RSG
the science of insight

TOWN OF WILLISTON, VERMONT AND CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION (CCRPC)

TRANSPORTATION IMPACT FEE STUDY

Report | September 17, 2019

180 Battery Street, Suite 350
Burlington, VT 05401
802.383.0118
www.rsginc.com

PREPARED FOR:
TOWN OF WILLISTON, VERMONT AND CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION (CCRPC)

SUBMITTED BY:
RSG

Prepared for:

The Town of Williston, Vermont

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

CONTENTS

1.0 INTRODUCTION 1
1.1 LEGAL BACKGROUND 1
2.0 GROWTH AND DEVELOPMENT 3
2.1 POPULATION 3
2.2 HOUSEHOLDS 3
2.3 EMPLOYMENT 5
3.0 TRANSPORTATION 6
3.1 OVERVIEW 6
3.2 IMPACT FEE BASIS 6
4.0 FUTURE TRAVEL DEMAND 8
4.1 OVERVIEW 8
4.2 OVERVIEW OF CHITTENDEN COUNTY TRANSPORTATION MODEL 8
4.3 TRIP GENERATION FORECASTS 8
ESTIMATING GROWTH FROM 2030 TO 2040 11
5.0 PROJECTS 12
5.1 STANDARD OF SERVICE TESTS 12
RATIO EXPANSION OF CAPACITY 12
PERSON MILES OF CAPACITY 13
6.0 BASE IMPACT FEE 16
6.1 CREDITS 16
INFRASTRUCTURE CREDITS 16
REVENUE CREDITS 16
RESIDENTIAL DEVELOPMENT 17

NONRESIDENTIAL DEVELOPMENT 20
6.2 FEE PER RESIDENTIAL UNIT 23
6.3 NON-RESIDENTIAL FEES 24
APPENDIX A. CAPACITY OF INFRASTRUCTURE 25

LIST OF FIGURES

FIGURE 1: HISTORICAL POPULATION GROWTH RATES 3
FIGURE 2: AVERAGE HOUSEHOLD SIZE (1940–2016) 4
FIGURE 3: GROWTH AND DIVERSITY LAND USE ZONES IN WILLISTON 10
FIGURE 4: 2030 TRAFFIC GROWTH CHANGES 11

LIST OF TABLES

TABLE 1: BEDROOMS BY HOUSEHOLD UNIT (5-YEAR ACS) 5
TABLE 2: DISTRIBUTION OF EMPLOYMENT SECTORS IN WILLISTON 5
TABLE 3: LAND USE CHANGES ANTICIPATED IN WILLISTON BY 2030 9
TABLE 4: LOCAL VS. TOTAL VMT CHANGE 9
TABLE 5: LAND USE CHANGES BY 2040 11
TABLE 6: WILLISTON TRANSPORTATION IMPACT FEE PROJECTS 12
TABLE 7: EXISTING SUPPLY OF TRANSPORTATION FACILITIES 13
TABLE 8: RATIO EXPANSION OF CAPACITY 13
TABLE 9: PERSON MILES CAPACITY IN WILLSTON - 2015 14
TABLE 10: VMT TO PMT - 2015 14
TABLE 11: PMT SYSTEM CAPACITY AND FUTURE DEMAND 14
TABLE 12: COST PER PM PEAK HOUR TRIP 16
TABLE 13: RESIDENTIAL REVENUE CREDIT FOR PREDEVELOPMENT TAX PAYMENTS 17
TABLE 14: RESIDENTIAL REVENUE CREDIT FOR FUTURE DEVELOPMENT TAX PAYMENTS 19
TABLE 15: NONRESIDENTIAL REVENUE CREDIT FOR PREDEVELOPMENT TAX PAYMENTS 20
TABLE 16: 2017 CONSTRUCTION VALUES FOR NONRESIDENTIAL USES BY CONSTRUCTION TYPE (VALUE PER SQUARE FOOT) 22
TABLE 17: RESIDENTIAL REVENUE CREDIT FOR FUTURE DEVELOPMENT TAX PAYMENTS 22
TABLE 18: BASE FEE PER RESIDENTIAL UNIT 23
TABLE 19: NET RESIDENTIAL IMPACT FEES FOR TRANSPORTATION CAPITAL EXPENSES 23

Table of Abbreviations

ACS	American Community Survey
CCRPC	Chittenden County Regional Planning Commission
CLA	Common Level of Appraisal
ITE	Institute of Transportation Engineers
PMT	Person miles traveled
TDM	Transportation demand management
VMT	Vehicle miles traveled
TAZ	Traffic Analysis Zone
CIP	Capital Improvement Program

1.0 INTRODUCTION

This impact fee study report summarizes the need for future infrastructure and identifies a fair, rational connection for new development to pay for the additional demands placed on that infrastructure.

Vermont statute (24 V.S.A., Chapter 131) authorizes municipalities to levy impact fees on new development as a means of allocating the cost of new capital facilities to the development that will benefit from those facilities. This can include fees to offset the costs of facilities built in the past with excess capacity for anticipated future development; it can also include facilities planned to be built to accommodate future development. The costs of such infrastructure shall only include the portion associated with new capacity to accommodate the future development's demand.

This impact fee study report outlines the future growth anticipated for the Town of Williston and documents the basis for implementing a transportation impact fee to pay for additional capacity associated with the increased demand for transportation mobility while conforming to the conditions imposed by 24 V.S.A., Chapter 131.

1.1 LEGAL BACKGROUND

Basic impact fee standards according to the American Planning Association

- The imposition of a fee must be rationally linked (the "rational nexus") to an impact created by a particular development and the demonstrated need for related capital improvements pursuant to a capital improvement plan and program.
- Some benefit must accrue to the development as a result of the payment of a fee.
- The amount of the fee must be a proportionate fair share of the costs of the improvements made necessary by the development and must not exceed the cost of the improvements.
- A fee cannot be imposed to address existing deficiencies except where they are exacerbated by new development.
- Funds received under such a program must be segregated from the general fund and used solely for the purposes for which the fee is established.
- The fees collected must be encumbered or expended within a reasonable timeframe to ensure that needed improvements are implemented.
- The fee assessed cannot exceed the cost of the improvements, and credits must be given for outside funding sources (such as federal and state grants, developer initiated improvements for impacts related to new development, etc.) and local tax payments which fund capital improvements, for example.

- The fee cannot be used to cover normal operation and maintenance or personnel costs, but must be used for capital improvements, or under some linkage programs, affordable housing, job training, child care, etc.

Typical management activities

- The fee established for specific capital improvements should be reviewed at least every two years to determine whether an adjustment is required, and similarly the capital improvement plan and budget should be reviewed at least every 5 to 8 years.
- Provisions must be included in the ordinance to permit refunds for projects that are not constructed, since no benefit will have manifested.
- Impact fee payments are typically required to be made as a condition of approval of the development, either at the time the building or occupancy permit is issued.

Vermont's impact fee statute does not preclude the use of funds for administrative duties associated with the management of the impact fee program. Nationally, it is common practice to collect and expend impact fees to cover time and expenses associated with the creation, management, and other administration of the impact fee program. These funds often cover the salary portion of the impact fee administrator, staff time in the preparation and review of impact fee studies, consultant or staff time preparing impact fee needs reports and ordinance support.

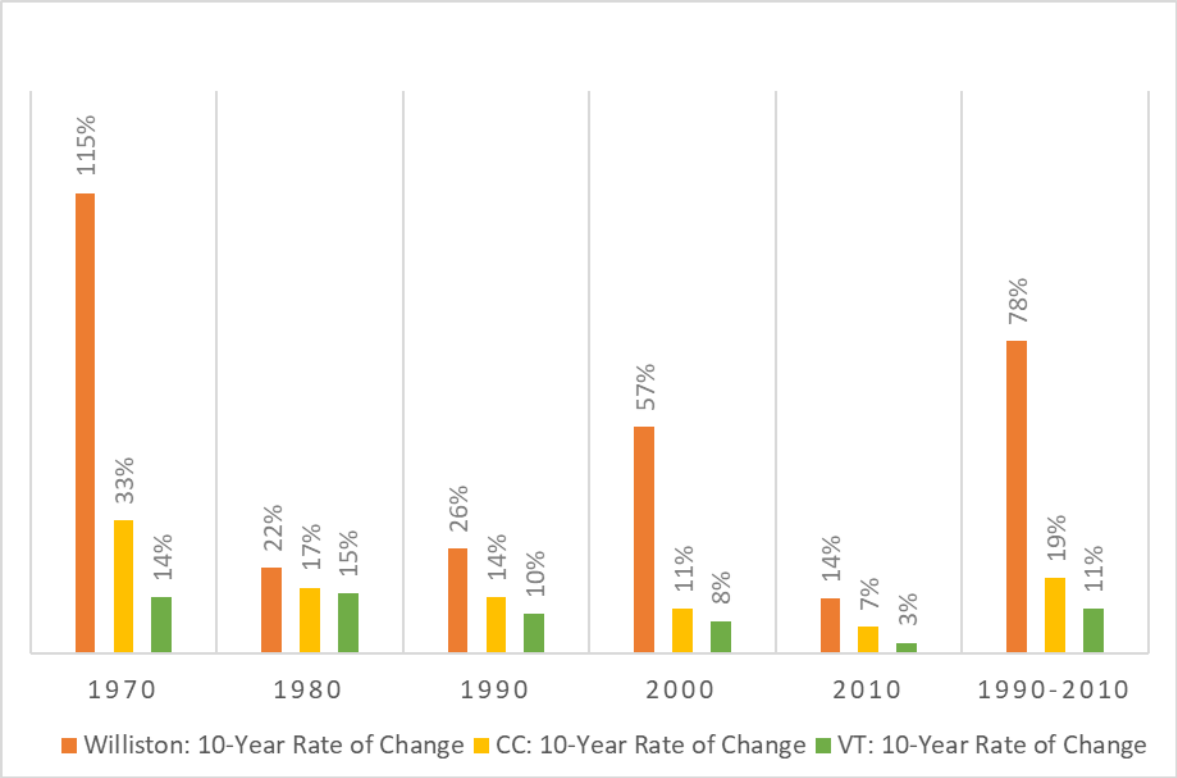
2.0 GROWTH AND DEVELOPMENT

2.1 POPULATION

The Town of Williston has 9,341 persons as of the 2017 American Community Survey (5-year estimates) making it the 6th most populous community within Chittenden County.

The Town has seen consistent demand for housing, originally as a bedroom community for the larger employment centers in Burlington, South Burlington, and Essex. However, since the 1990s, Williston diversified its land use to become a major commercial destination in the Taft Corners area. The population continued to grow at rates far higher than those experienced within Vermont and Chittenden County. Figure 1 shows the 10-year growth rates for Williston, Chittenden County, and Vermont.

FIGURE 1: HISTORICAL POPULATION GROWTH RATES



source: Williston Town Plan

2.2 HOUSEHOLDS

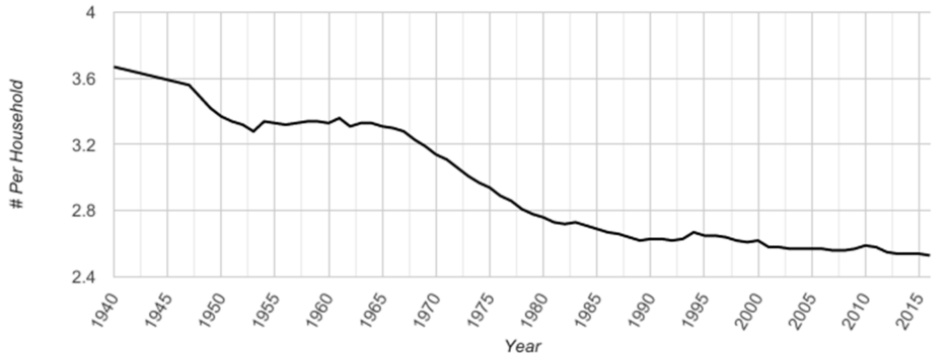
The Town of Williston has traditionally assessed residential impact fees at a household unit. The American Community Survey estimates that as of 2017, there are 3,897 households.

The majority of the households (78%) are owner occupied with an average of 2.42 persons per household. The remaining 22% of households are renter occupied with 2.21 persons per household[1].

There have been attempts nationally to reduce the effect that transportation impact fees may have on housing costs, and especially, “affordable housing.” Changing the assessment on the square footage of the home or on the number of bedrooms provides a stronger relationship to the number of occupants and the quantity of travel consumed.

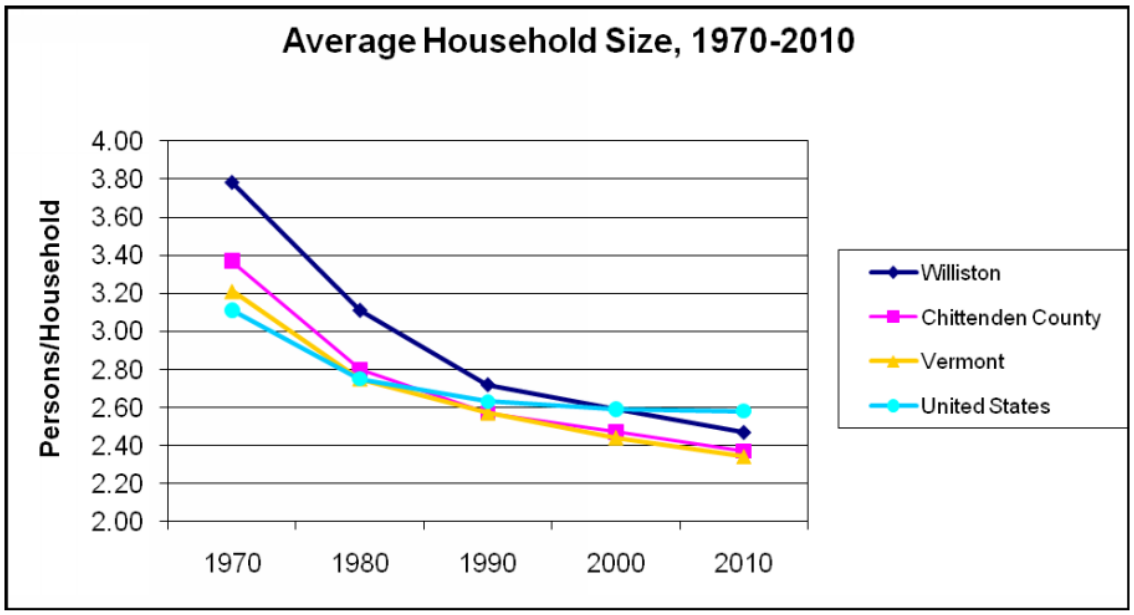
Nationally, over the past half century the average size (number of persons) of the household has dropped from 3.67 persons per household in 1940 to 2.53 in 2016 as shown in Figure 2.

FIGURE 2: AVERAGE HOUSEHOLD SIZE (1940–2016)



source: US Census Data

Williston is no different. According to the Town Plan, the average size of the household has come down in-line with national trends.



source: US Census Data–Williston Town Plan (Figure 2.G)

[1] 2015 American Community Survey 5-year estimates

The 2017 breakdown of households and the number bedrooms is shown in Table 1.

TABLE 1: BEDROOMS BY HOUSEHOLD UNIT (5-YEAR ACS)

HOUSEHOLD BEDROOM COUNT	COUNT	PERCENT
No bedroom	0	0%
1 bedroom	362	9%
2 bedrooms	1,121	29%
3 bedrooms	1,286	33%
4 bedrooms	986	25%
5 or more bedrooms	142	4%
Total housing units	**3,897**	**100%**

2.3 EMPLOYMENT

The Town of Williston is a significant destination for commercial and industrial activity. As of 2015 there were 13,154 persons employed within the Town. Of these, 92.7% live outside of Williston and commute in. 960 live and work in Williston. The 2017 5-year ACS summarizes the jobs within Williston.

TABLE 2: DISTRIBUTION OF EMPLOYMENT SECTORS IN WILLISTON

NAICS DESCRIPTION	% OF WORKERS IN TOWN OF WILLISTON
Accommodation and Food Services	5%
Administrative, Support, Waste Management, Remediation	7%
Agriculture, Forestry, Fishing and Hunting	0%
Arts, Entertainment, and Recreation	1%
Construction	14%
Educational Services	3%
Finance and Insurance	5%
Health Care and Social Assistance	7%
Information	2%
Manufacturing	8%
Other Services (except Public Administration)	3%
Professional, Scientific, and Technical Services	13%
Public Administration	3%
Real Estate and Rental and Leasing	1%
Retail Trade	15%
Transportation and Warehousing	4%
Utilities	0%
Wholesale Trade	7%

Employed individuals within Williston contribute to the demand for travel to, from, and within Williston. During the workday various activities are carried out to support the commercial activities but also there are recreation and health trips that are also generated. Employees require a multimodal transportation infrastructure.

3.0 TRANSPORTATION

3.1 OVERVIEW

The Town of Williston is expected to continue to experience a population growth and land use development at pace exceeding both Vermont and Chittenden County averages. The Exit 12 Growth Center is the hub of the commercial activity and is becoming increasingly diverse in land use, particularly east of VT2A with a large residential area being constructed over the past decade. The Town's Comprehensive Plan articulates a vision with several land use and transportation goals to manage and facilitate the growth to meet the needs of the community.

The Town's Plan states a vision to:

- Concentrate and limit high intensity development to areas within the Town's designated Growth Center in and around Taft Corners.
- Permit the flexibility and intensity of use necessary to foster creation of a design-conscious, mixed use, pedestrian-friendly commercial center around Taft Corners.
- Encourage and support the use of mass transit and non-motorized modes of transportation through mixed use development policies and transportation facilities planning.

The Town plans to achieve this vision by:

- Working with Developers to Build Grid Streets.
- Working with VTrans on Other Circulation Improvements.
- Developing a Master Transportation Plan comprised of a Major Road Plan, Sidewalks, paths and Trail Network, a Public Transportation Plan, and Connectivity between networks and land use.

Impact fees are an important tool that the Town can leverage by assessing fees on new land use development that would generate additional traffic and transportation demands placing a burden on the existing facilities and would benefit from additional transportation capacity.

3.2 IMPACT FEE BASIS

It is understood that future development generates additional new local demand for travel that begins and/or ends within the Town. Additional growth in population throughout the county and state generates additional demand for travel, although those trips begin and end outside of the Town and therefore, not directly associated with future development in the Town. These trips are considered "through trips."

The impact fee analysis focuses on local traffic generated by anticipated future development. The basic unit of analysis is the Peak Hour Trip End, which is either the origin or the destination of a trip. Any given trip has two trip ends—an origin and a destination. Any trip that either begins or ends within the Town is considered to be a local trip.

The impact fee will also be assessed on a trip, regardless of mode. The Vermont State Legislature under Act 34 of 2011 identified the “complete street” principles that defined transportation capacity consistently regardless of travel mode. The projects in Table 6 add multimodal capacity – offering residents, employees, patrons a variety of modal travel options.

The PM peak hour is the analysis hour in which the fee is assessed on the number of peak hour vehicle trips. The PM peak hour is the typical design hour[2] in the Town of Williston. It is noted that specific developments may generate a significant number of vehicle trips outside the design hour. Some uses (a church, for example) may have different peak hours of traffic generation. Cumulatively however, the highest traffic volume at most locations in Williston is during the PM peak design hour, as defined here.

Traffic impact fees are not assessed on trips that occur outside of the PM peak design hour. Limiting the period of assessment to the PM peak hour creates a common hour of analysis and provides the rational nexus required to assess impact fees. By assessing a fee during a particular hour of analysis the fee also acts as a transportation demand management (TDM) technique. This can encourage the development of land uses that generate travel demand outside of the peak hours to more efficient use of the existing transportation infrastructure by using available capacity at other times of the day. This same principle goes for shifting modes. As congestion may rise for one mode of travel, some users will shift modes to utilize spare capacity.

[2] Design Hour is defined as the 30th highest hour of volume during the year.

4.0 FUTURE TRAVEL DEMAND

4.1 OVERVIEW

The Town of Williston is anticipated to continue to receive a higher share of the county growth than other towns and communities within Chittenden County. The CCRPC Regional Travel Demand Model is a comprehensive tool to forecast the number of trips and traffic to be generated by future growth and land use development within Willison and the County. The tool was used to estimate the amount of traffic growth likely by 2030. The future year 2040 was forecast only after the initial base impact fees were calculated and after considering the feasibility of constructing the projects identified for impact fee funding.

4.2 OVERVIEW OF CHITTENDEN COUNTY TRANSPORTATION MODEL

In 2015 the CCRPC initiated a significant update to the regional travel demand model that included population and employment projections for each municipality for five year increments out to 2050. The CCRPC forecasts were used as the initial base that the Town amended given more recent information on land use and anticipated changes. The land use changes were entered back into the CCRPC Regional Travel Demand Model and run to generate estimates of new traffic generation, vehicle miles traveled, and percentage of growth in traffic that is through vs. local (see Section 3.0 above).

The model is a traditional four-step trip based travel demand model. The four steps are iterated to achieve an optimized routing pattern with stable travel times. The steps are defined as follows:

- Trip Generation – estimates the number of person trips produced and attracted to each Traffic Analysis Zone (TAZ). The land use inputs were established with each community by allocated future households and employees manually to the TAZs.
- Trip Distribution – connects person trips between TAZs.
- Mode Choice – splits person trips into single occupant vehicles, shared vehicle trips, transit trips, or walk/bike trips.
- Assignment – Selects the shortest route for each vehicle and transit trip traveling from one TAZ to another based on distance and travel time.

4.3 TRIP GENERATION FORECASTS

This study identified the anticipated changes to occur in Williston by 2030. The land use changes included household growth and increases in specific sectors of the economy. In total, an estimated 612 new households would be constructed by 2030 and 2,584 new employees would be based in Williston.

TABLE 3: LAND USE CHANGES ANTICIPATED IN WILLISTON BY 2030

2015 - 2030 LAND USE CHANGES		
Residential Growth		**Housing Units**
	New households	**612**
Employment Growth		**Employees**
	Accommodations	24
	Commercial	974
	Industrial	735
	Institutional	164
	Educational	15
	Retail	672
	Total Employment Growth	**2,584**

These land use changes were evaluated in the travel model in addition to all the other growth and changes in land uses within the county by 2030. The regional travel model accounts for growth in other communities within Chittenden County as well as estimated growth for trips that originate outside the county and for trips that may only pass through the county. While the model accounts for walking, biking, and transit, the trips that are outputs of the model are vehicle trips only.

The local land use growth in Williston and the growth occurring within Chittenden County and the state all increase the total vehicle miles traveled (VMT) on the roads in Williston. Table 4 shows the portion of VMT growth associated with land use (origin or destination) in Williston and total VMT using Williston's roads, excluding any VMT on the I-89 freeway. The local share of the change in VMT is 69%.

TABLE 4: LOCAL VS. TOTAL VMT CHANGE

	Local VMT (Non-Highway)			**Total VMT (Non-Highway)**	
	PM	Daily		PM	Daily
2015	16,471	191,043	2015	23,631	262,920
2030	18,382	213,678	2030	26,422	293,397
Change in VMT	**1911**	**22,634**		**2,792**	**30,477**

Additional adjustments are necessary to convert the travel model analysis into a multimodal forecast of total trip making in Williston. The number of vehicle trips forecast from the travel model is the net result after the model accounts for a variety of considerations. Much like a traffic study using the Institute of Transportation Engineers (ITE) Trip Generation manual has to adjust for density, site location (e.g. urban, suburban), proximity to transit, and mix of nearby uses – the travel model accounts for all these factors. Specifically, the factors: TDM and non-auto travel, internal capture (mix of complementary land uses within a travel analysis zone), and pass-by (trips that detour to a location en route to their primary destination).

These adjustments are applicable in a large part of Williston that has seen rapid growth and development as well as increase in the diversity and mix of land uses. The density, diversity, and design (the three D's) of the land uses in the highlighted areas of Williston enable individuals to travel between land uses without using major roads, are close enough to allow for walking, biking, and are the locations primarily served by transit. The effect of the three D's in this area reduces the net number of vehicle trips by 45%.

The land use changes in the area shown in Figure 3 includes 543 housing units and 2,295 new employees by 2030. The ITE trip generation for these land uses indicates that around 2,449 trips would be generated. After accounting for the three D's, the net number of new vehicle trips from the area in Figure 3 is forecast to be 1,347.

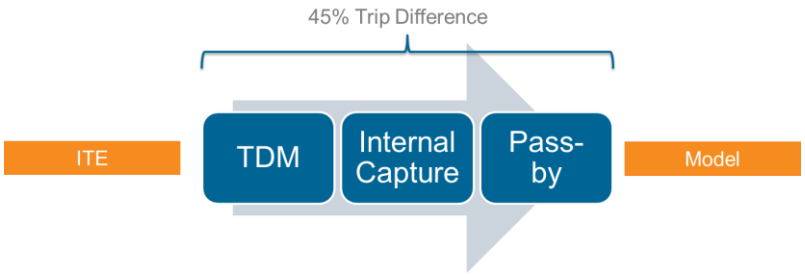
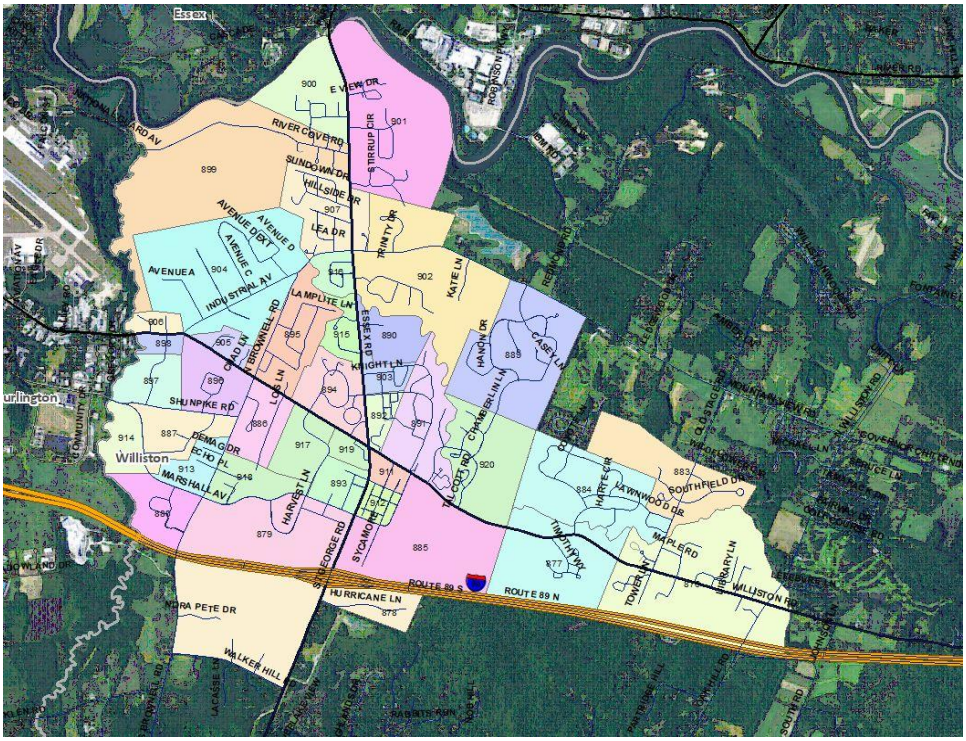


FIGURE 3: GROWTH AND DIVERSITY LAND USE ZONES IN WILLISTON

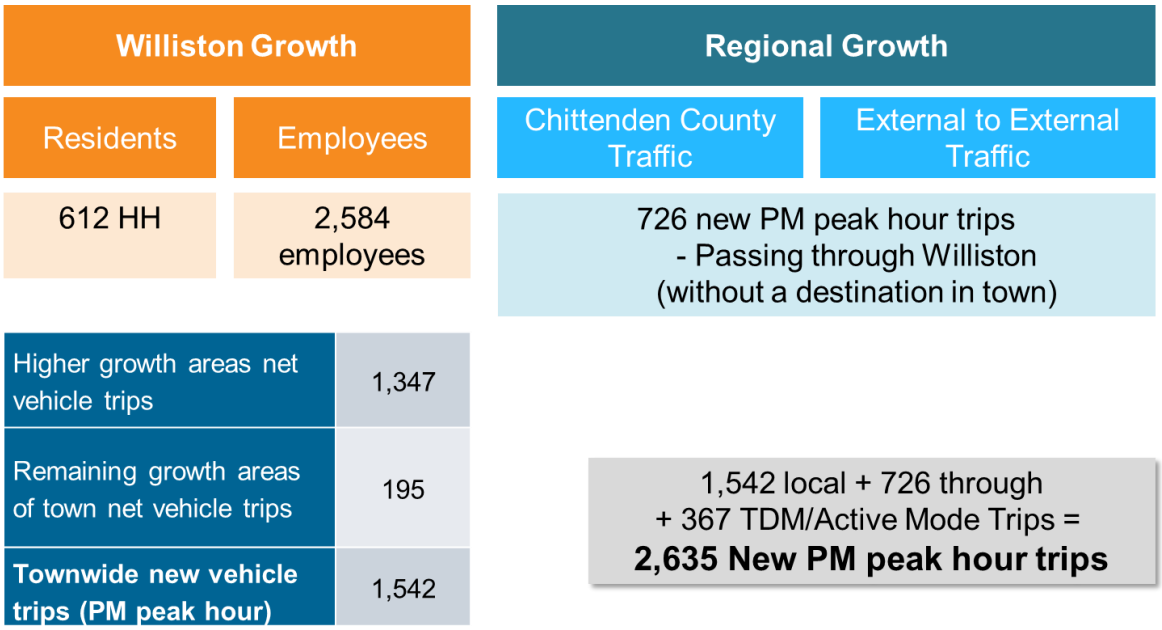


The remaining areas of Williston will experience more modest growth of 69 new housing units and 286 new employees by 2030. These land uses are expected to be located in areas that will not benefit from diversity of land uses or proximity to avoid traveling by car and therefore expected to generate 196 new peak hour vehicle trips.

By 2030, the Town is anticipated to generate an additional 1,542 new vehicle trips during the PM peak hour. The combination of vehicle trips, non-motorized trips, and trips that pass through

Williston are shown in Figure 4, resulting in 2,635 new total PM peak hour trips in Williston by 2030.

FIGURE 4: 2030 TRAFFIC GROWTH CHANGES



Estimating Growth from 2030 to 2040

The travel demand model provided forecasts for the transportation demand associated with the land use changes from 2015 to 2030. It was determined during the course of the study that the projects being pursued would benefit from extending over a longer time period – stretching to 2040. The growth forecasts developed by the CCRPC estimates that households and employment would grow by 9.8% between 2030 and 2040. The person trips for 2040 was forecast by extrapolating the growth from 2015 to 2030, resulting in an 8% increase from 2030. The difference is that not all land uses generate trips at the same quantity during the PM peak hour.

TABLE 5: LAND USE CHANGES BY 2040

	TOTAL UNITS BY 2040	CHANGE (2015 – 2040
Households	4,913	1,050
Employment	17,389	4,146
Trips	9,806	2,845

5.0 PROJECTS

The Town has identified 7 projects eligible for impact fee expenditures. Table 6 shows the transportation capital projects identified for local funding.

All the projects have been developed over many years through the course of several transportation studies, plans, and community conversations. There is evidence that the standard of service of transportation will deteriorate in the absence of these improvements.

TABLE 6: WILLISTON TRANSPORTATION IMPACT FEE PROJECTS

PROJECT DESCRIPTION	LOCAL PORTION OF PROJECT
Shared-Use Path along US 2 Taft Corners to Village Local portion for preliminary design and engineering.	$100,000
Marshall Avenue Shared-Use Path. The Williston segment would start where Marshall Ave and Kimball St meet, follow the south side of Marshall Ave, and end at the existing path on Marshall Ave.	$200,000
East-West Grid Street (VT-2A to Maple Tree Place). New road with bike lanes, and sidewalks that is south of the State Police Barracks then curves to the north, running along the east side of Dick's Sporting Goods.	$1,530,000
Upgrade Maple Tree Place Roundabout. Geometric changes and connect to the new East-West Grid Street.	$1,000,000
Industrial Avenue Sidewalk and Bike Lanes.	$846,800
Extension of Trader Lane to US-2	$1,750,000
Mountain View Road Bike Lanes. Local portion for preliminary design and engineering.	$100,000
Total projects	**$5,526,800**

5.1 STANDARD OF SERVICE TESTS

An impact fee fundamental tenant is that the growth and development does not pay for more than their proportion of impact, or their 'fair share'. This can be evaluated by comparing the current standard of service to the standard of service with and without the impact fee projects.

There are two methodologies used in this test.

a) Ratio of linear miles.

b) Person miles of capacity.

Ratio Expansion of Capacity

The Town of Williston has a diverse and widespread transportation network. Excluding the I-89 Interstate, there are 164 lane miles of roads, 3.64 miles of bike lanes, and 4.6 miles of shared use paths. There is also an extensive sidewalk network.

The existing supply of transportation infrastructure within the Town of Williston is summarized in Table 7. GIS data and aerial imagery were used to calculate the supply. The existing number of households and employees were used to develop a ratio of users per mile of infrastructure.

TABLE 7: EXISTING SUPPLY OF TRANSPORTATION FACILITIES

	MILES	RATIO: HH PER MILE	RATIO: EMPLOYEES PER MILE
Vehicle miles	164.514	23.5	80
Bike lanes	3.64	1,061.5	3,638
Shared use path	4.6	840	2,879

The ratio of users per mile of infrastructure is used to calculate the supply (miles) of new vehicle lanes, bike lanes, and shared use paths by 2040. The supply necessary to maintain the current ratios (miles per unit of growth) is shown next to the supply being provided in the impact fee projects.

TABLE 8: RATIO EXPANSION OF CAPACITY

	HH CHANGE 2040 [A]	EMPLOYEE CHANGE 2040 [B]	CHANGE IN MILES DUE TO HH [C]	CHANGE IN MILES DUE TO EMPLOYMENT [D]	RATIO BASED CAPACITY EXPANSION *AVG. CHANGE IN MILES* *E =AVG [C:D]*	CAPACITY OF IMPACT FEE PROJECTS [F]
Vehicle miles	1,050	4,146	45	52	48	1.46
Bike lanes	1,050	4,146	.99	1.14	1.06	9.20
Shared use path	1,050	4,146	1.25	1.44	1.34	1.95

Table 8 shows high number of lane miles suggested by the current ratio of lane miles to unit of growth, especially compared to the number of lane miles planned in the impact fee projects (column F).

The Town of Williston is looking to provide residents and guests the opportunity to change the way travel is done rather than continue the status quo. A ratio-based expansion in the number of linear miles of infrastructure retains the existing proportions and doesn't easily translate to shifting capacity from vehicle miles to bike lane miles, for example.

Person Miles of Capacity

Vermont's Complete Street legislation in 2011 (Act 34 H.198) directed that all users of the transportation system (regardless of mode) are considered in all state and municipally managed transportation projects. The recognition that all users of the system are equally valued in the development of projects provides the context for developing a mode-agnostic person miles

capacity analysis of the transportation system in Williston. The existing transportation system has a capacity for nearly 157,000 person miles during the PM peak hour.

TABLE 9: PERSON MILES CAPACITY IN WILLSTON - 2015

INFRASTRUCTURE	MILES	PERSON CAPACITY[3] (TARGET V/C RATIO ~.5)	PERSON MILES CAPACITY
Vehicle Miles	164.5	900	148,063
bike lanes	3.64	800	2,912
shared use path	4.6	1,250	5,750
		Total Person Miles Capacity	**156,725**

The VMT analyzed in the regional travel demand model is converted to person miles traveled (PMT) using the data in the 2009 National Household Travel Survey data Vermont add-on for the Williston census blocks. The VMT to PMT factor is 1.38.

TABLE 10: VMT TO PMT - 2015

2015 peak hour PM VMT	23,631
VMT to PMT factor	1.38
2015 peak hour PM PMT	31,322

Converting the capacity of the existing transportation system in Williston to PMT enables a mode-agnostic analysis of future capacity and demand for mobility.

Table 11 shows the translation from existing capacity, existing capacity to demand ratio (5.0), and using that ratio to assess what future capacity is needed to meet the needs of future residents, and lastly what portion of that future demand is met by the impact fee projects.

TABLE 11: PMT SYSTEM CAPACITY AND FUTURE DEMAND

	Person miles capacity (pm pk hr)
Vehicle Miles (1 direction)	148,063
Bike lanes	2,912
Shared use path	5,750
2015 Person Miles Capacity	**156,725**
2015 Person Miles Traveled (PM pk hr)	31,322
2015 Capacity to Demand Ratio (capacity / PMT)	5.0
2040 Person Miles Traveled (PM pk hr)	37,097
2040 Capacity to Demand Ratio	5.0
New Capacity - demanded (2015-2040) (new PMT x 5)	**28,900**
Impact Fee Supplied Person Miles Capacity	**12,933**

Table 11 indicates that the standard of service test is passed.

[3] NACTO, TRB, HCM 6th Edition (see appendix TBD)

- There is a deterioration of the existing standard experience within the Town of Williston due to future growth and land use development. In the absence of the impact fee projects the standard (supply to demand) ratio falls from 5.0 to 4.22.
- The fee projects funded by impact fees levied on future growth and land use development does not improve conditions above what is experienced today. Adding the new capacity to the existing capacity would result in a slight deterioration of overall standards of service (supply to demand) ratio of 5.0 to 4.57.

6.0 BASE IMPACT FEE

Base impact fees are the raw, unadjusted fees which are later discounted for credits and other incentives. The fee will be charged on a PM peak hour per trip basis. This is consistent with the current ordinance in Williston. The trip basis is consistent with the Vermont Agency of Transportation's Statewide impact fee enabling legislation, per Act 145 of 2014-Transportation Impact Fees (10 VSA Sections 6101-6111).

The base fee is described by the following equation:

Impact Fee = (Cost per PM Peak Hour Trip) x (New PM Peak Hour trips) – (Applicable Credits)

The base impact fee is calculated as the cost of projects divided by the number of new trips during the PM peak hour as shown in Table 12.

TABLE 12: COST PER PM PEAK HOUR TRIP

Cost of Impact Fee Projects (Table 6)	$5,526,800
Number of new PM Peak Hour Trips (Table 5)	2,845
Cost per PM Peak Hour Trip	**$1,943**

6.1 CREDITS

Credits are adjustments to the base impact fee that a land use would be assessed. Within the Town of Williston two credits are possible; infrastructure credit and revenue credits.

Infrastructure Credits

Any land use development that physically constructs any project identified in Table 6 is eligible for a reduction in impact fees, up to the total amount of the impact fee liability. If the cost of the project exceeds the impact fee liability, the Town has the latitude to allow that credit to offset future impact fees imposed on the entity that constructed the infrastructure project. The credit is also applicable even if the project was a condition of the land use development during the review process. This reduces the perception of double payments and incentivizes development in areas identified for transportation infrastructure.

Revenue Credits

Revenue credits discount the base impact fee to reduce the chance that a land use development in the Town would be funding the same capital improvement through two different funds. This frequently occurs when a land to be developed pays property taxes (prior to the development of the land and after the development), when a portion of which goes to fund the capital project that the impact fee contributed toward. In this case, it is necessary to offset the impact fee by a credit value to eliminate the double payment toward the same capacity. The credits equal the discounted present value of the stream of tax payments used for those expenditures.

The Town of Williston's impact fee is based on the total number of new PM peak hour trips that will consume transportation capacity. Not all new trips are associated with changes in land use development – roughly 32% of the new trips are associated with trips that neither originate nor are destinated for points in Williston. Therefore, $1,768,576, or 32% of the cost of the impact fee projects will be borne by other, non-impact fee funds – namely the property tax. This equates to $84,218 annually to be raised by the property tax.

The stream of tax payments is broken into two parts – that which occurs before the land use development occurs (called **past tax payments**), and that which occurs after the development comes onto the grand list (called **future tax payments**). The past tax payment determines the amount of tax payments on the raw land made prior to the payment of the impact fee. The future tax payment accounts for the stream of future tax payments made on the new development after the impact fee was paid.

Residential Development

Past Tax Payments

The predevelopment tax payments for any given residential development. For example, a dwelling constructed in 2022 includes tax payments made in years 2019 through 2021. This stream of payments is converted to the net present value in the year of construction, using a discount rate of 5%. Table 13 summarizes the value of predevelopment credits for a housing unit

TABLE 13: RESIDENTIAL REVENUE CREDIT FOR PREDEVELOPMENT TAX PAYMENTS

DWELLING YEAR	ANNUAL EXPENSE	TAX RATE NEEDED	TAX ON SINGLE FAMILY UNIT	TAX ON MULTI-FAMILY UNIT
2019	$0	0.000000	$0.00	$0.00
2020	$84,218	0.003968	$1.98	$0.99
2021	$84,218	0.003890	$1.95	$0.97
2022	$84,218	0.003814	$1.91	$0.95
2023	$84,218	0.003739	$1.87	$0.93
2024	$84,218	0.003666	$1.83	$0.92
2025	$84,218	0.003594	$1.80	$0.90
2026	$84,218	0.003523	$1.76	$0.88
2027	$84,218	0.003454	$1.73	$0.86
2028	$84,218	0.003387	$1.69	$0.85
2029	$84,218	0.003320	$1.66	$0.83
2030	$84,218	0.003255	$1.63	$0.81
2031	$84,218	0.003191	$1.60	$0.80

2032	$84,218	0.003129	$1.56	$0.78
2033	$84,218	0.003067	$1.53	$0.77
2034	$84,218	0.003007	$1.50	$0.75
2035	$84,218	0.002948	$1.47	$0.74
2036	$84,218	0.002890	$1.45	$0.72
2037	$84,218	0.002890	$1.45	$0.72
2038	$84,218	0.002834	$1.42	$0.71
2039	$84,218	0.002778	$1.39	$0.69
2040	$84,218	0.002724	$1.36	$0.68

Once the dwelling is constructed, it pays annual taxes on its new value as a dwelling (building and land). A review of the Town's Grand List data revealed that average assessed value of new single family detached dwellings is $400,000. New multiple family dwellings, the average assessed value is $250,000. The Town's Common Level of Appraisal (CLA) is nearly 1.0[4] and therefore the current assessed value is very close to market value.

Table 14 identifies the annual payments for future years from when the dwelling comes onto the grand list through the end of the programmed expenditures (2040). The credit for the tax payment is the current value of the future stream of tax payments, assuming a discount rate of 5%.

[4] ftp://ftp.act60.tax.state.vt.us/EQ%20STUDY%202018%20CERTIFIED/Williston/

TABLE 14: RESIDENTIAL REVENUE CREDIT FOR FUTURE DEVELOPMENT TAX PAYMENTS

DWELLING YEAR	ANNUAL EXPENSE	TAX RATE NEEDED	TAX ON	TAX ON
2019	$0	0.000000	$0.00	$0.00
2020	$84,218	0.003968	$15.87	$9.92
2021	$84,218	0.003890	$15.56	$9.73
2022	$84,218	0.003814	$15.26	$9.53
2023	$84,218	0.003739	$14.96	$9.35
2024	$84,218	0.003666	$14.66	$9.16
2025	$84,218	0.003594	$14.38	$8.98
2026	$84,218	0.003523	$14.09	$8.81
2027	$84,218	0.003454	$13.82	$8.64
2028	$84,218	0.003387	$13.55	$8.47
2029	$84,218	0.003320	$13.28	$8.30
2030	$84,218	0.003255	$13.02	$8.14
2031	$84,218	0.003191	$12.77	$7.98
2032	$84,218	0.003129	$12.52	$7.82
2033	$84,218	0.003067	$12.27	$7.67
2034	$84,218	0.003007	$12.03	$7.52
2035	$84,218	0.002948	$11.79	$7.37
2036	$84,218	0.002890	$11.56	$7.23
2037	$84,218	0.002834	$11.34	$7.08
2038	$84,218	0.002778	$11.11	$6.95
2039	$84,218	0.002724	$10.90	$6.81
2040	$84,218	0.002670	$10.68	$6.68

The net fee charged per unit comprises the base impact fee minus the predevelopment credit and the post development credit. RSG used the following assumptions to develop the residential revenue credit analysis:

- Average value of empty residential land per acre = $100,000. Assessed with the input from town assessor by looking at an array of land values for smaller sites planned for development as well as more rural and larger sites that could be subdivided in the future. The higher value provides a protection to the Town by creating a larger credit which should avoid any chance of double counting the impact fee revenue.

- Average annual growth of the grand list is 2%. Derived from a long-run average.
- 2019 Town Grand list value is $2,040,000,000. Taxable value is $20,000,000 (tax rate on every $100 of value).

Nonresidential Development

The value of impact fee credits for the nonresidential development is split into two categories: predevelopment and post development. Given the variety of nonresidential construction types, locations, and overall variation in the value that nonresidential land uses have within the grand list, the credit mechanism is based not on an average property value, but based on a unit of $1,000 property value. The predevelopment credit is to be calculated on the assessed value of the land upon which the development has occurred or will occur. This requires some judgment in terms of how a fractional use of a parcel is defined for the value of the nonresidential development. For instance, a five-acre parcel could be 20% for each one-acre subdivision; or, due to concentration within the five acres, the limited development footprint may be closer to 40%.

TABLE 15: NONRESIDENTIAL REVENUE CREDIT FOR PREDEVELOPMENT TAX PAYMENTS

DWELLING YEAR	ANNUAL EXPENSE	TAX RATE NEEDED	TAX ON $1,000 OF VALUE	CREDITS PER $1,000 OF ASSESSED VALUE
2019	$0	0.000000	$0.00	**$0.00**
2020	$84,218	0.004047	$0.04	**$0.00**
2021	$84,218	0.003968	$0.04	**$0.04**
2022	$84,218	0.003890	$0.04	**$0.09**
2023	$84,218	0.003814	$0.04	**$0.13**
2024	$84,218	0.003739	$0.04	**$0.18**
2025	$84,218	0.003666	$0.04	**$0.23**
2026	$84,218	0.003594	$0.04	**$0.28**
2027	$84,218	0.003523	$0.04	**$0.33**
2028	$84,218	0.003454	$0.03	**$0.39**
2029	$84,218	0.003387	$0.03	**$0.45**
2030	$84,218	0.003320	$0.03	**$0.51**
2031	$84,218	0.003255	$0.03	**$0.57**
2032	$84,218	0.003191	$0.03	**$0.64**
2033	$84,218	0.003129	$0.03	**$0.71**
2034	$84,218	0.003067	$0.03	**$0.78**
2035	$84,218	0.003007	$0.03	**$0.85**
2036	$84,218	0.002948	$0.03	**$0.93**

2037	$84,218	0.002890	$0.03	**$1.01**
2038	$84,218	0.002834	$0.03	**$1.10**
2039	$84,218	0.002778	$0.03	**$1.19**
2040	$84,218	0.002724	$0.03	**$1.28**

The post development credit is calculated based on the development value of the *structure*, which also uses $1,000 units of value. The credit is developed as a value per $1,000 of development value. The development value is often included in local development permits and State Act 250 applications. Table 16 assists in the estimation of development property assessment values based on different construction methods, building types, and uses. RSG created the table using an online subscription to RSMeans Square Foot Cost Estimator, which is available for the Burlington Vermont metropolitan area based on 2017 Q2 data. The estimates include general contractor and architectural fees, basic site work elements, and structural building elements. Four generalized types and typical forms of construction often found here in Vermont are included in this analysis.

TABLE 16: 2017 CONSTRUCTION VALUES FOR NONRESIDENTIAL USES BY CONSTRUCTION TYPE (VALUE PER SQUARE FOOT)

Construction Type	Reinforced Concrete or Steel Frame	Masonry or Concrete Bearing Wall	Wood Frame	PreFABRICATED Steel
Accommodation (hotels, shared and group housing)	$187	$181.50	$145.50	$179.50
Commercial (office, professional)	$216.50	$203.50	$171.50	$174
Industrial/factory/warehouse	$136	$124	--	$99
Educational (K–12)	$183	$184.50	--	$154.50
Retail	$145	$156	$110	$119

TABLE 17: RESIDENTIAL REVENUE CREDIT FOR FUTURE DEVELOPMENT TAX PAYMENTS

DWELLING YEAR	ANNUAL EXPENSE	TAX RATE NEEDED	TAX ON $1,000 OF VALUE	CREDITS PER $1,000 OF ASSESSED VALUE
2019	$0	0.000000	$0.00	**$0.00**
2020	$84,218	0.004047	$0.04	**$0.43**
2021	$84,218	0.003968	$0.04	**$0.41**
2022	$84,218	0.003890	$0.04	**$0.39**
2023	$84,218	0.003814	$0.04	**$0.37**
2024	$84,218	0.003739	$0.04	**$0.36**
2025	$84,218	0.003666	$0.04	**$0.34**
2026	$84,218	0.003594	$0.04	**$0.32**
2027	$84,218	0.003523	$0.04	**$0.30**
2028	$84,218	0.003454	$0.03	**$0.28**
2029	$84,218	0.003387	$0.03	**$0.27**
2030	$84,218	0.003320	$0.03	**$0.25**
2031	$84,218	0.003255	$0.03	**$0.23**
2032	$84,218	0.003191	$0.03	**$0.21**
2033	$84,218	0.003129	$0.03	**$0.19**
2034	$84,218	0.003067	$0.03	**$0.17**
2035	$84,218	0.003007	$0.03	**$0.14**
2036	$84,218	0.002948	$0.03	**$0.12**

2037	$84,218	0.002890	$0.03	**$0.10**
2038	$84,218	0.002834	$0.03	**$0.08**
2039	$84,218	0.002778	$0.03	**$0.05**
2040	$84,218	0.002724	$0.03	**$0.03**

6.2 FEE PER RESIDENTIAL UNIT

Table 12 summarizes the base cost per PM peak hour trip at $1,943. Non-residential and residential land use can be assessed on the trip basis determined by a traffic impact study or other trip generation studies.

To simplify the administration of the impact fees the trip generation for the residential uses can be summarized by the following table:

TABLE 18: BASE FEE PER RESIDENTIAL UNIT

LAND USE (ITE LAND USE CODE: #)	COST PER TRIP	ITE TRIP GENERATION 10TH EDITION DURING PM PEAK HOUR	BASE FEE PER UNIT
Single family detached (ITE LUC: 210)	$1,943	1.00	$1,943
Multifamily attached (ITE LUC: 221)	$1,943	0.52	$1,010

The net impact fee is the base impact fee (Table 18) minus any revenue credits for new residential development is shown below in Table 19.

TABLE 19: NET RESIDENTIAL IMPACT FEES FOR TRANSPORTATION CAPITAL EXPENSES

DWELLING YEAR	SINGLE FAMILY DWELLINGS				MULTIPLE FAMILY DWELLINGS			
	Base Fee	Credit for Past taxes	Credit for Future taxes	Net Fee per Unit	Base Fee	Credit for Past taxes	Credit for Future taxes	Net Fee per Unit
2019	$1,943.00	$0.00	$165.73	**$1,777.27**	$1,010.00	$0.00	$103.58	**$906.42**
2020	$1,943.00	$0.00	$174.02	**$1,768.98**	$1,010.00	$0.00	$108.76	**$901.24**
2021	$1,943.00	$2.08	$166.85	**$1,774.07**	$1,010.00	$1.04	$104.28	**$904.68**
2022	$1,943.00	$4.23	$159.63	**$1,779.14**	$1,010.00	$2.11	$99.77	**$908.12**
2023	$1,943.00	$6.44	$152.36	**$1,784.20**	$1,010.00	$3.22	$95.22	**$911.55**
2024	$1,943.00	$8.73	$145.02	**$1,789.25**	$1,010.00	$4.36	$90.64	**$915.00**
2025	$1,943.00	$11.09	$137.61	**$1,794.30**	$1,010.00	$5.54	$86.00	**$918.45**
2026	$1,943.00	$13.53	$130.11	**$1,799.36**	$1,010.00	$6.77	$81.32	**$921.92**
2027	$1,943.00	$16.06	$122.52	**$1,804.42**	$1,010.00	$8.03	$76.58	**$925.39**
2028	$1,943.00	$18.67	$114.83	**$1,809.50**	$1,010.00	$9.34	$71.77	**$928.89**
2029	$1,943.00	$21.39	$107.03	**$1,814.59**	$1,010.00	$10.69	$66.89	**$932.42**
2030	$1,943.00	$24.20	$99.10	**$1,819.71**	$1,010.00	$12.10	$61.94	**$935.97**
2031	$1,943.00	$27.12	$91.03	**$1,824.85**	$1,010.00	$13.56	$56.89	**$939.55**
2032	$1,943.00	$30.15	$82.82	**$1,830.04**	$1,010.00	$15.07	$51.76	**$943.17**

2033	$1,943.00	$33.30	$74.44	**$1,835.26**	$1,010.00	$16.65	$46.53	**$946.82**
2034	$1,943.00	$36.57	$65.89	**$1,840.53**	$1,010.00	$18.29	$41.18	**$950.53**
2035	$1,943.00	$39.98	$57.16	**$1,845.86**	$1,010.00	$19.99	$35.73	**$954.28**
2036	$1,943.00	$43.53	$48.23	**$1,851.25**	$1,010.00	$21.76	$30.14	**$958.10**
2037	$1,943.00	$47.22	$39.07	**$1,856.70**	$1,010.00	$23.61	$24.42	**$961.97**
2038	$1,943.00	$51.10	$29.69	**$1,862.21**	$1,010.00	$25.55	$18.56	**$965.89**
2039	$1,943.00	$55.14	$20.06	**$1,867.79**	$1,010.00	$27.57	$12.54	**$969.89**
2040	$1,943.00	$59.36	$10.17	**$1,873.47**	$1,010.00	$29.68	$6.36	**$973.96**

6.3 NON-RESIDENTIAL FEES

The non-residential land uses do not have the benefit of a summary document like this given the variety of construction methods and post-construction values.

The steps for non-residential impact fees are:

1. Calculate the number of new trips generated during the PM peak hour.
2. Multiply the number of trips by the cost per trip $1,943 (Table 12) to obtain the base impact fee.
3. Determine pre-development revenue credits based on the year of development and value of the property (Table 15).
4. Use Table 16 to multiply the nonresidential value by the future tax credit for occupancy year.
5. Determine the post-development revenue credits based on the year of development and value of the development (Table 17).
6. Calculate the final impact fee using Step 2 and subtract Step 3 and Step 4.

APPENDIX A. CAPACITY OF INFRASTRUCTURE

PERSON MILES CAPACITY PER MILE

TYPE OF FACILITY	PERSON CAPACITY[5] (TARGET V/C RATIO ~.5)
Bicycle Boulevard/cycle track	1,400
Sharrows	150
Bike Lanes	800
Buffered Bike Lanes	1,200
Paved Shoulder	200
Protected Bike Lane	1,320
Shared Use Path	1,250
Road lane (1 lanes)	900
Sidewalk (5 feet wide)	880
Sidewalk (10 feet wide)	1,760

[5] NACTO, TRB, HCM 6th Edition

RSG
the science of insight

180 Battery Street, Suite 350
Burlington, VT 05401
802.383.0118
www.rsginc.com

White River Junction & Burlington, VT

Arlington, VA

Chicago, IL

Evansville, IN

Portland, OR

Salt Lake City, UT

San Diego, CA

RSG promotes sustainable business practices that minimize negative impacts on the environment. We print all proposals and reports on recycled paper that utilizes a minimum of 30% post-consumer waste. RSG also encourages recycling of printed materials (including this document) whenever practicable. **For more information on RSG's sustainability practices, please visit www.rsginc.com.**