



LEE'S SUMMIT MISSOURI

DEVELOPMENT REVIEW FORM TRANSPORTATION IMPACT

DATE: June 6, 2018
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SUBMITTAL DATE: May 22, 2018
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PROJECT NAME: WOODSIDE RIDGE
PROJECT TYPE: Prel Dev Plan (PDP)

SURROUNDING ENVIRONMENT (*Streets, Developments*)

The proposed single family residential development is located along the west side Pryor Road, north and south of O'Brien Road. The surrounding property is residential.

ALLOWABLE ACCESS

Access to the site is proposed from a network of proposed public streets accessing Pryor Road at the existing intersections of O'Brien Road, Shamrock Avenue, and Ashurst Drive. Existing residential subdivision streets abutting the site (dead end streets planned for future connection) will be extended into the proposed subdivision (i.e. Killarney Ln., Joshua Dr., Ambersham Dr., and Ashurst Dr.)

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

Pryor Road is a four-lane, median divided, suburban major arterial with a 35 mph speed limit in the vicinity of the proposed development. Pryor Road extends north-south across the City with major junctions at Interstate 470 and M-150 Highway. It also intersects nearby east-west major arterials, 3rd Street and Chipman Road. O'Brien Road is a wide two-lane, undivided collector with a 25 mph speed limit extending east of Pryor Road towards downtown Lee's Summit with a grade separated crossing of US 50 Highway. The intersection of Pryor Road and O'Brien Road is traffic signal controlled with various turn lanes. The nearest major intersections along Pryor Road at Chipman Road and 3rd Street are also traffic signal controlled. Other existing streets referenced are on the development plan are typical two-lane, 25 mph, residential local roadways. The intersection of Ashurst Dr. at Pryor Road is limited to right-in/right-out traffic by an existing raised median along Pryor Road. The intersection of Shamrock Avenue is full access and stop controlled at Pryor Road. There is adequate sight distance at the existing intersections.

ACCESS MANAGEMENT CODE COMPLIANCE?

Yes

No

All but a couple provisions of the Access Management Code (AMC) are fully satisfied. Those two conditions are discussed below:

Although all proposed streets along the west side of Pryor Road align with existing intersections on Pryor Road and no access changes are proposed to the existing median along Pryor Road, the existing/proposed street spacing providing access to the proposed development does not comply with the minimum requirements for separation described in the AMC at Shamrock Avenue. The

existing full access intersection of Shamrock Avenue at Pryor Road is approximately 600 feet north of the existing full access intersection of Sterling Dr./1st Street at Pryor Road. The code requires a minimum separation of 660 feet between full access intersections along major arterials. The code also permits a 10% administrative deviation from standard. Since the location is marginally non-compliant and matches existing conditions, staff supports the proposed plan and any necessary code waiver.

The proposed development requires a southbound right-turn lane along Pryor Road at Ashurst Drive that is not shown on the development plan or recommended in the traffic study. Though the intersection is limited to right-in/right-out traffic and provides local access to few residences, its spacing is too close to adjacent intersections to comply with turn lane provisions of the AMC. The short 175-foot distance from Ashurst Drive (an existing intersection along Pryor Road) to the existing pedestrian crossing north of Ashurst Drive (a signal controlled crosswalk and adjacent non-residential driveway) precludes the physical space to provide an effective turn lane with minimum capacity and taper standardized in the AMC. A typical turn lane may have less capacity than the minimum; so too may the taper be reduced within reason. However, any modification to reduce the capacity and/or taper would likely render the safety and operational benefits of such turn lane ineffective. The warranting volume for required right-turn lane at this location is 30 vehicles in a peak hour and the study projects 36 vehicles in the PM Peak Hour (fewer than 30 in the AM Peak Hour). Ashurst Drive would not provide access to additional future development. Staff is in support of a request to waive the southbound right-turn lane at Ashurst Drive in consideration of these constraints, impact, and influence.

While not a requirement of the Access Management Code for the volume of southbound right-turn traffic projected at the intersection of Shamrock Avenue during a peak hour, a southbound right-turn lane should be provided along major arterials to improve safety and operation. Staff supports a request to defer the southbound right-turn lane at this location until the property immediately adjacent to Pryor Road develops; which will utilize Shamrock Ave. for access and cause the minimum volume warrant to be met.

TRIP GENERATION

Time Period	Total	In	Out
Weekday	2,022	1,011	1,011
A.M. Peak Hour	152	38	114
P.M. Peak Hour	204	129	75

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 requirements. A traffic impact study was submitted by Olsson Associates, dated July 25, 2018. This study considered AM and PM Peak Hour traffic operations along Pryor Road at the intersections of Chipman Road, Ashurst Drive, O'Brien Road, Shamrock Avenue, and 3rd Street. Analysis scenarios were completed for existing conditions and proposed development conditions.

Level of service (LOS) is an industry accepted standard measure of performance (e.g. delay) for traffic operations rated A-F, similar to a grade card with A the best and F the worst condition. The City Council has adopted a LOS policy in which the acceptable condition is LOS C or better for traffic signal controlled intersections and where LOS D (or worse) may be acceptable for stop controlled minor street approaches at major intersections. All studied intersections in all scenarios had adequate level of service reported with exception of the eastbound left-turn movement from Shamrock Ave. to Pryor Road. This left-turn movement had a LOS F reported during the PM Peak Hour as a result of the proposed development. This traffic movement is stop controlled at Pryor Road and the volume of traffic on Pryor Road may cause significant delay during the evening peak period reflective of the poor level of service. The volume of traffic affected on Shamrock Ave. is minimal and vehicle queues are generally shown to be less than two vehicles at any time. An eastbound left-turn lane will be provided separate from through and right-turn traffic. There are no practical improvements at this location in consideration of the traffic volumes to mitigate this level of service. The aforementioned analysis was completed for proposed development assuming the following recommended improvements in association with capacity needs and/or Access Management Code requirements:

1. Construct a southbound right-turn lane with 200 feet of storage plus taper at the intersection of Pryor Road and O'Brien Road.
2. Construct an eastbound left-turn lane with 150 feet of storage plus taper at the intersection of Pryor Road and O'Brien Road.
3. Construct a northbound left-turn lane with 200 feet of storage plus taper at the intersection of Pryor Road and Shamrock Ave.
4. Construct an eastbound left-turn lane with 150 feet of storage plus taper at the intersection of Pryor Road and Shamrock Ave.

Improvements at Pryor Road and Shamrock Ave. (#3 and #4) are planned/funded and approved by the City with the Shamrock Ave. construction project west of Pryor Road in support of the Fire Station #3 Replacement Capital Project.

The turn lanes recommended at the intersection of Pryor Road and O'Brien Road may have more storage than stipulated to better facilitate future development along the west side of Pryor Road utilizing the same roadways/intersections. Likewise, the (re)construction of O'Brien Road west of Pryor Road should consider lanes, width, access management, etc. that may be necessary in support of land development on the undeveloped property between Pryor Road and the proposed development to avoid negative reconstruction impacts.

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 in full compliance with the Livable Streets Policy adopted by Resolution 10-17. The project includes a trails/shared use paths, subdivision connectivity, and promotes a potential spur between the regional Rock Island Trail and O'Brien Road (a preferable route towards downtown Lee's Summit).

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 off-site transportation improvement conditions:

1. Construct a southbound right-turn lane with 200 feet of storage plus taper at the intersection of Pryor Road and O'Brien Road.
2. Construct an eastbound left-turn lane with 150 feet of storage plus taper at the intersection of Pryor Road and O'Brien Road.
3. Construct a northbound left-turn lane with 200 feet of storage plus taper at the intersection of Pryor Road and Shamrock Ave.
4. Construct an eastbound left-turn lane with 150 feet of storage plus taper at the intersection of Pryor Road and Shamrock Ave.

Notes: Conditions #3 and #4 are included in the City's Fire Station #3 Replacement Capital Improvement Project. Conditions #1 and #2 may be coordinated with adjacent development and have storage exceeding the minimum distances described as may be required to accommodate future demand.