

City of Alexandria



# **Transportation Planning Administrative Guidelines**

Multi-modal Transportation Studies

March 25, 2013

*See Section 11-700 of the Zoning Ordinance which provides a legal framework for these Guidelines, and which is attached as Appendix A.*

## **Multi-modal Transportation Study Guidelines**

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## Chapter 1 Introduction

The purpose of the Transportation Planning Administrative Guidelines (Guidelines) is to ensure that the mobility of pedestrians, transit users, bicyclists and motor vehicles will be maximized and that there is adequate transportation infrastructure and services to support future levels of development. It is a goal of the City of Alexandria to create an integrated, multimodal transportation system that is accessible and safe for all users. For Alexandria to maintain its attractiveness as a place to live, work and play, traffic impacts associated with new development must be minimized. The City recognizes that traffic congestion affects the attractiveness of the City for business and commercial growth since employers are not likely to locate on sites which are congested and inaccessible.

The Transportation Management Plan (TMP) ordinance serves to maintain the viability of its commercial centers, neighborhoods and growth areas. The TMP program is a comprehensive, coordinated and continuously operated program to encourage the use of travel modes other than single occupancy vehicles (SOV) and to reduce the peak hour traffic impacts associated with new development.

**The City of Alexandria takes a multi-modal approach to transportation and requires analysis of all modes of transportation.**

The Guidelines provide technical procedures to analyze and report the effects of new development on transportation facilities in Alexandria. The Guidelines are intended to standardize the submittal requirements and transportation systems evaluated to provide a comprehensive analysis of impacts related to development proposals and proposed mitigation strategies. The study results will be used to determine the level of mitigation needed for development, most notably the level of participation in the City's TMP program.

### Section 1 Process Overview

The guidelines apply to development projects subject to the site plan review process as defined in the Zoning Ordinance, Section 11-400. The review of such projects for transportation matters is conducted concurrently with the site plan review process, as shown in Figure 1.1. The following steps outline both processes and indicate key requirements for completing a transportation study.

**Step 1:** The Transportation Division of T&ES and Planning and Zoning will hold a pre-concept meeting with the applicant. At the pre-concept meeting, staff and the applicant will discuss the existing transportation network serving the site and the process for submittal of the Transportation Screening Worksheet and Scoping Intake Form, if applicable. (A sample of the worksheet and forms are in Appendix B.) If this discussion does not occur at the pre-concept meeting, or if a pre-concept meeting is not required, a separate meeting will be arranged as necessary.

**Step 2:** All applicants must submit a Transportation Screening Worksheet.

**Step 3:** Based on the information contained in the worksheet, T&ES will use the development thresholds as set forth in the Zoning Ordinance, Section 11-700 to determine if the applicant is required to submit a TMP, transportation study, or if no further action is required.

**Step 4:** If the applicant is required to submit a TMP or transportation study, the applicant must submit the Scoping Intake Form to T&ES Transportation Division during the Concept 2 Phase of the site plan

process. The form must document all methodology and elements to be used in the transportation study, such as use of data, assumptions, trip generation, trip distribution, and mode share, and must be submitted to the Transportation Division for approval.

**Step 5:** Upon submittal of the Scoping Intake Form, the applicant schedules a scoping meeting with T&ES Transportation Division.

**Step 6:** The applicant prepares a scoping agreement based on the Scoping Intake Form and the scoping meeting for approval by the T&ES Transportation Division. This agreement outlines the required contents of the transportation study and agreed to assumptions. The agreement should be signed by the City and the applicant, and should be included in the appendix of the transportation study.

**Step 7:** The applicant submits the transportation study to City staff for review with the preliminary plan. The transportation study must be in accordance with the scoping agreement.

**Step 8:** T&ES reviews the transportation study for completeness and requests any necessary revisions from the applicant.

**Step 9:** After incorporating any revisions, the applicant submits a final transportation study with the development application to T&ES and Planning and Zoning. The study must be submitted electronically in addition to required hard copy submittals.

**Step 10:** Following a final review of the transportation study, T&ES will prepare conditions for inclusion in the staff report. Conditions are designed to address the transportation issues and concerns in the transportation study, as well as other concerns that may arise during the development review process.

**Step 11:** Approving bodies review and take action on the development application.

If a study was conducted for a project site and there is updated information that would impact the transportation network or modify the transportation study in any way, the applicant will be required to resubmit an updated transportation study before approval by Planning Commission and Council. An update memo may be accepted by the City with prior approval by the Director of T&ES.

Circumventing the threshold by submitting piecemeal development applications is not permitted. If the applicant submits a new development application at an adjacent location within a five-year period of the initial submission, T&ES will direct the applicant to perform a new transportation study that includes all trips generated by all applications within the last five years.

## **Section 2 Scoping Meeting**

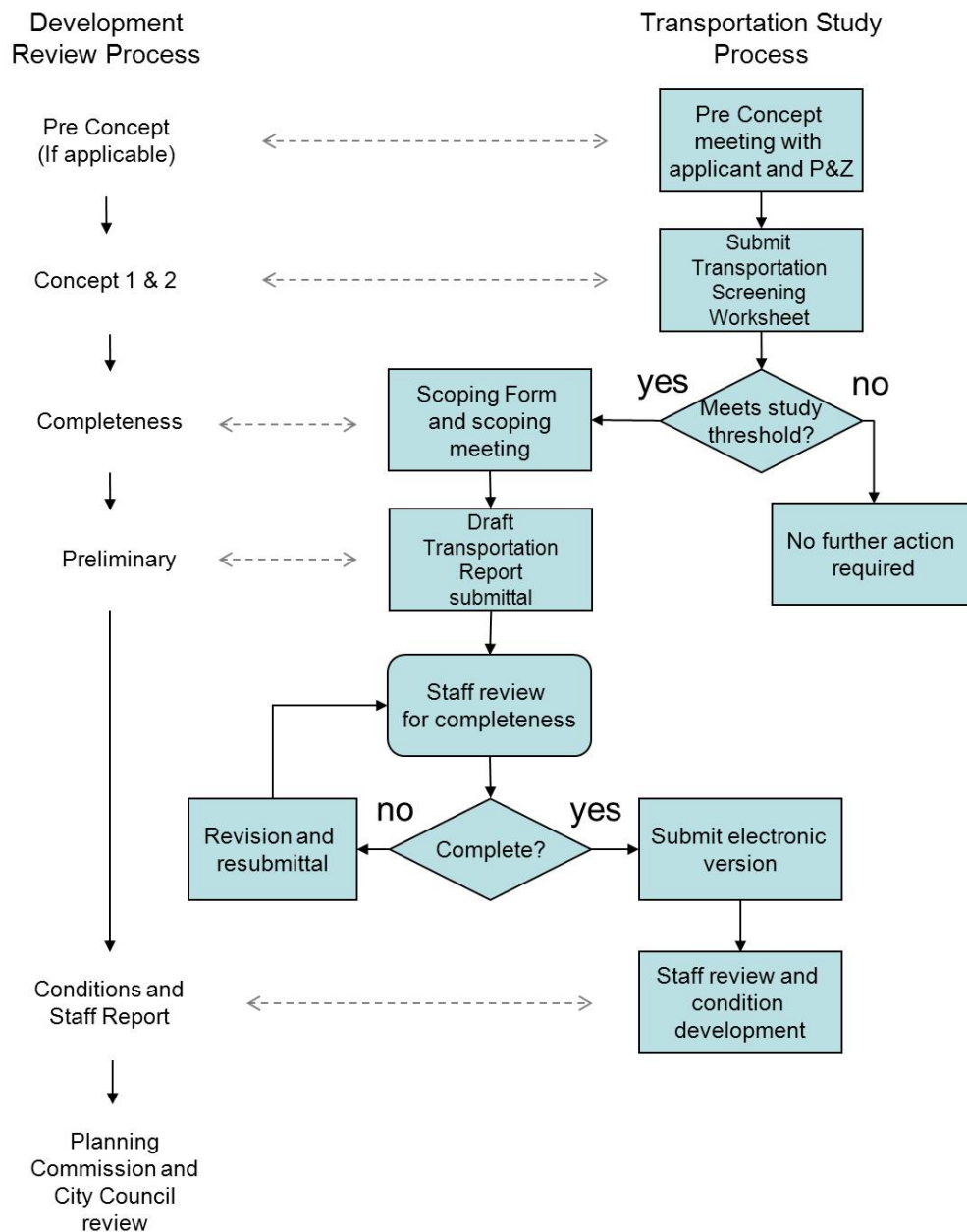
The purpose of the scoping meeting shall be to determine the scope of the transportation study and/or other special studies as needed and to allow the City and applicant to discuss requirements, methodology and any special considerations which may exist prior to the commencement of work. If a transportation study is required, the applicant and/or their transportation consultant shall submit a draft scoping agreement prior to the scoping meeting. The Transportation Scoping Form (Appendix B. 2.) is the template for the scoping agreement and includes all subject matter to be addressed in the transportation study.

Based on the discussion at the scoping meeting, the consultant will revise the draft scoping agreement for the transportation study prior to beginning work. The agreement is to be signed by both parties before work commences to document all of the assumptions to be included in the study.

### Section 3 General Notes

For all requirements included in these Guidelines, the Director of T&ES may make adjustments at his/her discretion.

**Figure 1.1 Integration of Transportation Study Process with Development Review Process**



## Chapter 2: Multi-modal Transportation Study Guidelines

### Section 1 Introduction

This chapter provides technical guidelines to analyze and report the effects of new development on multi-modal transportation facilities in Alexandria. This chapter describes the standardized submittal process and reporting requirements to provide a comprehensive analysis of impacts related to development proposals and proposed mitigation strategies.

### Section a. Study Thresholds

The requirement to complete a transportation study is determined by the TMP thresholds established in the Ordinance. Development projects below the TMP thresholds are not required to submit a separate transportation study. Table 2.1 shows the thresholds of the development size categories based on peak hour trips.

**Table 2.1 Definitions of project sizes by peak hour trips**

Peak Hour Trips*	Documentation Required	Development Size Category
<50	N/A	N/A
50-99	Transportation Study	Small
100-249	Transportation Study	Medium
>250	Transportation Study	Large

*\*Peak hour of the generator in either the am or pm, whichever is greater.*

For purposes of determining the study thresholds, the City uses unfactored trip generation rates as indicated on the Scoping Intake Form (Appendix B. 2.). The unfactored rates do not include discounts for existing uses, pass-by trips, transit usage, etc.

All Coordinated Development Districts (CDD) shall require a transportation study using the criteria of the large category. Each subsequent Development Special Use Permit (DSUP) within a CDD will go through the scoping process to determine if a study is required.

### Section b. Study Area

Each development size category has a corresponding study area relative to the size of the potential impact. The transportation study will cover each mode of transportation with different methods; therefore, some modes will have a unique study area based on the characteristics of that mode. The study area will be finalized at the scoping meeting by the Director of T&ES. The study areas are defined in Table 2.2.

### Section c. Templates

A standardized list of graphics, tables and appendices to incorporate into the transportation study is provided in Appendix C. A sample table of contents is also provided.

**Table 2.2 Study Area Guidelines by Development Size Category**

Size	Vehicular Study Area*	Transit, Bicycle and Pedestrian Study Area*	Parking Study Area*
Small	At a minimum, include all site driveways and 1000 feet radius or one signalized intersection in each direction, whichever is greater	Adjacent to site	Not applicable
Medium	At a minimum, include all site driveways and one-quarter mile radius or three signalized intersections in each direction, whichever is greater	Area within one-fourth mile of the site	Two block radius or 1,000 feet, whichever is shorter**
Large	At a minimum, include all site driveways and one-half mile radius or four signalized intersections in each direction, whichever is greater	Area within half-mile of the site	Two block radius or 1,000 feet, whichever is shorter**

*\*All distances are measured from the site perimeter.*

*\*\*Only if parking modification is requested*

#### **Section d. Required Analysis**

- Existing conditions
- Future conditions without subject development
- Future conditions with subject development
- Future conditions with subject development and mitigation (if necessary)

#### **Section e. Horizon Years**

The required analysis shall at a minimum consider the following, as applicable to the size of the development.

Single phase projects:

1. Small and medium developments: opening year
  - a. Existing conditions
  - b. Opening year analysis without subject development
  - c. Opening year analysis with subject development
  - d. Opening year analysis with subject development and mitigation (if necessary)
2. Large development: a.) opening year and b.) six years after opening
  - a. Existing conditions
  - b. Opening year analysis without subject development
  - c. Opening year analysis with subject development
  - d. Opening year analysis with subject development and mitigation (if necessary)
  - e. Opening year plus six years analysis without subject development
  - f. Opening year plus six years analysis with subject development
  - g. Opening year plus six years analysis with subject development and mitigation (if necessary)



Multi-phased projects:

1. Small development: opening year of each phase
  - a. Existing conditions
  - b. Phase one opening year analysis without subject development
  - c. Phase one opening year analysis with subject development
  - d. Phase one opening year analysis with subject development and mitigation (if necessary)
  - e. Phase two opening year analysis without subject development
  - f. Phase two opening year analysis with subject development
  - g. Phase two opening year analysis with subject development and mitigation (if necessary)
  - h. Continue e-g for each phase.
2. Medium and large developments: opening year of each phase and six years after final phase is complete. For large developments, six years after final phase is complete should not to exceed 25 years from project initiation. If it does exceed 25 years, then 25 years from project initiation shall be reviewed.
  - a. Existing conditions
  - b. Phase one opening year analysis without subject development
  - c. Phase one opening year analysis with subject development
  - d. Phase one opening year analysis with subject development and mitigation (if necessary)
  - e. Phase two opening year analysis without subject development
  - f. Phase two opening year analysis with subject development
  - g. Phase two opening year analysis with subject development and mitigation (if necessary)
  - h. Phase two opening year plus six years analysis without subject development
  - i. Phase two opening year plus six years analysis with subject development
  - j. Phase two opening year plus six years analysis with subject development and mitigation (if necessary)

The horizon year(s) should be related to the opening date of the proposed development or build-out of major phases of a multi-year development or long-range transportation plans or other significant transportation network changes. Horizon years will be established during the scoping process.

## **Section f. Resources**

All data sources used should be well documented in the transportation study. Sources not referenced in the Guidelines may be approved by the Director of T&ES or his designee and will be determined in the scoping process. The following resources may be used to create a transportation study and are referenced throughout this document:

- Field observations
- City approved studies
- Urban Land Institute, Shared Parking Second Edition, 2006\*
- Institute of Transportation Engineers Trip Generation, 8<sup>th</sup> Edition, 2008\*
- Institute of Transportation Engineers Transportation Planning Handbook, 3<sup>rd</sup> Edition, 2008\*
- Institute of Transportation Engineers Trip Generation Handbook, 2004\*
- Washington Metropolitan Area Transit Authority 2005 Development Related Ridership Survey\*
- US Census 2010\*
- Metropolitan Washington Council of Governments, Transportation Travel Demand Model, version 2.3\*

- Metropolitan Washington Council of Governments regional land use data
- Virginia Department of Transportation (VDOT) Average Daily Traffic (ADT) volumes from 2010\*
- Transit agency approved data from Washington Metropolitan Area Transit Authority (WMATA), DASH, Fairfax Connector, ART, PRTC, etc.

*\*As of the printing of these Guidelines, these publications were the commonly accepted versions. If a more recent version of these resources is published, it will be acceptable to use either version.*

Additional information about the City's proposed non-motorized transportation network is available at these websites:

- Transportation Master Plan:  
<http://www.alexandriava.gov/localmotion/info/default.aspx?id=14184>
- Pedestrian and Bicycle Mobility Plan:  
<http://www.alexandriava.gov/localmotion/info/default.aspx?id=11418>
- Bicycle Parking Standards, Rack Placement Rules and Guidelines:  
<http://www.alexandriava.gov/bicycleparking>
- An extensive GIS inventory of existing pedestrian and bicycle facilities, including a Data Dictionary, is available from the city's GIS Division:  
<http://www.alexandriava.gov/gis>

## **Section 2 Vehicular Transportation**

### **Section a. Introduction**

This section defines the elements that are required in the vehicular traffic impact analysis. A thorough study shall address each of the items discussed in the following sections.

### **Section b. Study Area**

The documentation should provide a description of the proposed site improvements, existing zoning and use, and proposed zoning within the study area. Anticipated land uses in the general vicinity of the site should be identified in order to understand other factors influencing the study area.

The local base map should include, but not limited to:

- The street system with names of all streets in the study area
- Study intersections numerically marked
- Shading of the study area
- Shading of the site with the boundary outlined
- Map should be to scale
- North arrow

Study intersections will be determined during the scoping process. Any existing site access is guaranteed to be a study intersection.

Where build out roadway and intersection configurations are different in future conditions from existing conditions, they must be based on approved infrastructure projects as determined by the City.

### **Section c. Data Collection**

The traffic data in the transportation study should be less than one year old at publication or approved by the Director of T&ES during the scoping process. Data collection should be conducted when schools are in session. Counts may not be taken on Federal holidays or the day before or after a Federal holiday.

All study intersections within the study scope should have full turning movement counts for vehicles, pedestrians and bicyclists. Traffic counts should be conducted Tuesdays through Thursdays for a three-hour morning peak period between 6-10 a.m. and a three-hour evening peak period between 3-7 p.m. and should be summarized by 15 minute periods to identify peak hour. Peak hour will be determined based on the peak hour for the overall traffic in the study area. The three peak hours to count will be determined by the midblock classification machine counts and the project land use.

In some cases, such as when a proposed development or surrounding parcels generate off peak traffic, the City may require off-peak hours or weekend hours to be analyzed. Midday and Saturday counts may need to be collected, and that will be determined during the scoping process. In addition to other weekday counts, medium and large retail land uses will require a two hour count on Saturday between noon to 4 p.m., and medium and large restaurant uses will require a two hour midday count between 11 a.m. to 1 p.m.

#### **Section d. Existing Conditions**

Existing peak hour intersection and roadway LOS, queue lengths and volume to capacity (V/C) ratios should be determined for all intersection movements within the study area based on the procedures described in the most current edition of the Highway Capacity Manual. Analysis of existing conditions should use the existing traffic signal timing and phasing.

#### **Section e. Trip Generation**

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition or the COG regional model are to be used as the primary sources for trip generation rates, or other as approved during the scoping process. When using the ITE Trip Generation Manual, the formulas should be used, if available. Where formulas do not exist the trip generation rate should be used.

Any reduction for pass-by trips or internal capture will require approval by T&ES prior to the submittal of a study during the scoping process. Pass-by trips and internal capture will require a demonstration of how the figures were derived.

Data collected from local sites of similar use may be used to supplement the ITE data if deemed appropriate by the Director of T&ES or his designee.

#### **Section f. Mode Split**

If the new development is located within the vicinity of a high volume transit station, reasonable vehicle trip reductions may be made with T&ES approval. Trip reduction may be estimated using the most current census data from the U.S. Census Bureau with T&ES approval. The developer may propose an alternative estimation method or technique such as the WMATA Development Related Ridership Study or another alternative approved by T&ES.

#### **Section g. Trip Distribution**

Trip distribution should be based on regional modeling, origin-destination studies, existing traffic flows, applied census data or other methodology approved by the Director of T&ES. Procedures and logic for

estimating the trip distribution should be well documented. Site traffic trip distribution should be depicted as percentages on inbound and outbound directional distribution map. Trip distribution should be determined during the scoping process.

## **Section h. Analysis Methodologies**

Studies should include an analysis of each approach to the intersection being evaluated. Analysis methodologies should include the Highway Capacity Manual (HCM) and VISSIM for selected cases as described below.

**HCM:** The HCM methodology should be used on all small and medium sized projects and for large projects where all signalized intersections have a V/C ratio of less than 0.85. V/C ratio can be calculated using HCM or the Critical Movement Summation (CMS) method. Synchro files will be provided by the City if available.

**VISSIM:** VISSIM is a micro-simulation program used to analyze multi-modal traffic flow. The City requires the use of VISSIM for large projects in certain cases because VISSIM has the capability to analyze the impacts of queue spill-over on the network as well as the impacts of transit vehicles and buses. All intersections on a roadway should be analyzed using VISSIM if either of the following exists:

- 1.) a dedicated transit-way is part of the analysis; or
- 2.) the study area includes interstate highway access.

The peak hour factor (PHF) should be calculated for existing conditions based of the traffic data collected. Future PHFs should be 15 percent greater than the existing for the future horizon analysis, not to exceed 0.95.

The percent of heavy vehicles should be determined from the traffic data collected. In cases where a facility with a large number of heavy vehicle traffic is being replaced by a different use, the percent of heavy vehicles should be calculated by subtracting the heavy vehicles generated by the current land use from the percent of heavy vehicles measured on the roadway.

## **Section i. VISSIM Calibration**

The VISSIM traffic model must be calibrated for existing conditions prior to performing any analysis. The objective of model calibration is to obtain the best match between model performance estimates and field measurements. Model outputs are compared against field data to determine if the output is within acceptable levels.

For each scenario a minimum of five VISSIM model runs are required for each calibration run. The calibration requirements for the VISSIM simulation are summarized below and should be provided in the appendix of the study.

<b>Criteria and Measures</b>	<b>Calibration Acceptance Targets</b>
Modeled Capacity	Within 10% of field measurements
Modeled link volumes less than 700 vph	Within 100 vph of field measurements
Modeled link volumes from 700 to 2700 vph	Within 15% of field measurement
Modeled link volumes greater than 2700 vph	Within 400 vph of field measurements

Sum of all modeled link flows	Within 5% of sum of all link counts
GEH Statistic < 5 for individual links	> 85% of cases
GEH Statistic for sum of all link flows	GEH < 4 for sum of all links counts
Modeled travel times	Within 15% of observed travel times
Modeled maximum queue lengths	Within 30% of observed queue lengths

VISSIM parameters that may be adjusted:

- Desired Speed
- Lane changing behavior (Urban driver)
  - Emergency stop distance
  - Lane change distance
- Car following behavior (Urban driver)
  - Average standstill distance
  - Additive part of safety distance

### **Section j. Background Development**

Background traffic should be representative of the horizon year(s). Background traffic volumes should be estimated by including the following elements:

- Known pipeline developments - This should account for all relevant approved projects within one mile of the study area or other major developments identified through the scoping process.
- MWCOC Cooperative Forecasting data, most recent edition.

### **Section k. Regional Growth**

Regional growth should be based on regional modeling, existing traffic flows, applied census data and the MWCOC Cooperative Forecasting data. This is determined through analysis of historical trends in the region, such as using historical VDOT count data or COG model data. A minimum of five years of historical count data should be used when determining growth rate. The ambient growth rate used in the transportation study will be approved during the scoping process. Procedures and logic for estimating regional growth should be well documented in the study.

### **Section l. VDOT 870 Review**

The Transportation Division will be responsible for determining if the project meets the VDOT 870 process. The determination will be made no later than the scoping meeting held by the Transportation Division with the applicant.

If the development meets the requirements of the VDOT 870 process, a coordination meeting will be held between Transportation Division and the VDOT along with the applicant and their engineer. After the meeting, the applicant will send out the VDOT scoping form for VDOT and City approval.

All fees associated with this review process should be the amount required by VDOT and should be in the form of check paid by the developer. The required fees along with a complete submittal package will be submitted to the City for completeness. Upon findings of completeness, the application will be submitted to VDOT by the City for review and action.

This process will comply with all the requirements of the VDOT “Traffic Impact Analysis Regulations Administrative Guidelines, 24 VAC 30-155”. The regulations can be found at <http://www.viriniadot.org/projects/chapter527/default.asp>

## **Section 3.3 Transit**

### **Section 3.3 a. Introduction**

The transit section in the transportation study will evaluate the quality of the existing transit service and infrastructure and establish if there is a need for future improvements. The applicant must perform due diligence to identify existing transit and shuttle services as well as project any impacts to the transit system with the new development. The City’s goal is to increase the use of existing and planned transit and private shuttles. Study area for transit data, analysis, and reporting as previously defined in the Guidelines are as follows:

- Small developments – roadways fronting the site and their full right-of-way
- Medium developments - ¼-mile radius of the site
- Large developments – ½-mile radius of the site

### **Section 3.3 b. Existing Conditions**

The transportation study should include a review of existing transit conditions including the services and infrastructure available in the study area in text format. This should include the following:

- Service Review- All public transit bus, public and private shuttles, and public transit rail routes within the study area as defined by the vehicular study area.
  - Operator
  - Private shuttles which are part of an adjacent TMP
  - Service type
  - Span of Service
  - Name of the route
  - Destinations
  - Location of stops in the study area
  - Frequency during peak and non-peak hours
  - Ridership at all bus and Metrorail or Commuter rail stop locations adjacent to and across from the study area as defined in Section 3.3.a.
- Infrastructure Review- All transit infrastructure within the study area including, but not limited to bus stops and bus shelters, stations, transit stations, benches, real-time transit information LED signs, etc.
  - Existing infrastructure
  - Conditions
    - ADA compliance
    - Structural conditions (rust, cracks, graffiti, paint chips, pad conditions, etc.
    - Bus stop pole and flag condition (updated and/or correct information, ADA compliance, graffiti, stickers, etc.)
  - Access to transit stations (see bicycle and pedestrian section of these guidelines)

The existing conditions review should include a map depicting transit stops and routes in the study area, as defined in Section 3.3.a.

### **Section 3.3 c. Data Collection**

Please refer to the vehicular transportation guidelines for acceptable data collection days and hours (holidays, schools in session, no major weather, etc.). The same regulations apply to data collection for transit. The preference for transit data collection is Tuesday, followed by Wednesday. Monday, Thursday and Friday boarding and alighting counts will not be accepted unless prior approval has been granted during the scoping process. Transit stop ridership data can be obtained from the City of Alexandria's Office of Transit Services.

If more than 75,000 square feet of retail is involved in the project (existing or future land use), then another count on Saturday will be necessary. Saturday counts should be conducted from 11 a.m. to 5 p.m.

### **Section 3.3 d. Analysis**

Existing transit LOS should be determined for medium and large projects. Acceptable LOS methodologies include Florida DOT Transit LOS Indicator methodology, HCM transit LOS methodology or other similar LOS methodologies.

### **Section 3.3 e. Site Ridership**

Ridership projections should include projected ridership with project in horizon year(s). The Transit Boardings Estimation Tool, also known as T-BEST ([www.tbest.org](http://www.tbest.org)) should be used to project ridership. Transit ridership from the transportation study trip generation table and from T-BEST should be used to determine the site transit usage, unless otherwise authorized during the scoping process. If any there are any major or minor changes in transit to be completed before or during the horizon years, it should be included in the analysis. Information about upcoming transit changes will be provided by the City of Alexandria and discussed during the scoping process.

### **Section 3.3 f. Major Infrastructure Improvements to Metrorail, Commuter Rail, or High-Capacity Transit**

Major infrastructure improvements such as infill Metrorail or Commuter Rail station, new entrances into a Metrorail or Commuter Rail station, or high-capacity transit routes and stations will impact future ridership. Therefore if planned improvements exist in the study area, this should be addressed in the scoping meeting and documented in the transportation study. A description of any documented transit plans/expansions affecting the study area should be included in the transportation study.

## **Section 4 Bicycle and Pedestrian**

### **Section a. Introduction**

It is a goal of the City of Alexandria to create an integrated, multimodal transportation system that is accessible and safe for all users, including pedestrians and bicyclists. To help achieve this goal, the City Council adopted a Complete Streets Policy in 2010. The term Complete Streets describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users. The policy is geared toward equality for pedestrians, bicyclists, riders and drivers of public transportation, as well as drivers of other motor-vehicles, and people of all ages and abilities, including children, older adults, and individuals with disabilities.

## **Section b. Data Collection**

Study areas for bicycle and pedestrian data, analysis and reporting as previously defined in the Guidelines are as follows:

- Small developments – roadways fronting the site and their full right-of-way
- Medium developments – ¼-mile radius of the site
- Large developments – ½-mile radius of the site

The applicant should collect data and report conditions for the following features within the study area:

- Trails
- Existing sidewalks
- Missing sidewalks
- Pedestrian and bicycle bridges and tunnels
- Curb ramps that do not meet current ADA standards
- On- street bicycle facilities (i.e., Pedestrian and Bicycle Mobility Plan designated route, bicycle lane, sharrows, cycle track)
- Off-street bicycle facilities (shared-use path)
- Pedestrian and bicycle level of service, when available
- Demand paths
- Transit stops
- Bikeshare stations
- Intersections without pedestrian countdown signals
- Schools
- Bicycle parking inventory
- Pedestrian and bicycle count data for medium and large developments

## **Section c. Existing Conditions**

The existing conditions should be represented on a graphic that consists of an aerial photo of the study area with the features listed above. Supporting text and photos are encouraged, especially for deficiencies that need to be addressed.

## **Section d. Complete Streets Checklist**

Medium and large developments will fill out a Complete Streets checklist as part of the site plan review process. As part of the Complete Streets checklist, a table of peak hour pedestrian and bicycle count data will be required for medium and large developments at key locations. Count data should be collected on days where the climate is suitable for pedestrian and bicycle activity.

## **Section e. Future Conditions**

The transportation study should provide a future conditions graphic that proposes facilities to improve existing deficiencies, and justification for where standards in the Pedestrian and Bicycle Mobility Plan, the Transportation Master Plan, street design guidelines for the area, or ADA will not be met after development is complete. Highlights of standards and guidelines in these documents include, but are not limited to:

- Developments must have sidewalks on both sides of all streets and that there are accessible routes to and through the site per the Americans with Disabilities Act.
- Sidewalks shall be constructed according to City Standards and Details for Construction.



- Signals and street markings on the site frontage of the subject development must meet all current accessibility standards, including provision of accessible curb ramps and accessible pedestrian signals.

Bicycle facilities on the site frontage or through the site are required as identified in the City's Transportation Master Plan and Pedestrian and Bicycle Mobility Plan. This includes bicycle parking, which must comply with Alexandria's Bicycle Parking Standards.

Proposals in the future conditions graphic to address gaps in the transportation network will be considered by staff as potential conditions in the development application. Off-site improvements may be considered for potential conditions for medium and large development projects.

## **Section 5 Parking**

### **Section a. Introduction**

The City of Alexandria's goal is to approve developments with an adequate amount of parking to support new development while discouraging single occupancy vehicle driving and to prevent spillover into adjacent communities.

If a parking modification is not requested in the development application and the development will provide enough spaces to meet the Zoning Ordinance, then the transportation study should include a statement as such. If a modification to the Zoning Ordinance parking requirement is requested in the development application, then further documentation must be provided to demonstrate that the parking supply for the development will not cause adverse impacts. This chapter explains the necessary documentation needed to assist City staff and City Council in determining if the parking provided is sufficient.

Small development projects may request a parking modification using written justification without collecting data or requiring professional analysis. Medium and large projects should collect on-street parking occupancy data and provide comparable examples of sites with similar parking ratios.

For any parking modification, a parking management plan should be submitted by the applicant with the site plan.

### **Section b. Study Area**

The study area for parking studies is two blocks or 1000 feet from the outside perimeter of the site, whichever is shorter. The study area will be finalized as part of the scoping process.

### **Section c. Data Collection**

To support a parking modification for medium and large projects, on-street and comparable site data should be collected. The on-street occupancy data should show how the on-street parking network is functioning in the study area. The comparable site data should show the occupancy of similar land uses in similar neighborhoods.

#### On-street Occupancy Data

On-street parking in the right-of-way can never be counted toward parking required in private development. Available on-street parking can be considered as rationale for parking modifications but not on a one-for-one basis.

Existing on-street parking occupancy count days and times must be approved during the scoping process. On-street parking counts should be collected during peak occupancy periods, and the total amount of hours for collecting data is outlined in Table 2.3. On-street parking counts are expected to be conducted on separate days in one week for medium sized developments and on separate days in two weeks for large sized developments.

**Table 2.3: Appropriate number of hours for collecting on-street parking data**

	Office	Residential (Including visitor parking)	Retail (Excluding Restaurant)	Restaurant
<b>Medium</b>				
Number of Counts	1	1 OR 3*	2	3
Total number of data collection hours	2 hours	3 OR 9 hours	8 hours	8 hours
<b>Large</b>				
Number of Counts	2	2 OR 6*	4	6
Total number of data collection hours	4 hours	6 OR 18 hours	16 hours	16 hours

*\*If a significant amount of retail is located within the study area, then a Friday and Saturday count may be necessary.*

#### Comparable Development Data

The preferred method to substantiate the parking modification request is to use parking occupancy counts for comparable developments, preferably within the City of Alexandria. A comparable site is defined as having the following similar characteristics as the proposed development:

- Land use and size
- Location in the City or in surrounding jurisdictions
- Distance to transit facilities such as metro stations and major transit hubs
- Number of transit facilities and amenities adjacent or near the site

The comparable development data must be collected within the last two years and should include the following for each site:

- Commercial: Existing total gross square footage for each land use type OR Existing number of employees
- Residential: The number of units for residential, hotel/motel, and live/work projects (OR) square footage
- Parking inventory information documenting type of space (tandem, compact, ADA, visitor, etc.)
- Peak parking utilization data indicating the time and date when the survey was taken
- Effective parking price (monthly, daily, hourly, etc.)
- Vacancy rates at the time of the parking count of all land uses using the parking

A secondary alternative to conducting occupancy counts at comparable sites uses parking ratio data and research to support the parking modification. Acceptable sources for parking ratio data:

- Previously accepted ratios by the City of Alexandria

- Urban Land Institute
- Parking generation ITE
- Other parking studies as approved by T&ES

#### **Section d. Existing Conditions**

The transportation study should document the following parking attributes in the existing conditions section:

- Describe the characteristics of parking within the parking study area including:
  - Number of on-street parking spaces,
  - Control of on-street parking (e.g., meters, signed for time limit, neighborhood residential permit parking, etc.)
  - Number of off-street parking facilities and spaces (public and private) and hourly/daily costs, and
  - Whether off-street parking is provided as independently-accessible stalls, tandem/stacked or valet operation.
- Record the on-street occupancy counts either in a table or graphic with supplemental text on the findings.
- Identify the effects of any special circumstances affecting the availability of parking in the vicinity of the proposed project (e.g., periods of peak parking demand and large generators of localized parking demand, such as a major institution, a large restaurant/bar, a large office building, etc.).

#### **Section e. Shared Parking Plan**

Shared parking may be appropriate when land uses have different parking demand patterns and are able to use the same parking spaces. Shared parking is most effective in mixed use developments when land uses utilizing a parking facility have significantly different parking accumulation patterns.

For medium and large developments with compatible occupancies within mixed-use buildings or projects, the applicant is encouraged to consider shared parking as a means to reduce the total number of parking spaces. The applicant should include a shared parking analysis and plan in the transportation study.

Shared parking plan should at a minimum include the following, with details to be coordinated with T&ES:

- Type and mix of uses as well as peak parking demand by land use for all uses using the selected lot/garage for shared parking should be documented
- If the shared parking plan assumes use of an existing parking facility, then field surveys should be conducted to determine parking inventory and accumulation of selected lots/garages for shared parking
- If the shared lot/garage is located off-site, the shared parking plan could include one or more of the following:
  - A. Plan of parking spaces intended for shared parking and their proximity to land uses that they will serve
  - B. A signage plan that directs drivers to the most convenient parking areas for each particular use or group of uses (if such distinctions can be made)
  - C. An efficient pedestrian circulation plan that shows connections and walkways between parking areas and land uses. These paths should be as direct and short as possible

- For large shared parking arrangements, a legal shared parking agreement between sharing property owners guaranteeing access to, use of, and management of designated spaces.

## **Section 6 Transportation Management Plans**

### **Section a. Introduction**

Transportation Management Plan (TMPs) are a set of specific strategies that influence travel behavior by mode, frequency, time, route or trip length to reduce single occupancy vehicle trips. TMPs help achieve an efficient and sustainable use of transportation facilities, and help attain larger City goals such as promoting access for all transportation system users, improving mobility, and minimizing the negative impacts of vehicular traffic. According to the City of Alexandria Zoning Ordinance, Article XI, Division B, Development Approvals, Section 11-700, a TMP may be required to implement strategies to persuade residents and employees to take public transportation, walk, bike or share a ride, as opposed to driving alone.

### **Section b. TMP Coordinator**

Each TMP must assign a TMP Coordinator and maintain current contact information with the Transportation Planning Division, including mailing address, phone number, and email address. The TMP Coordinator must work with staff in the City's Transportation Planning Division and have the authority, knowledge and capability to implement all aspects of the TMP. A TMP Coordinator is responsible for implementing the TMP as it is written once the project is built, usually six months to a year after completion of the project.

Duties of a TMP Coordinator include maintaining updated contact information with the Transportation Planning Division, distributing annual electronic surveys, managing and accounting the TMP fund, submitting reports to the City of Alexandria, and administering the program as defined by the TMP.

### **Section c. Program Components**

Program components should be proposed by the applicant to meet the mode share goals. Every TMP should include a combination of the following program components to lessen vehicular traffic.

#### **A. Transit Subsidies**

- Discount the cost of bus and transit fare media (and the succeeding electronic fare media) for on-site employees and residents. The discounted bus and rail fare media should be sold or distributed to employees/residents of the project on-site during hours that are convenient for residents who work or dispersed to employees/residents electronically. The fare media to be sold or dispersed will include, at a minimum, fare media for Metrorail, Metrobus, DASH and any other public transportation system fare media requested by employees and/or the Transportation Planning Division. The availability of this fare media will be prominently advertised. At a minimum, the initial discount will be 50%.
- Provide one time free SmarTrip card to first time condominium purchasers and retail employees.

#### **B. Carpool, vanpool and shuttle subsidies**

##### ***Shuttle***

- Provide shuttle service from the site to a Metrorail station, high capacity transit corridor station or bus transit center (i.e. Mark Center Transit Station). Details of the shuttle route, service

frequency, and cost estimates should be provided. If this option is used for mitigation purposes, please contact WMATA and DASH to verify that this option is acceptable.

#### *Carpool, vanpool and parking*

- A parking management program, whereby a parking pricing policy could be established that favors HOV travel
- Monitor and enforce the use of reserved parking spaces for carpools and vanpools.
- Administer the Parking Management Program including reserving a specified number of free parking spaces for carpools and vanpools and for employees of the Staggered Work Schedule Program.
- Provide access to company fleet vehicles or car-share vehicles for employees who do not drive to work

#### *Rideshare*

- Create a ridesharing program that includes not only participation in the regional Metropolitan Washington Council of Governments Commuter Connections Program, but also site-specific matching efforts.
- Administer a ridesharing program, including signing people up for the City's Ridesharing Program, and assisting in the formation of 2-person carpools and vanpools of three or more persons. If a vanpool is established, it should be reported to the City and other necessary transit agencies.
- Purchase and lease vans to on-site tenants for vanpooling
- Set up contractual arrangements with private entrepreneur to provide vanpool service

#### *Carshare*

- Subsidize or pay for application fees for carshare vehicles for residents or employees who use alternative modes to work.

### C. Marketing and projects

#### *Guaranteed Ride Home*

- Promote the regional Guaranteed Ride Home Program as part of the ridesharing and transit marketing efforts.

#### *Telework*

- Provide and promote on-site business center as a telework options for residential properties.
- Create and promote policies that allow for telework for commercial properties.

#### *Marketing*

- Distribute and display current marketing for transit schedules, rideshare applications and information, incentive information, etc. This can be on websites, newsletters, in the building lobby, in kiosks, advertising, at promotional events, in bus shelters, etc.
- Promote use of transit, carpooling/vanpooling and participation in the staggered work hour program and other components of the TMP with prospective tenants during marketing/leasing/sales activities and with both prospective and existing tenants and employees of the project.

### D. Other

#### *Transit*

- Maintain bus shelters and similar amenities to enhance transit usage.
- Install transit information display, and keep current and clean.

#### *Bicycling*

- Install bicycle lockers, secure storage areas, covered parking, accessible and visible visitor racks, and provision of shower and changing facilities.
- Subsidize bikeshare memberships for residents or employees
- Contribute to bikeshare infrastructure or operations and maintenance expenses

#### *Staggered Work Hours*

- Administer a staggered work hour program including the promotion of the program among existing and prospective lessees, the registration of staggered work hour participants, issuing stickers and/or electronic cards to verify vehicles participating in the program and monitoring the program.

#### *Regional Campaigns or Events*

- Participate in Ozone Action Days and other regionally sponsored clean air, transit, and traffic mitigation promotions by advertising such promotions in a manner and at such locations within the building acceptable to the condominium association.
- Host events or participate in Bike to Work Day, Try Transit Week, Car Free Day, Earth Day or other events with Local Motion.

Any other incentive activities as may be proposed by the applicant and approved by the Director of T&ES as meeting goals similar to those targeted by the required TMP measures. Transit, ridesharing, staggered work hours/compressed work week and the other program elements should be promoted to prospective residents and residents in the residential buildings.

### **Section d. Other TMP components**

The following components should also be addressed in the TMP:

- Compliance and reporting requirements for the project based on the requirements in the Zoning Ordinance.
- TMP base fund rate for the present year and acknowledgment that the fund rate applicable to the project will be the TMP base fund rate at the time of the certificate of occupancy when the TMP becomes active.
- Estimated site population (number of expected employees and residents who work or live on site daily, respectively).
- Mode split goal based upon the transportation study results submitted by the applicant, taking into account the trip generation rates and modal reduction in addition to available census, COG and other modal split data.
- Statement of perpetuity that states “Any SUP granted by City Council under section 11-700, unless revoked or expired, shall run with the land and shall be mandatory and binding upon the applicant, all owners of the land and all occupants and upon all of their heirs, successors and assigns.”

## **Glossary**

### **Definitions**

Metro - is a tri-jurisdictional government agency that operates transit service in the Washington, D.C. metropolitan area, including the Metrorail, Metrobus and MetroAccess.

Peak hour – The period of a single hour in the morning (a.m.), afternoon (midday), evening (p.m.) or Saturday during which the road system servicing the proposed use is most heavily utilized by motor

vehicles other than those traveling to or from the proposed use. Traffic counts shall be summarized by 15 minute periods to identify peak hour.

Peak period – Weekdays, a three hour period from 6-10 a.m. and from 3-7 p.m. or Saturdays for two hours between 1-4 p.m. which the road system servicing the proposed use is most heavily utilized by motor vehicles other than those traveling to or from the proposed use. The peak period(s) to use for the transportation study will be determined during the scoping process.

Projected trips, total number of – The projected number of total person trips generated by the proposed use in a designated time period based on the size, type and intensity of the proposed use. The Institute of Transportation Engineers Trip Generation Manual 8<sup>th</sup> Edition, 2008 or other agreed upon method may be used to calculate projected trips.

Proposed project – A proposed use which consists of one or more buildings or structures and which may be constructed in phases over time.

Proposed use – A use which is described in an application for a special use permit filed under Section 11-700.

Public transit – Publicly provided and regularly scheduled transportation, usually by bus or rail, or a combination of both.

Retail sales – The sale of goods or the provision of business or personal services.

Transit subsidies – The provision of cash reimbursement or payment and/or transit fare media (e.g. tickets, tokens, passes) to tenants and occupants of a building to encourage their use of public transit.

Transportation Management Plan – A comprehensive, coordinated and continuously operated plan submitted as part of an application for a special use permit under Section 11-700 which demonstrates the administrative activities, the physical facilities and the operational, financial and other commitments which will be undertaken at or in conjunction with a proposed use in order to reduce the traffic and related impacts of the proposed use.

Useable square feet – Floor area of a proposed use, which shall be the sum of all gross horizontal areas under a roof or roofs of all buildings or structures comprising a proposed use, computed by measuring from the exterior face – of walls and from the eaves of all roofs where they extend party walls, and which shall include all space with a headroom of seven feet six inches or more, whether or not provided with a finished floor or ceiling. Excluded shall be elevator and stair bulkheads. No deduction shall be made for columns and projections necessary to the building structure.

Unfactored ITE rates – Using trip generation rates from the ITE's Trip Generation Manual without any reductions, including pass-by trips, internal capture, mode splits or existing land uses on the development site.

Transportation Study – A transportation study can be a short transportation review or a comprehensive study, referred to as a transportation study in this document.

Trolley – a free service which provides access for visitors, residents, and those who work in the City to accommodations, attractions, restaurants, and shops within the City.

### **Abbreviations**

The following abbreviations may be used in the Guidelines:

ADA: Americans with Disabilities Act

ADT: Average Daily Trips

CDD: Coordinated Development District

DASH: Alexandria Transit Company

DSUP: Development Special Use Permit

GIS: Geographic Information Systems

ITE: Institute of Transportation Engineers

LOS: Level of Service

MWCOG: Metropolitan Washington Council of Governments

P&Z: Department of Planning and Zoning

SUP: Special Use Permit

T&ES: Department of Transportation and Environmental Services

TMP: Transportation Management Plan

ULI: Urban Land Institute

VDOT: Virginia Department of Transportation

WMATA: Washington Metropolitan Area Transit Authority



## **Appendix**

- A. Zoning Ordinance, Section 11-700
- B. Forms
  - 1. Screening Worksheet
  - 2. Scoping Intake Form
- C. Sample Report Documents
  - 1. Table of Contents
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## **Sec. 11-700 - Transportation management special use permits.**

### **11-701 - Purpose and intent.**

(A) There are certain uses of land which, by their location, nature or size and density, or by the accessory uses permitted or required in connection therewith, or by certain operational or design and engineering characteristics, tend to cause traffic and related impacts which are contrary to the public health, safety and general welfare in that they lead to, generate or exacerbate: danger and congestion in travel and transportation upon the public streets, parking problems, harmful air pollution, wasteful energy consumption, excess noise, and other adverse impacts upon public and private transportation facilities, environmental quality, historic areas and other qualities of the city which make it a desirable, prosperous and attractive residential and commercial community. These uses present a disproportionate danger of such impacts relative to similar uses of a different size and density and to other uses permitted under this ordinance.

(B) These uses may be allowed to locate within designated zones only under a special use permit, as provided in this [section 11-700](#), which, through the imposition of pertinent conditions and requirements, shall ensure that the adverse and disproportionate traffic and related impacts of such uses are reduced to levels consonant with the public health, safety and general welfare, that surrounding land, structures, persons and property are adequately protected and that public and private transportation is facilitated.

(C) The purpose of this [section 11-700](#) is to mitigate the traffic and related impacts of such certain office, retail, industrial and residential uses through the requirement that a transportation management plan for such uses be prepared and that a special use permit be issued for such uses containing terms and conditions which require the implementation of an appropriate transportation management plan.

### **11-702 - Application.**

(A) The following uses, when allowed as a permitted or special use by the use regulations applicable in the zone in which located, shall require a transportation management special use permit pursuant to the provisions of this [section 11-700](#)

(1) Any individual building or structure which contains:

- (a) 50,000 or more usable square feet of commercial and/or professional office space;
- (b) 40,000 or more usable square feet of retail sales space;
- (c) 150,000 or more usable square feet of industrial space;
- (d) 250 or more residential units; or
- (e) Any combination of space which includes 50,000 or more usable square feet of commercial and/or professional office space, or 40,000

or more usable square feet of retail sales space, or 250 or more residential units.

(2) Any project, complex or development which is or becomes the subject of common ownership or control, which is or becomes the subject of a common, concerted, coordinated or phased plan of development irrespective of ownership or control, or which is or becomes the subject of a common, concerted, coordinated or phased plan of lease, sale, marketing or operation irrespective of ownership or control, and which when completed or assembled involves two or more buildings or structures containing in the aggregate:

- (a) 50,000 or more usable square feet of commercial and/or professional office space;
- (b) 40,000 or more usable square feet of retail sales space;
- (c) 150,000 or more usable square feet of industrial space;
- (d) 250 or more residential units; or
- (e) Any combination of space which includes 50,000 or more usable square feet of commercial and/or professional office space, or 40,000 or more usable square feet of retail sales space, or 150,000 or more usable square feet of industrial space, or 250 or more residential units.

(B) All other uses shall be exempt from the requirements of this [section 11-700](#)

### **11-703 - Definitions.**

The following words and phrases shall, for purposes of this [section 11-700](#) have the following meanings:

(A) *Bus pool.* Subscription bus service on a regular and prearranged basis between locations responsive to commuter needs.

(B) *Car pool.* Three or more people traveling together on a continuing and prearranged basis in a private motor vehicle.

(C) *Peak hour.* The period of a single hour in the morning and the period of a single hour in the afternoon or evening during which the road system servicing the proposed use is most heavily utilized by motor vehicles other than those traveling to or from the proposed use.

(D) *Peak period.* The period from 6:00 a.m. to 9:00 p.m. in the morning and the period from 3:00 p.m. to 7:00 p.m. in the afternoon and evening during which the road system servicing the proposed use is most heavily utilized by motor vehicles other than those traveling to or from the proposed use.

(E) *Projected single occupancy vehicle trips.* The projected number of single occupancy vehicle trips generated by the proposed use in a designated time period based upon the size, type and intensity of the proposed use.

- (F) *Projected trips, total number of.* The projected number of total person trips generated by the proposed use in a designated time period based upon the size, type and intensity of the proposed use.
- (G) *Proposed project.* A proposed use which consists of more than one building or structure and which may be constructed in phases over time.
- (H) *Proposed use.* A use which is described in an application for a special use permit filed under this [section 11-700](#)
- (I) *Public transit.* Publicly provided and regularly scheduled transportation, usually by bus or rail, or a combination of both.
- (J) *Retail sales.* The sale of goods or the provision of business or personal services.
- (K) *Ride matching.* The process of identifying interested drivers and interested riders for purposes of ride sharing.
- (L) *Ride sharing.* The transportation of persons in a motor vehicle where such transportation is incidental to another purpose of the driver. The term shall include ride sharing arrangements known as car pools, van pools and bus pools.
- (M) *Transit subsidies.* The provision of cash reimbursement or payment and/or transit fare media (e.g., tickets, tokens, flash passes) to tenants and occupants of a building to encourage their use of public transit.
- (N) *Transportation coordinator.* A person responsible for educational, promotional and marketing measures to help the tenants and occupants of a building find and utilize ride sharing or public transit commuting alternatives.
- (O) *Transportation management plan.* A comprehensive, coordinated and continuously operated plan submitted as part of an application for a special use permit under this [section 11-700](#) which demonstrates the administrative activities, the physical facilities and the operational, financial and other commitments which will be undertaken at or in conjunction with a proposed use in order to reduce the traffic and related impacts of the proposed use.
- (P) *Usable square feet.* Floor area of a proposed use, which shall be the sum of all gross horizontal areas under a roof or roofs of all buildings or structures comprising a proposed use, computed by measuring from the exterior faces of walls and from the eaves of all roofs where they extend party walls, and which shall include all space with a headroom of seven feet six inches or more, whether or not provided with a finished floor or ceiling. Excluded shall be elevator and stair bulkheads. No deduction shall be made for columns and projections necessary to the building structure.
- (Q) *Van pool.* Eight or more people traveling together on a continuing and prearranged basis in a motor vehicle.
- (R) *Variable work hours.* Work schedules within which employees choose their arrival and departure times within management imposed limits (also known as flex time).

11-704

*Application and procedures for special use permit.*

(A) An application for a special use permit under this [section 11-700](#) shall be made in writing, on such forms as the director shall provide, shall be filed with the director, and shall include all information necessary for appropriate review. The application shall be filed concurrently with the application for approval of a preliminary or combined site plan for the same use, if such site plan is required by [section 11-400](#) of this ordinance.

(B) The owner, contract purchaser or lessee of real property on or in which a use subject to this [section 11-700](#) is or may be located, or any authorized agent of such party in interest (hereafter referred to as the applicant) may file an application for a special use permit under this [section 11-700](#)

(C) The city manager shall docket the special use permit application for public hearing and consideration by the city council and shall give notice of the hearing pursuant to [section 11-300](#) of this ordinance. The city manager shall refer the application to the planning commission for public hearing and consideration prior to consideration of the application by city council.

(D) Prior to the time the planning commission first considers the application, the director shall review the application and submit it to the other departments and offices of the city concerned therewith for their review, and shall transmit their comments and recommendations, together with his own, to the commission.

(E) Not later than five days prior to the public hearing before city council, the planning commission shall submit to council its recommendations, together with its reasons therefor.

(F) At the conclusion of its public hearing on the application, city council may approve or deny the application, as provided in section [11-706](#), or defer decision on the application for no more than 30 days in order to receive such additional information as it may require.

### **11-705 - Contents of application.**

Each such application for a special use permit under this [section 11-700](#) shall contain the following information:

(A) A clear and concise statement identifying the applicant, including the name and address of each person or entity owning an interest in the applicant and the extent of the ownership interest. If the applicant itself or any of the entities holding an ownership interest in the applicant is a corporation or a partnership, each person owning an interest in excess of ten percent in such corporation or partnership shall be identified by name and address, and the extent of his interest shall be described. For the purpose of this section [11-705\(A\)](#), the term ownership interest shall include any legal or equitable interest held at the time of the application in the real estate which is the subject of the application.

(B) A traffic impact study of the proposed use which shall comply with the following requirements.

(1) The traffic impact study shall be conducted by a qualified transportation planner or traffic engineer who shall meet and confer with the director and the director of transportation and environmental services prior to undertaking the study to define and agree upon the study elements. The extent of the required study will vary depending on the location of the site, the size and nature of the project, and may include some or all of the following elements, to be determined by the directors:

- (a) The streets and intersections to be included in the study;
- (b) The adequacy of available traffic and turning movement counts and the need for additional data;
- (c) The time period of the study (i.e., morning or evening peak period or both);
- (d) The approximate trip generation rates of the proposed use;
- (e) The directional distribution of the traffic generated by the proposed use;
- (f) The modal split and vehicle occupancy assumption to be utilized in the study;
- (g) The trends in the growth of traffic in the area of but not generated by the proposed use;
- (h) The transportation management programs operated by the city or other governmental units in the area of the proposed use, as well as the transportation management programs proposed for the area, to be considered in the study;
- (i) The nature and level of public transit that will service the site of the proposed use;
- (j) The years to be covered by the study;
- (k) The intersection level of service analytical technique to be utilized in the study; and
- (l) The identification of citizen and neighborhood associations whose membership will be proximately affected by the traffic and related impacts of the proposed use.

(2) Unless otherwise directed by the director or the director of transportation and environmental services, the traffic impact study shall include the following information:

- (a) All mutually agreed upon elements of the study identified in section 11-705(B)(1);
- (b) Traffic volumes and levels of service for all designated streets and intersections at the time of the study;

- (c) Projections of future traffic volumes and levels of service for all designated streets and intersections, without consideration of the proposed use, at the time the proposed use is to be completed or, if applicable, at the time each phase of the proposed project is to be completed;
- (d) Trip generation rates of and directional traffic distribution to and from the proposed use at the time the proposed use is to be occupied or, if applicable, at the time each phase of the proposed project is to be occupied, and, where the proposed use will include on-site parking in excess of the requirements of this ordinance, the trip generation rates and directional traffic distributions which would exist if such excess parking was not included;
- (e) Projections of future traffic volumes and levels of service for all designated streets and intersections and of any other significant traffic and related impacts attributable to the proposed use at the time it is to be occupied or, if applicable, at the time each phase of the proposed project is to be occupied.
- (f) Based on the projections in sections [11-705\(B\)\(2\)\(c\)](#) and (e), projections of the cumulative future traffic volumes and levels of service for all designated streets and intersections and of any other significant traffic and related impacts at the time the proposed use is to be occupied or, if applicable, at the time each phase of the proposed project is to be occupied.
- (g) Identification of all proposed parking facilities, their type of operation (e.g., self-park, valet, attendant), their hours of operation, whether parking in the facilities is to be leased or purchased, and parking charges, including lease rates and purchase prices, for unrestricted and restricted spaces;
- (h) An appendix of all study references and background field data;
- (i) A statement that the applicant has made a good faith effort to discuss the traffic and related impacts of the proposed use with the associations identified pursuant to section [11-705\(B\)\(1\)\(l\)](#), an identification of the associations with which discussions have occurred and a summary of the assessments by affected citizen and neighborhood associations of the traffic and related impacts of the proposed use; and
- (j) Such additional information, diagrams and drawings as the director or the director of transportation and environmental services may require in order to consider and evaluate the impacts of the proposed use.

(C) A transportation management plan for the proposed use which is in narrative form and contains specific detail and supporting documentation to ensure that the use will comply with the provisions of this [section 11-700](#), shall be prepared by a qualified transportation planner or traffic engineer and shall comply with the following requirements:

(1) The transportation management plan shall include a description of the following procedures:

- (a) Procedures whereby the car pool spaces required and any van pool spaces provided pursuant to Article VIII of this ordinance are restricted to car pool vehicles and van pool vehicles, respectively;
- (b) Procedures whereby car pool vehicles and van pool vehicles are registered with the city's office of transit services and programs;
- (c) Procedures for the management and supervision of on-site parking facilities proposed for the use generally and for the enforcement of the parking facilities management aspects of the transportation management plan; and
- (d) Procedures for the provision of a transportation coordinator for the proposed use who will administer its transportation management plan and coordinate its activities with the city's office of transit services and programs, and whose responsibilities shall include, but not be limited to:

- (1) The distribution, display and promotion of any transportation packet issued by the city's office of transit services and programs.
- (2) In the case of office and industrial uses, a survey, using adequate sampling procedures, of owner/tenant employees at the time 60 percent occupancy is reached to determine the number of employees, their residence, modes of transportation, willingness and ability to use car pooling, van pooling and/or public transit, and such additional information as the director may require, such surveys to be conducted annually thereafter and all surveys to be submitted to the office of transit services and programs to be used for the operation match program.
- (3) The preparation and submission of an annual report, consistent with guidelines established by the director, which discusses the activities taken during the year pursuant to the transportation and management plan for the use which demonstrates that the plan has been complied with fully and continuously during the year and which describes the effect of



the plan's activities in reducing the traffic and related impacts of the use.

(e) Procedures for the phased implementation of the transportation management plan in the event such phased implementation is appropriate.

(2) The transportation management plan shall include a reasonable and effective combination of some or all of the following elements which shall be appropriate to the size, scale and location of the proposed use and shall demonstrate that reasonable and practicable actions will be taken in conjunction with and over the life of the use which will produce a significant reduction in the traffic and related impacts of the use:

(a) Ride-sharing incentive programs which may include activities to encourage and assist the formation of car, van and bus pools, such as cash payments or subsidies and preferential parking charges and parking space location, and other analogous incentive programs;

(b) Public transit incentive programs which may include the provision of paratransit services to and from convenient public transit sites and to accommodate midday and evening excursions, the construction of transit shelters and amenities, the construction of bus/rail transit stations and related facilities, the dedication of land and the provision of other subsidies for the construction and operation of public transit facilities, the provision of transit fare media subsidies and marketing programs, and the provision of other analogous incentive programs;

(c) Recommended improvements in public transit which services the site of the proposed use, such as changes in service routes, increases in the frequency of service, alterations in the location of facilities, the establishment of fare incentive programs and other measures designed to make public transit more accessible to occupants of the proposed use;

(d) Bicycle and pedestrian incentive measures which may include the provision of bicycle parking and storage facilities, the construction and extension of bicycle paths and pedestrian walkways, the provision of shower and locker facilities and similar incentive features;

(e) In the case of office and industrial uses, variable work hour, or flex time, programs under which employees working at the proposed use will stagger their work hours in order to affect a reduction in the amount of peak period traffic to and/or from the use which would otherwise occur;

(f) Measures to reduce the reliance on single-occupancy vehicles by employees and others who will travel to and from the proposed use which may include parking fee structures tailored to discourage

single-occupancy vehicles, proscription of tenant-employer subsidy of parking costs for single-occupancy vehicles, time and other access restrictions to parking spaces in on-site parking facilities, and programs to support and encourage the utilization of alternative transportation modes;

(g) Use and accessory use design options which reduce reliance on single-occupancy vehicles by employees and others who will travel to and from the proposed use, such as the provision of less parking area than that required under the provisions of this ordinance, shared parking arrangements, the incorporation of residential units (in the case of proposed commercial uses) and other analogous design features; and

(h) Any other technique or combination of techniques capable of reducing the traffic and related impacts of the proposed use.

#### **11-706 - Action by city council.**

(A) In reviewing an application for a special use permit under this [section 11-700](#), the city council shall only consider the traffic and related impacts of the proposed use and the following characteristics of the proposed use which will determine or affect the extent of those impacts:

(1) *Traffic.* Number of employees, staff, residents and other persons regularly present at the proposed use during normal working hours and other hours of the day, number of guests, service providers and other persons who periodically travel to and from the proposed use, level of vehicular traffic generated by the proposed use, traffic peak characteristics of the proposed use and of the traffic affected by the proposed use, likely vehicle use patterns, extent of traffic congestion in the vicinity of the proposed use, types and number of vehicles associated with the proposed use, and such other operational characteristics of the proposed use as the council may determine substantially affect the traffic and related impacts associated with the proposed use;

(2) *Accessory parking use.* Evidence of parking demand created by the proposed use, minimum number of on-site parking spaces required by this ordinance to be provided, number of on-site parking spaces proposed for construction, fee structure for the proposed accessory parking, and such other operational characteristics of the proposed accessory parking use as the council may determine substantially affect the traffic and related impacts associated with the proposed use;

(3) *Parking overflow.* Extent to which adjacent neighborhoods may be affected by vehicles associated with the proposed use which park on the public streets, current availability of off-site, off-street parking in the vicinity of

the proposed use, and such other design and operational characteristics of the proposed use as the council may determine substantially affect the parking overflow associated with the proposed use;

(4) *Safety.* Number and location of driveways and curb cuts associated with the proposed use, traffic control, accessibility to fire, police and emergency service vehicles, access and good traffic circulation to and from adjacent lands, existing streets, alleys and sidewalks, as well as proposed or planned streets, alleys and sidewalks, design of traffic circulation and control within the site of the proposed use and in coordination with adjoining properties and facilities, vehicle loading and service areas, pedestrian circulation, walkways and safety, and such other design and engineering characteristics of the proposed use as the council may determine substantially affect the traffic and related impacts of the proposed use;

(5) *Location.* The location of the proposed use relative to public transit facilities, to public streets and highways, and to geographic areas with eating, shopping and other facilities within pedestrian range.

(B) The city council will approve an application for a special use permit under this [section 11-700](#) if it determines (i) that the applicant's transportation management plan is in accord with the requirements of this [section 11-700](#), and (ii) that the transportation management plan, together with any amendments deemed appropriate by council, demonstrates that reasonable and practicable actions will be taken in conjunction with and over the life of the proposed use which will produce a significant reduction in the traffic and transportation impacts of the use. In deciding whether such a determination may be made, council may consider whether either of the following goals for the proposed use will be achieved by the transportation management plan:

(1) That ten to 30 percent of the total number of projected trips to the use during the a.m. peak hour in the case of commercial, industrial or retail uses, or from the use during the a.m. peak hour in the case of residential uses, utilize a mode of travel other than the single-occupancy vehicle, and that ten to 30 percent of the total number of projected trips from the use during the p.m. peak hour in the case of commercial, industrial or retail uses, or to the use during the p.m. peak hour in the case of residential uses, utilize a mode of travel other than the single-occupancy vehicle; or

(2) That the use attains a degree of trip dispersion which results in no more than 40 percent of the number of projected single-occupancy vehicle trips to the use in the case of commercial, industrial or retail uses, or from the use in the case of residential uses, between 6:00 a.m. and 10:00 a.m. occurring during the a.m. peak hour, and no more than 40 percent of the number of projected single-occupancy vehicle trips from the use in the case of

commercial, industrial or retail uses, or to the use in the case of residential uses, between 3:00 p.m. and 7:00 p.m. occurring during the p.m. peak hour.

(C) In approving an application for a special use permit under this [section 11-700](#), city council may place such reasonable conditions and requirements in the permit as it deems necessary to ensure that the transportation management plan for the proposed use, which forms the basis for its determination under section [11-706](#)(B), will, unless revised or rescinded by council, be fully and continuously implemented throughout the life of the proposed use.

(D) Any special use permit granted by city council under this [section 11-700](#), unless revoked or expired, shall run with the land and shall be mandatory and binding upon the applicant, all owners of the land and all occupants and upon all of their heirs, successors and assigns. Any use authorized by a special use permit granted under this [section 11-700](#) shall be operated in conformity with such permit, and failure to so operate shall be deemed grounds for revocation of such permit, after notice and hearing, by the city council.

#### **11-707 - Permit validity and modification.**

(A) Each special use permit issued pursuant to the provisions of this [section 11-700](#) shall expire and become null and void concurrently with the expiration of the site plan approved in connection therewith as provided in [section 11-400](#), provided that if no such site plan is required to be submitted and approved, then the special use permit issued under the provisions of this article shall expire and become null and void 18 months after the date such permit is approved and issued, unless operation of the use authorized by such special use permit is commenced and thereafter diligently continuously pursued within such 18 month period.

(B) The prior applicant, or the successor in interest thereof, or any authorized agent of such applicant or such successor in interest who is bound by a special use permit issued pursuant to the provisions of this [section 11-700](#), may petition the city council for modification of the permit's transportation management plan, after notice and hearing, consistent with the provisions of this [section 11-700](#). Such petition shall set forth with particularity the modifications desired and the reasons therefor and shall show that the plan as so modified will comply with the provisions of this [section 11-700](#)

#### **11-708 - Nonconforming use status and related matters.**

(A) No individual building or structure, otherwise subject to the provisions of this [section 11-700](#), which is in existence on May 16, 1987, or for which a preliminary or combination site plan approved on or before May 16, 1987, continues in force and effect, shall be deemed a nonconforming or noncomplying use by virtue of any provision of this [section 11-700](#), nor shall any such building or structure be subject to the provisions of this [section 11-700](#)

(B) Any other provision of law to the contrary notwithstanding, the owner, contract purchaser or lessee, or any authorized agent of such party in interest, of any individual building or structure or project, complex or development which is or becomes a lawful nonconforming or noncomplying use under the provisions of this [section 11-700](#), may file an application for the issuance of a special use permit under the provisions of this [section 11-700](#)

(C) (1) The enlargement, extension or increase of more than five percent in the floor area expressed in usable square feet of any use for which a special use permit has been issued under the provisions of this [section 11-700](#) shall require an application for and approval of a new or amended special use permit governing the entire use as enlarged, extended or increased.

(2) In the case of a mixed-use building or structure for which a special use permit has been issued under this [section 11-700](#), any modification of the mixture of uses which increases or decreases the amount of usable square feet utilized by the dominant use by more than 20 percent shall require an application for and approval of a new or amended special use permit governing the entire building or structure as modified.

(3) Any change in use of a building or structure for which a special use permit has been issued under this [section 11-700](#) to another use required to obtain such a permit shall require an application for and approval of a new special use permit for the building or structure so changed in use.

(D) Whenever the use of any land, building or structure required to obtain a special use permit under the provisions of this [section 11-700](#), irrespective of whether or not such permit has been obtained, ceases to be operated for a period in excess of 24 months, or is changed to another use likewise required to obtain a special use permit under the provisions of this [section 11-700](#), then such other use shall require application for and approval of a new special use permit under the provisions of this [section 11-700](#), and the former special use permit, if any, shall expire at the end of such 24-month period in the event operation ceases or at the time the use is so changed in the event of a change in use.

#### **11-709 - Relationship with other provisions of law.**

(A) Unless otherwise specifically provided, the provisions of this [section 11-700](#) shall apply in addition to all other requirements and provisions of the city code, the city charter and general law, and compliance with the provisions of this [section 11-700](#) shall not excuse compliance with any other provision or requirement of the city code, the charter and of general law.

(B) Whenever a proposed individual building or structure or project, complex or development is required to obtain a special use permit under the provisions of [section 11-500](#) of this ordinance as well as under the provisions of this [section 11-700](#), then one joint application without duplication of information shall be filed for both

special use permits, and the application for both such permits shall be considered together by the planning commission and city council pursuant to the requirements of both this [section 11-700](#) and [section 11-500](#)

(C) The provisions of [section 11-500](#) of this ordinance shall not apply to any application for a special use permit filed solely under and as a result of the provisions of this [section 11-700](#)

#### **11-710 - Administration.**

(A) The director shall administer the provisions of this [section 11-700](#) and shall consult and coordinate with the directors of transportation and environmental services and of the office of transit services and programs and such other divisions of the city government as may be appropriate.

(B) The fee for filing and processing a special use permit application shall be according to that prescribed by section [11-104](#) and such fee shall be in addition to any other fees required under this ordinance.

*(Ord. No. 3923, § 8, 4-12-97)*

City of Alexandria  
Transportation Screening Worksheet

Date: \_\_\_\_\_

Project Name: \_\_\_\_\_

Property Address (include vicinity map): \_\_\_\_\_

Application # if available: \_\_\_\_\_

Point of contact name: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Existing uses	No. of units	Square feet
Use 1:		
Use 2:		
Use 3:		
Use 4:		

Proposed uses*	No. of units	Square feet
Use 1:		
Use 2:		
Use 3:		
Use 4:		

Project Description: \_\_\_\_\_

Trip Generation			AM Peak Hour			PM Peak Hour			Other Peak Hour**			ADT
	ITE Code	DU/SF	In	Out	Total	In	Out	Total	In	Out	Total	
Existing uses												
1:												
2:												
3:												
4:												
Total Existing Trips												
Proposed uses*												
1:												
2:												
3:												
4:												
Total Proposed Trips												
New Site Trips												

*City staff is available to assist in calculating trip generation.*

\* As approximate as possible.

\*\* If applicable. See page X of the Transportation Planning Administrative Guidelines for "Other Peak Hour" requirements.

Administrative Use Only

<b>Reviewed by:</b>		<b>Date:</b>
TMP Required	No	Yes
Study Required	None	Report

City of Alexandria  
Transportation Scoping Intake Form

Date: \_\_\_\_\_

Project Name: \_\_\_\_\_

Property Address: \_\_\_\_\_

Application # if available: \_\_\_\_\_

Point of contact name: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Existing uses	No. of DUs	SF	Proposed uses	No. of DUs	SF
Use 1:			Use 1:		
Use 2:			Use 2:		
Use 3:			Use 3:		
Use 4:			Use 4:		

Project Description: \_\_\_\_\_

Trip Generation			AM Peak Hour			PM Peak Hour			Other Peak Hour*			ADT
	ITE Code	DU/SF	In	Out	Total	In	Out	Total	In	Out	Total	
Existing uses												
1:												
2:												
3:												
4:												
Total Existing Trips												
Proposed uses*												
1:												
2:												
3:												
4:												
Total Proposed Trips												
New Site Trips												

Horizon Years Existing Year: Build Out Year: Design Year:

Proposed Study Area North: East:

Boundaries (Attach map) South: West:

Study Intersections:

1. 5. 9.

2. 6. 10.

3. 7. 11.

4. 8. 12.

Location of mid-block counts:

Attach additional sheets as needed.



City of Alexandria  
Transportation Scoping Intake Form

Background Development Projects

- 1.
- 2.
- 3.
- 4.

---

Roadway Improvements

- 1.
- 2.
- 3.
- 4.

---

Trip Distribution (attach a map)

North:	_____	East:	_____
South:	_____	West:	_____

Proposed Access Points (attach site map)

Annual Growth Rate: \_\_\_\_\_ Study methodology to be used: \_\_\_\_\_

---

Trip Reduction

Modal split/transit: \_\_\_\_\_ % trips      Internal capture \_\_\_\_\_ % trips      Pass-by trips: \_\_\_\_\_ % trips

---

Parking:

Proposed parking spaces to be provided: \_\_\_\_\_

Parking spaces required by Code: \_\_\_\_\_

Is a parking modification requested?      Yes      No

---

Additional Studies Required

- \_\_\_\_ Signal Warrant Analysis
- \_\_\_\_ Queuing Analysis
- \_\_\_\_ Signal Timing/Phasing Improvements
- \_\_\_\_ Parking Study
- \_\_\_\_ Other

Please attach the following graphics:

Vehicular study area and intersections

Bicycle and pedestrian study area

Distribution percentages and directions

Site plan (if available)

Is a TMP required?	Yes / No	TMP Requested?	Yes / No
--------------------	----------	----------------	----------

---

City staff signature

Date

---

Applicant signature

Date

Please include the signed scope of work agreement and attachments as an appendix to the transportation study.

*Attach additional sheets as needed.*

*\* If applicable.*

## Transportation Report Sample Table of Contents

	Development Size		
	Small	Medium	Large
List of Figures	X	X	X
List of Tables	X	X	X
Executive Summary	X	X	X
Introduction	X	X	X
Project Description	X	X	X
Project Study Area	X	X	X
Methodology	X	X	X
Existing Conditions	X	X	X
Existing Transit Facilities	X	X	X
Existing Bicycling and Pedestrian Mobility	X	X	X
Existing Roadway Network	X	X	X
Existing Traffic Volumes	X	X	X
Existing Capacity Analysis	X	X	X
Future conditions without Development	X	X	X
Planned Background Improvements	X	X	X
Future Transit Facilities		X	X
Future Bicycling and Pedestrian Mobility		X	X
Future Roadway Network	X	X	X
Future without Development Traffic Volumes	X	X	X
Future without Development Capacity Analysis	X	X	X
Future Conditions with Development	X	X	X
Site Access	X	X	X
Site Trip Generation	X	X	X
Site Trip Distribution	X	X	X
Future with Development Traffic Volumes	X	X	X
Future with Development Capacity Analysis	X	X	X
Multimodal Mitigation Summary	X	X	X
Parking Demand Analysis		X	X
Overview		X	X
Parking Supply		X	X
Parking Demands		X	X
Parking Summary		X	X
Shared Parking - Existing Occupancy		X	X
Shared Parking - Future Peak Demand by Land Use		X	X
Transportation Management Plan	X	X	X
Conclusion	X	X	X

## Transportation Report Sample List of Figures

Figures	Development Size		
	Small	Medium	Large
Regional map		X	X
Local map with study area and study intersections	X	X	X
Existing transit service	X	X	X
Existing pedestrian and bicycling circulation	X	X	X
Existing roadway classification	X	X	X
Existing lane use and traffic control	X	X	X
Existing peak hour turning movement counts and daily mid-block volumes	X	X	X
Existing levels of service and delay	X	X	X
Future without development transit	X	X	X
Future without development pedestrian and bicycling circulation	X	X	X
Future without development lane use and traffic control	X	X	X
Future without development peak hour turning movement volumes	X	X	X
Future without development levels of service and delay	X	X	X
Site plan	X	X	X
Trip distribution	X	X	X
Site generated trips	X	X	X
Pass-by trips	X	X	X
Future with development lane use and traffic control	X	X	X
Future with development peak hour turning movement volumes	X	X	X
Future with development levels of service and delay	X	X	X
<i>These figures may be required:</i>			
Parking supply by block		X	X
Parking occupancy by block		X	X
Queuing analysis	X	X	X

## Transportation Report Sample List of Tables

Tables	Development Size		
	Small	Medium	Large
DASH and Metrobus boarding and alighting information		X	X
Existing intersection levels of service and delays in seconds	X	X	X
Background development trip generation	X	X	X
Future without development capacity analysis results	X	X	X
Trip generation	X	X	X
ITE and field data comparison	X	X	X
Site trip distribution	X	X	X
Site trips percentage	X	X	X
Future with development capacity analysis results	X	X	X
Parking required per City Zoning Ordinance	X	X	X
<i>These figures may be required:</i>			
Signal warrant criteria	X	X	X
Existing curbside parking occupancy summary	X	X	X
Parking comparisons for parking reductions		X	X

## Transportation Report Sample List of Appendices

Appendices	Development Size		
	Small	Medium	Large
Scoping Agreement	X	X	X
Existing traffic, pedestrian, and bicycle counts	X	X	X
Existing capacity analysis	X	X	X
Background development traffic assignments	X	X	X
Background future capacity analysis	X	X	X
Total future capacity analysis	X	X	X
Parking occupancy counts		X	X
<i>May be required:</i>			
Signal warrant analysis	X	X	X
Turn lane warrant analysis	X	X	X