

**CITY OF AUBURN  
TRAFFIC CIRCULATION STANDARDS AND  
DEVELOPMENT TRAFFIC IMPACT STUDY REQUIREMENTS**

**1. GENERAL INFORMATION AND PURPOSE**

The City of Auburn has established traffic circulation standards and development traffic impact study requirements for the purpose of ensuring that both the quantitative and qualitative aspects of traffic circulation impact on the citizens, neighborhoods and businesses of Auburn are considered and properly mitigated. Application of these standards is intended to appropriately regulate and balance the increased traffic flow generated by new development with the need to reasonably preserve the quality of life and the environment within our community and to reasonably ensure pedestrian and bicycle safety as alternate modes of transportation. These standards will be amended from time to time as the community develops.

**2. STREET DEFINITIONS AND CLASSIFICATIONS**

A Street is a dedicated and accepted public right-of-way for vehicular and pedestrian traffic which affords the principal means of access to abutting property, provides a roadway connection between major parts of the City and its environs and collects traffic from neighborhoods and moves it to the arterial street system.

The establishment of a hierarchical circulation system in the City of Auburn will provide for a gradation in function from access to movement. This gradation is a continuum from unrestricted access to full control of access. Efficient and safe operation of the City's circulation system will require that specific facilities be designed to serve specific trip stages. The City has recognized the failure to do so will lead to the obsolescence of its streets and thwart development and orderly growth.

A listing of classified roadways within the City of Auburn is presented in Section 3 of this standard. Modification of the City's roadway classification system will occur as the City develops in the future and land use conditions change. Modifications to the City's roadway classification listing will be undertaken by appropriate action of the City. Such action, when undertaken, will modify the listing of classified roadways outlined in Section 3 of these guidelines as well as the city's Major Street Plan.

For the purposes of these standards, the following roadways are defined:

- 2.1. Interstate** – controlled access facilities with four or more lanes that provide fast and efficient movement of large volumes of traffic over a considerable distance by prohibiting access (ingress and egress) except at controlled intervals.
- 2.2. Arterial** - a facility that serves as a primary artery of the city intended to mainly carry through traffic and to connect major activity centers in the City and its planning jurisdiction. Its function is to move intra-city and intercity traffic. The streets that are classified as arterials may also serve abutting property; however, their primary purpose is to carry traffic. Arterials should not be bordered by uncontrolled strip development. Access to these facilities should be carefully managed to ensure the capacity of the facility is not comprised by driveways. Arterials vary in width and parking on-street is prohibited.
- 2.3. Collector** - a street whose primary function is to collect traffic from an area and move it to the arterial street system while also providing substantial service to abutting land uses. A

collector roadway will generally have lower design speeds than arterial roadways but higher than local street.

- 2.4. **Residential Collector Street** – a street whose primary function is to provide direct access to residential properties as well as residential subdivisions. Typically, residential collector streets collect traffic from local streets in residential neighborhoods and channel it to the arterial and collector system.
- 2.5. **Local Commercial Street** – all minor street, marginal access street and cul-de-sacs serving primarily commercial developed property.
- 2.6. **Local Residential Streets** – All minor street, marginal access streets and cul-de-sacs serving primarily residential property.
- 2.7. **Marginal Access Roadway** - a street that runs parallel to a major street, generally an arterial, its purpose is to separate through traffic from local traffic, and to provide access to abutting properties. A service road in commercial/business areas intended to remove traffic from arterials would be considered a marginal roadway. An access street in residential areas intended to remove local traffic from arterials and to buffer abutting residential lots from the effects of highway traffic as well as to limit the number of direct driveway accesses to arterials for safety purposes is also considered a marginal roadway.
- 2.8. **Cul-de-sac** - a local street with one outlet and having an appropriate terminal for the safe and convenient reversal of traffic movement.
- 2.9. **Alley** - a public right-of-way primarily designed to provide a secondary access to the side or rear of properties.

### **3. AUBURN STREETS BY CLASSIFICATION**

Street classifications for the City of Auburn are currently reflected in the Auburn Major Street Plan. The following listing reflects the city's street classification system.

#### **3.1 Arterials**

Beehive Road (South College Street to Wire Road)  
Bent Creek Road (I-85 to Glenn Avenue)  
Chadwick Lane  
College Street  
Cox Road  
Dean Road (Moore's Mill Road to Opelika Road)  
East University Drive  
Farmville Road  
Gay Street (Opelika Road to Samford Avenue)  
Glenn Avenue (N. Donahue Drive to Opelika City Limits)  
Heath Road  
Martin Luther King Drive  
Moore's Mill Road  
N. Donahue Drive  
Opelika Road  
Richland Road  
S. Donahue Drive (College Street to East University Drive)  
Samford Avenue  
Sand Hill Road  
Shelton Mill Road  
Shug Jordan Parkway  
Society Hill Road

U.S. Highway 280  
Wire Road

**3.2 Collectors**

Academy Drive  
Airport Road  
Annaloe Drive  
Auburn Lakes Road  
Bedell Avenue  
Beehive Road (Wire Road to Martin Luther King Boulevard)  
Bent Creek Road (Hamilton Road to I-85)  
Binford Drive  
Bragg Avenue  
Byrd Street (Magnolia Avenue to M L King Drive)  
Chewacla Drive  
Chinook Street  
Club Creek Drive (Yarborough Farm to Falls Crest Drive)  
Commerce Drive  
Conservation Drive  
Cotswald Way  
Country Club Drive  
Crescent Boulevard (Piedmont Drive to N. Donahue Drive)  
Dean Road (E University Drive to Moores Mill Road)  
Dean Road (Opelika Road to Sandstone Lane)  
DeKalb Street  
Downs Way  
Drake Avenue  
Foster Street  
Gatewood Drive  
Gay Street (Samford Avenue to East University Drive)  
Gay Street (Opelika Road to Shelton Mill Road)  
Glenn Avenue (N Donahue Drive to Byrd Street)  
Grand National Parkway  
Grove Hill Road  
Hamilton Road (Moores Mill Road to Opelika City Limits)  
Keystone Drive  
Longleaf Drive  
Longwood Drive  
Lundy Chase Drive  
Magnolia Avenue  
Mall Boulevard  
Mall Parkway  
McMillan Street  
Mill Creek Road  
Miracle Road  
Mitchum Avenue  
Moores Mill Drive  
Mrs. James Road  
Ogletree Road  
Old Mill Road  
Pear Tree Road  
Piedmont Drive  
Rock Fence Road  
Preserve Drive (Conservation Drive to Northern Terminus)  
Richland Road  
Ross Street  
Sanders Street

Saugahatchee Road (Annalue Drive to Airport Road)  
Shell Toomer Parkway  
South Donahue (East University Drive to East Longleaf Drive)  
Stanton Drive (VFW Road to Grove Hill Road)  
Stonewall Road  
Thach Avenue  
Tuscany Hills Drive  
Veterans Boulevard  
VFW Road (Binford Drive to Stanton Drive)  
Watercrest Drive  
Webster Road  
Willis Turk Road  
Woodfield Drive (South College Street to Gay Street)  
Wrights Mill Road (Samford Avenue to Shell Toomer Parkway)  
Yarbrough Farms Boulevard

**3.3 Local Streets/Local Residential Streets/Cul-de-Sacs/Alleys**

All other City streets, as applicable

**4. TRAFFIC CIRCULATION STANDARDS BY CLASSIFICATION**

Streets within the City of Auburn and its planning jurisdiction shall be limited to the maximum traffic volumes shown in Table 1 below as being those levels beyond which additional traffic volume would unacceptably degrade the quality of life throughout the community. Table 1 is a compilation of roadway daily and peak hour volumes established for City of Auburn streets and roadways developed from previous ordinances, experience of the City and the Alabama Department of Transportation accepted volumes for public roadways. The City has determined that the daily and peak hour traffic volumes on all streets and roadways with a designation of collector, local commercial/industrial, local residential and alley shall not have a level of service below a "C". Arterials and interstates shall not have a daily or peak hour level of service below "D". If in the opinion of the City Engineer, in those cases where property is proposed for redevelopment or rezoning and development generated would cause the traffic volume limits outlined in Table 1 to be exceeded, a traffic impact study would be required to be conducted by the developer of the property.

**Table 1  
Maximum Roadway Volumes by Classification**

Classification	Two Lane		Three Lane		Four Lane		Four Lane Divided (Five Lane)		Six Lane	
	Max. Peak Hour Volumes	Max. Daily Volumes	Max. Peak hour Volumes	Max. Daily Volumes	Max. Peak Hour Volumes	Max. Daily Volumes	Max. Peak Hour Volumes	Max. Daily Volumes	Max. Peak Hour Volumes	Max. Daily Volumes
Alley*	30 vph	300 vpd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Local Residential/Cul-de-sac Street*	200 vph	2,000 vpd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Local Commercial Street**	1,030 vph	10,300 vpd	1,290 vph	12,900 vpd	1,520 vph	16,200 vpd	1,770 vpd	17,700 vpd	N/A	N/A
Residential Collector***	500 vph	5,000 vpd	630 vph	6300 vpd	790 vph	7,900 vpd	860 vpd	8,600 vpd	N/A	N/A
Collector **	1,030 vph	10,300 vpd	1,290 vph	12,900 vpd	1,620 vph	16,200 vpd	1,770 vpd	17,700 vpd	2,600 vph	26,000 vpd
Arterial **	1,330 vph	13,300 vpd	1,570 vph	15,700 vpd	2,050 vph	20,500 vpd	2,540 vpd	25,400 vpd	3,750 vph	37,500 vpd
Expressway**	N/A	N/A	N/A	N/A	N/A	N/A	5,100 vpd	51,000 vpd	7,650 vph	76,500 vpd

\* based on maximum daily volumes from standards of other communities in Southeast

\*\* Alabama Department of Transportation Approved Capacities and LOS Criteria

\*\*\*Based on trip generation for 500 detached residential dwelling units from ITE

**5. STREETS AND CIRCULATION**

Streets and intersections in the City of Auburn and its planning jurisdiction shall be designed and constructed in conformance with the applicable requirements of the City of Auburn Subdivision Regulations. Design and construction of improvements on roadways controlled by the Alabama Department of Transportation shall be in accordance with applicable requirements of that agency and permitted prior to construction.

In subdivisions for all land uses, street layouts shall be provided for the continuation and connection of streets between adjacent properties whenever such continuation and connection is necessary for the convenient movement and circulation of traffic, effective police and fire protection, access by public service vehicles, and efficient provision of utilities and consistent with the City’s Major Street Plan.

Existing streets that abut a subdivision shall be continued and the continuation shall be at least as wide as the existing streets unless a reduction in width is approved by the City Engineer. Subdivision street layout shall provide stub-outs paved to the property line for the future continuation into undivided lands adjoining a sufficient number of streets to meet the purpose previously outlined.

**6. ACCESS MANAGEMENT GUIDELINES**

**6.1 Purpose, Intent and Application**

- a. The purpose of these *Guidelines* is to establish minimum regulations for access to property. Standards are established for new roads, driveways, shared access, parking lot cross access, and service roads throughout the City of Auburn. The standards of these *Guidelines* are intended to promote safe and efficient travel within the City of Auburn along its roadway system; minimize

disruptive and potentially hazardous traffic conflicts; ensure safe access by emergency vehicles; protect the substantial public investment in the street system by preserving capacity and avoiding the need for unnecessary and costly reconstruction which disrupts business and traffic flow; separate traffic conflict areas by reducing the number of driveways; provide safe spacing standards between driveways and between driveways and intersections; provide for shared access between abutting properties; ensure reasonable access to properties (not necessarily by the most direct access); and to coordinate access decisions with the Auburn Planning Commission and the Auburn City Council, as applicable.

- b. The standards in these *Guidelines* apply to private and public land along road rights-of-way for the roadways which are under the jurisdiction of the City of Auburn. The requirements and standards of these *Guidelines* shall be applied in addition to the requirements of the Auburn Zoning Ordinance, the Auburn Subdivision Regulations and the Auburn Major Street Plan.
- c. Failure by the applicant to begin construction of an approved road, driveway, shared access, service drive, or other access arrangement within eighteen (18) months from the date of approval, shall void the approval and a new application will be required.
- d. A representative of the City of Auburn shall inspect the driveway(s) as constructed for conformance with the standards of these *Guidelines* and any approval granted under it, prior to issuing a certificate of occupancy.

## **6.2 Key Steps in Applying Access Management Guidelines**

The Alabama Department of Transportation is responsible for access permits along state and federal routes. The City of Auburn oversees land use, subdivision, and site design decisions that affect access needs. Therefore, state and local coordination is essential to effective access management. Lack of coordination can undermine the effectiveness of regulatory programs and cause unnecessary frustration for permit applicants.

Timely communications are essential to an effective review procedure, and it begins with a coordinated process for review of access permits along state routes. Applicants should send completed permit applications for access to State controlled roadways to the appropriate Alabama Department of Transportation office with copies being transmitted to the City Engineer. Prior to any decision or recommendation concerning permitting of access, the local reviewing official and the state permitting official should discuss the application.

Property owners will be required to submit the necessary certificates of approval from other affected regulatory agencies, before a building permit is issued. An effective method of coordinating review and approval between developers and various government agencies is through a tiered process. The first stage is an informal meeting and "concept review" period, which allows officials to advise the developer about information needed to process a development application. This includes information on required state and local permits, and any special considerations for the development site. The concept review provides the developer with early feedback on a proposal, before the preliminary plat or site plan has been drafted. Once the preliminary plan is drafted, it can be checked to determine if additional conditions are required for approval. The final plan that is formally submitted should then require only an administrative review.

An applicant of an access permit on a State controlled roadway should request a response be transmitted to the City of Auburn from the Alabama Department of Transportation prior to approval of plats on the state highway system. Applicants should be required to send a copy of the subdivision application to the state access permitting official. This shall occur early in the plat review process, preferably during conceptual review. Early monitoring of platting activity would allow the Alabama Department of Transportation an opportunity to identify problems and develop acceptable alternatives.

### **6.3 – Driveway Location and Design**

All lots hereafter created and all structures hereafter created, substantially altered, or moved on property with frontage on or adjacent to City of Auburn streets, shall conform to the following requirements.

#### **6.3.1. General Driveway Design Standards**

- ❑ Construction of driveways along acceleration or deceleration lanes, left turn storage lanes, and tapers should be avoided, unless no other reasonable access to the property is available. If no other reasonable access can be provided, then the use of right-in/right-out accesses will be considered by the City Engineer.
- ❑ Driveways on undivided roadways shall be aligned directly opposite driveways on the opposite side of the road, or offset from each other in accordance with applicable City Standards, due to the potential for conflicting left turns or jog maneuvers and resulting safety or operational problems.
- ❑ Driveway width and return radius or flare shall be adequate to serve the volume of traffic and provide for efficient movement of vehicles onto and off of the major thoroughfare. However, the width of driveways shall not be so excessive as to pose safety hazards for pedestrians and bicycles.
- ❑ Driveways with more than two lanes should incorporate channelization features.
- ❑ Restrict the number of driveways or access points to one per property frontage or provide justification for additional driveways as applicable.
- ❑ Shared driveways between two parcels at the property lines should be used where practical.

#### **6.3.2. Driveway Location Standards**

- a. Driveway Location Approval - No driveway shall connect to a public street or road, without first receiving approval of the location and cross-section specifications from the City of Auburn, as applicable. No driveway shall connect to a private road unless approved by the Planning Commission and by the parties with an ownership interest in the private road.
- b. Factors on Location of Driveways - At a minimum, the following factors shall be considered prior to making a decision on the location of a driveway:
  - 1. The characteristics of the proposed land use;
  - 2. The existing traffic flow conditions and the future traffic demand anticipated by the proposed development on the adjacent street system;
  - 3. The location of the property;
  - 4. The size of the property;
  - 5. The orientation of structures on the site;
  - 6. The minimum number of driveways needed to accommodate anticipated traffic based on a traffic impact study, as provided by the applicant and verified by the City of Auburn, as applicable. Such traffic impact study shall demonstrate that traffic operations and safety along the public street would be improved (or at least not negatively affected), and not merely that another driveway is desired for convenience;
  - 7. The number and location of driveways on existing adjacent and opposite properties;
  - 8. The location of abutting streets or roads and the carrying capacity of nearby intersections;
  - 9. The proper geometric design of driveways;
  - 10. The spacing between opposite and adjacent driveways and from any nearby intersection;
  - 11. The internal circulation between driveways and through parking areas;
  - 12. The size, location and configuration of parking areas relative to the driveways; and
  - 13. The speed of the adjacent roadway.

- c. Driveway Location - Each driveway location shall conform to requirements outlined in these *Guidelines* and current regulations of the City of Auburn, as applicable.
- d. Driveways within Right-of-Way - Driveways including the radii but not including right-turn lanes, passing lanes and tapers, shall be located entirely within the right-of-way frontage, unless otherwise approved by the City Engineer upon written certification from the adjacent land owner agreeing to such encroachment.
- e. Backing-up from Parking or Loading Area onto a Public Street or Service Drive - Driveways shall not be permitted for parking or loading areas that require backing maneuvers in a public street or road right-of-way or onto a public or private service drive. Such restrictions will be applicable for roadways classified as residential collector, collector and arterials in the City of Auburn.
- f. Relationship to Lot Line - No part of a driveway shall be located closer than a distance equal to the flare radius of the driveway from a lot line unless it is a common or shared driveway and/or approval is granted by the City Engineer and/or adjacent property owners as necessary. This separation is intended to help control storm water runoff and provide adequate area for any necessary on-site landscaping.
- g. Existing Driveways – When a property is proposed for a change of use that requires a zoning permit or a site plan approval, existing driveways (except for shared driveways) that do not comply with the requirements of these *Guidelines* shall be closed. When an application for a change of use requiring a zoning permit or a site plan requiring approval is submitted and once approval of a new means of access under these *Guidelines* is granted, a closed driveway shall be graded and landscaped to conform to adjacent land and any curb cut shall be filled in with curb and gutter per the standards of the City of Auburn.
- h. Intersection Sight Distance – Driveways shall be located so as not to interfere with safe intersection sight distance and to comply with the City of Auburn Subdivision Regulations and A Policy on Geometric Design of Highways and Streets, published by the American Association of State Highway and Transportation Officials (AASHTO). **Table 2** below depicts the typical intersection sight distance required for a stopped passenger car to turn either left onto a two-lane highway with no median with a grade of 3 percent or less on the driveway or to turn right onto or cross a two-lane highway with no median with a grade of 3 percent or less on the driveway. For both conditions, any variations require the time gap to be modified and the required sight distance to be recalculated as per AASHTO. The values shown in **Table 2** originate from AASHTO's A Policy on Geometric Design of Highways and Streets. The design speed used to determine the required intersection sight distance should be based upon the prevailing posted speed plus five miles per hour or the 85<sup>th</sup> percentile speed.

**Table 2  
Design Intersection Sight Distance**

<b>Design Speed (mph)</b>	<b>Left Turn from Stop Design Intersection Sight Distance (ft)</b>	<b>Right Turn from Stop/Crossing Maneuver Design Intersection Sight Distance (ft)</b>
15	170	145
20	225	195
25	280	240
30	335	290
35	390	335
40	445	385
45	500	430
50	555	480
55	610	530
60	665	575
65	720	625
70	775	670

- i. Traffic Signals –Any signals proposed for installation on City streets shall meet the minimum criteria as outlined in the latest edition of the Manual on Uniform Traffic Control Devices as published by the Federal Highway Administration. Additionally, traffic signals proposed for installation on City streets would only be considered at those locations where their spacing from existing signals would not deteriorate roadway capacity along the street. A request for traffic signalization shall address the minimum criteria for installation as outlined above as well as the roadway capacity impacts created by signal spacing. A development may be responsible for all or part of any right-of-way, design, hardware, and construction costs of a traffic signal if it is determined that the signal is warranted by the traffic generated from the development. The procedures for traffic signal installation shall be in accordance with criteria established by the City of Auburn and the Alabama Department of Transportation, as applicable.

**6.3.3. Number of Driveways Permitted**

- a. Driveways for an individual parcel, lot, or building site or for contiguous parcels, lots, or building sites under the same ownership shall consist of either a single two-way driveway or a paired system wherein one driveway is designed, and appropriately marked, to accommodate ingress traffic and the other egress traffic.
- b. Direct access for single family residential lots or parcels shall be strongly discouraged onto arterial roadways in the City of Auburn.

- c. A temporary driveway permit may be issued for construction entrances at the discretion of the City of Auburn and/or the Alabama Department of Transportation. Field-entrance driveways will be reviewed on a case-by-case basis. The review shall take into account the proximity of the adjacent driveways and intersecting streets, as well as traffic volumes along the roadway.
- d. For a parcel, lot, or building site with frontage exceeding 600 feet, or where a parcel, lot, or building site has frontage on at least two streets, an additional driveway may be allowed, provided that a traffic impact study is submitted by the applicant showing that conditions warrant an additional driveway and that all driveways meet the access management spacing requirements.
- e. Certain developments generate enough traffic to warrant consideration of an additional driveway to reduce delays for exiting motorists. Where possible, these second driveways should be located on a side street or service drive, or shared with adjacent uses, or designed for right-turn-in, right-turn-out only movements. These second driveways shall also meet the spacing requirements of these *Guidelines*. In order to be considered for additional driveways, the applicant shall be required to submit a traffic impact study to the City of Auburn and/or the Alabama Department of Transportation which demonstrates the ability of the roadway system to accommodate the added driveways and not degrade the levels of service beyond acceptable standards.

**6.3.4. Driveway Spacing Standards**

- a. Separation from Other Driveways
  - 1. The minimum spacing between unsignalized driveways shall be as outlined in Table 3a. The minimum spacing shall be measured from the centerline of one driveway to the centerline of another driveway. The City of Auburn may grant approval of a temporary driveway for properties along the roadway covered in these *Guidelines* until such time minimum spacing requirements can be met, or an alternative driveway meeting the requirements of this ordinance is approved.

**Table 3a  
Driveway Spacing Standards**

Classification	Minimum Driveway Spacing (ft) *					
	Posted Speed Limit (MPH)					
	55	50	45	40	35	<30
Commercial	N/A	N/A	N/A	200ft	150ft	150ft
Residential Collector	N/A	N/A	N/A	N/A	150ft**	150ft**
Collector	350ft	300ft	250ft	200ft	150ft	150ft
Arterial	500ft	450ft	400ft	350ft	300ft	300ft
Shug Jordan/EUD	600 ft. **					
Auburn Outer Loop	600 ft. **					

\* measured from centerline of one driveway to the centerline of another driveway (Auburn Zoning Ordinance Section 437.01)

\*\* On average

- 2. In the case of expansion, alteration, or redesign of an existing development where the applicant can demonstrate that pre-existing conditions prohibit adherence to the minimum driveway spacing standards, the City shall have the authority to modify the driveway spacing requirements or grant approval of a temporary driveway until such time that minimum spacing

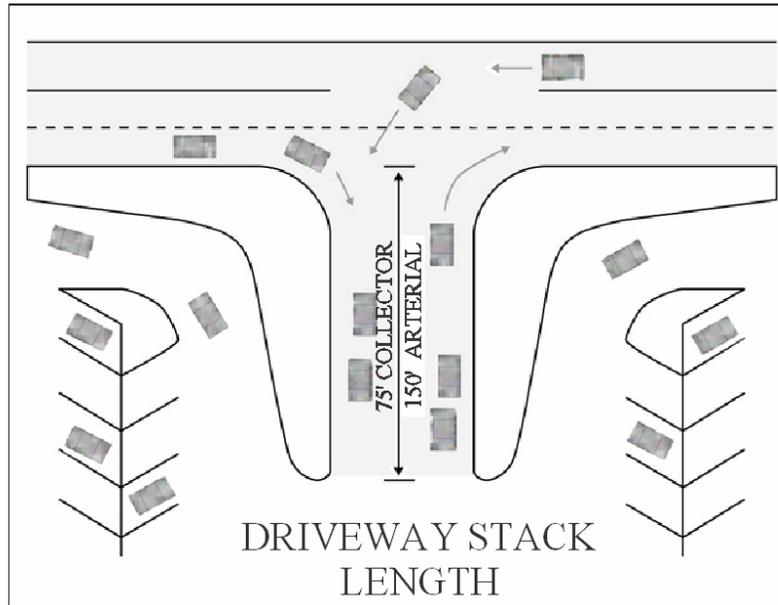
requirements can be met or an alternative driveway meeting the requirements of these *Guidelines* is approved. Such modifications shall be of the minimum amount necessary.

- b. Driveway Separation from Intersections – Driveways allowed along arterial and collector roadways in the City of Auburn shall be separated from their edge to the corner property lines of an intersecting street a distance equal to the minimum access spacing criteria as outlined in Table 3b. Driveway separations for residential streets shall be as outlined in the City of Auburn Zoning Ordinance. Driveway spacing from intersections shall be measured from the edge of the driveway to the nearest corner property line on the intersecting street.

**Table 3b  
Curb Cut Distances from Street Corner Property Lines**

<b>Development Type</b>	<b>Street Type (all districts except UC)</b>			<b>UC District</b>
	<b>Arterial</b>	<b>Collector</b>	<b>Local</b>	
Non-Residential	125'	100'	100'	25'
Multiple Unit Development per §502.02 (f)	125'	100'	100'	25'
All Other Residential	125'	100'	25'	25'

- c. Driveway Alignment
  - 1. Driveway offsets should be in accordance with the minimum spacing standards as outlined in previous paragraphs.
  - 2. Driveways should be perpendicular to the existing public street or an approved private road and shall line up with existing or planned driveways on the opposite side of the road wherever facing lots are not separated by a median, unless doing so in a particular case is substantially demonstrated by a professional traffic engineer to be unsafe.
- d. Vehicle Stacking/Storage Space - There should be one-hundred and fifty (150) feet of stacking for entering and exiting vehicles at the intersection of a driveway and pavement of arterial roadway measured from the pavement edge. On collector roadways, the minimum vehicle stack distance shall be seventy-five feet for entering and exiting vehicles measured from the pavement edge. In areas where significant pedestrian/bicycle travel is expected, as determined by either the City of Auburn or the Alabama Department of Transportation, the ingress and egress lanes should be separated by a 4' to 10' wide median with a pedestrian refuge area. Vehicle stacking distances are reflected in the illustration that follows.



e. Construction Standards

1. Curb radii – curb radii standards for the roadway covered in these *Guidelines* shall meet the current requirements of the City as outlined in their Subdivision Regulations and the Alabama Department of Transportation where applicable.
2. Deceleration lanes and tapers:
  - a. Deceleration lanes should be required at all permitted access points along an arterial roadway in the City of Auburn. Additionally, the City Engineer may require deceleration lanes on collector roadways in those areas where congestion is anticipated and the capacity of the roadway would be impacted.
  - b. Deceleration lane and taper lengths should be constructed as outlined in the Alabama Department of Transportation Special and Standard Highway Drawings, most recent edition.
  - c. Where the amount of frontage precludes the construction of a deceleration lane and taper combination entirely within the property lines of a parcel, the property owner will work with adjoining property owners to coordinate access to both parcels of property.
  - d. A continuous right-turn lane may be required where driveway spacing requirements restrict the use of consecutive turn bays and tapers and where it is determined by the City of Auburn and/or the Alabama Department of Transportation that the lane would not be used as a through lane.
3. Left Turn Lanes – On those roadways where medians currently exist, the construction of a median opening at a private access point will require approval of the Auburn City Council prior to construction. Construction of a left turn lane at a new median opening shall be done so in accordance with the current standards of the City of Auburn and/or the Alabama Department of Transportation. Left turn lanes, if not present on median divided roadways at current median openings, will be constructed by entities requesting permits for private driveways and/or public streets that align with such driveways. Left turn lanes will be required at all driveways requested to the City's arterial street system unless a traffic operational study is conducted by the Applicant which illustrates that such a lane is not required and the study is approved by the City Engineer. The traffic operational study would address current conditions, conditions for post development operations, background growth and anticipated major developments in the region. It is suggested the Applicant meet with the City Engineer prior to such a study being conducted to discuss parameters for the study and anticipated area development.

4. Directional Signs and Pavement Markings - In order to ensure smooth traffic circulation on the site, directional signs and pavement markings shall be installed as outlined in the latest edition of the Manual on Uniform Traffic Control Devices in conjunction with the City of Auburn and/or the Alabama Department of Transportation.
5. Shared Driveways - Shared driveways are strongly encouraged and in some cases will be required.
  - f. Shared Driveways: Sharing or joint use of a driveway by two or more property owners shall be encouraged. In cases where driveways are restricted by the spacing requirements outlined in these *Guidelines*, a shared driveway may be the only design allowed. The shared driveway shall be constructed along the midpoint between the two properties unless a written easement is provided which allows traffic to travel across one parcel to access another parcel and/or access the public street.
  - g. Frontage Roads: In cases where a frontage road exists, property access should be provided via such frontage road, rather than by direct connection to the abutting arterial street.
  - h. Rear Service Drives: Rear service drives shall be encouraged, especially for locations where connection to a side street is available. In addition to access along the rear service drive, direct connection(s) to the arterial street may be allowed, provided that the driveways meet the requirements of these *Guidelines*.
  - i. Parking Lot Connections - Where a proposed parking lot is adjacent to an existing parking lot of a similar use, there shall be a vehicular connection between the two parking lots where physically feasible, as determined by the City of Auburn and/or the Alabama Department of Transportation. For developments adjacent to vacant properties, the site shall be designed to provide for a future connection. A written access easement signed by both landowners shall be presented as evidence of the parking lot connection prior to the issuance of any final zoning approval and shall be shown on the plat and signed.
  - j. Access Easements - Shared driveways, cross access driveways, connected parking lots, and service drives shall be recorded as an access easement and shall constitute a covenant running with the land. Operating and maintenance agreements for these facilities should be recorded with the deed.
  - k. Medians and Median Openings
    1. The type, location, and length of medians on public roads shall be determined by the entity having jurisdiction over such roads. This determination will be made in consultation with the City of Auburn and the Alabama Department of Transportation and will be based on existing and projected traffic conditions; the type, size, and extent of existing and projected development and traffic generated by development; traffic control needs; and other factors.
    2. The minimum spacing between full median openings shall be twice the minimum driveway standards as outlined in Table 2 of these *Guidelines* based on the classification of the facility (example: arterial / 55 mph / 500 feet driveway spacing – 1000 feet minimum median opening spacing).
    3. Median openings intended to serve development must meet or exceed the minimum median opening spacing standards and must also be justified by a traffic impact analysis approved by the City of Auburn and/or the Alabama Department of Transportation. The cost for preparation of the traffic impact analysis and construction of the median opening or openings, including installation and operation of signals and other improvements where warranted, shall be borne by the applicant.

#### **6.3.5. Service Drives and Other Shared Access Standards**

- a. The use of shared driveways, parking lot connections, and service drives, in conjunction with driveway spacing, is intended to preserve traffic flow along major thoroughfares and minimize traffic conflicts, while retaining reasonable access to the property. Where noted above, or where the City of Auburn and/or the Alabama Department of Transportation determines that restricting new driveways or reducing the number of existing driveways may have a beneficial impact on traffic operations and safety while preserving the property owner's right to reasonable access, then access from a side street, a shared driveway, a parking lot connection, or service drive connecting two or more properties or uses may be required instead of more direct connection to the arterial or collector street. However, where traffic safety would be improved, and the driveway spacing requirements of these Guidelines can be met, then direct connection to the roadways covered by these Guidelines may be allowed in addition to a required service drive.
  1. In particular, shared access, service drives, or at least a connection between abutting land uses may be required in the following cases:
    - a. Where the driveway spacing standards of this section can not be met.
    - b. When the driveway could potentially interfere with traffic operations at an existing or planned traffic signal location.
    - c. The site is along a collector or arterial with high traffic volumes, or along segments experiencing congestion or a relatively high number of crashes.
    - d. The property frontage has limited sight distance.
    - e. The Public Safety Department or the Fire Department recommends a second means of emergency access.
  2. In areas where frontage roads or rear service drives are recommended, but adjacent properties have not yet been developed, the site shall be designed to accommodate a future road/facility designed according to the standards of the City of Auburn and/or the Alabama Department of Transportation. The City of Auburn and/or the Alabama Department of Transportation may approve temporary access points where a continuous service drive is not yet available and a performance bond or escrow is accepted to assure elimination of temporary access when the service road is constructed.
- b. The standards for service drives shall be as follows:
  1. Site Plan Review - The City of Auburn and/or the Alabama Department of Transportation shall review and approve all service drives to ensure safe and adequate continuity of the service drive between contiguous parcels as part of the current site plan review process.
  2. Front and Rear Service Drives - A front or rear service drive may be established on property which abuts only one public road. The design of a service drive shall conform to current design guidelines of the City of Auburn and/or the Alabama Department of Transportation.
  3. Location - Service drives shall generally be parallel to the front property line and may be located either in front of, or behind, principal buildings. In considering the most appropriate alignment for a service road, the City of Auburn and/or the Alabama Department of Transportation shall consider the setbacks of existing and/or proposed buildings and anticipated traffic flow for the site.
  4. Distance from Intersections on Service Drives - Frontage road and service drive intersections at the collector or arterial streets shall be designed according to the same minimum standards as described for driveways in these *Guidelines* as specified in Table 3a.
  5. Driveway Entrance - The City of Auburn and/or the Alabama Department of Transportation shall approve the location of all accesses to the service drive, based on current City of Auburn and/or the Alabama Department of Transportation driveway standards. Access to the service drive should be located so that there is no undue interference with the free movement of service drive and emergency vehicle traffic, where there is safe sight distance, and where there is a safe driveway grade as established by the City of Auburn and/or the Alabama Department of Transportation.
  6. Parking on Frontage Roads or Service Drives- The service drive is intended to be used exclusively for circulation, not as a parking, loading, or unloading aisle. Parking shall be

prohibited along two-way frontage roads and service drives. One-way or two-way service drives designed with additional width for parallel parking may be allowed if it can be demonstrated through traffic studies that on-street parking will not significantly affect the capacity, safety, or operation of the frontage road or service drive. Perpendicular or angle parking along either side of a designated frontage road or service drive is prohibited.

7. Directional Signs and Pavement Markings - Pavement markings may be required to help promote safety and efficient circulation. All directional signs and pavement markings along the service drive shall conform to the current Manual of Uniform Traffic Control Devices.
8. In the case of expansion, alteration, or redesign of existing development where it can be demonstrated that pre-existing conditions prohibit installation of a frontage road or service drive in accordance with the aforementioned standards, the City of Auburn and/or the Alabama Department of Transportation shall have the authority to allow and/or require alternative cross access between adjacent parking areas through the interconnection of main circulation aisles. Under these conditions, the aisles serving the parking stalls shall be aligned perpendicularly to the access aisle with islands, curbing, and/or signage to further delineate the edges of the route to be used by through traffic.

**7. TRAFFIC IMPACT STUDY REQUIREMENTS**

**7.1 General**

The transportation impact report shall identify the traffic impacts and potential problems to be generated by a proposed use, and improvements required to insure safe ingress and egress from a proposed development, maintain street capacity, and eliminate hazardous conditions. The following policies and guidelines have been established for the preparation of Traffic Impact Studies (TIS) for development proposals of all land use types. These policies exist to ensure consistent and proper traffic planning and engineering practices are followed when land use actions are being considered. The guidelines provide for a standard process, set of assumptions, set of analytic techniques, and a presentation format to be used in the preparation of the TIS.

**7.2 Applicability**

Developers and/or property owners shall be required to conduct traffic impact studies, as described herein, for all proposed development that meet any or all of the following:

- a. When traffic generated by the proposed development would cause the daily or peak hour traffic volumes on adjacent streets that serve as access for the development to exceed the limits outlined in Table 1;
- b. When a development proposes to access a collector or arterial roadway and the proposed development is larger than the thresholds established by the Institute of Transportation Engineers (ITE) as shown in Table 4. This threshold shall be determined by the full buildout of the project, not by individual phases of the project. If a developer completes a project that does not meet the threshold established in **Table 4** and later either builds subsequent phases of that project or builds a separate project on an adjacent or contiguous parcel of land to the previous project, the combined development size shall be used to determine if a traffic impact study is required ; or
- c. When in the opinion of the City of Auburn City Engineer, significant operational deficiencies, capacity deficiencies, and/or safety concerns on the surrounding roadways and intersections currently exist or would be created as a result of the development’s expected project.

**Table 4  
Traffic Impact Study Thresholds by Land Use\***

<i>Land Use</i>	<i>Size (units)</i>
Residential – Single Family	70 dwelling units

Residential – Townhomes/Condos	120 dwelling units
Residential – Apartments	100 dwelling units
Residential – Assisted Living	285 beds
Shopping Center	17,500 sf
Fast Food Restaurant w/drive-thru	1,500 sf
High-Turnover Sit-Down Restaurant	5,900 sf
Quality Restaurant	8,300 sf
Gas/Service Station w/Convenience Market & Car Wash	5 fueling positions
Bank w/drive-thru	2,200 sf
Pharmacy w/drive-in	8,500 sf
Hotel/Motel	95 rooms
General Office	45,500 sf
Medical/Dental Office	21,000 sf
General Light Industrial	102,000 sf
Manufacturing	137,000 sf

\*Institute of Transportation Engineers

The thresholds for land uses that are not depicted in **Table 4** shall be based upon the ITE standard of 100 or more peak hour trips or 750 or more daily trips, whichever is less.

Developers who are proposing projects are strongly encouraged to contact the City of Auburn to discuss traffic impact requirements prior to submitting a rezoning application or subdivision/site plans to determine the traffic impact study requirements for each project.

**7.3 Applicant Responsibility**

The responsibility for conducting a TIS and assessing the traffic impacts associated with an application for development approval rests with the Applicant. The assessment of these impacts shall be contained within a TIS report as specified herein. It shall be prepared under the supervision of, and sealed by, a Licensed Professional Engineer in Alabama with experience in traffic engineering and transportation planning/engineering.

For all State Highways within the study area, the Applicant is required to meet the requirements of the Alabama Department of Transportation (ALDOT) in addition to those of the City of Auburn.

**7.4 Capacity and Safety Issues**

Development of property has a direct impact on transportation, including vehicular, transit, bicycle, and pedestrian traffic. In order to meet capacity and safety needs as they relate to the traffic generated from a particular land use, specific traffic circulation improvements should be made. The goal of the TIS is to address traffic related issues that result from new development and to determine the improvements required to address and mitigate those issues such that street maximum capacities are not exceeded and traffic and pedestrian safety is maintained. The competing objectives of vehicular movement, pedestrians, bicyclists, and others must be balanced in the development review process. The TIS will provide information and guidance as plans are developed and decisions made for the proposed development plan.

**7.4.1 Vehicular Traffic Improvements.**

Examples of traffic capacity and safety improvements to mitigate development impacts include: road widening, turn lanes, deceleration lanes, intersection through lanes, traffic signals, stop signs, design speed adjustments, modifications to access points, roundabouts and other traffic calming techniques as approved by the City.

#### **7.4.2 Pedestrian Traffic Considerations and Improvements.**

Examples of street conditions that promote safe, comfortable and convenient pedestrian environments include: narrower roadways that promote shorter walking conditions; short blocks; lower prevailing travel speeds; sidewalks; well-defined crosswalks, median refuge areas and islands at street intersections. Walkway tunnels and overhead structures are examples of safety improvements that afford maximum protection for pedestrians.

#### **7.4.3 Bicycle Traffic Improvements.**

The addition of on-street bicycle lanes or off-street bicycle paths may be needed to achieve connectivity between the proposed project and the existing bikeway system.

### **8. TRAFFIC IMPACT STUDY PROCEDURES AND CRITERIA**

#### **8.1 Scoping Meeting/Telephone Conference**

##### **8.1.1 Purpose.**

A scoping meeting/telephone conference prior to the submittal of a request for rezoning or site/development plan will be required and used to determine the study area, study parameters and documentation requirements for conducting a Traffic Impact Study (TIS) for specific development proposals. The parameters determined in the scoping meeting/telephone conference represent general agreement between the City and the Applicant's consulting engineer, but they may not be all-inclusive. The City retains the right to require additional information and/or analysis to complete an evaluation of the proposed development project.

##### **8.1.2 Meeting/Telephone Conference Setup and Content.**

The applicant is required to contact the City to arrange for a Scoping Meeting/telephone conference to discuss the TIS requirements and determine the base assumptions. It is incumbent upon the Applicant to discuss the following:

1. Previous TIS prepared for the site, if any;
2. Location of the site;
3. Proposed access and its relationship to adjacent properties and their existing/proposed access;
4. Preliminary estimates of the site's trip generation and trip distribution at buildout;
5. Identification of proposed year of build-out;
6. Anticipated growth in traffic volumes between current and build-out conditions;
7. Anticipated roadway improvements required to mitigate development impact;
8. Phasing plan proposed, if any;
9. Special analysis needs; and
10. Other developments within the study area.

##### **8.1.3 Results of Meeting/Telephone Conference**

The Scoping Meeting/telephone conference shall conclude with the City and Applicant in mutual agreement with regard to determining the level of detail and extent to which the TIS will need to address each of the following:

1. Study area for the impact analysis;

2. Other developments within the study area;
3. Existing intersection counts;
4. Intersections and roadway segments to be studied in detail;
5. Existing traffic volume forecasts;
6. Anticipated growth in traffic from existing to build-out conditions;
7. Location of the nearest bicycle and pedestrian facilities; and
8. Special analysis needs (non traditional peak hour volumes for some uses, neighborhood impacts, access management plans, etc.).

## **8.2. Evaluation Elements**

The key elements of the project traffic impact assessment shall be specified by the City from the following list:

1. Conformity with the transportation related policies of the City of Auburn, including any other adopted access plans.
2. Peak hour intersection and roadway level of service.
3. Appropriateness of access locations;
4. Location and requirements for left turn lanes or deceleration lanes at accesses or intersections. Taper lengths, storage length and deceleration lengths for turn lanes shall be as outlined in Special Drawing LTL-623 of the Alabama Department of Transportation's *Special and Standard Highway Drawings*, latest edition;
5. Sight distance evaluations and recommendations (intersection, stopping, passing);
6. Continuity and adequacy of pedestrian and bike facilities;
7. Recommended traffic control devices for intersections which may include two way stop control, four way stop control or yield signs, school flashers, school crossing guards, crosswalks, traffic signals or roundabouts.
8. Traffic signal and stop sign warrants.
9. Other items as requested by the City Engineer and agreed to in the Scoping Meeting/telephone conference.
10. Neighborhood and public input issues.

## **8.3 Roadway Traffic Volumes/Traffic Counts**

Current morning and afternoon commuter peak hour (7-9 A.M. and 4-6 P.M.) traffic counts as specified by the City Engineer shall be obtained for the roadways and intersections within the study area for one, non-holiday Tuesday, Wednesday, or Thursday. Each peak hour count shall be conducted over the designated hours (or as specified by the City Engineer) and shall include fifteen (15) minute count data to clearly identify the peak hours.

Weekend counts and/or average daily counts may also be required where appropriate and when required by the City Engineer. ALDOT average weekday traffic (AWT) counts may be used when available. Pedestrian counts and bike usage should be obtained. Vehicle classification counts may be required.

In any case, these volumes shall be no more than one year old (from the date of application submittal). The source(s) of each of the existing traffic volumes shall be explicitly stated (ALDOT counts, new counts by Applicant, etc.). Summaries of current traffic counts shall be provided. Based on the impacts to daily and peak hour traffic volumes from both Auburn University and Auburn City Schools, the City will require the use of adjustment factors for data collected when either of these facilities is not in operation. Adjustment factors proposed for use in any TIS shall be submitted along with all supportive data to the City Engineer for review and approval. If in the opinion of the City Engineer, the proposed adjustment factors will not accurately reflect traffic conditions that would be in place during school operations, traffic count data will be accepted and require collection during those periods when the educational facilities are in operation.

In most cases, the actual completion of developments will occur at some time in the future. As part of the TIS, an annual growth rate of adjacent roadways and intersections will be developed. Growth rates utilized in the preparation of a TIS must be based on historical traffic growth, use of a regional travel demand model or other methods as approved by the City Engineer. Application of traffic growth shall be applied for buildout conditions and other interim development levels as required by and approved by the City Engineer.

#### **8.4 Intersection and Approach Level of Service.**

As a minimum, A.M. and P.M. peak hour intersection and approach levels of service shall be determined for the existing signalized and unsignalized intersections at all study intersections and roadways. Additional intersections should be included in the analysis where post development conditions are considered by the City to be significant. The analysis shall use procedures as described in the latest edition of the *Highway Capacity Manual*. Capacity analyses for intersections shall be based on individual approach levels of service whereas impacts on roadways shall be based on daily traffic volumes and the specific roadway classification.

#### **8.5 Trip Generation Rate.**

Trip generation rates utilized for conducting traffic impact studies in the City of Auburn should be taken from actual rates developed and generated from land uses in the Auburn area. When data is not available for a proposed land use or for a land uses unique to the Auburn area (University housing served by transit, etc.) is proposed, the Applicant must conduct a local trip generation study following procedures prescribed in the ITE Trip Generation Manual and provide sufficient justification for the proposed generation rate. This rate must be approved by the City Engineer prior to its use in the TIS written study.

If, in the opinion of the Auburn City Engineer, trip generation rates found in the latest edition of the Institute of Transportation Engineers' Trip Generation Manual or other industry publications accurately reflect the trip generation characteristics of a particular land use proposed, that trip generation rate may be used in forecasting traffic to be generated by a development.

#### **8.6 Preliminary Land Use Assumptions.**

The trip generation values contained in studies submitted prior to the establishment of a site-specific development plan shall be based on the maximum number of dwelling units permitted by the Auburn Zoning Ordinance for the approved land uses, and/or the maximum trip generation rates for the nonresidential development proposed land use action. When a TIS is being developed for a project with an established site-specific development plan, trip generation shall be based on actual dwelling unit counts and square footage(s) proposed on the final plan.

#### **8.7 Trip Generation Table.**

The Applicant shall prepare a Trip Generation Table, listing at a minimum, each type of land use within the site at build-out, the size and unit of measure for each land use, trip generation rates (total daily traffic, A.M. and P.M. peaks), and the resultant total trips generated.

#### **8.8 Trip Distribution.**

The distribution of site generated traffic must be documented in the TIS. The procedures and rationale used in determining the trip distributions for proposed developments must be fully explained and documented. It is recommended the Applicant coordinate with the City of Auburn to establish an acceptable distribution pattern. Distribution patterns assumed for development shall be illustrated in graphic format and provided to the City Engineer prior to proceeding with the remainder of a traffic impact study.

### **8.9. Requirement for Additional Lanes**

Within the study area of a TIS, as established by agreement between the City and the Applicant, additional lanes may be required on streets where minimum levels of service are exceeded for existing cross sections based on post development conditions. If such additional lanes are required, as established as part of the TIS, they can include general purpose through lanes, left turn lanes and right turn lanes. Additional lanes, when determined by a TIS and in the opinion of the City Engineer of the need for such lanes is established, shall be provided by the Applicant. Such improvements must be designed and constructed to city, county or state standards. Generally, the cost of such improvements will be borne entirely by the Applicant.

During the design phase of providing additional lanes on public streets and roadways, if it is determined that additional right-of-way is required to construct such additional lanes; the Applicant shall provide additional right-of-way along their property frontage as directed by the City Engineer. If the construction of such additional lanes requires right-of-way beyond the property frontage of the Applicant, the Applicant shall work with the City to devise a method to provide the additional right-of-way and related roadway improvements or modify their development plan to remove the requirement for such additional lanes.

### **8.10. Intersection Delay**

An A.M. and P.M. commuter peak hour intersection level of service analysis shall be conducted for each intersection analyzed in the TIS for existing conditions and those that reflect post development conditions. This analysis shall be based on procedures specified in the most recent release of the Highway Capacity Manual. In those areas adjacent to or in close proximity to City schools or Auburn University, additional peak hour analyses shall be conducted for those afternoon hours which reflect the peaks for those facilities. The intent of this analysis is to establish the existing and post development intersection delays and related levels of service for comparison and determination of impacts on operations.

### **8.11. Driveway Access.**

Driveway plan concepts for a development shall be submitted to the City for approval prior to development of construction plans. Because frequent curb cuts and driveways providing access to numerous adjoining properties are an impediment to the proper functioning of major streets, on-site circulation and cross-access agreements between lots are encouraged. Minimum spacing of driveways and other curb cuts shall conform to the minimum standards outlined in Table 2 of these Guidelines.

Where an intersection contains a left-turn stacking lane, any driveway opposite such lane shall not permit left turns into or from the driveway. Raised islands or other approved methods of restricting these movements will be required as approved by the City Engineer. Limitations on movements from driveways near intersections shall also apply to deceleration lanes.

Required distances between curb cuts and street shall be measured from the edge of the curb cuts to the nearest corner property line of the intersection street.

Various roadways in the City of Auburn have center medians that have been constructed for both traffic safety and aesthetic considerations. Any alteration of existing or planned roadway medians shall be allowed at the discretion of the Auburn City Council. Alterations to existing medians shall only be considered where such alterations are deemed by the City to be in the public interest. In those cases where medians are proposed for alterations as part of a development, it will be incumbent on the Applicant to demonstrate through traffic operational analysis in the TIS that such alterations can be implemented and not compromise public safety.

On those routes maintained by the Alabama Department of Transportation, an access permit is required from that agency. The City shall be copied on all ALDOT permit applications within Auburn and its planning jurisdiction.

#### **8.12. Traffic Signals.**

- 8.12.1. Proposed and existing access points, proposed intersections, and existing intersections effected by the land use actions being analyzed in the report that have any potential for traffic signalization will be reviewed and discussed during the Scoping Meeting/telephone conference.
- 8.12.2 During the Scoping Meeting/telephone conference an outline of locations for signal warrant analysis will be agreed upon.
- 8.12.3 Signal Warrant Analysis for potential signal locations shall consist of a review of the applicable signal warrants contained in the Manual on Uniform Traffic Control Devices. On roadways controlled by the Alabama Department of Transportation, procedures for meeting traffic signal warrants as established by that Department shall be followed.
- 8.12.4 Alternatives to signalization at potential signal locations will be discussed in the Scoping Meeting/telephone conference and the TIS report. The alternatives to adding new intersections would include added access points, limited movements at access points, frontage roads, joint use access points, roundabouts and other such designs as required and / or approved by the City.
- 8.12.5 If any signal timing and/or phasing changes are proposed as a mitigation measure of a TIS, an appropriate analysis of the intersection where the signal exists shall be conducted to demonstrate the potential implications of the suggested modifications. Such modifications to existing traffic signals in Auburn shall require submittal of a request for such change with supportive documentation of analysis and findings and shall not be undertaken without approval from the City Engineer.
- 8.12.6 Sight distance concerns that are anticipated or observed which may impact driveway, intersection, or roadway operation and safety need to be discussed in the TIS. Recommendations regarding stopping sight distance, intersection sight distance, and passing sight distance needs should be provided by the Applicant's traffic engineer for detailing on the final development, site plan, or final construction plans. Intersection sight distance requirements for driveways and intersections shall meet the criteria as set forth in section 6.3.2 (h) of these guidelines.

#### **8.13 Mitigation Thresholds and Measures**

When a project's vehicular impacts are determined to exceed the minimum acceptable level of service standard as outlined in Section 4 of these *Guidelines*, the TIS shall include feasible measures which would mitigate the project's impacts. The minimum acceptable level of service specified in Section 4 of these Guidelines has established a minimum level of service "D" for intersections, intersection approaches and roadways classified as an arterial or expressway, while the minimum level of service of "C" has been established for intersections, intersections approaches and roadways classified as a collector, local commercial, local residential and alley. Additionally, if the analysis included in a TIS reflects the LOS for an intersection, intersection approach or roadway would drop one level, however, not below the minimum criteria for a specific roadway classification, mitigation will not be required. If for any reason, the TIS illustrates the reduction in level of service for an intersection, intersection approach or roadway drops two (2) levels of service, mitigation will be required. An appropriate measure of traffic mitigation would be the ability of roadway, intersection and traffic control improvements to maintain acceptable levels of service for the impacted facility. Mitigation measures could include the addition of added through lanes (roadway widening), left turn lanes, right turn lanes, improved traffic control,

access management and other such measures as deemed appropriate by analysis and concurrence by the City.

#### **8.14 Traffic Signal Operations Improvements**

Traffic Signal Operational improvements shall include upgrading signals to include additional signal phases and timing plans, signalization of an unsignalized intersection and/or implementation of traffic signal systems. Signal improvements and/or installations on City streets must be approved by the City Engineer. Traffic signals recommended to be installed on ALDOT roadways shall be jointly approved by the State and City. Generally, the cost of such improvements will be borne entirely by the Applicant.

#### **8.15 Street Widening and Other Physical Improvements**

Mitigation measures, which include street widening, and other physical improvements must be demonstrated to be physically feasible and must meet minimum City standards and codes for both on-site and off-site improvements. As part of the basic TIS analysis, a determination of the need for left and right turn lanes as a result of development generated traffic should be undertaken. The analysis techniques utilized shall include procedures and methods outlined in the National Cooperative Highway Research Program (NCHRP) report 279 or other methodologies as approved by the City Engineer.

#### **8.16 Geometric Improvements**

The needs for turn lanes and other auxiliary lanes shall be determined based on the criteria as outlined in Section 8.15 for each development access and study intersection included in the TIS. The basis of design for such devices shall be the City of Auburn Zoning Ordinance, AASHTO or ALDOT as applicable. All proposed project entrances onto arterial and collector streets shall be evaluated as to whether they require deceleration lanes as outlined in these *Guidelines*.

### **9. TRAFFIC IMPACT STUDY REPORT CONCLUSIONS**

#### **9.1 Recommended Improvements**

The findings of the Traffic Impact Study should be provided in summary format, including the identification of any areas of significant impacts and recommended improvements/mitigation measures to achieve the maximum volume standards for all modes.

##### **9.1.1 Geometric Improvements**

The TIS shall include recommendations for all geometric improvements such as pavement markings, signs, adding through or turn lanes, adding project access and assorted turn lanes and changes in medians. Sufficient dimensions/data shall be identified to facilitate review. Anticipated right-of-way needs shall also be identified. This information shall be made available to the project civil engineer for use in preparing scaled drawings.

##### **9.1.2 Responsibility**

The Traffic Impact Study shall describe the location, nature and extent of all transportation improvements required to achieve the required post development levels of service within the study area. The responsibility for implementation of the post development mitigation measures shall rest with the Applicant.

### **10. TRAFFIC IMPACT STUDY REPORT OUTLINE**

**10.1 Introduction** (Purpose of report and study objectives)

**10.2 Proposed Development**

- A. Site Description** (include small version of site plan in appendices)
- B. Site Location** (include site location map)
- C. Zoning** (Current and proposed)
- D. Time Frame of Development** (include any phasing of development which is anticipated)

**10.3 Background Information**

- A. Background Traffic Growth Rate** (include projected traffic growth rate for the development time frames included in the proposed development and include method for traffic growth projections)
- B. Off-Site Developments** (description of other significant development in the vicinity which could impact traffic conditions in the study area)
- C. Planned and Programmed Roadway Improvements** (description of any Planned or Programmed Roadway Improvements within the study area which could impact traffic conditions within the study area during the time frame for development of the proposed project)

**10.4 Existing Traffic Conditions**

- A. Traffic Count Data** (introduce and illustrate current traffic counts for the study area roadways and intersections)
- B. Existing Conditions Capacity Analysis** (evaluate study area roadways and/or intersections based upon industry standard capacity analysis methods)
- C. Summary of Existing Traffic Conditions** in the study area

**10.5 Future Traffic Conditions**

- A. Background Traffic Growth** (apply the background growth rate for the time frame for a give phase of development)
- B. Inclusion of Planned or Programmed Improvements** (in the event any of the Planned or Programmed improvements are to be included in the analysis of future traffic conditions, a status of the projects and time frame of the projects should be demonstrated)
- C. Trip Generation Estimates** (estimate trip generation potential for each level of development)
- D. Trip Distribution** (describe the anticipated routes for traffic expected to be generated by the proposed development and illustrate the findings in graphic format)
- E. Traffic Assignment** (assign traffic expected by the proposed development to the study area roadways based upon the distribution patterns established)
- F. Future Conditions Capacity Analysis** (evaluate the study area roadways and intersections as well as site accesses with post-development traffic volumes)
- G. Identify Capacity Deficiencies** (identify roadways and/or intersections in which capacity deficiencies are expected for future traffic conditions)
- H. Recommended Roadway and Traffic Control Improvements** (develop and test potential improvements for the study area roadways and intersections aimed at mitigation of traffic impacts resulting from development traffic)
- I. Internal Circulation** (demonstrate the ability of the site's internal circulation pattern to handle site generated traffic that includes trucks)
- J. Capacity Analysis with Recommended Improvements** (demonstrate the effectiveness of Recommended Roadway and Traffic Control Improvements and resultant levels of service)

Note: These steps should be taken for each level of development within the corresponding time frame.

**10.6 Summary and Conclusions** (provide a summary of the findings of the study effort to include existing traffic conditions, future traffic conditions for each level of development, and the recommended improvements aimed at mitigating potential traffic impacts resulting from the proposed development for each level of development).