



LEE'S SUMMIT

MISSOURI

DEVELOPMENT REVIEW FORM

TRANSPORTATION IMPACT

DATE: May 10, 2019
SUBMITTAL DATE: June 3, 2019
APPLICATION #: PL2018202
PROJECT NAME: HOOK FARMS

CONDUCTED BY: Michael K Park, PE, PTOE
PHONE: 816.969.1800
EMAIL: Michael.Park@cityofls.net
PROJECT TYPE: Prel Plat

SURROUNDING ENVIRONMENT (*Streets, Developments*)

The proposed residential subdivision is located at the northwest corner of SW Pryor Road and SW Hook Road. The surrounding area consists of single family subdivision property to the north and west, an elementary school and planned residential subdivision to the east and undeveloped agricultural property to the south.

ALLOWABLE ACCESS

The proposed residential subdivision will be accessed via SW Pryor Road and SW Hook Road. Individual lots will be accessed from several proposed residential streets within the subdivision. Proposed residential streets within the subdivision will also connect to existing residential streets of adjacent subdivisions to the north and west as planned. There will be no individual lot access to SW Pryor Road or SW Hook Road. The proposed residential streets will have two lanes and a 25 mph speed limit. The proposed intersections will have adequate sight distance.

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

SW Pryor Road is a two lane undivided major arterial with a 45 mph speed limit currently constructed to an interim standard with paved shoulders. Improvements to SW Pryor Road from SW Longview Road to M-150 Highway are funded and planned within the next 10 years that would provide a five-lane divided urban road section to accommodate continued community growth based on the adopted Thoroughfare Master Plan. The section of SW Pryor Road from SW Hook Road to SW Longview Road (Phase 1) should begin design within the next 12 months and construction within the next 5 years as described in the CIP. SW Hook Road is a two lane undivided arterial with a 35 mph speed limit currently constructed to an interim standard with turf shoulders. A City initiated capital project has been design and construction scheduled to complete by the end of 2019 that provides paved shoulders along Hook Road meeting the current interim road standard. The interim standard of SW Pryor Road and SW Hook Road can support the proposed residential development according to the Unimproved Road Policy. SW Scherer Road is a two lane unimproved undivided major arterial with a 35 mph speed limit. The intersections of Pryor Road at Scherer Road and Pryor Road at Hook Road are controlled by all-way stop conditions, but span wire (e.g. temporary) traffic signals are included in the Capital Improvement Plan for construction within the next year. Temporary traffic signals will be replaced with permanent traffic signals in association with the planned Pryor Road capital improvement project. Multiple turn lanes already exist at these two intersections. There shall be no unmitigated sight distance issues related to proposed intersections along SW Pryor Road or SW Hook Road.

ACCESS MANAGEMENT CODE COMPLIANCE?YES No

The proposed development will incorporate all required left-turn and right-turn lanes along Pryor Road as listed in the conditions of recommendation for approval. There are no required turn lanes along Hook Road based on projected trip generation for each proposed intersection along Hook Road and Access Management Code minimum criteria. The proposed intersection spacing along Pryor Road and Hook Road also meets the minimum criteria in the Access Management Code.

All conditions required by the Access Management Code have been satisfied.

TRIP GENERATION

Time Period	Total	In	Out
Weekday	2512	1256	1256
A.M. Peak Hour	190	48	142
P.M. Peak Hour	247	156	91

TRANSPORTATION IMPACT STUDY REQUIRED?YES No

The proposed development will likely generate more than 100 vehicle trips to the surrounding street system during any given peak hour; a typical condition that requires a traffic impact study. A traffic impact study was completed by Priority Engineers, Inc. dated November 20, 2018, and supplemental traffic analysis in consideration of phased development with a focus on traffic signal warrant conditions at the intersection of Hook Road and Pryor Road was completed by Priority Engineers, Inc. dated March 22, 2019.

The traffic study provided an evaluation for the impact of proposed development generated trips on the surrounding streets for the AM Peak Hour and PM Peak Hour. Analysis scenarios included existing conditions, existing plus approved development conditions (for nearby development that is approved and/or under construction but not built), and existing plus approved plus proposed development conditions. Intersections reviewed included Pryor Road at Hook Road and the proposed intersections along Pryor Road and along Hook Road. Since the intersection of Pryor Road and Scherer Road had recently been studied in association with adjacent approved development, which also supports and is conditioned upon traffic signal construction at that location; no additional study was necessary to assess adequate operations. The planned traffic signal at Pryor and Scherer, which will be in place prior to development, will accommodate the projected trips from this development.

Traffic operations are reported using an industry accepted standard level of service measure of delay represented similar to a school grade card from A to F, with A the best and F the worst. The City of Lee's Summit has adopted an intersection level of service goal C (except that LOS D or E may be acceptable for individual movements and stop controlled approaches).

Reported traffic operations at all studied intersections for all scenarios are adequate assuming traffic signal control at the intersection of Pryor and Hook. The intersection of Pryor and Hook meets at least one traffic signal warrant for existing conditions. Additional warrants are met in consideration of approved development and proposed development. As additional warrants are met, the need for traffic signal control and delay mitigation for adequate LOS increases. A traffic signal at Hook and Pryor has been included in the City Capital Improvement Plan for construction

in FY2020 based on existing warrants and approved development. A supplemental traffic analysis was completed to assess traffic operations at this intersection considering partial (or phased) development under existing all-way stop control. This analysis incrementally ascertains the warranting condition and need so as to ensure adequate infrastructure in support of the development is available. As determined in the supplemental traffic analysis, the intersection should accommodate approximately 75 lots of the proposed development until a traffic signal is recommended/necessary. This portion of development is shown as Phase 1 on the preliminary plat. Staff supports the recommendation for traffic signal control and allowed development activity up to 75 lots in its interim all-way stop condition.

A left-turn lane and right-turn lane is recommended in the traffic impact study along Pryor Road at the proposed intersection in support of the development and compliance with the Access Management Code. Staff concurs with the turn lane recommendations. The turn lanes and aforementioned traffic signal recommendation are listed as stipulations for approval.

The development will not inhibit plans for future widening of Pryor Road and any required right-of-way for the widening of Pryor Road, including left-turn and right-turn lanes in consideration of the future 5-lane section for Pryor Road adjacent to the development would be provided through the platting process.

LIVABLE STREETS (Resolution 10-17)

COMPLIANT

EXCEPTIONS

The proposed 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, Greenway paths, street connectivity and accessibility. The development will enhance access to surrounding neighborhoods, parks and trails. The development will extend identified trail corridors in the Greenway Master Plan. The plan 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 plat subject to the following conditions:

1. Construct a southbound right-turn lane along SW Pryor Road at the proposed intersection of SW 26th Terrace prior to the issuance of building permits for any lot within the development accessed by SW 26th Terrace. The right-turn lane shall be at least 150 feet in length plus taper.
2. Construct a northbound left-turn lane along SW Pryor Road at the proposed intersection of SW 26th Terrace prior to the issuance of building permits for any lot within the development accessed by SW 26th Terrace. The left-turn lane shall be at least 200 feet in length plus taper.
3. A temporary (span wire) traffic signal at the intersection of SW Pryor Road and SW Hook Road shall be substantially completed prior to the issuance of building permits for any lot after the issuance of 75 building permits (e.g. Phase 1).
4. Necessary right-of-ways, if any, by the City for planned improvements to and along Hook Road and Pryor Road as generally described in the Thoroughfare Master Plan and/or Capital

Improvement Plan shall be dedicated to the City at the time of platting the adjacent property to the subject roadway.

Conditions #1 and #2 may be coordinated with City capital improvements to Pryor Road adjacent to the development in lieu of substantial completion only if an escrow is provided to the City in an amount equivalent to the improvement costs associated with each condition and the roadway associated with the condition is not yet open for public use and construction of the City project adjacent to the development is either underway or within 12 months of letting.