



# LEE'S SUMMIT MISSOURI

## DEVELOPMENT REVIEW FORM TRANSPORTATION IMPACT

**DATE:** September 16, 2020      **CONDUCTED BY:** Michael K Park, PE, PTOE  
**SUBMITTAL DATE:** August 24, 2020      **PHONE:** 816.969.1800  
**APPLICATION #:** PL2020210      **EMAIL:** Michael.Park@cityofls.net  
**PROJECT NAME:** STAG'S FIELD      **PROJECT TYPE:** Prel Dev Plan (PDP)

### **SURROUNDING ENVIRONMENT** (*Streets, Developments*)

The proposed development is located along the south side of Bowlin Road, east of Lakewood Way. The surrounding area consists of single family residential subdivision to the south, park grounds to the east and north, and mixed-use commercial property to the west.

### **ALLOWABLE ACCESS**

The proposed development will be phased such that access to the multi-family residential is from Bowlin Road and single family residential is from Jamestown Drive, which intersects Bowlin Road east of Lakewood Way. Neither phase of the development will be accessed from the other. Bowlin Road has a nearby interchange at Interstate 470. The intersections proposed along Bowlin Road and Jamestown Drive will have more than adequate sight distance.

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

Bowlin Road is a two-lane commercial collector east of Lakewood Way built to interim standards without paved shoulders and functionally classified as a minor arterial west of Lakewood Way built to urban standards. Bowlin Road changes name to Lakewood Blvd. west of the interchange at Interstate 470. Bowlin Road/Lakewood Blvd has a 35 mph speed limit. Jamestown Drive, which extends south of Bowlin Road is built to an interim standard with paved shoulders until entering the residential subdivisions where it is improved to an urban standard with curbs, sidewalks, etc. The intersection of Jamestown Drive and Bowlin Road will remain stop controlled on Jamestown Drive. Bowlin Road east of Jamestown Drive is County and provides lake access. Lakewood Way is a two-lane undivided commercial collector with a 45 mph speed limit near Bowlin Road. The intersection of Lakewood Way and Bowlin Road is traffic signal controlled with various turn lanes. The northbound ramp to/from I-470 at Bowlin Road is traffic signal controlled, but the southbound ramp to/from I-470 at Lakewood Blvd (Bowlin Road) is stop controlled. The interchange and interchange intersections along Bowlin Road/Lakewood Blvd. at Interstate 470 are owned and maintained by MoDOT. There are no existing areas of substandard sight distance among the aforementioned intersections. However, regular verge control (mowing, weeding and trimming) by the County has been needed to maintain adequate sight distance at the intersection of Bowlin Road and Jamestown Drive.

### **ACCESS MANAGEMENT CODE COMPLIANCE?**

YES

NO

All conditions of the Access Management Code have been met or will be met with recommended improvements to Bowlin Road and Jamestown Drive.

Access spacing proposed along Bowlin Road, a commercial collector, should be at least 300 feet. The Access Management Code allows for administrative modifications of no more than 10 percent

in the spacing criteria. Proposed driveway spacing is within 10 percent of code criteria and the marginal deviation to standard is only in proximity to Campground Road. The other intersections have ample separation.

The Access Management Code requires left-turn lanes on collectors serving non-residential development when the left turn volume is projected to exceed 30 vehicles in an hour. None of the proposed intersections will likely exhibit more than 30 left-turn movements in an hour. The Access Management Code requires right-turn lanes on collectors serving non-residential development when the right-turn volume is projected to exceed 100 vehicles in an hour. None of the proposed intersections will likely exhibit more than 100 right-turn movements in an hour.

The driveway throat depth(s), sight distances, intersection functional areas, and other applicable conditions required by the Access Management Code have been substantially satisfied or will be met as conditions of recommendation are constructed.

#### TRIP GENERATION

Time Period	Total	In	Out
Weekday	3,020	1,510	1,510
A.M. Peak Hour	187	43	144
P.M. Peak Hour	214	135	79

TRANSPORTATION IMPACT STUDY REQUIRED?

Yes

No

The proposed development will likely generate more than 100 vehicle trips during a weekday peak hour; the minimum condition for traffic impact study. A traffic impact study was completed by Transystems Corp., dated August 21, 2020. Since a portion of the study area and traffic impact from proposed development includes the Bowlin Road/Lakewood Boulevard interchange at I-470, locations within MoDOT jurisdiction, the study has also been submitted to MoDOT. MoDOT has completed its review of the traffic study and MoDOT's recommendations for approval are restated among the staff recommendations. MoDOT reserves all authority to revise its recommendations and requirements, whether to amend, change scope, add or waive improvements as part of its permitting process and such modification or waiver to any condition listed herein upon State right-of-way shall also be modified or waived as directed by MoDOT.

The traffic study considered the AM and PM weekday peak hour traffic operations at the intersections along Bowlin Road from Jamestown Drive to the southbound ramp at I-470. The scenarios studied included existing conditions, existing plus approved but unbuilt development potentially impacting the area (i.e. Monticello), and existing plus approved plus proposed development.

In summary, none of the studied scenarios require transportation improvements beyond those improvements to Bowlin Road and Jamestown Drive from interim standard to urban standard as proposed in the traffic study and staff recommendations to comply with the City's Unimproved Road Policy. MoDOT has recommended a dedicated southbound right-turn lane along the ramp at Lakewood Boulevard to mitigate additional delay caused by generated trips from the development. No other turn lanes, traffic signals or all-way stop conditions are warranted. There are no other level of service mitigations necessary for adequate transportation infrastructure.

Level of service (LOS) for vehicular travel is a standardized measure of acceptable delay that ranges in representation from A to F, similar to a grade card with A the best and F the worst. The southbound left-turn movement at the southbound off ramp from I-470 at Lakewood Blvd. /Bowlin Road has modeled a LOS F during existing conditions. The field measured LOS for this movement is more consistent with LOS D that worsens to LOS F in consideration of proposed development. The City's adopted level of service policy acknowledges a LOS D, E or F may be acceptable for stop control situations. MoDOT generally has a lower acceptance of level of service than the City. The intersection does meet the peak hour traffic signal warrant for the scenario with proposed development. However, other warranting criteria are not likely met and a signal was not recommended in the traffic impact study. MoDOT concurs with the study and recommends a southbound right-turn lane along the I-470 southbound off ramp at Lakewood Boulevard to mitigate some of the poor operations during peak hours. The City does not exercise control of MoDOT infrastructure and rights-of-ways, but conveys MoDOT's review comments and recommended improvements as conditions of approval. All other intersections are shown to exhibit acceptable LOS in all studied scenarios.

The existing interim standard roads, e.g. rural roads without curb, sidewalk, etc., will be improved to urban standards in compliance with the City's Unimproved Road Policy. The aforementioned capacity analysis considers such roadway improvements completed.

**LIVABLE STREETS** (*Resolution 10-17*)

**COMPLIANT**

**EXCEPTIONS**

The proposed development 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, street connectivity and accessibility. Road improvements recommended to Bowlin Road and Jamestown Drive further enhance access and modal facilities. No exceptions to the Livable Streets Policy adopted by Resolution 10-17 have been proposed.

**RECOMMENDATION:**

**APPROVAL**

**DENIAL**

**N/A**

**STIPULATIONS**

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

Staff recommends approval of the proposed preliminary development plan subject to the following stipulation(s):

1. Bowlin Road shall be fully improved to urban standards that typically include curb, gutter, sidewalk, etc. from the intersection of Lakewood Way to the intersection of Jamestown Road. The westbound left turn lane along Bowlin Road at Lakewood Way shall be extended from 60' to the minimum standard, 150' (plus taper), as part of the road improvement. This improvement shall be substantially completed prior to the issuance of any occupancy permit within the multi-family development.
2. A southbound right-turn lane along I470 southbound off ramp at Lakewood Boulevard shall be constructed with at least 200 feet of storage plus taper. MoDOT may or may not amend this condition, require a longer or shorter storage length, or waive the condition. This improvement shall be substantially completed, unless evidence is submitted to City that MoDOT has amended or waived this improvement, prior to the issuance of any occupancy permit within the multi-family development.

3. Jamestown Drive shall be fully improved to urban standards that typically include curb, gutter, sidewalk, etc. from the intersection of Bowlin Road to the Monticello subdivision. This improvement shall be substantially completed prior to the issuance of any residential building permit within the single family development.