



LEE'S SUMMIT MISSOURI

DEVELOPMENT REVIEW FORM TRANSPORTATION IMPACT

DATE:	May 14, 2019	CONDUCTED BY:	Michael K Park, PE, PTOE
SUBMITTAL DATE:	May 7, 2019	PHONE:	816.969.1800
APPLICATION #:	PL2019075	EMAIL:	Michael.Park@cityofls.net
PROJECT NAME:	ARIA/SUMMIT VILLAGE NORTH	PROJECT TYPE:	Rezoning

SURROUNDING ENVIRONMENT (*Streets, Developments*)

The proposed rezoning with preliminary development plan and conceptual development plan is located at the northwest corner of Douglas Street/Lee's Summit Road and Colbern Road. The surrounding area is generally undeveloped. The Lee's Summit Airport is located east of Douglas Street/Lee's Summit Road in the immediate vicinity of the project. The preliminary development plan is more specifically located near the intersection of Lee's Summit Road and Douglas Road/Douglas Street. The conceptual development plan is located between the preliminary development plan and Colbern Road along the west side of Lee's Summit Road/Douglas Street.

ALLOWABLE ACCESS

The proposed development will be accessed from Lee's Summit Road/Douglas Street (hereafter referred to as Lee's Summit Road where located north of Colbern Road). Portions of the conceptual development will also access Colbern Road. All access along Lee's Summit Road and Colbern Road and the travel ways within the development will be private streets or private driveways. All intersections proposed along Lee's Summit Road and Colbern Road are full access with exception of a driveway limited to right-in/right-out movements along Colbern Road in closest proximity to Douglas Street to comply with the Access Management Code.

EXISTING STREET CHARACTERISTICS (*Lanes, Speed limits, Sight Distance, Medians*)

Colbern Road is a 45 mph two-lane undivided major arterial currently constructed to interim/unimproved road (e.g. rural) standard between Blue Parkway and Douglas Street. East of Douglas Street and West of Blue Parkway, Colbern Road is has an urban design with four or more lanes including medians along some divided roadway sections. The City of Lee's Summit has a planned, and funded, capital improvement project for the interim/unimproved section of Colbern Road between 350 Highway and Douglas Street. Those capital improvements, funded in part by federal aid, will widen Colbern Road to at least 4 lanes, replace the bridge over the UPRR, add curb, street lights, sidewalk, shared-use path, medians, turn lanes, etc. Those capital improvements are currently under design and scheduled for construction in 2021/22. Colbern Road extends east-west across Lee's Summit with a roundabout intersection at Blue Parkway (major arterial) and signal controlled intersections at several other thoroughfares and highway interchanges (e.g. Douglas Street, Todd George Parkway, Blackwell Parkway, Independence Ave., M-291 Highway, 350 Highway, etc.) along the corridor. Lee's Summit Road/Douglas Street (referred to as Douglas Street south of Colbern Road and Lee's Summit Road north of Colbern Road) is a 45 mph major arterial with signal control at the intersection of Colbern Road. Douglas Street south of Colbern Road is an urban multi-lane facility having curbs, lighting, medians, turn lanes, and sidewalk with an interchange at I-470 adjacent to Colbern Road. Lee's Summit Road north of Colbern Road is a three-lane, 45 mph, roadway built to interim road standards (i.e. paved shoulders), but also has lighting and shared-use path along the east side. Lee's Summit Road

includes curbing and the shoulders transition to bike lanes at Kansas City's municipal boundary (about halfway between Strother Road and Douglas Road). Blue Parkway is a four-lane median divided major arterial between I-470 and Colbern Road with a multi-lane roundabout at the intersection of Colbern Road.

Sight distances at the proposed intersections with Lee's Summit Road, especially where located along the curve in Lee's Summit Road near Douglas Road, should be verified to have adequate conditions during the engineering review. Intersections proposed along Colbern Road should be coordinated during the design of Colbern Road by the City of Lee's Summit to ensure adequate spacing and sight distance.

UNIMPROVED ROAD POLICY (*Resolution 16-22*)

CONFORMANT

EXCEPTIONS

Lee's Summit Road and Colbern Road are defined according to the City Council adopted Unimproved Road Policy as built to interim road and unimproved road standards, respectively. Based on the Unimproved Road Policy, development including the land uses proposed on the preliminary development plan and conceptual development plan, are not permitted on interim roads or unimproved roads. Improvement of Lee's Summit Road and Colbern Road to meet the policy defined urban standard (e.g. curbs, sidewalks, typical lane widths, etc.) are required for any non-residential (i.e. single family exclusive) development regardless of traffic volume or impact. The conceptual development will be phased to occur after the completion of City planned improvements to Colbern Road. Thus, the conceptual development, if phased after the Colbern Road improvements, will conform to the policy. The preliminary development plan does not directly access Colbern Road. However, the preliminary development plan does access Lee's Summit Road and does not propose any urban roadway improvement.

The applicant is requesting an exception to this policy be granted by City Council so as to leave Lee's Summit Road in the current interim road condition. The policy would otherwise require the construction of curb along Lee's Summit Road from the City Limit (where Lee's Summit Road is currently improved to urban standards) to Colbern Road if conformance with the policy is desired (the sidewalk and lighting roadway elements already exist). Staff recommends conformance with the adopted policy, but would support a partial improvement approach or phased implementation discussed with the applicant along the corridor in consideration of the conceptual development plan opportunity to complete the road improvements at a future date. A partial or phased approach would include urban road improvements from the south property line of the preliminary development plan to the north City Limit along Lee's Summit Road, both sides; leaving the remainder of improvement to Lee's Summit Road from the preliminary development plan to Colbern Road for future responsibility of adjacent development when the conceptual development plan proceeds.

ACCESS MANAGEMENT CODE

COMPLIANT

WAIVERS

The preliminary development plan and conceptual development plan includes all required turn lanes in compliance with the Access Management Code. The turn lanes would be constructed prior to each associated phase of development.

All driveways and intersections associated with these development plans are properly separated. The internal site circulation, driveway throat depths, sight distance, connectivity and queue storages required by the Access Management Code have also been satisfied.

Access management and required improvements along Douglas Street, Lee's Summit Road and Colbern Road in association with the impact of this development extend beyond the jurisdictional controls of Lee's Summit. Consequently, this proposed development has been coordinated between the developer, Kansas City, MoDOT and Lee's Summit. MoDOT and the City of Kansas City, Missouri have reviewed the traffic impact of this development and its recommendations, roadway improvements, etc. Both agencies have accepted the traffic study, its recommendations and support the related transportation improvements as written in the staff conditions of approval to meet their respective requirements.

TRIP GENERATION

Time Period	Total	In	Out
Weekday	2,616	1,308	1,308
A.M. Peak Hour	160	42	118
P.M. Peak Hour	200	122	78

The trip generation shown above represents the Preliminary Development Plan for the Weekday A.M. and P.M. Peak Hours. Trip generation shown in the subsequent table represents the total traffic anticipated during the Weekday A.M. and P.M. Peak Hours for the Preliminary Development Plan and Conceptual Development Plan combined.

Time Period	Total	In	Out
Weekday	15,422	7,711	7,711
A.M. Peak Hour	1,242	630	614
P.M. Peak Hour	1,258	676	582

TRANSPORTATION IMPACT ANALYSIS

STUDY REQUIRED

STUDY NOT REQUIRED

The proposed preliminary development plan will likely generate more than 100 vehicle trips to the surrounding street system during any given peak hour. The proposed conceptual development plan will generate significant amounts of traffic in addition to the preliminary development plan.

A traffic impact study for the proposed development was completed by Olsson, dated April 24, 2019. The traffic study characterized the preliminary development plan as Phase 1 and conceptual development plan as Phase 2. The various traffic study scenarios included existing conditions, existing plus Phase 1 conditions, and existing plus Full Build (Phase 1 and Phase 2 combined) conditions during the A.M. and P.M. Peak Hours. The study included analysis of existing and proposed intersections along Lee's Summit Road/Douglas Street from Gregory Boulevard/Little Blue Road through the I-470 interchange, including Strother Road and St. Michaels High School/85th Street intersections. The study also included analysis of existing and proposed intersections along Colbern Road from Blue Parkway to Douglas Street.

The study analysis and recommendations for mitigation of the development impact to achieve adequate operations at each of the study intersections for each scenario and peak hour were based on level of service (vehicle delay) and vehicle queuing. Level of service is characterized according to a performance rating from A to F, similar to a school grade card with A representing free flow conditions and F highly congested gridlock or failed operation. It is a standardized measure of acceptable traffic operations. The City Council has adopted a level of service goal C,

but level of service D and below may be acceptable for some stop controlled movements. MoDOT (LOS E) and Kansas City (LOS D) may have different standards of acceptance for level of service than Lee's Summit.

The study results for existing conditions and existing plus Phase 1 (the preliminary development plan) show adequate traffic operations and managed queues for all intersections during both peak hours with exception of the Colbern Road and Douglas Street traffic signal during the P.M. Peak Hour and a few stop controlled movements along Lee's Summit Road . The stop controlled movements that exhibit a level of service (LOS) D or E during the peak hours have an associated vehicle queue less than 50 feet and cannot be mitigated by turn lane improvements (and traffic signals are not warranted for these stop controlled conditions). The intersection of Colbern Road and Douglas Street has an existing LOS D during the P.M. Peak Hour and continues to have a projected LOS D upon impact of Phase 1 during the same time period. Vehicle queues may extend beyond the adjacent interchange ramp intersection, but MoDOT concurs with the study recommendations as existing conditions that do not significantly change as a result of the preliminary development plan. Staff also concurs with the study analysis, reported performance results and improvement recommendations.

The study results for Full Build conditions that include trip generation from the conceptual development plan area exhibit various required left-turn and right-turn lanes at proposed driveways/intersections along Lee's Summit Road and Colbern Road, as well as mitigations at the intersection of Colbern Road and Douglas Street for adequate level of service. The study assumed Colbern Road would be improved as planned by the City between Blue Parkway and Douglas Street prior to Full Build. Those improvements were assumed to include a raised median along Colbern Road to restrict access at Drive 7 to right-in/right-out only. In consideration of these improvements and other mitigations recommended in the traffic study, the intersection level of service at Douglas Street and Colbern Road would meet the City's minimum desired goal (LOS C) for both peak hours.

As previously mentioned, trips generated by the proposed development will directly impact Kansas City and MoDOT roadways and highways. As such, the traffic study was submitted to Kansas City and MoDOT for review. Kansas City and MoDOT have accepted the traffic study, its conclusions and recommendations. There are no additional improvements recommended by Kansas City or MoDOT conveyed to the City for inclusion as conditions of approval consideration.

LIVABLE STREETS (*Resolution 10-17*)

CONFORMANT

EXCEPTIONS

The proposed preliminary development plan and conceptual development plan includes all Livable Streets elements identified in the City's adopted Comprehensive Plan, associated Greenway Master Plan and Bicycle Transportation Plan attachments, and elements otherwise required by ordinances and standards, including but not limited to sidewalk, trails and accessibility. No exceptions to the Livable Streets Policy adopted by Resolution 10-17 have been proposed.

RECOMMENDATION: **APPROVAL**

DENIAL

STIPULATIONS/CONDITIONS

Recommendations for Approval herein refer only to the transportation impact and do not constitute an endorsement of the development from City Staff.

Staff recommends approval of the proposed rezoning and preliminary development plan subject to the following conditions:

1. Re-stripe the existing two-way left-turn lane along Lee's Summit Road for a dedicated northbound left-turn lane with at least 200 feet of storage at the intersection of Drive 1.
2. Re-stripe the existing two-way left-turn lane along Lee's Summit Road for a dedicated northbound left-turn lane with at least 200 feet of storage at the intersection of Drive 2.
3. Construct curb and gutter along Lee's Summit Road from Colbern Road to the north city limits, both sides, in conformance with the Unimproved Road Policy.

With regards to the Conceptual Development Plan, the Traffic Impact Study shall be updated (or replaced), as necessary, at such time the Conceptual Development Plan is submitted for Preliminary Development Plan consideration. The recommendations in the traffic impact study related to the Conceptual Development Plan (a.k.a. Phase 2/Full Build), including the Colbern Road Improvements planned by the City prior to development of the Conceptual Development Plan area and various turn lanes and warranted traffic controls required by code or to provide adequate traffic operations and safety, will be reviewed at that time and similarly conditioned, as appropriate, upon any related Preliminary Development Plan application approved.