Transportation Capital Expansion Fee Study

Prepared for:

Larimer County, Colorado

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Table of Contents

List of Figures

List of Tables

Executive Summary

The 2026 Transportation Capital Expansion Fee (TCEF) study was prepared by the consultant team of Felsburg Holt & Ullevig (FHU) and subcontractor DP Guthrie LLC. Larimer County staff provided extensive input to the updated TCEF, which is a type of development impact fee. These fees are one-time payments imposed on new development that must be used solely to fund growth-related capital projects, typically called "system improvements". An impact fee represents new growth's proportionate share of capital facility needs. In contrast to project-level improvements, impact fees fund infrastructure that will benefit multiple development projects, or even the entire service area. There must be a reasonable relationship between new development and the need for growth-related infrastructure. Project-level improvements, typically specified in a development agreement, are usually limited to improvements within or near a proposed development, such as ingress/egress lanes. By law, impact fees can only be used for *capital* improvements, not operating or maintenance costs. Impact fees are subject to legal standards that satisfy three key tests: ***need, benefit, and proportionality***.

- First, to justify a fee for public facilities, local government must demonstrate a **need** for capital improvements.
- Second, new development must derive a **benefit** from the payment of the fees (i.e., public facilities constructed within a reasonable timeframe).
- Third, the fee paid should not exceed a development's **proportionate** share of the capital cost.

As documented in this report, Larimer County has complied with applicable legal precedents. Impact fees are proportionate and reasonably related to the capital improvement demands of new development, with the projects identified in this study consistent with Larimer County's long-range comprehensive plan and recent transportation master plan update. Specific costs have been identified using local data and current dollars from the County's transportation plan. With input from County staff, the consultant team determined service units for each type of infrastructure and calculated proportionate share factors to allocate costs by type of development. This report documents the formulas and input variables used to calculate the 2026 Transportation Capital Expansion Fees (TCEF).

Unique Requirements of the Colorado Impact Fee Act

For local governments, the first step in evaluating funding options for capital improvements is to determine basic options and requirements established by state law. Some states have more conservative legal parameters that basically restrict local government to specifically authorized actions. In contrast, "home-rule" states grant local governments broader powers unless precluded or preempted by state statutes. Although Colorado is a "home-rule" state and home-rule municipalities were already collecting "impact fees" under their home-rule authority granted in the Colorado Constitution, the Colorado Legislature passed enabling legislation in 2001, as discussed further below.

According to Colorado Revised Statute Section 29-20-104.5, impact fees must be legislatively adopted at a level no greater than necessary to defray impacts generally applicable to a broad class of property. The purpose of impact fees is to defray capital costs directly related to proposed development. Impact fees do have limitations and should not be regarded as the total solution for infrastructure funding. Rather, they are one component of a comprehensive portfolio to ensure adequate provision of public facilities. Because system improvements are larger and more costly, they may require bond financing and/or funding from other revenue sources. To be funded by impact fees, Section 29-20-104.5 requires capital improvements to have a useful life of at least five years. Also, development impact fees cannot be used to repair facilities or correct deficiencies in existing infrastructure.

Fee Methods and Cost Components

There are three general methods for calculating development fees. The choice of method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each method has advantages/disadvantages and can be used simultaneously for different cost components. The process of calculating development impact fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, development fees are complicated due to many variables involved in defining the relationship between development and the need for facilities within the service area. The following paragraphs discuss three basic methods for calculating development fees and how those methods can be applied.

- The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- The incremental expansion method documents current infrastructure standards for each type of public facility, using both quantitative and qualitative measures. If current standards are used, there is no existing infrastructure deficiency or surplus capacity, and new development is only paying its proportionate share to maintain current standards for growth-related infrastructure. Fee revenue will be used to expand or provide additional facilities, as needed to keep pace with new development.
- The plan-based method allocates costs for a specified set of improvements to a specified amount of service units. Improvements are typically identified in an infrastructure master plan and development potential is identified by land use assumptions. There are two options for determining the cost per service unit: 1) total cost of a public facility can be divided by total demand units (average cost approach), or 2) the growth-share of the public facility cost can be allocated to the net increase in demand units over the planning timeframe (marginal cost approach).

Table 1 summarizes the methods and cost components used for transportation infrastructure in Larimer County's 2026 TCEF study.

Table 1: Summary of Larimer County TCEF Methodology and Cost Components

Service Area	Incremental Expansion Method	Cost Allocation
Unincorporated Larimer County	Capacity Expansion of Non-Regional Arterials and Improved Intersections	Vehicle Miles of Travel on Non-Regional Arterials
Unincorporated Area and Fort Collins	Capacity Expansion of Regional Roads	Vehicle Miles of Travel on Regional Roads

Proposed 2026 TCEF

Proposed fees for residential and nonresidential development are listed in Table 2. Residential fees per dwelling unit are shown for seven size thresholds, based on climate-controlled living space (i.e., excludes garages and outdoor patios/porches). Fees for nonresidential development are listed per thousand square feet of floor area, except for Mini Warehouse/Self Storage that will be imposed per acre. Fewer and more general nonresidential categories make transportation fees easier to administer and minimizes the need to recalculate fees for land use changes.

The 2026 TCEF study includes a new category for Warehousing/Agricultural development that has a lower fee amount than Industrial/Manufacturing. Warehousing/Agricultural buildings typically have large floor area but a small number of employees, with access designed to accommodate large trucks. This development category is appropriate for agricultural businesses, such as food processing. Out buildings (e.g., barns) on residential property are ancillary to the primary use and should not be assessed a fee for transportation capacity expansion. Other examples of ancillary uses are parking garages and clubhouses within an apartment complex.

Industrial/Manufacturing includes all buildings used for goods production and supply chain land uses, such as transportation, communications, and utilities.

Commercial/Retail/Restaurant includes all shopping centers, establishments that sell merchandise, and all eating/drinking places. Entertainment uses often located in a shopping center (e.g., movie theater) are included in this category.

Office & All Other Services includes business services such as banks, plus personal services, such as health care. Also included in this category are lodging (e.g., hotel), public, and quasi-public buildings that provide educational, social assistance, or religious services.

Changes in trip generation rates (published by the Institute of Transportation Engineers) are the primary reason for the relative changes in TCEF amounts for the three existing types of nonresidential development. Current TCEF amounts are based on a 2018 study, with annual construction cost increases derived from CDOT indices. The 2018 study was based on the cost of additional capacity for County arterials and regional roads. The 2026 study adds the cost of intersection improvements to the proposed TCEF schedule. Elected officials may tailor the proposed fees by eliminating fee components, adopting a percentage of the fees, or phasing in fees over multiple years.

Table 2: 2026 Proposed TCEF Schedule

Development Type	Non-Regional Arterials	Non-Regional Intersection Improvements	Regional Roads	PROPOSED TOTAL 2026 TCEF	CURRENT TOTAL TCEF	Increase or Decrease	Percent Change
Residential (per dwelling) by Sq Ft of Finished Living Space							
900 or less	$3,098	$521	$237	**$3,856**	$3,501	$355	10%
901 to 1300	$4,291	$721	$328	**$5,340**	$4,906	$434	9%
1301 to 1800	$5,138	$864	$393	**$6,395**	$5,912	$483	8%
1801 to 2400	$5,934	$998	$453	**$7,385**	$6,924	$461	7%
2401 to 3000	$6,564	$1,104	$502	**$8,170**	$7,768	$402	5%
3001 to 3600	$7,082	$1,191	$541	**$8,814**	$8,459	$355	4%
3601 or more	$7,517	$1,264	$575	**$9,356**	$9,037	$319	4%
Nonresidential (KSF = square feet of floor area in thousands							
Mini Warehouse/Self Storage (per acre)	$9,635	$1,620	$737	**$11,992**			
Warehousing/Agricultural (per KSF)	$801	$134	$61	**$996**	$2,150	-$1,154	-54%
Industrial/Manufacturing (per KSF)	$1,580	$265	$120	**$1,965**	$2,150	-$185	-9%
Commercial/Retail/Restaurants (per KSF)	$7,918	$1,332	$605	**$9,855**	$9,069	$786	9%
Office & All Other Services (per KSF)	$5,082	$855	$388	**$6,325**	$5,337	$988	19%

Transportation Capital Expansion Fee

In the 2026 study, Transportation Capital Expansion Fees (TCEF) are derived using the incremental expansion cost method. As shown in the formula below, the transportation fee is the product of Vehicle Miles of Travel (VMT) per development unit multiplied by the capital cost per VMT.

TCEF = VMT per development unit

Multiplied by

Captial Cost per VMT
(for multiple types of transportation improvements)

VMT is the product of trip generation rate per development unit, multiplied by trip rate adjustment factor, travel distance (in miles) on system improvements, and trip-length weighting factor. The capital cost per VMT is based on the projected ten-year growth cost of transportation improvements, including County arterials, intersection improvements, and regional roads. Each component is described below.

Trip Generation Rates

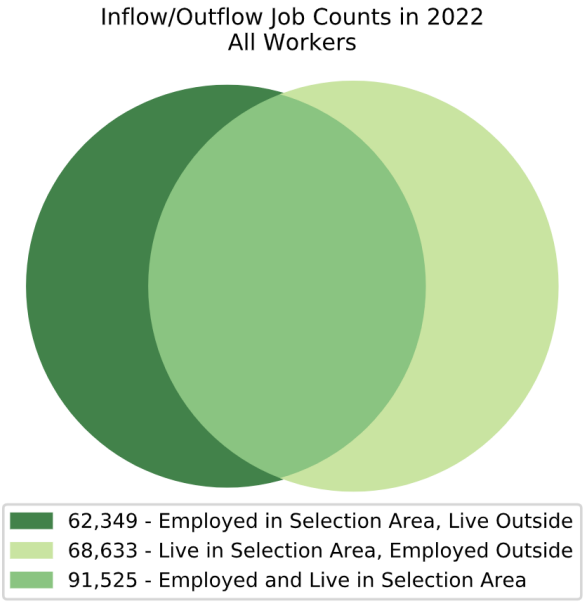
Transportation capacity expansion fees in Larimer County are based on Average Weekday Vehicle Trip Ends (AWVTE). Trip generation rates are from *Trip Generation* published by the Institute of Transportation Engineers (ITE 11th Edition 2022), except for the trip rate per acre for Mini Warehouse/Self Storage. For the TCEF study, FHU proportionately decreased the Mini Warehouse rate per acre from the 9th edition of *Trip Generation*, consistent with the decrease over time in trips per thousand square feet of building floor area, as documented in the 11th edition.

A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate transportation fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50%. As discussed further below, the TCEF methodology includes additional adjustments to make the fees proportionate to infrastructure demand for particular types of development.

Adjustments for Commuting Patterns and Pass-By Trips

Residential development has a larger trip adjustment factor of 54% to account for commuters leaving Larimer County for work. According to the 2022 National Household Travel Survey, home-base work trips are typically 17.1% of production trips (i.e., all out-bound trips, which are 50% of all trip ends). As shown in Figure 1, the Census Bureau's web application OnTheMap indicates that 42.9% of resident workers traveled outside Larimer County for work in 2022. In combination, these factors (0.171 x 0.50 x 0.429 = 0.04 rounded) support the additional 4% allocation of trips to residential development.

Figure 1: Inflow/Outflow Analysis



Inflow/Outflow Job Counts (All Jobs)

Job	2022 Count	2022 Share
Employed in the Selection Area	153,874	100.0%
Employed in the Selection Area but Living Outside	62,349	40.5%
Employed and Living in the Selection Area	91,525	59.5%
Living in the Selection Area	160,158	100.0%
Living in the Selection Area but Employed Outside	68,633	42.9%
Living and Employed in the Selection Area	91,525	57.1%

For Commercial/Retail/Restaurants, the trip adjustment factor is less than 50% because these developments attract vehicles as they pass by on arterial roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, the ITE data indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66% multiplied by 50%, or approximately 33% of the trip ends for an average-size shopping center.

Vehicle Miles of Travel

A Vehicle Mile of Travel (VMT) is a measurement unit equal to one vehicle traveling one mile[1]. In the aggregate, VMT is the product of vehicle trips multiplied by the average trip length. The 2026 TCEF study includes the projected need for system improvements to maintain existing infrastructure standards for County arterials, improved intersections and regional roads. Each needs analysis and their unique input parameters are described below.

Capacity Standards (vehicles per day)

The projected need for transportation capacity expansion and proposed fee amounts use capacity standards developed by FHU. For County arterials, the standard of 6,500 vehicles per lane per day is based on twelve-feet lanes with two-feet shoulders in rural areas. For regional roads, the lane capacity standard is 8,500 vehicles per day, assuming twelve-feet lanes and six-feet shoulders in urban areas. For the optional cost component for paving County roads, the needs analysis is based on centerline miles and 1,000 vehicles per day, consistent with traffic volumes documented in Larimer on the Move.

Trip Length Weighting Factor by Type of Land Use

The TCEF study include a percentage adjustment, or weighting factor, to account for trip length variation by type of land use (see Table 3). As documented by 2022 National Household Travel Survey, vehicle trips associated with residential development are approximately 120% of the average trip length. The residential trip length adjustment factor includes trips to work, social/recreational purposes and home. Conversely, shopping trips associated with commercial development are roughly 56% of the average trip length while other nonresidential development typically accounts for trips that are 81% of the average length for all trips.

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1 Typical VMT calculations for development-specific traffic studies, along with most transportation models of an entire urban area, are derived from traffic counts on particular road segments multiplied by the length of that road segment. For the TCEF study, VMT calculations are based on attraction (inbound) trips to development located in the service area, with trip length limited to the road network considered to be system improvements (i.e., County arterials, regional roads, and paved rural roads). This refinement eliminates pass-through or external- external trips, and travel on roads that are not system improvements (e.g. interstate highways and state roads).

Table 3: Trip Purpose and Weighting Factors by Type of Development

Trip Purpose Summary	*Travel Day Vehicle Trips*		*Type of Development*	*Percent of Trips*	*Average Trip Length*	*Weighting Factor*
	Annual Trips	Mean Miles				
Home	63,122,462,226	12.46	Residential			
Work	27,502,641,718	15.43	Residential			
Social/Recreational	12,976,886,647	16.38	Residential			
Subtotal	**103,601,990,591**		**Subtotal**	**64%**	**13.74**	**1.20**
Shopping/Errands	26,001,873,862	5.91	Commercial			
Meals	11,898,884,616	7.56	Commercial			
Subtotal	**37,900,758,478**		**Subtotal**	**24%**	**6.43**	**0.56**
School/Daycare/ Religious	3,998,689,680	8.89	Other Nonresidential			
Medical/Dental services	3,335,461,971	12.81	Other Nonresidential			
Transport someone	10,295,425,148	8.16	Other Nonresidential			
Something else	1,820,869,527	10.49	Other Nonresidential			
Subtotal	**19,450,446,326**		**Subtotal**	**12%**	**9.32**	**0.81**
All	160,953,195,395	11.48				

Data Source: Federal Highway Administration, 2022 National Household Travel Survey (NHTS).

DP Guthrie LLC created the tabulation with Data Explorer Tool, NHTS website at https://nhts.ornl.gov.

Projected Need for Non-Regional Arterials and Intersections

This section documents the relationship between development in unincorporated Larimer County and the need for County arterials and intersection improvements. Table 4 summarizes the input variables used to determine the utilization distance on County arterials. In the table below HU means housing units, KSF means square feet of nonresidential development, in thousands, Institute of Transportation Engineers is abbreviated ITE, and VTE means vehicle trip ends.

Development in the unincorporated area over the next ten years is discussed in detail in Appendix A and summarized in the middle section of Table 4. Trip generation rates and trip adjustment factors convert projected development into inbound weekday vehicle trips. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and possibly to a state or interstate highway. This progression of travel up and down the functional classification chain limits the utilization distance, for the purpose of the TCEF study, to the following question, "What is the average travel distance on TCEF system improvements (e.g., County arterials)?"

According to FHU, Larimer County has 94 centerline miles, which is equivalent to 188 lane miles of arterial roads. With 188 lane miles and a lane capacity standard of 6,500 vehicles per lane, County arterials have approximately 1,222,000 vehicle miles of capacity (i.e., 6,500 vehicles per lane traveling the entire 188 lane miles). To derive the average utilization (i.e., travel distance expressed in miles), divide vehicle miles of capacity by the vehicle trips attracted to development in the service area. As shown in the

bottom-left corner of the table below, existing development attracts 216,675 average weekday vehicle trips. Dividing 1,222,000 vehicle miles of capacity by inbound weekday vehicle trips yields an un-weighted utilization distance of approximately 5.64 miles. However, the calibration of utilization distance includes the same adjustment factors used in the TCEF calculations (i.e., journey-to-work commuting, commercial pass-by adjustment and average trip length adjustment by type of land use). With these adjustments, the consultant team determined the weighted-average utilization distance to be 5.41 miles on County arterials.

To maintain the current infrastructure standard of 1.54 County arterial lane miles per 10,000 vehicle miles of travel, Larimer County will need to add 22.7 lane miles of arterial capacity over the next ten years. Also, to maintain the current infrastructure standard of 0.22 improved intersections per 10,000 vehicle miles of travel, Larimer County will need to improve three additional intersections over the next ten years.

Table 4: Needs Analysis for Arterial Capacity and Intersection Improvements
(Unicorporated Larimer County)

Dev Type	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Residential	8.19	DU	54%	1.20
Industrial	3.37	KSF	50%	0.81
Commercial	37.01	KSF	33%	0.56
Office & Other Services	10.84	KSF	50%	0.81
Utilization Distance (miles)	5.41			
Lane Capacity (vehicles per day)	**6,500**	Provided by FHU, based on HCM 2025, 12' lane and 2' shoulder in rural area.		

	Year							
	Base	1	2	3	4	5	10	10-Year
Category	2025	2026	2027	2028	2029	2030	2035	Increase
Residential Units	34,233	34,613	34,996	35,385	35,778	36,175	38,228	3,995
Industrial KSF	4,807	4,869	4,933	4,997	5,062	5,128	5,470	663
Commercial KSF	2,767	2,803	2,840	2,877	2,914	2,952	3,149	382
Office & Other Services KSF	4,314	4,370	4,427	4,485	4,543	4,602	4,909	595
Residential Trips	151,399	153,079	154,773	156,494	158,232	159,988	169,067	
Industrial Trips	8,100	8,204	8,312	8,420	8,529	8,641	9,217	
Commercial Trips	33,794	34,234	34,686	35,138	35,590	36,054	38,460	
Office & Other Services Trips	23,382	23,685	23,994	24,309	24,623	24,943	26,607	
Total Vehicle Trips	216,675	219,203	221,766	224,360	226,974	229,625	243,351	
Vehicle Miles of Travel (VMT)	1,223,220	1,237,250	1,251,442	1,265,830	1,280,341	1,295,034	1,371,085	147,864
Lane Miles	188.2	190.3	192.5	194.7	197.0	199.2	210.9	22.7
Improved Intersections	27	27	28	28	28	29	30	3

Arterial centerline miles converted to lane miles (provided by FHU): 188.0 **Ten-Year VMT Increase: 10.8%**

Cost Factors for Non-Regional Arterials and Improved Intersections

As part of their work on the 2050 transportation plan for Larimer County, FHU prepared an extensive analysis of capital improvement projects for County roadways and intersections. For the 2026 TCEF study, FHU recommends a cost factor of $2,789,000 per centerline mile. Because County roads typically have two travel lanes, the rounded cost is $1.395 million per lane mile for County arterials.

In addition to lane miles, intersection improvements provide transportation capacity. Planned improvements, such as turn lanes, signalization, and roundabouts, have an average cost of $1.82 million per project (see Table 5).

Table 5: Cost of Improved Intersections with Larimer County as Anticipated Lead Agency

PROJ_ID	TRAFSECDES	PROJ_DESC	Anticipated Lead	Project Type Cost	Per Location Cost
140	CR 30 & CR 11	Improve bicycle and pedestrian connections to roundabout	Larimer County	Geometric Intersection Improvement	$1,000,000
160	CR 50E (Country Club) & CR 13)	Signalization or roundabout and widen to 6-foot shoulders or	Larimer County	Roundabout	$3,100,000
167	CR 17 & CR 54	Signalization or roundabout	Larimer County	Roundabout	$3,100,000
666	CR 13 & CR 30	Intersection improvements	Larimer County	Geometric intersection improvement	$1,000,000
664	CR 70 (Owl Canyon Rd) & CR 15	Intersection improvements including bridge on CR 15	Larimer County	Geometric intersection improvement	$1,000,000
				Larimer County Average Cost	**$1,820,000**

Proposed TCEF for Non-Regional Arterials

Table 6 summarizes Input variables and the TCEF component for County arterials. Inbound vehicle miles of travel, by type of development, are multiplied by the capacity cost per vehicle mile of travel to yield the TCEF. Based on the cost factors documented above, Larimer County will need to invest approximately $31.55 million to expand arterial capacity over the next ten years. Dividing the projected need for arterial capacity by the VMT increase over the next ten years, yields a capital cost of $213 per additional vehicle mile of travel. An example of the TCEF calculation for County arterials is shown below, using input variables for the smallest size dwelling unit.

4.13 weekday vehicle trip ends per dwelling unit
x
0.54 adjustment factor for inbound trips, including commuting adjustment
x
1.20 trip length adjustment factor for residential development
x
5.41 utilization distance (i.e., miles per trip)
x
$214 growth cost of arterials per VMT
=
$3,098 per dwelling unit (truncated)

Table 6: TCEF Component for County Arterials

Input Variables for Unincorporated Area:

Utilization Distance (i.e., miles per trip): 5.41

Lane Miles Needed Over Ten Years: 22.7

Roadway Projects Cost per Lane Mile: $1,395,000

Ten-Year Growth Cost of Arterials: $31,666,500

VMT Increase Over Ten Years: 147,864

Capital Cost per VMT: $214

Development Type	Avg Wkdy Veh Trip Ends	Trip Rate Adjustment	Trip Length Adjustment	Proposed TCEF for County Arterials
Residential (per dwelling) by Sq Ft of Finished Living Space				
900 or less	4.13	54%	120%	**$3,098**
901 to 1300	5.72	54%	120%	**$4,291**
1301 to 1800	6.85	54%	120%	**$5,138**
1801 to 2400	7.91	54%	120%	**$5,934**
2401 to 3000	8.75	54%	120%	**$6,564**
3001 to 3600	9.44	54%	120%	**$7,082**
3601 or more	10.02	54%	120%	**$7,517**
Nonresidential (KSF = square feet of floor area in thousands)				
Mini Warehouse/Self Storage (per acre)	20.55	50%	81%	**$9,635**
Warehousing/Agricultural (per KSF)	1.71	50%	81%	**$801**
Industrial/Manufacturing (per KSF)	3.37	50%	81%	**$1,580**
Commercial/Retail/Restaurants (per KSF)	37.01	33%	56%	**$7,918**
Office & All Other Services (per KSF)	10.84	50%	81%	**$5,082**

Proposed TCEF for Non-Regional Intersection Improvements

Table 7 summarizes Input variables for intersection improvements. Inbound vehicle miles of travel, by type of development, are multiplied by the capacity cost per vehicle mile of travel to yield the TCEF. Based on the cost factors documented above, Larimer County will need to invest approximately $5.46 million to improve intersections over the next ten years. Dividing the projected need for improvements by the VMT increase over the next ten years, yields a capital cost of $36 per additional vehicle mile of travel. An example of the TCEF calculation for intersection improveents is described below, using input variables for the smallest size dwelling unit.

4.13 weekday vehicle trip ends per dwelling unit

x

0.54 adjustment factor for inbound trips, including commuting adjustment

x

1.20 trip length adjustment factor for residential development

x

5.41 utilization distance (i.e., miles per trip)

x

$36 growth cost for intersection improvements per VMT

=

$521 per dwelling unit (truncated)

Table 7: TCEF Component for Intersection Improvements

Input Variables for Unincorporated Area:

Utilization Distance (i.e., miles per trip): 5.41

Intersection Projects Needed Over Ten Years: 3

Average Cost per Intersection Project: $1,820,000

Ten-Year Growth Cost of Intersections: $5,460,000

VMT Increase Over Ten Years: 147,864

Capital Cost per VMT: $36

Development Type	Avg Wkdy Veh Trip Ends	Trip Rate Adjustment	Trip Length Adjustment	Proposed TCEF for Intersections
Residential (per dwelling) by Sq Ft of Finished Living Space				
900 or less	4.13	54%	120%	**$521**
901 to 1300	5.72	54%	120%	**$721**
1301 to 1800	6.85	54%	120%	**$864**
1801 to 2400	7.91	54%	120%	**$998**
2401 to 3000	8.75	54%	120%	**$1,104**
3001 to 3600	9.44	54%	120%	**$1,191**
3601 or more	10.02	54%	120%	**$1,264**
Nonresidential (KSF = square feet of floor area in thousands)				
Mini Warehouse/Self Storage (per acre)	20.55	50%	81%	**$1,620**
Warehousing/Agricultural (per KSF)	1.71	50%	81%	**$134**
Industrial/Manufacturing (per KSF)	3.37	50%	81%	**$265**
Commercial/Retail/Restaurants (per KSF)	37.01	33%	56%	**$1,332**
Office & All Other Services (per KSF)	10.84	50%	81%	**$855**

Projected Need for Regional Roads

Table 8 summarizes the input variables used to determine utilization distance (i.e., miles per trip) on regional roads. Projected development includes both the unincorporated area and Fort Collins. Based on 2023 population estimates, the service area for regional roads accounts for 64% of countywide development. Trip generation rates and trip adjustment factors convert projected development into inbound weekday vehicle trips. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and possibly to a state or interstate highway. This progression of travel up and down the functional classification chain limits the utilization distance determination, to the following question, "What is the average travel distance on TCEF system improvements (i.e. regional roads)?"

According to FHU, there are 24.9 centerline miles of regional roads, which is equivalent to 49.8 lane miles of regional roads. With 49.8 lane miles and a lane capacity standard of 8,500 vehicles per lane, regional roads have approximately 423,300 vehicle miles of capacity. To derive the average utilization distance (i.e., miles per trip), divide vehicle miles of capacity by the vehicle trips attracted to development in the service area. As shown in the bottom-left corner of the table below, existing development attracts 773,100 average weekday vehicle trips. Dividing 423,000 vehicle miles of capacity by inbound weekday vehicle trips yields an un-weighted utilization distance of approximately 0.55 miles. However, the calibration of utilization distance includes the same adjustment factors used in the TCEF calculations (i.e., journey-to-work commuting, commercial pass-by adjustment and average trip length adjustment by type of land use). With these adjustments, the consultant team determined the weighted-average utilization distance to be 0.54 miles on regional roads. To maintain the current infrastructure standard of 1.17 miles of regional roads per 10,000 vehicle miles of travel, Larimer County will need to add 8.3 lane miles of regional road capacity over the next ten years.

Table 8: Needs Analysis for Regional Roads

64% of countywide population (Fort Collins + unincorporated area)

Dev Type	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Residential	8.19	DU	54%	1.20
Industrial	3.37	KSF	50%	0.81
Commercial	37.01	KSF	33%	0.56
Office & Other Services	10.84	KSF	50%	0.81
Utilization Distance (miles)	0.54			
Lane Capacity (vehicles per day)	**8,500**	Provided by FHU, based on HCM 2025, 12' lane and 6' shoulder in urban area.		

	Year							
	Base	1	2	3	4	5	10	10-Year
Regional Roads	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2035**	**Increase**
Residential Units	110,362	112,161	113,990	115,848	117,736	119,655	129,731	19,369
Industrial KSF	11,084	11,231	11,380	11,532	11,685	11,841	12,649	1,565
Commercial KSF	11,033	11,180	11,329	11,479	11,632	11,787	12,591	1,558
Office & Other Services KSF	24,278	24,600	24,927	25,260	25,596	25,935	27,707	3,429
Residential Trips	488,087	496,043	504,132	512,349	520,699	529,186	573,748	
Industrial Trips	18,677	18,924	19,175	19,431	19,689	19,952	21,314	
Commercial Trips	134,749	136,545	138,364	140,196	142,065	143,958	153,778	
Office & Other Services Trips	131,587	133,332	135,104	136,909	138,730	140,568	150,172	
Total Vehicle Trips	773,100	784,844	796,776	808,886	821,184	833,664	899,011	
Vehicle Miles of Travel (VMT)	422,754	429,324	436,001	442,781	449,666	456,657	493,299	70,545
LANE MILES	49.7	50.5	51.3	52.1	52.9	53.7	58.0	8.3

Regional Road lane miles (provided by FHU): 49.8 **Ten-Year VMT Increase: 14.3%**

Cost Factor for Regional Roads

For the 2026 TCEF study, FHU recommends a cost factor of $1.395 million per lane mile for regional roads.

Proposed TCEF for Regional Roads

Input variables for regional roads are shown in the upper section of Table 9. Inbound vehicle miles of travel, by type of development, are multiplied by the capacity cost per vehicle mile of travel to yield the TCEF for regional roads. Given the ten-year growth cost of $11,537,000 for regional roads, and the projected increase of 70,545 vehicle miles of travel over the next ten years, the capital cost of regional roads is $163 per VMT. An example of the TCEF calculation for regional roads is shown below, using input variables for the smallest size dwelling unit.

4.13 weekday vehicle trip ends per dwelling unit
x
0.54 adjustment factor for inbound trips, including commuting adjustment
x
1.20 trip length adjustment factor for residential development
x
0.54 utilization distance (i.e., miles per trip)
x
$164 growth cost of regional roads per VMT
=
$237 per dwelling unit (truncated)

Table 9: TCEF Component for Regional Roads

Input Variables for Unincorporated Area:

Utilization Distance (i.e., miles per trip): 0.54
Additional Lane Miles over Ten Years: 8.3
Capital Cost per Lane Mile: $1,395,000
Ten-Year Growth Cost of Regional Roads: $11,578,500
VMT Increase Over Ten Years: 70,545
Capital Cost per VMT: $164

Development Type	Avg Wkdy Veh Trip Ends	Trip Rate Adjustment	Trip Length Adjustment	Proposed TCEF for Regional Roads
Residential (per dwelling) by Sq Ft of Finished Living Space				
900 or less	4.13	54%	120%	**$237**
901 to 1300	5.72	54%	120%	**$328**
1301 to 1800	6.85	54%	120%	**$393**
1801 to 2400	7.91	54%	120%	**$453**
2401 to 3000	8.75	54%	120%	**$502**
3001 to 3600	9.44	54%	120%	**$541**
3601 or more	10.02	54%	120%	**$575**
Nonresidential (KSF = square feet of floor area in thousands)				
Mini Warehouse/Self Storage (per acre)	20.55	50%	81%	**$737**
Warehousing/Agricultural (per KSF)	1.71	50%	81%	**$61**
Industrial/Manufacturing (per KSF)	3.37	50%	81%	**$120**
Commercial/Retail/Restaurants (per KSF)	37.01	33%	56%	**$605**
Office & All Other Services (per KSF)	10.84	50%	81%	**$388**

Paving Gravel/Bladed/Graded Roads (optional component not recommended)

Table 10 summarizes the input variables used to determine the utilization distance (i.e., miles per trip) on paved rural roads. Projected development in the unincorporated area over the next ten years is shown in the middle section of Table 10. Trip generation rates and trip adjustment factors convert projected development into inbound weekday vehicle trips. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and eventually to a state or interstate highway. This progression of travel up and down the functional classification chain limits the utilization distance determination, for the purpose of TCEF calculations, to the following question, "What is the average travel distance on system improvements (i.e. paved rural roads)?"

According to the report *Larimer on the Move*, there are 384 centerline miles of mainline paved roads. With an estimated volume of 1,000 vehicles per lane on paved roads, there is approximately 384,000 vehicle miles of capacity (i.e., 1,000 vehicles per day traveling the entire 384 miles). To derive the utilization distance (i.e., miles per trip), divide vehicle miles of capacity by the vehicle trips attracted to development in the service area. As shown in the bottom-left corner of the table below, existing development attracts 216,675 average weekday vehicle trips. Dividing 384,000 vehicle miles of capacity by inbound weekday vehicle trips yields an un-weighted average trip length of approximately 1.77 miles. However, the calibration of travel distance includes the same adjustment factors used in the TCEF

calculations (i.e., journey-to-work commuting, commercial pass-by adjustment and average trip length adjustment by type of land use). With these adjustments, the consultant team determined the weighted-average utilization distance to be 1.70 miles on paved rural roads. To maintain the current infrastructure standard of 10.00 paved miles per 10,000 vehicle miles of travel, Larimer County will need to pave 46.4 centerline miles of gravel/bladed/graded roads over the next ten years.

Table 10: Needs Analysis for Paving Gravel/Bladed/Graded Roads

Dev Type	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Residential	8.19	DU	54%	1.20
Industrial	3.37	KSF	50%	0.81
Commercial	37.01	KSF	33%	0.56
Office & Other Services	10.84	KSF	50%	0.81
Utilization Distance (miles)	1.70			
Vehicles Per Day	**1,000**	*Larimer on the Move*, Figure 28		

Unincorporated Larimer County

	Year							
	Base	1	2	3	4	5	10	10-Year
	2025	2026	2027	2028	2029	2030	2035	Increase
Residential Units	34,233	34,613	34,996	35,385	35,778	36,175	38,228	3,995
Industrial KSF	4,807	4,869	4,933	4,997	5,062	5,128	5,470	663
Commercial KSF	2,767	2,803	2,840	2,877	2,914	2,952	3,149	382
Office & Other Services KSF	4,314	4,370	4,427	4,485	4,543	4,602	4,909	595
Residential Trips	151,399	153,079	154,773	156,494	158,232	159,988	169,067	
Industrial Trips	8,100	8,204	8,312	8,420	8,529	8,641	9,217	
Commercial Trips	33,794	34,234	34,686	35,138	35,590	36,054	38,460	
Office & Other Services Trips	23,382	23,685	23,994	24,309	24,623	24,943	26,607	
Total Vehicle Trips	216,675	219,203	221,766	224,360	226,974	229,625	243,351	
Vehicle Miles of Travel (VMT)	384,376	388,785	393,244	397,766	402,325	406,942	430,840	46,464
CENTERLINE MILES	384.4	388.8	393.2	397.8	402.3	406.9	430.8	46.4

Mainline paved miles (*Larimer on the Move*): 384.0 **Ten-Year VMT Increase: 10.78%**

Optional Cost Factor for Paving County Roads

As part of their work on the 2050 transportation plan for Larimer County, FHU prepared an extensive analysis of capital improvement projects for paving gravel/bladed/graded roads. For the 2026 TCEF study, FHU recommends a cost factor of $2,789,000 per centerline mile.

Optional TCEF for Paving County Roads

Input variables for the optional paving component are shown in the upper section of Table 11. Inbound vehicle miles of travel, by type of development, are multiplied by the capacity cost per vehicle mile of travel to yield the optional cost component for paving rural roads. To maintain the current infrastructure standard for paved County roads, Larimer County plans to spend approximately $129.4 million over the next ten years. However, paving gravel/bladed/graded roads provides benefit to both existing and new

development. In other words, the reason for paving roads is not solely due to traffic volume from additional development. Paved roads also reduce maintenance costs and enhance air quality by lowering particulate counts (i.e., dust control). Given the dual rational nexus test requirement to consider benefit in fee calculations, the consultant team recommends a more conservative average cost allocation for paving projects. New development over the next ten years will only pay approximately 10.78% of the total cost of paving projects (i.e., $13,956,000). Based on a projected increase of 46,464 vehicle miles of travel over the next ten years, the capital cost of paving projects is $300 per VMT. An example of the TCEF calculation for paving projects is shown below, using input variables for the smallest size dwelling unit.

4.13 weekday vehicle trip ends per dwelling unit
x
0.54 adjustment factor for inbound trips, including commuting adjustment
x
1.20 trip length adjustment factor for residential development
x
1.70 utilization distance (i.e., miles per trip) on paved rural roads
x
$300 growth cost per VMT
=
$1,364 per dwelling unit (truncated)

Table 11: Optional TCEF Component for Paving Gravel/Bladed/Graded Roads

Input Variables for Unincorporated Area

Utilization Distance (i.e., miles per trip): 1.70
Centerline Miles Needed Over Ten Years: 46.4
Cost per Centerline Mile for Paving Projects: $2,789,000
Ten-Year Total Cost of Paving Projects: $129,409,600
Ten-Year Growth Cost of Paving Projects: $13,956,000
VMT Increase Over Ten Years: 46,464
Capital Cost per VMT: $300

Development Type	Avg Wkdy Veh Trip Ends	Trip Rate Adjustment	Trip Length Adjustment	Optional Component for Paving County Roads
Residential (per dwelling) by Sq Ft of Finished Living Space				
900 or less	4.13	54%	120%	**$1,364**
901 to 1300	5.72	54%	120%	**$1,890**
1301 to 1800	6.85	54%	120%	**$2,263**
1801 to 2400	7.91	54%	120%	**$2,614**
2401 to 3000	8.75	54%	120%	**$2,891**
3001 to 3600	9.44	54%	120%	**$3,119**
3601 or more	10.02	54%	120%	**$3,311**
Nonresidential (KSF = square feet of floor area in thousands)				
Mini Warehouse/Self Storage (per acre)	20.55	50%	81%	**$4,244**
Warehousing/Agricultural (per KSF)	1.71	50%	81%	**$353**
Industrial/Manufacturing (per KSF)	3.37	50%	81%	**$696**
Commercial/Retail/Restaurants (per KSF)	37.01	33%	56%	**$3,488**
Office & All Other Services (per KSF)	10.84	50%	81%	**$2,239**

Past TCEF Accounting and Projected Revenue

County staff provided the data in Table 12, summarizing TCEF collections, expenditures, and ending fund balances over the past three years. To ensure benefit to feepayers, capital improvements should be constructed in a timely manner, with the goal of minimizing TCEF fund balances.

Table 12: TCEF Collections, Expenditures, and Ending Balances Over Past Three Years

Category	2022	2023	2024
TCEF Collections: County Roads	$1,042,143	$666,256	$819,688
TCEF Collections: County Regional Roads	$87,126	$51,551	$72,989
TCEF Collections: Fort Collins Regional Roads	$341,815	$431,552	$394,099
TCEF Collections Grand Total	**$1,471,084**	**$1,149,359**	**$1,286,776**
TCEF Expenditures: County Roads	$600,029	$2,026,835	$2,708,996
TCEF Expenditures: County Regional Roads	$50,000	$0	$200,000
TCEF Expenditures: Fort Collins Regional Roads	$277,657	$314,278	$1,491,228
TCEF Expenditures Grand Total	**$927,686**	**$2,341,113**	**$4,400,224**
TCEF Ending Balance: County Roads	$4,765,458	$3,415,530	$1,526,222
TCEF Ending Balance: County Regional Roads	$322,635	$374,186	$247,175
TCEF Ending Balance: Fort Collins Regional Roads	$2,745,017	$2,862,291	$1,765,162
TCEF Ending Balance Grand Total	**$7,833,110**	**$6,652,007**	**$3,538,559**

Data Source: County staff fund breakdown by GL key.

Table 13 compares the ten-year, growth cost of transportation improvements to projected impact fee revenue. The County expects to provide approximately $48.55 million in growth-related transportation improvements within the unincorporated area in order to accommodate new development over the next ten years. As shown in the lower portion of the table, projected impact fee revenue will cover the growth cost of improvements, assuming Fort Collins continues to collect TCEF revenue for regional roads.

The revenue projection shown below is based on the demographic data described in Appendix A and the proposed fee amount for an average-size residential unit. Residential development in the unincorporated area is expected to yield approximately 74% of TCEF revenue for the unincorporated area. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the TCEF revenue and associated capital costs.

Table 13: Projected TCEF Revenue Over Next Ten Years

Ten-Year Growth Cost of Transportation Improvements

County Arterials	$31,666,500
Intersection Improvements	$5,460,000
Regional Roads	$11,578,500
TOTAL (rounded)	**$48,710,000**

Ten-Year TCEF Revenue Projection

Average-Size Residential: $7,647per housing unit

Commercial: $12,012 per 1000 Sq Ft

Industrial: $2,397 per 1000 Sq Ft

Office & Other Services: $7,710 per 1000 Sq Ft

Year		Residential (Hsg Units)	Industrial (KSF)	Commercial (KSF)	Office & Other Services (KSF)
Base	2025	34,233	4,807	2,767	4,314
Year 1	2026	34,613	4,869	2,803	4,370
Year 2	2027	34,996	4,933	2,840	4,427
Year 3	2028	35,385	4,997	2,877	4,485
Year 4	2029	35,778	5,062	2,914	4,543
Year 5	2030	36,175	5,128	2,952	4,602
Year 6	2031	36,576	5,194	2,990	4,662
Year 7	2032	36,982	5,262	3,029	4,722
Year 8	2033	37,393	5,330	3,069	4,784
Year 9	2034	37,808	5,400	3,108	4,846
Year 10	2035	38,228	5,470	3,149	4,909
Ten-Yr Increase		3,995	663	382	595
Projected Revenue =>		$30,550,000	$1,589,000	$4,589,000	$4,587,000
				Projected Revenue from Unincorporated Area	**$41,315,000**
				Regional Road Revenue from Fort Collins	**$7,395,000**
				Total Projected Revenue (rounded)	**$48,710,000**

Appendix A: Demographics and Development Projections

Appendix A provides supporting documentation on population, housing units, jobs, and nonresidential floor area used in the 2026 TCEF study. Although long-range projections are necessary for planning capital improvements, a shorter time frame of five to ten years is critical for capacity fees. Infrastructure standards are calibrated using the latest available data and the first projection year is fiscal year 2026. In the Larimer County the fiscal year begins on January 1st.

Summary of Growth Indicators

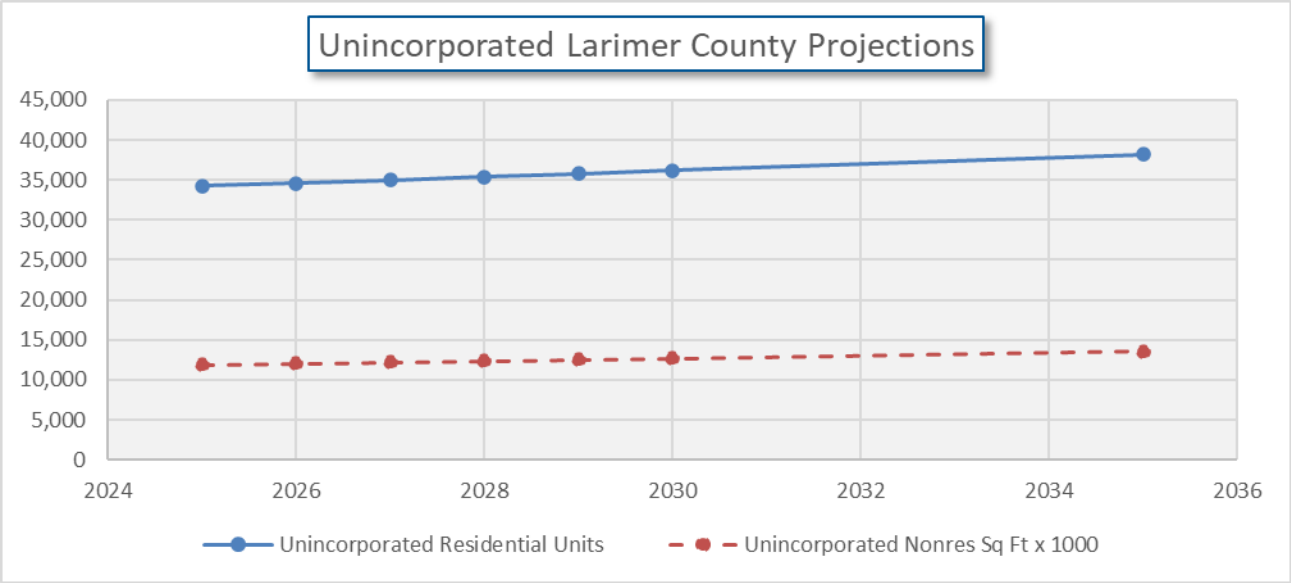
Development projections and growth rates are summarized in Figure A1. These projections are used to estimate TCEF revenue and to indicate the anticipated need for growth-related infrastructure. However, TCEF methodologies are designed to reduce sensitivity to accurate development projections in the determination of the proportionate-share fee amounts. If actual development is slower than projected, fee revenues will also decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the County will receive an increase in fee revenue, but will also need to accelerate the capital improvements program to keep pace with the actual rate of development.

Larimer County data for the demographic analysis and development projections include 2022 census estimates of jobs by place of work, along with 2023 American Community Survey (ACS) tables and Public Use Micro-data Samples (PUMS). Population projections were converted to housing units by holding constant the 2023 ratio of year-round residents per housing unit, as reported by the Colorado State Demography Office. Job projections were converted to nonresidential floor area using average floor area multipliers, derived from the Larimer County Assessor's parcel database.

During the next ten years, the 2026 TCEF study expects an average increase of 400 housing units per year in the unincorporated area. Unincorporated Larimer County anticipates an average increase of 164,000 square feet of nonresidential floor area per year from 2025 to 2035. For residential development in the unincorporated area over the next ten years, the compound annual growth rate 1.11%. Nonresidential development in the unincorporated area is projected to increase by a compound average annual growth rate of 1.30%. These growth rates yield projected development that will match the actual average annual increase in development over the past ten years, based on an analysis of the Assessor parcel database.

Figure A1: Development Projections and Growth Rates for Larimer County, CO

	Year							2025 to 2035 Average Annual	
	2025	2026	2027	2028	2029	2030	2035	Increase	Compound Growth Rate
Unincorporated Residential Units	34,233	34,613	34,996	35,385	35,778	36,175	38,228	400	1.11%
Unincorporated Nonres Sq Ft x 1000	11,888	12,042	12,200	12,359	12,519	12,682	13,528	164	1.30%



Nonresidential Development

In addition to data on residential development, the calculation of impact fees requires data on nonresidential development. DP Guthrie, LLC uses the term "jobs" to refer to employment by place of work. In Table A1, gray shading indicates three nonresidential development prototypes used to derive vehicle miles of travel. The prototype development for Industrial/Manufacturing jobs is "Industrial Park". Average weekday vehicle trip generation rates are from the Institute of Transportation Engineers (ITE 2022). The prototype for Commercial/Retail/Restaurants is an average-size shopping center. This category includes all businesses that sell merchandise, including eating/drinking places. For Office & All Other Services, the development prototype is an average-size general office building. This category includes all business and personal services, like banks, medical offices, and health care facilities.

Table A1: Employee and Building Area Ratios

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit*	Wkdy Trip Ends Per Employee*	Emp Per Dmd Unit	Sq Ft Per Emp
130	**Industrial Park**	**1,000 Sq Ft**	**3.37**	**2.91**	**1.16**	**864**
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
710	**General Office**	**1,000 Sq Ft**	**10.84**	**3.33**	**3.26**	**307**
820	**Shopping Center**	**1,000 Sq Ft**	**37.01**	**17.42**	**2.12**	**471**

**Trip Generation*, Institute of Transportation Engineers, 11th Edition (2022).

Jobs by Type of Nonresidential Development

Table A2 indicates 2022 estimates of nonresidential floor area and jobs located in Larimer County. Floor area estimates are from the Larimer County Assessor's parcel database, aggregated into three nonresidential categories. The job mix in 2022 is based on two-digit industry sectors (NAICS), as reported by the U.S. Census Bureau's On-The-Map web application. DP Guthrie, LLC converted jobs to floor area using the square feet per job multipliers shown below.

Table A2: Jobs and Floor Area Estimate

Category	Countywide				Unincorporated			
	2022 Jobs (1)	Job Mix	Square Feet of Floor Area (2)	Square Feet per Job	2022 Jobs (1)	Job Mix	Square Feet of Floor Area (2)	Square Feet per Job
Industrial (3)	37,658	24.5%	16,637,176	442	12,704	39.1%	4,628,672	364
Commercial (4)	33,541	21.8%	16,584,036	494	7,234	22.3%	2,660,595	368
Services (5)	82,675	53.7%	36,450,973	441	12,538	38.6%	4,155,070	331
TOTAL	**153,874**	**100.0%**	**69,672,185**	**453**	**32,476**	**100.0%**	**11,444,337**	**352**

(1) Jobs in 2022 from Work Area Profile, OnTheMap, U.S. Census Bureau web application. Unincorporated estimate based on countywide jobs minus jobs in Fort Collins and Loveland.

(2) Source: Larimer County Tax Assessor data through calendar year 2022.

(3) Major sectors are Manufacturing and Construction.

(4) Major sectors are Retail Trade and Accommodation/Food Services.

(5) Major sectors are Health Care/Social Assistance and Professional/Scientific/Technical Services.

Detailed Development Projections

Demographic data shown in Table A3 provide key inputs for Larimer County's 2026 TCEF study. Cumulative data are shown at the top and projected annual increases by type of development are shown at the bottom of the table. Given the expectation that impact fees are updated approximately every five to seven years, DP Guthrie, LLC did not evaluate long-term demographic trends such as declining household size. As discussed in the next section, DP Guthrie, LLC recommends the use of vehicle trip ends per housing unit to derive fees for residential development. Therefore, vacancy rates and number of households are not relevant to the demographic analysis. Cells highlighted yellow are population and housing unit estimates from the Colorada State Demography Office. The impact fee analysis includes annual data, but years 6-9 were hidden to fit the table on a single page.

Table A3: Annual Demographic Data (FY begins January 1st)

Category	2022	2023	2024	2025 *(Base Yr)*	2026 (Year *1)*	2027 (Year 2)	2028 (Year *3)*	2029 (Year *4)*	2030 (Year *5)*	2035 (Year *10)*	2050 (Year *25)*	Compound *Anl Growth*
Population												
Countywide		370,639	376,680	382,820	389,060	395,402	401,847	408,397	415,054	450,002	573,513	1.63%
Municipalities		304,004	309,305	314,697	320,181	325,759	331,431	337,199	343,066	373,929	483,740	1.74%
Unincorporated Area		66,635	67,375	68,123	68,879	69,643	70,416	71,198	71,988	76,073	89,773	1.11%
% Unincorporated =>		*18.0%*	*17.9%*	*17.8%*	*17.7%*	*17.6%*	*17.5%*	*17.4%*	*17.3%*	*16.9%*	*15.7%*	
Housing Units												
Countywide		167,036	169,676	172,441	175,252	178,109	181,012	183,963	186,961	202,704	258,339	1.63%
Municipalities		133,555	135,660	138,025	140,430	142,877	145,364	147,894	150,468	164,004	212,167	1.73%
Unincorporated Area		33,481	33,857	34,233	34,613	34,996	35,385	35,778	36,175	38,228	45,112	1.11%
Jobs												
Countywide	153,874	155,921	157,994	160,096	162,225	164,382	166,569	168,784	171,029	182,709	222,757	1.33%
Municipalities	121,398	123,023	124,668	126,337	128,027	129,739	131,476	133,235	135,018	144,295	176,131	1.34%
Unincorporated Area	32,476	32,898	33,326	33,759	34,198	34,643	35,093	35,549	36,011	38,414	46,626	1.30%
Countywide Jobs-Housing Ratio		0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.90	0.86	
Countywide Nonresidential Floor Area (square feet in thousands = KSF)												
Industrial	16,637	16,866	17,091	17,318	17,548	17,782	18,018	18,258	18,501	19,764	24,096	1.33%
Commercial	16,584	16,790	17,013	17,239	17,468	17,701	17,936	18,175	18,417	19,674	23,987	1.33%
Services	36,451	36,945	37,436	37,934	38,438	38,949	39,468	39,993	40,524	43,292	52,781	1.33%
Total	69,672	70,601	71,540	72,491	73,454	74,432	75,422	76,426	77,442	82,730	100,864	
Unincorporated Nonresidential Floor Area (square feet in thousands = KSF)												
Industrial	4,629	4,684	4,745	4,807	4,869	4,933	4,997	5,062	5,128	5,470	6,639	1.30%
Commercial	2,661	2,697	2,732	2,767	2,803	2,840	2,877	2,914	2,952	3,149	3,822	1.30%
Services	4,155	4,204	4,259	4,314	4,370	4,427	4,485	4,543	4,602	4,909	5,958	1.30%
Total	11,444	11,585	11,736	11,888	12,042	12,200	12,359	12,519	12,682	13,528	16,419	
Countywide Annual Increases				25 to 26	26 to 27	27 to 28	28 to 29	29 to 30	30 to 31	**Avg Annual**		
Housing Units				2,811	2,857	2,903	2,951	2,998	3,048	3,026		
Nonresidential Floor Area (KSF)				963	978	990	1,004	1,016	1,030	1,024		
Unincorporated Area Annual Increases				25 to 26	26 to 27	27 to 28	28 to 29	29 to 30	30 to 31	**Avg Annual**		
Housing Units				380	383	389	393	397	401	400		
Nonresidential Floor Area (KSF)				154	158	159	160	163	164	164		

Customized Residential Trip Generation Rates

DP Guthrie, LLC recommends a fee schedule whereby larger units pay higher impact fees in proportion to the number of service units per dwelling. Benefits of the proposed methodology include: 1) proportionate assessment of infrastructure demand using local demographic data, 2) progressive fee structure (i.e. smaller units pay less and larger units pay more), 3) more affordable fees for workforce housing, and 4) ease of fee implementation/administration. Impact fees based on size of dwelling are generally easier to administer when expressed in square feet of living space for all types of housing (excluding garages, patios and porches that are not climate-controlled). For a building with more than one residential unit, County staff will determine the average size threshold for the entire building by dividing total climate-controlled floor area by the total number of dwellings in the building.

Custom tabulations of demographic data by bedroom range were created from individual survey responses provided by the U.S. Census Bureau, in files known as Public Use Micro-data Samples (PUMS). PUMS files are only available for areas of roughly 100,000 persons and Larimer County includes three of these areas. At the top of Table A4, cells with yellow shading indicate the survey results, which yield the unadjusted number of persons and vehicles available per dwelling. These multipliers are adjusted to match the control totals for Larimer County. According to the Colorado Demography Office, Larimer County has an average of 2.22 persons per housing unit. Also, DP Guthrie, LLC used ACS table B25046 as the control total for the average number of vehicles available per housing unit. In 2023, there was an average of 1.88 vehicles available per housing unit in Larimer County.

The middle section of Table A4 provides nation-wide data from the Institute of Transportation Engineers (ITE). AWVTE is the acronym for Average Weekday Vehicle Trip Ends, which measures vehicles coming and going from a development. National trip rates per person and per vehicle available are multiplied by local demographic data per housing unit by bedroom range, to yield trip rates by bedroom range. Rather than rely on one methodology, the recommended trip generation rates shown in the bottom section of Table A4 are an average of trip rates based on persons and vehicles available by bedroom range. In Larimer County, each housing unit is expected to generate an average of 8.19 Average Weekday Vehicle Trip Ends, compared to the national average of 8.46 average weekday trip ends per housing unit.

Table A4: Demographic Multipliers by Bedroom Range

Larimer County 2023 Data

Bedroom Range	Persons (1)	Vehicles Available (1)	Housing Units (1)	Larimer Co. Hsg Mix	Unadjusted Persons/HU	Adjusted Persons/HU (2)	Unadjusted VehAvl/HU	Adjusted VehAvl/HU (3)
0-1	178	148	153	9%	1.16	1.20	0.97	0.95
2	613	563	364	22%	1.68	1.73	1.55	1.53
3	1,288	1,177	599	37%	2.15	2.22	1.96	1.93
4+	1,431	1,240	519	32%	2.76	2.85	2.39	2.35
Total	**3,510**	**3,128**	**1,635**		**2.15**	**2.22**	**1.91**	**1.88**

National Averages According to Institute of Transportation Engineers (2022)

ITE Code	AWVTE per Person	AWVTE per Vehicle Available (ITE 2017)	AWVTE per Housing Unit	Larimer Co. Hsg Mix
220 (low-rise MF)	1.86	5.10	6.74	36%
210 SFD	2.65	6.36	9.43	64%
Wgtd Avg	2.37	5.91	8.46	

Recommended AWVTE per Dwelling by Bedroom Range

Bedroom Range	AWVTE per Housing Unit Based on Persons (4)	AWVTE per Hsg Unit Based on Vehicles Available (5)	Larimer Co. AWVTE per Housing Unit (6)
0-1	2.84	5.61	**4.23**
2	4.10	9.04	**6.57**
3	5.26	11.41	**8.34**
4+	6.75	13.89	**10.32**
Total	**5.26**	**11.11**	**8.19**

(1) American Community Survey, Public Use Microdata Sample for CO 2020 PUMAs 301, 302, and 303 (2023 One-Year unweighted data).

(2) Adjusted multipliers are scaled to make the average PUMS values match control total for Larimer County, based persons per housing unit data from Colorado State Demography Office.

(3) Adjusted multipliers are scaled to make the average PUMS values match control total for Larimer County, based on vehicles available per housing unit from 2023 One-Year ACS table B25046.

(4) Adjusted persons per housing unit multiplied by national weighted average trip rate per person.

(5) Adjusted vehicles available per housing unit multiplied by national weighted average trip rate per vehicle available.

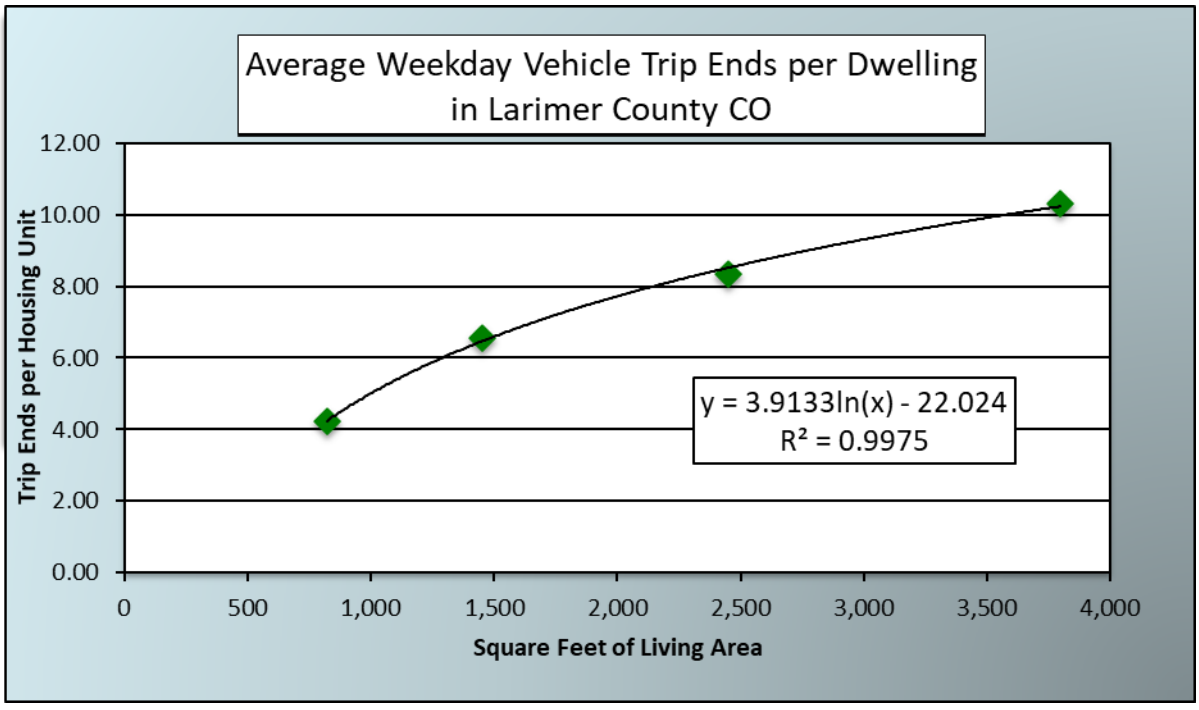
(6) Average of trip rates based on persons and vehicles available per housing unit.

To derive average weekday vehicle trip ends by residential unit size, DP Guthrie, LLC plotted trip generation rates and average floor area, by bedroom range, as shown in Figure A2. The logarithmic trend line formula is derived from the four averages graphed in the scatter plot. Floor areas by bedroom range are derived from the Larimer County Assessor's parcel database. Trip generation rates by bedroom range are derived from ACS PUMS data, as described above. Size thresholds are consistent with the 2018 TCEF study. Generally, larger dwellings can accommodate more persons, typically have a greater number of vehicles available and tend to be occupied by higher-income residents. All of these demographic characteristics are positively and strongly correlated with higher vehicular trip generation.

Figure A2: Average Weekday Vehicle Trip Ends by Dwelling Size

Average weekday vehicle trip ends per housing unit are derived from 2023 ACS PUMS data for Larimer County. Average square feet by bedroom range derived from Larimer Assessor parcel database.

Larimer Averages per Dwelling			Fitted-Curve Values	
Bedrooms	**Square Feet**	**Trip Ends**	**Sq Ft Range**	**Trip Ends**
0-1	822	4.23	900 or less	**4.13**
2	1,453	6.57	901 to 1300	**5.72**
3	2,452	8.34	1301 to 1800	**6.85**
4+	3,797	10.32	1801 to 2400	**7.91**
			2401 to 3000	**8.75**
			3001 to 3600	**9.44**
			3601 or more	**10.02**



Appendix B: Implementation and Administration

Development impact fees should be periodically evaluated and updated to reflect recent data. One approach is to adjust for inflation using an index, such as the Engineering News Record (ENR) Construction Cost Index published by McGraw-Hill Companies, or the Colorado Department of Transportation. An index can be used to annually adjust the adopted impact fee schedule. If cost estimates or demand indicators change significantly, the County should redo the fee calculations.

Colorado's enabling legislation allows local governments to "waive an impact fee or other similar development charge on the development of low or moderate income housing, or affordable employee housing, as defined by the local government."

Credits and Reimbursements

New development should not be required to pay twice for the cost of new facilities (i.e., once through development fees and again through other taxes or fees that are used to fund the growth cost of facilities). To avoid potential double-payment, development fees may be reduced, and such a reduction is referred to as an offset or revenue credit that is incorporated into the development fee calculation. In general, offsets are only required for funding that is dedicated for capacity-expanding improvements of the type addressed by the development fee. A municipality is not required to use general fund revenue to pay for growth-related improvements.

Specific policies and procedures related to site-specific credits or developer reimbursements should be addressed in the ordinance that establishes the TCEF schedule. Project-level improvements, normally required as part of the development approval process, are not eligible for credits against impact fees. If a developer constructs a system improvement, it will be necessary to either reimburse the developer or provide a site-specific credit. The latter option is more difficult to administer because it creates unique fees for specific geographic areas. DP Guthrie, LLC recommends establishing reimbursement agreements with a developer that construct a system improvement. The reimbursement agreement should be limited to a payback period of no more than ten years and the County should not pay interest on the outstanding balance. The developer must provide sufficient documentation of the actual cost incurred for the system improvement. The County should only agree to pay the lesser of the actual construction cost or the estimated cost used in the impact fee analysis. If the County pays more than the cost used in the fee analysis, there will be insufficient impact fee revenue. Reimbursement agreements should only obligate the County to reimburse developers annually according to actual fee collections from the service area. If the County collects impact fees for other types of infrastructure, site specific credits or developer reimbursements for one type of system improvement does not negate payment of impact fees for other types of infrastructure.

Service Areas

The TCEF service area for non-regional roads is the entire unincorporated area of Larimer County. The TCEF for regional roads includes the unincorporated area and Fort Collins.

Development Categories

The TCEF for residential development is by square feet of finished living space, excluding unfinished basement, attic, and garage floor area. Appendix A provides further documentation of demographic data by residential size threshold. For a building with more than one residential unit, County staff will determine the average size threshold for the entire building by dividing total climate-controlled floor area by the total number of dwellings in the building.

Nonresidential development categories represent general groups of land uses that share similar vehicle trip generation rates. An applicant may submit an independent study to document unique demand indicators for a particular development. The independent study must be prepared by a professional engineer or certified planner and use the same type of input variables as those in the TCEF study. The independent fee study will be reviewed by County staff and can be accepted as the basis for a unique fee calculation. If staff determines the independent fee study is not reasonable, the applicant may appeal the administrative decision to elected officials for their consideration.

Appendix C: References

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