

***ACHD Guidebook for Conducting
Individual Assessments***



November 14, 2007

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INTRODUCTION

The current Ada County Highway District (ACHD) Impact Fee Ordinance outlines a process for preparing an individual assessment to determine a site specific impact fee. This guidebook has been developed to provide clear guidance to conduct the individual assessment.

Initiating an Individual Assessment

To initiate an individual assessment, the Developer or Fee Payer must submit a written Individual Assessment Application to the Impact Fee Administrator no later than thirty (30) calendar days after the date of payment of the impact fee. The completed individual assessment must be submitted within two (2) years from the date that the Individual Assessment Application is received by ACHD.

An individual assessment may be completed prior to payment of the impact fee. In that case, the assessed fee will be that determined by the results of the individual assessment as accepted by ACHD. A Developer or Fee Payer may also opt to pay the impact fee as assessed from the impact fee schedule, make application for an individual assessment within thirty (30) days of the payment of the fee, and then complete the individual assessment within two (2) years from the date that the Individual Assessment Application was received by ACHD. This option may be more appropriate for developments that have difficulty finding suitable similar sites to base the trip generation and origin / destination studies upon. An individual assessment may be completed prior to payment of the impact fee. In that case, the assessed fee will be that determined by the results of the individual assessment as accepted by ACHD. The following sections detail the requirements for both individual assessment scenario options.

Time Extensions

The Impact Fee Administrator may grant an extension of up to 1 year upon showing of just cause as to why the individual assessment could not be completed within the required 2 years. The determination of just cause shall be at the sole discretion of the Impact Fee Administrator and determined on a case by case basis. Applicants are encouraged to meet with the Impact Fee Administrator as soon as it is apparent that an extension may be necessary to avoid missing the submittal deadline.

The current ACHD Impact Fee Ordinance requires that an individual assessment include a determination of each of the factors in the impact fee formula for the particular development that is the subject of the individual assessment. The developer must submit data to support site specific calculations of:

- Peak Hour Trip Rate;
- The New Trip Factor (Trip type characteristics primary, pass by, or diverted trips);

- Average Trip Length; and
- The Network Adjustment Factor.

The ordinance requires that data be collected at similar land uses or at the actual site if it is already developed. This guidebook provides direction as to how this data should be obtained in order to facilitate a more streamlined and consistent individual assessment process. To be consistent with standard traffic engineering practice, much of this guidebook is based on procedures recommended by the Institute of Transportation Engineers (ITE).

DEFINITIONS

The percentage of trips that fall into the three trip type categories (Primary, pass by, and diverted) are a fundamental requirement of an accurate individual assessment. Each of three trip types are defined below.

Primary¹ Trips are made for the specific purpose of visiting the generator; the stop at the generator is the primary reason for the trip. The typical primary trip goes from an origin to the generator and then returns to the origin.

Pass by¹ Trips are intermediate stops made on the way from an origin to a primary trip destination without diverting from the primary trip route. Pass by trips come from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. By definition, pass by trips have a trip length of zero.

Diverted¹ Trips come from traffic on the roadways within the vicinity of the generator but require a diversion from that roadway to another roadway to gain access to the site. These trips may occur on highways or freeways adjacent to a generator. Diverted trips add traffic to the streets adjacent to the site but do not add traffic to the area's major travel routes.

The ITE Handbook further states that diverted trips should be treated similarly to primary trips unless: 1) all three (primary, pass by, and diverted) categories are being analyzed and processed separately, and (2) the travel routes for diverted trips can be clearly established. The ITE Handbook also clearly states that both pass by and diverted trips may be part of a multiple stop chain of trips.

The last category of trips that could be important in an individual assessment for a multi use development is *Internal Trips*. *Internal Trips* take place between individual uses within the development and do not have any impact on the surrounding transportation system. They only apply at multi use development sites. For the purposes of this Guidebook, a multi use site is defined based on the ITE definition which includes sites with the following characteristics:

¹ ITE Trip Generation Handbook, Second Edition, An ITE Recommended Practice

- Sites that are typically planned as a single real estate project,
- Typically between 100,000 and 2 million square feet in size,
- Contain two or more land uses,
- Some trips are between on site land uses, and
- Trips between land uses do not travel on the major street system.

BASIC REQUIREMENTS

There are certain basic requirements that need to be met to conduct a proper individual assessment.

- If the site has not already been developed, three to five sites need to be selected for study.
 - Three is the minimum number of sites for a survey, while five sites are preferred.
 - Studying five sites produces more reliable results and allows outlying data points to be identified and possibly discarded.
- All surveys and counts should be conducted during a typical commuter weekday p.m. peak hour.
- All surveys should be conducted through interviews and should not be passed out to employees and/or patrons to be returned at a later date.
- The independent variable used in establishing site specific rates (i.e. square footage of development, number of employees, etc..) must be consistent with the independent variable in the trip generation rate used to formulate the initial impact fee assessment. This data should be obtained from the study site's manager or owner (or from data already available from ACHD), and should not be simply estimated from aerial photography or some other means.
- All surveys should be conducted using the forms included with the guidebook and submitted to ACHD using the spreadsheet included with the guidebook. The actual spreadsheet can be downloaded from the ACHD website.

Additional details regarding each of the above requirements are explained in the following sections.

SITE SELECTION

If the specific site in question is not yet developed, representative sites must be identified as a surrogate. The selection of appropriate study sites is critical to the accuracy of the individual assessment. Key criteria that need to be considered in choosing study locations are:

- *Near full occupancy:* At least 85% of each development being studied should be occupied. The occupancy percentage of each site should be recorded².
- *Comparable development:* The sites should be representative of the type of land use being studied.
- *Maturity of Development:* The comparable sites should be economically healthy and at least two years old.
- *Availability of independent variable:* The owner or manager of each site should be able to readily supply the measurement of the appropriate independent variable (i.e. square footage, number of employees, etc...). Which independent variable should be chosen is described under Basic Requirements above.
- *Ease and accuracy of data collection:* There are a number of items that should be considered in site selection in order to ensure that data can be collected accurately and easily.
 - Parking and driveways for the site are distinguishable between parking and driveways for other development.
 - No thru traffic is present on site.
 - The traffic counters and surveyors can perform their work in a safe environment.
 - Be sure that traffic counters have formal permission from the owner or manager of the property prior to conducting the survey.
 - Be sure that traffic counters and surveyors wear proper safety related attire (formal example safety vests when conducting traffic counts).
 - The site is a single land use (multi use sites are dealt with later on in the guidebook).
 - There is either no, or minimal, construction activity present in the site vicinity.
 - The site owner or manager is willing to grant permission to have the site studied.
 - The surveys can be conducted on site in a manner that does not disrupt traffic or create congestion and/or queues that spillback onto public street system.

² ITE Trip Generation Handbook, 2nd Edition

Following the above guidelines will enhance the reliability of the individual assessment. *Prior to conducting the data collection, the proposed study sites shall be submitted to ACHD staff for review and approval.*

TRIP GENERATION

The site specific trip generation rate should be established by conducting traffic counts at the actual site in question or the representative similar land uses (refer to Site Selection section for how to choose study locations). The counts should represent a typical weekday p.m. peak hour (4:00 6:00 p.m. Tuesday Thursday). If the development in question is a seasonally variable business, counts should be conducted during what are considered “typical” conditions. Holidays, special events, construction, bad weather, and other external factors may alter traffic patterns from the norm, and therefore, counts should not be conducted on days when any of these are present.

The following highlights the requirements for conducting the actual traffic counts at each location:

- Traffic counts should be collected and reported in fifteen minute intervals or less (see Appendix A for an example traffic count summary sheet).
- Entering and exiting volumes should be counted at each site access point.
- Automatic counters should generally be avoided but may be used if site conditions allow for an accurate count. If automatic counts are used they should be verified with a brief manual count (i.e. one or two fifteen minute intervals).
- All site access points should be counted concurrently.

To create an average trip generation rate for the site, data from at least three sites should be provided. After reviewing the average trip generation rate, if the variation among the sites is large (resulting in a high standard deviation), consideration should be given to removing the outliers and adding an additional site(s).

NEW TRIP, TRIP LENGTH, AND NETWORK ADJUSTMENT

The new trip factor, average trip length, and network adjustment factor pieces of the individual assessment shall be established by conducting an origin / destination survey which requires interviews of individuals exiting the sites where the traffic counts for the trip generation rate are being conducted.

Overview of Interview Methodology

The following summarizes the methodology for conducting on site interviews:

- Interviews should ideally take place concurrently with the traffic counts.

- A minimum of 100 *exiting* individuals should be interviewed using the questionnaire found in Appendix A to provide results at approximately a 95% confidence level and 10% sampling error³.
- For business with little or no customer traffic, it may be acceptable to simply interview all the exiting employees, which could result in less than 100 interviews. This exception must be discussed with and approved writing by ACHD staff in advance of the data collection effort.
- All interviews should be conducted on site and the results tallied at the time of the interview. Survey forms should not be passed out to employees/customers to be returned later.
- Each interviewer should be equipped with an appropriate number of questionnaires, maps of the Ada County roadway network, and maps of the site vicinity area.

Conducting the Interviews

The following is a step by step discussion of the interview using the survey form found in Appendix A:

- Each survey of a willing participant should begin with Q1 shown on the form in Appendix A.
- If the answer to Q1 is “no,” then the survey should be ended since the interviewee did not travel to the site by automobile.
- If the answer is “yes,” the interviewer should continue to Q2 to determine if the trip is a primary trip.
- A “yes” answer to Q2 indicates that the interviewee’s trip to the site is of a primary nature. At this point, the interviewer should ask the interviewee to provide the address or, alternatively identify the nearest local street intersection to where he/she started his/her trip on one of the maps illustrating the Ada County roadway network. This location should be circled and written down on the map and the map should be labeled with the corresponding survey number from the questionnaire. Some interviewees may be able to mark their exact route on the form which will help but is not required. This map should be placed in a location separate from the unused maps and *not used again for any other interviews*.
- If the answer to Q2 is “no,” the interviewer should move on and ask Q3.
- A “yes” answer to Q3 indicates that the interviewee’s trip is a pass by trip. A “no” answer means that it is a diverted trip, and the interviewee should move on to Q4.

³ ITE Trip Generation Handbook, 2nd Edition

- The interviewee should point out his response to Q4 on the site vicinity map. If the intersection the interviewee diverted from is not on the vicinity map, the larger map of Ada County may be substituted. In either case, the interviewer should circle and label the intersection, as well as label the map with the corresponding survey number from the questionnaire. This map should be placed in a location separate from the unused maps and *not used again for any other interviews*.
- Once a questionnaire sheet is full, it should be grouped together with its corresponding trip origin maps to prevent confusion regarding which maps belong to which questionnaire sheet.

Summarizing the Data

Once the interviews are complete, the actual trip length for each surveyed trip can be determined through a number of different possible methods. A simple and consistent method would be to use one of the internet mapping tools such as www.maps.google.com. Professional judgment should be used in determining both the total trip length as well as the length of the trip using Ada County Arterial roadways. Separate trip lengths will be determined for each primary and diverted trip type (pass by trips by definition have a trip length of zero), based on the location of the site and the indicated origin of each trip. The information for each non pass by trip should be clearly recorded on the trip's corresponding map for later submission to ACHD.

After the necessary information for each trip has been determined, the data itself should be entered into the summary spreadsheet provided by ACHD. The following are some specific instructions for using the spreadsheet:

- The spreadsheet provides rows for up to 500 interviews.
- In the unlikely event that additional rows are needed, they may be created by copying the appropriate number of the 500 existing rows and then inserting the copied rows into the spreadsheet. *Do not insert new rows*. There are formulas embedded into each row that need to be copied into the additional rows, otherwise the summary calculations will leave out rows of data.
- Do adjust the numbering of the rows to reflect the number of interviews being entered.
- The spreadsheet will perform all the necessary calculations on this data to produce the new trip factor, average trip length, and network adjustment factor for the surveyed development. This information is presented on the "Data Summary" tab of the spreadsheet.
- The "Data Summary" sheet summarizes all pertinent information for each of the three to five developments surveyed. This sheet also calculates the final trip generation rate, new trip factor, average trip length, and network adjustment factor that will be used by ACHD

to determine the new site specific impact fee. Table 1 below summarizes the formulas used in this spreadsheet.

**Table 1
Formulas Used in Spreadsheet**

"Site..." Sheets	
Value	Formula
Total Trips	Primary Trips + Diverted Trips + Pass-By Trips
New Trip Factor	(Primary Trips + Diverted Trips) / Total Trips
Ave. Trip Length	(Primary Trips * Ave Length [of primary trips] + Diverted Trips * Ave Length [of diverted trips]) / (Primary Trips + Diverted Trips)
Network Adj.	(Miles of Primary Trips on ACHD Arterials + Miles of Diverted Trips on ACHD Arterials) / (Miles of Primary Trips + Miles of Diverted Trips)
Primary Trips	Number of columns where a "Y" (yes) is entered under the "Primary?" column
Ave Length	Miles of Primary Trips / Primary Trips
Diverted Trips	Number of columns where a "Y" (yes) is entered under the "Diverted?" column
Ave Length	Miles of Diverted Trips / Diverted Trips
"Summary Sheet" Sheet	
Value	Formula
Peak Hour Trip Rate (One Way)	Average of Site Trip Generation Rate values from the five "Site..." sheets / 2
New Trip Factor	Average of New Trip Factor values from the five "Site..." sheets
Average Trip Length	Average of Ave. Trip Length values from the five "Site..." sheets
Network Adjustment Factor	Average of Network Adj values from the five "Site..." sheets
VMT Cost	VMT Cost for the "Service Area" selected in cell B5. Based on ACHD Current TIF Ordinance.
Gross Traffic Impact Fee per Development Unit	Peak Hour Trip Rate (One Way) * New Trip Factor * Average Trip Length * Network Adjustment Factor * VMT Cost
Traffic Impact Fee	Gross Traffic Impact Fee Per Development Unit * Number of Units

SPECIAL CONSIDERATIONS FOR MULTI-USE DEVELOPMENTS

A multi use development contains more than one distinct land use and is designed such that trips can be made between the different land uses without utilizing the external roadway network (see detailed definition in the Definitions section of this Guidebook). This definition does not include land uses for which ITE has already established an internalization factor into its trip generation rate (i.e. shopping centers, office parks with retail uses, etc...). Data collection at these developments requires additional efforts beyond the above described procedures for a single use site.

Determining Trip Generation Rates

If the focus of the individual assessment is the entire multi use development, all of the driveways entering and exiting the development should be counted similar to any other development. If however the focus of the study is a single use within a multi use development, it may be more challenging to clearly distinguish trips to the specific use in question because of shared driveways and/or parking areas. If that is the case, an alternative to conducting a vehicle count at driveways would be to count the number of employees/patrons entering and exiting the building supplemented with a vehicle occupancy count to determine average vehicle occupancy (a minimum sample size of 100 vehicles should be provided).

Determining Trip Type

In addition to the three trip types previously discussed (primary, pass by, and diverted). Multi use sites may have a significant percentage of internal trips. If the focus of the individual assessment is the entire multi use development, and all of the driveways entering and exiting the development have been counted, there is no need to determine the internal trip percentage as the reduction will already be reflected in the driveway counts. If however the focus of the study is a single use within a multi use development, the multi use trip type survey found in Appendix A should be used.

Note that an individual assessment may only be conducted and applied to the current phase of multi-phase projects. The individual assessment must be updated for each phase of multi-phase projects. The trip generation and traffic characteristics must include the current phase of the development as well as all other phases to date.

PREPARING THE FINAL REPORT

Once the calculations have been made a brief report should be prepared summarizing the results of the study. To facilitate the review process it would be helpful to follow the sample report shown in Appendix B.

The sample report should include a technical appendix that includes all raw data collection sheets (i.e. questionnaires, maps, traffic counts, etc...). In addition the electronic spreadsheet summarizing the data as well as the calculations should be submitted with the final report. The raw data collection sheets should be submitted in such a fashion that ACHD staff could replicate the data processing effort made by the fee payer and arrive at the same results.

APPENDIX A – SURVEY FORMS

Trip Type and Length Questionnaire

Name of Development: _____ Day of Week: _____

Surveyor: _____ Date: _____

Comments:	Time Period:
-----------	--------------

Survey Number	Q1: Did you make your trip here by car/truck?		Q2: Will you go directly back to where you started your trip from here?		Q3: Would you have driven by this site even if you had not stopped here now?		Q4: If you had not stopped at this establishment today, what is the closest intersection on your normal route you would have traveled through?
	Y: Yes (proceed to Q2)		Y: Yes (ask to point out nearest intersection to trip origin, then end survey)		Y: Yes (end of survey)		(Ask to point out intersection on map)
	N: No (end survey)		N: No (proceed to Q3)		N: No (proceed to Q4)		
	Y	N	Y	N	Y	N	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
							<= Totals

Multi-Use Trip Type and Length Questionnaire

Name of Development: _____ Day of Week: _____

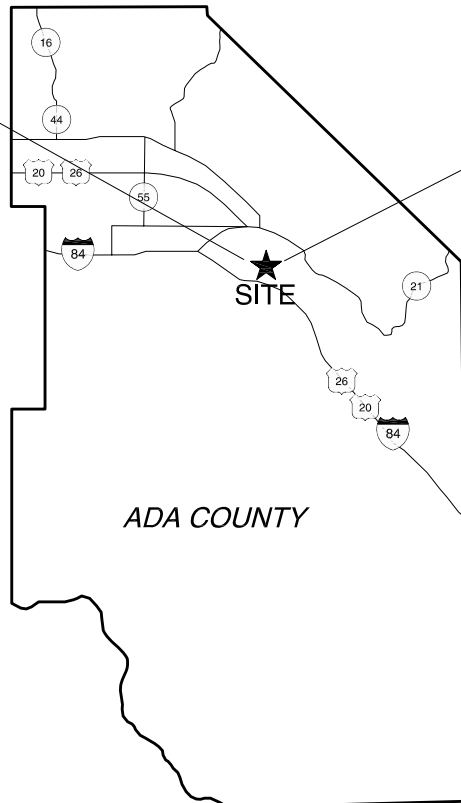
Surveyor: _____ Date: _____

Comments:	Time Period:
-----------	--------------

Survey Number	Q1: Did you make your trip here by car/truck?		Q2: Does your trip include any other stops within this development?		Q3: Is this site the primary reason for your trip to this development?		Q4: Will you go directly back to where you started your trip from here?		Q5: Would you have driven by this site even if you had not stopped here now?		Q6: If you had not stopped at this establishment today, what is the closest intersection on your normal route you would have traveled through?	
	Y: Yes (proceed to Q2)		Y: Yes (proceed to Q3)		Y: Yes (proceed to Q4)		Y: Yes (ask to point out nearest intersection to trip origin, then end survey)		Y: Yes (end of survey)		(Ask to point out intersection on map)	
	N: No (end survey)		N: No (proceed to Q4)		N: No (end of survey)		N: No (proceed to Q5)		N: No (proceed to Q6)			
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
												<= Totals

APPENDIX B – SAMPLE REPORT

- Last Bank, located on ??? S Pioneer Way.



H:\profile\18537 - ACHD TIF Review\dwg\figs\ExampleFig1.dwg Sep 20, 2007 - 5:33pm - nfoster Layout Tab: Layout1

SITE VICINITY MAP
BOISE, IDAHO

FIGURE
1

Peak Hour Trip Rate

Manual turning movement counts were conducted during an average weekday p.m. peak hour (4 6 p.m. Tuesday Thursday) for two consecutive days at each site access driveway in order to determine a peak hour trip rate for each site. All site access driveways were easily distinguishable as serving only the site being surveyed. The five sites surveyed had two way peak hour trip rates ranging from 40.25 – 43.68 trips/1,000 sq. ft. with an average one way peak hour trip rate of 21.04 trips/1,000 sq. ft. *Appendix “B” contains the turning movement counts used in this assessment.*

New Trip Factor, Average Trip Length, and Network Adjustment Factor

Surveys of exiting patrons and employees of each bank were conducted at each site during the same time period that turning movement counts were being conducted. The individuals exiting the sites were surveyed using the *Trip Type and Length Questionnaire* contained in the *ACHD Guidebook*. Individuals answering “yes” to question 2 were counted as a primary trip and provided a map of Ada County to identify the nearest intersection to where they started their trip. Individuals answering “no” to question 3 were counted as a diverted trip and provided a map of the site vicinity to identify the nearest intersection that they would have traveled through on their normal route. *Appendix “C” contains the questionnaires and maps used in this assessment.* In both instances the length of each trip, and the length of each trip on ACHD arterials, was determined using the Google Earth internet mapping software. This data was then entered into the *ACHD Guidebook* spreadsheet, which calculated the new trip factor, average trip length, and network adjustment for each site. *Appendix “D” contains the data summary sheets from the ACHD Guidebook spreadsheet for all five sites surveyed.*

RESULTS

The results of the Future Bank individual assessment are summarized below in Table 1. This summary is based on the calculations made in the *ACHD Guidebook* spreadsheet, ACHD TIF Ordinance 202 (Reference 2), and the TIF paid by FBDC on January 30, 2007.

Table 1
Future Bank Individual Assessment Results Summary and Comparison to Default Values

	ACHD Default Value¹	Individual Assessment Value
Peak Hour Trip Rate (One-Way)	22.87	21.04
New Trip Factor	0.53	0.51
Average Trip Length (Miles)	1.75	1.70
Network Adjustment Factor	0.340	0.372
VMT Cost	\$1,115	\$1,115
Gross TIF per 1,000 Sq. Ft.	\$8,065	\$7,565
Development Size (1,000 Sq. Ft.)	2.8	2.8
Traffic Impact Fee	\$22,580	\$21,180
<i>TIF Paid 1/30/07</i>		\$22,580
Refund Due		\$1,400

¹Based on values for the Southeast service area.

Table 1 shows that based on local data, the Future Bank development is anticipated to have a lower peak hour trip rate, new trip factor, and trip length than is predicted in the standard ACHD TIF formula for a Drive in Bank. At the same time, the network adjustment factor is forecast to be slightly higher than the figure used in the ACHD formula. Based on these results from the individual assessment, FBDC overpaid its TIF by \$1,400 and is therefore owed a refund of the same amount from ACHD.

REFERENCES

1. ACHD. *ACHD Guidebook for Conducting Individual Assessments*. 2007.
2. ACHD. *ACHD Impact Fee Ordinance 202*. 2006.

Name of Development: Average Bank
Address of Development: ??? S East Street
Service Area (choose one): 3 - Southeast
Description of Land Use: Drive-in Bank
ITE Land Use Code: 912
Size of Development: 3,000 Sq Feet
Site Trip Generation Rate: 42.35
Date of Survey: 6/19-6/20/07
Day of Week: Tue-Wed
Time Period: 4-6 PM
Percent Occupied: 100%
Number of Interviews: 102
Total Site Volume:
Inbound 64
Outbound 63

Data Summary

Total Trips 102
New Trip Factor 0.46
Ave Trip Length 1.83
Network Adj 0.291
 Primary Trips 35
 Ave Length 2.03 Miles
 Diverted Trips 12
 Ave Length 1.25 Miles
 Pass-By Trips 55

Trips Summary

Trip #	Primary? (Y/N)	Diverted? (Y/N)	Pass-By? (Y/N)	Trip Length (Miles)	Mile of Trip on County Arterials
1	y	n	n	1	0
2	n	y	n	1	0
3	n	n	y		
4	y	n	n	2	0
5	n	n	y		
6	n	n	y		
7	n	n	y		
8	n	n	y		
9	n	n	y		
10	n	n	y		
11	n	n	y		
12	n	n	y		
13	n	n	y		
14	n	n	y		
15	n	n	y		
16	n	n	y		
17	n	n	y		
18	n	n	y		

19	n	n	y		
20	n	y	n	2	0
21	n	y	n	3	1
22	y	n	n	2	1
23	n	n	y		
24	n	n	y		
25	n	n	y		
26	n	n	y		
27	n	n	y		
28	n	n	y		
29	y	n	n	3	1
30	y	n	n	3	1
31	y	n	n	3	1
32	y	n	n	3	2
33	y	n	n	3	1
34	y	n	n	1	0
35	y	n	n	2	0
36	y	n	n	2	0
37	y	n	n	3	2
38	y	n	n	1	0
39	y	n	n	2	0
40	y	n	n	2	1
41	y	n	n	1	0
42	y	n	n	3	1
43	y	n	n	1	1
44	y	n	n	3	1
45	n	n	y		
46	n	n	y		
47	n	n	y		
48	y	n	n	1	0
49	y	n	n	2	1
50	y	n	n	2	1
51	y	n	n	1	0
52	y	n	n	2	1
53	y	n	n	1	0
54	n	n	y		
55	n	n	y		

56	n	n	y		
57	n	n	y		
58	n	n	y		
59	n	n	y		
60	n	n	y		
61	n	n	y		
62	n	n	y		
63	n	n	y		
64	n	n	y		
65	n	n	y		
66	n	n	y		
67	y	n	n	3	1
68	y	n	n	1	0
69	y	n	n	3	1
70	n	y	n	1	0
71	n	y	n	1	1
72	n	n	y		
73	n	n	y		
74	n	n	y		
75	n	y	n	1	0
76	n	y	n	1	0
77	n	n	y		
78	n	n	y		
79	n	n	y		
80	y	n	n	1	0
81	y	n	n	3	1
82	y	n	n	3	1
83	n	y	n	1	0
84	n	y	n	1	0
85	n	n	y		
86	n	n	y		
87	n	n	y		
88	n	n	y		
89	n	n	y		
90	y	n	n	1	1
91	y	n	n	3	1
92	y	n	n	1	0

93	n	y	n	1	0
94	n	y	n	1	0
95	n	n	y		
96	n	y	n	1	0
97	n	n	y		
98	n	n	y		
99	n	n	y		
100	n	n	y		
101	n	n	y		
102	y	n	n	2	1

Name of Development: 2nd Bank
Address of Development: ??? E South Avenue
Service Area (choose one): 3 - Southeast
Description of Land Use: Drive-In Bank
ITE Land Use Code: 912
Size of Development: 3500 Sq Ft
Site Trip Generation Rate: 41.95
Date of Survey: 6/12-6/13/07
Day of Week: Tue-Wed
Time Period: 4-6 PM
Percent Occupied: 100%
Number of Interviews: 115
Total Site Volume:
Inbound 73
Outbound 74

Data Summary

Total Trips 113
New Trip Factor 0.51
Ave Trip Length 1.47
Network Adj 0.376
 Primary Trips 30
 Ave Length 1.70 Miles
 Diverted Trips 28
 Ave Length 1.21 Miles
 Pass-By Trips 55

Trips Summary

Trip #	Primary? (Y/N)	Diverted? (Y/N)	Pass-By? (Y/N)	Trip Length (Miles)	Mile of Trip on County Arterials
1	y	n	n	2	0
2	n	y	n	1	0
3	n	n	y		
4	y	n	n	2	1
5	n	n	y		
6	y	n	n	2	1
7	y	n	n	2	1
8	y	n	n	1	0
9	y	n	n	2	0
10	y	n	n	2	1
11	y	n	n	1	1
12	n	n	n		
13	n	n	y		
14	n	n	y		
15	n	n	y		
16	n	n	y		
17	n	n	y		
18	n	n	y		

19	n	n	y		
20	n	n	y		
21	n	n	y		
22	n	n	y		
23	n	n	y		
24	n	n	y		
25	n	n	y		
26	n	n	y		
27	n	n	y		
28	n	n	y		
29	n	n	y		
30	n	n	y		
31	n	y	n	1	0
32	n	y	n	1	0
33	n	y	n	1	0
34	n	y	n	1	1
35	n	y	n	1	0
36	n	n	y		
37	n	y	n	1	0
38	n	y	n	1	0
39	n	y	n	1	1
40	n	y	n	1	0
41	n	y	n	1	0
42	n	y	n	1	0
43	n	y	n	1	1
44	y	n	n	2	1
45	n	n	y		
46	y	n	n	1	1
47	y	n	n	2	1
48	N	N	Y		
49	n	y	n	2	1
50	n	y	n	1	0
51	n	y	n	1	0
52	n	n	y		
53	y	n	n	2	1
54	n	n	y		
55	n	n	y		

56	n	n	y		
57	n	n	y		
58	y	n	n	2	1
59	y	n	n	1	0
60	y	n	n	1	0
61	y	n	n	2	1
62	y	n	n	2	1
63	n	n	y		
64	n	y	n	1	0
65	n	y	n	2	1
66	n	y	n	2	1
67	y	n	n	3	1
68	y	n	n	2	1
69	y	n	n	1	0
70	y	n	n	1	0
71	y	n	n	2	1
72	y	n	n	2	1
73	n	n	y		
74	n	n	y		
75	n	n	y		
76	n	n	y		
77	n	n	y		
78	n	y	n	1	0
79	n	n	y		
80	y	n	n	1	1
81	n	n	y		
82	n	n	y		
83	n	n	y		
84	n	y	n	1	0
85	n	n	y		
86	y	n	n	3	2
87	n	n	y		
88	n	n	y		
89	n	n	y		
90	n	n	y		
91	y	n	n	1	1
92	y	n	n	1	0

93	N	N	Y		
94	n	y	n	1	1
95	n	n	y		
96	y	n	n	1	1
97	y	n	n	2	1
98	N	N	Y		
99	n	y	n	1	0
100	n	n	y		
101	n	y	n	1	0
102	n	y	n	1	0
103	n	y	n	2	1
104	y	n	n	2	1
105	N	N	Y		
106	n	y	n	3	1
107	n	n	y		
108	n	n	y		
109	n	n	y		
110	n	n	y		
111	y	n	n	2	1
112	N	N	Y		
113	n	y	n	1	0
114	n	n	y		
115	n	n	y		

Name of Development: 3rd Bank
Address of Development: ??? E Lava Avenue
Service Area (choose one): 3 - Southeast
Description of Land Use: Drive-In Bank
ITE Land Use Code: 912
Size of Development: 4800 Sq Ft
Site Trip Generation Rate: 40.25
Date of Survey: 6/12-6/13/07
Day of Week: Tue-Wed
Time Period: 4-6 PM
Percent Occupied: 100%
Number of Interviews: 100
Total Site Volume:
Inbound 96
Outbound 97

Data Summary

Total Trips 100
New Trip Factor 0.52
Ave Trip Length 1.77
Network Adj 0.380
 Primary Trips 41
 Ave Length 1.93 Miles
 Diverted Trips 11
 Ave Length 1.18 Miles
 Pass-By Trips 48

Trips Summary

Trip #	Primary? (Y/N)	Diverted? (Y/N)	Pass-By? (Y/N)	Trip Length (Miles)	Mile of Trip on County Arterials
1	y	n	n	1	1
2	n	y	n	1	0
3	n	n	y		
4	y	n	n	2	1
5	n	n	y		
6	y	n	n	1	0
7	n	y	n	1	0
8	n	n	y		
9	n	n	y		
10	n	n	y		
11	n	n	y		
12	n	n	y		
13	n	n	y		
14	y	n	n	2	1
15	n	n	y		
16	y	n	n	2	1
17	n	y	n	1	0
18	n	n	y		

19	y	n	n	2	1
20	n	n	y		
21	y	n	n	2	1
22	y	n	n	2	1
23	n	n	y		
24	n	n	y		
25	n	n	y		
26	y	n	n	3	1
27	y	n	n	2	1
28	n	n	y		
29	n	n	y		
30	y	n	n	2	1
31	y	n	n	2	1
32	n	n	y		
33	n	n	y		
34	n	n	y		
35	n	n	y		
36	y	n	n	2	1
37	n	y	n	1	0
38	n	y	n	1	0
39	n	y	n	1	0
40	n	n	y		
41	n	y	n	3	1
42	n	y	n	1	0
43	n	y	n	1	0
44	n	n	y		
45	y	n	n	2	1
46	n	n	y		
47	n	n	y		
48	n	n	y		
49	n	n	y		
50	y	n	n	2	1
51	n	n	y		
52	y	n	n	3	1
53	y	n	n	2	1
54	y	n	n	1	0
55	n	n	y		

56	n	n	y		
57	n	n	y		
58	n	n	y		
59	y	n	n	1	0
60	y	n	n	2	1
61	y	n	n	2	1
62	n	n	y		
63	n	n	y		
64	n	n	y		
65	n	n	y		
66	y	n	n	3	1
67	n	n	y		
68	n	n	y		
69	y	n	n	1	0
70	y	n	n	2	1
71	n	n	y		
72	y	n	n	2	1
73	y	n	n	2	1
74	y	n	n	1	0
75	y	n	n	1	0
76	y	n	n	2	1
77	n	n	y		
78	y	n	n	3	1
79	y	n	n	3	1
80	n	n	y		
81	y	n	n	2	1
82	n	n	y		
83	n	n	y		
84	y	n	n	2	1
85	y	n	n	1	0
86	n	n	y		
87	y	n	n	2	1
88	n	n	y		
89	n	n	y		
90	y	n	n	2	1
91	y	n	n	2	1
92	n	n	y		

93	n	n	y		
94	n	n	y		
95	y	n	n	2	1
96	y	n	n	2	1
97	n	y	n	1	0
98	n	y	n	1	0
99	y	n	n	2	1
100	y	n	n	2	1

Name of Development: 4th Bank
Address of Development: ??? E Stevens Street
Service Area (choose one): 3 - Southeast
Description of Land Use: Drive-In Bank
ITE Land Use Code: 912
Size of Development: 2700 Sq Ft
Site Trip Generation Rate: 42.21
Date of Survey: 6/12-6/13/07
Day of Week: Tue-Wed
Time Period: 4-6 PM
Percent Occupied: 100%
Number of Interviews: 101
Total Site Volume:
Inbound 57
Outbound 57

Data Summary

Total Trips 101
New Trip Factor 0.53
Ave Trip Length 1.67
Network Adj 0.411
 Primary Trips 28
 Ave Length 2.00 Miles
 Diverted Trips 26
 Ave Length 1.31 Miles
 Pass-By Trips 47

Trips Summary

Trip #	Primary? (Y/N)	Diverted? (Y/N)	Pass-By? (Y/N)	Trip Length (Miles)	Mile of Trip on County Arterials
1	y	n	n	2	1
2	n	y	n	1	0
3	n	n	y		
4	y	n	n	3	2
5	n	n	y		
6	n	n	y		
7	y	n	n	3	2
8	y	n	n	2	2
9	y	n	n	3	2
10	y	n	n	2	1
11	n	y	n	1	0
12	n	y	n	1	0
13	n	y	n	1	0
14	n	n	y		
15	n	y	n	1	0
16	n	n	y		
17	y	n	n	2	1
18	y	n	n	2	1

19	y	n	n	1	0
20	n	y	n	1	0
21	n	n	y		
22	n	n	y		
23	n	n	y		
24	y	n	n	1	1
25	y	n	n	3	1
26	y	n	n	3	1
27	n	y	n	1	0
28	n	n	y		
29	y	n	n	3	1
30	n	y	n	1	0
31	n	n	y		
32	y	n	n	2	1
33			y		
34	y	n	n	2	1
35	n	n	y		
36	n	n	y		
37	n	n	y		
38	n	y	n	1	0
39	n	y	n	1	0
40	n	n	y		
41	n	n	y		
42	n	n	y		
43	n	y	n	3	1
44	n	n	y		
45	y	n	n	1	0
46	n	n	y		
47	n	n	y		
48	n	y	n	1	1
49	n	n	y		
50	n	n	y		
51	n	n	y		
52	y	n	n	1	1
53	n	n	y		
54	y	n	n	2	1
55	y	n	n	3	1

56	y	n	n	2	1
57	y	n	n	1	1
58	n	y	n	1	0
59	n	y	n	1	0
60	n	y	n	1	0
61	n	n	y		
62	y	n	n	3	1
63	y	n	n	1	1
64	y	n	n	1	0
65	n	y	n	1	0
66	n	n	y		
67	n	n	y		
68	n	n	y		
69	n	y	n	3	1
70	n	y	n	3	1
71	n	n	y		
72	n	n	y		
73	n	y	n	1	1
74	n	y	n	2	1
75	n	y	n	1	0
76	n	n	y		
77	n	n	y		
78	n	y	n	1	0
79	n	n	y		
80	n	n	y		
81	n	n	y		
82	n	n	y		
83	n	n	y		
84	n	n	y		
85	n	n	y		
86	n	n	y		
87	n	y	n	2	1
88	n	y	n	1	1
89	n	n	y		
90	n	n	y		
91	n	y	n	1	0
92	n	n	y		

93	y	n	n	2	1
94	n	n	y		
95	y	n	n	2	1
96	y	n	n	1	1
97	y	n	n	2	1
98	n	y	n	1	0
99	n	n	y		
100	n	n	y		
101	n	n	y		

Name of Development: Last Bank
Address of Development: ??? S Pioneer Way
Service Area (choose one): 3 - Southeast
Description of Land Use: Drive-In Bank
ITE Land Use Code: 912
Size of Development: 2800 Sq Ft
Site Trip Generation Rate: 43.68
Date of Survey: 6/19-6/20/07
Day of Week: Tue-Wed
Time Period: 4-6PM
Percent Occupied: 100%
Number of Interviews: 100
Total Site Volume:
Inbound 61
Outbound 61

Data Summary

Total Trips 101
New Trip Factor 0.51
Ave Trip Length 1.77
Network Adj 0.402
 Primary Trips 37
 Ave Length 1.92 Miles
 Diverted Trips 15
 Ave Length 1.40 Miles
 Pass-By Trips 49

Trips Summary

Trip #	Primary? (Y/N)	Diverted? (Y/N)	Pass-By? (Y/N)	Trip Length (Miles)	Mile of Trip on County Arterials
1	y	n	n	2	1
2	n	n	y		
3	n	n	y		
4	y	n	n	2	1
5	n	n	y		
6	n	n	y		
7	n	n	y		
8	n	n	y		
9	n	n	y		
10	n	n	y		
11	n	n	y		
12	n	n	y		
13	n	y	n	1	0
14	y	n	n	3	1
15	y	n	n	3	1
16	y	n	n	3	1
17	y	n	n	1	0
18	y	n	n	2	1

19	n	y	n	2	1
20	n	n	y		
21	n	n	y		
22	y	n	n	1	0
23	n	n	y		
24	n	y	n	1	0
25	y	n	n	2	1
26	y	n	n	2	1
27	y	n	n	1	1
28	y	n	n	4	2
29	y	n	n	1	1
30	n	y	n	1	0
31	n	n	y		
32	n	n	y		
33	y	n	n	3	0
34	n	n	y		
35	n	y	n	2	1
36	y	n	n	1	1
37	y	n	n	1	0
38	y	n	n	3	1
39	n	n	y		
40	y	n	n	2	1
41	n	y	n	1	0
42	n	n	y		
43	n	n	y		
44	y	n	n	2	1
45	y	n	n	2	1
46	y	n	n	1	1
47	n	n	y		
48	y	n	n	2	1
49	n	n	y		
50	n	n	y		
51	n	n	y		
52	n	n	y		
53	y	n	n	2	1
54	y	n	n	1	0
55	n	n	y		

56	y	n	n	2	0
57	n	y	n	2	1
58	n	n	y		
59	n	n	y		
60	y	n	n	2	1
61	n	n	y		
62	y	n	n	1	1
63	n	y	n	1	1
64	n	n	y		
65	n	n	y		
66	y	n	n	2	1
67	n	n	y		
68	y	n	n	2	1
69	n	y	n	2	1
70	n	n	y		
71	n	n	y		
72	y	n	n	3	1
73	n	n	y		
74	y	n	n	1	0
75	n	y	n	2	1
76	n	n	y		
77	n	n	y		
78	y	n	n	1	0
79	n	n	y		
80	n	n	y		
81	n	n	y		
82	n	n	y		
83	n	n	y		
84	y	n	n	3	1
85	n	n	y		
86	n	n	y		
87	y	n	n	1	1
88	n	n	y		
89	y	n	n	2	0
90	n	y	n	1	1
91	n	n	y		
92	n	n	y		

93	n	n	y		
94	y	n	n	2	1
95	n	y	n	1	0
96	n	n	y		
97	n	n	y		
98	n	y	n	2	1
99	n	y	n	1	0
100	n	y	n	1	0
101	y	n	n	2	1

Individual Assessment Results

Name of Proposed Development:	Future Bank
Fee Payer:	Future Bank Development Corporation
Site Location:	??? S Sagebrush Boulevard
Service Area:	3 - Southeast
Size of Development:	2800 Square Feet
Development Units	1000 Square Feet
ITE Land Use:	Drive-In Bank
ITE Land Use Code:	912
Number of Sites Surveyed:	5

Peak Hour Trip Rate (One-Way):	21.04
New Trip Factor:	0.51
Average Trip Length:	1.70
Network Adjustment Factor:	0.372
VMT Cost:	\$1,115

Gross Traffic Impact Fee Per Development Unit:	\$ 7,565
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Number of Units:	2.8
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Traffic Impact Fee:	\$ 21,180
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Formulas Used in Spreadsheet

"Site..." Sheets

Value	Formula
Total Trips	Primary Trips + Diverted Trips + Pass-By Trips
New Trip Factor	(Primary Trips + Diverted Trips) / Total Trips
Ave. Trip Length	(Primary Trips * Ave Length [of primary trips] + Diverted Trips * Ave Length [of diverted trips]) / (Primary Trips + Diverted Trips)
Network Adj	(Miles of Primary Trips on ACHD Arterials + Miles of Diverted Trips on ACHD Arterials) / (Miles of Primary Trips + Miles of Diverted Trips)
Primary Trips	Number of columns where a "Y" is entered under the "Primary?" column
Ave Length	Miles of Primary Trips / Primary Trips
Divered Trips	Number of columns where a "Y" is entered under the "Diverted?" column
Ave Length	Miles of Diverted Trips / Diverted Trips

"Summary Sheet"

Value	Formula
Peak Hour Trip Rate (One Way)	Average of Site Trip Generation Rate values from the five "Site..." sheets / 2 (rounded to the 2nd decimal place)
New Trip Factor	Average of New Trip Factor values from the five "Site..." sheets (rounded to the 2nd decimal place)
Average Trip Length	Average of Ave. Trip Length values from the five "Site..." sheets (rounded to the 2nd decimal place)
Network Adjustment Factor	Average of Network Adj values from the five "Site..." sheets (rounded to the 3rd decimal place)
VMT Cost	VMT Cost for the "Service Area" selected in cell B5. Based on ACHD TIF Ordinance #202.
Gross Traffic Impact Fee Per Development Unit	Peak Hour Trip Rate (One Way) * New Trip Factor * Average Trip Length * Network Adjustment Factor * VMT Cost (rounded to the nearest five)
Traffic Impact Fee	Gross Traffic Impact Fee Per Development Unit * Number of Units (rounded to the nearest five)