required Loading Spaces	Space Size (feet)
	40,001 - 100,000	3	10 x 50 25,001 and above
	100,001– 250,000	4	
	+ 250,000	4 + 1 per 200,000 sq. ft. above 250,000	
Industrial	1–4,999	None	N/A
	5,000-- 40,000	1	10 × 25 for bldgs. up to 20,000 sq ft 10 × 50 for bldgs. over 20,000 sq. ft.
	40,001– 100,000	2	
	+100,000	2 + 1 per 100,000 sq. ft. above 100,000	

(d) Rules for Calculating Requirements

The following rules apply when calculating off-street loading requirements:

(1) Multiple Uses

Unless otherwise approved, Lots containing more than one use shall provide loading spaces in an amount equal to the total of the requirements for all uses.

(2) Fractions

When measurements of the number of required loading spaces result in a fractional number, any fractional result shall be rounded up to the next consecutive whole number.

(3) Area Measurements

(i) Unless otherwise specifically noted, all loading standards given in square feet shall be computed on the basis of Gross Floor Area which is to be measured using all of the Floor Area on each floor of the Building, whether or not such area is enclosed by walls. Interior areas used for off-Street loading facilities are not included in the Floor Area.

(ii) For outdoor areas, calculations will be based on the portion of the Lot actually being used for the specified purpose.

20-911 DRIVEWAYS AND ALLEYS

(a) General Standards

(1) Vehicular Access to property from the street right-of-way is allowed only by way of Driveways. No other portion of the Lot Frontage may be used for vehicle ingress or egress.

(2) Driveways for uses other than Detached Dwellings, individual Duplexes, Residential Design Manufactured Homes, Attached Dwellings, and Group Homes, Limited shall be arranged so that an exiting vehicle does not need to back onto a Street.

(3) All Driveway cuts into the street require a permit from the City.

(4) Driveways shall intersect the street at right angles, unless otherwise approved by the City Engineer.

(5) All Driveways shall conform to the City of Lawrence Municipal Services & Operations Standard Driveway Detail, unless otherwise approved by the City Engineer with review of a site plan, special use permit, or development plan for specialized design of entry points or other features.

(6) Driveway designs shall allow an entering vehicle turning speed of 15 miles per hour to help reduce interference with through street traffic. Radii of Driveway shall be sufficient to achieve this standard for the types of vehicles that the Driveway is intended to serve.

(7) There shall be sufficient on-site space to accommodate queued vehicles waiting to park or exit, without interfering with street traffic.

(8) Provisions for circulation between adjacent Parcels shall be provided, when determined to be reasonable, through coordinated planning or Cross Access Agreements/Easements or Shared Access Easements.

(9) Driveways shall be placed and designed so that:

(i) Loading and unloading activities will not hinder vehicle ingress or egress,

(ii) Vehicles entering the Driveway from the street will not encroach upon the exit lane of a two-way Driveway, and

(iii) A right-turning exiting vehicle shall be able to use only the first through-traffic lane available without encroaching into the adjacent through-lane.

(10) When available, Alley Access is encouraged and preferred.

(11) A clear sight area shall be provided for all alleys and non-residential Driveways per the standards in Section 20-912(d).

(b) Standards for Driveways serving Detached Dwellings, Duplexes, Attached Dwellings, Residential Design Manufactured Homes, and Group Homes, Limited.

(1) Driveways shall not exceed 26 feet in width at the property line except in conformance with standards outlined in Chapter 16, Article 3 of the City Code. Additional limitations for the RS3 and RS5 Districts are listed below:

(i) In RS3 Districts, Driveway width (measured at the property line) shall not exceed the greater of 12 feet or 25% of the Lot Frontage, up to a maximum of 20 feet.

(ii) In RS5 Districts, Driveway width (measured at the property line) shall not exceed the greater of 20 feet or 25% of the Lot Frontage up to a maximum of 26 feet.

(2) Single or double Driveways and turnarounds may be used to provide required off-street parking within the required Front or Exterior Side Setback when they are serving:

(i) An individual Duplex, Detached Dwelling, Short Term Rentals, Group Home, Limited, or Residential Design Manufactured Home; or

(ii) An Attached Dwelling when it is located in the RS-5, RS-7, and RS-10 Districts as outlined in Section 20-503.

(3) All direct Access to any Public Street shall be in accordance with the City's Access Management Guidelines. (Section 20-912)

(c) Standards for Parking Areas with Access on alleys.

The following standards apply to parking for all Detached Dwellings, Duplexes, Group Homes, Limited, Attached Dwellings, and Residential Design Manufactured Homes with Parking Areas that are adjacent to alleys:

(1) Stacked parking is not permitted.

(2) Bumper blocks or a 6 inch curb will be used to define the Parking Space.

(3) Any new covered parking structure shall not exceed more than 2 car capacity.

(4) A minimum 2 foot setback is required between the Parking Spaces and the side lot lines.

(5) The entire lot width, minus the 2 foot setback on the side lot lines, or the exterior side setback required along the street-side, may be developed with uncovered Parking Spaces. (Figure 1, this section)

(6) If covered parking is used, the garage may not exceed a maximum capacity of 2 vehicles and may be located directly on the side lot line. (Figure 2, this section)

(i) If the garage door faces the alley, the garage must be setback a minimum of 5 feet from the alley for visibility

(ii) If the garage door does not face the alley, no setback is required from the alley.

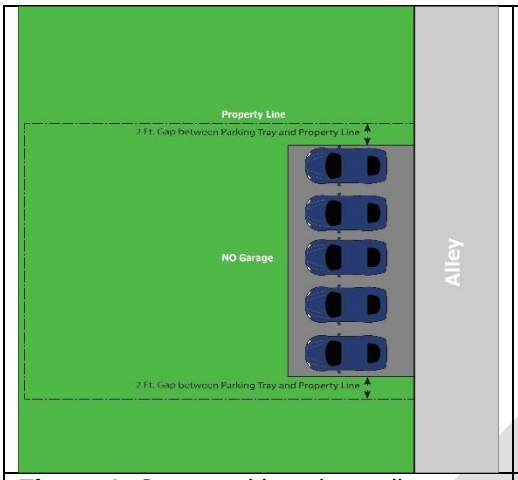


Figure 1. Open parking along alley

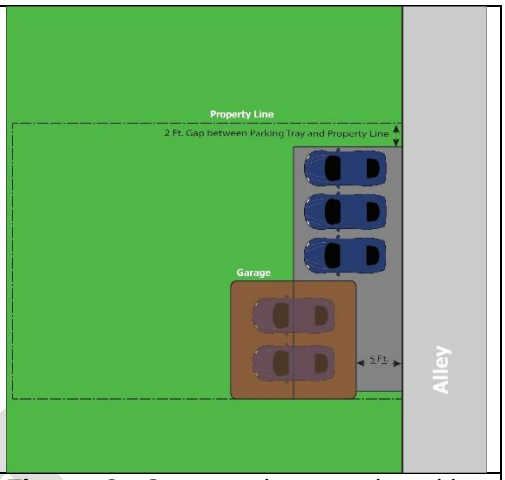


Figure 2. Open and covered parking along alley

(d) Standards for Driveways serving Multi-Dwelling or Non-Residential Uses

(1) Access Drives shall be arranged to prevent vehicles from backing directly onto the street to exit the property.

(2) Driveways shall be designed to provide a minimum vehicle turning radii of 15 feet. Greater radii may be required by the City Engineer if needed to accommodate the types of vehicles that the Driveway is intended to serve.

(3) Driveways providing Access to Parking Areas shall be located to provide sufficient on-site space to accommodate queued vehicles waiting to park or exit without interfering with on-street traffic.

(4) Turn lanes are required when City Engineer determines, based on a Traffic Impact Study, that such treatment is necessary to avoid congestion and/or unsafe conditions on the Public Street.

(5) Driveways that intersect with street right-of-way shall be located to allow for the minimum sight distance based on the intersection type (full or partial Access) and the street type.

(i) Sight distances shall be determined by a professional engineer licensed by the State of Kansas, utilizing the most recent AASHTO Green Book Criteria*, and shall be based on the design speed of the street or on the 85th percentile speed, whichever is higher. (*A Policy on Geometric Design of Highways and Streets.)

(ii) A clear sight area shall be provided for all Driveways based on the sight distance. At a minimum, the standards in Section 20-912(d) apply.

20-912 ACCESS MANAGEMENT STANDARDS

All direct Access to any Public Street shall be in accordance with these Access Management Standards.

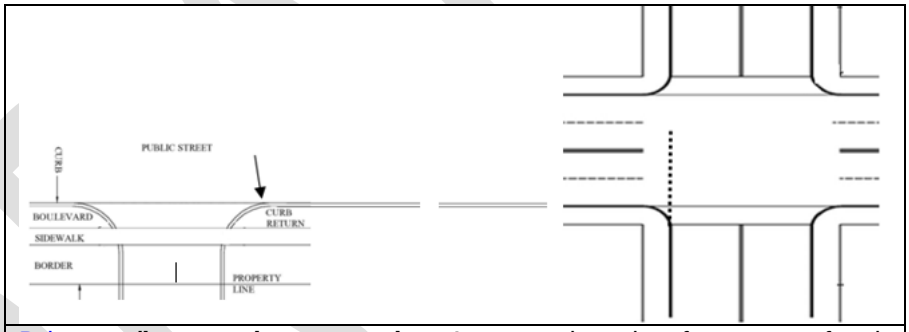
(a) Arterial Streets

Direct Access to an Arterial Street is prohibited except in redevelopment or infill situations where the subject property has no other reasonable Access to the street system, and the City Engineer determines that Access onto the Arterial Street, based on the Street's Ultimate Design, can be safely accommodated.

(1) When direct Access to an Arterial Street is approved by the City Engineer pursuant to the requirements of this section, the following standards apply with the following exception: In the event that the standards cannot be met because of an unusually narrow or shallow Lot size, the City Engineer may reduce the spacing between cuts as long as the reduction does not result in an unsafe traffic condition.

(i) Spacing from Controlled Intersections

All Driveways providing Access to Arterial Streets shall be constructed so that the point of tangency of Driveway curb radius closest to a signalized or stop sign-controlled intersection is at least of 300 feet from the curb line extended of the intersection or beyond the limits of the area of influence of the intersection as defined in the accepted Traffic Impact Study, whichever is greater. (Figure 1)



Driveway **/intersection separation.** Arrow marks point of tangency of curb return radius, vertical dotted line is the curb line extended.

(ii) Spacing from Other (Non-signalized) Access Points

All Driveways providing Access to Arterial Streets shall be constructed so the point of tangency of the Driveway curb return radius closest to the non-signalized Street or Driveway intersection is at least 300 feet from the Driveway or intersection curb line extended.

(b) Collector Streets

Direct Access to Collector Streets shall be regulated in accordance with the following standards. In the event that such standard cannot be met because of an unusually narrow or shallow Lot size, the City Engineer may reduce the spacing so long as the reduction does not result in an unsafe traffic condition.

(1) Attached Dwellings, Detached Dwellings, Duplex Lots, and Group Homes Limited

Direct Access to Collector Streets from Attached Dwellings, Detached Dwellings, and Duplex Lots is prohibited except when the subject property

has no other reasonable Access to the Street system and the City Engineer determines that Access can be safely accommodated.

(1) Spacing from Controlled Intersections
All Driveways providing Access to Collector Streets shall be constructed so that the point of tangency of the Driveway curb return radius (Figure X) is at least 300 feet from the curb line extended of the closest intersecting Arterial Street or 250 feet from the curb line extended of the closest intersecting Collector or Local Street.

(2) Spacing from Other Access Points
All Driveways providing Access to Collector Streets shall be constructed so that the point of tangency of a Driveway curb return radius (Figure X) is at least 250 feet from the extended curb line of the closest intersecting street or Driveway.

(c) Local Streets

(2) Detached Dwellings and Group Homes, Limited
Each property containing a Detached Dwelling or Group Home, Limited shall be allowed one Driveway curb cut with the following exceptions:

(i) Interior Lots will be allowed up to two Driveway curb cuts if the length of the Lot Line adjacent to the street is at least 100 feet.

(ii) Corner Lots will be allowed two Driveway curb cuts if the length of either Lot Line adjacent to the street is at least 100 feet.

a. These two curb cuts may both be constructed along one Lot Line or one along each Lot Line; however, both curb cuts may only be constructed along one Lot Line only if that Lot Line is at least 100 feet in length.

(iii) Through Lots may have a curb cut on each street Frontage, provided each Frontage is compliant with the minimum Frontage width for that district.

(2) Attached Dwelling Lots
Access and Driveway standards for Attached Dwelling Lots are provided in Section 20-503 of this Chapter.

(3) Duplex Dwelling Lots
Two curb cuts are permitted on a Duplex Lot in accordance with Section 16-302, Sketch C of the City Code.

(4) Cul-de-Sac Lots
No more than one Driveway curb cut per lot is permitted on the bulb of a Cul-de-Sac.

(5) Distance from curb cuts on Local Streets to Intersecting Streets

a. Driveway curb cuts on Corner Lots shall be at least 25 feet from the curb line extended of a Local Street.

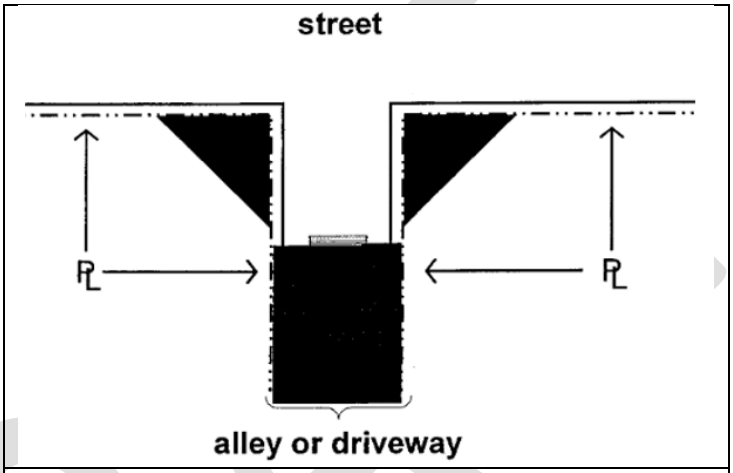
b. Driveway curb cuts on Corner Lots shall be at least 50 feet from the curb line extended of a Collector or Minor Arterial Street.

c. Driveway curb cuts on Corner Lots shall be at least 75 feet from the curb line extended of a Major Arterial Street.

(6) Distance from Other Driveways
Driveway curb cuts on the same Lot shall have a minimum of 20 feet between the inner edge of the drives measured at the curb line.

(d) Clear Sight Area

(1) All landscaping and site improvements proposed near site Access points shall comply with intersection sight distance requirements provided by the "Policy Of Geometric Design of Highways and Streets" by AASHTO (American Association of State Highway and Transportation Officials)



Clear sight area

(e) Waivers

(1) Waivers from the Access Management standards in this section may be approved by the City Engineer if it is determined that the requested waiver will not create a serious detriment to the safety or operation of traffic on the street or roadway and only for infill or redevelopment projects where no other feasible option exists.

(2) The burden of proof that the requested waiver will not create a serious detriment to the safety or operation of traffic on the street or roadway will be on the applicant. The City Engineer may require that the applicant for a waiver submit a traffic impact study pursuant to Section 20-913 if it is determined that such an analysis is necessary in order to render a competent decision on the requested waiver.

(e) Additional Access Management Standards
The City may adopt additional Access Management standards for various streets. Additional standards adopted for West 6th Street between Wakarusa Drive, and Kansas Highway 10 (K-10), prior to the effective date of these regulations, are provided in City Code Chapter 16, Article 12.

20-913 TRAFFIC IMPACT STUDY

A Traffic Impact Study (TIS) shall be prepared and submitted to the City for development or redevelopment, based on thresholds established in Chapter 16, Article 11 of the City Code. Preparation of a Traffic Impact Study shall be required, as part of a site plan or development plan

application, subdivision Lot or plan approval, and shall be based upon standards for a TIS provided in Chapter 16, Article 11 of the City Code, adopted by the City Commission.

(a) Purpose

The purpose of requiring a Traffic Impact Study is to provide the City with the information necessary to evaluate and make a determination about the impact of a proposed land use change or development project on adjacent land uses, on the existing and Ultimate Street Design, and on the entire transportation network.

(b) Exceptions

(1) Applicants are required to follow the Traffic Impact Study analysis set forth in Chapter 16, Article 11 of the City Code, unless waived with respect to the development because:

(i) the development is covered by a modified site plan, pursuant to Section 20-1305(n)(2), that has been determined not to constitute a material change; or

(ii) the development is covered by a modified final development plan, pursuant to Section 20-1304(e)(2)(iv), that has been determined not to constitute a major change; or

(iii) the development involves the reuse of existing Structures or modification of existing Structures, but does not involve a change in existing use or intensity of use;

(iv) the development is a residential development with ten (10) or fewer Lots or Dwelling Units; or

(v) the development has been determined by the City Engineer not to generate traffic impacts sufficient to justify the preparation of a TIS.

(c) Additional Analysis

When Access points are not defined or a site plan is not available at the time the Traffic Impact Study is prepared, additional analysis shall be conducted or required when a site plan becomes available or the Access points are defined.

(d) Expense

(1) Notice if at Owner's or Developer's Expense

If the City determines that it is appropriate to engage an engineer or engineering firm to conduct a Traffic Impact Study, the City shall give the Owner or developer written notice of that determination, ten Business Days before work on the Traffic Impact Study begins. This study shall be conducted for the City at the Owner or developer's expense.

(2) Payment as Permit Condition

In such instance, payment of a Traffic Impact Study shall be a condition of the issuance of any required permit or approval, pursuant to this Development Code.

DEFINITIONS
20-1701
(revise, Access Way/Access Drive) ACCESS DRIVE—a drive that connects the Driveway with the parking area and allows circulation between rows of parking and throughout the parking area.

(delete) Bicycle Parking Space

(Revise) DRIVEWAY-A roadway providing a vehicular connector between the street right-of-way and the parking area or garage. This is typically perpendicular to the right-of-way.

DRIVEWAY APRON—Also known as a 'Driveway approach'. That part of the Driveway that lies within the street right-of-way adjacent to the property. The Driveway apron is often flared to accommodate access.

(remove—term not used in regs) PARKING ACCESS

(revise) PARKING AREA: That portion of a lot set aside, marked, posted, or intended for parking. This includes circulation areas, loading and unloading areas, Parking Spaces and drive aisles, landscaped areas, bikeways, and walkways.

PARKING FACILITIES
(1) Accessory Parking
Accessory parking facilities provide parking that is required or provided for a specific use or uses.

(2) Commercial Parking
Commercial parking facilities provide parking that is not accessory to a specific use. A parking fee may or may not be charged. A facility that provides both Accessory Parking facilities for both a specific use and regular fee parking for people not connected to the use is also classified as a Commercial Parking use.

PARKING, OFF-SITE —parking provided for a use which is located on another lot.

PEDESTRIAN WALKWAY—A dedicated pathway for pedestrians that is differentiated from a sidewalk by not being located along an adjacent street but being internal to the site.

(revise) PARKING, SHARED —Use of the same off-street Parking Spaces for two or more different uses based on differing times of parking demand or the arrangement of uses that result in visiting multiple land uses on the same trip. Shared parking may or may not be located on the same lot as the use.

RECREATION VEHICLE—A motorized, self-propelled vehicle or a vehicle pushed, towed, propelled by wind, or carried by a motorized, self-propelled vehicle that may be described as follows:

1) It is designed to have temporary living quarters for recreation and camping;

2) It is an all-terrain vehicle or a specialized off-road racing or competition vehicle that is not used for day-to-day transportation; or

3) It is a boat, canoe, kayak, or personal watercraft on a trailer.

STACKING SPACES—The space(s) specifically designated as a waiting area for vehicles in a queue at a drive-in or pick-up use or a drop off area.

2019 CITY OF LAWRENCE
TRANSPORTATION COMMISSION CALENDAR

Study Sessions begin at 5:00PM
Regular Meetings begin at 6:00PM

January – No meeting	February 4	March 4
April 1	**May 6**	**June 3**
Study Session: • Strategic Plan; CIP/budget process • Receive update on Transit Hub Regular Meeting: • Discussion on composition of Transportation Commission	Study Session: • Review Pedestrian Bicycle Issues Task Force Report Regular Meeting: • Discussion on composition of Transportation Commission • Recommendation on 2019 Neighborhood Traffic Management Program	Study Session: • Update on Safe Routes to School Plan • School Area Traffic Control Policy • Receive draft Lawrence Bike Plan Regular Meeting: • Recommendation on 13th Street & 21st Street Bike Boulevard Concept Plan • Recommendation on 2019 Bike/Ped Projects
July 1	**August 5**	**September 9**
Study Session: • Non-motorized Project Prioritization Regular Meeting: •	Study Session: • Information on regulations for electric vehicles. • Receive request from VeoRide to amend contract for bike share to include e-scooters. Regular Meeting: • Recommend approval of Lawrence Bike Plan • Recommend approval of Non-motorized Project Prioritization	Study Session: • Transportation/Land-Use Relationship Regular Meeting: • East 23rd Street Planning Study • K-10 & 27th/Wakarusa Study (KDOT Presentation) • Non-motorized Project Prioritization
October 7	**November 4**	**December 2**
Study Session: • Update on sidewalk maintenance program • E-scooter update Regular Meeting: • E. 19th Street – Haskell to O'Connell design options	Study Session: • TBD Regular Meeting: • 2020-2024 Bike/Ped Funding Plan • Kasold – 22nd Street to Clinton Parkway	Study Session: • TBD Regular Meeting:

Future Study Session Topics:

- Downtown Master Plan parking/multi-modal transportation components
- Lawrence Loop – 8th Street to 11th Street and 29th Street Project
- STAR transition to LEED (Sustainability Coordinator)
- Distracted Driving
- Grant Opportunities
- ADA Transition Plan update

Future Regular Meeting Items:

- Crossing - 11th St & New Hampshire

Revised: 9/30/2019