



**DEVELOPMENT REVIEW FORM
TRANSPORTATION IMPACT**

DATE:	March 31, 2021	CONDUCTED BY:	Brad Cooley, PE
SUBMITTAL DATE:	April 2, 2021	PHONE:	816.969.1800
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PROJECT NAME:	CHASE BANK	PROJECT TYPE:	Prel Dev Plan (PDP)

SURROUNDING ENVIRONMENT *(Streets, Developments)*

The proposed commercial development is located at the NW corner of Missouri Highway 291 and NE Langsford Road. The lot is bordered by commercial property to the north and east (across M-291), high-density residential to the west, and a cemetery, south of Langsford.

ALLOWABLE ACCESS

The proposed commercial development will be accessed from an existing private drive with a right-in/right-out driveway along Langsford Road, west of M-291 approximately 200 feet. The proposed development will also maintain internal access from property to the north, Lee's Summit Retail Center. The Retail Center has existing right-in/right-out access along M-291, approximately 500 feet north of Langsford.

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

NE Langsford Road is a four-lane undivided major arterial street with a 35 mph speed limit east of M-291. NE Langsford Road/2nd Street is a four-lane undivided minor arterial street with a 35 mph speed limit west of M-291. M-291 Highway is a four-lane divided highway with a 45 mph speed limit, owned and maintained by MoDOT. The intersection of Langsford Road and M-291 is traffic signal controlled with limited left-turn lanes caused by frequent full access along the corridor. The intersection is MoDOT owned and operated. There is one right-turn lane for the north- and westbound traffic with two dedicated right-turn lanes for southbound traffic. West of M-291 is Independence Avenue, a two-lane minor arterial, and several private driveways between. The intersection of Langsford Road and Independence Avenue is also traffic signal controlled with left-turn lanes along Langsford. There are no sight distance concerns at the proposed driveway intersection, but vehicle queuing throughout the corridor results in higher risk traffic maneuvers with questionable sight distances for interior lanes along Langsford Road.

ACCESS MANAGEMENT CODE COMPLIANCE? YES NO

Existing access along Langsford Road, between M-291 Highway and Independence Avenue, does not comply with the Access Management Code. A variety of code provisions, conflicts, and compliance issues are described herein. Some of these existing nonconforming conditions cannot be locally mitigated due to more regional contributing circumstances, physical limitations, and overreaching impacts beyond the proposed development. This review will focus on the code provisions and areas specifically related to the proposed development and its existing access points (i.e. existing full access along Langsford Road proposed to be a right-in/right-out driveway). Poor access management along this corridor has contributed to experienced traffic congestion and numerous crashes, but as previously noted, driveways disassociated with access to the site were not reviewed for corrective mitigations as part of the proposed project and require a larger, more regionally significant perspective or adjacent redevelopment activity to act upon.

- Sections 11.1 and 11.2, The upstream and downstream intersection functional area have not been protected for the traffic signal controlled intersection of Langsford Road and M-291. The full access driveways immediately west of M-291 (including the proposed right-in/right-out bank access and existing Summit East Plaza Condominiums driveway west of the proposed bank entrance) encroaches the area necessary for safe driver reaction and acceleration. These adjacent driveway encroachments, as well as those on the east side of the intersection, also conflict with projected vehicle queues at the traffic signal. The minimum upstream separation between intersections should be 370 feet (plus vehicle queue) as a desirable condition and 270 feet (plus vehicle queue) as a limiting condition. The minimum safe downstream functional area that should be protected is 250 feet, equivalent to the safe stopping distance for a 35 mph road. The existing condominium full access driveway west of the existing bank's driveway is approximately 190 feet from the adjacent traffic signal controlled intersection, violating the limiting condition of upstream functional area and downstream functional area. The proposed change in full access to right-in/right-out at the bank driveway along Langsford Road would address (mitigate/improve) upstream functional area; being located approximately 150 feet from M-291 with no upstream left-turn or egress conflicts. This driveway is also further discussed in the referenced Section 15.1 below.

- Section 12.1, The code standard for medians has been proposed on the development plan along Langsford Road west of M-291. The proposed raised median along Langsford Road west of M-291 limits the existing driveway along Langsford Road to right-in/right-out traffic in accordance with code provisions. The median proposed by staff along Langsford Road west of M-291 is further discussed under the referenced Sections 16.1 and 16.2 below. The raised median would not extend further west along Langsford Road at this time; restricting access to the Summit East Plaza as discussed in the referenced Sections 16.1 and 16.2 below. Future median extensions to limit access at the existing condo driveway may occur in the future in association with capital improvements or redevelopment activity of the associated driveway.

- Section 15.1, The development plan has failed to meet the connection spacing provisions of the code. Full access spacing along Langsford Road west of M291 should be at least 440 feet. Access separation for right-in and right-out only restricted driveways is limited by the design of right-turn lanes for the subject access in relation to upstream intersections and for right-turn lanes at downstream intersections. Turn lane requirements are discussed in Sections 16.1 and 16.2 below. Access points introduce conflicts and friction into the traffic stream. These conflicts and the differential in speeds between through traffic and turning traffic significantly increase crash potential. The existing driveways cannot be combined at this time to improve driveway separation and access management due to separate, uncooperative, ownership and associated development application.

- Sections 16.1 and 16.2, The code requires left-turn and right-turn lanes along Langsford Road at each full access street/driveway (only right-turn lanes for driveways restricted to right-in and right-out traffic). The proposed right-in/right-out driveway along Langsford Road is too close to M-291 for an appropriate westbound right-turn lane. This proposed driveway is approximately 150 feet from M-291. Right-turn lanes are discussed under the referenced Sections 16.1 and 16.2 below. The proposed right-in/right-out access would conflict with the connection spacing provisions of the code, section 11.1 of the code regarding downstream intersection function area, section 16.2 of the code regarding right-turn lane standards, and section 16.2 of the code regarding continuous right-turn lanes. The omission of a right-turn lane is supported by staff so long as the median

provisions and other public improvements recommended by staff are all conditioned upon project approval for an overall traffic improvement along the corridor.

There have been no right-turn lanes or delineation of left-turn lanes along Langsford Road shown on the proposed development plan. These turn lanes were reviewed in the applicant's traffic study and omitted from the plan because the volume did not meet City code minimums, conditions preexisted the development proposal, and such turn lanes could not be constructed to current standards given the built environment.

Staff recommends a raised median along Langsford Road to delineate and protect the left-turn lane for the eastbound traffic at the traffic signal controlled intersection of Langsford Road and M-291. A median would restrict traffic movements at the existing driveway to the west of M-291 (see other comments related to access spacing in the referenced Section 15.1). A median would extend west of M-291 approximately 200 feet (or more as necessary to create an effective right-in/right-out driveway restriction). The length of this median protected eastbound left-turn lane was limited so as not to adversely impact other driveways along Langsford Road that have no pending development application, capital project, or efficient alternative for traffic circulation at this time.

Other code provisions related to intersection sight distance, driveway throat depth, and site circulation have been adhered or recommended in the applicants traffic study.

TRIP GENERATION

Time Period	Total	In	Out
Weekday	197	99	98
A.M. Peak Hour	19	11	8
P.M. Peak Hour	40	18	22

The trip generation tabulated above is estimated from the traffic impact study dated February 11, 2021, and a combination of available ITE Code 911 (Walk-In Bank) and 912 (Drive-In Bank) for a 3,320 s.f. Walk-In Bank. Since the ITE Trip Generation Manual only provides information for Weekday PM rates pertaining to ITE Code 912, the traffic study was used to factor rates for daily traffic and AM peak. The proposed land use is a relatively low trip generator suitable for this site considering the access constraints, traffic congestion, safety issues and limited mitigation opportunities.

TRANSPORTATION IMPACT STUDY REQUIRED? YES NO

The proposed development will not likely generate more than 100 peak hour trips; a minimum condition in the Access Management Code for Traffic Impact Studies. However, due to the number of crashes, Level of Service and AMC waivers required for this property, a study is required.

A traffic impact study was completed for the preliminary development plan by CBB, dated February 11, 2021. The traffic study considered the traffic impact of the proposed development, a 3,320 s.f. Drive-In Bank, during the A.M. and P.M. peak hour of adjacent street traffic at each intersection along Langsford Road between and including M-291 and Independence Ave.

With exception of the intersection operations at M-291 Highway and Langsford Road during the P.M. peak hour, the results of the applicant's traffic study indicate all existing and projected developed traffic conditions operate at acceptable levels of service (LOS) C or better with only a

median improvement recommendation. The City's accepted level of service goal (LOS C) has been met for all City owned and operated intersections in the study area.

The intersection of M-291 Highway and Langsford Road has an existing reported LOS D during the P.M. peak hour. This LOS would worsen as a result of the development, but remain LOS D. MoDOT has a lower level of service standard than the City. MoDOT concurrently reviewed the traffic impact study and has no improvement recommendations along M-291 Highway or at the intersection of Langsford Road in support of the development. No mitigating improvements were considered for this intersection and none recommended in the traffic study.

The traffic study recommendation for raised median along Langsford Road, with Staff concurrence, will substantially comply with the Access Management Code to the extent reasonably possible in consideration of the proposed development activity and improve traffic operations and public safety.

LIVABLE STREETS (Resolution 10-17)

COMPLIANT

EXCEPTIONS

The proposed redevelopment plan will improve access management along the corridor making it safer for all road users. The existing sidewalk will be replaced where disturbed by the project and roadway (i.e. median) improvements. Elements otherwise required by ordinances and standards, including but not limited to property landscaping, lighting, parking, and ADA accessibility have been proposed. No exceptions to the Livable Streets Policy adopted by Resolution 10-17 are requested.

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. A raised median having a minimum width consistent with the raised median along Langsford Road east of M291 and compliant with the Design and Construction Manual shall be constructed along Langsford Road from the intersection of M-291 westward approximately 200 feet (or farther as necessary to effectively limit driveway access to right-in/right-out traffic).