

THOROUGHFARE PLAN AMENDMENT
FOR
DAJA LANE EXTENSION
IN
THE CITY OF GRAND PRAIRIE, TEXAS

RECEIVED

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PLANNING DEPARTMENT

Prepared for

AVERA COMPANIES

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By

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**Thoroughfare Plan Amendment
Daja Lane
Grand Prairie, Texas
July 14, 2014**

PURPOSE OF STUDY

The purpose of conducting this analysis was to determine if Daja Lane should be extended from its current termination to January Lane as indicated on the current City of Grand Prairie Thoroughfare Plan. The analysis included a review of traffic circulation patterns that would be needed to accommodate the proposed traffic for several undeveloped sites. The traffic circulation patterns would consider both the extension of Daja Road and the traffic circulation without the Daja Extension.

If the extension of Daja Lane is not needed, then the City of Grand Prairie Thoroughfare plan must be amended. It is important to note that if the Thoroughfare Plan is not amended, the currently shown extension of Daja Lane will render the proposed warehouse development on the Warehouse Site Unfeasible as the extended Daja Lane would cut such site, and the proposed building, in half.

STUDY AREA TRAFFIC CONDITONS

The primary access to the proposed tracts north of January Lane would be January Lane/E. Randall Mill Road (4 lane undivided), and Avenue E/ Tarrant Road (6 Lane-divided).

The primary access to the proposed Warehouse Site is January Lane and an access driveway onto Southbound SH 161.

Daja Lane is not specifically indicated in the Master Transportation Plan but the current roadway appears to be a residential collector with at least 37 feet of pavement with a flare at the intersection with Avenue E/Tarrant Road.

SH 161 is a multi-lane tolled facility with limited access. The nearest access to southbound SH 161 is south of N. Tarrant Road. Access to northbound 161 is north of Egyptian Way.

There is a northbound exit ramp from SH 161 that would serve N. Tarrant Road. The Southbound access to N. Tarrant Road is provided by an exit ramp to Egyptian Way.

Access to the area from IH 30 is via exit and entrance ramps to/from Northwest 19th Street.

PROPOSED DEVELOPMENTS

There are several undeveloped tracts in this area that will require access. These tracts are:

The proposed Warehouse along January Lane. This 18.81 acre tract will initially include approximately 350,000 SF of Warehouse. Future uses would reduce the amount of Warehouse SF by adding up to 29,700 GSF of office.

A proposed light industrial site northwest of the proposed warehouse site of approximately 5 acres. Since this site is approximately 26% of the warehouse acreage, the amount of GSF available is approximately 26 % of the warehouse site which would yield 88,000 GSF of light industrial development.

A proposed general retail site of approximately 4 acres northeast of the proposed warehouse site. The amount of square footage was determined by multiplying 4 acres by the SF per acre (43,560 SF) = 174,240 SF. A reasonable Floor to Area ratio for a general retail site is .25 or 25% to account for parking, building, driveways, and loading area. This yields a GSF of 43,560 GSF.

TRIP GENERATION

The above proposed development options were used to develop estimated trips to and from all of the sites. The trips were generated using the higher or either the average rates or the fitted curve (formulae) rates from the ninth edition of the ITE Trip generation manual and the proposed GSF. These are listed in tables below:

TABLE 1
Table 1 Trip Generation Data

LAND USE	ITE CODE	UNITS	QUANTITY
Warehousing	150	1000 GSF	325,000
Light Industrial	110	1000 GSF	88,000
Retail (Shopping Center)	820	1000 GSF	43,560
Office	710	1000 GSF	29,700

The trips indicated in Table 2 are the total unadjusted traffic volumes for the residential land use proposed for the study site.

TABLE 2
Calculated Trip Ends

LAND USE	ADT (vpd)	A.M. PEAK HOUR		P.M. PEAK HOUR	
		IN (vph)	OUT (VPH)	IN (vph)	OUT (VPH)
Warehousing	1,394	159	33	39	137
Light Industrial	3,105	66	9	9	69
General Retail (Shopping Center)	4,041	60	37	168	183
Office	526	64	9	13	99
TOTAL	9,066	349	88	229	488

(ADT = average daily trips; vpd = vehicles per day; vph = vehicles per hour; in = vehicles entering the site; and out = vehicles exiting the site).

Note: Warehousing traffic can be up to 20% heavy trucks. Light industrial can also generate heavy trucks.

SITE ACCESS

Warehousing/Office Site: Access would be via driveways onto January Lane and a proposed driveway onto SH 161 at the Northeastern property line. The SH 161 driveway is at a current driveway location and it is proposed that this be a shared driveway with the property to the north.

Light Industrial: Access would be via Daja Lane and then Tarrant Road. It would be desirable to connect this site to the site to the east to provide a joint driveway to Daja Lane and then to SH 161 via a common access drive shared with the Warehousing site.

General Retail: Primary access to this site would be via the shared driveway with the Warehouse site and possibly another driveway north of the share driveway. A common access drive with the light industrial site would also provide access to Daja Lane.

Connections to SH 161

All access points to SH 161 are subject to approval by the TxDOT Access management Manual (AMM) requirements. The below tables indicate the connection distances (between driveways) and threshold guidelines for providing auxiliary lanes (right turn deceleration lanes).

Table 3 Access Connections Spacing (Table 2-2 in AMM)

Posted Speed (Mph)	Driveway and Corner spacing (Feet)
30 or less	200
35	250
40	305
45	360
50 or more	425

Table 4 Auxiliary Lane Thresholds (Table 2-3 in AMM)

Median Type	Left Turn to or from Property		Right turn to or from Property (5)	
	Acceleration	Deceleration	Acceleration	Deceleration
Non-Traversable (Raised Median)	(2)	All	Right Turn egress > 200 vph (4)	<ul style="list-style-type: none"> • > 45 mph where right turn volume is > 50 vph • < 45 where right turn volume is > 60 vph
Traversable (Undivided Road)	(2)	(1)	Same as above	Same as above

DISCUSSION

Below is listed some discussion of the impact of a Daja Lane extension.

Impact of extending Daja Lane.

- Would provide access for the northern tracts to January Lane.
- Would encourage non-residential traffic (retail, warehouse and light industrial) to travel north to Tarrant Road.
 - The current location of the entrance ramp on SH 161 would make it desirable for traffic to travel north to use the southbound entrance ramp just south of Tarrant Road.
 - Traffic from the Warehouse tract could include approximately 20 % large trucks (up to 40 trucks) of which approximately 50% may travel north.
- Normally it is desirable to separate traffic from different land uses (such as the multi-family at the corner of Daja and Tarrant Road from the warehouse traffic).
- May also encourage additional traffic on January Lane to travel north and increase the amount of traffic on Daja Lane.
- An extended Daja Lane cuts the 18.8 acre Warehouse Site in half substantially reducing the prospects for any development on that site.

Impact of NOT extending Daja Lane

- Warehouse traffic (to and from warehouse site) would use SH 161 Frontage road or January Lane and NOT Daja Lane.
- Traffic from the light industrial and retail would use Daja Lane or the SH 161 southbound frontage road via common driveways and common access driveway (s) onto SH 161.

Discussion:

- A Daja Lane extension is not necessary to provide access to the warehouse site or the other tracts to the north.
- Adequate access to the warehouse site is provided by January Lane and SH 161.
- Adequate access to the sites north of the warehouse site is provided by Tarrant Road (via Daja Lane) and the Southbound SH 161 frontage road.
- Not extending Daja would reduce the potential for heavy trucks traveling along Daja Lane.
- Fire truck and emergency access will be available as the Warehouse tract will provide an access easement to the retail site.

RECOMMENDATIONS

Daja Lane should not be extended to January Lane. Daja should end in a cul-de-sac. This would allow the two remaining tracts would be connected to Daja through a joint access driveway and then to the joint access driveway also serving the warehouse site and/or be connected to the SH 161 frontage road across the light industrial and retail tracts through another access driveway onto SH 161.

Access to the tracts to the north of the proposed warehouse site would be via Daja Lane to Tarrant Road (a six lane divided roadway) and with driveway (s) onto the southbound SH 161 frontage road.

The City of Grand Prairie Thoroughfare Plan should be revised to eliminate the extension of Daja Lane to January Lane.