

APPENDIX E

TRAFFIC IMPACT ANALYSIS – CROWN CENTRE CASTLE HILLS

Study Purpose:

The purpose of the Traffic Impact Analysis study (TIA) needed for the Crown Centre Castle Hills development is to determine the impacts of the proposed development and the associated traffic volumes on the surrounding street network and to determine the necessary mitigation measures.

The TIA shall generally address the traffic impacts to the street intersections, major driveway intersections (those shown on the Framework Plan), public roadways, queuing analysis for storage length of auxiliary lanes and identify necessary mitigation measures.

The TIA shall enable the City of Lewisville to determine the necessary mitigation measures and timing of construction for each measure for each phase of development and the specific improvements related to access points and immediately adjacent roadways that should be in place to accommodate the specific developments' traffic.

TIA Scope: The scope of the TIA shall include the following intersections:

1. SH 121 Business and FM 544
2. Crown Way and FM 544
3. Midway Road and FM 544
4. Midway Road and Crown Way
5. Sam Rayburn Tollway and FM 544 interchange
6. All major driveway intersections with public streets (those shown on the framework plan)

TXDOT Concurrence: It is likely TXDOT will require review of the TIA when warranting and permitting specific improvements in the TXDOT rights of way. In the event TXDOT objects to assumptions or methodology used to perform the TIA, those issues will need to be addressed to TXDOT's satisfaction either through modification of the TIA or of the planned traffic improvements prior to approval for the improvements. In the event TXDOT will not approve installation of a specific improvement recommended by the TIA regardless of design, the subject improvement may be delayed or eliminated depending on the specific reasons for TXDOT's disapproval.

Annual Traffic Growth Rate: The existing traffic counts shall be grown using an annual growth rate to the build-out year of the proposed development. The City of Lewisville will accept an annual growth rate of **2%**.

Milestones of the Development Progression: The TIA shall include the milestones identifying a timeline that indicates at what point of time specific improvements will be needed.

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Report Sections:

The TIA shall include the following:

- Title Page
- Table of contents, Lists of figures and tables
- Introduction including
 - o Project Description
 - o Purpose of Report
 - o Executive Summary and
 - o Recommendations
- Area map showing the study boundaries
- Site plan
- Existing conditions including
 - o Description of roadways
 - o Traffic counts (most recent, year 2020 counts)
 - o Adjacent land use
 - o 5-year traffic crash records
- Proposed conditions including
 - o Proposed roadway configuration
 - o Projected traffic counts at full build-out year
- Trip generation
- Trip distribution (including rationale)
- Figure showing traffic assignment
- Capacity Analysis - of intersections and roadways
- Queuing Analysis
 - o A queuing analysis is required for all intersections, driveway access points and ramps within the study area controlled by stop signs, yield signs or traffic signals. The queuing analysis shall estimate the queue lengths and associated storage requirements that the intersection design should accommodate. The TIA shall evaluate queue lengths for the left turn lanes and the right turn lanes to ensure that queues do not overflow into the adjacent through lanes.
- Signal warrant studies
- Coordination with TxDOT and submission to TxDOT for review and concurrence, if required by TxDOT
- Mitigations and Recommendations
 - o Proposed mitigation measures at impacted intersections and roadways
 - o Recommended Improvements - a list of recommended improvements to mitigate any expected traffic congestion or safety issues identified after comparison with the existing conditions.
- Appendix of the study to include all Synchro and/or HCS computer runs. Provide all material related to the traffic study data collection and study results.