

PASCO COUNTY
MOBILITY FEE
ADMINISTRATIVE PROCEDURES MANUAL



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Pasco County

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Section 1 Mobility Fee Administration General Definitions

When used in administering the Mobility Fee program, the following terms shall have the following meanings, unless the context clearly indicates otherwise. Additional terms relating to the Mobility Fee program are contained in Appendix A of the Pasco County Land Development Code.

“Age Restricted” shall mean a community or subdivision providing housing for persons who are fifty-five (55) years of age or older, and that has satisfied the requirements of Section 1302.1.D. of the Land Development Code.

“Airport Hangar” shall mean routine maintenance and minor repair facilities specifically designed for servicing aircrafts.

“Auto Repair/Body Shop” shall mean an establishment that houses a business or numerous businesses that provide automobile related services, such as repair and servicing, stereo installation, and seat covering/upholstering.

“Bank/Savings (w/drive-in)” shall mean banks, which provide banking facilities for the motorist while in a vehicle, and may also serve patrons who walk into the building. The drive-in lanes may or may not provide automatic teller machines. The mobility fee for a bank is charged on the gross floor area of the building.

“Bowling Alley” shall mean recreational facilities that include bowling lanes. A small lounge and/or snack bar, video games, and pool tables may also be available.

“Cemetery” shall mean a place for burying the deceased, possibly including buildings used for funeral services, a mausoleum, and a crematorium.

“Church” shall mean an institution that people regularly attend to participate in or hold religious services and other related religious activities. Other religious activities that may be conducted by churches or places of religious worship include on-site child care for use during religious services, and studies involving religious instruction, but shall not include schools, temporary or permanent dwellings, or other activities not directly related to religious practices.

“Community Center/Gymnasium” shall mean a stand-alone public facility similar to and including YMCAs. These facilities often include classes for adults and children, day care, meeting rooms, swimming pools, saunas, athletic courts, weightlifting and gymnastic equipment, lockers, and a restaurant or snack bar.

“Condominium” shall mean a single family ownership dwelling unit that has at least one other similar unit within the same building structure

“Congregate Care Facility (Attached)” shall mean facilities that consist of one or more multi-unit buildings designed for elderly living and disabled individuals who are unable to live independently. They may also contain dining rooms, medical facilities, and recreational facilities. Congregate Care Facilities may include private homes, boarding homes and other places that

undertake to provide, for a period exceeding twenty-four (24) hours at a time, food and other personal services for four or more adults not related to the owner, who require such services. They may provide limited nursing services, when specifically licensed to do so pursuant to section 400.407, Florida Statutes.

“Convenience/Gasoline/Fast Food Store” shall mean a convenience store which sells gasoline, convenience foods, newspapers, magazines, and often beer and wine. This land use includes convenience markets with gasoline pumps where the primary business is the selling of convenience items, not the fueling of motor vehicles. This includes a service station with a convenience store that sells gasoline and convenience store items, with or without a car wash.

“Corporate Headquarters Building” shall mean a building that contains offices, meeting rooms, and space for file storage and data processing of a single business or company, and possibly other service functions including a restaurant or cafeteria.

“Dance Studio” shall mean facilities offering professional instructions for all types of dances. They offer classes, workshops, private lessons and also host dance parties.

“Day Care” shall mean an establishment which provides for the care, protection, and supervision of at least three (3) children for a period of less than 24 hours a day on a regular basis, which supplements parental care, enrichment, and health supervision for the child, in accordance with his individual needs, and for which a payment, fee or grant is made for care. The facility generally includes classrooms, offices, eating areas, and a playground. The definition includes such terms as day nurseries, day care service, day care agency, nursery school, or play school. The term does not include summer camps or family day care homes.

“Dwelling Unit” means a single unit providing complete independent living facilities for one (1) or more persons including permanent provisions for living, sleeping, eating, cooking, and sanitation.

“Elementary School” shall mean a school typically serving students attending kindergarten through the fifth or sixth grade. Elementary schools are usually centrally located in residential communities in order to facilitate student access, and they have no student drivers. This land use consists of public schools where bus service is usually provided to students living beyond a specified distance from the school.

“Fast Food Restaurant w/Drive-Thru” shall mean a land use including fast-food restaurants with drive-through windows. This type of restaurant is characterized by a large carryout clientele; long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours); and high turnover rate for eat-in customers. Quality restaurant, high turnover restaurant, fast food restaurant without drive-through window, fast-food restaurant with drive through window and no indoor seating, and drinking place are related uses.

“Furniture Store” shall mean a store that specializes in the sale of furniture, and often carpeting. They are generally large and include storage areas.

“Gasoline Station” shall mean a land use generally located near intersections or freeway interchanges and having facilities, such as gas pumps, for fueling motor vehicles. They may also

have facilities for servicing and repairing motor vehicles. This land use includes service stations without convenience stores or car washes.

“General Light Industrial” shall mean industrial facilities that employ fewer than 500 employees and have an emphasis on activities other than manufacturing and typically have minimal office space. Typical light industrial activities include printing plants, material testing laboratories, assemblers of data processing equipment, and power stations.

“General Heavy Industrial” shall mean industrial facilities that have a high number of employees and are limited to the manufacturing of large items.

“General Recreation” shall mean a variety of recreational uses that are generally characterized by large sites with limited buildings. They may include county parks, amphitheatres, amusement parks, go-cart and other vehicle parks, drive-in mall theatres, outdoor facilities including swimming pools, tennis courts, racquetball facilities, among others.

“Golf Course” shall mean an area designed for playing the game of golf, including any clubhouse, with or without bar and banquet facilities.

“Gross Floor Area” shall mean the sum (in square feet) of the area of each floor level, including cellars, basements, mezzanines, penthouse, corridors, lobbies, stores, and offices, that are within the principal outside faces of exterior walls. If a ground-level area, or part thereof, within the principal outside faces of the exterior walls is not enclosed, this gross floor area is considered part of the overall square footage of the building. Unroofed areas and unenclosed roofed-over spaces, except those contained within the principal outside faces of exterior walls, should be excluded from the area calculations.

“Hardware/Paint” shall mean a free-standing building with off-street parking that sells paint and general hardware.

“Spa” shall mean recreational facilities that include swimming pools, whirlpools, saunas, exercise classes, racquetball, handball and tennis courts, and weightlifting and gymnastics equipment. Locker rooms and a restaurant or snack bar may also be available.

“High Cube Warehouse” shall mean buildings used for the storage of manufactured goods prior to their distribution to retail outlets. These facilities consist of large shells of steel buildings and large halls, often subdivided for individual tenants, with a typical ceiling height of 24 to 26 feet; they are also characterized by a small employment count due to a high level of mechanization, truck activities occurring outside of the peak hours adjacent street system, and good freeway access.

“High School” shall mean a school, which serves students who have completed middle or junior high school. The high schools are generally separated from other land uses and have exclusive access points and parking facilities.

“High Turnover Restaurant” shall mean a land use consisting of sit-down eating establishments with turnover rates of approximately one hour or less. This type of restaurant is usually

moderately priced and frequently belongs to a restaurant chain. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours a day. Some facilities contained within this land use may also contain a bar for serving food and alcoholic drinks. Quality restaurant, fast-food restaurant with drive-through window and no interior seating and drinking place are related uses.

“Home Improvement Superstore” shall mean a freestanding warehouse type facility with off street parking. Home improvement superstores generally offer a variety of customer services and centralized cashiering, and they specialize in the sale of home improvement merchandise. They typically maintain long store hours seven days a week. Examples of items sold in these stores include lumber, tools, paint, lighting, wallpaper and paneling, kitchen and bathroom fixtures, lawn equipment, and garden plants and accessories. The stores included in this data are often the only ones on the site, but they can also be found in mutual operation with a related or unrelated garden center. Home improvement superstores are also sometimes found as separate parcels within a retail complex with their own dedicated parking. The buildings contained in this land use usually range in size from 25,000 to 150,000 square feet of gross floor area. Building materials and lumber store is a related field.

“Hospital” shall mean a building or group of buildings having facilities for overnight care of one or more human patients, providing primary and urgent care treatment for injuries and trauma, services to inpatients, and medical care to the sick and injured. The term “hospital” may include related facilities such as: laboratories, outpatient services, training facilities, central service facilities, and staff facilities; provided, however, that any related facility shall be incidental and subordinate to the use and operation of the principal hospital. A hospital is an institutional use under these zoning regulations. The term “hospital” does not refer to medical offices or clinics.

“Hotel” shall mean a facility offering transient lodging accommodations normally on a daily rate to the general public and typically providing accessory uses, such as: restaurants, meeting rooms and recreational facilities. Hotels are different than motels in that each room does not have a separate entry directly from the outside of the building but rather entry is gained through the interior of the building through a lobby. For the purposes of calculating residential density each guestroom shall be considered a dwelling unit. For the purpose of calculating water and sewer impact fees, a hotel or resort hotel is considered a non-residential use.

“Industrial Park” shall mean areas containing a number of industrial facilities. They are characterized by a mix of manufacturing, service, and warehouse facilities. Many industrial parks contain highly diversified facilities, some with a large number of small businesses and others with one or two dominant industries. All land uses located within an identified industrial park are assessed at the rate under the industrial park land use in the mobility fee schedule.

“Junior College” shall mean two-year junior, community, or technical colleges, which are generally separated from other, land uses and have exclusive access points and parking facilities.

“Living Area” shall mean an area under roof, including but not limited to, bedrooms, bathrooms, dining rooms, dens and any other floor commonly used by occupants.

“Manufacturing” shall mean facilities where the primary activity is the conversion of raw materials or parts into finished products. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research, and associated functions.

“Marina” shall mean a boating facility, chiefly for recreational boating, located on navigable water frontage, and providing all or any combination of the following: boat slips or dockage, dry boat storage, small boat hauling or launching facilities, marine fuel and lubricants, marine supplies, bait and fishing equipment, restaurants, boat and boat motor sales, and rentals. Minor boat, rigging and motor repair which is incidental to the principal marina use is generally permitted, and no boat construction or reconstruction is permitted. A boat sales lot is not a marina.

“Medical Office” shall mean office space utilized for providing diagnoses and administering human medical and health related services on a routine basis, including outpatient clinics, but is unable to provide prolonged in-patient medical and surgical care. Medical office uses shall include medical doctors, dentists, psychiatrists, optometrists, osteopaths, chiropractors, naturopaths, nurse practitioners, health maintenance organizations and similar professional and group practices, which are regulated by the State of Florida. Also included are diagnostic centers providing radiology, medical screening and related testing services, outpatient surgery and endoscopy centers, oncology centers, outpatient laboratory centers, physical therapy practices and other related ambulatory care services. “Clinic” is a related land use.

“Middle School” shall mean a school serving students who have completed elementary school and have not yet entered high school.

“Miniature Golf Course” shall mean an area designed for playing the game of golf, consisting of one or more individual putting courses. This land use is a stand-alone facility and is not part of a larger multipurpose use.

“Mini-Warehouse” shall mean buildings in which a number of storage units or vaults are rented for the storage of goods. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

“Mobile Home” shall mean a detached dwelling unit with all of the following characteristics: (a) designed for long-term occupancy and containing sleeping accommodations, a flush toilet, a tub or shower and kitchen facilities with plumbing and electrical connections provided for attachment to outside systems; (b) designed for transportation after fabrication on streets or highways on its own wheels; and (c) arriving at the site where it is to be occupied as a dwelling complete, including major appliances and furniture, and ready for occupancy except for minor and incidental unpacking and assembly operations, location on jacks or other temporary or permanent foundations, connection to utilities and the like. A travel trailer/RV is not to be considered as a mobile home. For the purposes of computing the mobility fee, a mobile home on a single family lot (i.e., not located in a mobile home park) shall be considered a Single Family Detached House.

“Motel” shall mean a facility offering transient lodging accommodations normally on a daily basis and at a daily rate for automobile travelers and typically providing parking adjacent to each sleeping room. Accessory uses may be provided, such as: restaurants, meeting rooms and

recreational facilities. Motels are different than hotels, in that each motel room has a separate entry directly from the outside of the building while hotel guests gain entry to their room through the interior of the building through a lobby. For the purposes of calculating residential density each guestroom shall be considered a dwelling unit.

“Movie Theater” shall mean a building with an area of audience seating, single or multiple screens and auditoriums, a lobby, and a refreshment stand.

“Multi-Use Building” shall mean a development project in which more than one mobility fee land use category is contemplated to be constructed. For multi-use buildings or parcels and shopping centers, if one (1) use occupies thirty-five (35) percent or more of the total, gross square feet of the building, parcel or shopping center or one use is 30,000 square feet or more, that use shall be assessed at its specific-use rate. All uses that do not exceed thirty-five (35) percent or more of the total gross square feet of the building, parcel or shopping center and that do not exceed 30,000 square feet or more shall be assessed the rate of the most predominate general use of the remainder of the building, parcel or shopping center based on the size of the entire building, parcel or shopping center. This rule does not apply to outparcels or residential uses, which shall be assessed the applicable rate for the specific single use, and which shall not be used in the calculation of the size of the entire building, parcel or shopping center. This rule also does not apply to uses classified in the mobility fee schedule as Recreation, Institutions or Retail if the most predominate use of the remainder of the building or parcel is Lodging, Office or Industrial; in such cases the Recreation, Institutions or Retail use shall be assessed at its specific-use rate, regardless of the size of such use, unless the use is an accessory building or structure.

“Multi-Family Apartments” shall mean a group of two or more Dwelling Units within a single conventional building, attached side by side or one above the other, or both, and wherein each Dwelling Unit may be individually owned or leased mutually on land, which is under common or single ownership. For purposes of determining whether a lot is in multi-family uses, the following considerations shall apply:

a. Multi-Family Dwelling uses may involve Dwelling Units intended to be rented and maintained under central ownership and management, or cooperative apartments. It may include the fee ownership of land beneath each Dwelling Unit following development from a common base of ownership.

b. Any Multi-Family Dwelling in which Dwelling Units are available for rental for periods of less than one week shall be considered a tourist home, a motel, motor hotel or hotel, as the case may be, and shall only be permitted in districts where specifically designated.

“New/Used Autos Sales” shall mean a land use providing for automobile mechanical services, automobile body repair, parts, and sales. Used car sales, leasing options and truck sales and servicing may also be available.

“Nursing Home” shall mean a facility whose primary function is to care for persons who are unable to care for themselves, including rest homes (primarily for the aged), chronic, and convalescent homes.

“Office” shall mean a building or portion of a building wherein services are performed involving predominantly administrative, professional, or clerical operations. It is a characteristic that retail or wholesale goods are not shown to or delivered from the premises to customers.

“Office Park” shall mean suburban subdivisions or planned unit developments containing general office buildings and support services such as banks, savings and loan institutions, restaurants, and service stations, arranged in a park or campus like atmosphere. All land uses located within an identified office park are assessed at the rate under the office park land use in the mobility fee schedule.

“Pharmacy/Drug Store with and without Drive-Thru” shall mean retail facilities that primarily sell prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationary, personal care products, limited food products, and general merchandise. The drug stores in this category may contain drive-through windows.

“Quality Restaurant” shall mean eating establishments of high quality and with turnover rates usually of at least one hour or longer. Generally, quality restaurants do not serve breakfast, some do serve lunch, but all serve dinner. Often they do not belong to a chain of restaurants and generally require reservations.

“Quick Lube” shall mean a quick lubrication vehicle shop where the primary activity is to perform oil change services for vehicles. Other ancillary services provided may include preventative maintenance, such as fluid and filter changes. Automobile repair service is generally not provided.

“Racquet Club” shall mean privately-owned recreational facilities that include racquetball and handball courts, tennis courts, swimming pools and whirlpools, saunas, exercise classes, and weightlifting equipment.

“Recreational Vehicle (RV)” shall mean a vehicular, portable structure built on a chassis, designed to be used as a temporary dwelling.

“Recreational Vehicle (RV) Park” shall mean a facility for the temporary sitting of recreational vehicles and may have community facilities such as recreational rooms, swimming pools, and laundry facilities.

“Resort Hotel” shall mean a place providing a wide variety of recreational facilities/programs (golf courses, tennis courts, beach access, or other amenities) rather than convention and meeting business. Resort hotels are normally located in suburban or outlying locations on larger sites than conventional hotels. Resort hotels are similar to hotels in that they provide sleeping accommodations, restaurants, cocktail lounges, retail shops, and guest services. The primary difference is that resort hotels cater to the tourist and vacation industry.

“Research and Development Center” shall mean facilities or group of facilities devoted almost exclusively to research and development activities. They may contain office and light fabrication areas.

“Retail” shall mean one or more establishments devoted to selling merchandise goods and products to consumers.

“Self-Service Car Wash” shall mean a land use that allows the manual cleaning of vehicles by providing stalls for the driver to park and wash the vehicle.

“Single-Family (Detached)” shall mean a home on an individual lot or parcel of land intended, designed, used and/or occupied by no more than one family, excludes duplex, triplex, and quadruplexes.

“Specialty Retail” shall mean small high end clustered and/or strip center like retail stores of less than 5,000 square feet each and where the total square footage of the entire cluster and/or strip center is less than 50,000 square feet. Stores in the cluster and/or strip center might include, but not be limited to, jewelry, luggage, china and silverware, crystal, artwork, leather goods, and fine apparel.

“Supermarket” shall mean a departmentalized self-service retail market, which primarily sells food items, but also may sell household items, personal items and other merchandise. A supermarket is to be distinguished from a grocery store on the basis of scale, being usually 20,000 square feet or larger in size, and the broader mix of goods and services.

“Tire Store” shall mean a land use primarily involved in the business of sales and marketing of tires for automotive vehicles. Services usually include tire installation and repair as well as other automotive maintenance or repair services.

“University” shall include four-year universities that may or may not offer graduate programs.

“Veterinarian Clinic” shall mean facilities where diagnosis and treatment of sick, deceased or ailing animals, primarily domestic pets, are performed.

“Warehouse” shall mean facilities that are primarily devoted to the storage of materials. They may also include office and maintenance areas. High-cube warehouse is a related use.

**Section 2
Mobility Fee
Independent Study Guidelines**

2.1 INTRODUCTION

This document identifies the guidelines for conducting an Independent Mobility Fee Study (hereafter referred to as an “Independent Study”) in Pasco County. An Independent Study is required in instances where the County Administrator or designee and the developer are unable to reach an agreement for classification of a proposed development to an equivalent land use category in the adopted fee schedule. This section contains the requirements, methodology, and procedures for the preparation, execution, and submission of an Independent Study. Additional information can also be found in the Pasco County’s Mobility Fee Ordinance. For an expanded list of land uses cross-referenced to those included in the fee schedule in the Mobility Fee Ordinance, please refer to the Land Use Cross Reference Table in Appendix A.

A. Fee Review Schedule

A fee for the review of the Independent Study will be charged by the County to cover the County’s cost to review the submitted studies. The fee review schedule is included in Appendix B. Fees will be paid incrementally as the development proceeds: Methodology Review, Study Analysis Review, Methodology/Study Analysis Appeal, and other optional services.

B. Review Timeline and Appeals Process

A review timeline and appeals process for the Independent Study process is contained in Appendix C.

2.2 METHODOLOGY STATEMENT

Prior to conducting any Independent Study, a methodology statement shall be prepared by the applicant and submitted for review and approval by the County Administrator or designee. The purpose of the methodology statement is to establish agreed upon methodologies and assumptions prior to the start of the study. A methodology statement shall be prepared using the guidelines provided in the following paragraphs and will first be reviewed and approved by the County Administrator or designee prior to the start of the data collection process.

A. Introduction

The applicant shall describe the proposed land use and explain why it may have travel demand characteristics different from those published in the adopted fee schedule. If appropriate, features of the land use that allow its uniqueness to be confirmed from a regulatory perspective should be identified.

B. Proposed Previous Studies

If the applicant proposes relying on the results of any previous studies, he should provide a copy of the previous studies. The County Administrator or designee will review the previous studies for sufficiency and applicability to the proposed new

development. County Administrator or designee approval is required before the Applicant is allowed to utilize prior studies.

C. New Land Use Rate Category

If the applicant believes that the land use categories included in the County's fee schedule do not include an appropriate category for the proposed development, the applicant shall provide an explanation and supporting data/documentation to show how the proposed development is different. Discussions regarding the land use characteristics need to occur during the methodology stage, prior to conducting the study. However, if there is a disagreement between the applicant and the County Administrator or designee, the final approval for a new land use category shall be made upon completion of the independent study based on the study results.

D. Proposed Study Sites

The applicant will identify a minimum of three comparable sites to be studied. For the purpose of this document, a comparable site means a site that is representative of the land use in question and would provide typical travel demand for the specific land use. The qualified sites must be active and have been in operation for a year or more. "Start-up" sites, meaning sites that have been in operation for less than one year, cannot be used in the study. The site description should include the specific location, the character of the location (Central Business District, urban, suburban, or rural urbanized or rural areas), and the land use(s) at the location (including ITE code and classification). In the event three sites suitable for study cannot be found in Pasco County, the applicant can use sites in another county to conduct the survey. If three suitable sites are not found, the applicant cannot proceed with the Independent Study process.

The applicant should include an explanation of why the proposed sites are similar to the average uses of the proposed new development. The explanation should address pertinent characteristics, such as land use, adjacent area, and demographics within the expected "market area" of the land use.

The applicant should include a map showing the location of the proposed new development and the proposed study sites. All sites must have reasonable control of the driveway access point to a single use. Using an access point that serves mixed uses or is commonly used by pass through traffic may be a basis for rejecting the applicant survey results.

The County Administrator or designee will review the proposed study sites for applicability to the proposed new development.

E. Study Data Elements

Study data elements will include the mobility fee formula demand component variables. These are the trip generation rate, trip length, and percent new trips factor. Each of these components is discussed below:

i. Trip Generation Rate

The trip generation rate (vehicle-trips) is normally determined by machine counts and manual observations. The applicant should provide documentation depicting the proposed machine counter sites and locations within the site. The County Administrator or designee will review the proposed sites for suitability of equipment, hose/loop detector configurations, and the dates of counting. The County Administrator or designee will specify the level of detail to be included in the study report.

ii. Trip Length and Percent New Trips

These two data items are normally determined by an origin/destination survey, consisting of motorist interviews. The County Administrator or designee will review the proposed location of interviewers, interview forms, and dates and times of day for conducting interviews. The applicant should identify any portions of trips to be excluded from trip lengths, such as travel on toll road systems and local streets.

iii. Other Data Items

The County Administrator or designee will specify any other data items the applicant will be required to collect for the proposed study.

F. Proposed Data Collection Methodology

The County Administrator or designee will review the applicant's proposed methodology for analyzing the data collected in the study. This methodology shall follow the guidelines as outlined in Section 2.3.

G. Methodology Submittal

The applicant shall submit three (3) copies of the proposed study methodology to the County Administrator or designee. If the County Administrator or designee concurs with the proposed methodology, the applicant will be notified to proceed with the study. If the County Administrator or designee disagrees with the proposed methodology, the County Administrator or designee will identify the problem areas for the applicant. The applicant should receive approval from the County Administrator or designee before proceeding with the study.

2.3 DATA COLLECTION METHODOLOGY

The Independent Study shall follow the prescribed methodologies and formats in the Mobility Fee Ordinance and the following guidelines. The results of the Independent Study shall be submitted to the County Administrator or designee.

A. Collecting Trip Generation Data

The applicant will be required to place the machine counters at project driveways, for a minimum of three consecutive days of 24-hour machine counting, on days representative of typical traffic patterns at that site (not during a holiday, for example) and when school is in session. The traffic counts should occur during the same days

(Tuesday, Wednesday, Thursday) that the collection of trip length and percent new trips data is conducted.

The data to be collected includes:

- Date and times of counts
- A summary of counts by 15-minute increments (entering, exiting, and total)
- Average daily volume
- Volume during the a.m. and p.m. peak hours of the adjacent street
- Weather conditions (Note: Extreme weather conditions may be the basis for rejecting survey data and results)

The applicant must verify the correct operation of the machine counters by manually observing their proper data recording for a minimum of two consecutive fifteen-minute periods (30 minutes) on at least two occasions. Each manual verification exercise should include a period of no less than 30 minutes and no more than 3 hours. Following the 30-minute minimum period, the manual verification is considered complete after 100 vehicles are observed. If there are less than 100 vehicles observed, the manual verification must encompass the entire 3-hour period. The verifications may be performed at the start and finish of the counting period. This manual verification must be documented in the study report.

The applicant will include the machine count data in the study report. All data are subject to review and acceptance by the County Administrator or designee, based on currently accepted traffic engineering practices and quality control measures. The applicant must notify the County Administrator or designee as to when the data collection is schedule to occur, as the County Administrator or designee may visit the study site to observe the placement and operation of the machine counters. Quality control measures that will be utilized should include verification of the following.

- The 24-hour total inbound volumes should approximately equal the 24-hour total outbound volumes (i.e., within 10 percent).
- The peak hour volumes should represent industry averages, i.e., 10 percent of traffic usually occurs during the peak hour. (Note that ITE provides information in this regard for certain land uses.)
- Manual counts should closely represent machine counts. Manual counts should be conducted and documented as described above.
- The site plan should verify no cut-through traffic.
- Extensive truck traffic should be reported, i.e., truck traffic greater than 4 percent of total traffic.

If the applicant is unable to obtain machine counts according to the above requirements, he may repeat the entire count or may elect to submit an explanation in writing to the County Administrator or designee. The County Administrator or designee will review the explanation and then may accept the data as is, approve a partial recount, or require an entire recount. The County Administrator or designee

will provide this response verbally within five (5) business days and in writing within ten (10) business days.

There may be a situation where it is not possible to install tubes at the driveway(s) to do machine counts. In this case, if the site operates principally between 8:00 a.m. and 10:00 p.m. and is relatively small in size, then all counts should be conducted manually. However, if it is determined that the counts cannot be completed in a reasonable manner, then that particular site should not be used.

B. Collecting Trip Length and Percent New Trips Data

The origin/destination survey will collect the following information:

- Date of the interview
- Location of the interview
- Name of the interviewer
- Time of day of the interview
- Origin of the interviewee's trip
- Destination of the interviewee's trip
- Trip purpose

The place of origin or destination should be identified as accurately as possible. The origin and destination should be determined with one of the following methods (listed from most preferred method to least preferred method).

- The specific name and address of the origin and destination
- The specific name of the origin and destination (mall, town, bank, supermarket, subdivision, school, etc.)
- The intersection nearest to the origin and destination
- The major intersection nearest to the origin and destination

The applicant will find it helpful for interviewers to have a good prior knowledge of the places and major intersections in the community that are most likely to be named by interviewees so the interviewers can quickly recognize and record these responses when interviewees give them, or solicit further detail in the response. In some cases, places named by interviewees cannot later be pinpointed when the interview forms are tabulated, disqualifying those interviews as observations. For that reason, the applicant is prudent to conduct a quantity of interviews in excess of the minimum required sample size.

The applicant will use an interview form to record the interview responses. This form will be used to record the information identified above. Samples of acceptable interview forms are provided in Appendix D. These samples include fields to record the data items listed above, as well as fields for calculating the trip length (at a later time), and fields for quality control. The applicant should include copies of the completed interview forms in the study report submitted to the County Administrator or designee.

It is not acceptable to record the trip length as estimated by the interviewee. The proper method to determine a trip length is to use either a scaled map to measure the most direct and logical route between the site and the reported places of origin and destination, or a recognized computer mapping program or Geographic Information System (GIS) to measure the distance traveled. Trip length measurements to calculate the impact cost should account for travel on the functionally classified roadway system. To calculate the gasoline tax credit, the trip length should be increased by 0.5 miles to account for travel on local collectors, as is done in the County's adopted Mobility Fee Update Study.

Acceptable procedures to determine whether a trip is classified as Primary, Secondary, Diverted, or Captured, and to compute the assessable trip length are described in "Measuring Travel Characteristics for Mobility Fees", W.E. Oliver, (ITE Journal, April 1991). A copy of this article can be found in Appendix E.

The applicant should also include in the study report:

- The number of observations (useable interview responses);
- The average trip length, rounded to the nearest 0.1 mile; and
- The percent new trips.

C. Number of Interviews to Conduct

In determining a reasonable estimate of the trip length and percent new trips, the applicant will perform surveys at each of the three sites for a minimum of ten (10) hours per site, or for the length of time that the site is open and employees are coming to or going from the site. The specific time period to be covered will be governed by the type of land use being surveyed and its typical daily operations. The total number of valid observations that will be required at the three sites combined shall be the number of valid surveys (N) required to meet a ninety percent (90%) level of confidence at a plus/minus fifteen percent (15%) level of accuracy, as calculated using the sample size equation indicated below. An observation shall be considered valid if its origin and destination are specific enough from which the trip length and type of trip can be determined. In addition, a total of 150 usable surveys be obtained for each of the studied land uses. Based on the calculated number of valid surveys that are required, the sample size requirement should be divided by the number of sites observed to determine the minimum number of valid observations that must be obtained at each site. For example, if it is determined that one hundred and eighty (180) usable surveys are required to meet statistical requirements, then at least sixty (60) valid observations should be collected at each of the three sites. In some cases, due to the type of land use being surveyed, a minimum of 150 surveys may not be achievable. If this is expected, the applicant should inform the County Administrator or designee in the initial methodology statement as to the reasons for this expectation and inform the County Administrator or designee of the number of surveys expected to be collected at each site. The applicant must still utilize the statistical equation below to determine if the required number of surveys, based on the standard deviation of the sample trip length, was achieved.

The number of required surveys can be determined by the following sample size equation¹:

$$N = \frac{C^2 \times Z^2}{E^2}$$

Where:

N is the required sample size for the specific level of confidence at the desired accuracy level;

C is the coefficient of variation as calculated by dividing the sample mean trip length into the standard deviation of the sample trip length;

Z is the normal distribution value statistic at the specific level of confidence (for 90% confidence levels, Z=1.645); and

E is the specific margin of error or level of accuracy (i.e., 15%).

To illustrate the use of this equation consider the following example:

For purposes of the Pasco County Mobility Fee Update Study, average trip lengths for several land uses were studied. One of these studies involved the single-family detached land use. For this particular use, a total of 876 usable trip length samples were collected at several sites. The average trip length calculated from these observations is 7.52 miles, with a standard deviation of 8.89 miles. These figures result in a Coefficient of Variation (C) equal to 1.18. Using the equation for ninety percent (90%) confidence and fifteen percent (15%) margin of error produces the following result:

$$N = \frac{(1.18)^2 \times (1.645)^2}{(0.15)^2}$$

= 168 valid observations

Therefore, a minimum total sample of 168 valid observations was required for statistical significance, and the actual trip length samples totaled 876. Each site had more than 56 samples.

¹ This sample size formula is based on a methodology developed by Michael E. Smith in "Design of Small-Sample Home Interview Travel Surveys," Transportation Research Board 701, 1979.

2.4 REPORT SUBMITTAL

The applicant should compile the study findings into a report structured as follows:

- Letter of Transmittal
- Table of Contents
- Findings of the Report
 - Trip generation rate
 - Trip length
 - Percent new trips
- Mobility Fee Calculations
- Appendices
 - Trip generation rate summary
 - Trip length worksheet
 - Percent new trips worksheet
 - Trip generation data
 - Interview forms

The report shall contain a calculation of the proposed fee in accordance with the procedures documented in the “Pasco County Multi-Modal Mobility Fee Study Final Report” (Tindale-Oliver and Associates, Inc., July 7, 2011) section 3.2 Example Fee Calculation, or subsequent current versions. Fee rates shall be calculated for each of the seven area and development types indicated in Tables 3-1 through 3-7 (e.g. Urban, Suburban, and Rural areas, for standard, TND, and TOD development). The calculation shall also identify the extent of “buy-down” proposed, which shall be consistent with the buy-down provided for other land uses in the general land use categories indicated in the mobility fee schedules (Tables 3-1 through 3-7), and also report the portion of the new fee rate that is allocable to the Strategic Intermodal System, transit, bicycle, and pedestrian systems. These shares can be derived from Tables 3-1 through 3-7.

The applicant shall submit three (3) copies of the study report to the County Administrator or designee. The study must be sealed by a Professional Engineer registered in the State of Florida or AICP.

2.5 SUFFICIENCY DETERMINATION

The County Administrator or designee will review the Independent Study methodology for sufficiency, technical accuracy, and findings and will make recommendations concerning the amount of the mobility fee and whether to accept the study. This sufficiency determination will be based on the statistical similarity between the trip generation data collected as part of the Independent Study with the ITE data and/or local data previously collected for that land use. Appendix F demonstrates the steps in calculating the confidence level, as well as an example computation.

- A. When the Independent Study data results in a confidence level of 75 percent or less, implying that the data is statistically insignificant with respect to the existing

data set for the land use, then it is recommended that the Independent Study data not be combined with the existing data set for that land use. A statistical confidence of 75 percent or less indicates that the data is not statistically different than the existing data for that land use. Therefore, the applicant will be assessed the mobility fee due as established in the County's adopted mobility fee schedule.

- B.** When the Independent Study data shows a statistical confidence of greater than 75 percent that the data is different than the previously collected data for the land use, the County Administrator or designee shall determine if the site falls under an existing land use in the County's Mobility Fee Schedule. If the site does fall under an existing land use classification, then the County Administrator or designee shall determine if there are any characteristics, such as building size or location, that differentiate that site from the land use currently listed in the fee schedule. If the study site falls under an existing land use in the County's Mobility Fee Schedule and no differentiating characteristics can be determined, then the results of the Independent Study shall be combined with the existing data set for that land use. The applicant will then be assessed the mobility fee calculated based on this combined data set. If the County Administrator or designee determines that there is a characteristic that differentiates that site from existing land uses in the fee schedule or the site does not fall under an existing land use category in the County's fee schedule, then the County Administrator or designee shall create a land use classification separate from the land uses already included in the mobility fee schedule. To facilitate this, the trip generation data from the Independent Study sites should be utilized to calculate the appropriate mobility fee for the new land use category.

Appendix A
Pasco County
Mobility Fee Land-Use Cross Reference Table

Appendix A
Transportation Mobility Fee Land Use Cross Reference Table

MAJOR MOBILITY FEE CATEGORY	MOBILITY FEE LAND USE	EXPANDED LIST OF LAND USES	ITE LAND USE CODE
Residential	A. Single Family (Detached)	1. Single Family Detached dwellings on individual lots 2. Single Family Mobile Homes on individual lots 3. Single Family Manufactured dwellings on individual lots	210
	B. Multi-Family Apartments	1. Apartments 2. Duplex 3. Triplex 4. Quadplex	221
	C. Low-Rise Condominium/Townhouse (1 to 2 stories)	1. Condominium - Attached 2. Townhouse - Attached	231
	D. High-Rise Condominium (3 or more stories)	1. Condominium - Attached	232
	E. Mobile Home Park	1. Mobile Homes in a Mobile Home Park	240
	F. Age Restricted Single Family	1. Age Restricted Single Family	250
	G. Congregate Care Facility - Attached	1. Adult Care Living Facility	252
Lodging	A. Hotel	1. Hotel 2. All Suites Hotel 3. Business Hotel	310 311 312
	B. Motel	1. Bed and Breakfast 2. Condotels 3. Tourist Homes	320
	C. Resort Hotel	1. Resort Hotel	330
Recreation	A. RV Park	1. Recreational Vehicle Park 2. Campground	416
	B. Marina	1. Marina 2. Marina with boat storage docs 3. Marina without boat storage docs	420
	C. Golf Course	1. Golf Course	430
	D. Miniature Golf Course	1. Miniature Golf Course	431
	E. Movie Theater	1. Movie Theater without Matinee 2. Movie Theatre with Matinee	443
	F. General Recreation	1. Amusement Park 2. Amusement facilities 3. Amphitheater 5. Shooting and Archery Ranges - Indoors 6. Sports and Recreation Camps 7. Sports parks, including batting cages, trampolines and similar sports facilities - outdoors 8. Swimming Pool - outdoors 9. Tennis, handball and racquetball facilities - outdoors	480
	G. Racquet Club/Health Club/Spa/Dance Studio	1. Racquetball, Tennis, and handball facilities - indoors 2. Health Spas, Swimming Pools - Indoors 3. Physical Fitness Facilities 4. Children's dancing schools 5. Dance hall operation 6. Dancing halls or dancing academies 7. Professional dancing schools	473
	H. Bowling Alley	1. Bowling Center 2. Pool Hall / Billiards Establishment	494

Appendix A
Transportation Mobility Fee Land Use Cross Reference Table

MAJOR MOBILITY FEE CATEGORY	MOBILITY FEE LAND USE	EXPANDED LIST OF LAND USES	ITE LAND USE CODE
		3. Bowling alleys within a building - shall not be located closer than 1,500 feet	
	I. Community Center/Gymnasium	1. Recreational Community Center 2. Sports Arenas / Field Facilities 3. Stadiums 4. Gymnasiums	495
Institutional	A. Hospital	1. Hospital	610
	B. Nursing Home	1. Nursing Home 2. Convalescent Home with Continuous nursing care 3. Rest Home for the Aged	620
	C. Elementary School	1. Elementary School 2. Academy 3. Boarding School 4. Military Academy 5. Parochal School 6. Schools for the physically handicapped	520
	D. Middle School	1. Middle School 2. Academy / Preparatory 3. Boarding School 4. Military Academy 5. Parochail School 6. Schools for the physically handicapped	522
	E. High School	1. High School 2. Academy / Preparatory 3. Boarding School 4. Military Academy 5. Parochail School / Seminaries 6. Schools for the physically handicapped 7. Vocational	530
	F. Univeristy/Junior College	1. Community College 2. University 3. Professional schools: e.g., dental, engineering, law, medical 4. Seminary	540/550
	G. Church	1. Church 2. Synagogue	560 561
	H. Day Care	1. Daycare Center 2. Head Start centers, except in conjunction with schools 3. Nursery schools 4. Preschool centers	565
	I. Cemetery	1. Cemetery	566
Office	A. Office - 50,000 sf or less B. Office - 50,001-100,000 sf C. Office - 100,001-200,000 sf D. Office - 200,001-400,000 sf E. Office - greater than 400,000 sf	1. General Office Building Professional Offices including: 1. Attorneys 2. Accountants 3. Corporate 4. Engineering 5. Financial Institutions 6. Real Estate	710
	F. Medical Office	1. Medical-Dental Office 2. Clinic 3. Office and Clinic of Medical Doctors	720 630

Appendix A
Transportation Mobility Fee Land Use Cross Reference Table

MAJOR MOBILITY FEE CATEGORY	MOBILITY FEE LAND USE	EXPANDED LIST OF LAND USES	ITE LAND USE CODE
		4. Office and Clinic of Dentistry 5. Office and Clinic of Osteopathy 6. Office and Clinic of Chiropractory 7. Office and Clinic of Optometry 8. Office and Clinic of Occupational Therapy	
	G. Veterinarian Clinic	1. Veterinarian Clinic 2. Animal hospitals for pet and other animal specialties 3. Veterinarian service for pets and other animal specialties 4. Kennels 5. Livestock services	n/a
	H. Office Park	1. Office Park	750
Retail	A. Specialty Retail	1. Specialty Retail Center (e.g. Small Strip Shopping Center)	814
	B. Shopping Center - under 50,000 GSF C. Shopping Center - 50,000 to 200,000 GSF D. Shopping Center - 200,001 to 400,000 GSF E. Shopping Center - 400,001 to 600,000 GSF F. Shopping Center - 600,001 to 800,000 GSF G. Shopping Center - Greater than 800,000 GSF	1. Bakery stores - retail only. Baking permitted on premises. 2. Bicycle stores and repair shops - all repairs, storage, and displays to be done 3. Dry cleaning 4. Dressed poultry and seafood stores - retail sales to be done inside of building. 5. Department Store 6. Pet shops 7. Freestanding Retail 8. Community / Neighborhood Shopping Center with an anchor store such as Publix, Walmart, etc.) 9. Secondhand stores - all sales and displays to be done inside of building. 10. Clothing/apparel/fabric Store 11. Pawn shops 12. Music, radio, and television stores and repair shops 13. Mortuaries or funeral homes, including crematoriums. 14. Discount Store	820
	H. Hardware / Paint	1. Hardware / Paint 2. Builder's Hardware 3. Plumber shops 4. Propane sales - retail only, not exceeding 20,000-gallon storage. 5. Electric appliances and fixture stores and repair shops - all repairs, storage, and displays to be done inside of building.	816
	I. Quality Restaurant	1. Sit Down Restaurant, food served at table (turnover greater than an hour)	831
	J. High-Turnover Restaurant	1. Sandwich Shop 2. Cafeteria 3. Sit Down Restaurant, food served at the table (turnover less than an hour)	832
	K. Fast Food Restaurant w/ Drive-Thru	1. Order Food at the Counter and then sit down	834

Appendix A
Transportation Mobility Fee Land Use Cross Reference Table

MAJOR MOBILITY FEE CATEGORY	MOBILITY FEE LAND USE	EXPANDED LIST OF LAND USES	ITE LAND USE CODE
		2. Take-Out Only Restaurant 3. Take-Out Only Restaurant with outside seating 4. Barbecue stands and pits	
	L. Quick Lube	1. Quick Lubrication Vehicle Shop	837
	M. Auto Repair or Body Shop	1. AutoRepair 2. Auto Body / Paint Shop 3. Automobile washing, body, and painting - including steam cleaning in enclosed buildings only 4. Automobile parts - new or secondhand, from enclosed buildings only 5. Garage or mechanical service - all work to be done inside of building	840
	N. New/Used Auto Sales	1. New/Used Auto Sales 2. Automobile show and sales rooms, including display of automobiles 3. Automobile and trailer sales - used and immediately drivable 4. Motorcycle sales and repairs 5. Boat sales lot	841
	O. Gasoline Station	1. Full Service 2. Gas Only Station	844
	P. Self-Service Car Wash	1. Self-service car wash	847
	Q. Tire Store	1. Tire Store 2. Wholesale Tire Store 3. Tire, battery, and accessory dealers-retail	848 849
	R. Supermarket	1. Supermarket	850
	S. Convenience Store with Gas Pumps	1. Convenience Store with Gas Pumps	853
	T. Home Improvement Superstore	1. Home Improvement Superstore	862
	U. Pharmacy/Drug Store w/ or w/o Drive-Thru	1. Without Drive Through 2. With Drive Through	880 881
	V. Furniture Store	1. Furniture Store 2. Miscellaneous Home Furnishing Store 3. Carpet and Floor Covering Store 4. Antiques Store	890
	W. Bank/Savings w/ Drive-in	1. Bank/Savings Drive-in 2. Commerical Banks 3. Credit Unions	912
	X. Conv'ce/Gasoline/Fast Food Store	1. Conv'ce/Gasoline/Fast Food Store	n/a
Industrial	A. General Light Industrial	1. General Light Industrial 2. Assembly Plants 3. Food Processor and Packing Plant 4. Laundry / Cleaning Plant 5. Printing shops and publishing plants (newspapers, periodicals and books) 6. Sign painting shops - all work to be done inside of building. 7. Cabinet and carpentry shops - all storage and work to be done inside of a building 8. Exterminating products - where the materials or ingredients are stored and mixed	110

Appendix A
Transportation Mobility Fee Land Use Cross Reference Table

MAJOR MOBILITY FEE CATEGORY	MOBILITY FEE LAND USE	EXPANDED LIST OF LAND USES	ITE LAND USE CODE
		9. Pottery and statues - designed for yard ornaments, retail sales only.	
	B. General Heavy Industrial	1. Heavy Industrial 2. Fabricating Plants 3. Automobile wrecking, junkyards, iron, or rag storage. 4. Cement, lime, gypsum mixing or manufacturing Plaster of Paris, or other similar products. 5. Recycling operations. 6. Transfer stations. 7. Food distribution, wholesale - provided no outside storage.	120
	C. Industrial Park	1. Industrial Park	130
	D. Manufacturing	1. Manufacturing 2. Refining or mixing of petroleum or its products such as asphalt. 3. Lumber yards 4. Rubber or gutta-percha manufacturing or treatment. 5. Smelting of aluminum, tin, copper, zinc, or iron ores 6. Paper or pulp manufacturing. 7. Refining or mixing of petroleum or its products such as asphalt 8. Fertilizer manufacturing 9. Glue, size, or gelatine manufacturing	140
	E. Warehouse	1. Storage Warehouse 2. Motor Freight Transportation Centers 3. Distribution Center 4. Warehousing and general storage - including sales and office	150
	F. Mini-warehouse	1. Mini-warehouse 2. Self-Storage 3. RV/Boat Storage Lots	151
	G. High Cube Warehouse	1. High Cube Warehouse	152
	H. Airport Hanger	1. Airport Hanger 2. Boat Ramp	N/A

Note: Expanded Land Uses were derived from the Pasco County Zoning Code. Similar Uses found in other county codes and the Standard Industrial Code 2002, Land Use Groups. Access to the Pasco Land Development Code can be obtained at <http://www.pascocountyfl.net/devser/dseindex.htm>. SIC Grouping Structure can be obtained at <http://www.osha.gov/cgi-bin/sic/sicser5>

Appendix B

Pasco County
Independent Mobility Fee Study
Review Fee Schedule

Appendix B
Pasco County Independent Mobility Fee Study
Review Fee Schedule

INDEPENDENT STUDY REVIEW TIMELINE

According to the Pasco County Mobility Fee Ordinance, the County shall charge a review fee for the Independent Study. Pursuant to the Ordinance, the fees charged shall not exceed the actual costs of the review.

Methodology Review – \$1,748 (\$1,520 Plus 15% County Administration Fee)

This includes the initial review of the applicant’s submitted methodology including review of proposed study sites, trip characteristic survey forms/questions, and proposed data collection methodology. If the proposed methodology is not found to be consistent with the County methodology identified in Section 2.3 and cannot be accepted, a letter will be prepared identifying the methodology review findings, including why the methodology was found to be inconsistent with the County methodology guidelines identified in Section 2.3 and not found acceptable to the County. The summary statement will identify what remedial actions are necessary to correct the methodology so that it is acceptable. Once the corrections to the methodology are made, the applicant may resubmit the corrected methodology to ensure that proper changes to the methodology have been made and to seek final approval. If, following the first round of review, the applicant’s methodology is found to be unacceptable, the applicant shall be subject to a fee of \$842 (\$732 plus 15% County Administration Fee) for each additional round of methodology review.

“Most Similar Land Use” Consultation -- \$780 (\$650 Plus 15% County Administration Fee)

If a land use is not included in the adopted fee schedule, or the Appendix A Land Use Cross-Reference table, a fee payer may request a determination of the “most similar land use” to use as a basis for the fee to be paid. The County Administrator or designee will make a determination as an alternative to avoid the need for a fee payer to undertake the independent fee study. Applicant must provide information about the proposed land use, including the nature of the operation, licensing requirements, typical employment, building size, operating shifts and sizes, site service by suppliers’ trucks and other service vehicles, market area, hours of operation, etc. The County Administrator or designee will use the provided information, and other information at the County’s disposal, to establish similarity to a land use already established within the fee schedule.

Study Analysis Review – \$5,492 (\$4,776 Plus 15% County Administration Fee)

Following the acceptance of the applicant’s methodology, a detailed review of the trip characteristic data will be completed and will include verification of trip lengths and percent new trips through a sample of the trip characteristic survey data. The reasonableness of the traffic count data will also be reviewed, including verification of manual traffic counts, directional distribution, diurnal pattern, peak hour consistency and time, analysis of variance between characteristics observed and characteristics of data upon which the County’s published fee is based, and recommendations regarding a potential fee adjustment. Following the detailed review, written comments summarizing the review findings and recommendations will be prepared and forwarded to the applicant.

If the study submitted by the applicant is found to be unacceptable following the initial detailed

review, written comments summarizing the reasons for this finding will be forwarded to the applicant and/or the applicant's consultant for correction and re-submittal.

Following re-submittal, if the County Administrator or designee must reanalyze corrected data, the County shall charge the applicant for this additional work, which will be determined based on a percentage of the surveys required to be reanalyzed. Upon receipt of the re-submittal, the County Administrator or designee will notify the applicant as to the additional fee, if applicable, based on the percentage of the analysis required to be reanalyzed and will follow the fee schedule set forth in the Study Analysis Review. The County must receive payment for services prior to any subsequent reanalysis. The fee schedule for the survey reanalysis is presented in Table B-1 and is calculated by multiplying the Survey Analysis fee (prior to the 15% Administration Fee charged by the County) of \$4,776 by the percentage of the surveys to be reanalyzed.

**Table B-1
Fee Schedule for Survey Reanalysis**

Percent of Data to be Reanalyzed	Base Fee	Administration Fee	Total
10%	\$477.60	\$71.64	\$549.24
20%	\$955.20	\$143.28	\$1,098.48
30%	\$1,432.80	\$214.92	\$1,647.72
40%	\$1,910.40	\$286.56	\$2,196.96
50%	\$2,388.00	\$358.20	\$2,746.20

Methodology/Study Analysis Appeal

If any portion of the methodology or study analysis is appealed by the applicant, the fee for the involvement of the Consultant will be established based on the specific nature of the appeal and will be established as a part of the appeal process.

If the applicant does not agree with the methodology or study analysis, the applicant may request a final determination from the County Administrator or designee, who shall make a final determination.

The decision of the County Administrator or designee may be appealed to the Board of County Commissioners pursuant to Sections 1301.1.1 and 407.1 of the Pasco County Land Development Code.

Optional Services:

Additional services meetings, if necessary, will be provided per the schedule below. A 15 percent County administrative surcharge will be added to these fees, as noted below.

- Survey site visit - \$952 per site (\$828 Plus a 15% County Administration Fee) for sites located within the Tampa Bay region. The fee for a site visit located outside of the Tampa Bay region is \$2,222 (\$1,932 Plus a 15% County Administration Fee).
- Attend staff meeting in Pasco County - \$1,450 (\$1,261 Plus a 15% County Administration Fee).
- Attend public hearing - \$2,086 (\$1,814 Plus a 15% County Administration Fee).

Appendix C

Pasco County
Independent Mobility Fee Study
Review Timeline and Appeals Process

Appendix C
Pasco County Independent Transportation Study
Review Timeline and Appeals Process

INDEPENDENT STUDY REVIEW TIMELINE

The following is the timeline and appeals process associated with the completion of the Independent Study.

- a. The County Administrator or designee shall review and approve the methodology statement (can be with conditions) within ten (10) business days following receipt of the methodology statement after the issuance of the Notice to Proceed by the County. If requested by the applicant, the County Administrator or designee shall schedule a methodology meeting no more than ten (10) business days after the applicant's request. If the applicant does not request a methodology meeting or respond to comments within the ten (10) business days following issuance of comments by the County Administrator or designee on the methodology, then that shall constitute acceptance by the applicant of the methodology statement with all the associated conditions of approval.
- b. The applicant shall have ten (10) business days to revise (if needed) the methodology statement to reflect discussions during the methodology meeting and resubmit the statement to the County Administrator or designee for review. The County Administrator or designee shall have ten (10) business days from the date of the resubmittal to approve the methodology or make final comments.
- c. Within twelve (12) months after approval of the final methodology statement, the applicant shall submit the results of the Independent Study to the County Administrator or designee for review. The applicant may ask the County Administrator or designee for one (1) extension consisting of no more than six (6) months. In order to be granted the extension, the applicant must request the extension prior to the end of the eleventh (11) month from final approval of the methodology statement. If the applicant fails to submit the results of the Independent Study to the County Administrator or designee by the end of the twelfth (12) month or by the end of any extension granted by the County Administrator or designee, then the County Administrator or designee may request the applicant to recollect the trip characteristic survey and traffic count data.
- d. Following receipt of the results of the Independent Study, the County Administrator or designee shall have thirty (30) business days to review the Independent Study analysis and, if necessary, make written comments to the applicant.
- e. The applicant shall have thirty (30) business days to respond to comments and revise the study as necessary and resubmit it to the County Administrator or designee for review.
- f. Each subsequent round of review and subsequent round of revisions shall take no more than fifteen (15) business days.
- g. If the information submitted remains inadequate for the County Administrator or designee to develop recommendations for acceptance or denial after the second round of revisions and submittal to the County Administrator or designee, the County Administrator or designee shall prepare a recommendation for denial of approval based on insufficiency of supporting information.

- h.** If disagreements remain between the County Administrator or designee and the applicant over the Independent Study, the applicant may either:
 - 1. Supply additional sufficiency responses until the issues in dispute are resolved, with additional fees for continued reviews as outlined in this appendix, or
 - 2. Follow the appeal procedures set for in Subsection i below.
- i.** In the event the County Administrator or designee and the applicant are unable to agree on an approved methodology or results of the review, the applicant may proceed to the appeals process, as described in Subsection i(1) and i(2) below.
 - 1. The applicant may request a final determination from the County Administrator or designee, who shall make a final determination on any disputed issues.
 - 2. The decision of the County Administrator or designee may be appealed to the Board of County Commissioners pursuant to Sections 1301.1.1 and 407.1 of the Pasco County Land Development Code.

Appendix D

Sample Origin/Destination Survey Forms

Pasco County, FL
Trip Characteristics Study

Date: _____ Interviewer: _____

Site Location: _____

Weather: AM _____ Noon: _____ PM: _____

Comments: _____

Residential Form (Inbound and Outbound)

(1) Time	(2) (I) Inbound	(2) What is the name of the business you just came from before coming here?	(3) Did you stop anywhere between here and where you said you came from?	(4) What is the address or nearest intersection (major and minor street) of this location?
	(O) Outbound	What is the name of the business you are going to after leaving here?	Do you plan to stop anywhere between here and where you said you are going?	What is the address or nearest intersection (major and minor street) of this location?
Enter the current time	Circle "I" or "O" to indicate if interviewee is inbound or outbound	Enter the name of the business where the interviewee just came from or is going. If a residence, write "residence" below.	Verify that the interviewee did not/is not going to stop at any other locations. If yes, then input that location under (2).	Enter nearest intersection of the major and minor street where the interviewee confirmed they just came from or plan to go next.
	I		(No Input Necessary In This Column)	
	O			
	I			
	O			
	I			
	O			
	I			
	O			
	I			
	O			
	I			
	O			
	I			
	O			
	I			
	O			

QC Review: _____ Date: _____ Data Entry By: _____ Date: _____

Comments: _____

Tally Unusable Surveys Here: _____

Pasco County, FL
Trip Characteristics Study

Date: _____ Interviewer: _____

Site Location: _____

Weather: AM _____ Noon: _____ PM: _____ Comments: _____

Nonresidential Form - ONLY INTERVIEW PATRONS EXITING THE FACILITY

(1) Time <i>Enter the current time</i>	(2) What is the name of the business you just came from before coming here? <i>Enter the name of the business where the interviewee just came from. If a residence, write "residence" below.</i>	(3) Did you stop anywhere between here and where you said you came from? <i>Verify that the interviewee did not stop at any other locations. If yes, then input that location under (2).</i>	(4) What is the address or nearest intersection (major and minor street) of this location? <i>Enter nearest intersection of the major and minor street where the interviewee confirmed they just came from.</i>	(5) What is the name of the business you are going to after leaving here? <i>Enter the name of the business where the interviewee is going next. If a residence, write "residence" below.</i>	(6) Do you plan to stop anywhere between here and where you said you are going? <i>Verify that the interviewee is not going to stop at any other locations. If yes, then input that location under (2).</i>	(7) What is the address or nearest intersection (major and minor street) of this location? <i>Enter nearest intersection of the major and minor street where the interviewee confirmed they plan to go next.</i>	
		(No Input Necessary In This Column)			(No Input Necessary In This Column)		

QC Review: _____ Date: _____ Data Entry By: _____ Date: _____

Comments: _____

Tally Unusable Surveys Here:	Cut-Thru:	Did Not Survey:	Ambiguous:	Other:
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Appendix E
“Measuring Travel Characteristics for Transportation Impact Fees”

Measuring Travel Characteristics for Transportation Impact Fees

BY WILLIAM E. OLIVER

Many government agencies in Florida have adopted transportation impact fees as a means of assessing the additional demands for road capacity imposed by new developments. The magnitude of these fees is related to the amount of new travel added to the road system as a result of the development. For example, a development that adds 10 vehicle-miles of new travel would be expected to pay more in impact fees than a development that adds only 5 vehicle-miles of new travel.

The general equation used to compute the transportation impact fee for a given land use is

$$\text{Demand} \times \text{Cost} - \text{Credits} = \text{Fees}$$

The travel demand placed on the transportation system is usually expressed in units of new lane-miles of roadway consumed or new vehicle-miles of travel generated. The cost is usually expressed in units of dollars per lane-mile of roadway or dollars per vehicle-mile of travel. The credits are based on an estimate of the revenues generated by the development that will be allocated to roadway construction or transportation system capacity expansion.

A primary consideration in establishing impact fee rates is that the fees be appropriate and equitable. This means that the fee for a given land use should not be higher than the cost to replace the road system capacity it consumes and that developments consuming similar amounts of the road system should

be charged similar fees. For these reasons, it is important to develop standardized and conservative procedures for measuring travel characteristics of land uses.

The amount of new travel is estimated by multiplying three variables: the trip-end generation, the assessable trip length, and the percentage of new trips added to the road system by the development. Although there are standard procedures¹ to estimate the trip-end generation for a site, no standard terminology or procedure has been established for measuring the assessable trip length or the percentage of new trips to a site. The purpose of this article is to suggest standard procedures for measuring these travel characteristics for use in the demand and credit components of an impact-fee equation. In addition, this article introduces important concepts regarding the definition of "captured" trips in an impact fee context, which differs from the definition typically encountered in a traffic-impact-analysis context, and considerations for allocating responsibility for diverted trips.

Assessable Trip Length

The trip length used to compute an impact fee (the assessable trip length) is the amount of new travel that a development adds to the arterial and collector road system, for which payment should be made. Typically, the portion of the trip on local streets is excluded from the as-

sessable trip length because governments in Florida usually do not build local streets using their transportation funds. This job is usually left to the developer of a subdivision. Thus, the procedures to measure assessable trip lengths should exclude travel on local streets. In addition, the portion of trips using the interstate or toll-road system is frequently excluded because local agencies typically do not use their impact-fee revenues to expand the interstate highway or toll-road systems. The proportion of interstate and toll-road travel is highly dependent on the proximity of a site to these facilities and the presence of such facilities in the community. Interstate and toll-road mileage is usually discounted from the assessable trip length by applying a community-wide estimated interstate and toll-road mileage-reduction factor prior to computing the fee.

Motorist interviews are conducted to collect data on trip length. An example of a typical interview form is shown in Figure 1. The purpose of the questions is to ascertain the type of trip, as well as the trip length. The form includes optional questions regarding length of stay and nature of the visit. For some land uses, these questions can be helpful in establishing normal and unusual site-visit patterns and in categorizing trips. From each interview, information relative to two trip-ends is obtained—the inbound trip-end and the outbound trip-end. Using the survey information, trips

had they traveled out of their way to stop at a survey site or, had they not stopped, would they have passed the survey site; their responses were compared with the reported locations of trip origin and next destination (considered to be more fac-

$$\frac{\sum (\text{lengths of primary and secondary trip-ends}) + 2 \sum (\text{diverted trip-ends})}{\text{number of primary, secondary, and diverted trip-ends surveyed}}$$

Equation 1. The assessable trip length for secondary trips.

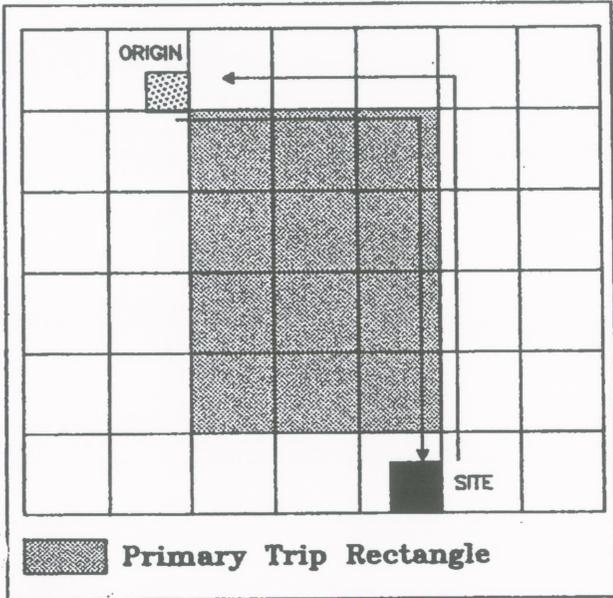


Figure 2. An example of how the length of a primary trip is measured.

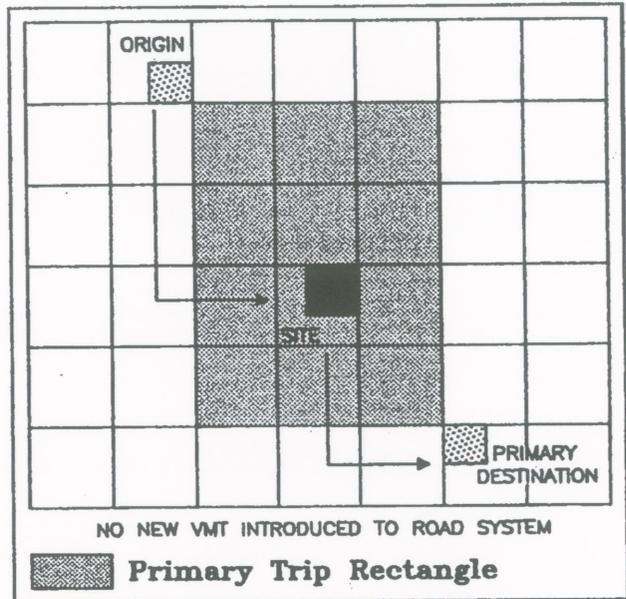


Figure 3. An example of how the length of a captured trip is measured.

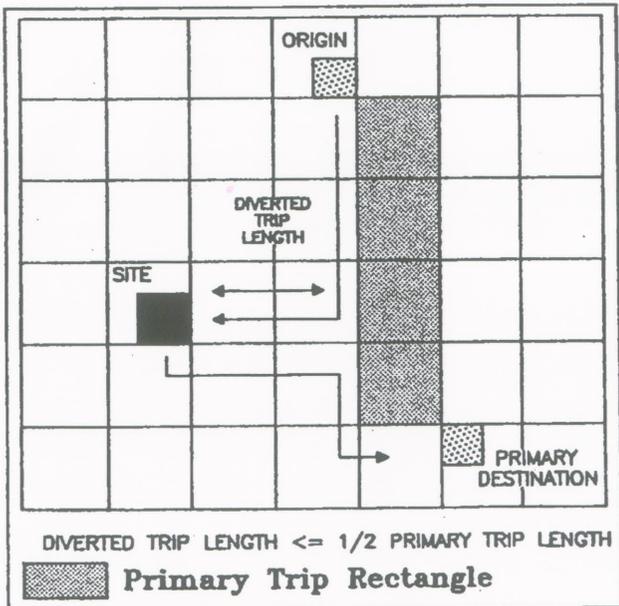


Figure 4. An example of how the length of a diverted trip is measured.

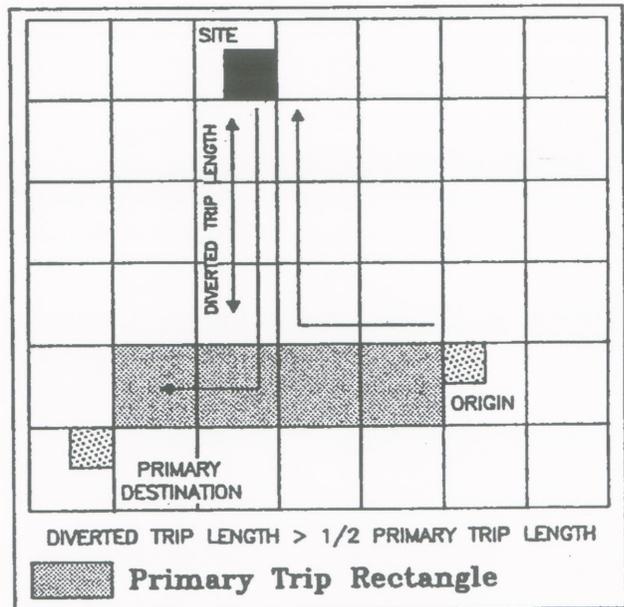


Figure 5. An example of how the length of a secondary trip is measured.

tual information). We found that the motorists' subjective judgments of distance traveled were frequently in great error. Furthermore, their unfamiliarity with the concepts of trip capture and trip diversion led to very inconsistent results. As a result, we developed the quantitative approach described in the preceding paragraphs.

To analyze the survey data, each survey form is reviewed, and the two trip-ends surveyed are identified as primary, captured, diverted, or secondary based on the locations of the origin of the inbound trip and the destination of the outbound trip. The length of each trip is logged onto a data summary form (illustrated in Figure 6). Each survey form provides information regarding two trip-ends. The lengths for each trip type are then added and combined in accordance with the equation provided earlier. Because impact fees allocate the assessment for a trip evenly to the origin-end development and the destination-end development, the demand equation usually includes a denominator of two. If not, then one-half the average trip length as calculated in Figure 6 should be used in the fee equation.

This procedure has a systematic flaw

that fails to account for 100 percent of the travel on the road network. In the captured trip example in Figure 3, if the survey and analysis procedures were applied at the "primary destination" location, the trips from the site to the primary destination and from the primary destination back to the origin would be identified as secondary trips, and one-half their lengths would be allocated to the primary destination. Since none of the captured-trip length is allocated to the site, the first half of the trip from the site to the primary destination is unassessed. Similar "gaps" in the allocation of travel can occur in the case of diverted trips as well. There is no easy way of accounting for all the travel through survey or analysis technique modifications.

The travel unaccounted for by the survey and analysis methods could be accounted for if all trips were treated as primary or secondary. However, not accounting for all of the travel is preferable to the alternative of not recognizing trip capture and diversion of the land uses that exhibit these characteristics. Furthermore, if the approach is consistently applied to all land uses, the land uses will be treated objectively and a lower trip length will be provided, thereby im-

proving the chances of successful defense of a fee if it is challenged as being excessive.

Travel demand characteristics are usually incorporated into an impact-fee rate computation at two points: the computation of the demand for facilities, and the estimation of credits for transportation revenues generated.

Demand Component

For the demand component of the impact fee equation, the following equation and values are typically used:

$$\text{Demand (lane-miles)} = ADT \times \%NT \times ATL \times IRF / (2 \times CAP)$$

Where

ADT = Number of daily trips generated by the development,

%NT = Percentage of new trips,

ATL = Assessable trip length,

IRF = Interstate and toll-road reduction factor, which must be locally determined, and

CAP = Capacity per lane of road, from the local impact fee.

The resulting quantity is the assessable lane-miles of roadway consumed. When multiplied by the cost per lane-mile, the cost to replace the capacity consumed by the land-development activity is estimated.

Credit Component

The credit component of the impact fee equation will vary from community to community. Typically, it recognizes the revenues that will be collected from the land-development activity and applied to roadway system expansion. Examples of such revenues may be *ad valorem* taxes, utility taxes, or any special or benefit assessments, such as a municipal services tax. The most common credit is the gasoline tax, to which the travel characteristic should be applied. The gasoline tax credit is computed as follows:

$$\text{Gas tax credit} = \{ [(\$ \text{ per gallon}) \times ADT \times TTL \times DPY] / (2 \times MPG) \} \times (P/A)_n^{20}$$

Where

\$ per gallon = Amount of gasoline tax per gallon (federal, state, and local) that is

	Primary Trip Lengths	Secondary Trip Lengths	Diverted Trip Lengths	
	2.5 mi.	2.1 mi.	0.8 mi.	
	2.5	0.8	0.8	Information from one motorist interview.
	7.8	3.1		
	7.8	0.5		
	2.2			
	2.2			
Totals:	49.6 mi.	23.1 mi.	4.4 mi.	
Number of Observations:	12	10	6	
Average Assessable Trip Length =	[(49.6 + 23.1) + (2 × 4.4)] / (12 + 10 + 6)			
	= 2.9 mi.			

Figure 6. An example of assessable trip-length calculation.

applied to road-system expansion,
ADT = Number of daily trips generated by the developments,
TTL = Total trip length, including local street, interstate, and toll-road mileage,
DPY = Number of operating days per year,
MPG = Fuel efficiency of vehicle fleet accessing the site,
P/A = The factor representing the present worth of an annually recurring uniform amount,
i% = Compounded interest rate to be applied to the annual gasoline taxes collected, and
n = Number of years of gasoline taxes to be

credited, typically 25 to 50 years.

The rationale for including the local, interstate, and toll-road mileage in the credit component is that gasoline is consumed and gasoline taxes are generated for road construction regardless of the type of road.

Conclusion

A need exists to establish standard procedures so that assessable trip lengths are measured for use in transportation impact fees and so that these characteristics can be cataloged uniformly for various land uses. This article has provided a study methodology that is conservative and a solid, defensible base on which to determine a fee. The procedure is simple and lends itself easily to uniform application. Important considerations in identifying captured trips (or percentage of new trips) and the allocation of re-

sponsibility for diverted trips were introduced. Finally, the application of the assessable trip-length data has been discussed. These procedures have been applied to successful impact-fee studies in Florida.

Reference

1. Institute of Transportation Engineers. *Trip Generation*, 4th Edition. Washington, D.C.: ITE, 1987. ■



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Appendix F
Calculating the Confidence Level Using the Z-Score Method

Appendix F Calculating the Confidence Level using the Z-Score Method

This appendix demonstrates the steps necessary for calculating a percent confidence using the z-score methodology. This analysis is used to determine the *statistical significance* of any differences between Independent Study data and data used to produce the original mobility fee. It is important to note that statistical comparisons using small sample sizes lack certainty; however, the following application of the test still provides insight as to the significance of the differences in trip characteristics data. Also, this procedure addresses the need to use data obtained from multiple sources in one equation, e.g., trip generation rates from the Institute of Transportation Engineers (ITE) source and trip length and percent new trips from local trip characteristics studies are used to obtain the vehicle miles of travel (VMT).

The statistical test involves four steps. The first two steps involve obtaining average VMT and variance for the data used in the adopted mobility fee schedule and for the Independent Study data. The z-score is then computed in the third step, followed by a translation of the z-score into a confidence level in the fourth and final step. The equation used to obtain the z-score is shown below, followed by a detailed example of the z-score calculation.

$$z - score = \frac{(-\mu_I + \mu_0)}{\sqrt{(\sigma_I^2 / n_I) + (\sigma_0^2 / n_0)}}$$

Where:

μ_I = Average VMT obtained by the Independent Study data

μ_0 = Average VMT obtained using ITE and other studies used in the original mobility fee calculation

σ_I^2 = Variance of the VMT obtained by the Independent Study data

σ_0^2 = Variance of the VMT obtained using ITE and other studies used in the original mobility fee calculation

n_I = Number of site locations in the Independent Study with complete observations

n_0 = Number of site locations in the original study with complete observations

The following example explains the steps taken to obtain the z-score of an Independent Study commissioned by a daycare land use (ITE land use code 565). Therefore, trip rate calculation table headings will be in terms of a daycare. Note that if a study is conducted on a retail land use site, for instance, trip rate table headings would be shown as “1,000 square feet of Building,” “Trips,” and “Trips per 1,000 square feet of Building” respectively. All other table headings will be identical to those shown in the subsequent example.

Step 1: Obtaining Average VMT and Variance of the Original Data Used in the Adopted Mobility Fee Schedule

Below is the formula to calculate the VMT:

$$\text{VMT} = \text{Average Trip Rate} \times \text{Average Trip Length} \times \text{Average Percent New Trips}$$

Since the average trip rate, average trip length, and average percent new trips are usually measured at different sites, and have different number of observations, it is necessary to combine the variances associated with each of the three variables to estimate the variance of the VMT.

Below is the generic formula used to calculate the variance of the VMT, denoted σ^2 (note that since these calculations will be done by computer in Excel or another program alike, the standard deviation (SD), as well as the mean/ average, will be given and can then be plugged into the equation):

$$\sigma_{x,y}^2 = [\mu_x^2 \times \sigma_y^2] + [\mu_y^2 \times \sigma_x^2] + [\sigma_x^2 \times \sigma_y^2]$$

Where:

σ^2 = variance
 μ = average

The above equation would be applied twice, once to estimate the standard deviation of the product of the trip rate and trip length, and a second time to estimate the standard deviation of the product of the first two variables and the percent new trips variable.

**Trip Rate
(ITE-LUC 565)**

**Trip Length
(Prior TOA Studies)**

Students	Trips	Trips per Student
50	350	7.00
30	75	2.50
68	310	4.56
72	385	5.35
73	440	6.03
80	340	4.25
90	260	2.89
92	370	4.02
100	410	4.10
113	400	3.54
158	820	5.19

Site 1	1.90
Site 2	2.10
Site 3	2.60
Site 4	2.40

Average: 2.25 ←
Standard Deviation: 0.31
Variance: 0.10 ←

Average: 4.49 ←
Standard Deviation: 1.33
Variance: 1.77 ←

**Percent New Trips
(Prior TOA Studies)**

VMT (VMT_0, μ_0, σ_0^2)

Site 1	70.0%
Site 2	75.0%
Site 3	89.0%
Site 4	82.0%

Average: 79.0% ←
Standard Deviation: 0.08
Variance: 0.01 ←

Average: **7.98**
Standard Deviation: **2.84**
Variance: **8.09**

Calculations:

Average $VMT_0, \mu_0 = 4.49 \times 2.25 \times 79\% = 7.98$ vehicle miles

Variance (σ_0^2) is calculated in two steps:

- 1) σ_0^2 (Rate x Length) = $(4.49^2 \times 0.10) + (2.25^2 \times 1.77) + (1.77 \times 0.10) = 11.15$
- 2) σ_0^2 (Rate x Length x % New Trips) = $[(4.49 \times 2.25)^2 \times 0.01] + [(0.79^2 \times 11.15)] + (11.15 \times 0.01) = 8.09$ vehicle miles

Step 2: Obtaining Average VMT and Variance from the Independent Study Data

The example below illustrates the resulting values obtained from the data collected during the Independent Study. Note that the values shown for the Independent Study variables VMT calculations will simply be obtained using an Excel (or similar program) formula for variance and does not have to be obtained using the extended method that was necessary for the adopted VMT calculation since all three variables were obtained from the same source or study site and have the same number of sites observed, n .

Trip Rate

Trip Length

Students	Trips	Trips per Student
198	633	3.20
260	784	3.02
287	830	2.89

Site 1	1.96
Site 2	4.00
Site 3	2.83

Percent New Trips		VMT (VMTI, μ_I , σ_I^2)	
Site 1	92.0%	Site 1	5.77
Site 2	44.0%	Site 2	5.32
Site 3	60.3%	Site 3	4.93
		Average:	5.34
		Standard Deviation:	0.42
		Variance:	0.18

Step 3: Obtaining a Z-Score

Using the z-score equation presented previously, substitute in the values obtained and circled in Step 1 and Step 2.

$$z - score = \frac{(-5.34 + 7.98)}{\sqrt{((0.18/3) + (8.09/4))}} = 1.59$$

Note:

$n_0 = 4$ since, although there are many more observations for trip rate, there are only 4 complete observations that include all the variables- trip length, trip rate, and percent new trips.

$n_I = 3$ since there are 3 complete observations.

Step 4: Converting the Z-Score to a Confidence Level

Once the z-score is obtained, refer to the following Table F-1 below to locate the area under the standard normal distribution curve, illustrated in Chart F-1, associated with the specific z-score and multiply the associated probability by 2. This area represents the probability that the Independent Study data is observed outside the values of the original mobility fee study data.

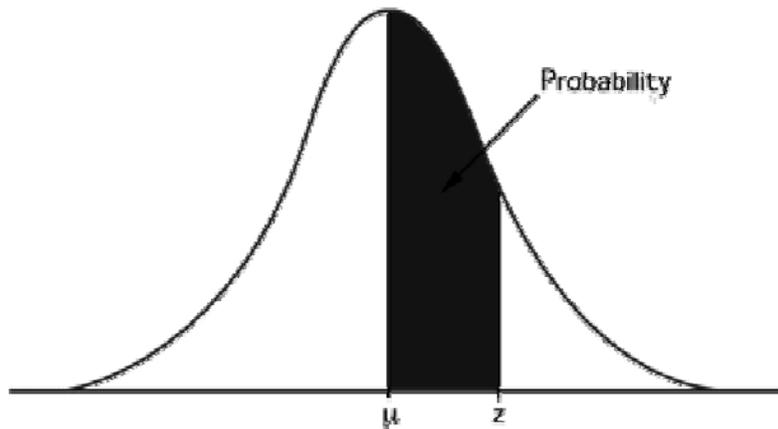
Example:

A z-score of 1.59 is associated with 0.4441, or 44.41%.
 44.4% x 2 = 89% Confidence Level

The resulting confidence level tells how confident we are that the data from the Independent Study is significantly different from the data used in the original mobility fee equation and thus warrants, or fails to warrant, a unique mobility fee. In this example, we are 89% confident that the Independent Study data is significantly different than the data used in the original mobility fee equation. Since the confidence level is greater than 75%, it must be determined whether this site is included under an existing land use classification in the County's Mobility Fee Study. There is currently a daycare land use included in the fee schedule. Therefore, to determine how the mobility fee should be calculated, the County must determine if there are any differentiating characteristics at the study sites, such building size tailored for a large minimum student

enrollment, that differentiate the Independent Study site from the daycare land use classification included in the fee schedule. If no differentiating characteristic can be found, then this data is to be combined with the existing data set for the day care land use. If a differentiating characteristic can be found, then a separate land use classification shall be incorporated into the County's fee schedule and the mobility fee shall be calculated on the results of the Independent Study. Please refer to Section 2.5 "Sufficiency Determination" for further recommendations based on the level of confidence.

Chart F-1
Standard Normal Z-Distribution



**Table F-1
Standard Normal Z-Distribution**

z	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0	0	0.004	0.008	0.012	0.016	0.019	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.091	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.148	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.17	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.195	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.219	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.258	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.291	0.2939	0.2969	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.334	0.3365	0.3389
1	0.3413	0.3438	0.3461	0.3485	0.3508	0.3513	0.3554	0.3577	0.3529	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.377	0.379	0.381	0.383
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.398	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.437	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.475	0.4756	0.4761	0.4767
2	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.483	0.4834	0.4838	0.4842	0.4846	0.485	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.489
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.492	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.494	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.496	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.497	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.498	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.499	0.499
3.1	0.499	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998

Note: The first column corresponds with the first decimal place of the z-score, in the above example, 1.5. The remaining columns correspond with the second decimal place, in this example, 0.09. As such, cross referencing 1.5 and 0.09 results in an area of 0.4441.

A quick reference guide of z-scores and their associated confidence levels is also shown in Table F-2.

**Table F-2
Z-Score Reference Guide**

Z-Score	% Confidence
2.55	99%
1.96	95%
1.65	90%
1.17	76%
1.15	75%
0.67	50%
0.00	0%