

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 employee 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 Equivalent Demand Units 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 section.

Table 3.1 – 10-Year EDUs

IF Area	SF	MF	Retail	Office	Industrial	Public	Other	Total
EDU Factor	1	0.68	0.49	0.61	0.2	0.24	0.41	
Northwest & Deer Valley	3,129	3,885	441	1,297	1,490	57	97	10,396
Northeast & Paradise Ridge	15,931	4,163	501	2,131	53	169	323	23,271
Southwest	8,164	3,724	762	224	2,082	85	341	15,382
Ahwatukee	790	0	0	0	0	0	0	790
Balance of City	4,824	17,823	2,456	3,570	1,868	237	680	31,458
Citywide	32,838	29,595	4,160	7,222	5,493	548	1,441	81,297

Table 3.2 – 10-Year Buy in EDUs

IF Area	SF	MF	Retail	Office	Industrial	Public	Other	Total
EDU Factor	1	0.68	0.49	0.61	0.2	0.24	0.41	
Northwest & Deer Valley	18,328	8,418	1,498	1,457	2,307	470	298	32,776
Northeast & Paradise Ridge	36,983	10,834	2,384	3,932	364	628	1,816	56,941
Southwest	56,931	6,465	4,170	313	15,505	1,262	654	85,300
Ahwatukee	25,195	6,741	1,477	1,013	240	556	465	35,687
Balance of City	300,735	184,396	41,689	71,013	24,780	21,116	24,127	667,856
Citywide	438,172	216,854	51,218	77,728	43,196	24,032	27,360	878,560

Table 3.3 – Buildout EDUs

IF Area	SF	MF	Retail	Office	Industrial	Public	Other	Total
EDU Factor	1	0.68	0.49	0.61	0.2	0.24	0.41	
Northwest & Deer Valley	66,689	23,906	5,713	10,478	8,602	985	637	117,010
Northeast & Paradise Ridge	60,205	16,087	5,290	16,826	714	1,049	2,077	102,248
Southwest	59,967	7,904	5,332	1,432	16,976	1,408	1,091	94,110
Ahwatukee	26,941	6,741	1,629	1,013	240	556	465	37,585
Balance of City	300,735	184,396	41,689	71,013	24,780	21,116	24,127	667,856
Citywide	512,791	239,034	59,501	100,762	51,312	25,114	28,397	1,018,809

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 3.4 – 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 3.5 – Fire Station Costs

Item	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 3.6 – 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
83	51st & Carefree	3	E,R	Buildout	\$17,743,950
81	39 th Ave & Pinnacle Peak Rd.	3	E,R	Buildout	\$17,743,950
89	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 3.7 – 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
82	Pinnacle Peak & Cave Creek	3	E,R	Planned	\$18,103,950
71	60th St & Mayo	3	E,R	Planned	\$18,103,950
67	Deer Valley & 34th St	3	E,R	Buildout	\$18,103,950
84	Sonoran Desert Drive, Verdin	3	E,R	Buildout	\$18,103,950
85	NE Cave Creek area	3	E,R	Buildout	\$18,103,950
86	Happy Valley Rd North of Azara	3	E,R	Buildout	\$18,103,950
87	56th St and Pinnacle Peak	3	E,R	Buildout	\$18,103,950
88	64th St and Deer Valley	3	E,R	Buildout	\$18,103,950

Table 3.8 – 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 3.9 – 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 3.10 – 10-Year Plan Costs

IF Area	Total Cost	EDU	Gross Fee (per EDU)
Northwest	\$40,846,450	10,396	\$3,929
Northeast	\$36,207,900	23,271	\$1,556
South	\$79,614,350	15,382	\$5,176
Ahwatukee	\$15,303,950	790	\$19,372

1. Total cost = sum of all planned stations from relative Table 3.6-3.7
2. EDU from Table 3.1
3. Gross fee = Total Cost / EDU

Table 3.11 – 10-Year Buy In Plan Costs

IF Area	Total Cost	EDU	Gross Fee (per EDU)
Northwest	\$88,271,850	32,776	\$2,693
Northeast	\$68,952,750	56,941	\$1,211
South	\$144,194,100	85,300	\$1,690
Ahwatukee	\$71,383,350	35,687	\$2,000

1. Total cost = sum of existing and planned stations from relative Table 3.6-3.7
2. EDU from Table 3.2
3. Gross fee = Total Cost / EDU

Table 3.12 – Buildout Plan Costs

IF Area	Total Cost	EDU	Gross Fee (per EDU)
Northwest	\$159,247,650	117,010	\$1,361
Northeast	\$177,576,450	102,248	\$1,737
South	\$179,682,000	94,110	\$1,909
Ahwatukee	\$71,383,350	37,585	\$1,899

1. Total cost = sum of all stations from relative Table 3.6-3.7
2. EDU from Table 3.3
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 3.13 Potential Gross Fee & Change in Fee

IF Area	10 Year Fee	10 Year+ Fee	Buildout Fee	Potential Gross Impact Fee (per EDU)
Northwest	\$3,929	\$2,693	\$1,361	\$1,361
Northeast	\$1,556	\$1,211	\$1,737	\$1,211
South	\$5,176	\$1,690	\$1,909	\$1,690
Ahwatukee	\$19,372	\$2,000	\$1,899	\$1,899

1. Fees from Tables 3.10-3.12
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 3.14 Fire Impact Fee Alternative Revenue Offsets

IF Area	Alternative Revenue (per EDU)
Northwest	\$79
Northeast	\$46
South	\$65
Ahwatukee	\$66

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 3.15 Potential Net Impact Fees

IF Area	Gross Impact Fee (per EDU)	Alternative Revenue (per EDU)	Potential Net Fee (per EDU)
Northwest	\$1,361	\$79	\$1,282
Northeast	\$1,211	\$46	\$1,165
South	\$1,690	\$65	\$1,625
Ahwatukee	\$1,899	\$66	\$1,833

1. Gross fee from Table 3.13
2. Offset from Table 3.14

SUMMARY OF PLANNED IMPROVEMENTS

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

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

The City is prohibited from spending impact fee funds on operations, maintenance, repairs, or replacement.

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 3.16 Northwest / Deer Valley Planned Improvements and Costs

Planned Improvement	Total Cost
Station 47	\$17,743,950
Station 51	\$23,102,500
Total Cost	\$40,846,450
Planned Net Impact Fee Revenue	\$13,327,409
Fund Balance	\$3,500,876
Anticipated Need for Alternative Funding	\$24,018,165

Table 3.17 Northeast / Paradise Ridge Planned Improvements and Costs

Planned Improvement	Cost
Station Number	
Station 14	\$18,103,950
Station 71	\$18,103,950
Total Cost	\$36,207,900
Planned Net Impact Fee Revenue	\$27,109,570
Fund Balance	\$4,481,602
Anticipated Need for Alternative Funding	\$4,616,728

Table 3.18 Southwest Planned Improvements and Costs

Planned Improvement	Cost
Station 34	\$17,743,950
Station 62	\$17,743,950
Station 69	\$17,743,950
Station 73	\$26,382,500
Total Cost	\$79,614,350
Planned Net Impact Fee Revenue	\$25,002,440
Fund Balance	\$1,783,440
Anticipated Need for Alternative Funding	\$52,828,470

Table 3.19 Ahwatukee Planned Improvements and Costs

Planned Improvement	Cost
Station 74	\$15,303,950
Total Cost	\$15,303,950
Planned Net Impact Fee Revenue	\$1,448,070
Fund Balance	\$3,048
Anticipated Need for Alternative Funding	\$13,852,634