

FIRE PROTECTION INFRASTRUCTURE IMPROVEMENTS PLAN

Arizona statutes allow cities to charge development impact fees for “fire facilities, including all appurtenances, equipment and vehicles.” The City of Phoenix charges the Fire Protection impact fee to help provide new fire stations, vehicles and equipment needed to serve the City's growth areas.

FIRE PROTECTION IMPACT FEE METHODOLOGY

The Fire Protection DIF is calculated using a planned based approach which uses facilities identified by the City of Phoenix Fire Department and a study conducted by Matrix Consulting Group, *Report on the North Phoenix Infrastructure Pilot Study* (Matrix Report), to predict how many and the potential locations of fire stations needed to meet demand in the future. When reviewing costs and growth this plan examined both over three distinct time cohorts to determine the most equitable cost for future development. The selected cohort will have the lowest impact on cost over time. This avoids any one cohort carrying a substantial burden compared to future years of development. The three time cohorts reviewed are:

- 10-Year – This cohort only includes the growth and expenditures over the next 10 years (2025-2034). This will be represented as “planned” inventory in the plan.
- 10-Year Buy In – This cohort analyzes the impact of existing capacity to the growth assumptions made by the 10-Year cohort. It includes all “existing” inventory and growth represented by EDUs as well as the “planned” and future 10-year growth.
- Buildout – This cohort contemplates the total service network construction as well as an estimate of all growth occurring in the region to ensure the plan does not overload fire station construction on any one time period. The cohort will include all EDUs listed as buildout EDUs and all potential fire stations listed as “existing”, “planned”, and “buildout”.

FIRE PROTECTION IMPACT FEE AREAS

The cost to provide new fire protection service capacity varies geographically for two major reasons. First, the northern growth area composed of the Northeast / Paradise Ridge and Northwest / Deer Valley has a more limited road network with significant growth projected limiting response times for existing and planned stations. Second, the cost of land increases in the Northeast / Paradise Ridge impact fee area compared to other areas of the city. The Fire Protection Impact Fee Areas are named in the following manner and can be viewed in the *Impact Fee Service Area Maps Report: Map 2: Police, Fire, Parks, and Library Service Areas*:

- Northwest / Deer Valley
- Northeast / Paradise Ridge
- Southwest
- Ahwatukee

LEVEL OF SERVICE (LOS)

The Matrix Report evaluates level of service by analyzing call volume handled by existing stations and comparing that to the amount of development in the area while maintaining a benchmark response time of four minutes. The majority of stations are three bay and employ a fire engine and a rescue apparatus

with exceptions where other apparatus is needed to fulfill service requirements or larger four bay stations and more specialized apparatus are needed.

FUNCTIONAL POPULATION

The City of Phoenix Functional Population Report details the methodology to determine the factor of service impact by varying land uses along with the number of Equivalent Demand Units (EDU) representing the amount of growth in each land use category. For easy reference, the following tables provide the numbers used later in this chapter.

Table 1: 10-Year EDUs

IF Area	SF	MF	Retail	Office	Industrial	Public	Other	Total
EDU Factor	1.00	0.68	0.49	0.61	0.20	0.24	0.41	
Citywide	32,816	30,105	3,484	6,981	5,077	558	12,161	91,183
Northeast w/ PR	14,350	3,971	504	1,947	63	169	884	21,887
Northwest w/ DV	2,710	3,988	436	1,098	915	57	169	9,373
Southwest	9,338	3,847	764	227	2,150	175	507	17,008
Ahwatukee	337	0	0	0	0	0	193	530

Table 2: 10-Year Buy in EDUs

IF Area	SF	MF	Retail	Office	Industrial	Public	Other	Total
EDU Factor	1.00	0.68	0.49	0.61	0.20	0.24	0.41	
Citywide	434,622	214,431	50,712	76,823	42,252	23,999	27,192	870,031
Northeast w/ PR	34,706	10,352	2,334	3,636	364	628	1,738	53,758
Northwest w/ DV	17,859	8,128	1,446	1,258	1,707	470	275	31,144
Southwest	56,557	6,185	4,103	294	15,333	1,345	640	84,457
Ahwatukee	24,742	6,741	1,477	1,013	240	556	466	35,234

Table 3: Buildout EDUs

IF Area	SF	MF	Retail	Office	Industrial	Public	Other	Total
EDU Factor	1.00	0.68	0.49	0.61	0.20	0.24	0.41	
Citywide	515,877	252,544	66,075	107,162	54,806	25,750	29,583	1,051,796
Northeast w/ PR	60,205	16,087	5,290	16,826	714	1,049	2,077	102,248
Northwest w/ DV	66,689	23,906	5,713	10,478	8,602	985	637	117,011
Southwest	59,967	7,904	5,332	1,432	16,976	1,408	1,084	94,103
Ahwatukee	26,941	6,741	1,629	1,013	240	556	465	37,585

1. EDU Factors from Current and Potential Non-Utility EDU Factors, August 22, 2024

2. EDU numbers from Growth Projects and Land Use Assumptions 2024 Update, Applied Economics, Revised August 21, 2024

FIRE STATION & APPARATUS INVENTORY & COSTS

Fire station construction and apparatus costs were derived from the most recent purchases or estimates used by the Fire Department. When possible, actual numbers were used such as station 51 in the Northwest / Deer Valley area which is currently under contract for design and construction. Land costs were analyzed by BBG Real Estate Services as part of an appraisal. The full report can be found online as the *Northern Impact Fee Area Land Use Study* and *Southern Impact Fee Area Land Use Study*. The following table represents costs used in calculations where real time numbers are not available. The tables also provide an abbreviation and description of all apparatus used in calculating the total cost of fire stations in future sections.

Table 4: Fire Apparatus Abbreviations and Costs

Abbreviation	Description	Cost
B	Brush Truck	\$452,800
BC	Battalion Chief	\$202,350
E	Engine	\$1,227,000
HAZ	Hazmat Unit	\$500,000
L	Ladder	\$2,204,100
LT	Ladder Tender	\$732,100
R	Rescue	\$576,950
T	Tanker	\$1,309,050
U	Utility	\$1,076,200

Table 5: Fire Station Costs

Facility/Land	Cost
3 Bay Station	\$13,500,000
4 Bay Station	\$19,000,000
Land	\$2,440,000
Northeast / Paradise Ridge Land	\$2,800,000
Station 51*	\$17,660,000

1. Station and equipment prices provided by Phoenix Fire Department
2. Land values provided by Land Cost Study (Northern & Southern Areas) by BBG Real Estate Services, April 1, 2024
3. *Price reflects reduction for \$5,000,000 federal grant.

The Fire Station inventory, which includes necessary apparatus, was developed by the Fire Department as part of their service deployment plan. Additional buildout fire stations were analyzed by the Matrix Design in the Matrix Study. Where possible actual station identification and locations are used. Because of shifts in Fire Department Service demand locations and identifications may be subject to change. The following tables display the fire station inventory for each impact fee area along with any necessary apparatus, see abbreviations above for description, their time cohort, and cost which includes any relevant station costs (station and land) along with planned apparatus costs.

Table 6: Northwest / Deer Valley Fire Station Inventory

Station	Address	# of Bays	Equipment	Status	Total Cost
48	5230 W. Happy Valley Rd.	3	E,B	Existing	\$15,179,800
55	26639 N. Black Canyon Hwy.	3	E,B,R	Existing	\$15,756,750
56	3210 W. Canotia Place	3	E,B,T	Existing	\$16,488,850
47	15th Ave & Dove Valley	3	E,R	Planned	\$17,743,950
*51	51st Ave & Loop 303	4	E,R,L,LT,BC,HAZ	Planned	\$23,102,500
70	51st & Carefree	3	E,R	Buildout	\$17,743,950
71	51st & CAP	3	E,R	Buildout	\$17,743,950
72	SDD and North Valley	3	E,R	Buildout	\$17,743,950
80	43rd Ave & Circle Mountain	3	E,R	Buildout	\$17,743,950

*Station 51 uses actual costs reduced by federal grants as stated above

Table 7: Northeast / Paradise Ridge Fire Station Inventory

Station	Address	# of Bays	Equipment	Status	Total Cost
49	3750 E. Dynamite Blvd.	3	E,B,T	Existing	\$16,488,850
72	33027 N. Cave Creek Rd.	3	E,B,U	Existing	\$16,256,000
14	Pinnacle Peak & Cave Creek	3	E,R	Planned	\$18,103,950
71	60th St & Mayo	3	E,R	Planned	\$18,103,950
13	Deer Valley & 34th St	3	E,R	Buildout	\$18,103,950
74	Sonoran Desert Drive, Verdin	3	E,R	Buildout	\$18,103,950
75	NE Cave Creek area	3	E,R	Buildout	\$18,103,950
76	Happy Valley Rd North of Azara	3	E,R	Buildout	\$18,103,950
77	56th St and Pinnacle Peak	3	E,R	Buildout	\$18,103,950
78	64th St and Deer Valley	3	E,R	Buildout	\$18,103,950

Table 8: Southwest Fire Station Inventory

Station	Address	# of Bays	Equipment	Status	Total Cost
44	7117 W. McDowell Rd.	3	E,E,R	Existing	\$16,530,950
57	1660 W. Dobbins Rd.	3	E,B	Existing	\$15,179,800
58	4718 West Dobbins Rd.	3	E,B,T	Existing	\$16,488,850
59	1111 S. 65th Ave.	3	E,R,U	Existing	\$16,380,150
34	51st Ave & Lower Buckeye	3	E,R	Planned	\$17,743,950
62	93rd Ave & Lower Buckeye	3	E,R	Planned	\$17,743,950
69	51st Ave & Estrella	3	E,R	Planned	\$17,743,950
73	67th Ave & Baseline	4	E,L,LT,R,BC	Planned	\$26,382,500
39	2276 W Southern	3	E,R	Buildout	\$17,743,950
75	35th Ave & Baseline	3	E,R	Buildout	\$17,743,950

Table 9: Ahwatukee Fire Station Inventory

Station	Address	# of Bays	Equipment	Status	Total Cost
38	5002 E. Warner-Elliot Loop	3	E,R,R,U	Existing	\$16,957,100
43	4110 E. Chandler Blvd.	4	E,R,BC,L,LT	Existing	\$23,942,500
46	15402 S. Marketplace Way	3	E,B	Existing	\$15,179,800
*74	19th Ave & Chandler	3	E,R	Planned	\$15,303,950

*Land has already been acquired for station 74

10 YEAR, 10 YEAR BUY IN, & BUILDOUT PLAN COST, EDUS AND ESTIMATED GROSS FEE

To analyze all three time cohorts it is easiest to first summarize the plan costs for each timeframe. The plan costs include the relative station totals for each impact fee area. The relative totals are “existing” for the 10-Year plan, “existing & planned” for the 10-Year Buy In plan, and all stations for the buildout plan. The tables below shows the summary.

Table 10: 10-Year Plan Costs

Impact Fee Area	Total Station & Equipment Cost	10-Year EDUs	Gross Fee (per EDU)
Northeast	\$36,207,900	21,887	\$1,654
Northwest	\$40,846,450	9,373	\$4,358
South	\$97,358,300	17,008	\$5,724
Ahwatukee	\$15,303,950	530	\$28,875

1. Total cost = sum of all planned stations from relative Table 6-7
2. EDU from Table 1
3. Gross fee = Total Cost / EDU

Table 11: 10-Year Buy In Plan Costs

Impact Fee Area	Total Station & Equipment Cost	2025 + 10-Year EDUs	Gross Fee (per EDU)
Northeast	\$68,952,750	53,758	\$1,283
Northwest	\$88,271,850	31,144	\$2,834
South	\$161,938,050	84,457	\$1,917
Ahwatukee	\$71,383,350	35,234	\$2,026

1. Total cost = sum of existing and planned stations from relative Table 6-7
2. EDU from Table 2
3. Gross fee = Total Cost / EDU

Table 12: Buildout Plan Costs

Impact Fee Area	Total Station & Equipment Cost	Buildout EDUs	Gross Fee (per EDU)
Northeast	\$177,576,450	102,248	\$1,737
Northwest	\$159,247,650	117,011	\$1,361
South	\$179,682,000	94,103	\$1,909
Ahwatukee	\$71,383,350	37,585	\$1,899

1. Total cost = sum of all stations from relative Table 6 & 7
2. EDU from Table 3
3. Gross fee = Total Cost / EDU

POTENTIAL GROSS IMPACT FEE

The potential gross impact fee was selected by reviewing all three time cohorts in the above tables and choosing the most equitable, lowest, fee that represented the Fire Station inventory costs spread across time. The table below examines all gross impact fees and displays the potential fee. It also shows the change between the potential fee and the old fee.

Table 13: Potential Gross Fee & Change in Fee

Impact Fee Area	10 Year Fee	10 Year Buy-In Fee	Buildout Fee	Potential Gross Impact Fee (per EDU)
Northeast	\$1,654	\$1,283	\$1,737	\$1,283
Northwest	\$4,358	\$2,834	\$1,361	\$1,361
South	\$5,724	\$1,917	\$1,909	\$1,909
Ahwatukee	\$28,875	\$2,026	\$1,899	\$1,899

1. Fees from Tables 10-12
2. Gross Fee = lowest fee in each area
3. Old Fee from City of Phoenix 2020 Infrastructure Improvement Plan

ALTERNATIVE REVENUE OFFSETS

Offsets for the Fire Department Impact Fee have been described and calculated under the *Alternative Revenue Offsets Report*. In addition to alternative revenues a fund balance adjustment was calculated (see the City of Phoenix 2025 Development Impact Fee Update Fund Balance Adjustment Report). It was determined no fund balance adjustment was necessary for the Fire Impact Fee.

Table 14: Fire Impact Fee Alternative Revenue Offsets

Impact Fee Area	Alternative Revenue (per EDU)
Northeast	\$11
Northwest	\$43
South	\$34
Ahwatukee	\$35

1. Offsets from Alternative Revenue Offsets Report, City of Phoenix

POTENTIAL NET IMPACT FEES

Potential net impact fees are calculated by subtracting any applicable offsets from the potential gross fee. The table below displays the potential net impact fees.

Table 15: Potential Net Impact Fees

Impact Fee Area	Gross Impact Fee (per EDU)	Alternative Revenue (per EDU)	Potential Net Fee (per EDU)
Northeast	\$1,283	\$11	\$1,272
Northwest	\$1,361	\$43	\$1,318
South	\$1,909	\$34	\$1,876
Ahwatukee	\$1,899	\$35	\$1,864

1. Gross fee from Table 13
2. Offset from Table 14

SUMMARY OF PLANNED IMPROVEMENTS

A.R.S. 9-463.05 requires that impact fees collected must be spent on either:

- New projects that serve new development or
- To repay debt (interest and principal) incurred to fund the construction of projects that serve new development.

It should be noted that A.R.S. 9-463.05 (and impact fee common law) prohibit impact fee revenues from being spent on operations, maintenance, repair, rehabilitation, environmental or other non-capital expenditures.

For this analysis, the following assumptions have been made:

- That all the projected number of projected EDUs will be developed in the ten-year planning period 2025-2034, and that all EDUs will pay net fees that are consistent with single-family dwellings.
- That all the future fire facilities and equipment identified in this IIP will be built or otherwise acquired within the ten-year planning period 2025-2034.

A summary of the planned improvements and costs for the ten-year planning period 2025-2035 for the impact fee service areas are shown in the following tables. The tables provide a summary of planned facilities that are eligible to be funded by the Fire Protection impact fee collections, as calculated within this section.

Table 16: Northwest / Deer Valley Planned Improvements and Costs

Planned Improvement	Cost
Station 47	\$17,743,950
Station 51	\$28,102,500
Subtotal	\$45,846,450
Planned Net Impact Fee Revenue	\$12,354,674
Anticipated Need for Alternative Funding	\$33,491,776

Table 17: Northeast / Paradise Ridge Planned Improvements and Costs

Planned Improvement	Cost
Station Number	
Station 14	\$18,103,950
Station 71	\$18,103,950
Subtotal	\$36,207,900
Planned Net Impact Fee Revenue	\$27,832,624
Anticipated Need for Alternative Funding	\$8,375,276

Table 18: Southwest Planned Improvements and Costs

Planned Improvement	Cost
Station 34	\$17,743,950
Station 62	\$15,303,950
Station 69	\$17,743,950
Station 73	\$26,382,500
Subtotal	\$77,174,350
Planned Net Impact Fee Revenue	\$31,905,450
Anticipated Need for Alternative Funding	\$45,268,900

Table 19: Ahwatukee Planned Improvements and Costs

Planned Improvement	Cost
Station 74	\$15,303,950
Subtotal	\$15,303,950
Planned Net Impact Fee Revenue	\$987,809
Anticipated Need for Alternative Funding	\$14,316,141