TRAFFIC IMPACT ANALYSIS (TIA) CRITERIA

Revised
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City of Peoria

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INTRODUCTION

Traffic Impact Analysis reports (TIAs) are required for Master Site Plans, Site Plans and Preliminary Plats. TIAs, or a reduced analysis, often referred to as Traffic Impact Statement (TIS) described below, may also be required for General Plan Amendments, rezoning, and conditional use permit applications. This section presents the analysis process and requirements for completing a Traffic Impact Analysis to determine needed modifications to the existing and planned transportation system as a result of proposed development.

One of the City of Peoria's primary objectives is to operate and maintain a safe and efficient roadway system. The review and management of development-generated traffic is an integral part of that objective. The TIA procedures as outlined in this document have been established for this purpose. The TIA procedures establish a range of Traffic Impact Analysis categories based on the characteristics of development and estimated peak hour traffic volumes. The TIA procedures also outline the analysis approach and methods.

A TIA identifies existing traffic volumes and conditions, development traffic volumes and conditions and their combined impacts on the existing and future roadway system. The TIA is a useful tool for early identification of potential traffic problems and can play an important part in the success of a development. The need for a TIA should be assessed as early as possible in the development process when there is maximum flexibility for eliminating traffic-related problems. The results of the TIA can also affect the Site Plan or development proposal, so it is important to begin the traffic analysis early and incorporate the TIA recommendations into the development plans during design.

The procedures contained herein are provided to assist developers through the approval process by outlining the requirements and level of detail of traffic analysis that will be required of them during the approval process, to standardize the types and details of analysis required in the assessment of traffic impacts and to ensure consistency in the preparation and review of a TIA.

The purpose of this document is to provide criteria for the preparation of Traffic Impact Analysis (TIA) or a Traffic Impact Statement (TIS) for new land developments or additions to existing developments and to establish the report format for these studies.

ANALYSIS REQUIREMENTS

A Traffic Impact Analysis (TIA) or Traffic Impact Statement (TIS) prepared by a Registered Professional Engineer in the State of Arizona is required for all developments. Peak hour trips must be estimated by using the most recent edition of *Trip Generation Manual,* ITE. The developer should initially identify the land use, number of units, and estimated number of daily, AM and PM peak hour vehicle trips that

will be generated by the proposed development to determine the Level of Analysis. A pre-TIA scoping meeting can be scheduled during the pre-application meeting for TIAs falling in Categories 1- 4 to discuss the methodology to be used in the analysis. In addition to the existing conditions, the study must analyze the horizon years as stated in the following table.

LEVELS OF ANALYSIS

Traffic Impact Analysis will be classified into five categories:

Table 1: Categories of TIA

TIA Category	Development Characteristic	Analysis Horizon	Analysis Area
Traffic Impact Statement	Developments that are estimated to generate less than 100 trips during the A.M. or P.M. peak hours.	Opening Year	Driveways and any major signalized intersections within half mile radius
1	Developments that are estimated to generate greater than 100 but less than 500 vehicle trips during either the AM or PM peak hours.	Opening Year and 5 years in the future	1. Site access drives 2. All major signalized and unsignalized intersections within ¼ mile and all major driveways within 500 feet 3. All roadway segments within ¼ mile of the project site boundary
2	Developments that are estimated to generate more than 500 but less than 1,000 vehicle trips during either of the AM or PM peak hours.	Opening Year plus 5 and 10 years in the future	1. Site access drives 2. All major signalized and unsignalized intersections and all major driveways within a ½ mile radius of the project site boundary 3. All roadway segments within ½ mile of the project site boundary
3	Those developments that are estimated to generate more than 1,000 or less than 1,500 vehicle trips during either of the AM or PM peak hours.	Opening Year plus 5, 10, 15 years in the future	1. Site access drives 2. All major signalized and unsignalized intersections and all major driveways within a 1 mile radius of the project site boundary 3. All roadway segments within 1 mile of the project site boundary
4	Regional Development generating 1,500 or greater peak hour trips	Opening Year plus 5, 10, 15, and 20 years in future or as specified in the Phasing Schedule	1. Site access drives 2. All major signalized and unsignalized intersections and all major driveways within an impact area defined during the methodology meeting 3. All roadway segments within an impact area defined during the methodology meeting

TRAFFIC IMPACT STATEMENT (TIS):

If the proposed project generates less than 100 trips during either of the AM or PM peak hour, a Traffic Impact Statement (TIS) that addresses trip generation and any site specific issues may be submitted in lieu of a full Traffic Impact Analysis. These projects are assumed to have insignificant impacts on the surrounding transportation system. The TIS should be signed and sealed by a Registered Professional Engineer in the State of Arizona.

TRAFFIC IMPACT ANALYSIS (TIA):

A TIA is required for all projects which generate 100 or more trips during either of the AM or PM peak hour. The most recent version of the *ITE Trip Generation Manual* should be used for all trip generation calculations in the TIA or Traffic Statement.

Traffic Impact Analysis will be classified into four categories:

Category 1: The first category is proposed projects that are deemed to have minor or minimal traffic impacts.

Category 2: The second category is projects that have localized impacts to the City's transportation system.

Category 3: The third category is proposed developments that have significant impacts to the transportation system that may extend beyond the vicinity of the site.

Category 4: The fourth category is proposed for developments that have regional impacts to the transportation system that extend beyond the vicinity of the site, and may cross jurisdictional boundaries.

PRE-TIA SCOPING MEETING

The purpose of the pre-TIA Scoping Meeting is to discuss the project scope and required/expected level of analysis to be conducted in completing the TIA. Applicants can contact the Planning Department or the City Traffic Engineer or his designee to request a pre-TIA Scoping Meeting in order to go over the required level of analysis for the TIA. This scoping meeting is recommended for all projects that fall under categories 2 through 4.

ANALYSIS AREA – **see Table 1**

ANALYSIS HORIZON - **see Table 1**

ANALYSIS TIME PERIODS

The study should include an analysis of the impact of the development traffic for the typical adjacent street peak hour conditions which normally occur within the AM (7:00-9:00) and PM (4:00-6:00) peak periods on a typical weekday. Roadway segment analysis shall be conducted for the daily and peak hour. The City may require additional time periods if the development has unusual peaking characteristics or if the adjacent non-site traffic conditions warrant an analysis of other peak traffic time periods.

DATA COLLECTION

The Traffic Impact Analysis should include information on the following existing and proposed conditions within the study area:

a) Traffic Volumes

The TIA will provide current approach volumes for 24 hours of a typical weekday, and turning movement volumes in 15 minute intervals for the AM and PM peak hours which are usually between 7:00 to 9:00 in the AM and 4:00 to 6:00 in the PM, for all intersections of streets that are classified as collector (major or minor), arterial (major or minor), road of regional significance, parkway, expressway, or freeway in the study area. The results of a Level-of-Service analysis for the peak fifteen-minute periods in the morning and evening for the existing conditions will be included in the report.

Future projected background traffic volumes should be based on available traffic projections from the Maricopa Association of Governments (MAG), other appropriate documented traffic projection sources, or historical traffic volume trends analyses. Projected traffic volumes shall include adjustments, as necessary, to reflect other adjacent future development. Trend growth rates from historic count data can also be utilized to project future background traffic volumes.

b) Land Use

Identify the existing land uses within the study area and the proposed land use and possible phasing of the new development.

c) Roadway Conditions

Existing and proposed roadway characteristics shall be identified including number of lanes, type of medians and location of median openings, speed limits, functional classification, maximum service volume, and existing traffic control devices. Roadway segment analysis shall be conducted for the daily and peak hours.

d) Crash Experience

Crash experience should be documented for the past 36 month time period for the intersections and roadway segments included within the study area and can be provided by the City if requested.

TRIP GENERATION

The trip generation for any proposed development shall be estimated using the latest edition of *Trip Generation Manual* published by ITE. Exceptions to the use of this document must be approved by the City and may include actual trip generation counts from an existing facility of similar size, land use and surrounding area characteristics or from other recognized sources that provide trip generation data not included in the ITE Manual.

INTERNAL CAPTURE AND PASS-BY PERCENTAGE

The use of internal capture and pass-by percentage reductions will be allowed for certain types and sizes of Mixed Use Developments. Allowable sources for internal capture and pass-by reduction rates for land uses are identified below:

1. The internal capture rates or equations contained in the most recent version of the ITE *Trip Generation Manual* as approved for use by the City.

2. The internal capture rate from a previously approved City of Peoria TIA of similar land uses.

Adjustments to the site traffic generation should be documented to reflect pass-by traffic, internal capture, modal split, carpooling (TDM), or other means of trip reduction. Trip reduction methods should be discussed with the City prior to use within the report.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Manual traffic distribution and assignment based on the gravity model principle can be accomplished using experience, judgment, and knowledge of local conditions. Site traffic shall be assigned to the proposed site driveways and street network system included within the study area based on the distribution of existing traffic counts, or an analysis of future market area within the area of influence, or by computer based modeling software. However, projects generating more than 300 peak-hour trips may be required, at the discretion of City staff, to use either MAG's model or as identified and approved during the pre-TIA meeting.

CAPACITY ANALYSIS

The study should include the following minimum items for analysis:

a) All study area roadway segments including v/c ratios and Levels of Service for daily and PM peak hour using latest edition of the *Highway Capacity Manual*, HCM (Special Report 209, Transportation Research Board) and generalized service volume tables approved by the City Traffic Engineer.

1. Existing conditions
2. Future non-site background traffic conditions
3. Future total background plus project traffic conditions

b) Levels of Service (LOS) for signalized and unsignalized intersections and project driveways in accordance with the Federal Highway Administrations (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD) *for Streets and Highways* (edition adopted by the Arizona Department of Transportation) and the latest edition of the *Highway Capacity Manual* (HCM), and identify traffic control device requirements to maintain acceptable LOS C or D.

1. Existing conditions
2. Future non-site background traffic conditions
3. Future total background plus project traffic conditions

c) Intersection and driveway geometrics and queuing analysis using recognized accepted formulas as specified in the AASHTO *Green Book* and provide documentation.

1. Analyze intersection capacity and identify the need for additional through traffic lanes or auxiliary right or left turn lanes for existing, future background and future total traffic conditions and include storage requirements. See Deceleration Lane Criteria and Standard Detail PE 251-3 provided in this document.
2. Show the number and location of all proposed driveway access points. Analyze potential conflicts of proposed driveways with existing and/or proposed adjacent driveways or intersections. Show lane configurations and internal site circulation patterns for the future total traffic conditions.

d) Crash summary and identification of trends and/or potential safety hazards.

e) Other analyses as requested by the City Traffic Engineer or as may be required due to the type and location of the proposed development

1. Weaving Analysis
2. Parking Analysis

f) Mitigation measures

All recommended on-site and off-site improvements required to mitigate future projected traffic congestion or safety issues to maintain the before condition

Levels of Service or the minimum standard of LOS C or D, shall be identified along with which improvements are the responsibility of the development.

ADDITIONAL CRITERIA FOR K-12 SCHOOL SITES

The study for any public, charter, or private school with students ranging in grades K-12 shall provide the following additional information:

a) Student Enrollment

The maximum student enrollment at build out shall be indicated in the study Introduction and Summary. Partial student enrollment may be discussed, but will not impact site queuing requirements.

b) Parking

The total number of parking spaces onsite shall be provided in the study Introduction, Traffic Circulation Overview, and Summary. Additional off-site parking available through shared-use facilities, such as adjacent parks or community center, or on-street parking may be discussed as well.

c) Minimum Required Parent Vehicle Queue Calculation

The site shall accommodate a minimum parent vehicle queue for student drop-off and pick-up.

1. The minimum number of parent vehicles to be accommodated shall be calculated by multiplying the school's maximum enrollment by .08 for traditional K-8 public elementary schools. A higher value shall be required for magnet, charter, and private schools that generate a greater number of parent vehicles trips than an average neighborhood school. This value may range from .1 to .3, depending on busing, staggering of arrival and dismissal times, and number of parking spaces available. The engineer may provide values based on observations of existing comparable school sites, subject to approval.
2. The minimum parent vehicle queue length shall be calculated by multiplying the number of parent vehicles by 20' for schools with a formal student drop-off/pick-up procedure characterized by centralized student loading locations. For schools with no organized process, multiply the number of parent vehicles by 25'.

    a. The entire parent vehicle queue should be contained within the school site and/or on a consenting adjacent shared-use site.
    b. The length of an adjacent right turn lane may be added to the minimum required queue if approved by Traffic Engineering.

d) School Traffic Circulation Overview

A school traffic circulation overview with diagrams shall detail motor vehicle, bus, bicycle, and pedestrian circulation on site, including:

1. Direction of traffic flow and number of lanes throughout diagram;
2. Ingress and egress from the site;
3. Minimum required parent vehicle queue;
4. School bus loading areas; and
5. Pedestrians and bicycle routes that avoid crossing school driveways.
6. School-related Traffic Control - Anticipated school traffic control in compliance with the current adopted version of the MUTCD, ADOT *Guidelines for School Traffic Safety*, and City of Peoria practices shall be addressed, including, but not limited to:

    a. 15mph School Crossing;
    b. Adult crossing guards;
    c. NO PARKING restrictions on streets adjacent to the school site;
    d. Reduced speed limit school zones.

REPORT FORMAT

The TIA should include the following items and report sections:

a. Letter of Transmittal
b. Title Page
c. Table of Contents, List of Figures and Tables
d. Introduction including description of project, purpose of report and executive summary
e. Proposed Development description including address, location, current land use, proposed land use, and zoning. Include vicinity map, site plan and proposed phasing schedule, and any agreements during the pre-TIA scoping meeting.
f. Study Area description, Impact Area map, and list of roadway segments and intersections to be included in the study based on the requirements on Table 1.
g. Existing conditions including study site land use, adjacent roadway description, and traffic volumes. Include a graphic of existing daily and peak hour traffic volumes and existing roadway and intersection Levels of Service.
h. Projected future traffic volumes including background and project traffic generation by phase for the daily and peak periods, distribution percentages and turning movement assignments for each time period to be analyzed. Include tabular data as needed to show trip generation rates or equations and a summary of the site traffic assignment. Graphics should be included showing the daily and peak hour traffic volumes for

each analysis time period included and the level of service for both the site and non-site background traffic for each roadway segment and intersection within the project impact area. Total traffic (background plus project) should be shown for each analysis time period; AM and PM peak hours, and daily. Summarize all Traffic Analyses in tabular and graphic format.

i. School Traffic Circulation Overview (schools only),
j. Summary, Conclusions and Recommended Improvements
k. Appendices providing all back-up data and data collection supporting the study results.

COORDINATION WITH OTHER PUBLIC AGENCIES

If applicable, the requirements for a Traffic Impact Analysis as noted in this document may need to be coordinated with the requirements of other local agencies such as adjacent cities or towns, the Maricopa County Department of Transportation, or the Arizona Department of Transportation. Any deviation from the requirements of this document due to the requirements of other agencies should be presented in written form to the City for review and approval or denial.

REPORT SUBMITTALS

A minimum of two hard copies and one electronic version of the report shall be submitted to the City for review. Additional copies of the report may be required for review by other adjacent public agencies.

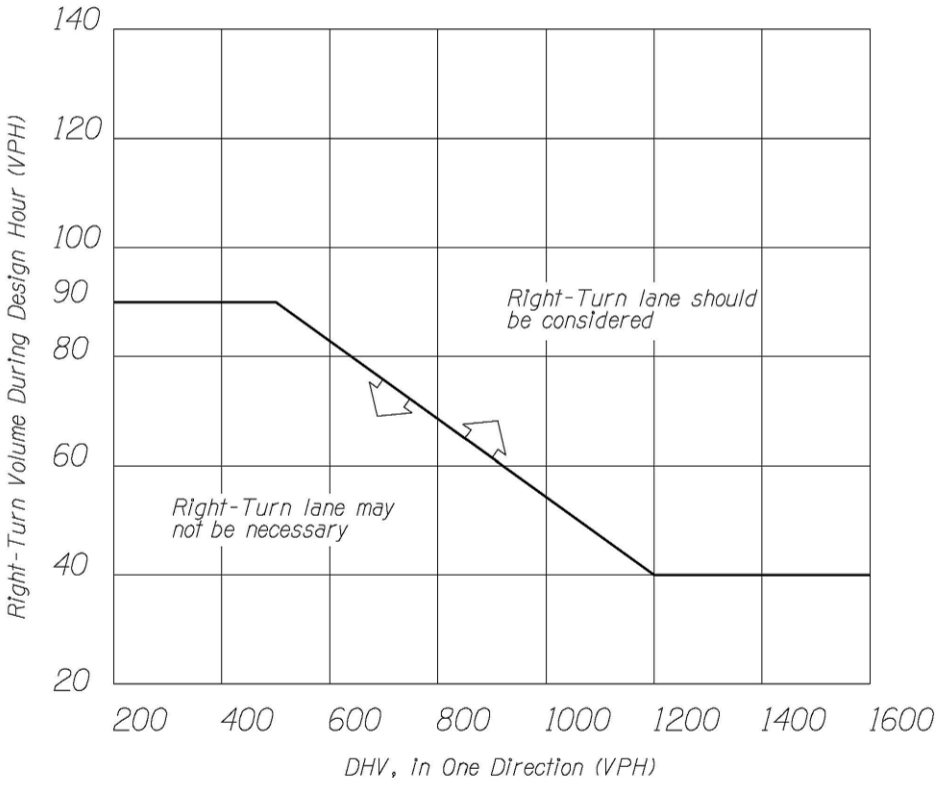
DECELERATION LANE CRITERIA

To determine the need for a deceleration lane, the proposed site conditions must meet a **minimum of three** of the following criteria:

1. At least 5,000 vehicles per day are using or are expected in the near future (five years after the development is built-out) to be using the adjacent street.
2. The posted speed limit is 35 mph or the 85th percentile speed limit is greater than 35 mph.
3. At least 1,000 vehicles per day are using or are expected to use the driveway(s) for the development or adjacent development(s) (existing or future).
4. At least 90 vehicles are expected to make right turns into the driveway(s) for a one-hour period for the development or adjacent developments (existing or future).

VOLUME WARRANTS FOR RIGHT-TURN DECELERATION LANES ON URBAN ROADWAYS

Source: NCHRP 279, Illinois.



Commercial and Industrial Sites:

If a TIA for a commercial and industrial site indicates that a deceleration lane is not warranted as per above criteria, a minimum of one driveway shall be designated as a truck delivery access driveway. The driveway shall meet the minimum turning path for a WB-67 design vehicle, without requiring maneuvering into more than one traffic lane within the public roadway. Additional driveways meeting this criteria may be required, if determined by the City Traffic Engineer or his designee based on local conditions.

Storage Facilities:

If a TIA for storage facility site indicates that a deceleration lane is not warranted as per above criteria, the main access driveway shall meet the minimum turning path for a MH/B design vehicle.

At the discretion of the City Traffic Engineer or his designee, a deceleration lane may be required regardless of the minimum criteria, if site specific conditions warrant the addition of such a lane. In no event shall adjacent driveways be located within the area of the deceleration lane and the required taper lengths, unless specifically approved by the City Traffic Engineer.

Deceleration Lane Length:

A. The lengths of deceleration lane outlined in this section exclude the required length of taper, which should be approximately 8-feet to 15-feet longitudinally per 1-foot transversely (8:1 to 15:1). These taper lengths are only applicable to deceleration lanes. Tapers associated with changing of pavement widths shall be in accordance with the City of Peoria technical design requirements for street classification outlined in the Infrastructure Development Guidelines.
B. The deceleration lane length must be determined by the site Traffic Engineer on a case by-case basis and must be approved by the City Traffic Engineer or their designee.
C. On parkways and major arterial roads and streets, the deceleration lane length required is needed for a safe and comfortable stop from the design speed of the highway. Minimum deceleration lane lengths for auxiliary lanes on grades of two (2%) percent or less, with an accompanying stop condition, for design speeds of 30, 40, and 50 mph are 235, 315, and 435 feet respectively.
D. Deceleration lanes serving ingress/egress driveways on collector and local commercial streets shall be calculated based on a queuing length calculated from an average two - minute period within the peak hour. However, in no event shall the minimum length be less than space required for two vehicles. The type of vehicles used in the calculation shall depend solely on the type of facility being studied accounting for 10% truck traffic (minimum of one) where applicable.

E. Deceleration lanes serving ingress/egress driveways on arterial streets shall be calculated based on an average two - minute period within the peak hour. However, in no event shall the total length (stacking length and taper) be less than the length required to accommodate the breaking distance in addition to the queuing length calculated from an average two - minute period within the peak hour (minimum of two vehicles). The type of vehicles used in the calculation shall depend solely on the type of facility being studied accounting for 10% truck traffic (minimum of one) where applicable.
F. Deceleration lane length for driveway serving school sites may be required to be increased based on recommendation of the City Traffic Engineer after review of the onsite traffic circulation plan.
G. The City Traffic Engineer may require certain lengths of deceleration lane or tapers based on specific site conditions.

CITY OF PEORIA
STANDARD DETAIL PE-251-3
DRIVEWAY CRITERIA

APPROVALS: CITY ENGINEER 5-21-12 DATE

	RESIDENTIAL		COMMERCIAL INDUSTRIAL	
	SINGLE FAMILY	MULTI-FAMILY	SINGLE BUSINESS	MULTI-BUSINESS
STD. CONSTRUCTION DETAIL	CITY OF PHOENIX *P1255-1	PE-251-1 OR PE-251-2	PE-251-1 OR PE-251-2	PE-251-1 OR PE-251-2
STANDARD WIDTH (TWO WAY)	16'	24'	30'	30'
MIN. WIDTH (TWO WAY)	16'	24'	24'	24'
MAX. WIDTH (TWO WAY)	24'	40' (2)	30'	40' (2)
MIN. SPACE BETWEEN DRIVES (INSIDE EDGE TO INSIDE EDGE)	10'	(4)	(4)	(4)
MIN. DIST. FROM INTERSECTION (NEAREST P.C. TO INSIDE EDGE)	25'	(5)	(5)	(5)
MAX. NO. OF DRIVES	1	2 PER FIRST 19 UNITS 3 PER 1200' FRONTAGE 4 PER 2600' FRONTAGE	2 PER STREET	1 PER 225' FRONTAGE 2 PER 800' FRONTAGE 3 PER 1200' FRONTAGE 4 PER 2600' FRONTAGE

* = MODIFIED P1255-1 WITH 4' WIDE ADA PEDESTRIAN PASS

NOTES:

1. DETAIL PE-251-1 OR PE-251-2 MAY BE USED ON ARTERIAL STREETS.
2. (a) HIGH VOLUME DRIVEWAY WITH TWO OUTBOUND APPROACH LANES.
   (b) REQUIRES DECELERATION LANE UNLESS OTHERWISE APPROVED BY TRAFFIC ENGINEER.
   (c) BE INCREASED TO 46' WITH ADDITION OF RAISED MEDIAN.
3. ALL DRIVEWAY WINGS OR P.C.'S WILL BEGIN NO CLOSER THAN 5' FROM ANY PROPERTY LINE.
4. SEE TABLE 1 OF THE ACCESS MANAGEMENT GUIDELINES.
5. SEE TABLE 2 OF THE ACCESS MANAGEMENT GUIDELINES.

I:\GUIDES\DETAILS\CAD\PE-251-3

MAY 2012

See Guides, Checklists and Details at:

http://www.peoriaaz.gov/uploadedFiles/Peoriaaz/Departments/Engineering/Downloads/Appendix-StandardDetails(3).pdf

ACCESS MANAGEMENT GUIDELINES – DRIVEWAY CRITERIA

Access Spacing

Minimum access spacing provides sufficient perception-reaction time to address one potential conflict area at a time. Guidelines for minimum unsignalized driveway or local street spacing should consider the speed of the major roadway, stopping sight distance, the elimination of right-turn conflict overlays and the functional area of the access points. When a driveway is to be located upstream of a major intersection, the possibility of weaving, or lane shifts, to make a left turn at the major intersection should also be considered.

The functional area of any access point should be kept clear of any additional points of access. Guidelines for minimum access spacing are presented in Table 2.

Table 2. Minimum Access Spacing (feet)

30	150
35	180
40	230
45	260
50	290

Corner Clearance

Corner clearance is the distance between an access drive and the nearest cross road intersection. It should provide drivers with adequate perception-reaction time to access potential downstream conflicts and is aimed at preventing the location of driveways within the functional area of an intersection. It will also minimize driveway/intersection conflicts by preventing blockage of driveways upstream of an intersection due to standing traffic queues. Minimum driveway setback distances should take into consideration typical traffic queue lengths while permitting sufficient movement to driveway traffic. The corner clearance on the upstream side of the intersection should be longer than the longest expected queue, or at a minimum, the distances indicated in Table 3. On the downstream side, the minimum distance should conform to Table 2. Driveways on corner lots should be located on the lesser street and near the property line most distant from the intersection.

Table 3. Minimum Corner Clearance (feet)		
Speed (mph)	Distance From Near Side of Street to Near Side of Access Driveway	
	Major Generator	Minor Generator
30	200	145
35	295	230
40	390	310
45	425	325
50	450	345

Major generators are those developments that are estimated to generate 500 vehicle trips or more during either of the AM or PM peak hours. Other development projects are considered minor generators.

Vehicle service stations, which are almost always on corner lots, should have up to two driveways on each street. Only one driveway on the major street, located near the property, is desirable. Depending on the classification of the intersecting street, one driveway is desirable with a maximum of two driveways.

On streets with posted speed limits or prima facie speed limits of less than 30 mph the minimum access spacing may be reduced to 50 feet. Other provisions of Peoria Detail 251-3 (Driveway Criteria) will remain in effect.

Refer to the City of Peoria Access Management Guidelines found within the infrastructure Design Guidelines at:

http://www.peoriaaz.gov/uploadedFiles/Peoriaaz/Departments/Engineering/Downloads/AccessManagementGuidelinesDrivewayCriteria.pdf

Table 4 – Service Volumes and LOS

Roadway (Urban Area)	# of Travel Lanes	LOS A	LOS B	LOS C	LOS D	LOS E
Freeways	4	47,940	55,930	63,920	71,910	79,900
	6	73,980	86,310	98,640	110,970	123,300
	8	100,080	116,760	133,440	150,120	166,800
	10	126,180	147,210	168,240	189,270	210,300
Limited Access Parkways	2	14,760	17,220	19,680	22,140	24,600
	4	29,280	34,160	39,040	43,920	48,800
	6	43,740	51,030	58,320	65,610	72,900
	8	57,960	67,620	77,280	86,940	96,600
Major Arterial	3	14,880	17,360	19,840	22,320	24,800
	4	24,540	28,630	32,720	36,810	40,900
	5	30,480	35,560	40,640	45,720	50,800
	6	36,480	42,560	48,640	54,720	60,800
Minor Arterial	2	11,280	13,160	15,040	16,920	18,800
	3	12,960	15,120	17,280	19,440	21,600
	4	21,540	25,130	28,720	32,310	35,900
	5	22,080	25,760	29,440	33,120	36,800
Major Collector	2	5,100	5,950	6,800	7,650	8,500
	3	8,520	9,940	11,360	12,780	14,200
	4	10,560	12,320	14,080	15,840	17,600
Minor Collector	2	3,360	3,920	4,480	5,040	5,600
Local Street	2	1,200	1,400	1,600	1,800	2,000

Source: MCDOT Roadway Design Manual, Graham County, Safford, Thatcher, Pima, - Small Area Transportation Study – PB Americas, Inc., July 2009