



DEVELOPMENT REVIEW FORM
TRANSPORTATION IMPACT

DATE:	February 14, 2023	CONDUCTED BY:	Brad Cooley, PE
SUBMITTAL DATE:	June 28, 2022	PHONE:	816.969.1800
APPLICATION #:	PL2022217	EMAIL:	Brad.Cooley@cityofls.net
PROJECT NAME:	COLTON'S CROSSING	PROJECT TYPE:	Prel Dev Plan (PDP)

SURROUNDING ENVIRONMENT (*Streets, Developments*)

The proposed development is located toward the southeast corner of the City along Hamblen Road, just north of Greenwood City Limits. The property is bordered by undeveloped land to the northwest, Hamblen Road to the east, some large lot residential further east of Hamblen, Shamrock Golf Course to the southwest, and Greenwood City Limits to the south.

All adjacent property is zoned Agriculture (AG).

ALLOWABLE ACCESS

Access to the site is planned solely by Hamblen Road, as Hamblen Rd. is the only thoroughfare that currently passes through to the site. There is a portion of Hamblen that runs east-west through the site which will be converted to Hook Rd. with this development and extend through the center of the project. This will be further discussed in the Access Management Code/TFMP section of this report. The proposed development will construct 135 single-family homes with 60 duplexes, all to the west of existing Hamblen Road.

The development will be accessed through three proposed connections; one connecting to SE Hamblen (north of the proposed Hook Road extension), one connecting to Hook Rd. on the west side of the development, and one connecting to Hook Rd. on the east. The northmost connection on Hamblen Road is approximately 525' north of proposed Hook and is planned as a T intersection. The west access point is approximately 810' west of Hamblen and will be full access. The east access point is approximately 920' east of Hamblen (north) and 920' west of Hamblen (south) and also planned as full access.

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

Hamblen Road is a north-south, undivided, two-lane minor arterial that extends from US-50 Highway to Bailey Road. Hamblen Road to the north of Bailey Road becomes M-291 Highway, a MoDOT facility, at the grade separated, traffic signal controlled, diamond interchange with US-50 Highway. Hamblen Road is then offset to the east at Bailey Road where it aligns with Century Drive and continues south into Greenwood, MO. The speed limit on Hamblen Road varies from 35 mph to 40 mph. Turn lanes exist at several intersections. The eastern intersection of Hamblen Road/Century Drive and Bailey Road is traffic signal controlled. The southern portion(s) of Hamblen Road and adjacent to the subject development is built to an unimproved road standard, as defined by the City's Unimproved Road Policy (URP).

Sight distance is adequate all the aforementioned street intersections.

ACCESS MANAGEMENT CODE AND TFMP COMPLIANCE?Yes ☒No ☐

Per the Access Management Code (AMC), left-turn lanes shall be provided on all arterial streets at the intersection with other arterial and collector streets. Further, left-turn lanes shall be provided on minor arterial streets at the intersection with any local street or driveway where the left-turn volume is at least 20 vehicles in any hour. Right-turn lanes are required on arterial streets at each intersecting street or driveway where the right-turn volume on the major arterial street is projected to be at least 30 vehicles in any hour, or the right-turn volume on the minor arterial street is projected to be at least 60 vehicles in any hour. Multiple turn lanes are required per the City's AMC and are identified in the

The City's Thoroughfare Master Plan (TFMP) shows an extension of Hook Road from Ranson Rd to a planned interchange at M-291 South. The subject development will be responsible for the portion of Hook Rd. through the site which will dead-end at the west property line. The PDP, as shown, meets the intent of the City's TFMP.

All other intersection spacing, turn lanes and other applicable criteria required by the Access Management Code have been satisfied as shown on the development plans.

TRIP GENERATION

Time Period	Total	In	Out
Weekday	1762	881	881
A.M. Peak Hour	127	34	93
P.M. Peak Hour	166	102	64

The trip generation information provided above was established by the ITE Trip Generation Manual, 11th Edition. The numbers are a sum of the following proposed uses; Single-Family Detached (ITE Code 210) and Single Family Attached (ITE Code 215).

UNIMPROVED ROAD POLICY (Resolution 16-22)CONFORMANT ☐EXCEPTIONS ☒

The Unimproved Road Policy (URP) is intended to provide direction for staff when considering proposed development with the intent to provide a safe travel way to and from development(s). The policy does allow for deviations

Per the URP, SE Hamblen Road is considered an unimproved road. The subject development shall improve Hamblen Road from proposed Hook Road, north to SE Thompson Dr. with a cross-section of two 12-foot lanes and six-foot wide paved shoulders.

TRANSPORTATION IMPACT STUDY REQUIRED?Yes ☒No ☐

The proposed development is projected to generate more than 100 peak hour trips along the adjacent street network during a weekday peak hour, meeting the minimum requirement for a traffic impact study in the Access Management Code.

A traffic impact study was completed for the preliminary development plan by HG Consult Inc, and submitted to the City on January 30th, 2023. The study considered the traffic impact of the proposed development, 135 single-family homes and 60 attached duplex units, during the A.M. and P.M. peak hours of adjacent street traffic. The traffic study evaluated two scenarios associated with the subject property; existing and existing plus proposed development conditions.

Intersection analysis compares proposed development conditions to existing conditions and all operations based on City established performance goals for measuring adequate infrastructure. The City has adopted a level of service (LOS) standard "C" for overall traffic signal operations; where individual traffic movements may be at LOS D or worse. Level of Service for stop controlled movements should be at least "D", but LOS E and LOS F may be acceptable. These performance goals, or minimum conditions of adequate infrastructure, help to identify public improvement needs associated with development for safer and efficient travel. Level of Service is an industry accepted standard measure of traffic performance based on experienced or calculated delay and driver/user comfort rated on a scale from A to F, where A represents the best and F the worst. Other improvement needs may be identified based on vehicle queuing and minimum code criteria, guidelines and standards that address transportation operations and safety (e.g. turn lanes, sight distance, intersection spacing, alignment, etc.).

An assessment of existing plus approved plus proposed development conditions indicate acceptable levels of service for all studied intersections.

Estimated trips generated by the proposed development were projected onto existing conditions and analyzed. For this scenario, no new traffic signals were recommended. However, various turn lanes are recommended in the traffic study. Those recommended turn lanes in support of the proposed development or turn lanes in support of the proposed development include:

- Southbound left-turn lane on Hamblen Road at Hook Road with a minimum storage length of 250 feet plus appropriate taper.
- Eastbound left-turn lane on Hook Road at Hamblen Road with a minimum storage length of 250 feet plus appropriate taper.
- Westbound right-turn lane on Hook Road at Hamblen Road with a minimum storage length of 250 feet plus appropriate taper.
- Eastbound left-turn lane on Hook at Hamblen Ct./Dustin Dr. with a minimum storage length of 250 feet plus appropriate taper.
- Westbound left-turn lane on Hook at Hamblen Ct./Dustin Dr. with a minimum storage length of 250 feet plus appropriate taper.

Hook and Coltons Drive; east- and westbound left-turn lanes are required but since Hook road will dead-end at the west property line, these turn lanes can be omitted with this project.

The TIS looked at Hamblen Road in comparison to the City's Unimproved Road Policy (URP) and has recommended that the pavement section be improved to 24-feet wide with 6-foot paved shoulders from Hook Road to Thompson Drive.

Proposed Hook Road, as shown on the PDP, was aligned in coordination with the City's Thoroughfare Master Plan (TFMP). The development has planned to construct Hook with a 1/2 roadway section for a typical arterial roadway as current demand does not require the full width. However, the development will provide sufficient right-of-way for future expansion of Hook Road.

Staff concurs with the study findings and recommendations. The transportation improvements recommended in the study are consistent with and included in the Staff recommended stipulations for approval listed at the end of this report.

The proposed preliminary 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, street connectivity and accessibility. 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 conditions noted below:

1. Improve Hamblen Road from the intersection of Hook Drive to the intersection of Thompson Drive (approximately 2,800 feet). The improvements shall include widening Hamblen Road to a 24-foot pavement section with 6-foot wide paved shoulders on both sides.
2. Construct Hook Road in accordance with the City's Thoroughfare Master Plan through the property boundaries with a 1/2-roadway section for a typical arterial roadway.
3. Construct a southbound left-turn lane on Hamblen Road at Hook Road with a minimum storage length of 250-feet plus appropriate taper.
4. Construct a westbound right-turn lane on Hook Road at Hamblen Road with a minimum storage length of 250-feet plus appropriate taper.
5. Construct an eastbound left-turn lane on Hook Road at Hamblen Road with a minimum storage length of 250-feet plus appropriate taper.
6. Construct an eastbound left-turn lane on Hook Road at Hamblen Court with a minimum storage length of 250-feet plus appropriate taper.
7. Construct a westbound left-turn lane on Hook Road at Dustin Drive with a minimum storage length of 250-feet plus appropriate taper.