

**ADMINISTRATIVE CODE**  
**BOARD OF COUNTY COMMISSIONERS**

<b>CATEGORY:</b> TRANSPORTATION AND TRAFFIC MANAGEMENT	<b>CODE NUMBER:</b> AC-11-4
<b>TITLE:</b> TURN LANE POLICY	<b>ADOPTED:</b> 10/19/88
	<b>AMENDED:</b> 10/16/91 3/24/98
	<b>ORIGINATING DEPARTMENT:</b> TRANSPORTATION

**PURPOSE/SCOPE:**

GENERAL

**I. SCOPE**

Deceleration, left and right turn lanes are desirable for the safe execution of speed change maneuvers and for storage and protection of left and right turning vehicles. These additional lanes for exit or entrance maneuvers shall be provided in accordance with County Design Standards herein. The pavement width and cross slopes of such lanes shall meet minimum requirements; however, special designs may be allowed when deemed necessary by the Director of the Division of Transportation for County maintained facilities and the Director of the Division of Development Services for privately-maintained facilities. Shoulders and recovery areas should be provided in accordance with the same requirements for other travel lanes; wherever possible.

It should be realized that deceleration, left and right turn lanes constitute an integral part of the geometric design of streets and highways and shall be included in the design for all new and replacement construction projects. At times, deceleration, left and right turn lanes may need to be installed at an existing intersection or access point to improve the existing or outdated design, if and when a traffic analysis shows that the LOS is being degraded by the proposed project traffic, or the turning movements at the intersection are being created at the intersection by the proposed projects traffic. This Policy addresses the warrants and design features for both cases.

**POLICY/PROCEDURE:**

**II. POLICY AND PROCEDURE**

Deceleration, left and right turn lanes shall be provided at all intersections and/or access points on county-maintained and privately-maintained facilities as required by this policy. Deceleration, left and right turn lane requirements shall not apply to a single family residence, a duplex residence, or two (2) family residence. When an existing development increases trip generation by expanding facilities or by change in use, a one-time deviation may be granted whereby only the increased trip generation is considered in determining if the warrants for requiring deceleration, left and right turn lanes are satisfied providing such deviation does not create a new or increased existing hazard which is detrimental to the health, safety and welfare of the traveling public.

This policy shall not be used to deny access to county maintained facilities for property which otherwise has the right of access; and for which it is not possible to provide deceleration, left and right turn lanes without acquiring additional Right-of-way (ROW) beyond the limits of the subject property. Nothing in this policy shall be construed to place an obligation upon the County to permit left turn lanes into or out of any development via either any existing or proposed street or access point driveway from any street or highway facility where the Director of the Division of Transportation or the Director of the Division of Development Services (hereinafter referred to as the "Directors") has determined it is not in the best interests of the health, safety and general welfare of the traveling public to allow such left turning movement.

Turn lane and deceleration requirements on state maintained **facilities** shall be in accord with policies and standards of the Florida Department of Transportation (**FDOT**) as directed by the FDOT. However, the Directors will confer with appropriate FDOT officials on the applicability and use of these requirements in each case of a development connecting to this system.

### III. CLASSIFICATION, FUNCTION AND WARRANTS

#### A. Classification and Function

Deceleration, left and right turn lanes serve more than one (1) purpose, but may be generally **classified** according to their main function as follows:

##### 1. Deceleration Lane(s)

The primary function of a deceleration lane is to provide a safe travel path and **sufficient** distance for exiting vehicles to decelerate from the operating speed on the through lanes of a roadway prior to exiting from the facility.

##### 2. Turn Lane(s)

###### a. Left Turn

The primary function of a left turn lane is to provide a protected area separated from the flow of through **traffic** in the same direction where left turning vehicles can slow to a stop and wait until a suitable gap occurs or is provided in the opposing flow of traffic to allow the turning maneuver to be safely completed. A secondary function is to eliminate the delay and congestion which would affect the through **traffic** movement in the same direction while the left turning vehicles slowed down and waited for a safe and adequate gap in the opposing flow of traffic to complete the turning maneuver.

###### b. Right Turn

The primary purpose of a right turn storage lane is to provide a protected area separated **from the** flow of through traffic in the same direction where right turning vehicles can slow to turning speed or stop and wait until the turning maneuver can be safely completed. A secondary purpose is to eliminate the delay and congestion that would occur for through

**traffic** moving in the same direction while turning vehicles slowed down and completed the right turn movement.

#### B. Warrants

The need for deceleration and turn lanes are generally determined by the following factors:

- Street classification of any particular street or road as identified in the adopted County administrative code entitled "County Road Functional Classification Map and List".
- Posted Roadway Speed
  - a. High speed (45 miles per hour (mph) or greater)
  - b. Intermediate speed (35 or 40 mph)
  - c. Low speed (30 mph or less)

- Number of Turning Movements during the Peak Hour
- Opposing and same direction peak hour through volumes.
- intersection Sight Distance
- Access Control
- Traffic Control

#### IV. DECELERATION AND LEFT TURN LANES

As defined in section III.A 1 and 2.a, a deceleration and left turn lane will be required when any two (2) or more of the following warrants are satisfied:

##### A. Arterial Street

1. Posted speed limit of the arterial street is equal to or greater than thirty-five (35) mph and the peak hour left turning movement is ten (10) or more as conditioned herein.
2. Estimated two-way peak season, peak hour through volume is equal to or greater than 500 vehicles per hour and the number of left turning movements from the arterial is equal to or greater than 15 at through volume = 500 to 599; 14 at through volume = 600 to 699; 13 at through volume = 700 to 799; 12 at through volume = 800 to 899; 11 at through volume = 900 to 999; or 10 at through volume = 1000 or more. Two-way peak season, peak hour volumes to be derived from the AADT estimates in the most recent Lee County Traffic Count Report, as adjusted using the peak season and peak hour factors from the nearest appropriate permanent count station. The volumes should also be adjusted to the appropriate horizon year per the TIS requirements.
3. Available Sight Distance  
  
for leftturning vehicles to observe approaching traffic or for approaching traffic moving in either direction to observe the left turning vehicle is less than the value shown Table A-I for the posted speed of the arterial street.
4. Arterial street has been designated as a **controlled** access facility by the BOCC.
5. Traffic Control  
  
of the intersecting street or access point connection is by a traffic signal.

##### B. Collector Street

1. Posted speed limit of the collector street is equal to or greater than thirty-five (35) mph and the peak hour left turning movement is twenty (20) or more as conditioned herein.
2. Number of Left Turning Movements
  - (a) On multi-lane collector facilities the number of leftturning vehicles from the collector roadway is equal to or greater than twenty (20) during either the A.M. or P.M. peak hour of the collector street.
  - (b) On two (2) lane two way collectors the estimated two-way peak season peak hour through volume is equal to or greater than 500 vehicles per hour and the number of left turning movements from the collector is equal to or greater than 25 at through volume = 500 to 599; 24 at through volume = 600 to 699; 23 at through volume = 700 to 799; 22 at through

volume = 800 to 899; 21 at through volume = 900 to 999 or 20 at through volume = 1000 or more, Two-way peak season peak hour volumes to be derived from the AADT estimates in the most recent Lee County Traffic Count Report (or developer counts if County counts not **available**), as adjusted using the peak season and peak hour factors from the nearest appropriate permanent count station. The volumes should also be adjusted to the appropriate horizon year per the TIS requirements.

3. Available Sight Distance

for left turning vehicles to observe approaching **traffic** or for approaching **traffic** moving in either direction to observe the left turning vehicle is less than the value shown in Table A-I for the posted speed limit of the collector street.

4. Traffic Control of

the intersecting street or access point connection is a traffic signal.

C. Local Streets

1. Posted speed limit on the local street is equal to or greater than thirty (30) mph and the peak hour left turning movement is sixty (**60**) or more as conditioned herein.

2. Number of Left Turning Movements

(a) On multi-lane facilities the number of leftturning vehicles from the local street exceeds one hundred (100) during **either A.M.** or P.M. peak hour of the local street.

(b) On ~~two~~ (2) lane two way facilities the number of left turning vehicles from the local street exceeds sixty (**60**) during either the A.M. or P.M. peak hour of the local street and the opposing through **traffic** volume exceeds five hundred (500) vehicles during either the A.M. or P.M. peak hour of the local street.

3. Available Sight Distance

for left turning ~~vehicles to observe~~ approaching traffic: or for approaching traffic moving in either direction to observe the left turning vehicle is less than the value shown in Table A-I for the posted speed limit of the local street.

5. Traffic Control of

the intersecting street ~~or~~ access point connection is a **traffic** signal.

D. Separate left turn lanes are required on an intersecting street or access point connection when any two (2) or more of the following warrants are satisfied:

I. Intersection/Connection to Arterial Streets.

(a) Posted speed limit of the intersecting street or access point connection is equal to or greater than forty five (45) mph.

(b) When the Number of left turning vehicles from the intersecting street or access point connection is equal to or greater than thirty (30) vehicles during either A.M. or P.M. peak hour of the arterial street.

(c) Arterial street which is being entered has been designated as a controlled

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access facility by the BOCC.

**(d) Traffic Control**

of the intersecting street or access point connection is a **traffic** signal.

2. Intersection/Connection to Collector Street

(a) Posted speed limit of the intersecting street or access point connection is equal to or greater than thirty five (35) mph.

(b) Number of **left** turning vehicles from the intersecting street or access point connection is equal to or greater than sixty (60) vehicles during either the A.M. or P.M. peak hour of the collector street.

**(c) Traffic Control**

of the intersecting street or access point connection is a traffic signal.

3. Intersection/Connection to Local Street

(a) Posted speed limit of the intersecting street or access point connection is equal to or greater than thirty (30) mph.

(b) Number of leftturning vehicles from the intersecting street or access point connection is equal to or greater than ninety (90) vehicles during either the A.M. or P.M. peak period of the local street.

**(c) Traffic Control**

of the intersecting street or access point connection is a **traffic** signal.

V. DECELERATION AND RIGHT TURN LANES

As defined in Section III. A. 1 and 2. b., a deceleration and right turn will be required when any two (2) or more of the following warrants are satisfied:

A. Arterial Street

1. Posted speed limit of the arterial street is equal to or greater than thirty-five (35) mph.

2. Number of ~~right~~ turning movements from the ~~arterial~~ street is ~~equal to or greater than thirty (30)~~ during either the A.M. or P.M. peak hour of the arterial street.

3. Available Sight Distance

of a right turning vehicle to be seen by through traffic traveling in the same direction is less than the value shown in Table A-I for the posted speed limit of the arterial street.

4. Arterial Street has been designated as a controlled access facility by the BOCC.

5. **Traffic Control** of the

intersecting street or access point connection is a **traffic** signal.

B. Collector Street

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1. Posted speed limit of the collector street is equal to or greater than thirty five (35) mph.
2. Number of right turning movements from the collector street is equal to or greater than **forty-five (45)** during either the **A.M.** or P.M. peak hour of the collector street.
3. Available Sight Distance  
  
for a right turning vehicle to be seen by through traffic traveling ~~in~~ the same direction is less than the value shown in Table A-I for the posted speed limit of the collector street.
4. **Traffic Control** of the  
  
intersecting street or access point connection is a traffic signal.

C. Local Street

1. Posted speed limit of the local street is equal to ~~or~~ greater than thirty (30) mph.
2. Number of right turning movements from the local street is equal to or greater than sixty (60) during either ~~the~~ A.M. or P.M. peak hour of the local street.
3. Available Sight Distance  
  
for a right turning vehicle to be seen by through traffic traveling in the same direction is less than the value shown in Table A-I for the posted speed limit of the local street.
4. **Traffic Control** of the  
  
intersecting street or access point connection is a traffic signal.

D. Separate Right Turn Lanes are required on an intersecting street or access point connection when any two (2) or more of the following warrants are satisfied: Separate right turn lanes will not be required if the street being intersected or connected to is operating at Level of Service "C" or better on a peak season, peak hour basis.

1. Intersection/Connection to Arterial Street
  - (a) Posted Speed Limit of the intersecting street or access point connection is equal to or greater than **forty five (45)** mph.
  - (b) Number of right turning vehicles from the intersecting street ~~or~~ access point connection is equal to or greater ~~than~~ sixty (60) during either the A.M. or P.M. peak ~~hour~~ of the **arterial** street.
  - (c) Arterial street which is being entered has been designated as a controlled access facility by the **BOCC**.
  - (d) Traffic control of the  
  
intersecting street or access point connection is by a traffic signal.
2. Intersection/Connection to Collector Street
  - (a) Posted speed limit of the intersecting street or access point connection is equal to or greater than thirty five (35) mph.

- (b) Number of right turning movements from the intersecting street or access point connection is equal to or greater than ninety (90) during either the A.M. or P.M. peak hour of the collector street.
  - (c) Traffic Control of the  
intersecting street or access point connection is a traffic signal,
3. Intersection/Connection to Local Street
- (a) Posted speed limit of the intersecting street or access point connection is equal to or greater than **thirty** (30) mph.
  - (b) Number of right turning movements from the intersecting street or access point connection is equal to or greater than one hundred and twenty (120) during either the A.M. or P.M. peak hour of the local street.
  - (c) Traffic Control of the  
intersecting street or access point connection is a traffic signal,

DESIGN

- I. Deceleration lanes consist of two distinct sections. The transition section is the distance needed for vehicles to achieve transfer from the through lane to the turn lane. The deceleration section is the distance needed to slow to a stop.

FDOT has tabulated standards for these distances, but those apply to **typical** rural highways. Under county urbanized conditions drivers begin deceleration immediately upon entry into the transition section and arrive at the deceleration section at lower speeds than the posted speed. Under urbanized conditions drivers utilize deceleration rates of 12 ft. per sec. per sec. which requires shorter deceleration lengths than 10 ft. per sec. per sec. which is typical of rural conditions. The table below represents a set of calculated County standards which differ from the FDOT standards except for those roads with a posted speed of 50 mph or above. County standards shall be used on County roads, except controlled access roadways which will utilize the FDOT standards. FDOT will specify requirements on State Highways. FDOT standards are found in **Index #301**.

<u>Design Speed</u>	<u>Trans.</u>	<u>Decel</u>	<u>Total</u>
30	75	50	125
35	80	60	140
40	90	75	165
45	105	9.5	200
50		See FDOT Index #301	
55		See FDOT Index #301	

The initial 50 feet of the transition length shall consist of pavement taper and the remaining length shall be the full width of the deceleration lane.

II. DESIGN OF LEFT AND RIGHT TURN LANES

Where left and right turn lanes are required, storage lanes shall be used in conjunction with deceleration lanes and their lengths shall be added to the required deceleration length. Turn lanes for right turns shall generally conform to the configuration shown in Fig. FBI. Turn lanes for left turns shall generally conform to the configuration shown in Fig. FB-2.

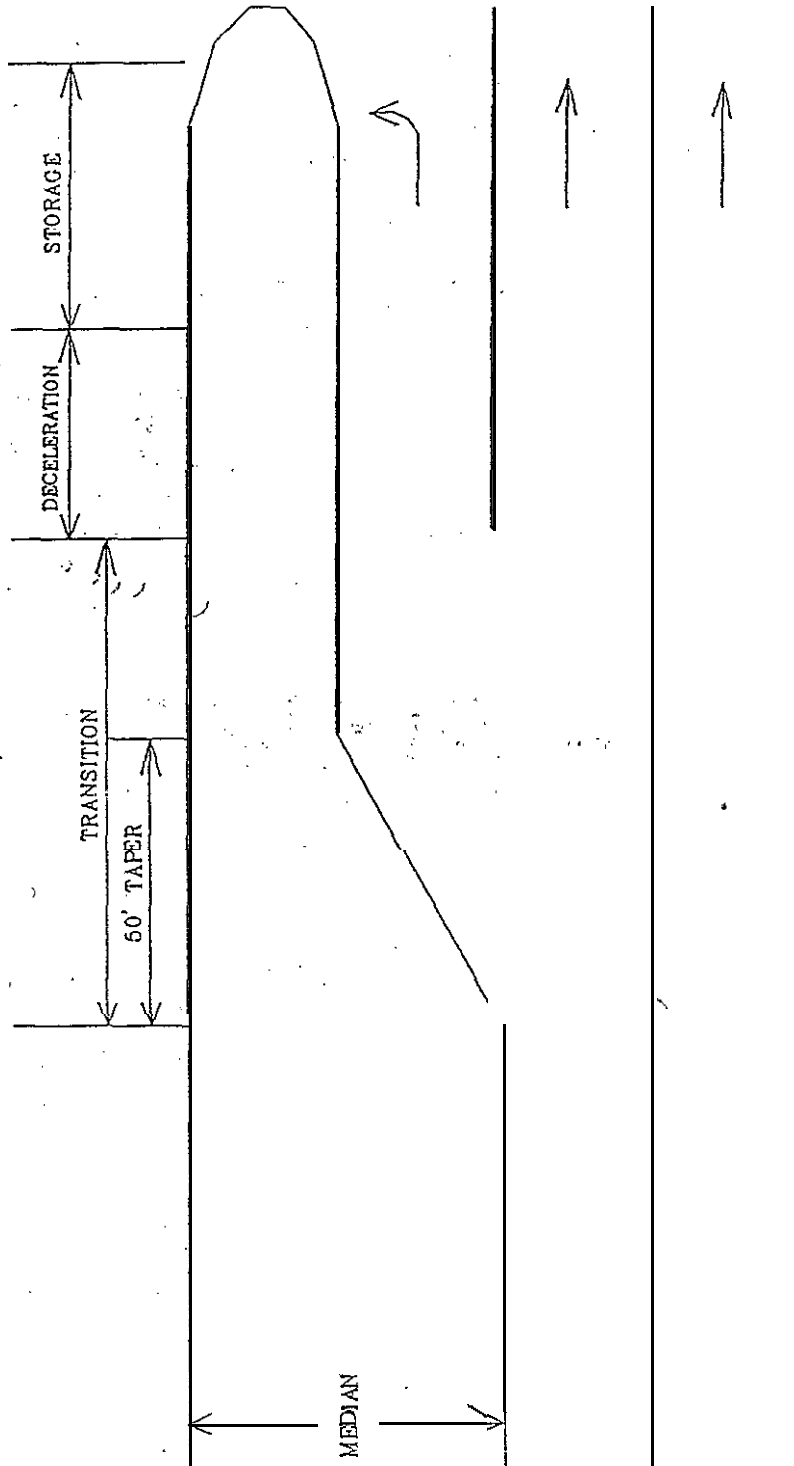






# FIG JRE FB-2

## LEFT TURN LANE ELEMENTS



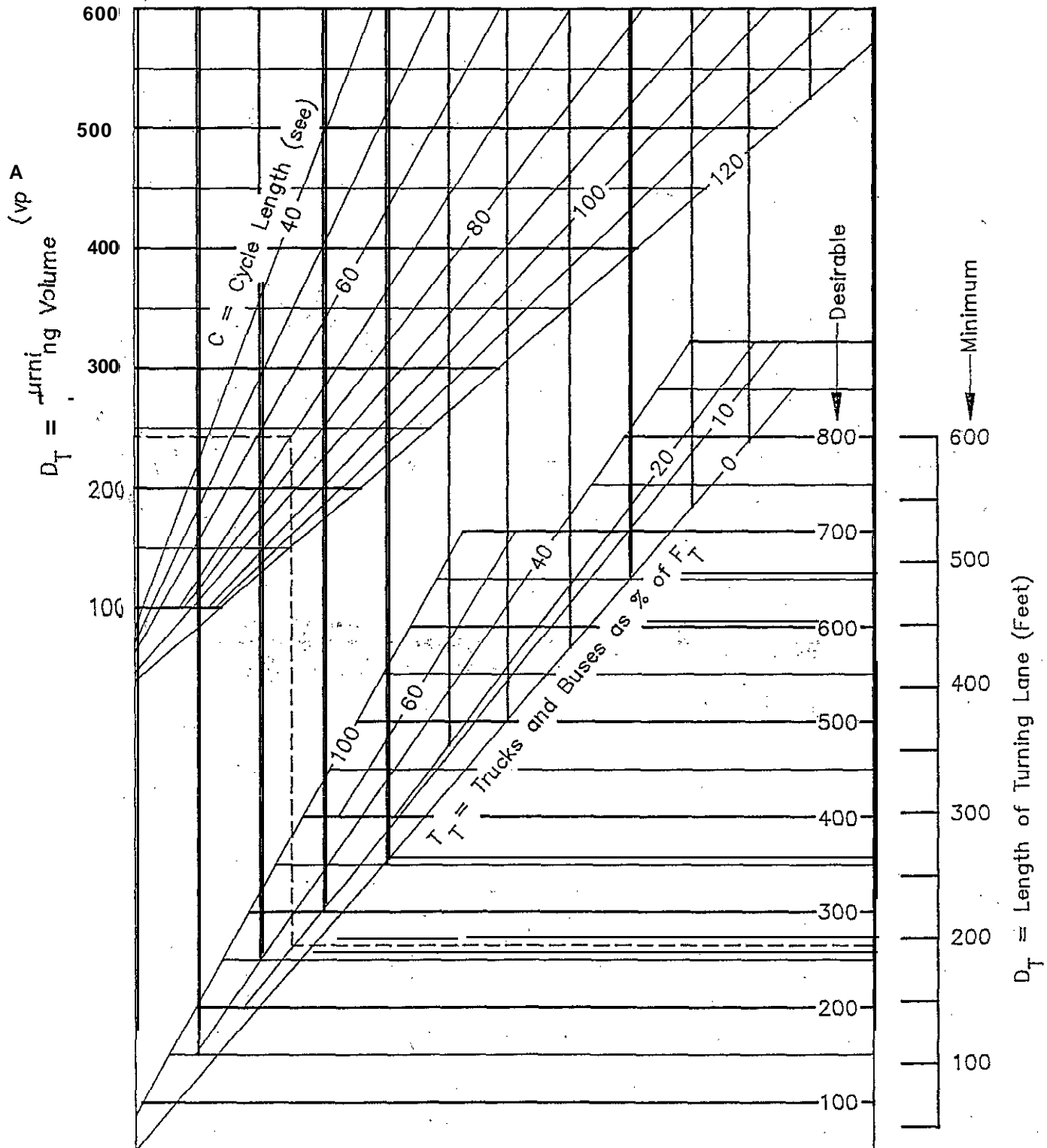


# FIGURE N-Z

## LEFT-TURN STORAGE LENGTH SIGNALIZED INTERSECTIONS

Desirable: 95% probability of storing  
all left-turn vehicles

Minimum: 90% probability



Source: Northwestern University Traffic Institute





TABLE A-1

SIGHT DISTANCE FOR APPROACH TO STOPS  
(rounded values)

DESIGN <del>POSTED</del> SPEED (MPH)	20	30	40	50	60
STOPPING SIGHT DISTANCE					
Minimum (FT)	125	200	275	400	525
Desirable (FT)	200	250	375	475	650