City of San Diego Active Transportation In Lieu Fee Calculator Tool – User Manual

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City of San Diego
Active Transportation In Lieu Fee Calculator Tool - User Manual

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1.0 Introduction

This manual provides an overview of the features, assumptions, and methods within the City of San Diego's Active Transportation In Lieu Fee Calculator Tool (Calculator). The Calculator is an Excel based program that allows project applicants, developers, and City staff to calculate the active transportation In Lieu fee associated with a specific project based on its location, land use, and size.

The Active Transportation In Lieu Fee Program (Fee) is part of the Mobility Choices[1] component of the City of San Diego's Complete Communities[2] initiative which sets the City on a path to achieve a vision of equitable, healthy, and sustainable neighborhoods, with a focus on four key areas: housing, mobility, parks, and infrastructure.

This manual focuses specifically on the functions, inputs, data sources, methodology, and assumptions used in the Calculator. However, this manual does not describe or document the purpose or justification for the Active Transportation In Lieu Fee program; that information is contained in the Nexus Study. It is recommended that the following documents also be reviewed to provide a better understanding of the Active Transportation In Lieu Fee Program:

- City of San Diego Complete Communities Mobility Choices Ordinance
- City of San Diego Complete Communities EIR
- City of San Diego Transportation Study Manual
- City of San Diego Land Development Manual
- City of San Diego Active Transportation In Lieu Fee Program - Nexus Study
- City of San Diego Active Transportation In Lieu Fee Program – VMT Elasticity Memo
- City of San Diego Active Transportation In Lieu Fee Program – Unit Cost Memo
- City of San Diego Residential Scaling Analysis and Methodology Memo

However, to provide some context, the following sections provide a brief overview of the background and purpose of the Active Transportation In Lieu Fee Program.

1.1 Background

In December 2018, the State of California Natural Resources Agency codified Senate Bill 743 (SB 743) into the California Environmental Quality Act (CEQA) by revising the California Natural Resources Agency *Guidelines for the Implementation of the California Environmental Quality Act* (*CEQA Guidelines*). SB 743 fundamentally changes the way transportation related impacts are identified under CEQA. As such, SB 743 restricts the use of traffic operations (level of service or delay) as the criteria in which environmental impact significance is determined for transportation, and in turn requires that Vehicle Miles Traveled (VMT) be used as one of the criteria to identify significant impacts. All jurisdictions within the State of California are required to implement CEQA significance thresholds that are consistent with SB-743 prior to July 1, 2020.

[1] https://www.sandiego.gov/complete-communities-mobility-choices
[2] https://www.sandiego.gov/planning/programs/completecommunities/housingsolutions

In preparation for the implementation of SB 743, the City of San Diego developed the Mobility Choices Program, with an Active Transportation In Lieu Fee component, to provide an avenue for future development to mitigate associated VMT related impacts. The Active Transportation In Lieu Fee will assist the City to fund and construct multi-modal infrastructure that will help to reduce citywide VMT to levels that are consistent with the State's climate change goals, as implemented by SB -743 and SB 375, and also the City's local climate goals, as set forth in the City's Climate Action Plan.

The Active Transportation In Lieu Fee only applies to development projects (projects) located within the Mobility Zone 4[3], since these are the areas that typically generate an average VMT above the significance thresholds recommended by OPR, and the threshold that the City will be using as well. Per the City's Transportation Study Manual, discretionary development projects within these areas will need to reduce their project VMT per Capita to 15% below the regional average (for residential and office projects) through the use of VMT-reducing strategies in order to have a less than significant transportation VMT impact on the environment. Currently, enforcement of TDM strategies at the project level is difficult; therefore, through this effort, the City plans to only require VMT reduction measures, implemented through infrastructure projects, for which the quantification of the VMT reductions can be calculated, and which do not need to be regularly monitored to ensure that they are being properly administered. In addition, the Complete Communities: Mobility Choices initiative helps implement SB 375 and the City's Climate Action Plan to reduce regional greenhouse gas emissions. Therefore, these regulations would apply as development regulations applicable to all projects that require a building permit.

1.2 Fee Purpose

Rather than investing VMT reducing infrastructure in Mobility Zone 4, where its VMT reduction potential is limited, the Mobility Choices regulations would require payment of a fee to mitigate transportation VMT impacts. The fee is based on the estimated cost to reduce a mile of VMT within areas of the City where there is greater return on investment for VMT reducing infrastructure (in the City's Mobility Zones 1, 2, and 3. The purpose of this fee is to 1) invest in active transportation and transit infrastructure within Mobility Zones 1, 2 and 3 where VMT reduction potential is highest and where the greatest return on investment in terms of VMT reductions can be achieved, and 2) allow projects within Mobility Zone 4 to more efficiently work towards a mitigation solution for VMT impacts. This fee is based on the planning level costs identified for the various VMT-reducing infrastructure and associated VMT reduction. This calculation resulted in the projected cost to reduce a single unit of VMT within Mobility Zones 1, 2, and 3, on average (Fee Cost). These calculations are established within the City of San Diego Active Transportation In Lieu Fee Program - Nexus Study.

1.3 Manual Organization

Following the introductory Section, the remaining sections of this manual provide the following information.

2.0 *Calculator Instructions* - Explains the various steps required to use the Calculator and provides an explanation and guide on how to read the various components of the Calculator.

[3] See the City of San Diego Complete Communities Ordinance for the definitions of the four Mobility Zones within the City of San Diego.

3.0 *Back End Work Sheet Instructions* – Outlines the information and capabilities that are provided to City Staff through both the additional information and the override tabs within the calculator.

4.0 *Assumptions and Universal Inputs* - This section reviews both the general assumptions that were utilized to develop the calculator and where in the calculator their associated values can be updated.

5.0 *Data Sources* - Outlines and documents the major data sources upon which the Calculator is built. This data should only be changed during the Calculator Update process.

6.0 *Maintaining the Calculator* - Outlines when and how the Calculator should be updated.

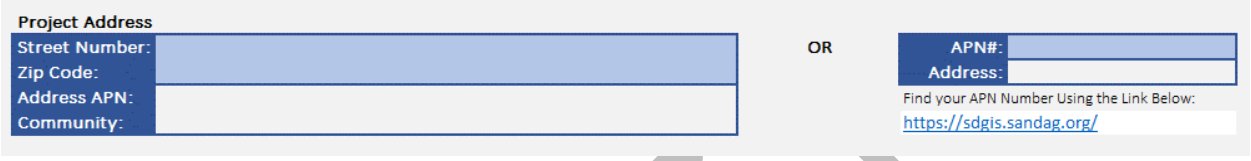
7.0 *Testing* – Outlines the testing and verification process for the Calculator.

2.0 Calculator Instructions

This section explains the various steps required to use the Calculator and provides an explanation and guide on how to read the various components and values that the Calculator generates.

2.1 Project Location

Input the project's location either by Assessor's Parcel Number (APN) or by address, within the light blue boxes shown below.



APN

The APN is the preferred method of input and will provide the most successful results. Please note that the full ten-digit APN is required and the APN-8 (the first eight digits of the APN) will not work. To find a project's APN based on address or geography, please visit the following webpage: https://sdgis.sandag.org/

Address

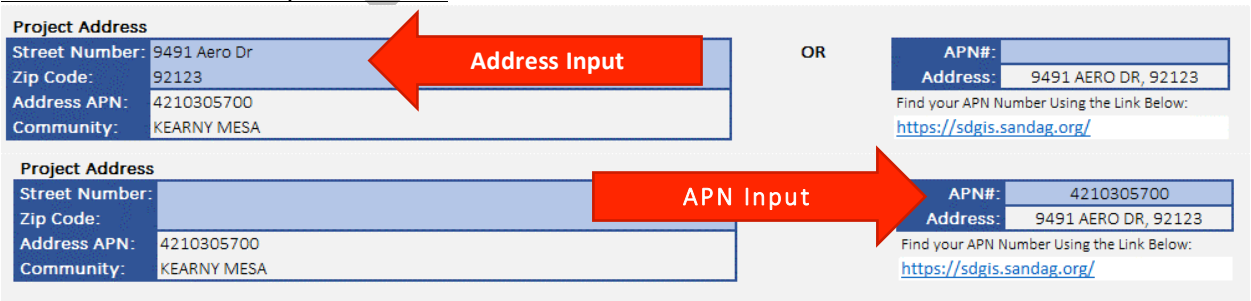
A project's address can also be used to locate its associated parcel information. However, not all parcels have an address, and some addresses may not be entered into the parcel database. Therefore, if the Calculator cannot locate a project's address, please use the link above to find its associated APN.

Addresses should be entered into the light blue boxes using the following format:
Number *<space>* Street *<space>* Abbreviated Street Type (i.e. Dr, Ave, Ct, Ln, Rd)

Please note that a period should not be inputted after the street type.

If there is a direction preceding the project's street name then the starting letter of that direction (N S,E, or W) and a period should be inputted prior to the street name, with a space in-between. Example: W. Broadway

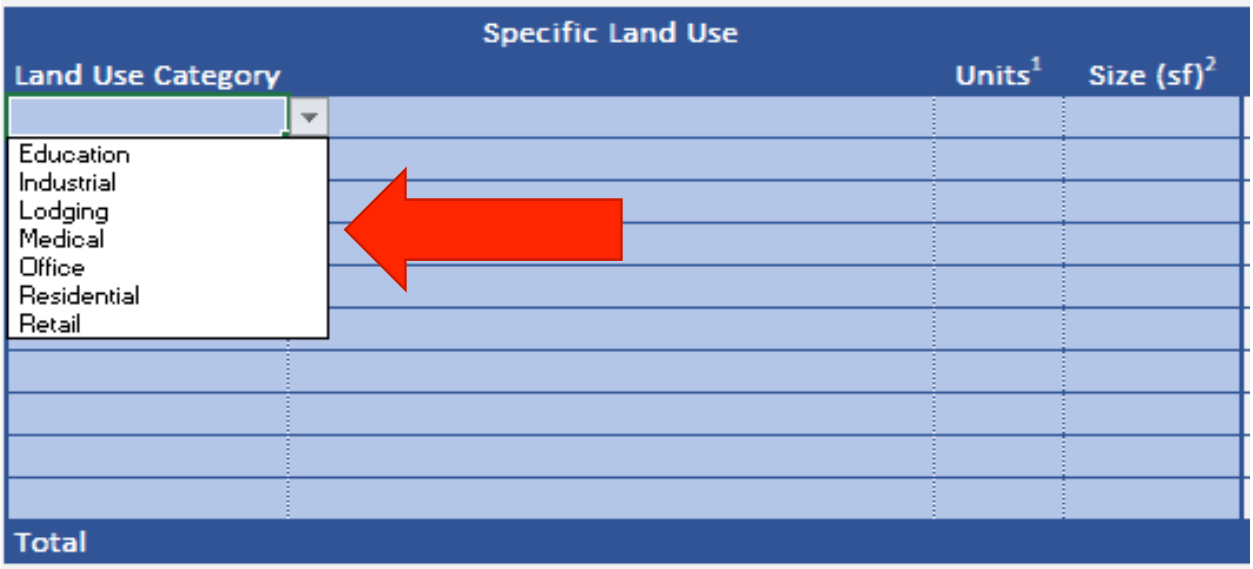
Please see the examples below:



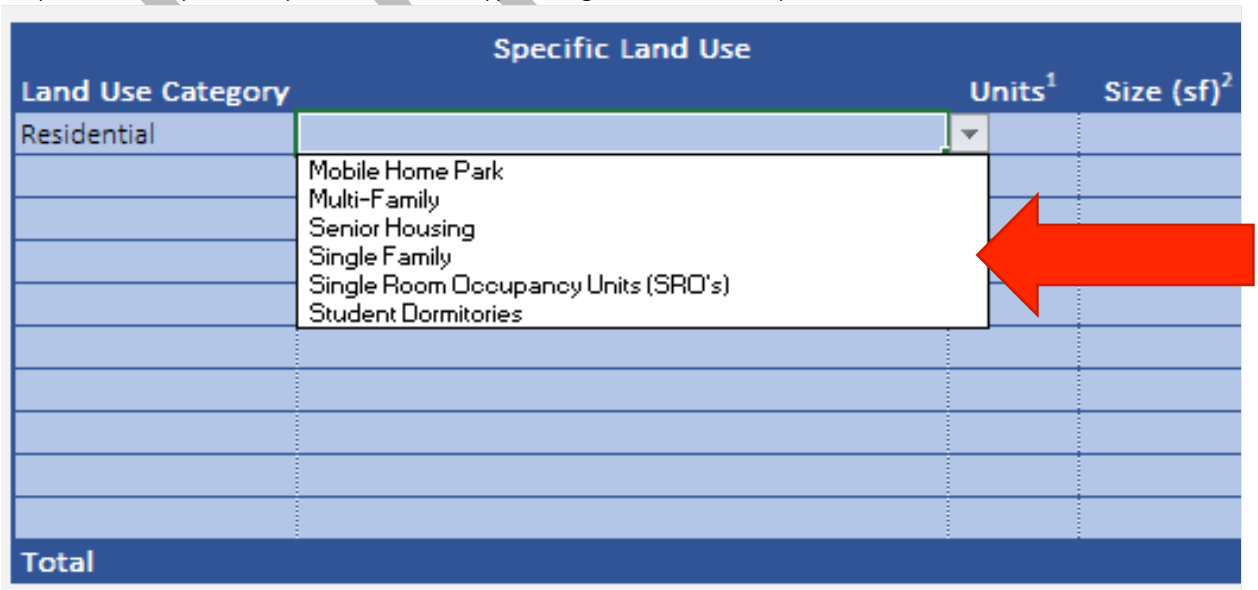
2.2 Project Land Uses

Project land uses should be inputted into the light blue boxes displayed below.

Step 1: First input the land use category using the drop-down menu.



Step 2: Next input the specific land use type using the second drop down menu.



Step 3: Finally, input the project size. For residential units both the total number of dwelling units and the size of the units (in square feet) are needed. Units with different sizes should be implemented separately. Hotel uses only need to input the total number of rooms and all other land use types only need to input the building size in gross square feet.

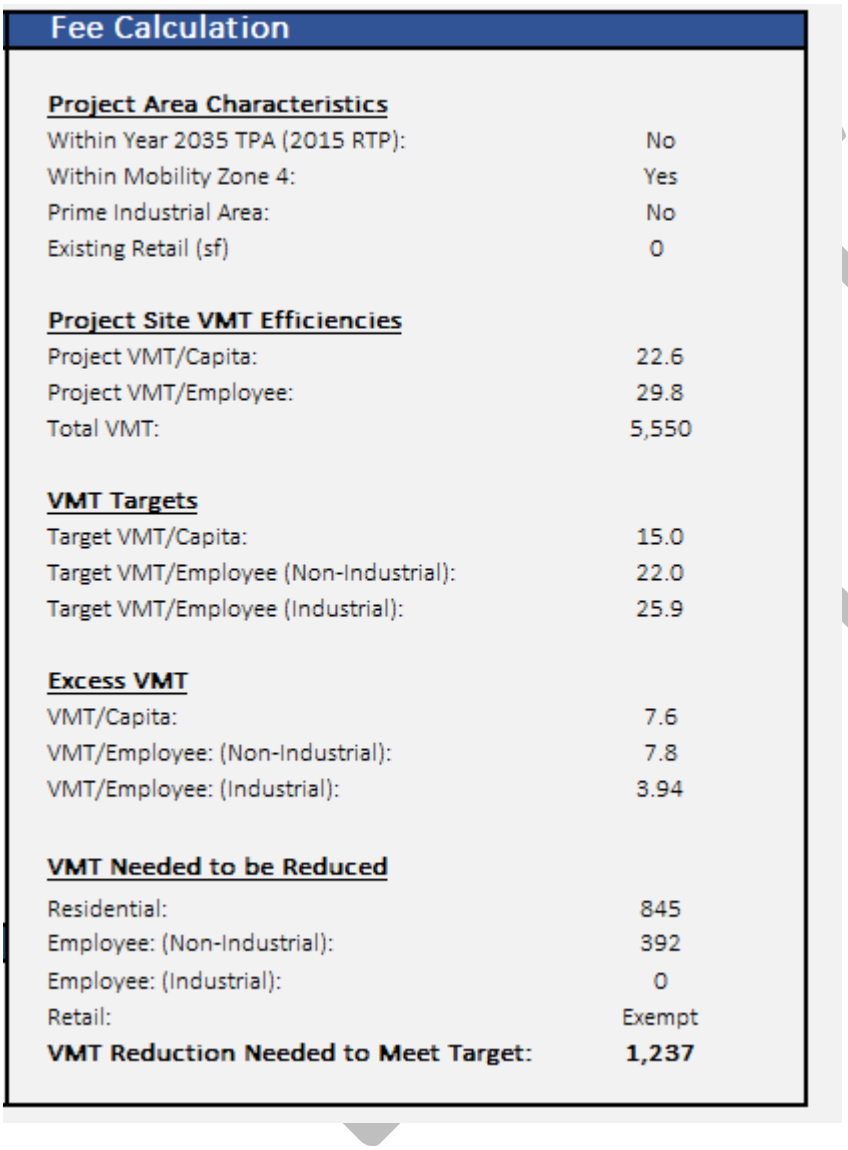
Land Use Category	Specific Land Use	Units[1]	Size (sf)[2]
Residential	Multi-Family Residential	50	950
Total			

Step 4: Repeat the previous three steps for all project land uses.

Land Use Category	Specific Land Use	Units[1]	Size (sf)[2]
Residential	Multi-Family Residential	50	950
Retail	Arterial Commercial		10,000
Office	Medical Office		20,000
Total			

2.3 Fee Calculation

The additional components used to derive the project's Fee are displayed on the right side of the calculator, as shown below. The following sections describe the data that is provided within this table, as well as the sources and methods used to calculate the data.



Fee Calculation

Project Area Characteristics	
Within Year 2035 TPA (2015 RTP):	No
Within Mobility Zone 4:	Yes
Prime Industrial Area:	No
Existing Retail (sf)	0
Project Site VMT Efficiencies	
Project VMT/Capita:	22.6
Project VMT/Employee:	29.8
Total VMT:	5,550
VMT Targets	
Target VMT/Capita:	15.0
Target VMT/Employee (Non-Industrial):	22.0
Target VMT/Employee (Industrial):	25.9
Excess VMT	
VMT/Capita:	7.6
VMT/Employee: (Non-Industrial):	7.8
VMT/Employee: (Industrial):	3.94
VMT Needed to be Reduced	
Residential:	845
Employee: (Non-Industrial):	392
Employee: (Industrial):	0
Retail:	Exempt
VMT Reduction Needed to Meet Target:	**1,237**

The project area characteristics section filters out projects that would be exempt from paying the fee based on their location. There are four factors that can filter out a project:

- *TPA* - If a project is location within a Transit Priority Area (TPA) it is exempt from the fee.
- *Mobility Zones* – Only projects located in Mobility Zone 4 are required to pay the fee.
- *Prime Industrial Areas* – Some industrial uses are exempt from paying the fee if they are located in a Prime Industrial Area, as designated by the City's General Plan.
- *Existing Retail* – The amount of existing retail that is associated with the area in which the project parcel is located. This is based on the original tentative map in which the parcel was created. If the retail located within the project plus the existing retail within the area is less than 100,000 sf, then the retail uses within the project are exempt.

Project Area Characteristics	
Within Year 2035 TPA (2015 RTP):	No
Within Mobility Zone 4:	Yes
Prime Industrial Area:	No
Existing Retail (sf)	0

The fee is ultimately assessed based on a project's VMT efficiencies. The project's VMT is derived from the VMT/Capita and/or VMT/Employee based on the Base Year Model of the latest adopted SANDAG Travel Demand Model. This VMT is based on the project's location. For retail projects, the VMT is based on the use's associated trip generation multiplied by the associated trip length (see section 3.1 for additional detail).

Project Site VMT Efficiencies	
Project VMT/Capita:	22.6
Project VMT/Employee:	29.8
Total VMT:	5,550

VMT Targets	
Target VMT/Capita:	15.0
Target VMT/Employee (Non-Industrial):	21.2
Target VMT/Employee (Industrial):	24.9

VMT Targets are consistent with VMT Thresholds established in the City's Transportation Study Manual:

- Residential Projects: 85% of the regional average VMT/Capita
- Employment Projects (non-Industrial): 85% of the regional average VMT/Employee
- Industrial Projects: regional average VMT/Employee

Excess VMT is the difference between the Project VMT and the VMT targets. This is the amount of project VMT that is over the established target.

Excess VMT	
VMT/Capita:	7.6
VMT/Employee: (Non-Industrial):	8.6
VMT/Employee: (Industrial):	4.94

The VMT that would need to be reduced is the Excess VMT per capita multiplied by the total number of residents plus the Excess VMT per employee multiplied by the total number of employees for the project plus, for non-local serving retail uses, the total VMT that would be generated by those retail uses. This is the total VMT reduction that a discretionary project would need to achieve to alleviate its VMT-related impacts to less than significant.

VMT Needed to be Reduced	
Residential:	845
Employee: (Non-Industrial):	392
Employee: (Industrial):	0
Retail:	Exempt
VMT Reduction Needed to Meet Target:	**1,237**

Total VMT Reduction Needed to Meet Target

The total VMT to be reduced is the value for which the fee is assessed. This is the sum of the excess VMT from the four land use categories listed above.

2.4 Fee Amount

The amount the project will be assessed for its Active Transportation In Lieu Fee is displayed in the white boxes highlighted below.

Land Use Category	Specific Land Use	Units[1]	Size (sf)[2]	Land Use Exempt?	Cost Per Unit	Cost Per SF	Total Cost
Residential	Multi-Family	50	950	No	$23,485	$0	$1,174,240
Retail	Arterial Commercial		10,000	No	$0	$0	$0
Office	Medical Office		20,000	No	$0	$30	$604,961
Total					$23,485	$20	$1,779,202

The following sections describe the various calculations and components used to calculate the Fee that will be assessed.

Exempt Land Uses

Land Use Exempt?	Cost Per Unit	Cost Per SF	Total Cost
No	$23,485	$0	$1,174,240
No	$0	$0	$0
No	$0	$30	$604,961
	$23,485	$20	$1,779,202

The first column indicates if project land use is exempt from paying the fee. This is either based on the project's location (discussed previously in the Project Exemptions section above), the project's land use type (See Appendix T of the City of San Diego Land Development Manual), or both. If a specific project land use is exempt from paying the fee either based on type, location, or both, the fee calculates calculated as $0 in the table. It should be noted that affordable housing uses are also exempt from the fee program and should not be implemented into the Land Use table.

Cost Per Unit

The second column in the table displays the fee that will be assessed, per unit, for residential or lodging uses.

Land Use Exempt?	Cost Per Unit	Cost Per SF	Total Cost
No	$23,485	$0	$1,174,240
No	$0	$0	$0
No	$0	$30	$604,961
	$23,485	$20	$1,779,202

The cost per unit is calculated based on the following formula:

Cost Per Unit (Residential) = Excess VMT Per Capita X Maximum Per Unit Fee[1] X Residential Scaling Discount[2]

Cost Per Unit (Lodging) = Excess VMT Per Employee X Employees Per Room

Notes:

[1]Maximum Fee Per unit is based on the 85th Percentile size of unit within the City of San Diego

[2]Residential Scaling analysis and methodology

Cost Per Square Feet

The third column displays the fee that will be assessed, per square foot, for both employment based, and retail uses.

Land Use Exempt?	Cost Per Unit	Cost Per SF	Total Cost
No	$23,485	$0	$1,174,240
No	$0	$0	$0
No	$0	$30	$604,961
	$23,485	$20	$1,779,202

The cost is calculated based on the following formula:

Cost Per SF (Employment) = (Excess VMT Per Employee X Employment Capacity[1] X Cost to Reduce VMT[2]) / Total Square Feet
Cost Per SF (Retail)[3] = (Trip Generation[4] X Trip Length[5] X Cost to Reduce VMT[2]) / Total Square Feet

Notes:
[1]Based on City of San Diego Square Fee Per Employee Standards (See Land Use tab of the calculator)
[2]Cost to reduce VMT is established by the Active Transportation In Lieu Fee Program Nexus Study
[3]Note: Retail uses under 100,000 sf (including existing and near-by uses) are exempt from the fee
[4]Trip Generation Rates are derived from Table 7 of the City of San Diego Land Development Code – Trip Generation Manual
[5]Trip lengths were derived from the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region

Total Cost

The last column displays the total fee that will be assessed for the specific land use type.

Land Use Exempt?	Cost Per Unit	Cost Per SF	Total Cost
No	$23,485	$0	$1,174,240
No	$0	$0	$0
No	$0	$30	$604,961
	$23,485	$20	$1,779,202

The total fee associated with a specific land use is derived based on the number or units or square feet of the land use, multiplied by its respective unit cost. The total fee assessed to the project, for all land uses, is summed at the bottom of the table. This is the total amount in which the project will need to pay for their Active Transportation In Lieu fee.

2.5 Opt-In Fee

The Opt-In Fee section of the calculator determines the total fee in which a project located within Mobility Zones 2 or 3 would need to pay In Lieu of implementing their required VMT Reduction Measure points. This is shown at the bottom of the Calculator in the table below:

Project Opt-In Fee Calcualtion	Additional Points Needed:	5
	Opt-In Fee:	$146,160

The Opt-In Fee is calculated based on the base fee rate (per VMT) multiplied by the number of VMT Reduction Measure points needed (5 for Mobility Zone 2 and 8 for Mobility Zones 3) multiplied by the total project VMT (shown under the VMT efficiencies section of the sidebar calculation panel). It should be noted that projects located in the Downtown Community are exempt from the required VMT Reduction Measures.

3.0 Back End Work Sheet Instructions

The following sections outline the information and capabilities that are provided to City staff through both the Additional Information and the Override tabs within the Calculator.

3.1 Additional Information

The Additional Information tab displays project specific information that is used to derive the outputs displayed on the Calculator tab and ultimately calculate the fee that will be assessed to a project. This additional detail is provided to assist staff in their project analysis or to answer questions an applicant may have. This information is displayed in the table shown below. It should be noted that no information should be inputted or changed on this tab. All project information should be inputted on the Calculator tab.

Land Use Category	Specific Land Use	Units[1]	Size (sf)[2]	Project Totals Population	Project Totals Employees	Total VMT Residential	Total VMT Employment	Total VMT Retail	Cost Per Unit	Cost Per SF
Residential	Multi-Family	50	950	111		2,510	0	0	$23,485	$0
Retail	Arterial Commercial		10,000			0	0	1,548	$0	$0
Office	Medical Office		20,000		50	0	1,492	0	$0	$30
						0	0	0	$0	$0
						0	0	0	$0	$0
						0	0	0	$0	$0
						0	0	0	$0	$0
						0	0	0	$0	$0
						0	0	0	$0	$0
						0	0	0	$0	$0
Total				111	50	2,510	1,492	1,548		

Land Use Data

The project's land use information (pulled from the Calculator Tab) is provided in the first 4 columns of the table. This information is only provided for reference.

Land Use Category	Specific Land Use	Units[1]	Size (sf)[2]
Residential	Multi-Family	50	950
Retail	Arterial Commercial		10,000
Office	Medical Office		20,000
Total			

Project Totals

Project Totals	
Population	Emplyees
111	
	50
111	50

The projected number of residents or employees, for each specific land use, is calculated in the fifth and sixth columns of the tables, respectively.

As noted previously, the number of residents is derived based on the City's Residential Scaling analysis and methodology (see Res Scaling tab), while the projected employment is calculated based on the City of San Diego Square Fee Per Employee Standards (see Land Use Data tab).

Total VMT

Total VMT		
Residential	Employment	Retail
2,510	0	0
0	0	1,548
0	1,492	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
2,510	1,492	1,548

The total VMT associated with each specific land use is displayed in columns seven through nine. Total VMT is calculated as follows for each VMT type:

- *Residential VMT* = Total Population multiplied by the Project site VMT per Capita
- *Employment VMT* = Total Employees multiplied by the Project site VMT per Employee
- *Retail VMT* = Associated Trip Generation[1] multiplied by the Associated Trip Length[2]

Notes:

[1]Trip Generation Rates are derived from Table 7 of the City of San Diego Land Development Code – Trip Generation Manual

[2]Trip lengths were derived from the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region.

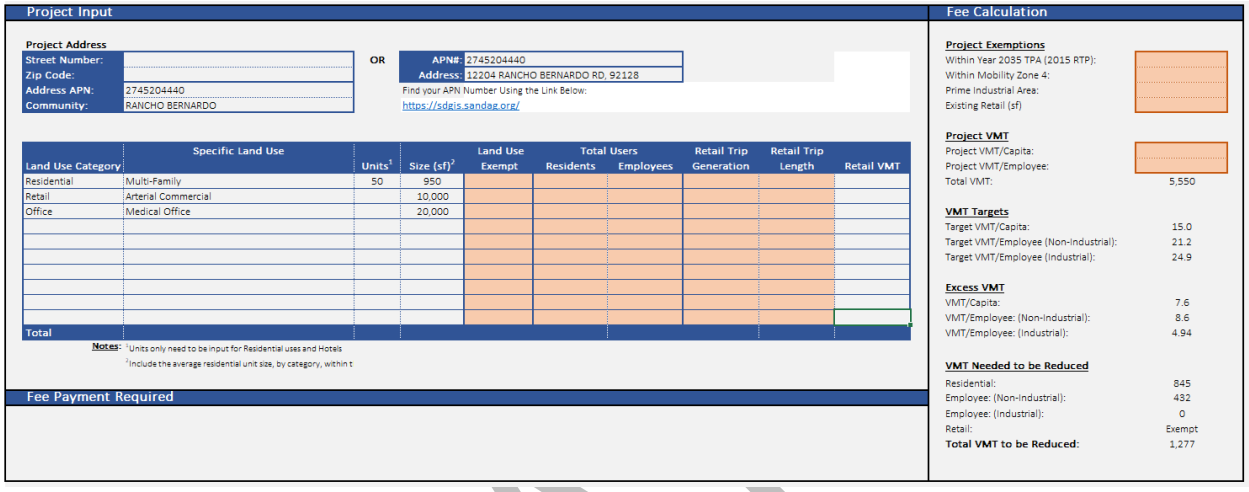
Cost

Cost	
Per Unit	Per SF
$23,485	$0
$0	$0
$0	$30
$0	$0
$0	$0
$0	$0
$0	$0
$0	$0
$0	$0
$0	$0

Finally, the last two columns display the fee to be assessed on a per unit or square foot bases, respectively. This is calculated the same way as what was described previously for the Calculator tab; however, the numbers in this tab do not change if a fee cap is placed on any specific land use type. Fee caps are discussed further in the Land Use tab (Section 4.2).

3.2 Input Overrides

The ability to override certain functions and inputs within the Calculator is provided to City staff through the Override tab. Through this tab, City staff has the ability to manually input any value in the highlighted orange cells below. Overrides should only be used if the project applicant or City itself provide substantial evidence that would supersede the inputs and assumptions that are already contained in the Calculator.



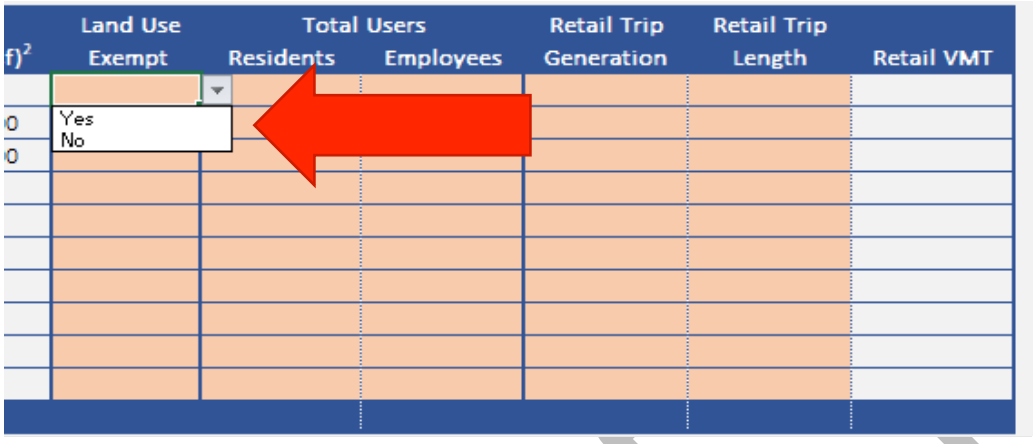
Note: All overrides or the values affected by them will show up in orange text on the Calculator tab, as shown below:

Land Use Exempt?	Cost Per Unit	Cost Per SF	Total Cost
No	*$21,319*	$0	$1,065,950
No	$0	$0	$0
Yes	$0	$0	$0
	$21,319	$0	$1,065,950

If an override needs to be undone, then just delete the data from the relevant cell and leave the cell blank. This will set the value back to default on the Calculator tab.

Land Use Exempt

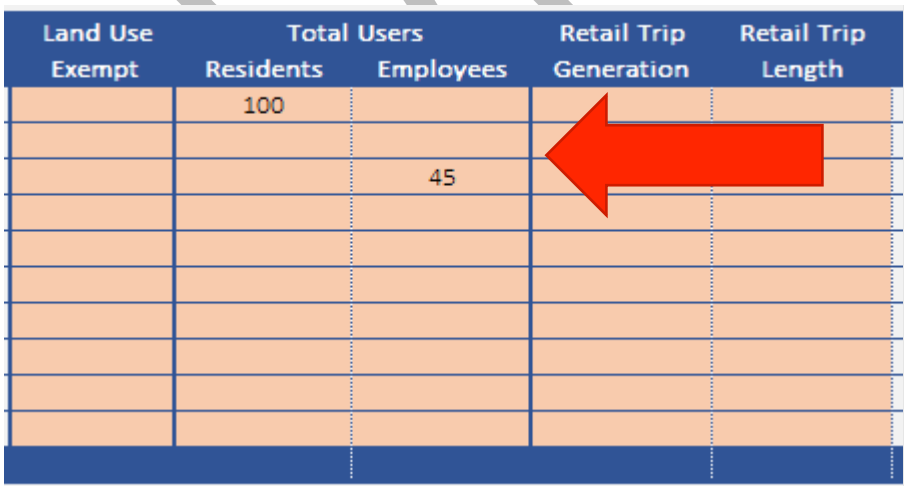
Specific land uses can be exempted or unexempted through the Override tab, as shown below:



This function will override all exemptions including land use type and location. However, it should be noted that if a retail land use needs to be unexempted due to the presence of existing retail, this function will not work. This should be overridden through the Existing Retail cell, discussed in the subsequent portions of this section.

Total Users

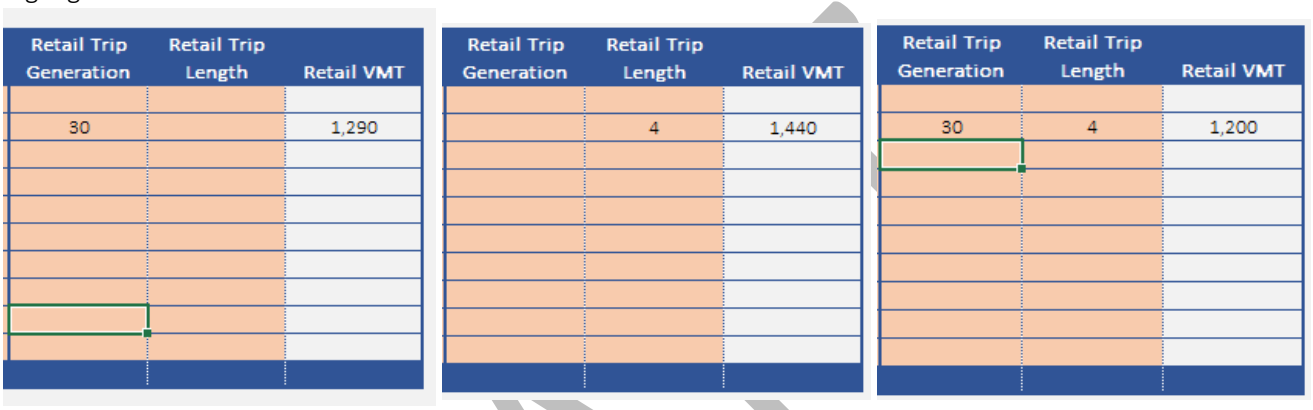
Both the total number of employees and the total number of residents that are associated with specific land use can be manually inputted through this tab as well. However, it should be noted that the fee is not based on the number of residents or employees in which the land uses are planning to serve, instead, the fee is based on the number of employees in which the land uses have the capacity to serve. Therefore, these land uses should only be overridden if the applicant can provide substantial evidence that the building footprints or features unique to their project can only serve the number of users that are projected.



Finally, it should be noted that the number of employees does not apply to retail uses or lodging use since the fee for these uses are calculated based on the total VMT generated and number of units, respectively.

Retail VMT

The fee assessed to retail uses is based on the total VMT in which they are anticipated to generate, which is calculated based on their anticipated trip generation multiplied by their average trip length. As noted in the previous section these values are derived from Table 7 of the City of San Diego Land Development Code – Trip Generation Manual and SANDAG's Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, respectively. If an applicant can provide substantial evidence that the default values for one or both of these inputs does not apply to their project, then they can be overridden in the cells highlighted below:



Retail Trip Generation	Retail Trip Length	Retail VMT
30		1,290

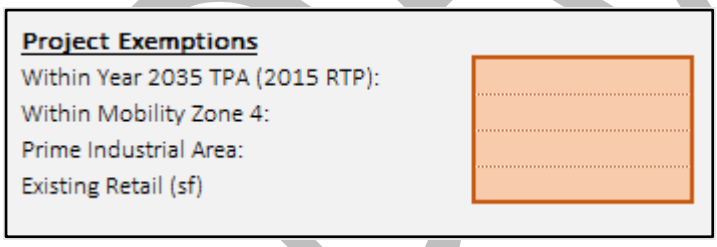
Retail Trip Generation	Retail Trip Length	Retail VMT
	4	1,440

Retail Trip Generation	Retail Trip Length	Retail VMT
30	4	1,200

It should be noted that trip generation rates should be inputted as the trip generation rate per 1,000 sf of the associated retail use.

Location Specific Exemptions

As noted in a previous section, exemptions for specific land uses can be overridden on a line by line basis. Exemptions for the project as a whole, based on location and adjacent features can also be overridden through the following cells:



Project Exemptions

Within Year 2035 TPA (2015 RTP):	
Within Mobility Zone 4:	
Prime Industrial Area:	
Existing Retail (sf)	

These override features should be used when boundary adjustments occur, transit services are provided or enhanced, or existing retail has been developed or removed.

Project VMT

The Project VMT should be overridden if the applicant was required to run a project specific SANDAG model run as part of the TIS or if the project applicant can provide other substantial evidence that their project specific VMT differs from the values provided by the Calculator.

Project VMT

Project VMT/Capita:	
Project VMT/Employee:	
Total VMT:	5,202

4.0 Assumptions and Universal Inputs

This section reviews both the general assumptions that were utilized to develop the Calculator and where in the Calculator their associated values can be updated.

4.1 Assumptions

The data and the inputs included within the Assumptions tab should not be changed or adjusted without additional detailed study and authorization from City management. The information contained within this tab is applied Citywide and should not be adjusted on a project by project basis. Therefore, this tab is locked and should not be unlocked without proper authorization.

Table 4.1 displays the data inputs provided within the Assumptions tab and the source of the data.

Table 4.1: Assumption Inputs and Sources

Input	Value	Source	Purpose
Regional VMT/Capita	17.6 miles	SANDAG Series 13 Regional Model	Basis for the residential VMT threshold.
Regional VMT/Employee	24.9 miles	SANDAG Series 13 Regional Model	Basis for the employment VMT threshold.
Fee Rate	$1,400 / reduced VMT	City of San Diego Active Transportation In Lieu Fee Program - Nexus Study	Amount in which the fee is assessed on.
VMT/Capita Target	15.0 miles (85% of regional mean)	City of San Diego Transportation Study Manual	Threshold for residential VMT
VMT/Employee (Non-Ind) Target	21.2 miles (85% of regional mean)	City of San Diego Transportation Study Manual	Threshold for non-industrial employment VMT
VMT/Employee (Ind) Target	24.9 (regional mean)	City of San Diego Transportation Study Manual	Threshold for industrial employment VMT
TPA Year	2035	SANDAG RTP	TPA year used to establish Mobility Zone 2
Retail Local Trip Assumption	100%	None	Provides the option for the City to reduce fees associated with retail project if desired.

Other Information Provided in the Tab

Land Use Categories – These are the categories that appear in the first row of Calculator tab. These are included in this tab for organizational purposes (Do not change, remove, or move).

Exempt Communities – Exempt communities are those that were identified to be VMT efficient and therefore be located in Mobility Zone 3 by the Mobility Choices Framework Study. The yes or no values within this table affect whether the calculator identifies if a project is located within Mobility Zone 3 or 4.

Existing Retail Calculation – This is the summation of the existing retail that is located within the subdivision map in which the project is located. This is the basis for the Existing Retail data within the Calculator. This is described in further detail in Sections 5.2 and 5.3.

Project MGRA – The Master Geographical Reference Area in which the proposed project is located. This is a geo-reference point used by the SANDAG model.

4.2 Land Use Data

The Land Use Data tab houses all of the land use exemptions, employment density, trip generation, trip length and fee cap assumptions used by the Calculator. **Table 4.2** describes the data that is provided within each column of this tab.

Table 4.2: Land Use Data

Column	Data	Purpose
Use Type	Land Use Type	Used for Excel look up functions
Land Uses	Specific Land Use	Used for Excel look up functions
Employment Density	SF per Employee	Used to calculate total number of employees per for each employment-based land use included within a project
Industrial	If the land is an industrial use	Not currently being used by the calculator
Prime Industrial	Is the land use type exempt within prime industrial areas	Specific industrial land use types are exempt from paying the fee if they are located within a Prime Industrial area. An X in this column notes those uses.
100K	Retail uses exempt if they are under 100,000 SF	Not currently being used by the calculator
Trip Generation	Trip generation rate for the land use	Used to calculate retail VMT
Trip Generation Source	Source of trip generation rate	Documentation
Trip Length	Trip length associated the land use	Used to calculate retail VMT
Trip Length Source	Source of trip length	Documentation
Fee Cap	Highest fee rate in which the land use can be assessed at	Caps out the fee calculation for the specific use. It should be noted that no fee caps have been established at this point.

5.0 Data Sources

This section outlines and documents the major data sources in which the Calculator is built upon. This data should only be changed during the Calculator Update process, described in Section 6.0.

5.1 Residential Scaling

All information contained in the Residential Scaling tab was derived from the City of San Diego Residential Scaling Analysis and Methodology Memo. **Table 5.1** outlines the major features and data provided within this tab.

Table 5.1: Residential Scaling Data

Feature / Input	Source	Purpose
Fee Cost	Excess Per Capita VMT x Fee Rate	Establishes the fee cost per resident for the proposed project.
Max People Per HH	Residential Scaling Analysis and Methodology Memo	Establishes the maximum fee that can be assessed for each unit type. The City established residential fee scaling caps at 2,500 SF for single family units and 1,250 sf for multi-family units.
Single Family	Residential Scaling Analysis and Methodology Memo	Residential scaling methodology identifies that there are projected to be 3.4 persons per household for a single-family unit that is 2,500 sf.
Multi-Family	Residential Scaling Analysis and Methodology Memo	Residential scaling methodology identifies that there are projected to be 2.6 persons per household for a multi-family unit that is 1,250 sf.
Senior Housing	Census Data	Census data indicates that for households in which the head of household is over 55-year-old, there is an average of 1.9 people per household.
Group Quarters	None	It is assumed one person per bed for group quarters
Max Cost Per Unit	Max People Per Household X Fee Cost	Establishes the maximum fee per unit type for the proposed project.
Overridden Cost	(Override # of Residents X Fee Cost) / # of Units	Calculates the cost per units when an override is inputted. It should be noted that for overrides the Residential scaling methodologies are not applied.
Multi Family Values	(Project Residents / Max Residents) X Max Cost Per Unit	Used to calculate the project fee based on unit size
Single Family Values	(Project Residents / Max Residents) X Max Cost Per Unit	Used to calculate the project fee based on unit size
Senior Housing Values	(Project Residents / Max Residents) X Max Cost Per Unit. However, if the multi-family fee is lower it defaults to multi-family fee.	Used to calculate the project fee based on unit size
Project Look Up Table	Cost per unit for specific land use in associated table line.	Identifies fee per unit for the project to be used in the calculator. Note this is used for Excel look up purposes.

5.2 Address Data (Parcel Data)

The data provided in the Address tab is derived from the SanGIS Parcel Shapefile, which provides coverage of every parcel within the City of San Diego. To keep the file size of the Calculator's dataset manageable, not all fields within the SanGIS parcel shapefile are included within the Address Data tab,

only the critical fields. Some fields within the tab were joined spatially to the parcel data from other shapefiles (highlighted in the tab in blue) and others are based on coded functions in excel (highlighted in the tab in orange). **Table 5.2** describes the attributes of each field within the Address Data tab and their source .

Table 5.2: Address Fields and Attributes

Field	Attribute	Source
APN	Assessor's Parcel Number	SanGIS Parcel Shapefile
PARCELID	Parcel's Identification Number	SanGIS Parcel Shapefile
ADRESS_#	Parcel's street address number	SanGIS Parcel Shapefile
SITUS_PRE_	Directional prefix of parcel roadway (not always provided)	SanGIS Parcel Shapefile
STREET	Street in which the parcel is located	SanGIS Parcel Shapefile
STREET_SFX	Parcel's street suffix (Rd, Dr, Ln, etc.)	SanGIS Parcel Shapefile
ZIP_CODE	Parcel's zip code	SanGIS Parcel Shapefile
LEGLDESC	Legal description of the parcel based on tentative map	SanGIS Parcel Shapefile
ACREAGE	Parcel's size in acres	SanGIS Parcel Shapefile
ASR_LANDUS	Parcel's land use code	SanGIS Parcel Shapefile
NUCLEUS_US	Parcels detailed land use code	SanGIS Parcel Shapefile
UNITQTY	Number of units currently constructed on the parcel	SanGIS Parcel Shapefile
SUBMAP	Number of the subdivision map in which the parcel was created	SanGIS Parcel Shapefile
SUBMAP RETAIL	Total existing retail (SF) located on the parcel	Formula
SUBNAME	Name of the subdivision map in which the parcel was created	SanGIS Parcel Shapefile
TOTAL_LVG_	Total living area that is currently constructed on the parcel	SanGIS Parcel Shapefile
USABLE_SQ_	Usable square feet of building space constructed on the parcel	SanGIS Parcel Shapefile
TPA2020	Indicates if the parcel is located in a 2020 TPA. 1 = Yes 0 = No	SanGIS TPA Shapefile
CPA	Community Planning Area the parcel is located in	SanGIS CPA Shapefile
MGRA	Master Geographic Reference Area the parcel is located in	SANDAG Series 13
TPA2035	Indicates if the parcel is located in a 2035 TPA. 1 = Yes 0 = No	SanGIS TPA Shapefile
PrimeInd	Indicates if the parcel is located in a Prime Industrial Land. 1 = Yes 0 = No	SanGIS Prime Industrial Lands Shapefile
Address	Complete parcel address.	Formula
APN(#)	APN number in number format instead of text format.	Formula

5.3 Retail Codes

The Retail Codes tab contains a table that indicates which NUCLEUS_US (see Table 5.2) should be included in the Existing retail calculation (SUBMAP RETAIL).

5.4 VMT Data

The VMT Data tab contains the estimated VMT per resident and employee by Census Tract derived from the SANDAG model. Table 5.3 describes the attributes of each field within this tab (all are sourced from the SANDAG model). SANDAG does not provide the VMT per capita data by MGRA, so processing steps (described in Section 6.2) are required to convert the data into that geography.

Table 5.3: VMT Fields and Attributes

Field	Attribute
MGRA	Master Geographic Reference Area in which the VMT data can be attributed to
home_tract	Census Tract number in which the residential VMT data can be attributed to
Residents	Number or residents assumed within the associated home tract
Residentialvmt	Total daily VMT generated by the residents within the associated census tract
VMTpercapita	Average VMT per Capita within the associated census tract
home_tra_1	Census Tract number in which the employment VMT data can be attributed to
employees	Total number of employees located within the associated census tract
commercialvmt	Total daily VMT generated by employees within the associated census tract
VMTperemployee	Average VMT per employee within the associated census tract

The information within this tab should be based on the most current SANDAG base year model, unless otherwise determined by the City that a different model is more suitable.

6.0 Maintaining the Calculator

This section outlines when and how the Calculator should be maintained to keep up with changing transportation and land use conditions. There are five data inputs to the calculator that should be refreshed with newer datasets on an occasional basis:

- Fee Rate (Assumptions tab)
- Regional VMT inputs (Assumptions tab)
- VMT Data (VMT Data tab)
- Parcel Shapefile (Address Data tab)
- TPA Shapefile

The following sub-sections outline when and how this data should be updated. It is highly recommended that the person(s) updating the tool have a strong familiarity with both excel and GIS.

6.1 When to Refresh the Data Inputs

Most of the data inputs and assumptions within the calculator do not need to be refreshed on a regular basis. Any data or assumption contained within the calculator that is not outlined within this chapter should only be refreshed when a specific study or policy change has identified the need for an update. However, the following five datasets should be updated based on the timelines or milestones outlined below:

Fee Rate (Assumptions tab) – As noted in the Fee program's nexus study, it is recommended that the fee rates be indexed annually based on the "Los Angeles Construction Cost Index" (LACCI) derived by Engineering News Record (using an existing base of 12,144.49, January 2020), in order to keep up with future increases in the cost of construction. The fee should be indexed with the start of the new Fiscal Year (July 1st) each year. The revised annual fee should be coded manually within the Assumptions tab, see Section 4.1 for further detail.

Regional VMT inputs (Assumptions tab) – The regional VMT inputs should be updated whenever SANDAG releases a new transportation model series or conducts a major update to the current series base year model which significantly changes the regional VMT thresholds. Additionally, the VMT thresholds should also be updated if the City or State revise their transportation guidelines and the currently assumed thresholds are no longer current.

VMT Data (VMT Data tab) - The VMT data inputs should be updated whenever SANDAG releases a new model series or conducts a major update to the current series base year model. Steps to complete this process are described in Section 6.2.

Parcel Shapefile (Address Data tab) – The SanGIS parcel shapefile is updated with the latest property changes multiple times a year. However, the effort of refreshing this input within the Calculator at the same frequency may not be worth the benefits it would provide. It is recommended instead that the Parcel inputs within the Calculator be refreshed every one to two years. Steps to complete this process are described in Section 6.3.

TPA Shapefile (Address Data tab) – The TPA inputs within the Calculator should be updated with the latest coverage upon the adoption of a new Regional Transportation Plan (RTP), or when a Regional Transportation Congestion Improvement Program (RTCIP) or new transportation model series is

released. Updates to these items are typically scheduled to occur in unison every four to five years. Since TPA coverage is joined spatially with the Parcel shapefile (see Section 5.2) it is recommended that the Parcel fields also be refreshed with the latest shapefile whenever the TPA input is refreshed. Steps to complete this process are provided in Section 6.3.

6.2 VMT Data

When starting the update process the citywide VMT data for base year conditions should be requested from SANDAG by MGRA. Currently, SANDAG only provides this data at the Census Tract geography. However, if SANDAG can provide the data at the MGRA geography, then the need for several processing steps could be eliminated and by allowing the data to be input directly into the VMT Data tab (see Step Four). If the VMT data is ever provided by MGRA directly, then leave the census tract inputs within the Calculator blank instead of deleting. Deleting these columns all together will invalidate some of the reference functions that are built into the calculator.

Information to request from SANDAG:

- Citywide base year VMT data from the current regional model by MGRA (ideally) or by Census Tract.
- Current MGRA shape file (not needed if VMT data is provided by MGRA).

Other Shapefiles Needed:

- City of San Diego Boundary shapefile
- Census Tract shapefile (see comments)

Step One – Import the MGRA shapefile into ArcMap. Spatial join[4] the MGRA shapefile to the Census Tract shapefile containing the VMT data received from SANDAG so that the VMT attributes (by census tract) are transferred to the MGRAs. The spatial join match option should be set to *HAVE_THEIR_CENTER_IN*, to ensure the join is based on the MGRA centroid to Census Tract. MGRAs are a smaller geography than Census Tracts, adjacent groupings of MGRAs will comprise the same area of a single Census Tract and those MGRAs will have identical VMT data based on the common Census Tract.

Step Two – If the MGRA dataset used in the earlier steps includes MGRAs outside of the City of San Diego, use the City's boundary shapefile to extract a shapefile of only the MGRAs within the City, otherwise disregard this step

Step Three – Open a blank excel file, then drag and drop the dbf file associated with the MGRA shapefile in the previous step from windows explorer into the excel file. A new tab should appear with the information contained in the dbf file. Save this as an excel file for back up.

Step Four – One by one, copy and paste the relevant columns, in their entirety, from the excel file created in Step Three into the Calculator. The field names in the Calculator should match those from the dbf;

[4] ArcToolbox/Analysis Tools/Overlay/Spatial Join

however, if there are inconsistencies then see Table 5.3 for reference. Since the MGRA data and census tract data will most likely not be in the same order in the dbf/excel file as they currently are within the Calculator, it is important that the data within each column in the tab is replaced with new data. It is permissible if the data is not inputted into the Calculator in the same order as it was originally; however, the different columns reference each other so that data inputted into each column of must be in the same order as the other columns.

After all the attributes are pasted into the VMT data tab, the refresh of VMT inputs is complete.

6.3 Parcel Data

The Calculator should be refreshed with the latest parcel shapefile downloaded from SanGIS[5] at least every two years. Download the full Parcel database for the region (Parces.zip) which contains all the parcels within the City. Do not download one of the geographic subareas, otherwise your dataset will be incomplete.

Shapefiles Needed:

- Parcels – SanGIS
- City of San Diego Community Planning Areas (CPAs) – SanGIS
- Prime Industrial Lands – SanGIS
- MGRAs – SANDAG
- TPA Coverage Areas (For the relevant year based on City Policy) – SanGIS

Step One – Import the parcels shapefile and the CPAs shapefile into ArcMap. Spatial join[6] the parcels shapefile to the City of San Diego CPA shapefile so that the CPA attribute is transferred to the parcels. The spatial join match option should be set to *HAVE_THEIR_CENTER_IN*, to ensure the join is based on the parcel centroid to CPA. Exclude all parcels outside of the City (those parcels will be identifiable by having a blank field in the CPA attribute).

Step Two – Import the Prime Industrial Lands shapefile into ArcMap. Create a new field short integer field in the parcels shapefile attribute table for Prime Industrial Lands. Use Select by Location to query a selection of all parcels (target layer) overlapping with the prime industrial lands shapefile (source layer). The spatial selection method should be set to "have their centroid in". For the selected features, use Field Calculator to input a 1 in the new Prime Industrial Lands field that was created. All other features not selected will remain 0.

Step Three – Spatial join[7] the parcels shapefile modified in the previous two steps to the MGRA shapefile so that the MGRA identification is transferred to the parcels. The spatial join match option should be set to *HAVE_THEIR_CENTER_IN*, to ensure the join is based on the parcel centroid to MGRA.

[5] www.sangis.org
[6] ArcToolbox/Analysis Tools/Overlay/Spatial Join
[7] ArcToolbox/Analysis Tools/Overlay/Spatial Join

Step Four – Import TPA area coverage into ArcMap. Create a new field short integer field in the parcels shapefile attribute table for TPAs. Use Select by Location to query a selection of all parcels (target layer) overlapping with the TPA coverage shapefile (source layer). The spatial selection method should be set to "have their centroid in". For the selected features, use Field Calculator to input a 1 in the new TPA field that was created. All other features not selected will remain 0.
Step Five - Open a blank excel file, then drag and drop the dbf file associated with the parcels shapefile modified in the previous steps from windows explorer into the fresh excel file. A new tab should appear with the information contained in the dbf file. Save this as an excel file for back up.

Step Six – One by one, copy and paste the relevant columns from the excel file created in Step Five into the Address data tab of the Calculator. The field names in the Calculator should match those from the dbf; however, if there are inconsistencies then see Table 5.2 for reference. Since the parcel data will most likely not be in the same order in the dbf/excel file as they currently are within the Calculator, it is important that the data within each column is replaced with new data. It is permissible if the data is not inputted into the calculator in the same order as it was originally; however, the different columns reference each other so that data inputted into each column of this tab most be in the same order as the other columns.

Additional note: The relevant TPA data should be pasted into the 2035 TPA column, if secondary TPA information is needed or provided, it should be pasted into the 2020 TPA data.

7.0 Calculator Testing

To ensure the accuracy and usability of the tool, the calculator underwent a rigorous testing process. Beta versions of the tool were tested by numerous user groups to identify any issues or bugs within the Calculator or its functions. Table 7.1 displays the functions of the calculator that were tested and the associated test results.

Function	Test	Results	Pass
APN Look Up	Inputted random APNs from various parts of the City.	The Calculator was able to pull data for all APNs identified.	☑
Address Look Up	Inputted random addresses from various parts of the City.	The Calculator was able to pull around 75% of the addresses inputted. However, the addresses that could not be found were due to issues with the parcel database and not the Calculator's functions.	☑
VMT Look Up	Checked VMT output vs the SANDAG 720 Concept map.	All VMTs pulled correctly	☑
Employment Density Check	Checked the total employment outputs from the Calculator, for various land use types, to hand calculations using the City's employment density.	All employment calculations by the Calculator were correct.	☑
Residential Unit Cost Check	Compared the residential cost per unit from the Calculator to hand calculations using the City's Residential Scaling methodology.	All calculations came up correctly in the calculator.	☑
Retail VMT Check	Compared the total retail VMT from the Calculator, for various land use types, vs hand calculations using the City's Trip Generation Manual and SANDAG trips lengths	All retail VMT calculations in the calculator were correct.	☑
TPA Location Check	Checked to ensure that the Calculator was able to determine if a parcel was located in a 2035 TPA.	The Calculator correctly identified if all of the APNs inputted were correctly located within a TPA or not.	☑

Function	Test	Results	Pass
Mobility Zone 4 Check	Checked to ensure the Calculator is able to identify if a parcel is located in a Mobility Zone 4 Community.	The Calculator correctly identified all of the APNs inputted were correctly located within Mobility Zone 4 or not.	☑
Existing Retail Check	Checked to ensure that the existing retail output for the Calculator was correctly pulled for each parcel and their associated tentative map.	All existing retail was correctly pulled; however, it was found that some parcels tentative maps are too expansive which may cause issues for this function.	☑
Land Use Exemption Check	Verified that fees for the land uses that were identified as exempt were not calculated.	The calculator did not generate fees for any exempt land uses.	☑
Retail over 100,000 SF Check	Verified that the Calculator did not calculate fees for retail uses under 100,000 (including existing retail).	The calculator did not generate fees for any retail uses under 100,000 sf.	☑
Override Test	Checked to ensure that the features in the Override tab operate correctly.	All functions on the Override tab operate correctly.	☑