# Capital Improvement Plan and Development Impact Fee Study

Submitted to:

Marsing Rural Fire District

January 13, 2025

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# Development Impact Fee Study
# Marsing Rural Fire District

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## EXECUTIVE SUMMARY

The Marsing Rural Fire District ("Fire District") retained TischlerBise to prepare a Capital Improvement Plan and Development Impact Fee Study in order to meet the new demands generated by new development within the Fire District. This report presents the methodology and calculation used to generate current levels of service and updated maximum supportable impact fees. It is intended to serve as supporting documentation for establishing impact fees in the Fire District.

The purpose of this study is to demonstrate the Fire District's compliance with Idaho Statutes as authorized by the Idaho Legislature. Consistent with the authorization (Idaho Code 67-8202(1-4)), it is the intent of the Fire District to:

1. Collect impact fees to ensure that adequate public facilities are available to serve new growth and development;
2. Promote orderly growth and development by establishing uniform standards by which local governments may require that those who benefit from new growth and development pay a proportionate share of the cost of new public facilities needed to serve new growth and development;
3. Establish minimum standards for the adoption of development impact fee ordinances by government entities;
4. Ensure that those who benefit from new growth and development are required to pay no more than their proportionate share of the cost of public facilities needed to serve new growth and development and to prevent duplicate and ad hoc development requirements;

Impact fees are one-time payments used to construct system improvements needed to accommodate new development. An impact fee represents new growth's fair share of capital facility needs. By law, impact fees can only be used for capital improvements, not operating or maintenance costs. Impact fees are subject to legal standards, which require fulfillment of three key elements: need, benefit and proportionality.

- First, to justify a fee for public facilities, it must be demonstrated that new development will create a need for capital improvements.
- Second, new development must derive a benefit from the payment of the fees (i.e., in the form of public facilities constructed within a reasonable timeframe).
- Third, the fee paid by a particular type of development should not exceed its proportional share of the capital cost for system improvements.

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of development for the levels of service and fees. Local demographic data and improvement costs were used to identify specific capital costs attributable to growth. This report includes summary tables

indicating the specific factors, referred to as level of service standards, used to derive the impact fees. The service area for the analysis and fee collection is districtwide. Lastly, the fees are calculated for both residential and nonresidential development.

## IDAHO DEVELOPMENT IMPACT FEE ENABLING LEGISLATION

The Enabling Legislation governs how development fees are calculated for municipalities in Idaho. All requirements of the Idaho Development Impact Fee Act have been met in the supporting documentation prepared by TischlerBise. There are four requirements of the Idaho Act that are not common in the development impact fee enabling legislation of other states. This overview offers further clarification of these unique requirements.

First, as specified in 67-8204(2) of the Idaho Act, "development impact fees shall be calculated on the basis of levels of service for public facilities . . . applicable to existing development as well as new growth and development."

Second, Idaho requires a Capital Improvements Plan (CIP) [see 67-8208]. The CIP requirements are summarized in this report, with detailed documentation provided in the discussion on infrastructure.

Third, the Idaho Act also requires documentation of any existing deficiencies in the types of infrastructure to be funded by development impact fees [see 67-8208(1)(a)]. The intent of this requirement is to prevent charging new development to cure existing deficiencies. In the context of development impact fees for the Fire District, the term "deficiencies" means a shortage or inadequacy of current system improvements when measured against the levels of service to be applied to new development. It does not mean a shortage or inadequacy when measured against some "hoped for" level of service.

TischlerBise used the current infrastructure cost per service unit (i.e., existing standards), or future levels of service where appropriate, multiplied by the projected increase in service units over an appropriate planning timeframe, to yield the cost of growth-related system improvements. The relationship between these three variables can be reduced to a mathematical formula, expressed as A x B = C. In section 67-8204(16), the Idaho Act simply reorganizes this formula, stating the cost per service unit (i.e., development impact fee) may not exceed the cost of growth-related system improvements divided by the number of projected service units attributable to new development (i.e., A = C ÷ B). By using existing infrastructure standards to determine the need for growth-related capital improvements, the Fire District ensures the same level-of-service standards are applicable to existing and new development. Using existing infrastructure standards also means there are no existing deficiencies in the current system that must be corrected from non-development impact fee funding.

Fourth, Idaho requires a proportionate share determination [see 67-8207]. Basically, local government must consider various types of applicable credits and/or other revenues that may reduce the capital costs

attributable to new development. The development impact fee methodologies and the cash flow analysis have addressed the need for credits to avoid potential double payment for growth-related infrastructure.

Importantly, stated in [67-8204A], "Governmental entities . . . that are jointly affected by development are authorized to enter into intergovernmental agreements with each other or with . . . fire districts, ambulance districts . . . for the purpose of developing joint plans for capital improvements or for the purpose of agreeing to collect and expend development impact fees for system improvements, or both, provided that such agreement complies with any applicable state laws." Thus, the impact fees for the Marsing Rural Fire District will be collected by the City of Marsing, Canyon County, and Owyhee County. To ensure that the Fire District captures the full potential revenue of the impact fees an intergovernmental agreement (IGA) is necessary for the City and Counties to collect the impact fees on the District's behalf. Those revenues would be remitted to the Fire District periodically.

## SUMMARY OF CAPITAL IMPROVEMENT PLANS AND DEVELOPMENT IMPACT FEES

Development impact fees can be calculated by any one of several legitimate methods. The choice of a particular method depends primarily on the service characteristics and planning requirements for each facility type. Each method has advantages and disadvantages in a particular situation, and to some extent can be interchangeable, because each allocates facility costs in proportion to the needs created by development.

Reduced to its simplest terms, 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, 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. The following paragraphs discuss three basic methods for calculating development impact fees, and how each method can be applied.

***Cost Recovery*.** The rationale for the cost recovery approach 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 systems that were oversized such as sewer and water facilities.

***Incremental Expansion*.** The incremental expansion method documents the current level of service (LOS) for each type of public facility in both quantitative and qualitative measures, based on an existing service standard (such as park land acres per 1,000 residents). This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments, with LOS standards based on current conditions in the community.

***Plan-Based*.** The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Facility plans identify needed improvements, and land use plans identify development. In this method, the total cost of relevant facilities is divided by total demand to calculate a cost per unit of demand. Then, the cost per unit of demand is multiplied by the amount of demand per unit of development (e.g., housing units or square feet of building area) in each category to arrive at a cost per specific unit of development (e.g., single family detached unit).

***Credits.*** Regardless of the methodology, a consideration of "credits" is integral to the development of a legally valid impact fee methodology. There are two types of "credits," each with specific and distinct characteristics, but both of which should be addressed in the calculation of development impact fees. The first is a credit due to possible double payment situations. This could occur when contributions are made by the property owner toward the capital costs of the public facility covered by the impact fee. This type of credit is integrated into the impact fee calculation. The second is a credit toward the payment of a fee for dedication of public sites or improvements provided by the developer and for which the facility fee is imposed. This type of credit is addressed in the administration and implementation of a facility fee program.

## Proposed Fee Methods and Cost Components

Figure 1 lists impact fee service area, the components to the impact fee, and the methodologies used in the analysis.

**Figure 1. Summary of Impact Fee Methodologies**

| Fee Category | Service Area | Cost Recovery | Incremental Expansion | Plan-Based | Cost Allocation |
|---|---|---|---|---|---|
| Fire | Districtwide | Impact Fee Study | Fire Apparatus, and Fire Equipment | | Equivalent Dwelling Units (EDUs) |

## Capital Improvement Plan

Below in Figure 2 is the ten-year capital improvement plan (CIP) the Fire District is anticipating to accommodate future demand. In the CIP, there are fire apparatus and equipment that is consistent with the projected need to serve growth at the current level of service. The CIP is to be updated annually and will be revised to reflect any shift in demand, market, and costs.

**Figure 2. Capital Improvement Plan**

| Marsing Rural Fire District 10-Year Capital Improvement Plan | | |
|---|---|---|
| **Project** | **Unit** | **Cost** |
| New Fire Engine | 1 | $500,000 |
| New Pumper Truck | 1 | $500,000 |
| New Fire Equipment | 20 | $40,000 |
| | **Total** | **$1,040,000** |

### Maximum Supportable Development Impact Fees

Figure 3 provides a schedule of the maximum supportable development impact fees by type of land use for the Fire District. The fees represent the highest supportable amount for each type of applicable land use, and represents 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. Currently, Marsing Rural Fire District is collecting impact fees in the Canyon County portion of the district amounting to $1,238 per housing unit and $620 per 1,000 nonresidential square feet.

The service unit for the Fire Impact Fee is an equivalent dwelling unit, or EDU. EDU factors by land use is determined with functional population factors such as persons per housing unit and employees per 1,000 square feet. The description of the functional population methodology, the calculation of the EDU factors, and the determination of existing and projected EDUs is presented in the body of the report.

**Figure 3. Summary of Maximum Supportable Development Impact Fee**

**Residential**

| Housing Type | EDUs per Housing Unit | Maximum Supportable Fee |
|---|---|---|
| **Residential (per housing unit)** | | |
| Single Family | 1.00 | **$1,500** |
| Multifamily | 0.48 | **$720** |

**Nonresidential**

| Development Type | EDUs per 1,000 Sq. Ft. | Maximum Supportable Fee |
|---|---|---|
| **Nonresidential (per 1,000 square feet)** | | |
| Retail | 0.99 | **$1,485** |
| Office | 0.72 | **$1,080** |
| Industrial | 0.34 | **$510** |
| Institutional | 0.71 | **$1,065** |

## CAPITAL IMPROVEMENT PLAN

The following section provides a summary of the Capital Improvement Plans depicting growth-related capital demands. First, Figure 4 lists the projected growth over the next ten years in the Fire District. Overall, there is an estimated 986 new residents and 114 new jobs projected (16 percent increase from the base year). Further details on the growth projections can be found in Appendix B. Demographic Assumptions

### Figure 4. Ten-Year Growth Projections

| | | 5-Year Increment | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Base Year | *1* | *2* | *3* | *4* | *5* | *10* | Total |
| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2033 | Increase |
| Population [1] | 6,225 | 6,393 | 6,562 | 6,642 | 6,722 | 6,803 | 7,211 | **986** |
| **Housing Units by Type [1]** | | | | | | | | |
| Single Family | 2,233 | 2,293 | 2,353 | 2,383 | 2,413 | 2,442 | 2,594 | **361** |
| Multifamily | 59 | 60 | 61 | 62 | 63 | 64 | 69 | **10** |
| Total Housing Units | 2,292 | 2,353 | 2,414 | 2,445 | 2,476 | 2,506 | 2,663 | **371** |
| **Jobs [1]** | | | | | | | | |
| Retail | 270 | 277 | 285 | 288 | 292 | 295 | 313 | **43** |
| Office | 94 | 97 | 99 | 100 | 102 | 103 | 109 | **15** |
| Industrial | 307 | 315 | 324 | 328 | 332 | 335 | 356 | **49** |
| Institutional | 160 | 164 | 169 | 171 | 173 | 175 | 185 | **25** |
| Total Jobs | 831 | 853 | 876 | 887 | 897 | 908 | 963 | **132** |
| **Nonresidential Floor Area (1,000 sq. ft.) [2]** | | | | | | | | |
| Retail | 127 | 131 | 134 | 136 | 137 | 139 | 147 | **20** |
| Office | 29 | 30 | 30 | 31 | 31 | 32 | 33 | **5** |
| Industrial | 196 | 201 | 206 | 209 | 211 | 214 | 227 | **31** |
| Institutional | 56 | 58 | 59 | 60 | 60 | 61 | 65 | **9** |
| Total Floor Area | 408 | 419 | 430 | 435 | 440 | 445 | 472 | **65** |
| **EDUs [1]** | | | | | | | | |
| Residential Subtotal | 2,261 | 2,322 | 2,382 | 2,413 | 2,443 | 2,473 | 2,627 | **366** |
| Nonresidential Subtotal | 253 | 260 | 267 | 270 | 273 | 276 | 293 | **40** |
| Total EDUs | 2,514 | 2,582 | 2,649 | 2,682 | 2,716 | 2,750 | 2,920 | **406** |

[1] Source: U.S. Census Bureau, 2021 American Community Survey 5-Year Estimates; COMPASS (Community Planning Association of Southwest Idaho) Traffic Analysis Zone Model; ESRI Business Analyst; TischlerBise analysis
[2] Source: Institute of Transportation Engineers, Trip Generation, 2021

The Idaho Development Fee Act requires Capital Improvement Plans (CIP) to be updated regularly, at least once every five years (Idaho Code 67-8208(2)). This report projects revenue and fees based on ten-year forecast in an effort to provide the public and elected officials with illustrative guidance of probable growth demands based on current trends however, per Idaho Code, it is expected that an update to all CIPs included in this study will occur within five years.

The development impact fee is based on the existing level of service provided for fire facilities. To serve projected growth at current levels of service, the following infrastructure is projected over the next ten years:

- 1.77 new apparatus units
- 18.46 new equipment units
- $580,000 growth-related costs

Below in Figure 5 is the ten-year CIP the Fire District is anticipating to accommodate future demand. In the plan are fire apparatus and equipment that is consistent with the projected need to serve growth at the current level of service. At the moment, additional fire station space is not needed to accommodate growth, however, that may be revised in the future. The CIP is to be updated annually and will be revised to reflect any shift in demand, market, and costs.

**Figure 5. Capital Improvement Plan**

| Marsing Rural Fire District 10-Year Capital Improvement Plan | | |
|---|---|---|
| **Project** | **Unit** | **Cost** |
| New Fire Engine | 1 | $500,000 |
| New Pumper Truck | 1 | $500,000 |
| New Fire Equipment | 20 | $40,000 |
| | **Total** | **$1,040,000** |

### Funding Sources for Capital Improvements

In determining the proportionate share of capital costs attributable to new development, the Idaho Development Fee Act states that local governments must consider historical, available, and alternative sources of funding for system improvements (Idaho Code 67-8209(2)). Currently, there are no dedicated revenues being collected by the Fire District to fund growth-related projects.

Furthermore, the maximum supportable impact fees are constructed to offset all growth-related capital costs for facilities. Evidence is given in in the specific chapters of this report that the projected capital costs from new development will be entirely offset by the development impact fees. Thus, no general tax dollars are assumed to be used to fund growth-related capital costs, requiring no further revenue credits.

# FIRE PROTECTION DEVELOPMENT IMPACT FEES

The Fire Development Impact Fee is based on the cost per service unit method specified in Idaho Code 67-8204(16), also referred to as the incremental expansion method elsewhere in this report.

The Fire infrastructure components included in the impact fee analysis are:

- Fire apparatus
- Fire equipment
- Cost of development impact fee study

At the moment, additional fire station space is not needed to accommodate growth, however, that may be revised in the future. The CIP is to be updated annually and future updates to the impact fee program will be revised to reflect any shift in demand, market, and costs.

The service unit for the Fire Impact Fee is an equivalent dwelling unit, or EDU. The functional population per unit factors by land use such as persons per housing unit and employees per 1,000 square feet are converted into EDUs, with a single family home being equivalent to one EDU. 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. 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. The description of the functional population methodology, the calculation of the EDU factors, and the determination of existing and projected EDUs in the service area are presented below.

Specified in Idaho Code 67-8209(2), local governments must consider historical, available, and alternative sources of funding for system improvements. Currently, there are no dedicated revenues being collected by the Fire District to fund growth-related projects for fire facilities. Furthermore, the maximum supportable impact fees are constructed to offset all growth-related capital costs for facilities. Evidence is given in this chapter that the projected capital costs from new development will be entirely offset by the development impact fees. Thus, no general tax dollars are assumed to be used to fund growth-related capital costs, requiring no further revenue credits.

## COST ALLOCATION FOR FIRE PROTECTION INFRASTRUCTURE

### 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 6 is the functional population for single family and multifamily units in Marsing Rural Fire District.

**Figure 6. Residential Functional Population per Housing Unit**

| Development Type | Unit | Persons per Household | Percent of Day at Home | Functional Population/Unit |
|---|---|---|---|---|
| Single Family | dwelling | 2.92 | 58% | 1.70 |
| Multifamily | dwelling | 1.39 | 58% | 0.81 |

Source: U.S. Census Bureau, 2021 American Community Survey 5-Year Estimates

### 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 7.

**Figure 7. 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. | 14.06 | 1.82 | 2.12 | 23.46 | 1.69 |
| Office | 1,000 sq. ft. | 5.42 | 1.18 | 3.26 | 3.14 | 1.22 |
| Industrial | 1,000 sq. ft. | 2.44 | 1.18 | 1.57 | 1.31 | 0.58 |
| Institutional | 1,000 sq. ft. | 5.39 | 1.67 | 2.86 | 6.14 | 1.21 |

[1] Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017)

[2] Source: Summary of Travel Trends 2017 National Household Travel Survey, US Department of Transportation Federal Highway Administration, 2017

[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

In the service area an equivalent dwelling unit (EDU) is set to the functional population of a single family unit. In Marsing Rural Fire District an EDU is set to a functional population of 1.70. This is compared to the functional population factors for the other development types to calculate its EDU. For example, a multifamily unit in the District has a functional population of 0.81, which results in 0.48 EDUs (0.81 functional population / 1.70 functional population per EDU = 0.48 EDUs).

### Figure 8. Marsing Rural Fire District EDU Factors

| Development Type | Unit | Functional Population/Unit | EDUs/Unit |
|---|---|---|---|
| Single Family | dwelling | 1.70 | 1.00 |
| Multifamily | dwelling | 0.81 | 0.48 |
| Retail | 1,000 sq. ft. | 1.69 | 0.99 |
| Office/Service | 1,000 sq. ft. | 1.22 | 0.72 |
| Industrial | 1,000 sq. ft. | 0.58 | 0.34 |
| Institutional | 1,000 sq. ft. | 1.21 | 0.71 |

## 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 9, there are a total of 2,516 EDUs in the Marsing Rural Fire District.

### Figure 9. Marsing Rural Fire District Base Year EDUs

| Development Type | Base Year Housing Units | EDUs/Unit | Base Year EDUs |
|---|---|---|---|
| Single Family | 2,235 | 1.00 | 2,235 |
| Multifamily | 59 | 0.48 | 28 |
| Residential Subtotal | 2,294 | | 2,263 |

| Development Type | Base Year 1,000 Sq. Ft. | EDUs/KSF | Base Year EDUs |
|---|---|---|---|
| Retail | 127 | 0.99 | 126 |
| Office | 29 | 0.72 | 21 |
| Industrial | 196 | 0.34 | 66 |
| Institutional | 56 | 0.71 | 40 |
| Nonresidential Subtotal | 408 | | 253 |

| Development Type | Base Year EDUs | Percent of Total EDUs |
|---|---|---|
| Residential EDUs | 2,263 | 90% |
| Nonresidential EDUs | 253 | 10% |
| Total | 2,516 | 100% |

## FIRE PROTECTION LEVEL OF SERVICE AND COST ANALYSIS

As shown in Figure 10, Marsing Rural Fire District has 11 vehicles to provide fire services. 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 4.37 vehicles per 1,000 EDUs.

Based on the District's expectation to replace the fleet, the average cost per vehicle is $308,000. 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 $1,346 per EDU (4.37 vehicles per 1,000 EDUs x $308,000 per vehicle = $1,346 per EDU, rounded).

**Figure 10. Fire Apparatus Level of Service and Cost Analysis**

| Apparatus | Units | Current Cost per Unit | Total Replacement Cost |
|---|---|---|---|
| Brush Truck | 4 | $188,000 | $752,000 |
| Fire Engine | 4 | $500,000 | $2,000,000 |
| Fire Tender | 2 | $292,360 | $584,720 |
| Ford Truck | 1 | $45,980 | $45,980 |
| **Total** | **11** | | **$3,382,700** |

| ***Level-of-Service Standards*** | **EDU** |
|---|---|
| Proportionate Share | 100% |
| Share of Units | 11.0 |
| 2023 Equivalent Dwelling Unit (EDU) | 2,516 |
| **Units per 1,000 EDUs** | **4.37** |

| ***Cost Analysis*** | **EDU** |
|---|---|
| Units per 1,000 EDUs | 4.37 |
| Average Cost per Unit | $308,000 |
| **Capital Cost per EDU** | **$1,346** |

As shown in Figure 11, Marsing Rural Fire District has 115 units of equipment to provided fire services. To determine the level of service, the equipment is divided by the base year demand factor (EDUs) then multiplied by 1,000. As a result, there are 45.71 equipment units per 1,000 EDUs.

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 $91 per EDU (45.71 units per 1,000 EDUs x $2,000 per unit = $91 per EDU, rounded).

**Figure 11. Fire Equipment Level of Service and Cost Analysis**

| Equipment Type | Units | Current Cost per Unit | Total Replacement Cost |
|---|---|---|---|
| MSA G1 | 12 | $7,789 | $93,468 |
| MSA Bottles | 12 | $1,210 | $14,520 |
| Survive Air | 16 | $7,789 | $124,624 |
| Bottles | 16 | $1,210 | $19,360 |
| Motorola HT1250 | 45 | $131 | $5,900 |
| Mounted Radios | 14 | $1,450 | $20,300 |
| **Total** | **115** | | **$278,172** |

| *Level-of-Service Standards* | EDU |
|---|---|
| Proportionate Share | 100% |
| Share of Units | 115 |
| 2023 Equivalent Dwelling Unit (EDU) | 2,516 |
| **Units per 1,000 EDU** | **45.71** |

| *Cost Analysis* | EDU |
|---|---|
| Units per 1,000 EDU | 45.71 |
| Average Cost per Unit | $2,000 |
| **Capital Cost per EDU** | **$91** |

### SHARE OF THE DEVELOPMENT IMPACT FEE STUDY

Under the Idaho enabling legislation, the Fire District is able to recover the cost of the study through the collection of future fees. An impact fee study must be completed every five years, so the study cost is compared to the five-year projected increase in equivalent dwelling units (EDUs). As a result, the cost per EDU is $63.

**Figure 12. Share of the Development Impact Fee Study**

| Share of Study Cost | Residential Share | Nonresidential Share |
|---|---|---|
| $16,300 | 90% | 10% |

| Residential Growth Share | Five-Year EDU Increase | Capital Cost per EDU |
|---|---|---|
| 100% | **234** | **$63** |

## CAPITAL IMPROVEMENTS NEEDED TO SERVE GROWTH

Needs due to future growth were calculated using the levels of service and cost factors for the infrastructure components. Growth-related needs are a projection of the amount of infrastructure and estimated costs over the next ten years needed to maintain levels of service.

To estimate the 10-year growth needs for fire apparatus in Marsing Rural Fire District, the current level of service (4.37 units per 1,000 EDUs) is applied to the projected growth of EDUs in the district. The district is projected to increase by 404 EDUs over the next ten years. Listed in Figure 13, there will need to be a total of 1.77 additional fire apparatus added to the fleet to accommodate the growth. By applying the average cost ($308,000 per unit), the total expenditure for the growth is calculated (1.77 units x $308,000 = $543,656).

Lastly, the current level of service for equipment (45.71 units per 1,000 EDUs) is applied to the projected growth of EDUs in the district. There will be a need for 18.46 new units of equipment to accommodate growth. By applying the average cost ($2,000 per unit), the total expenditure for the growth is calculated. Overall, the combined projected need for growth is $580,582.

**Figure 13. Projected Demand for Fire Apparatus & Equipment**

| Level of Service | | Demand Unit | Unit Cost |
|---|---|---|---|
| 4.37 | Fire Apparatus | per 1,000 EDUs | $308,000 |
| 45.71 | Fire Equipment Units | per 1,000 EDUs | $2,000 |

| Year | | Equivalent Dwelling Unit | Fire Apparatus | Fire Equipment |
|---|---|---|---|---|
| Base | 2023 | 2,516 | 10.99 | 115.01 |
| Year 1 | 2024 | 2,582 | 11.28 | 118.00 |
| Year 2 | 2025 | 2,649 | 11.58 | 121.08 |
| Year 3 | 2026 | 2,682 | 11.72 | 122.61 |
| Year 4 | 2027 | 2,716 | 11.87 | 124.15 |
| Year 5 | 2028 | 2,750 | 12.02 | 125.68 |
| Year 6 | 2029 | 2,783 | 12.16 | 127.21 |
| Year 7 | 2030 | 2,817 | 12.31 | 128.75 |
| Year 8 | 2031 | 2,851 | 12.46 | 130.32 |
| Year 9 | 2032 | 2,885 | 12.61 | 131.90 |
| Year 10 | 2033 | 2,920 | 12.76 | 133.47 |
| Ten-Year Increase | | 404 | **1.77** | **18.46** |
| | | **Growth-Related Expenditures** | **$543,656** | **$36,926** |

| Marsing Fire Growth-Related Capital Cost | $580,582 |
|---|---|

## SUMMARY OF INPUT VARIABLES AND MAXIMUM SUPPORTABLE IMPACT FEES

Figure 14 provides a summary of the input variables (described in the chapter sections above) used to calculate the net cost per EDU. The Fire Development Impact Fees are the product of equivalent dwelling unit by type multiplied by the total net capital cost per EDU. For example, the multifamily maximum impact fee is $720 per unit ($1,500 per EDU x 0.48 EDUs per housing unit = $720, rounded).

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. Currently, Marsing Rural Fire District is collecting impact fees in the Canyon County portion of the district amounting to $1,238 per housing unit and $620 per 1,000 nonresidential square feet.

**Figure 14. Summary of Input Variables and Maximum Supportable Impact Fees**

| Fee Component | Cost per EDU |
|---|---|
| Fire Apparatus | $1,346 |
| Fire Equipment | $91 |
| Impact Fee Study | $63 |
| **Gross Total** | $1,500 |
| **Net Total** | **$1,500** |

**Residential**

| Housing Type | EDUs per Housing Unit | Maximum Supportable Fee |
|---|---|---|
| **Residential (per housing unit)** | | |
| Single Family | 1.00 | **$1,500** |
| Multifamily | 0.48 | **$720** |

**Nonresidential**

| Development Type | EDUs per 1,000 Sq. Ft. | Maximum Supportable Fee |
|---|---|---|
| **Nonresidential (per 1,000 square feet)** | | |
| Retail | 0.99 | **$1,485** |
| Office | 0.72 | **$1,080** |
| Industrial | 0.34 | **$510** |
| Institutional | 0.71 | **$1,065** |

## CASH FLOW PROJECTIONS FOR MAXIMUM SUPPORTABLE IMPACT FEE

This section summarizes the potential cash flow to the Fire District if the development impact fees are implemented at the maximum supportable amounts. The cash flow projections are based on the assumptions detailed in this chapter and the development projections discussed in Appendix B. Demographic Assumptions.

The summary provides an indication of the impact fee revenue generated by new development. Shown at the bottom of the figure, the maximum supportable fire impact fee is estimated to generate $608,000 in revenue while there is a growth-related cost of $613,000. The gap in funding is the result of rounding, thus the revenue is able to mitigate 100 percent of growth-related costs.

### Figure 15. Cash Flow Summary for Maximum Supportable Impact Fees

**Infrastructure Costs for Fire Facilities**

| | Total Cost | Growth Cost |
|---|---|---|
| Fire Apparatus | $543,656 | $543,656 |
| Fire Equipment | $36,926 | $36,926 |
| Impact Fee Study | $32,600 | $32,600 |
| **Total Expenditures** | **$613,182** | **$613,182** |

**Projected Development Impact Fee Revenue**

| Year | | Single Family $1,500 per unit | Multifamily $720 per unit | Retail $1,485 per KSF | Office $1,080 per KSF | Industrial $510 per KSF | Institutional $1,065 per KSF |
|---|---|---|---|---|---|---|---|
| | | Housing Units | Housing Units | KSF | KSF | KSF | KSF |
| Base | 2023 | 2,233 | 59 | 127 | 29 | 196 | 56 |
| 1 | 2024 | 2,293 | 60 | 131 | 30 | 201 | 58 |
| 2 | 2025 | 2,353 | 61 | 134 | 30 | 206 | 59 |
| 3 | 2026 | 2,383 | 62 | 136 | 31 | 209 | 60 |
| 4 | 2027 | 2,413 | 63 | 137 | 31 | 211 | 60 |
| 5 | 2028 | 2,442 | 64 | 139 | 32 | 214 | 61 |
| 6 | 2029 | 2,472 | 65 | 141 | 32 | 216 | 62 |
| 7 | 2030 | 2,502 | 66 | 142 | 32 | 219 | 63 |
| 8 | 2031 | 2,533 | 67 | 144 | 33 | 221 | 63 |
| 9 | 2032 | 2,563 | 68 | 146 | 33 | 224 | 64 |
| 10 | 2033 | 2,594 | 69 | 147 | 33 | 227 | 65 |
| Ten-Year Increase | | 361 | 10 | 20 | 5 | 31 | 9 |
| Projected Revenue | | $541,145 | $7,226 | $29,919 | $4,938 | $15,801 | $9,449 |

| | |
|---|---|
| **Projected Revenue =>** | **$608,000** |
| **Projected Expenditures =>** | **$613,000** |
| **Non-Impact Fee Funding =>** | **$5,000** |

## PROPORTIONATE SHARE ANALYSIS

Development impact fees for Marsing Rural Fire District are based on reasonable and fair formulas or methods. The fees do not exceed a proportionate share of the costs incurred or to be incurred by the District in the provision of system improvements to serve new development. The District will fund non-growth-related improvements with non-development impact fee funds as it has in the past. Specified in the Idaho Development Impact Fee Act (Idaho Code 67-8207), several factors must be evaluated in the development impact fee study and are discussed below.

1) The development impact fees for Marsing Rural Fire District are based on new growth's share of the costs of previously built projects along with planned public facilities as provided by the Fire District. Projects are included in the District's capital improvements plan and will be included in annual capital budgets.
2) TischlerBise estimated development impact fee revenue based on the maximum supportable development impact fees for the one, districtwide service area; results are shown in the cash flow analyses in this report. Existing and future development impact fee revenue will entirely fund growth-related improvements.
3) TischlerBise has evaluated the extent to which new development may contribute to the cost of public facilities.
4) The relative extent to which properties will make future contributions to the cost of existing public facilities has also been evaluated in regards to existing debt.
5) The District will evaluate the extent to which newly developed properties are entitled to a credit for system improvements that have been provided by property owners or developers. These "site-specific" credits will be available for system improvements identified in the annual capital budget and long-term Capital Improvement Plans. Administrative procedures for site-specific credits should be addressed in the development impact fee ordinance.
6) Extraordinary costs, if any, in servicing newly developed properties should be addressed through administrative procedures that allow independent studies to be submitted to the District. These procedures should be addressed in the development impact fee ordinance.
7) The time-price differential inherent in fair comparisons of amounts paid at different times has been addressed. All costs in the development impact fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the annual evaluation and update of development impact fees.

## IMPLEMENTATION AND ADMINISTRATION

The Idaho Development Impact Fee Act (hereafter referred to as the Idaho Act) requires jurisdictions to form a Development Impact Fee Advisory Committee (DIFAC). The committee must have at least five members with a minimum of two members active in the business of real estate, building, or development. The committee acts in an advisory capacity and is tasked to do the following:

- Assist the governmental entity in adopting land use assumptions;
- Review the capital improvements plan, and proposed amendments, and file written comments;
- Monitor and evaluate implementation of the capital improvements plan;
- File periodic reports, at least annually, with respect to the capital improvements plan and report to the governmental entity any perceived inequities in implementing the plan or imposing the development impact fees; and
- Advise the governmental entity of the need to update or revise land use assumptions, the capital improvements plan, and development impact fees.

Furthermore, it is the collecting jurisdiction that is required to form the DIFAC. In this case, Marsing Rural Fire Protection Impact Fees will be collected by the City of Marsing, Canyon County, and Owyhee County. Thus, those jurisdictions will form separate DIFACs.

Per the above, each jurisdiction has formed a DIFAC. TischlerBise has met with each DIFAC during the process and provided information on land use assumptions, level of service and cost assumptions, and draft development impact fee schedules. This report reflects comments and feedback received from the DIFACs.

The Fire District must develop and adopt a capital improvements plan (CIP) that includes those improvements for which fees were developed. The Idaho Act defines a capital improvement as an "improvement with a useful life of ten years or more, by new construction or other action, which increases the service capacity of a public facility." Requirements for the CIP are outlined in Idaho Code 67-8208. Certain procedural requirements must be followed for adoption of the CIP and the development impact fee ordinance. Requirements are described in detail in Idaho Code 67-8206. The Fire District has a CIP that meets the above requirements.

TischlerBise recommends that development impact fees be updated annually to reflect recent data. One approach is to adjust for inflation in construction costs by means of an index like the RSMeans or Engineering News Record (ENR). This index can be applied against the calculated development impact fee. If cost estimates change significantly the Fire District should evaluate an adjustment to the CIP and development impact fees.

Idaho's enabling legislation requires an annual development impact fees report that accounts for fees collected and spent during the preceding year (Idaho Code 67-8210). Development impact fees must be deposited in interest-bearing accounts earmarked for the associated capital facilities as outlined in capital improvements plans. Also, fees must be spent within eight years of when they are collected (on a first in, first out basis) unless the local governmental entity identifies in writing (a) a reasonable cause why the fees should be held longer than eight years; and (b) an anticipated date by which the fees will be expended but in no event greater than eleven years from the date they were collected.

Credits must be provided for in accordance with Idaho Code Section 67-8209 regarding site-specific credits or developer reimbursements for system improvements that have been included in the development impact fee calculations. Project improvements normally required as part of the development approval process are not eligible for credits against development impact fees. Specific policies and procedures related to site-specific credits or developer reimbursements for system improvements should be addressed in the ordinance that establishes the fees.

The general concept is that developers may be eligible for site-specific credits or reimbursements only if they provide system improvements that have been included in CIP and development impact fee calculations. If a developer constructs a system improvement that was included in the fee calculations, it is necessary to either reimburse the developer or provide a credit against the fees in the area that benefits from the system improvement. The latter option is more difficult to administer because it creates unique fees for specific geographic areas. Based on TischlerBise's experience, it is better for a reimbursement agreement to be established with the developer that constructs a system improvement. For example, if a developer elects to construct a system improvement, then a reimbursement agreement can be established to payback the developer from future development impact fee revenue. The reimbursement agreement should be based on the actual documented cost of the system improvement, if less than the amount shown in the CIP. However, the reimbursement should not exceed the CIP amount that has been used in the development impact fee calculations.

# APPENDIX A. LAND USE DEFINITIONS

## RESIDENTIAL DEVELOPMENT

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey.

**Single Family Units:**

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. 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 Units:**

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.

## NONRESIDENTIAL DEVELOPMENT CATEGORIES

Nonresidential development categories used throughout this study are based on land use classifications from the book *Trip Generation* (ITE, 2021). A summary description of each development category is provided below.

**Retail:** Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Retail* includes shopping centers, banks, restaurants, and movie theaters.

**Office:** Establishments providing management, administrative, professional, or business services. By way of example, *Office* includes offices and business services.

**Industrial:** Establishments primarily engaged in the production and transportation of goods. By way of example, *Industrial* includes manufacturing plants, distribution facilities, warehousing facilities.

**Institutional:** Public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Institutional* includes schools, churches, daycare facilities, and health care facilities.

# APPENDIX B. 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 seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that fees for residential development in Marsing Rural Fire District be imposed according to persons per housing unit.

Based on housing characteristics, TischlerBise recommends using two housing unit categories for the Impact Fee study: (1) Single Family and (2) Multifamily. Each housing type has different characteristics which results in a different demand on District facilities and services.

The boundaries of the Fire District are not contiguous with available US Census geographies. In this case, geographies have been chosen that best represent the demographics of each area. The estimates in Figure 16 are for PPHU calculations for Marsing CCD, Census Tract 223.02, and Census Tract 223.03. A map of the Marsing CCD geography can be found in Figure 29 at the end of the report.

Marsing CCD is a US Census defined geography that is larger than the City of Marsing, including portions of unincorporated areas surrounding the city. This, combined with Census Tracts within the boundaries of the district, provides a better sample of demographics in the Marsing Rural Fire District. As a result, single family units have an average household size of 2.92 persons and multifamily units have an average household size of 1.39 persons. Additionally, there is a housing mix of 97 percent single family and 3 percent multifamily.

**Figure 16. Persons per Housing Unit**

| Housing Type | Persons | Housing Units | Persons per Housing Unit | Households | Persons per Household | Housing Unit Mix |
|---|---|---|---|---|---|---|
| Single Family [1] | 7,220 | 2,473 | **2.92** | 2,320 | 3.11 | 97% |
| Multifamily [2] | 107 | 77 | **1.39** | 77 | 1.39 | 3% |
| Total | 7,327 | 2,550 | **2.87** | 2,397 | 3.06 | |

[1] Includes attached and detached single family homes and mobile homes
[2] Includes all other types
Source: U.S. Census Bureau, 2021 American Community Survey 5-Year Estimates

## BASE YEAR HOUSING UNITS AND POPULATION

Base year population is derived from 2021 U.S Census Bureau data for Marsing CCD and Canyon County sections of the District, PPHU factors, and Owyhee County Parcel Data. Based off of this data, the base year population estimate for Marsing Rural Fire District is 6,225. PPHU data shown in Figure 16 is used to convert this total population number to a total housing unit number, which is estimated to be 2,294 units. Then the housing unit mix percentage is applied to this total housing unit estimate to get a breakdown between single and multifamily units.

### Figure 17. Base Year Housing Units and Population

| Marsing Rural Fire District | Base Year 2023 |
|---|---|
| Population [1] | 6,225 |
| **Housing Units [2]** | |
| Single Family | 2,235 |
| Multifamily | 59 |
| Total Housing Units | 2,294 |

[1] COMPASS (Community Planning Association of Southwest Idaho) Traffic Analysis Zone Model
[2] U.S. Census Bureau, 2021 American Community Survey 5-Year Estimates, TischlerBise analysis

## NEW RESIDENTIAL CONSTRUCTION TREND

To illustrate residential development trends in the District, Figure 18 lists the past five years of new construction in Marsing Rural Fire District which includes sections of Canyon County, Owyhee County, and the City of Marsing. This building permit data is only for Owyhee County while the Canyon County portion of the District uses COMPASS data for projections. As seen in Figure 18, over the past five years in the Marsing Rural Fire District there has been a total of 141 housing units added with 136 being single family homes and 5 being multifamily homes. This leads to a five-year average of 29 housing units added annually.

### Figure 18. Annual New Construction Estimates by Housing Type – Owyhee County

| Housing Type | 2019 | 2020 | 2021 | 2022 | 2023 | Total | 5-Year Average |
|---|---|---|---|---|---|---|---|
| Single Family | 22 | 27 | 31 | 30 | 26 | 136 | 28 |
| Multifamily | 1 | 0 | 0 | 0 | 4 | 5 | 1 |
| Total | 23 | 27 | 31 | 30 | 30 | 141 | 29 |

Source: Owyhee County Building Department

## HOUSING UNIT AND POPULATION PROJECTIONS

Past housing construction trends are assumed to continue through the next ten years, so the five-year annual average totals are combined with COMPASS projections for the Canyon County portion of the Fire District to estimate housing growth. Population growth is estimated based on housing development and PPHU by housing type.

As a result, there are 371 new housing units projected in the Fire District over the next ten years, 361 units single family and 10 units multifamily. Based on the housing development, the population in the Fire District is estimated to grow by 986 residents or 15.8 percent.

**Figure 19. Residential Development Projections**

| Marsing Rural Fire District | Base Year 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | Total Increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Population | 6,225 | 6,393 | 6,562 | 6,642 | 6,722 | 6,803 | 6,883 | 6,963 | 7,046 | 7,128 | 7,211 | **986** |
| *Percent Increase* | | *2.7%* | *2.6%* | *1.2%* | *1.2%* | *1.2%* | *1.2%* | *1.2%* | *1.2%* | *1.2%* | *1.2%* | *15.8%* |
| **Housing Units [1]** | | | | | | | | | | | | |
| Single Family | 2,233 | 2,293 | 2,353 | 2,383 | 2,413 | 2,442 | 2,472 | 2,502 | 2,533 | 2,563 | 2,594 | **361** |
| Multifamily | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | **10** |
| Total Housing Units | 2,292 | 2,353 | 2,414 | 2,445 | 2,476 | 2,506 | 2,537 | 2,568 | 2,600 | 2,631 | 2,663 | **371** |

[1] Annual average new construction totals in the Fire District are assumed to continue over the next ten years.
Source: COMPASS (Community Planning Association of Southwest Idaho) Traffic Analysis Zone Model; Owyhee County Building Department; TischlerBise analysis

## CURRENT EMPLOYMENT AND NONRESIDENTIAL FLOOR AREA

The impact fee study will include nonresidential development as well. Utilizing the COMPASS TAZ Model and ESRI Business Analyst data, 2023 total employment in the district is estimated at 831 jobs. Listed in Figure 20, there are an estimated 270 retail jobs, 94 office jobs, 307 industrial jobs, and 160 institutional jobs located in the district.

To estimate the nonresidential floor area, employee density factors from the Institute of Transportation Engineers (ITE) *Trip Generation* Manual (2021) are applied to job estimated. Figure 21 lists the land use type and density factors that are included in the analysis. Overall, there is 407,587 square feet estimated in the district. Retail and industrial development make up the majority of this with a combined 79 percent of the total floor area.

**Figure 20. Base Year Employment and Nonresidential Floor Area**

| Employment Industries | Base Year Jobs [1] | Sq. Ft. per Job [2] | Floor Area (sq. ft.) | Percent of Total |
|---|---|---|---|---|
| Retail | 270 | 471 | 127,170 | 31% |
| Office | 94 | 307 | 28,858 | 7% |
| Industrial | 307 | 637 | 195,559 | 48% |
| Institutional | 160 | 350 | 56,000 | 14% |
| **Total** | **831** | | **407,587** | **100%** |

[1] COMPASS (Community Planning Association of Southwest Idaho) Traffic Analysis Zone Model; ESRI Business Analyst
[2] Source: *Trip Generation* , Institute of Transportation Engineers, 11th Edition (2021)

**Figure 21. 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 | 2.12 | 471 |
| Office | 710 | General Office | 1,000 Sq Ft | 3.26 | 307 |
| Industrial | 110 | Light Industrial | 1,000 Sq Ft | 1.57 | 637 |
| Institutional | 610 | Hospital | 1,000 Sq Ft | 2.86 | 350 |

Source: *Trip Generation* , Institute of Transportation Engineers, 11th Edition (2021)

## EMPLOYMENT AND NONRESIDENTIAL FLOOR AREA PROJECTIONS

Job growth is projected using a jobs per resident factor shown in Figure 22 which is calculated by dividing base year jobs by base year population (831 jobs / 6,225 residents = 0.133 jobs per resident).

**Figure 22. Jobs per Resident Factor Marsing Rural Fire District**

| Marsing Rural Fire District | Base Year 2023 |
|---|---|
| Jobs [1] | 831 |
| Population [2] | 6,225 |
| Jobs per Resident | 0.133 |

[1] COMPASS (Community Planning Association of Southwest Idaho) Traffic Analysis Zone Model, TischlerBise Analysis
[2] U.S. Census Bureau, 2021 American Community Survey 5-Year Estimates, TischlerBise analysis

Job and nonresidential floor area projections for the next ten years are provided in Figure 23. Job growth is converted into nonresidential floor area using the ITE square feet per employee averages shown in Figure 21. Over the next ten years, the nonresidential floor area is projected to increase by approximately 65,000 square feet. Additionally, there is a projected increase of 132 jobs in the district, a 16 percent increase from the base year. Retail and industrial developments account for the greatest share of the increase.

**Figure 23. Employment and Nonresidential Floor Area Projections**

| Marsing Rural Fire District | Base Year 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | Total Increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jobs [1]** | | | | | | | | | | | | |
| Retail | 270 | 277 | 285 | 288 | 292 | 295 | 299 | 302 | 306 | 309 | 313 | **43** |
| Office | 94 | 97 | 99 | 100 | 102 | 103 | 104 | 105 | 106 | 108 | 109 | **15** |
| Industrial | 307 | 315 | 324 | 328 | 332 | 335 | 339 | 343 | 347 | 352 | 356 | **49** |
| Institutional | 160 | 164 | 169 | 171 | 173 | 175 | 177 | 179 | 181 | 183 | 185 | **25** |
| Total | 831 | 853 | 876 | 887 | 897 | 908 | 919 | 930 | 941 | 952 | 963 | **132** |
| **Nonresidential Floor Area (1,000 sq. ft.) [2]** | | | | | | | | | | | | |
| Retail | 127 | 131 | 134 | 136 | 137 | 139 | 141 | 142 | 144 | 146 | 147 | **20** |
| Office | 29 | 30 | 30 | 31 | 31 | 32 | 32 | 32 | 33 | 33 | 33 | **5** |
| Industrial | 196 | 201 | 206 | 209 | 211 | 214 | 216 | 219 | 221 | 224 | 227 | **31** |
| Institutional | 56 | 58 | 59 | 60 | 60 | 61 | 62 | 63 | 63 | 64 | 65 | **9** |
| Total | 408 | 419 | 430 | 435 | 440 | 445 | 451 | 456 | 461 | 467 | 472 | **65** |

[1] COMPASS (Community Planning Association of Southwest Idaho) Traffic Analysis Zone Model; ESRI Business Analyst; TischlerBise analysis

[2] Source: Institute of Transportation Engineers, *Trip Generation* , 2021

## FUNCTIONAL POPULATION

Both residential and nonresidential developments increase the demand on District services and facilities. To calculate the proportional share between residential and nonresidential demand on service and facilities, a functional population approach is used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the district through the 24 hours in a day. As mentioned, the analysis uses the US Census Marsing CCD geography instead of the City of Marsing to provide a more accurate sample of the Fire District's boundary.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in the Marsing Rural Fire District are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the district are assigned 14 hours to residential development, the remaining hours in the day are assumed to be spent outside of the district working. Inflow commuters are assigned 10 hours to nonresidential development. Based on the most recent functional population data (2020), residential development accounts for 79 percent of the functional population, while nonresidential development accounts for 21 percent.

**Figure 24. Marsing Rural Fire District Functional Population**

| Marsing CCD (2020) | | | | |
|---|---|---|---|---|
| ***Residential*** | | | *Demand Hours/Day* | *Person Hours* |
| Population* | 3,518 | | | |
| Residents Not Working | | 2,207 | 20 | 44,140 |
| Employed Residents | | 1,311 | | |
| Employed in Marsing | | 210 | 14 | 2,940 |
| Employed outside Marsing | | 1,101 | 14 | 15,414 |
| | | | Residential Subtotal | 62,494 |
| | | | **Residential Share =>** | **79%** |
| ***Nonresidential*** | | | | |
| Non-working Residents | | 2,207 | 4 | 8,828 |
| Jobs Located in Marsing | | 788 | | |
| Residents Employed in Marsing | | 578 | 10 | 5,780 |
| Non-Resident Workers (inflow commuters) | | 210 | 10 | 2,100 |
| | | | Nonresidential Subtotal | 16,708 |
| | | | **Nonresidential Share =>** | **21%** |
| | | | TOTAL | 79,202 |

Source: U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics.
* Source: U.S. Census Bureau, 2020 American Community Survey 5-Year Estimates

## VEHICLE TRIP GENERATION

### 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 31 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", 82 percent of Marsing CCD workers travel outside the district for work. In combination, these factors account for 13 percent of additional production trips (0.31 x 0.50 x 0.82 = 0.13). 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 (13 percent of production trips) for a total of 63 percent.

**Figure 25. Residential Trip Adjustment Factor for Commuters**

***Trip Adjustment Factor for Commuters***

| | |
|---|---|
| Employed Marsing CCD Residents (2020) | 1,311 |
| Residents Working in Marsing CCD (2020) | 210 |
| Residents Commuting Outside of Marsing CCD for Work | 1,101 |
| Percent Commuting Out of Marsing CCD | 84% |
| **Additional Production Trips** | **13%** |

| | |
|---|---|
| **Standard Trip Adjustment Factor** | **50%** |
| **Residential Trip Adjustment Factor** | **63%** |

Source: U.S. Census, OnTheMap Application, 2020

### 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 11th edition of *Trip Generation*. To estimate the trip generation in the Marsing Rural 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**

| Employment 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 | 37.01 | 17.42 |
| Office | 710 | General Office | 1,000 Sq Ft | 10.84 | 3.33 |
| Industrial | 110 | Light Industrial | 1,000 Sq Ft | 4.87 | 3.10 |
| Institutional | 610 | Hospital | 1,000 Sq Ft | 10.77 | 3.77 |

Source: *Trip Generation* , Institute of Transportation Engineers, 11th Edition (2021)

For nonresidential land uses, the standard 50 percent adjustment is applied to office, industrial, and institutional. A lower vehicle trip adjustment factor is used for retail because this type of development 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 27, the Institute for Transportation Engineers' land use code, daily vehicle trip end rate, and trip adjustment factor is listed for each land use.

**Figure 27. 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 | 9.43 | 63% | 5.94 |
| Multifamily | 220 | 6.74 | 63% | 4.25 |
| **Nonresidential (per 1,000 square feet)** | | | | |
| Retail | 820 | 37.01 | 38% | 14.06 |
| Office | 710 | 10.84 | 50% | 5.42 |
| Industrial | 110 | 4.87 | 50% | 2.44 |
| Institutional | 610 | 10.77 | 50% | 5.39 |

Source: *Trip Generation* , Institute of Transportation Engineers, 11th Edition (2021); 'National Household Travel Survey, 2009

## 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 13,517 vehicle trips and nonresidential land uses account for 2,723 vehicle trips in the base year (Figure 28).

Through 2033, it is projected that daily vehicle trips will increase by 2,617 trips with the majority of the growth being generated by single family (82 percent) and retail (11 percent) development which leads to a 16 percent increase in vehicle trips from the base year through 2033.

**Figure 28. Marsing Rural Fire District Vehicle Trip Projections**

| Marsing Rural Fire District | Base Year 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | Total Increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Residential Trips** | | | | | | | | | | | | |
| Single Family | 13,266 | 13,622 | 13,979 | 14,156 | 14,333 | 14,510 | 14,687 | 14,864 | 15,046 | 15,228 | 15,410 | **2,143** |
| Multifamily | 250 | 255 | 259 | 263 | 268 | 272 | 276 | 280 | 284 | 289 | 293 | **43** |
| Subtotal | 13,517 | 13,877 | 14,238 | 14,419 | 14,601 | 14,782 | 14,963 | 15,144 | 15,330 | 15,516 | 15,702 | **2,186** |
| **Nonresidential Trips** | | | | | | | | | | | | |
| Retail | 1,788 | 1,837 | 1,885 | 1,908 | 1,931 | 1,954 | 1,978 | 2,001 | 2,024 | 2,048 | 2,072 | **283** |
| Office | 156 | 161 | 165 | 167 | 169 | 171 | 173 | 175 | 177 | 179 | 181 | **25** |
| Industrial | 476 | 489 | 502 | 508 | 514 | 520 | 527 | 533 | 539 | 545 | 552 | **75** |
| Institutional | 302 | 310 | 318 | 322 | 326 | 330 | 333 | 337 | 341 | 345 | 349 | **48** |
| Subtotal | 2,723 | 2,796 | 2,870 | 2,905 | 2,940 | 2,975 | 3,010 | 3,046 | 3,082 | 3,118 | 3,154 | **431** |
| **Vehicle Trips** | | | | | | | | | | | | |
| Grand Total | 16,239 | 16,674 | 17,108 | 17,324 | 17,541 | 17,757 | 17,974 | 18,190 | 18,412 | 18,634 | 18,856 | **2,617** |

Source: Institute of Transportation Engineers, *Trip Generation* , 11th Edition (2021)

**Figure 29. Marsing CCD Census Map**