

**Introduction - Methodology**

The Ada County Highway District has prepared a Traffic Impact Fee (TIF) methodology to meet the requirements of the Idaho Impact Fee Act, which states that an Impact Fee Ordinance must provide a detailed description of the methodology by which the costs per Service Unit are determined (Idaho Code, section 67-8204(16)). The Ordinance sets out such a methodology and formula. This Exhibit ‘B’ provides additional explanation of that methodology, and calculates the maximum impact fees that may be charged by ACHD in the Service Areas in accordance with the Idaho Impact Fee Act.

The TIF methodology was developed with consideration of the Ada County Highway District Capital Improvements Plan (CIP), as further described in Exhibit ‘C.’ The CIP and TIF are based on an analysis of future transportation system deficiencies, employing the COMPASS Regional Travel Demand Model to consistently summarize and identify where future traffic volumes exceed the capacity of ACHD’s roadway system. The COMPASS Model was also used to consistently estimate the average travel conditions generated by new development within the Ada County Service Areas, including:

- Land use assumptions
- Trip generation
- Vehicle miles traveled (VMT)
- Adjustment factors (including average trip length and network adjustment factors)

The methodology used here to calculate maximum Impact Fees is to (1) determine the gross cost per *Service Unit*, and (2) reduce the cost by a credit per Service Unit for potential revenues generated in the future by new development and available to help pay for System improvements. The resulting net cost per Service Unit can then be multiplied by the Service Units produced by a Development to determine the maximum Impact Fee that could be charged per Development Unit.

**Service Units - Necessitated and Attributable to New Development**

Future travel demand estimates in Ada County are based on regional population, housing and employment forecasts (see Section D). All of these data are assimilated by COMPASS in their Regional Travel Demand Model used to prepare the *Destination 2030 – Regional Transportation Plan (RTP)*. The COMPASS Model forecasts average weekday, p.m. peak hour vehicle trips. Daily vehicle trips are estimated from the Comprehensive Plan-based, socio-economic input data (households and employment by employment class) for the base-year and 20-year planning horizon as shown in **Table B-1**.

Table B-1

COMPASS Travel Model Socio-Economic Data Input and Trip Estimates in Ada County							
Year	P.M. Peak Hour Trips (1)	Population	Households	Employment			
				Retail	Office	Industrial	Government
2007	292,770	375,760	140,735	54,010	90,460	28,290	26,670
2027	446,135	561,755	206,295	91,885	153,160	43,995	39,105

SOURCE: COMPASS Travel Demand Model, 2005.  
 (1) Excluding Canyon County and “external-external” trips (eg. Oregon to Twin Falls) on the Ada County roadway system.

A summary of ACHD System vehicle miles traveled is provided in **Table B-2**.

**Table B-2**

Ada County Net New System VMT					
Service Area	ACHD System Vehicle Miles Traveled (VMT) - PM Peak Hour				
	1 - NW	2 - SW	3 - SE	4 - NE	Total:
2007	47,986	39,003	76,181	91,766	254,936
2027	112,058	103,670	128,979	148,077	492,784
Growth	64,072	64,667	52,798	56,311	237,848
SOURCE: COMPASS Travel Demand Model, 2005 & 2006.		Excluding Canyon County and "external-external" trips (eg. Oregon to Twin Falls) on the Ada County roadway system.			

**New System VMT = 237,848**

The peak hour trip and VMT estimates for 2007 and 2027 were derived from the COMPASS Travel Demand Model to meet the Impact Fee Act requirements.

The peak hour VMT estimates for 2009 were derived by straight-line forecast from the 2007 and 2027 values. The updated summary of ACHD System vehicle miles traveled is provided in **Table B-3**.

**Table B-3**

Ada County Net New System VMT					
Service Area	ACHD System Vehicle Miles Traveled (VMT) - PM Peak Hour				
	1 - NW	2 - SW	3 - SE	4 - NE	Total
2009	54,088	45,162	81,209	97,123	277,582
2027	112,058	103,670	128,979	148,077	492,784
Growth	57,970	58,508	47,770	50,954	215,202
SOURCE: COMPASS Travel Demand Model, 2005 & 2006.		Excluding Canyon County and "external-external" trips (eg. Oregon to Twin Falls) on the Ada County roadway system.			

**New System VMT = 215,202**

The peak hour trip and VMT estimates for 2009 and 2027 were derived from the COMPASS Travel Demand Model to meet the Impact Fee Act requirements. The Act specifies that projected demand for system improvement requirements (by the new "service unit") not exceed 20 years.

The traffic impact fee *Service Unit*, to be consistent with the Impact Fee Act requirement of "proportionate share," should relate to the ACHD CIP list of projects, which is based exclusively on ACHD *Arterial* street improvements within Ada County – otherwise known as "System" improvements (including all assumptions of TIF-eligibility). The new traffic generated by growth over the next 20 years, measured as VMT to account for the number and length of trip, should also be accounted for exclusively on ACHD *Arterial* streets. The *Service Unit* thus consists of the net new

“System” VMT generated by growth on ACHD’s *Arterial* streets in Ada County. The net new “System” VMT in Ada County is **215,202**.

## **Methodology Components**

### **Peak Hour Trip Rate**

A trip rate is a measurement of traffic volume over time. More specifically, as used in this ordinance, it is either the number of daily vehicle trips calculated to be generated from a specified land use activity, or the number of trips generated during the peak hour. ACHD uses rates from the 8<sup>th</sup> edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* unless more competent local data are available.

Trip generation rates contained in the ITE *Trip Generation Manual*, and sometimes those obtained from local data, include both production (going) and attraction (coming) trips. This could lead to double counting. For example, consider the case of a single-family resident leaving home, going to a store, and then returning home. According to the methodology used by the ITE *Trip Generation Manual*, this two-way shopping trip is counted as four trip ends: a production and attraction trip for the single-family home, and a production and attraction trip for the retail store. When this methodology is used to determine trip generation rates, the rates are divided by two to avoid double counting.

Peak hour trip rates are typically used in analyzing the vehicular capacity of urban classified streets and highways. Peak hour trips are sufficient to measure the proportionate share of the new trip generation potential for any one development as compared to other new developments in Ada County. Hence, peak hour trip generation rates are used in determining the traffic impact fee formula.

### **New Trip Factor**

The impact fee methodology includes a factor to reduce the trip rates for certain land uses by considering their pass-by trips. Pass-by trips are not new to the system, as the intermediate stop at certain land uses is not the primary trip destination. ACHD uses the ITE *Trip Generation Handbook, second edition* to establish the New Trip Factor for each land use. Non-pass-by trips include primary trips and diverted linked trips. ACHD acknowledges the definition and recommended practice of treating diverted linked trips as primary trips, unless otherwise defined through a local, site-specific individual assessment.

### **Average Trip Length**

The impact of new development on ACHD’s highway system depends on both the number of vehicle trips it will generate and on the travel distance or length of the trips. COMPASS has compiled data that has enabled ACHD to calculate Average Trip Lengths (see **Table B-4**) for all trips with origins or destinations in the Ada County Assessment District.

While the average trip length should be representative for most commercial land uses, ACHD recognizes that a lower figure is more accurate for certain convenience retail and service uses. The Urban Land Institute estimates that neighborhood centers have a service area radius of about 2 miles in urban areas. Convenience stores are determined to have even shorter average trip lengths.

Table B-4

Average Trip Length and Network Adjustment Factors		
Location	Average Trip Length (miles)	Network Adjustment Factor
1 - Northwest	7.41	.387
2 - Southwest	8.23	.346
3 - Southeast	6.99	.341
4 - Northeast	6.38	.408
Source: COMPASS Regional Travel Demand Model, 2005.		

In the methodology for Ada County, the average trip length was reduced for selected neighborhood land uses that capture trips within the same neighborhood. The reductions amounted to 50 or 75 percent of the average trip length.

**Network Adjustment Factor**

Many trips will use both the ACHD roadway system and State/Federal highways. The impact fee is based on charging each development unit its proportionate share of system improvement costs of expanding only those *Arterial* streets (excluding collector and *local* streets) that are under ACHD’s jurisdiction. ACHD calculated a network adjustment factor that accounts for the “System” VMT on ACHD’s arterials as a percent of the total “Regional Roadway Network” VMT (includes VMT on all ACHD arterials, collectors, local streets and State/Federal highways). These data were also compiled from the COMPASS Model. **Table B-4** lists the network adjustment factors for the Ada County Service Areas.

**Vehicle Miles Traveled (VMT) Cost**

A major component of the impact fee formula involves determining a cost measure linking the cost of constructing new capacity improvements on ACHD’s *Arterial* street system (that portion determined as impact fee-eligible), by proportionate share, to the relative impact of new development. The impact fee-eligible portion of new highway construction as identified in ACHD’s CIP (see **Exhibit C**), defined as the cost of designing and constructing System capacity improvements to accommodate new development, measured by *service unit* – “System” VMT. This is determined by dividing the adjusted TIF-eligible costs by the net new “System” VMT generated by new development. The TIF-eligible costs identified in the CIP are adjusted to take into consideration the projected federal aid funding by Service Area, the existing\* Service Area fund balances and the existing\* Service Area credit agreement balances. The determination of the adjusted TIF-eligible costs are detailed by Service Area on Figures B-1, B-2, B-3, B-4.

\* Source: ACHD Fiscal Year 2009 3<sup>rd</sup> quarter balance

### **Traffic Impact Fee Methodology**

The summary of the traffic impact fee formula, as shown in **Figures B-1, B-2, B-3 and B-4**, is expressed as:

$$\text{Gross Traffic Impact Fee per Development Unit} = \text{Peak Hour Trip Rate (one-way)} \times \text{New Trip Factor} \times \text{Average Trip Length} \times \text{Network Adjustment Factor} \times \text{VMT Cost}$$

### **Inflation Index**

The impact fee schedule (Exhibit “A”) shall be adjusted annually and effective on the first day of the ACHD fiscal year (October 1<sup>st</sup>) by using the five (5) year rolling average percentage increase in the Consumer Price Index for the West Urban region as published by the U.S. Department of Labor. The fee schedules shall be automatically adjusted by operation of law. The adjusted fee schedules shall be calculated by multiplying the VMT Cost for each service area by the multiplier of one (1) plus the five (5) year rolling average percentage increase in the Consumer Price Index for the West Urban region.

**FIGURE B-1: 2009 Traffic Impact Fee Formula**

ORDINANCE #208

**Service Area: 1-Northwest**

**Step 1 - Estimating Traffic Impact Fee (TIF)-Eligible Improvement Costs**

ACHD Capital Improvements Plan,  
2009-2027:

Total Project Costs*	-	Non TIF-Eligible Costs*	=	TIF-Eligible Costs*	-	Projected Federal Aid*	-	Service Area Balance**	-	Service Area Credit Balance**	=	Adjusted TIF-Eligible Costs
\$178,626,000	-	\$38,733,500	=	\$139,892,500	-	\$0	-	-\$8,112,189	-	(\$161,194)	=	\$148,165,883

\*SOURCE: ACHD 2009 CIP: Arterial street and intersection improvements only.

\*\* SOURCE: ACHD Fiscal Year 2009 3rd quarter balance

**Step 2 - Estimating Cost Per Peak Hour, Vehicle Miles Traveled (VMT)**

ACHD CIP TIF-Eligible Costs:	/	Net New Ada County "System" VMT*(Peak Hour)	=	VMT Cost:
\$148,165,883	/	57,970	=	\$2,556

\*SOURCE: COMPASS 2006

(rounded)

**Step 3 - Estimating Trip Adjustment Factors**

AVERAGE TRIP LENGTH		NETWORK ADJUSTMENT FACTOR	
Average Trip Length (miles)		Network Adjustment Factor	
Ordinance No.:	<b>208</b>	(VMT on ACHD System)	
Service Area			<b>208</b>
#1 - Northwest	7.41		0.387
#2 - Southwest	8.23		0.346
#3 - Southeast	6.99		0.341
#4 - Northeast	6.38		0.408

  

NEIGHBORHOOD LAND USE TRIP LENGTH ADJUSTMENTS	
Land Use Category	
50%	Auto Parts & Service, Church, Public Park, Restaurant
25%	Bank, Convenience Market, Day Care, Pharmacy, Fast Food Restaurant, Supermarket, Car Wash, Quick Lube

**Step 4 - Estimating Traffic Impact Fee**

Example: Service Area: 1 Northwest

Sample Land Use Type	ITE (8th Edition) Trip Rate (1-Way) PM Peak Hr.	x	New Trip Factor	x	Average Trip Length	x	Network Adjustment Factor	x	VMT Cost	=	Traffic Impact Fee (rounded)
<b>Per Dwelling Unit</b>											
Single Family Dwelling Unit	0.505	x	1.00	x	7.41	x	0.387	x	\$2,556	=	\$3,702
<b>Per 1,000 Sq. Ft.</b>											
Bank w/ Drive-Thru	12.91	x	0.53	x	1.85	x	0.387	x	\$2,556	=	\$12,521
Convenience Market	26.205	x	0.39	x	1.85	x	0.387	x	\$2,556	=	\$18,702
Light Industrial	0.485	x	1.00	x	7.41	x	0.387	x	\$2,556	=	\$3,555
Medical - Dental Office	1.73	x	1.00	x	7.41	x	0.387	x	\$2,556	=	\$12,680
Shopping Center	1.865	x	0.66	x	7.41	x	0.387	x	\$2,556	=	\$9,022

- Notes:
- (A) Source: ITE Trip Generation, 8th Edition.
  - (B) Source: ITE Trip Generation Handbook, 2nd Edition, June 2004 - Based on Pass-by Trip Rates only.
  - (C) Source: COMPASS Regional Travel Demand Model - Service Area: 1 Northwest

**FIGURE B-2: 2009 Traffic Impact Fee Formula**

ORDINANCE #208

**Service Area : 2 Southwest**

**Step 1 - Estimating Traffic Impact Fee (TIF)-Eligible Improvement Costs**

ACHD Capital Improvements Plan,  
2009-2027:

Total Project Costs*	-	Non TIF-Eligible Costs*	=	TIF-Eligible Costs*	-	Projected Federal Aid*	-	Service Area Balance**	-	Service Area Credit Balance**	=	Adjusted TIF-Eligible Costs
\$164,253,000		\$25,889,500		\$138,363,500		\$0		(\$1,092,088)		(\$64,263)		\$139,519,851

\*SOURCE: ACHD 2009 CIP: Arterial street and intersection improvements only.

\*\* SOURCE: ACHD Fiscal Year 2009 2nd quarter balance

**Step 2 - Estimating Cost Per Peak Hour, Vehicle Miles Traveled (VMT)**

ACHD CIP TIF-Eligible Costs	/	Net New Ada County "System" VMT* (Peak Hour)	=	VMT Cost
\$139,519,851		58,508		\$2,385

\*SOURCE: COMPASS 2006

(rounded)

**Step 3 - Estimating Trip Adjustment Factors**

AVERAGE TRIP LENGTH		NETWORK ADJUSTMENT FACTOR	
Average Trip Length (miles)		Network Adjustment Factor	
Ordinance No.:	<b>208</b>	208	
Service Area		(VMT on ACHD System)	
#1 - Northwest	7.41		0.387
#2 - Southwest	8.23		0.346
#3 - Southeast	6.99		0.341
#4 - Northeast	6.38		0.408

  

NEIGHBORHOOD LAND USE TRIP LENGTH ADJUSTMENTS	
Land Use Category	
50%	Auto Parts & Service, Church, Public Park, Restaurant
25%	Bank, Convenience Market, Day Care, Pharmacy, Fast Food Restaurant, Supermarket, Car Wash, Quick Lube

**Step 4 - Estimating Traffic Impact Fee**

Example: Service Area: 2 Southwest

Sample Land Use Type	ITE (8th Edition) Trip Rate (1-Way) PM Peak Hr.	x	New Trip Factor	x	Average Trip Length	x	Network Adjustment Factor	x	VMT Cost	=	Traffic Impact Fee (rounded)
<b>Per Dwelling Unit</b>											
Single Family Dwelling Unit	0.505	x	1.00	x	8.23	x	0.346	x	\$2,385	=	\$3,430
<b>Per 1,000 Sq. Ft.</b>											
Bank w/ Drive-Thru	12.91	x	0.53	x	2.06	x	0.346	x	\$2,385	=	\$11,631
Convenience Market	26.205	x	0.39	x	2.06	x	0.346	x	\$2,385	=	\$17,373
Light Industrial	0.485	x	1.00	x	8.23	x	0.346	x	\$2,385	=	\$3,294
Medical - Dental Office	1.73	x	1.00	x	8.23	x	0.346	x	\$2,385	=	\$11,749
Shopping Center	1.865	x	0.66	x	8.23	x	0.346	x	\$2,385	=	\$8,360

Notes:

- (A) Source: ITE Trip Generation, 8th Edition.
- (B) Source: ITE Trip Generation Handbook, 2nd Edition, June 2004 - Based on Pass-by Trip Rates only.
- (C) Source: COMPASS Regional Travel Demand Model - Service Area: 2 Southwest

## FIGURE B-3: 2009 Traffic Impact Fee Formula

ORDINANCE #208

Service Area : 3 Southeast

### Step 1 - Estimating Traffic Impact Fee (TIF)-Eligible Improvement Costs

ACHD Capital Improvements Plan,  
2007-2027:

Total Project Costs*	-	Non TIF-Eligible Costs*	=	TIF-Eligible Costs*	-	Projected Federal Aid*	-	Service Area Balance**	-	Service Area Credit Balance**	=	Adjusted TIF-Eligible Costs
\$127,858,000		\$24,469,000		\$103,389,000		\$0		(\$6,789,049)		(\$206,359)		\$110,384,408

\*SOURCE: ACHD 2009 CIP: Arterial street and intersection improvements only.

\*\* SOURCE: ACHD Fiscal Year 2009 2nd quarter balance

### Step 2 - Estimating Cost Per Peak Hour, Vehicle Miles Traveled (VMT)

ACHD CIP TIF-Eligible Costs	/	Net New Ada County "System" VMT* (Peak Hour)	=	VMT Cost
\$110,384,408		47,770		\$2,311

\*SOURCE: COMPASS 2006

(rounded)

### Step 3 - Estimating Trip Adjustment Factors

AVERAGE TRIP LENGTH		NETWORK ADJUSTMENT FACTOR	
Ordinance No.: Service Area	Average Trip Length (miles) <b>208</b>	Network Adjustment Factor (VMT on ACHD System)	<b>208</b>
#1 - Northwest	7.41		0.387
#2 - Southwest	8.23		0.346
#3 - Southeast	6.99		0.341
#4 - Northeast	6.38		0.408

  

NEIGHBORHOOD LAND USE TRIP LENGTH ADJUSTMENTS	
	Land Use Category
50%	Auto Parts & Service, Church, Public Park, Restaurant
25%	Bank, Convenience Market, Day Care, Pharmacy, Fast Food Restaurant, Supermarket, Car Wash, Quick Lube

### Step 4 - Estimating Traffic Impact Fee

Example: Service Area: 3 Southeast

Sample Land Use Type	ITE (8th Edition) Trip Rate (1-Way) PM Peak Hr.	x	New Trip Factor	x	Average Trip Length	x	Network Adjustment Factor	x	VMT Cost	=	Traffic Impact Fee (rounded)
<i>Per Dwelling Unit</i>											
Single Family Dwelling Unit	0.505	x	1.00	x	6.99	x	0.341	x	\$2,311	=	\$2,782
<i>Per 1,000 Sq. Ft.</i>											
Bank w/ Drive-Thru	12.91	x	0.53	x	1.75	x	0.341	x	\$2,311	=	\$9,436
Convenience Market	26.205	x	0.39	x	1.75	x	0.341	x	\$2,311	=	\$14,094
Light Industrial	0.485	x	1.00	x	6.99	x	0.341	x	\$2,311	=	\$2,672
Medical - Dental Office	1.73	x	1.00	x	6.99	x	0.341	x	\$2,311	=	\$9,530
Shopping Center	1.865	x	0.66	x	6.99	x	0.341	x	\$2,311	=	\$6,780

Notes:

- (A) Source: ITE Trip Generation, 8th Edition.
- (B) Source: ITE Trip Generation Handbook, 2nd Edition, June 2004 - Based on Pass-by Trip Rates only.
- (C) Source: COMPASS Regional Travel Demand Model - Service Area: 3 Southeast

**FIGURE B-4: 2009 Traffic Impact Fee Formula**

ORDINANCE #208

**Service Area : 4 Northeast**

**Step 1 - Estimating Traffic Impact Fee (TIF)-Eligible Improvement Costs**

ACHD Capital Improvements Plan,  
2009-2027:

Total Project Costs*	-	Non TIF-Eligible Costs*	=	TIF-Eligible Costs*	-	Projected Federal Aid*	-	Service Area Balance**	-	Service Area Credit Balance**	=	Adjusted TIF-Eligible Costs
\$213,840,000		\$72,806,000		\$141,034,000		\$0		(\$10,350,838)		(\$81,717)		\$151,466,555

\*SOURCE: ACHD 2009 CIP: Arterial street and intersection improvements only.

\*\* SOURCE: ACHD Fiscal Year 2009 3rd quarter balance

**Step 2 - Estimating Cost Per Peak Hour, Vehicle Miles Traveled (VMT)**

ACHD CIP TIF-Eligible Costs	/	Net New Ada County "System" VMT* (Peak Hour)	=	VMT Cost
\$151,466,555		50,954		\$2,973

\*SOURCE: COMPASS 2006

(rounded)

**Step 3 - Estimating Trip Adjustment Factors**

AVERAGE TRIP LENGTH		NETWORK ADJUSTMENT FACTOR	
Ordinance No.: Service Area	Average Trip Length (miles) <b>208</b>	Network Adjustment Factor (VMT on ACHD System)	<b>208</b>
#1 - Northwest	7.41		0.387
#2 - Southwest	8.23		0.346
#3 - Southeast	6.99		0.341
#4 - Northeast	6.38		0.408

  

NEIGHBORHOOD LAND USE TRIP LENGTH ADJUSTMENTS	
Land Use Category	Adjustment
50%	Auto Parts & Service, Church, Public Park, Restaurant
25%	Bank, Convenience Market, Day Care, Pharmacy, Fast Food Restaurant, Supermarket, Car Wash, Quick Lube

**Step 4 - Estimating Traffic Impact Fee**

Example: Service Area: 4 Northeast

Sample Land Use Type	ITE (8th Edition) Trip Rate (1-Way) PM Peak Hr.	New Trip Factor	Average Trip Length	Network Adjustment Factor	VMT Cost	Traffic Impact Fee (rounded)
<b>Per Dwelling Unit</b>						
Single Family Dwelling Unit	0.505	1.00	6.38	0.408	\$2,973	\$3,908
<b>Per 1,000 Sq. Ft.</b>						
Bank w/ Drive-Thru	12.91	0.53	1.6	0.408	\$2,973	\$13,279
Convenience Market	26.205	0.39	1.6	0.408	\$2,973	\$19,835
Light Industrial	0.485	1.00	6.38	0.408	\$2,973	\$3,753
Medical - Dental Office	1.73	1.00	6.38	0.408	\$2,973	\$13,388
Shopping Center	1.865	0.66	6.38	0.408	\$2,973	\$9,526

Notes:

- (A) Source: ITE Trip Generation, 8th Edition.
- (B) Source: ITE Trip Generation Handbook, 2nd Edition, June 2004 - Based on Pass-by Trip Rates only.
- (C) Source: COMPASS Regional Travel Demand Model - Service Area: 4 Northeast