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Tyler R. Gernant, Missoula County Clerk & Recorder
eRecording

RESOLUTION NO. 2026-104

A RESOLUTION TO ADOPT IMPACT FEES FOR MISSOULA RURAL FIRE DISTRICT IN MISSOULA COUNTY

WHEREAS, §7-6-1602, M.C.A., allows that local governments may consider the adoption of impact fees based on the completion of a service area report that:

(a) describes the existing conditions of the facility;
(b) establishes level-of-service standards;
(c) forecasts future additional needs for service for a defined period of time;
(d) identifies capital improvements necessary to meet future needs for service;
(e) identifies those capital improvements needed for continued operation and maintenance of the facility;
(f) makes a determine as to whether one service area or more than one service area is necessary to establish a correlation between impact fees and benefits;
(g) makes a determination as to whether one service area or more than one service area for transportation facilities is needed to establish a correlation between impact fees and benefits;
(h) establishes the methodology and time period over which the governmental entity will assign the proportionate share of capital costs for expansion of the facility to provide service to new development within each service area;
(i) establishes the methodology that the governmental entity will use to exclude operations and maintenance costs and correction of existing deficiencies from the impact fee;
(j) establishes the amount of the impact fee that will be imposed for each unit of increased service demand; and
(k) has a component of the budget of the governmental entity that;
    i. schedules construction of public facility capital improvements to serve projected growth;
    ii. projects costs of the capital improvements;
    iii. allocates collected impact fees for construction of the capital improvements; and
    iv. covers at least a 5-year period and is reviewed and updated at least every 5 years; and

WHEREAS, Missoula Rural Fire District contracted with Tischler Bise to complete an impact fee study for the district in compliance with §7-6-1602, M.C.A., using generally accepted financial principles, that proposes impact fees intended to establish cost-based proportional impact fees related to fire protection; and

WHEREAS, Missoula County conducted community outreach regarding potential adoption of impact fees for Missoula Rural Fire District, including posting and emailing information about the study on Missoula County Voice, publication of notice about the Impact Fee Advisory Committee meeting and the Board of County Commissioners' public hearing in the in the *Missoulian* on July 3 and 11, 2026, and mass email to agencies, engineering and surveying firms and the county's general planning projects email list of approximately 650 addresses; and

WHEREAS, the Missoula Rural Fire District Board of Trustees considered the impact fee study at their regularly scheduled meeting on June 9, 2026, and unanimously recommended the Missoula County Board of County Commissioners adopt impact fees as recommended in the study; and,

WHEREAS, the Missoula County Impact Fee Advisory Committee, appointed by the Missoula

County Board of Commissioners, met on July 15, 2026, to consider the study and proposed impact fees for Missoula Rural Fire District as required under§ 7-6-1602, M.C.A.; and

WHEREAS, after reviewing the study and accepting public comment, the Impact Fee Advisory Committee unanimously recommended the Missoula County Board of Commissioners adopt impact fees as outlined in the impact fee study; and

WHEREAS, on August 13, 2026, the Missoula County Board of Commissioners held a public hearing to consider the Missoula Rural Fire District impact fee study, the recommendations of the Missoula Rural Fire District Board of Trustees and the Impact Fee Advisory Committee, and accept public comment;

NOW, THEREFORE, BE IT RESOLVED that the Missoula County Board of Commissioners hereby finds that the recommendation from the Impact Fee Advisory Committee satisfies the requirements of § 7-6-1602, M.C.A., for imposing an impact fee and directs staff to prepare an updated resolution pursuant to § 7-6-1603, M.C.A., for the collection and expenditure of impact fees incorporating information from the Missoula Rural Fire District Impact Fee Study, which is attached as Exhibit A.

ATTEST:

Tyler Gernant, Clerk and Recorder

BOARD OF COUNTY COMMISSIONERS
MISSOULA COUNTY

Josh Slotnick, Chair

David Strohmaier, Commissioner

Approved as to form:

John Hart,
Deputy County Attorney

Juanita Vero, Commissioner

Exhibit A – Missoula Rural Fire District Impact Fee Study

Service Area Report and Impact Fee Study

Prepared for:
Missoula Rural Fire District

June 4, 2026

TischlerBise
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EXECUTIVE SUMMARY

The Missoula Rural Fire District, contracted with TischlerBise to document land use assumptions, prepare the Service Area Report, and update impact fees within the applicable service areas pursuant to Montana Code 7-6-16 (hereafter referred to as the "Enabling Legislation"). Governmental entities in Montana may assess impact fees to offset infrastructure costs to the governmental entity for public facilities needed to serve future development. For each public facility for which an impact fee is imposed, the governmental entity shall prepare and approve a service area report. The impact fees must (1) be reasonably related to and reasonably attributable to the development's share of the cost of infrastructure improvements made necessary by the new development and (2) may not exceed a proportionate share of the costs incurred or to be incurred by the governmental entity in accommodating the development.

Impact fees are one-time payments used to construct system improvements needed to accommodate future development, and the fee represents future development's proportionate share of infrastructure costs. Impact fees may be used for infrastructure improvements or debt service for growth-related infrastructure. In contrast to general taxes, impact fees may not be used for operations, maintenance, replacement, or correcting existing deficiencies.

MONTANA IMPACT FEE ENABLING LEGISLATION

The Enabling Legislation governs how impact fees are calculated for governmental entities in Montana. In 2025, a recent Montana State Senate Bill (SB 133) revised the Enabling Legislation by limiting the public facilities that are eligible for impact fee funding and the fee to administrate an impact fee program. Below summaries the State Statutes with the recent revisions.

Public Facilities

Under the requirements of the Enabling Legislation, impact fees may only be used for construction, acquisition, or expansion of public facilities made necessary by new development. "Public Facilities" means any of the following categories of capital improvements with a useful life of 10 years or more that increase or improve the service capacity of a public facility (§ 7-6-1601(7)):

1. a water supply production, treatment, storage, or distribution facility;
2. a wastewater collection, treatment, or disposal facility;
3. a transportation facility, including roads, streets, bridges, rights-of-way, and traffic signals;
4. a storm water collection, retention, detention, treatment, or disposal facility or a flood control facility;
5. a law enforcement, emergency medical rescue, 9-1-1 system, emergency management, or fire protection facility.

Also, § 7-6-1601(5a) states that "impact fee" means any charge imposed on development by a governmental entity as part of the development approval process to fund the additional service capacity required by the development from which it is collected.

Furthermore, SB 133 removed the ability for communities to assess an administrative fee in impact fee programs.

Service Area Report

For each public facility for which an impact fee is imposed, the governmental entity shall prepare and approve a service area report. The service area report is a written analysis that must:

1. describe existing conditions of the facility;
2. establish level-of-service standards;
3. forecast future additional needs for service for a defined period of time;
4. identify capital improvements necessary to meet future needs for service;
5. identify those capital improvements needed for continued operation and maintenance of the facility;
6. make a determination as to whether one service area or more than one service area is necessary to establish a correlation between impact fees and benefits;
7. make a determination as to whether one service area or more than one service area for transportation facilities is needed to establish a correlation between impact fees and benefits;
8. establish the methodology and time period over which the governmental entity will assign the proportionate share of capital costs for expansion of the facility to provide service to new development within each service area;
9. establish the methodology that the governmental entity will use to exclude operations and maintenance costs and correction of existing deficiencies from the impact fee;
10. establish the amount of the impact fee that will be imposed for each unit of increased service demand; and
11. have a component of the budget of the governmental entity that:
    a. schedules construction of public facility capital improvements to serve projected growth;
    b. projects costs of the capital improvements;
    c. allocates collected impact fees for construction of the capital improvements; and
    d. covers at least a 5-year period and is reviewed and updated at least every 5 years.

LEGAL FRAMEWORK

Both state and federal courts have recognized the imposition of impact fees as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is in the protection of public health, safety, and welfare by ensuring development is not detrimental to the quality of essential public services. The means to this end are also important, requiring both procedural and substantive due process. The process followed to receive community input (i.e., stakeholder meetings, work sessions, and public hearings) provides opportunities for comments and refinements to the impact fees.

There are three reasonable relationship requirements for impact fees that are closely related to "rational nexus", or "reasonable relationship" requirements enunciated by a number of state courts. Although the

term "dual rational nexus" is often used to characterize the standard by which courts evaluate the validity of impact fees under the U.S. Constitution, we prefer a more rigorous formulation that recognizes three elements: "need," "benefit," and "proportionality." The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the Dolan case (*Dolan v. District of Tigard*, OR, 1994). Furthermore, the plaintiff in the 2024 *Sheetz v. El Dorado County* U.S. Supreme Court case argued that the El Dorado County, CA impact fee program failed to meet the Nollan/Dolan test. The U.S. Supreme Court remanded the case back to the California Supreme Court for further proceedings on a stricter interpretation of the rational nexus, specifically the extent impact fees can be "roughly proportionate." Thus, is has been determined that State courts will make judgements further similar cases. Individual elements of the nexus standard are discussed further in the following paragraphs.

All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the capacity of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Impact fees may be used to recover the cost of development-related facilities, but only to the extent that the need for facilities is a consequence of development that is subject to the fees. The Nollan decision reinforced the principle that development exactions may be used only to mitigate conditions created by the developments upon which they are imposed. That principle clearly applies to impact fees. In this study, the impact of development on infrastructure needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific capital facilities, based on applicable level-of-service standards.

The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the Dolan case and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate impact fees for various types of facilities and categories of development. The demand for capital facilities is measured in terms of relevant and measurable attributes of development (e.g., a typical housing unit's average weekday vehicle trips).

A sufficient benefit relationship requires that impact fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. Impact fees must be expended in a timely manner and the facilities funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the state enabling legislation requires that facilities funded with fee revenues be available exclusively to development paying the fees. In other words, benefit may extend to a general area including multiple real estate developments. Procedures for the earmarking and expenditure of fee revenues are discussed near the end of this study. All of these procedural as well as substantive issues are intended to ensure that new development benefits from the impact fees they are required to pay. The authority and procedures to implement impact fees is separate from and complementary to the authority to require improvements as part of subdivision or zoning review.

As documented in this report, Missoula Rural Fire District has complied with applicable legal precedents. Impact fees are proportionate and reasonably related to the capital improvement demands of new development. Specific costs have been identified using local data and current dollars. With input from Fire

District staff, TischlerBise identified service demand indicators 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 impact fees for each type of public facility. Impact fee methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital costs.

METHODOLOGY

Impact fees for public facilities made necessary by new development must be based on the same level of service provided to existing development in the service area. There are three basic methodologies used to calculate impact fees. They examine the past, present, and future status of infrastructure. The objective of evaluating these different methodologies is to determine the best measure of the demand created by new development for additional infrastructure capacity. Each method has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components. Additionally, impact fees for public facilities can also include a fee for the administration of the impact fee not to exceed five percent of the total impact fee collected.

Reduced to its simplest terms, the process of calculating impact fees involves two main steps: (1) determining the cost of growth-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss basic methods for calculating impact fees and how those methods can be applied.

- **Cost Recovery** (past improvements) - The rationale for recoupment, often called cost recovery, is that future development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which future development will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- **Incremental Expansion** (concurrent improvements) - The incremental expansion methodology documents current level-of-service standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no existing infrastructure deficiencies or surplus infrastructure capacity. Future development is only paying its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate future development. An incremental expansion methodology is best suited for public facilities that will be expanded in regular increments to keep pace with development.
- **Plan-Based** (future improvements) - The plan-based methodology allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per service demand unit: (1) total cost of a public facility can be divided by total service demand units (average cost), or (2) the growth-share of the

public facility cost can be divided by the net increase in service demand units over the planning timeframe (marginal cost).

Conceptual Impact Fee Calculation

In contrast to project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire service area (usually referred to as system improvements). The first step is to determine an appropriate service demand indicator for the particular type of infrastructure. The service demand indicator measures the number of service units for each unit of development. For example, an appropriate indicator of the demand for parks is residents per housing unit. The second step in the impact fee formula is to determine infrastructure improvement units per service demand unit, typically called level-of-service (LOS) standards. In keeping with the park example, a common LOS standard is park acres per 1,000 residents. The third step in the impact fee formula is the cost of various infrastructure units. To complete the park example, this part of the formula would establish a construction cost per acre of park expansion.

Deficiency Credit

A fundamental principle of impact fees, rooted in both case law and norms of equity, is that impact fees should not charge new development for a higher level of service than is provided to existing development. While the impact fees can be based on a higher level of service than the one existing at the time of the adoption of the fees, another source of funding other than impact fees must be identified and committed to fund the capacity deficiency created by the higher level of service. In addition, the impact fees must generally be reduced to ensure that new development does not pay twice for the same level of service, once through impact fees and again through general taxes that are used to remedy the capacity deficiency for existing development. Such a reduction is referred to as a revenue credit. In order to avoid these complications, the general practice is to base impact fees on the existing level of service. This study does that and consequently a deficiency credit is not warranted for any of the infrastructure types.

Debt Credit

A corollary principle is that new development should not have to pay twice for the same level of service. If impact fees are based on a higher-than-existing level of service, the fees should be reduced by a credit that accounts for the contribution of new development toward remedying the existing deficiencies. A similar situation arises when the existing level of service has not been fully paid for. Outstanding debt on existing facilities that is counted in the existing level of service will be retired, in part, by revenues generated from new development. To avoid requiring new development to pay more than its proportional share, impact fees should be reduced to account for future tax payments that will retire outstanding debt on existing facilities included in determining the existing level of service.

Maximum Supportable Impact Fees

Below, Figure 1 summarizes service areas, methodologies, and infrastructure cost components.

Figure 1. Impact Fee Service Areas, Methodologies, and Cost Allocation

Fee Category	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Fire	Districtwide	-	Fire Stations & Apparatus	-	Equivalent Dwelling Units (EDUs)

The following figures list the schedule of the maximum supportable impact fees by type of land use. The fees represent the highest amount allowable for each type of applicable land use. The maximum supportable impact fees for residential development will be assessed per housing unit based on the square footage of the unit. Nonresidential impact fees will be assessed per square foot of floor area by type of development.

Figure 2. Maximum Supportable Impact Fee Schedule

Dwelling Size (square feet)	EDUs per Housing Unit	Maximum Supportable Fee
Residential (per housing unit by square feet)		
750 or Less	0.32	**$518**
751 to 1,000	0.42	**$680**
1,001 to 1,250	0.60	**$971**
1,251 to 1,500	0.74	**$1,198**
1,501 to 1,750	0.86	**$1,392**
1,751 to 2,000	0.96	**$1,554**
2,001 to 2,250	1.05	**$1,700**
2,251 to 2,500	1.13	**$1,829**
2,501 to 2,750	1.20	**$1,943**
2,751 to 3,000	1.26	**$2,040**
3,001 to 3,250	1.32	**$2,137**
3,251 to 3,500	1.37	**$2,218**
3,501 to 3,750	1.43	**$2,315**
3,751 to 4,000	1.47	**$2,380**
4,000 or more	1.51	**$2,445**

Development Type	EDUs per 1,000 Sq. Ft.	Maximum Supportable Fee
Nonresidential (per 1,000 square feet)		
Retail	0.93	**$1,506**
Office	0.57	**$923**
Industrial	0.23	**$372**
Institutional	0.82	**$1,328**

FIRE DEVELOPMENT IMPACT FEE

The Fire Service Area Report includes components for station space and apparatus. An incremental expansion methodology is applied to examine the current level of service of facilities and demand from residential and nonresidential development. Importantly, the initial purchase of the apparatus that are included in the analysis have a useful life of 10 years or longer making it an impact fee eligible component.

Service Area

The Missoula Rural Fire District (MRFD) strives to provide uniform response times districtwide, with its current and future stations and apparatus operating as an integrated network. The service area for the Fire Service Area Report is districtwide.

Fire Infrastructures Funding Sources

The District has studied various ways of providing funding for fire facilities. The sources of revenue for capital expansion are general fund revenues, grants, or impact fees. In comparing an equitable allocation to the costs borne in the past and to be borne in the future, in comparison to the benefits already received and yet to be received, the District has determined that a mixture of funding sources is an equitable way of financing the growth-related fire facilities.

Specified in Montana Code 7-6-1602-7(b)(ii), local governments must consider *user fees, debt service payments, taxes, and other available sources of funding the system improvements*. In this case, MRFD does not have any existing debt service or another other available sources related to growth-related capital expansion.

In accordance with Montana Code, if any maintenance or repair is required, these costs will need to be funded by other sources, such as property taxes, because replacement and addressing existing deficiencies are not eligible to be funded with impact fees. The District retains discretion and authority to fund deficiencies through the annual CIP budget process, accumulate savings annually, or through the deferred maintenance budget, annually appropriated for these sorts of expenses.

COST ALLOCATION FOR FIRE INFRASTRUCTURE

To determine demand on fire infrastructure from the land uses included in the analysis an equivalent dwelling unit (EDU) factor is used in the impact fee analysis. The following section details the EDU calculations for residential and nonresidential land uses.

Residential Functional Population

For residential land uses, the impact of a dwelling unit on the need for capital facilities is generally proportional to the number of persons residing in the dwelling unit. This can be measured for different housing types and in this analysis, average household size is used to develop the functional population factors.

It is estimated that residents, on average, spend 14 hours, or 58 percent, of each 24-hour weekday at their place of residence. Shown in Figure 3 is the functional population for single family and multifamily units in MRFD.

Figure 3. Residential Functional Population per Housing Unit

Development Type	Unit	Persons per Housing Unit	Percent of Day at Home	Functional Population/Unit
Single Family	dwelling	2.53	58%	1.48
Multifamily	dwelling	1.71	58%	1.00

Source: U.S. Census Bureau, 2024 American Community Survey 5-Year Estimates

Additionally, persons per housing unit and functional population factors can be assessed by the size of the housing unit. Further detailed in Appendix A: Land Use Assumptions, the persons per housing unit by square footage of the unit are derived for size 15 groupings. Using the same methodology as above, the functional population per housing unit size is calculated in Figure 4.

Figure 4. Residential Functional Population per Housing Unit Size

Dwelling Size (square feet)	Unit	Persons per Housing Unit	Percent of Day at Home	Functional Population/Unit
750 or Less	dwelling	0.80	58%	0.47
751 to 1,000	dwelling	1.07	58%	0.62
1,001 to 1,250	dwelling	1.52	58%	0.89
1,251 to 1,500	dwelling	1.88	58%	1.10
1,501 to 1,750	dwelling	2.18	58%	1.27
1,751 to 2,000	dwelling	2.43	58%	1.42
2,001 to 2,250	dwelling	2.66	58%	1.55
2,251 to 2,500	dwelling	2.86	58%	1.67
2,501 to 2,750	dwelling	3.04	58%	1.77
2,751 to 3,000	dwelling	3.20	58%	1.87
3,001 to 3,250	dwelling	3.35	58%	1.95
3,251 to 3,500	dwelling	3.48	58%	2.03
3,501 to 3,750	dwelling	3.61	58%	2.11
3,751 to 4,000	dwelling	3.73	58%	2.18
4,000 or more	dwelling	3.84	58%	2.24

Nonresidential Functional Population

The functional population methodology for nonresidential land uses is based on trip generation and employee density data. Functional population per 1,000 square feet is derived by dividing the total number of hours spent by employees and visitors during a weekday by 24 hours. Employees are estimated to spend eight hours per day at their place of employment and visitors are estimated to spend one hour per visit. Using this formula and information on trip generation rates, vehicle occupancy rates, and employee density, nonresidential functional population estimates per 1,000 square feet of floor area is calculated in Figure 5.

Figure 5. Nonresidential Functional Population per 1,000 Square Feet

Development Type	Unit	Vehicle Trips/ Unit [1]	Persons/ Trip [2]	Employee/ Unit [1]	Visitors/ Unit [3]	Functional Population/Unit [4]
Retail	1,000 sq. ft.	12.01	1.53	2.09	16.28	1.37
Office	1,000 sq. ft.	3.92	1.08	2.28	1.95	0.84
Industrial	1,000 sq. ft.	1.80	1.08	0.90	1.05	0.34
Institutional	1,000 sq. ft.	5.35	1.52	3.00	5.13	1.21

[1] Source: *Trip Generation* , Institute of Transportation Engineers, 12th Edition (2025)
[2] Source: Summary of Travel Trends 2022 National Household Travel Survey, US Department of Transportation Federal Highway Administration
[3] The visitors per unit factor is found by multiplying vehicles trips and persons per trip then subtracting employees per unit.
[4] Functional population is found by multiplying the employee per unit by 8 hours and visitors for unit by 1 hour and then dividing the total by 24 hours.

Equivalent Dwelling Unit Factors

For the MRFD impact fee analysis, an equivalent dwelling unit (EDU) is set to the functional population of a single family unit, 1.48. This is compared to the functional population factors for the other development types to calculate its EDU. For example, a multifamily unit in MRFD has a functional population of 1.00, which results in 0.68 EDUs (1.00 functional population / 1.48 functional population per EDU = 0.68 EDUs).

Figure 6. Missoula Rural Fire District EDU Factors

Development Type	Unit	Functional Population/Unit [1]	EDUs/Unit
Residential (housing type)			
Single Family	dwelling	1.48	**1.00**
Multifamily	dwelling	1.00	**0.68**
Residential (square feet of dwelling unit)			
750 or Less	dwelling	0.47	**0.32**
751 to 1,000	dwelling	0.62	**0.42**
1,001 to 1,250	dwelling	0.89	**0.60**
1,251 to 1,500	dwelling	1.10	**0.74**
1,501 to 1,750	dwelling	1.27	**0.86**
1,751 to 2,000	dwelling	1.42	**0.96**
2,001 to 2,250	dwelling	1.55	**1.05**
2,251 to 2,500	dwelling	1.67	**1.13**
2,501 to 2,750	dwelling	1.77	**1.20**
2,751 to 3,000	dwelling	1.87	**1.26**
3,001 to 3,250	dwelling	1.95	**1.32**
3,251 to 3,500	dwelling	2.03	**1.37**
3,501 to 3,750	dwelling	2.11	**1.43**
3,751 to 4,000	dwelling	2.18	**1.47**
4,000 or more	dwelling	2.24	**1.51**
Nonresidential			
Retail	1,000 sq. ft.	1.37	**0.93**
Office	1,000 sq. ft.	0.84	**0.57**
Industrial	1,000 sq. ft.	0.34	**0.23**
Institutional	1,000 sq. ft.	1.21	**0.82**

[1] TischlerBise analysis of hours spent at locations based on residential demand (person per housing unit) and nonresidential demand (vehicle trips, employee, and visitor generation)

Base Year EDUs

To calculate the current level of service of fire facilities, it is necessary to determine the base year EDUs. This is done by applying the EDU factors to the base year housing and nonresidential floor area estimates. Shown at the bottom of Figure 7, there are a total of 13,784 EDUs in MRFD.

Figure 7. Missoula Rural Fire District Base Year EDUs

Development Type	Base Year Housing Units	EDUs/Unit	Base Year EDUs
Single Family	11,458	1.00	11,458
Multifamily	1,457	0.68	990
Residential Subtotal	**12,915**		**12,448**

Development Type	Base Year 1,000 Sq. Ft.	EDUs/Unit	Base Year EDUs
Retail	556	0.93	517
Office	150	0.57	86
Industrial	2,481	0.23	571
Institutional	197	0.82	162
Nonresidential Subtotal	**3,384**		**1,336**

Development Type	Base Year EDUs	Percent of Total EDUs
Residential EDUs	12,448	90%
Nonresidential EDUs	1,336	10%
Total	**13,784**	**100%**

Level of Service and Cost Analysis

The following section details the level of service and cost factors for facility types included in the analysis.

Call Distribution

Importantly, the impact fees will only be collected within the District's boundaries. However, due to the close proximity between the MRFD and the City of Missoula, a significant portion of the calls responded to by the MRFD occur within the city.

Shown below in Figure 8 is the total annual calls responded to by MRFD. Analysis found that 66.5 percent of calls responded to by the District occurred within the District, while 33.5 percent occurred within the City. To account for this demand and ensure that the growth within MRFD is only charged for service demand generated within the District, the 66.5 percent call split is applied the District's fire station and apparatus inventory to find the level of service.

Figure 8. Missoula Rural Fire District vs. District Calls

Location	2025 Annual Calls	% of Total
Missoula Rural Fire	2,542	**66.5%**
City of Missoula	1,282	**33.5%**
Total	**3,824**	**100.0%**

*Estimated

Fire Station Space

Listed in Figure 9, Missoula Rural Fire District occupies 30,874 square feet of station space. Of that station space, 20,531 square feet is attributed to calls occurring within the Missoula Rural Fire District after applying the 66.5 percent in district calls for service split. To determine the level of service, the floor area is divided by the base year demand factor (EDUs) then multiplied by 1,000. As a result, there are 1,489 square feet of station space per 1,000 EDUs.

Based on the District's CIP, the average cost per square foot for future Stations 1 and 5 is $733. To find the capital cost per EDU, the level of service standard is applied to the average cost per square foot. This results in a capital cost of $1,092 per EDU (1,489 square feet per 1,000 EDUs x $733 per square foot = $1,092 per EDU, rounded).

Figure 9. Fire Station Space Level of Service and Cost Analysis

Fire Stations	Square Feet
Station #1	6,400
Station #2	5,000
Station #4	11,274
Station #5	4,400
Station #6	3,800
Total	**30,874**

Level-of-Service Standards	EDU
Total of Square Feet	30,874
% Calls within MRFD Boundaries	66.5%
MRFD Attributed Square Feet	**20,531**
2026 Equivalent Dwelling Unit (EDU)	13,784
Square Feet per 1,000 EDUs	**1,489**

Cost Analysis	EDU
Square Feet per 1,000 EDUs	1,489
Average Cost per Square Foot [1]	$733
Capital Cost per EDU	**$1,092**

[1] Based on fire station costs in CIP

Fire Apparatus

As shown in Figure 10, Missoula Rural Fire District has 22 vehicles to provide fire services. Of the number of vehicles 14.6 units are attributed to demand within the District after applying the 66.5 percent in district calls for service split. To determine the level of service, the fleet is divided by the base year demand factor (EDUs) then multiplied by 1,000. As a result, there are 1.06 vehicles per 1,000 EDUs.

Based on the District's expectation to replace the fleet, the average cost per vehicle is $497,000. To find the capital cost per EDU, the level of service standard is applied to the average cost. This results in a capital cost of $527 per EDU (1.06 vehicles per 1,000 EDUs x $497,000 per vehicle = $527 per EDU, rounded).

Figure 10. Fire Apparatus Level of Service and Cost Analysis

Apparatus	Units	Cost per Unit [1]	Total Cost
Structure Engine	4	$833,000	$3,332,000
Structure Engine (Type 3)	1	$860,000	$860,000
Wildland Engine (Type 5)	6	$145,000	$870,000
Water Tender	5	$650,000	$3,250,000
Command Vehicle	1	$85,000	$85,000
Ladder Truck	1	$1,800,000	$1,800,000
HazMat Tow Vehicle	1	$600,000	$600,000
Rescue (UTV)	2	$20,000	$40,000
T-6 Rescue	1	$100,000	$100,000
Total	**22**		**$10,937,000**

Level-of-Service Standards	EDU
Total Units	22.0
% Calls to MRFD	66.5%
MRFD Attributed Units	**14.6**
2026 Equivalent Dwelling Unit (EDU)	13,784
Units per 1,000 EDUs	**1.06**

Cost Analysis	EDU
Units per 1,000 EDUs	1.06
Average Cost per Unit	$497,000
Capital Cost per EDU	**$527**

[1] Based on either future anticipated purchase price in CIP or current valuation

FIRE CAPITAL IMPROVEMENTS NEEDED TO SERVICE GROWTH

To accommodate projected development, MRFD will expand its fire facilities and acquire additional apparatus as development occurs. The anticipated need is based on the development projections contained in the land use assumptions (see Appendix A: Land Use Assumptions)

Shown in Figure 11, over the next ten years and based current levels of service and growth projections there is an estimated need for 4,773 square feet of additional fire station space, and a need for an additional 3.4 fire apparatus. The current cost factor is applied to the growth related need to estimate growth-related cost. Overall, there is a growth-related cost of $5.2 million to provide current levels of service to future development.

Figure 11. Growth-Related Need for Fire Station Space

Level of Service		Demand Unit	Unit Cost
1,489	Fire Station Square Feet	per 1,000 EDUs	$733
1.06	Fire Apparatus Units	per 1,000 EDUs	$497,000

Year		Equivalent Dwelling Unit	Fire Station Square Feet	Fire Apparatus Units
Base	2026	13,784	20,531	14.6
Year 1	2027	14,104	21,008	15.0
Year 2	2028	14,425	21,485	15.3
Year 3	2029	14,745	21,962	15.6
Year 4	2030	15,066	22,440	16.0
Year 5	2031	15,386	22,917	16.3
Year 6	2032	15,706	23,394	16.6
Year 7	2033	16,027	23,872	17.0
Year 8	2034	16,347	24,349	17.3
Year 9	2035	16,668	24,827	17.7
Year 10	2036	16,988	25,304	18.0
Ten-Year Increase		**3,204**	**4,773**	**3.4**
Growth-Related Expenditures			**$3,500,122**	**$1,689,800**

MRFD Fire Growth-Related Capital Cost	$5,189,922

FIRE CAPITAL IMPROVEMENT PLANS

Figure 12 lists the Missoula Rural Fire District growth-related Capital Improvement Plan (CIP). The plans include the relocation and expansion of Fire Station 1, and a remodel and expansion of Station 5. The plan totals 26,000 square feet and $19 million, $11.1 million is considered to be growth-related. This is higher than the anticipated need over the next ten years as shown above in Figure 11. Identified in the last two columns of the figure, growth in the next ten years is projected to generate $3.5 million for station expansion. As a result, MRFD will need $15.6 million in other funding sources to complete the plan over the next ten years.

Additionally, the department needs additional apparatus to serve growth. Over the next ten years, the department plans to purchase nine more units with a total cost of $4.8 million. This is higher than the anticipated need over the next ten years shown above in Figure 11. Based on the projected growth in the District, impact fee revenue will be able to fund the first six units in the CIP. District will have to secure other funding to pay for the full cost of the additional apparatus.

In other words, the CIP reflects a level of service greater than the current level of service and under the incremental expansion approach used to calculate the fees, if growth exceeds the projected estimate in this analysis additional revenue will be collected.

Figure 12. Fire 10-Year Capital Improvement Plan

Timeline & Description			*Total Cost*		*Impact Fee & Other Revenues*			
10-Year Fire District Capital Improvement Plan	**Year**	**Unit**	**Total Cost**	**Cost per Unit**	**Growth-Related %**	**Growth-Related Cost**	**10-Year Proj. I.F. Revenue**	**Other Funding [2]**
Facilities								
Station 1 Relocation + Expansion	2031	15,000 Square feet	$11,000,000	$733	57%	$6,306,667	$3,499,000	$7,501,000
Station 5 New/Remodel [1]	2036+	11,000 square feet	$8,066,667	$733	60%	$4,840,000	$0	$8,066,667
	Subtotal	***26,000 square feet***	***$19,066,667***			***$11,146,667***	***$3,499,000***	***$15,567,667***
Apparatus								
Water Tender	2029	1 unit	$650,000	$650,000	100%	$650,000	$650,000	$0
Type 5	2030	2 unit	$290,000	$145,000	100%	$290,000	$290,000	$0
Staff Vehicles (RM/ARM) Used	2031	1 unit	$40,000	$40,000	100%	$40,000	$40,000	$0
BC Staff Vehicle	2031	1 unit	$85,000	$85,000	100%	$85,000	$85,000	$0
Type 1	2033	1 unit	$833,000	$833,000	100%	$833,000	$624,325	$208,675
Type 3	2036	1 unit	$860,000	$860,000	100%	$860,000	$0	$860,000
Ladder Truck	2036+	1 unit	$1,800,000	$1,800,000	41%	$738,462	$0	$1,800,000
Ambulance	2036+	1 unit	$225,000	$225,000	100%	$225,000	$0	$225,000
	Subtotal	***9 units***	***$4,783,000***			***$3,721,462***	***$1,689,325***	***$3,093,675***
		Grand Total	**$23,849,667**			**$14,868,128**	**$5,188,325**	**$18,661,342**

[1] Future total square footage assumed to be similar to Station 4. Growth-related % is based on added square feet from current footprint
[2] Other funding includes state/federal grants, general fund revenue, bond referendum

MAXIMUM SUPPORTABLE FIRE IMPACT FEES

Figure 13 provides a summary of the input variables (described in the chapter sections above) used to calculate the net cost per EDU. The residential Fire Development Impact Fees are the product of equivalent dwelling unit per square feet by type multiplied by the total net capital cost per EDU. For example, maximum impact fee for a 2,000 square foot home is $1,554 per unit ($1,619 per EDU x 0.96 EDUs per housing unit = $1,554, rounded). The nonresidential fees are the product of equivalent dwelling unit per 1,000 square feet by type multiplied by the total net capital cost per EDU.

The fees represent the highest supportable amount for each type of applicable land use and new growth's fair share of the cost for capital facilities. The Fire Board may adopt fees that are less than the amounts shown. However, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in levels of service.

Figure 13. Maximum Supportable Fire Impact Fees

Fee Component	Cost per EDU
Fire Stations	$1,092
Fire Apparatus	$527
Gross Total	$1,619
Net Total	**$1,619**

Dwelling Size (square feet)	EDUs per Housing Unit	Maximum Supportable Fee
Residential (per housing unit by square feet)		
750 or Less	0.32	**$518**
751 to 1,000	0.42	**$680**
1,001 to 1,250	0.60	**$971**
1,251 to 1,500	0.74	**$1,198**
1,501 to 1,750	0.86	**$1,392**
1,751 to 2,000	0.96	**$1,554**
2,001 to 2,250	1.05	**$1,700**
2,251 to 2,500	1.13	**$1,829**
2,501 to 2,750	1.20	**$1,943**
2,751 to 3,000	1.26	**$2,040**
3,001 to 3,250	1.32	**$2,137**
3,251 to 3,500	1.37	**$2,218**
3,501 to 3,750	1.43	**$2,315**
3,751 to 4,000	1.47	**$2,380**
4,000 or more	1.51	**$2,445**

Development Type	EDUs per 1,000 Sq. Ft.	Maximum Supportable Fee
Nonresidential (per 1,000 square feet)		
Retail	0.93	**$1,506**
Office	0.57	**$923**
Industrial	0.23	**$372**
Institutional	0.82	**$1,328**

PROJECTED FIRE IMPACT FEE REVENUE

Revenue projections assume implementation of the maximum supportable fire impact fees and that future development is consistent with the land use assumptions described in Appendix A: Land Use Assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue. The fee for an average size single family and multifamily unit is used in the revenue projections.

As shown in Figure 14, are the growth-related infrastructure costs by type over the next ten years. First, the District has a total CIP cost of $23.8 million and $14.9 million is related to future growth. Furthermore, the cost to continue providing the current level of service (LOS) is $5.2 million. Shown at the bottom of the figure, the maximum supportable impact fees are combined with the 10-year growth projections to estimate $5.2 million of revenue. The revenues are able to offset 100 percent of growth-related capital costs to continue the current level of service.

However, there is a funding gap between the revenue projection and CIP totals. This is a result of the CIP providing expansion plans that exceeds the current level of service and the impact fee being calculated based on the current level of service. Thus, the projects that go above and beyond the 10-year growth-related need will not be funded with impact fees over the next ten years. To fully fund the CIP, the Fire District will have to use other revenues such as grants or bond. Also, under the incremental expansion approach to calculate the fees, if growth exceeds the projected estimate in this analysis additional revenue will be collected.

Figure 14. Projected Fire Impact Fee Revenue

Infrastructure Costs for Fire Facilities

	Total CIP Cost	CIP Growth Cost	Current LOS Cost
Fire Stations	$19,066,667	$11,146,667	$3,500,122
Fire Apparatus	$4,783,000	$3,721,462	$1,689,800
Total Expenditures	**$23,849,667**	**$14,868,128**	**$5,189,922**

Projected Development Impact Fee Revenue

Year		Single Family $1,619 per unit	Multifamily $1,101 per unit	Retail $1,506 per KSF	Office $923 per KSF	Industrial $372 per KSF	Institutional $1,328 per KSF
		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2026	11,458	1,457	556	150	2,481	197
1	2027	11,656	1,482	616	183	2,602	201
2	2028	11,854	1,507	676	215	2,723	205
3	2029	12,052	1,532	736	248	2,844	209
4	2030	12,250	1,557	796	281	2,966	213
5	2031	12,447	1,582	857	313	3,087	216
6	2032	12,645	1,607	917	346	3,208	220
7	2033	12,843	1,633	977	378	3,329	224
8	2034	13,041	1,658	1,037	411	3,450	228
9	2035	13,239	1,683	1,097	444	3,571	232
10	2036	13,437	1,708	1,157	476	3,693	236
Ten-Year Increase		1,979	252	601	326	1,212	38
Projected Revenue		$3,203,839	$276,958	$905,328	$300,937	$450,725	$50,676

Projected Revenue	**$5,188,000**
Projected Expenditures	**$23,849,667**
Non-Impact Fee Funding	**$18,661,667**

APPENDIX A: LAND USE ASSUMPTIONS

The following sections detail base year and projected demographic assumptions.

POPULATION AND HOUSING CHARACTERISTICS

Impact fees often use per capita standards and persons per housing unit or persons per household to derive proportionate share fee amounts. Housing types have varying household sizes and, consequently, a varying demand on District infrastructure and services. Thus, it is important to differentiate between housing types and size.

When persons per housing unit (PPHU) is used in the development impact fee calculations, infrastructure standards are derived using year-round population. In contrast, when persons per household (PPHH) is used in the development impact fee calculations, the fee methodology assumes all housing units will be occupied, thus requiring peak population to be used when deriving infrastructure standards, including assuming all housing units are occupied during peak season. Although the Missoula area receives some visitation and tourism demand, this is typical for a District the size of the Missoula Rural Fire District and does not meet a threshold that would require the analysis to assume full occupancy. Thus, TischlerBise recommends using PPHU in the analysis, consistent with the previous impact fee study.

Based on housing characteristics, TischlerBise recommends using two housing unit categories in the following growth projections: (1) single family and (2) multifamily[1]. Each housing type has different characteristics which results in a different demand on District facilities and services. Figure 15 shows the US Census American Community Survey (ACS) 2023 5-Year Estimates data for Missoula Rural Fire District. Single family units have an average household size of 2.53 persons and multifamily units have an average household size of 1.71 persons. Additionally, there is a housing mix of 89 percent single family and 11 percent multifamily. The estimates in Figure 15 are for household size calculations. Base year population and housing units are estimated with another, more recent data source.

Figure 15. Persons per Housing Unit by Housing Type

Housing Type	Persons	Housing Units	Persons per Housing Units	Households	Persons per Household	Housing Unit Mix
Single Family [1]	22,713	8,976	**2.53**	8,626	2.63	89%
Multifamily [2]	1,951	1,141	**1.71**	1,657	1.18	11%
Total	24,664	10,117	**2.44**	10,283	2.40	

[1] Includes attached and detached single family homes and mobile homes
[2] Includes all other types
Source: US Census Bureau, 2024 American Community Survey 5-Year Estimates

[1] The single family category includes single family detached, single family attached (i.e. townhouses), and mobile homes. The multifamily category includes all other housing types including duplexes and accessory dwelling units (ADU). Additionally, the occupancy status (owner vs renter) does not influence the housing type.

BUILDING PERMIT HISTORY

In Figure 16, the past five years of building permit history is listed by housing type to understand the recent growth trend in the District. There has been a steady amount of single family development over the past five years in the District, while multifamily development has been the driving factor in the elevated construction trend. Housing development peaked in 2021 with a spike in multifamily construction.

Overall, there has been an average of 46 single family units and 4 multifamily units constructed annually. Single family development represents 92 percent of housing growth while multifamily development represents 8 percent of growth.

Figure 16. Building Permit History by Housing Type

Missoula Rural Fire District	2021	2022	2023	2024	2025	Total	5-Year Average
Single Family	81	50	33	42	25	231	**46**
Multifamily	2	4	2	5	6	19	**4**
Total	83	54	35	47	31	250	**50**

Source: Missoula Rural Fire District
Note: Multifamily includes ADUs

BASE YEAR HOUSING UNITS AND POPULATION

Base year population (31,484 residents) is estimated with traffic area zones (TAZ) from the Missoula Travel Demand Model, which projects population amongst other factors from 2022 through the year 2050.

Figure 17. Missoula Population Growth

Missoula Rural Fire District	2022	2023	2024	2025	Base Year 2026
Population	29,309	29,853	30,397	30,940	**31,484**

To estimates the current housing stock in Missoula Rural Fire District, person per housing unit factors from Figure 15 were applied to the base year population. There are an estimated 12,915 housing units in the District 11,458 single family units and 1,457 multifamily units.

Figure 18. Base Year Housing and Population

Missoula Rural Fire District	Base Year 2026
Population [1]	31,484
Housing Units [2]	
Single Family	11,458
Multifamily	1,457
Total Units	12,915

[1] Missoula Rural Fire District, Traffic Area Zone (TAZ) Data
[2] 2024 US Census ACS

HOUSING UNIT AND POPULATION PROJECTIONS

The ten-year residential projections for the District are illustrated in Figure 19. Population growth is based on the estimates from the Missoula MPO travel demand model. As a result, the population is anticipated to reach nearly 37,000 residents by 2036, a 17.3 percent increase from the base year.

Housing development is assumed to continue based on population growth and PPHU factors in Figure 15. This results in 1,979 new single-family units and 252 new multifamily units. The growth rate results in approximately 200 housing units annually, a significant increase from the last five years.

Figure 19. Residential Development Projections

Missoula Rural Fire District	Base Year 2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Increase
Population [1]	31,484	32,028	32,572	33,115	33,659	34,203	34,747	35,290	35,834	36,378	36,922	**5,438**
Percent Increase		1.7%	1.7%	1.7%	1.6%	1.6%	1.6%	1.6%	1.5%	1.5%	1.5%	**17.3%**
Housing Units [2]												
Single Family	11,458	11,656	11,854	12,052	12,250	12,447	12,645	12,843	13,041	13,239	13,437	**1,979**
Multifamily	1,457	1,482	1,507	1,532	1,557	1,582	1,607	1,633	1,658	1,683	1,708	**252**
Total Units	12,915	13,138	13,361	13,584	13,807	14,030	14,253	14,476	14,699	14,922	15,145	**2,230**

[1] TAZ population projection from Missoula MPO travel demand model
[2] Housing growth based on population projections and PPHU factors

Current Employment and Nonresidential Floor Area

The impact fee study will include nonresidential development as well. Employment estimates are based on TAZ data from the Missoula MPO travel demand model which projects employment counts amongst other factors through the year 2050. As a result, there are an estimated 14,713 jobs.

Figure 20. Base Year Total Employment

Missoula Rural Fire District	2022 Total Jobs	Growth Since 2022	Est. 2026 Total Jobs
Employment	13,434	9.5%	**14,713**

Nonresidential floor area is derived from land parcel data, provided Missoula County. The totals for retail, office, industrial, and institutional developments are listed below in Figure 21. Total floor area results in 3,384,456 square feet, the majority being industrial development.

Figure 21. Base Year Employment by Industry

Missoula Rural Fire District	2026 Jobs [1]	2026 Floor Area (square feet) [2]
Retail	6,510	555,936
Office	2,088	150,216
Industrial	5,374	2,480,890
Institutional	741	197,414
Total	**14,713**	**3,384,456**

[1] Missoula MPO travel demand model
[2] Missoula County parcel GIS data

Employment and Nonresidential Floor Area Projections

The ten-year growth projections from the impact fee studies relies on these projections along with employee density factors from the Institution of Transportation Engineers' (ITE). For the retail industry the Shopping Center land use factors are used; for office the General Office factors are used; for industrial the Light Industrial factors are used; for Institutional the Hospital factors are used.

Figure 22. Institute of Transportation Engineers (ITE) Employment Density Factors

Employment Industry	ITE Code	Land Use	Demand Unit	Emp Per Dmd Unit	Sq Ft Per Emp
Retail	820	Shopping Center	1,000 Sq Ft	2.09	479
Office	710	General Office	1,000 Sq Ft	2.28	439
Industrial	110	Light Industrial	1,000 Sq Ft	0.90	1,117
Institutional	610	Hospital	1,000 Sq Ft	3.00	334

Source: Trip Generation, Institute of Transportation Engineers, 12th Edition (2025)

Job and nonresidential floor area projections for the next ten years are shown in Figure 23. Employment projections are based on the travel demand model. Over the next ten years, there is an estimated increase of 3,197 jobs, a 21.7 percent increase from the base year.

Job growth is converted into nonresidential floor area using the ITE square feet per employee averages in Figure 22. Over the next ten years there is a projected increase of 2.1 million nonresidential square feet in the District. Industrial development accounts for 56 percent of the increase with a million new square feet projected.

Figure 23. Employment and Nonresidential Floor Area Projections

Missoula Rual Fire District	Base Year 2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total Increase
Jobs [1]												
Retail	6,510	6,636	6,761	6,887	7,012	7,138	7,263	7,389	7,514	7,640	7,765	**1,255**
Office	2,088	2,162	2,237	2,311	2,385	2,459	2,534	2,608	2,682	2,757	2,831	**743**
Industrial	5,374	5,482	5,591	5,699	5,808	5,916	6,025	6,133	6,242	6,350	6,459	**1,085**
Institutional	741	752	764	775	786	798	809	821	832	844	855	**114**
Total	14,713	15,032	15,352	15,672	15,991	16,311	16,631	16,950	17,270	17,590	17,909	**3,197**
Percent Increase		2.2%	2.1%	2.1%	2.0%	2.0%	2.0%	1.9%	1.9%	1.9%	1.8%	**21.7%**
Nonresidential Floors Area (1,000 sq. ft.) [2]												
Retail	556	616	676	736	796	857	917	977	1,037	1,097	1,157	**601**
Office	150	183	215	248	281	313	346	378	411	444	476	**326**
Industrial	2,481	2,602	2,723	2,844	2,966	3,087	3,208	3,329	3,450	3,571	3,693	**1,212**
Institutional	197	201	205	209	213	216	220	224	228	232	236	**38**
Total	3,384	3,602	3,820	4,038	4,255	4,473	4,691	4,908	5,126	5,344	5,561	**2,177**

[1] Missoula MPO travel demand model

[2] *Trip Generation* , Institute of Transportation Engineers, 12th Edition (2025)

VEHICLE TRIP GENERATION

Residential Vehicle Trips by Housing Type

A customized trip rate is calculated for the single family and multifamily units in the District. In Figure 24 the most recent data from the U.S. Census ACS is inputted into equations provided by the ITE to calculate the trip ends per housing unit factor. A single family unit is estimated to generate 9.90 trip ends and a multifamily unit is estimated to generate 5.20 trip ends on an average weekday. As expected, single family homes generate more vehicle trips than smaller multifamily units. Furthermore, multifamily units in Missoula Rural Fire District average more vehicle trips than the national average.

Figure 24. Customized Residential Trip End Rates by Housing Type

		Households by Structure Type [2]			
Tenure by Units in Structure	Vehicles Available [1]	Single Family	Multifamily	Total	Vehicles per HH by Tenure
Owner-occupied	16,321	7,523	87	7,610	2.14
Renter-occupied	3,487	1,103	999	2,102	1.66
Total	19,808	8,626	1,086	9,712	2.04
	Housing Units [3]	**8,976**	**1,141**	**10,117**	

Units in Structure	Persons in HH [4]	Trip Ends from Persons [5]	Vehicles by Type of Units	Trip Ends from Vehicles [6]	Average Trip Ends	Local Trip Ends per Unit	National Trip Ends per Unit [7]
Single Family Units*	22,713	60,722	17,964	116,762	88,742	**9.90**	**9.09**
Multifamily Units	1,951	4,387	1,844	7,558	5,973	**5.20**	**4.46**
Total	**24,664**	**65,108**	**19,808**	**124,321**	**94,714**	**9.40**	

** Includes Single Family Detached, Single Family Attached, and Manufactured Homes*

1. Vehicles available by tenure from Table B25046, American Community Survey, 2024 5-Year Estimates.
2. Households by tenure and units in structure from Table B25032, American Community Survey, 2024 5-Year Estimates.
3. Housing units from Table B25024, American Community Survey, 2024 5-Year Estimates.
4. Total population in households from Table B25033, American Community Survey, 2024 5-Year Estimates.
5. Vehicle trips ends based on persons using formulas from ITE *Trip Generation* . For single-family housing (ITE 210), the fitted curve equation is EXP(0.89*LN(persons)+1.72) [ITE 2017]. To approximate the average population of the ITE studies, persons were divided by 48 and the equation result multiplied by 48. For multi-family housing (ITE 221), the fitted curve equation is (2.29*persons)-81.02 [ITE 2017].
6. Vehicle trip ends based on vehicles available using formulas from ITE *Trip Generation* . For single-family housing (ITE 210), the fitted curve equation is EXP(0.99*LN(vehicles)+1.93) [ITE 2017]. To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 81 and the equation result multiplied by 81. For multifamily housing (ITE 220), the fitted curve equation is (3.94*vehicles)+293.58 [ITE 2012].
7. *Trip Generation* , Institute of Transportation Engineers, 12th Edition (2025).

Residential Vehicle Trips Adjustment Factors

A vehicle trip end is the out-bound or in-bound leg of a vehicle trip. As a result, so to not double count trips, a standard 50 percent adjustment is applied to trip ends to calculate a vehicle trip. For example, the out-bound trip from a person's home to work is attributed to the housing unit and the trip from work back home is attributed to the employer.

However, an additional adjustment is necessary to capture District residents' work bound trips that are outside of the District. The trip adjustment factor includes two components. According to the National Household Travel Survey, home-based work trips are typically 36 percent of out-bound trips (which are 50 percent of all trip ends). Also, utilizing the most recent data from the Census Bureau's web application "OnTheMap", 85 percent of workers travel outside the District for work. In combination, these factors account for 15 percent of additional production trips (0.36 x 0.50 x 0.85 = 0.15). Shown in Figure 25, the total adjustment factor for residential housing units includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (15 percent of production trips) for a total of 65 percent.

Figure 25. Residential Trip Adjustment Factor for Commuters

Trip Adjustment Factor for Commuters

Employmet Missoula Rural Fire District Residents (2023)	13,476
Residents Working in Missoula Rural Fire District (2023)	2,059
Residents Commuting Outside of Missoula Rural Fire District for Work	11,417
Percent Commuting Out of Missoula Rural Fire District	**85%**

Additional Production Trips [1]	15%
Standard Trip Adjustment Factor	50%
Residential Trip Adjustment Factor [2]	**65%**

Source: U.S. Census, OnTheMap Application (2023)
[1] In combination, these factors (0.36 x 0.50 x 0.85 = 0.15) account for 15 percent of additional production trips.
[2] The total adjustment factor for residential includes attraction trips (50% of trip ends) plus the jouney-to-work commuting adjustmen (15% of production trips) for a total of 65 percent

Nonresidential Vehicle Trips

Vehicle trip generation for nonresidential land uses are calculated by using ITE's average daily trip end rates and adjustment factors found in their recently published 12th edition of Trip Generation. To estimate the trip generation in Missoula Rual Fire District, the weekday trip end per 1,000 square feet factors listed in Figure 26 are used.

Figure 26. Institute of Transportation Engineers Nonresidential Factors

Industry	ITE Code	Land Use	Demand Unit	Wkdy Trip Ends Per Dmd Unit	Wkdy Trip Ends Per Employee
Retail	820	Shopping Center	1,000 Sq Ft	36.39	17.42
Office	710	General Office	1,000 Sq Ft	7.83	3.44
Industrial	110	Light Industrial	1,000 Sq Ft	3.60	4.02
Institutional	610	Hospital	1,000 Sq Ft	10.70	3.57

Source: *Trip Generation* , Institute of Transportation Engineers, 12th Edition (2025)

For nonresidential land uses, the standard 50 percent adjustment is applied to office, industrial, and institutional development. A lower vehicle trip adjustment factor is used for retail development because this type of growth attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination.

In Figure 26, the Institute for Transportation Engineers' land use code, daily vehicle trip end rate, and trip adjustment factor is listed for each land use.

Figure 26. Daily Vehicle Trip Factors

Land Use	ITE Codes	Daily Vehicle Trip Ends	Trip Adj. Factor	Daily Vehicle Trips
Residential (per housing unit)				
Single Family	210	9.09	65%	5.93
Multifamily	220	6.21	65%	4.05
Nonresidential (per 1,000) square feet)				
Retail	820	36.39	33%	12.01
Office	710	7.83	50%	3.92
Industrial	110	3.60	50%	1.80
Institutional	610	10.70	50%	5.35

Source: Trip Generation, Institute of Transportation Engineers, 12th Edition (2025)

VEHICLE TRIP PROJECTIONS

The base year vehicle trip totals and vehicle trip projections are calculated by combining the vehicle trip end factors, the trip adjustment factors, and the residential and nonresidential assumptions for housing stock and floor area. Districtwide, residential land uses account for 73,862 vehicle trips and nonresidential land uses account for 12,786 vehicle trips in the base year (Figure 27).

Through 2036, it is projected that daily vehicle trips will increase by 13,771 trips with the majority of the growth being generated by retail and multifamily development.

Figure 27. Vehicle Trip Projections

Missoula Rural Fire District	Base Year 2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total Increase
Residential Trips												
Single Family	67,960	68,233	68,506	68,778	69,051	69,324	69,597	69,870	70,143	70,415	70,688	**2,728**
Multifamily	5,902	5,918	5,934	5,950	5,967	5,983	5,999	6,015	6,031	6,048	6,064	**162**
Subtotal	73,862	74,151	74,440	74,729	75,018	75,307	75,596	75,885	76,174	76,463	76,752	**2,890**
Nonresidential Trips												
Retail	6,676	7,398	8,120	8,842	9,564	10,286	11,007	11,729	12,451	13,173	13,895	**7,219**
Office	588	716	843	971	1,099	1,226	1,354	1,482	1,609	1,737	1,865	**1,276**
Industrial	4,466	4,684	4,902	5,120	5,338	5,556	5,774	5,992	6,210	6,428	6,647	**2,181**
Insitutional	1,056	1,077	1,097	1,117	1,138	1,158	1,179	1,199	1,219	1,240	1,260	**204**
Subtotal	12,786	13,874	14,962	16,050	17,138	18,226	19,314	20,402	21,490	22,578	23,666	**10,881**
Vehicle Trips												
Grand Total	86,648	88,025	89,402	90,779	92,156	93,533	94,910	96,287	97,664	99,041	100,419	**13,771**

Source: Trip Generation, Institute of Transportation Engineers, 12th Edition (2025)

DEMAND INDICATORS BY DWELLING SIZE

As an alternative to simply using national average trip generation rates for residential development, published by the Institute of Transportation Engineers (ITE), TischlerBise derived custom trip rates using local demographic data. Key inputs needed for the analysis (i.e., average number of persons and vehicles available per housing) are available from ACS data.

The U.S. Census Bureau provides a continuous monthly mailing of surveys, which has limitations due to sample-size constraints. For example, data on detached housing units are combined with attached single units (commonly known as townhouses). Part of the rationale for deriving fees by house size, as discussed further below, is to address this ACS data limitation. Because townhouses generally have fewer bedrooms and less living space than detached units, fees by house size ensure proportionality and facilitate construction of affordable units. For the following calculations, Figure 28 highlights the overall average of 2.44 persons per housing unit for all homes in the District.

Figure 28. Persons per Housing Unit

Housing Type	Persons	Housing Units	Persons per Housing Units	Households	Persons per Household	Housing Unit Mix
Single Family [1]	22,713	8,976	**2.53**	8,626	2.63	89%
Multifamily [2]	1,951	1,141	**1.71**	1,657	1.18	11%
Total	24,664	10,117	**2.44**	10,283	2.40	

[1] Includes attached and detached single family homes and mobile homes
[2] Includes all other types
Source: US Census Bureau, 2024 American Community Survey 5-Year Estimates

Trip generation rates are also dependent upon the average number of vehicles available per dwelling. Figure 29 indicates an average of 1.95 vehicles per housing unit in Missoula Rural Fire District.

Figure 29. Vehicles per Housing Unit

		Housing Units			
Tenure	Vehicles Available	Single Family	Multifamily	Total	Vehicles per HU by Tenure
Owner-occupied	16,321	7,523	87	7,610	2.14
Renter-occupied	3,487	1,103	999	2,102	1.66
Total	19,808	8,626	1,086	9,712	2.04

Housing Type	Vehicles Available	Housing Units	Vehicles per Housing Unit
Single Family	17,930	8,976	**2.00**
Multifamily	1,845	1,141	**1.62**
Total	19,775	10,117	**1.95**

Source: U.S. Census Bureau, 2024 American Community Survey 5-Year Estimates

Demand Indicators by Dwelling Size

Impact fees must be proportionate to the demand for infrastructure. Because averages per household, for both persons and vehicle trip ends, have a strong, positive correlation to the number of bedrooms, TischlerBise recommends residential fee schedules that increase by unit size. Custom tabulations of demographic data by bedroom range can be created from individual survey responses provided by the

U.S. Census Bureau in files known as Public Use Microdata Samples (PUMS). PUMS files are only available for areas of at least 100,000 persons with Missoula Rural Fire District included in Public Use Microdata Areas (PUMA) 200.

Cells shaded yellow below are survey results for PUMA 200. Unadjusted persons per household (1.93), derived from PUMS data for the PUMA listed above, are adjusted upward to match the control totals for Missoula Rural Fire District (2.44), as shown above in Figure 30. Adjusted persons per housing unit totals are shaded in gray.

Figure 30. Persons by Bedroom Range

Bedroom Range	Persons[1]	Vehicles Available[1]	Housing Unit[1]	Housing Mix	Unadjusted PPHU	Adjusted PPHU[2]	Unadjusted VPHU	Adjusted VPHU[2]
0-1	565	579	538	14%	1.05	**1.34**	1.08	1.12
2	1,646	1,643	1,038	27%	1.59	**2.02**	1.58	1.65
3	2,835	2,892	1,426	37%	1.99	**2.53**	2.03	2.11
4	1,588	1,472	596	16%	2.66	**3.39**	2.47	2.57
5+	690	589	229	6%	3.01	**3.84**	2.57	2.68
Total	7,324	7,175	3,827	100%	1.91	**2.44**	1.87	1.95

1. American Community Survey, Public Use Microdata Sample for Montana PUMA 200 (2023 5-Year unweight
2. Adjusted multipliers are scaled to make the average PUMS values match control totals for Missoula based on 2023 ACS 5-Year Estimates.

Persons by Dwelling Size

Average floor area and number of persons by bedroom range are plotted in Figure 31 with a logarithmic trend line derived from 2024 square footage estimates provided by the U.S. Census Bureau (West Region). Dwellings with one bedroom or less average 1,001 square feet of floor area—based on multifamily dwellings constructed in West Census Region. Two-bedroom dwellings average 1,508 square feet, three-bedroom dwellings average 2,069 square feet, four-bedroom dwellings average 2,994 square feet, and dwellings with five or more bedrooms average 4,223 square feet—based on single family dwellings constructed in West Census Region.

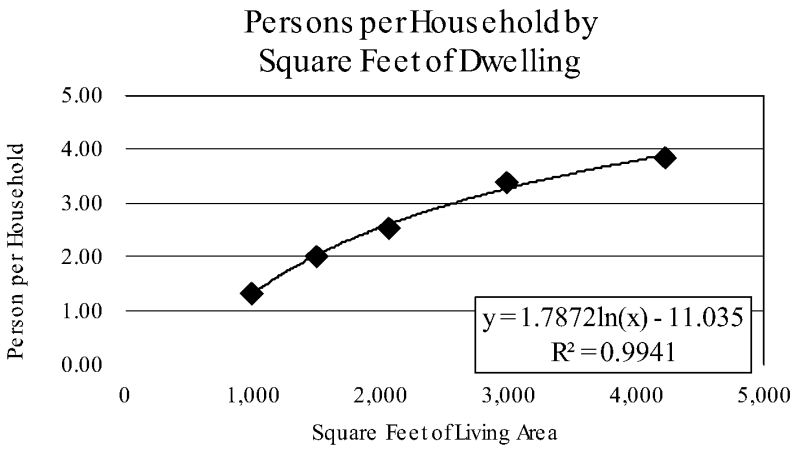
Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons, by dwelling size, using 15 size groupings. The largest residential size grouping in the current impact fee schedule is 4,001 square feet and greater.

As shown in the upper-right corner of the table below, the smallest floor area range (750 square feet or less) has an estimated average of 0.80 persons per dwelling. The largest floor area range (4,001 square feet or more) has an estimated average of 3.84 persons per dwelling. Importantly, vacancy rates are included in the PPHU factors, resulting in the small dwelling units having less than one person per unit.

Figure 31. Persons by Dwelling Size

Actual Averages per Dwelling Unit			Fitted-Curve Values	
Bedrooms	Square Feet	Persons	Sq Ft Range	Persons
0-1	1,001	1.34	750 or less	0.80
2	1,508	2.02	751 to 1,000	1.07
3	2,069	2.53	1,001 to 1,250	1.52
4	2,994	3.39	1,251 to 1,500	1.88
5+	4,223	3.84	1,501 to 1,750	2.18
			1,751 to 2,000	2.43
			2,001 to 2,250	2.66
			2,251 to 2,500	2.86
			2,501 to 2,750	3.04
			2,751 to 3,000	3.20
			3,001 to 3,250	3.35
			3,251 to 3,500	3.48
			3,501 to 3,750	3.61
			3,751 to 4,000	3.73
			4,001 or more	3.84

Average persons per household derived from 2023 ACS PUMS data for the area that includes Missoula (PUMA 200). Unit size for 0-1 bedroom is from the 2024 U.S. Census Bureau average for all multifamily units constructed in the Census West region. Unit size for all other bedrooms is from the 2024 U.S. Census Bureau average for single family units constructed in the Census Mountain division.



APPENDIX B: LAND USE DEFINITIONS

Residential Development

Single Family:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.
3. Mobile home includes both occupied and vacant mobile homes, to which no permanent rooms have been added, are counted in this category. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.

Multifamily:

1. 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with "2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments."
2. Boat, RV, Van, etc. includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence. Such living quarters are only allowed under Missoula zoning under unusual temporary conditions.

Nonresidential Development

Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per 1,000 square feet).

Retail: Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Retail* includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, and movie theaters.

Industrial: Establishments primarily engaged in the production, transportation, or storage of goods. By way of example, *Industrial* includes manufacturing plants, distribution warehouses, trucking companies, utility substations, power generation facilities, and telecommunications buildings.

Office: Establishments providing management, administrative, professional, or business services. By way of example, *Office* can include business offices, office parks, and corporate headquarters.

Institutional: Establishments providing education and healthcare services. By way of example, *Institutional* includes universities, nursing homes, daycare facilities, and hospitals.