

Specific Infrastructure Financing Plan for the City of Phoenix, Arizona: Fire, Police, Library and Drainage Fee Categories



City of Phoenix



Amended January 2010

Table of Contents

EXECUTIVE SUMMARY	1
Summary of Policy Changes	1
Potential Impact Fee Summary	3
IMPACT FEE STUDY	8
Background.....	8
Legal Framework	10
Study Methodology	13
Inflation Indexing.....	17
INFRASTRUCTURE IMPROVEMENTS PLAN: INTRODUCTION.....	19
INFRASTRUCTURE IMPROVEMENTS PLAN: FIRE	21
Service Areas	21
Methodology	22
Service Units.....	22
Planned Improvements	24
Cost per Service Unit	29
Level of Service Analysis	29
Net Cost per Service Unit	33
Potential Fee Schedules	35
Improvements Plan.....	36
INFRASTRUCTURE IMPROVEMENTS PLAN: POLICE.....	39
Service Areas	39
Methodology	39
Service Units.....	40
Planned Improvements	42
Cost per Service Unit	45
Level of Service Analysis	45
Net Cost per Service Unit	50
Potential Fee Schedules	51
Improvements Plan.....	52
INFRASTRUCTURE IMPROVEMENTS PLAN: LIBRARY	55
Service Areas	55
Methodology	56
Service Units.....	57
Planned Improvements	59
Cost per Service Unit	60
Level of Service Analysis	61
Net Cost per Service Unit	63
Potential Fee Schedules	65
Improvements Plan.....	66
INFRASTRUCTURE IMPROVEMENTS PLAN: DRAINAGE.....	68
Service Areas	68
Methodology	68
Service Units.....	69
Planned Improvements	69
Cost per Service Unit	72

Level of Service Analysis	73
Net Cost per Service Unit	74
Potential Fee Schedules	76
Improvements Plan	77
APPENDIX A: LAND USE DATA	80
APPENDIX B: FUNCTIONAL POPULATION	82
APPENDIX C: BOND-FUNDED FIRE FACILITIES	86
APPENDIX D: POLICE FACILITY INVENTORY	87
APPENDIX E: BOND-FUNDED POLICE FACILITIES	89
APPENDIX F: LAND COSTS	90
APPENDIX G: DRAINAGE PROJECT COSTS	92

List of Tables

Table 1. Fire Impact Fee Summary	3
Table 2. Police Impact Fee Summary	4
Table 3. Library Impact Fee Summary	5
Table 4. Drainage Impact Fee Summary	5
Table 5. Total of Fire, Police, Library and Drainage Impact Fees	6
Table 6. Fire Service Unit Multiplier Comparison	23
Table 7. Existing and Build-Out Fire Service Units	24
Table 8. Fire Station Planning Summary	25
Table 9. Fire Station Construction Cost	27
Table 10. Planned Fire Station Costs	27
Table 11. Fire Equipment Unit Costs	28
Table 12. Planned Fire Equipment Cost	28
Table 13. Plan-Based Fire Cost per Service Unit	29
Table 14. Existing Fire Facilities	30
Table 15. Existing Fire Vehicle Inventory	31
Table 16. Existing Fire Level of Service	32
Table 17. Fire Level of Service Analysis	33
Table 18. Outstanding Fire-Related Bond Issues	34
Table 19. Fire Debt per Service Unit	35
Table 20. Fire Net Cost per Service Unit	35
Table 21. Potential Fire Impact Fee Schedules	36
Table 22. Potential Fire Impact Fee Revenue	37
Table 23. Fire Improvements Plan	38
Table 24. Police Service Unit Multiplier Comparison	41
Table 25. Existing and Build-Out Police Service Units	41
Table 26. Existing Precinct Station Level of Service	43
Table 27. Precinct Station Construction Cost	43
Table 28. Planned City-Wide Police Improvements	44
Table 29. Plan-Based Police Cost per Service Unit	45
Table 30. Existing Police Facilities	46
Table 31. Police Facility Land Replacement Cost	47
Table 32. Existing Precinct Vehicle Inventory	47
Table 33. Patrol Vehicle Unit Cost	48

Table 34. Police Precinct Vehicle Replacement Cost.....	48
Table 35. Police Communications Equipment Replacement Cost.....	48
Table 36. Outstanding Police-Related Bond Issues.....	49
Table 37. Outstanding Police Debt.....	49
Table 38. Existing Police Facility Level of Service	50
Table 39. Police Level of Service Analysis	50
Table 40. Potential Police Impact Fee Schedules.....	52
Table 41. Potential Police Impact Fee Revenue.....	53
Table 42. Police Improvements Plan	54
Table 43. Library Service Unit Multipliers	57
Table 44. Library Service Unit Multipliers Comparison.....	58
Table 45. Existing and Build-Out Library Service Units.....	59
Table 46. Library Construction Cost per Square Foot.....	60
Table 47. Plan-Based Library Cost per Service Unit	61
Table 48. Existing City-Wide Branch Libraries	62
Table 49. Existing Library Level of Service	63
Table 50. Library Level of Service Analysis	63
Table 51. Library Debt per Service Unit	64
Table 52. Library Net Cost per Service Unit	65
Table 53. Potential Library Impact Fee Schedules.....	65
Table 54. Potential Library Impact Fee Revenue.....	66
Table 55. Library Improvements Plan	67
Table 56. Existing and Build-Out Drainage Service Units	69
Table 57. Planned Drainage Projects	70
Table 58. Drainage Land Costs.....	71
Table 59. Planned Drainage Project Costs.....	72
Table 60. Plan-Based Drainage Cost per Service Unit	72
Table 61. Completed Drainage Projects.....	73
Table 62. Existing Drainage Level of Service	74
Table 63. Drainage Level of Service Analysis.....	74
Table 64. Outstanding Drainage Debt.....	75
Table 65. Drainage Debt per Service Unit.....	75
Table 66. Drainage Net Cost per Service Unit.....	76
Table 67. Potential Drainage Impact Fee Schedules	76
Table 68. Comparative Drainage Impact Fees	77
Table 69. Potential Drainage Impact Fee Revenue.....	78
Table 70. Drainage Improvements Plan.....	79
Table 71. Existing Residential and Nonresidential Development.....	80
Table 72. Build-Out Residential and Nonresidential Development.....	81
Table 73. Average Household Size, 2000.....	82
Table 74. Residential Functional Population and EDU Multipliers.....	82
Table 75. Nonresidential Functional Population and EDU Multipliers.....	83
Table 76. Existing Total Functional Population-Based Service Units	84
Table 77. Build-Out Functional Population-Based Service Units	85
Table 78. Bond-Funded Fire Facilities.....	86
Table 79. Existing City-Wide Police Facility Inventory	87
Table 80. Bond-Funded Police Facilities.....	89
Table 81. Recent City Land Purchases in the Growth Areas	90

Table 82. Fire, Police and Library Land Costs per Acre by Service Area91
 Table 83. Drainage Project Cost Components.....92

List of Figures

Figure 1. Northern Phoenix Growth Area Map..... 9
 Figure 2. Southern Phoenix Growth Area Map 9
 Figure 3. Construction Cost Indices 16
 Figure 4. Fire Service Areas..... 21
 Figure 5. Northern Growth Area Planned and Existing Fire Facilities 24
 Figure 6. Southern Growth Area Planned and Existing Fire Facilities..... 25
 Figure 7. Phoenix Police Precinct Map..... 39
 Figure 8. Current and Proposed Precinct Facilities 42
 Figure 9. Existing Library Facilities..... 55
 Figure 10. Library Service Areas 56
 Figure 11. Storm Drainage Service Areas..... 68
 Figure 12. Nonresidential Functional Population Formula 83
 Figure 13. Existing and Planned Police Facility Map 88

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EXECUTIVE SUMMARY

This report serves as the amendment to the Specific Infrastructure Financing Plan for the City of Phoenix and consists of both the documents required by A.R.S. 9-463-05. As such, the report is divided into two sections: Section I, the Impact Fee Study and Section II, the Infrastructure Improvements Plan.

The purpose of this study is to calculate potential impact fees the City of Phoenix can charge in the growth areas based on planned improvements and existing levels of service for fire, police, library and drainage improvements. The current impact fees for these facilities are based on the *Infrastructure Financing Plan* that was developed by City staff in November 2006.

At the conclusion of the 2006 update, the City Council directed staff to update the impact fees for one-third of the impact fee categories each year, starting in 2007. The roadway facility, parks and trails and open space impact fees were updated in the first of the three updates, with the updated fee schedules adopted by the City Council on March 4, 2009. The water, wastewater, equipment repair and solid waste fees will be updated in 2010.

Summary of Policy Changes

The initial phase of this impact fee update project consisted of a diagnostic review and policy evaluation of the City's existing impact fee system, including recommendations for updating the impact fee calculations, general impact fee policy procedures and related ordinance issues. The recommendations contained in the *Impact Fee Update: Policy Memorandum* were adopted by the City Council on June 11, 2008 to serve as guidelines for each phase of the impact fee update. They are summarized as follows.

General Recommendations

The City's development impact fee system is currently fragmented into three separate documents, with Equivalent Dwelling Unit (EDU) multipliers contained in the ordinance, costs per EDU calculated in the *Infrastructure Financing Plan* and "offsets"¹ calculated in the *Offsets Report*. Under the current procedure, the City Council adopts the *Infrastructure Financing Plan*, and thus determines the cost per EDU for each facility type for each service area. However, the City Council does not adopt the offset schedule for each land use type and type of facility; instead, they are prepared as a separate report by City staff. As a result, the City does not have a net impact fee schedule in the ordinance or other published schedules available for the development community and staff to consult when submitting or reviewing development projects.

In order to provide more clarity to the development community and staff, this impact fee update and subsequent impact fee updates combine all of the fee elements (EDU multipliers, costs per EDU and offsets) into one document that calculates the impact fees. This approach permits the inclusion of a

¹ Offsets represent the present value of future payments of other taxes and fees that are used to provide the same types of facilities as the impact fees. The impact fees are the cost per unit of development less appropriate offsets.

net impact fee schedule in a unified impact fee study, which will enable the City Council to actually adopt the fees that are to be charged, and have the adopted fee schedules included in the impact fee ordinance.

Methodology Changes

In the 2006 impact fee update and earlier updates the City of Phoenix nominally utilized the plan-based approach, because the calculation of the fee was based on a list of planned major improvements needed over a fixed planning horizon (e.g., 2006-2030). However, the City's approach has differed from the traditional plan-based approach in that it divided planned costs by total service units forecast for 2030, rather than by new service units added over the planning horizon. Also, in some cases planned improvements used in the impact fee calculations were based on build-out needs rather than a fixed time horizon of 2030. The *Policy Memorandum* recommendations include the following overall changes to the methodology used in calculating the impact fee:

Divide by growth. Since the planned improvements are designed to serve new growth rather than existing development, the planned improvement costs in this update are divided by new service units expected over the planning horizon, rather than the sum of existing and new service units added over the planning horizon as was previously done.

Analyze the existing level of service. To ensure that development does not pay for more than its share of the remaining improvement costs, this update includes an existing level of service analysis for each service area.

Use build-out planning horizon. This update utilizes development at build-out rather than at 2030, in order to provide a consistent basis for calculating all fees.

Create a uniform secondary property tax offset based on outstanding debt. Under the City's previous approach, the secondary property tax offset was varied for each land use category based on typical property values and the portion of future facilities that may be funded with debt. The approach used in this study creates a uniform offset per EDU by dividing the outstanding city-wide debt by existing city-wide service units.

Update EDU factors. As in prior studies, this update utilizes a standardized unit of demand (the Equivalent Dwelling Unit or EDU) for each facility type. The land use categories for all fees have been simplified into three residential land use categories (single-family, detached; multi-family and mobile home) and four nonresidential categories (retail/commercial; office; industrial/warehouse; and public/institutional). Consistent with the parks and trails and open space impact fee update, the library impact fee is only assessed on residential land uses. The land use categories used in this update provide uniformity among all of the updated impact fees.

Due to limited call data, the fire and police impact fee EDU factors were updated using the "functional population" approach. The functional population approach is a more generalized approach than the calls-for-service approach, and is based on the premise that the demand for fire and police services is strongly related to the presence of people at the site of a land use. Consistent with the earlier parks and open space impact fee updates, the library EDU factors are updated based on

relative household size. This update retains the current basis for the storm drainage EDU factors, with one EDU based on the standard single-family density of four dwellings per acre.

Update cost components and planned improvements. The cost components for each fee were reviewed and updated to reflect current costs. In particular, the land cost components were updated to reflect recent costs paid by the City of Phoenix for fire, police, library and storm drainage sites. The lists of planned improvements were updated to reflect the City’s current plans for the build-out of the service areas.

Potential Impact Fee Summary

Each of the impact fee categories included in this update was last updated in 2006. Under the City’s prior impact fee system, the City did not publish an official net impact fee schedule. Instead, the Development Services Department calculated the net impact fee when permits were obtained based on the service area cost per service unit, less the appropriate offsets related to other revenues used in financing facilities. In some instances, the offset exceeded the cost per service unit and no fee was charged.

The current and potential fire impact fees calculated in this report are summarized in Table 1 for major land use categories. Increases would be greatest in Ahwatukee, where the current fees are the lowest.

Table 1. Fire Impact Fee Summary

Land Use	Unit	Current	Proposed	Change
Northern Growth Area				
Single-Family Detached	Dwelling	\$322	\$328	\$6
Multi-Family	Dwelling	\$270	\$249	-\$21
Retail	1,000 Sq. Ft.	\$96	\$180	\$84
Office	1,000 Sq. Ft.	\$119	\$207	\$88
Industrial	1,000 Sq. Ft.	\$165	\$161	-\$4
Estrella/Laveen				
Single-Family Detached	Dwelling	\$162	\$310	\$148
Multi-Family	Dwelling	\$161	\$236	\$75
Retail	1,000 Sq. Ft.	\$2	\$171	\$169
Office	1,000 Sq. Ft.	\$25	\$195	\$170
Industrial	1,000 Sq. Ft.	\$71	\$152	\$81
Ahwatukee				
Single-Family Detached	Dwelling	\$60	\$372	\$312
Multi-Family	Dwelling	\$91	\$283	\$192
Retail	1,000 Sq. Ft.	\$0	\$205	\$205
Office	1,000 Sq. Ft.	\$0	\$234	\$234
Industrial	1,000 Sq. Ft.	\$10	\$182	\$172

Source: Current and potential fire impact fees from Table 21.

The current and potential police impact fees calculated in this report for major land use categories are summarized in Table 2. The proposed fees would be the same in all three service areas, since these fees are based on the existing city-wide level of service. Since the current fees vary significantly by service area, ranging from no fees in Ahwatukee to a single-family fee of \$344 in the Northern Growth Area, the changes in fees will vary substantially, with fees going down in the Northern Growth Area and increasing in the two southern service areas.

Table 2. Police Impact Fee Summary

Land Use	Unit	Current	Proposed	Change
Northern Growth Area				
Single-Family Detached	Dwelling	\$344	\$209	-\$135
Multi-Family	Dwelling	\$153	\$159	\$6
Retail	1,000 Sq. Ft.	\$189	\$115	-\$74
Office	1,000 Sq. Ft.	\$198	\$132	-\$66
Industrial	1,000 Sq. Ft.	\$216	\$102	-\$114
Estrella/Laveen				
Single-Family Detached	Dwelling	\$90	\$209	\$119
Multi-Family	Dwelling	\$47	\$159	\$112
Retail	1,000 Sq. Ft.	\$24	\$115	\$91
Office	1,000 Sq. Ft.	\$33	\$132	\$99
Industrial	1,000 Sq. Ft.	\$51	\$102	\$51
Ahwatukee				
Single-Family Detached	Dwelling	\$0	\$209	\$209
Multi-Family	Dwelling	\$0	\$159	\$159
Retail	1,000 Sq. Ft.	\$0	\$115	\$115
Office	1,000 Sq. Ft.	\$0	\$132	\$132
Industrial	1,000 Sq. Ft.	\$0	\$102	\$102

Source: Current and potential police impact fees from Table 40.

The current and potential library impact fees calculated in this report for are shown in Table 3. The City currently charges library impact fees on nonresidential land uses, but the fees are zero in most service areas because the property tax offsets outweigh the cost. The updated library fees would apply only to residential development. The proposed fees would go down in three of the four library service areas. In Ahwatukee, which currently has the lowest fees, the fees would increase.

Table 3. Library Impact Fee Summary

Land Use	Unit	Current	Proposed	Change
Desert View				
Single-Family Detached	Dwelling	\$370	\$166	-\$204
Multi-Family	Dwelling	\$151	\$126	-\$25
Retail	1,000 Sq. Ft.	\$0	\$0	\$0
Office	1,000 Sq. Ft.	\$41	\$0	-\$41
Industrial	1,000 Sq. Ft.	\$15	\$0	-\$15
North Gateway				
Single-Family Detached	Dwelling	\$425	\$143	-\$282
Multi-Family	Dwelling	\$175	\$109	-\$66
Retail	1,000 Sq. Ft.	\$10	\$0	-\$10
Office	1,000 Sq. Ft.	\$55	\$0	-\$55
Industrial	1,000 Sq. Ft.	\$23	\$0	-\$23
Estrella/Laveen				
Single-Family Detached	Dwelling	\$196	\$46	-\$150
Multi-Family	Dwelling	\$77	\$35	-\$42
Retail	1,000 Sq. Ft.	\$0	\$0	\$0
Office	1,000 Sq. Ft.	\$0	\$0	\$0
Industrial	1,000 Sq. Ft.	\$0	\$0	\$0
Ahwatukee				
Single-Family Detached	Dwelling	\$52	\$237	\$185
Multi-Family	Dwelling	\$15	\$180	\$165
Retail	1,000 Sq. Ft.	\$0	\$0	\$0
Office	1,000 Sq. Ft.	\$0	\$0	\$0
Industrial	1,000 Sq. Ft.	\$0	\$0	\$0

Source: Current and potential library impact fees from Table 53.

Drainage fees are only charged in the Estrella and Laveen service areas. The current and potential drainage impact fees calculated in this report are summarized for major land uses in Table 4. In general, the proposed fees would decrease for residential uses and increase for nonresidential uses in both service areas.

Table 4. Drainage Impact Fee Summary

Land Use	Unit	Current	Proposed	Change
Estrella				
Single-Family Detached	Dwelling	\$1,154	\$842	-\$312
Multi-Family	Dwelling	\$374	\$281	-\$93
Retail	1,000 Sq. Ft.	\$194	\$309	\$115
Office	1,000 Sq. Ft.	\$0	\$99	\$99
Industrial	1,000 Sq. Ft.	\$184	\$227	\$43
Laveen				
Single-Family Detached	Dwelling	\$919	\$352	-\$567
Multi-Family	Dwelling	\$296	\$117	-\$179
Retail	1,000 Sq. Ft.	\$108	\$129	\$21
Office	1,000 Sq. Ft.	\$0	\$41	\$41
Industrial	1,000 Sq. Ft.	\$120	\$95	-\$25

Source: Current and potential drainage impact fees from Table 68.

The sum total of all of the fees calculated in this report (fire, police, library and drainage) are summarized in Table 5 for major land use categories. The total of these fees would decline for most major land uses in the Northern Growth Area (Desert View and North Gateway service areas). In contrast, total fees would increase for at least nonresidential uses in the Southern Growth Area (Estrella, Laveen and Ahwatukee service areas). The increase for all land use categories in Ahwatukee reflects the fact that current fees are very low.

Table 5. Total of Fire, Police, Library and Drainage Impact Fees

Land Use	Unit	Current	Proposed	Change
Desert View				
Single-Family Detached	Dwelling	\$1,036	\$703	-\$333
Multi-Family	Dwelling	\$574	\$534	-\$40
Retail	1,000 Sq. Ft.	\$285	\$295	\$10
Office	1,000 Sq. Ft.	\$358	\$339	-\$19
Industrial	1,000 Sq. Ft.	\$396	\$263	-\$133
North Gateway				
Single-Family Detached	Dwelling	\$1,091	\$680	-\$411
Multi-Family	Dwelling	\$598	\$517	-\$81
Retail	1,000 Sq. Ft.	\$295	\$295	\$0
Office	1,000 Sq. Ft.	\$372	\$339	-\$33
Industrial	1,000 Sq. Ft.	\$404	\$263	-\$141
Estrella				
Single-Family Detached	Dwelling	\$1,602	\$1,407	-\$195
Multi-Family	Dwelling	\$659	\$711	\$52
Retail	1,000 Sq. Ft.	\$220	\$595	\$375
Office	1,000 Sq. Ft.	\$58	\$426	\$368
Industrial	1,000 Sq. Ft.	\$306	\$481	\$175
Laveen				
Single-Family Detached	Dwelling	\$1,367	\$917	-\$450
Multi-Family	Dwelling	\$581	\$547	-\$34
Retail	1,000 Sq. Ft.	\$134	\$415	\$281
Office	1,000 Sq. Ft.	\$58	\$368	\$310
Industrial	1,000 Sq. Ft.	\$242	\$349	\$107
Ahwatukee				
Single-Family Detached	Dwelling	\$112	\$818	\$706
Multi-Family	Dwelling	\$106	\$622	\$516
Retail	1,000 Sq. Ft.	\$0	\$320	\$320
Office	1,000 Sq. Ft.	\$0	\$366	\$366
Industrial	1,000 Sq. Ft.	\$10	\$284	\$274

Source: Current and potential impact fees are the sum of fees from the preceding four tables for fire, police, library and drainage.

**Section I: Impact Fee Study:
Fire, Police Library and Drainage Fee Categories
Specific Infrastructure Financing Plan for the City
of Phoenix, Arizona**

IMPACT FEE STUDY

The purpose of this study is to calculate potential impact fees that the City of Phoenix can charge based on planned improvements and existing levels of service for fire, police and library facilities in the growth areas, and for drainage infrastructure in the Estrella and Laveen service areas. The current impact fees for the facilities included in this report are based on the *Infrastructure Financing Plan* that was developed by City staff in November 2006.

At the conclusion of the 2006 update, the City Council directed City staff to update the impact fees for one-third of the City's impact fee categories each year starting in 2007. The roadway facility, parks and trails and open space impact fees were updated in the first of the three updates with the updated fee schedules adopted by the City Council on March 4, 2009. The water, wastewater, equipment repair and solid waste fees will be updated in 2010.

This section of the impact fee study includes the information required by the Arizona impact fee enabling act, Section 9-463.05, Arizona Revised Statutes (A.R.S.), which requires that:

A municipality...shall release to the public a written report that identifies the methodology for calculating the amount of the development fee, explains the relationship between the development fee and the infrastructure improvements plan, includes documentation that supports the assessment of a new or modified development fee and identifies any index or indices to be used for automatic adjustment of the development fee pursuant to subsection G of this section and timing of those adjustments. (A.R.S. 9-463.05)

In addition to the requirements of the impact fee enabling act, this section provides an overview of the City's current impact fee system, and the legal framework that governs impact fees nationally and within Arizona.

Background

The City of Phoenix charges development impact fees for the following facilities: roadway facility, parks and trails, open space, equipment repair, fire, libraries, police, stormwater drainage, water and wastewater. The City also nominally charges a solid waste fee, although the fees have been zero since the 2006 update, since the offset schedule exceeds the costs calculated in the 2006 update.

The impact fees do not apply city-wide, but are assessed only on new development located within growth areas. Impact fees are calculated for two general geographic areas, the Northern Growth Area and the Southern Growth Area. The growth areas are illustrated in Figure 1 and Figure 2; it should be noted that these maps are illustrated in this report for informational purposes and that these areas are more completely delineated by electronic maps retained on file by the City of Phoenix Planning Department in a Geographic Information Systems (GIS) format. The growth areas are further divided into additional service areas for certain facility types. The impact fees are charged at building permit and are based on the land use and service area in which the development is located. The water and wastewater impact fees are charged when the permit is issued for the water meter if the meters or fixture units cannot be identified when the building permit is issued.

Figure 1. Northern Phoenix Growth Area Map

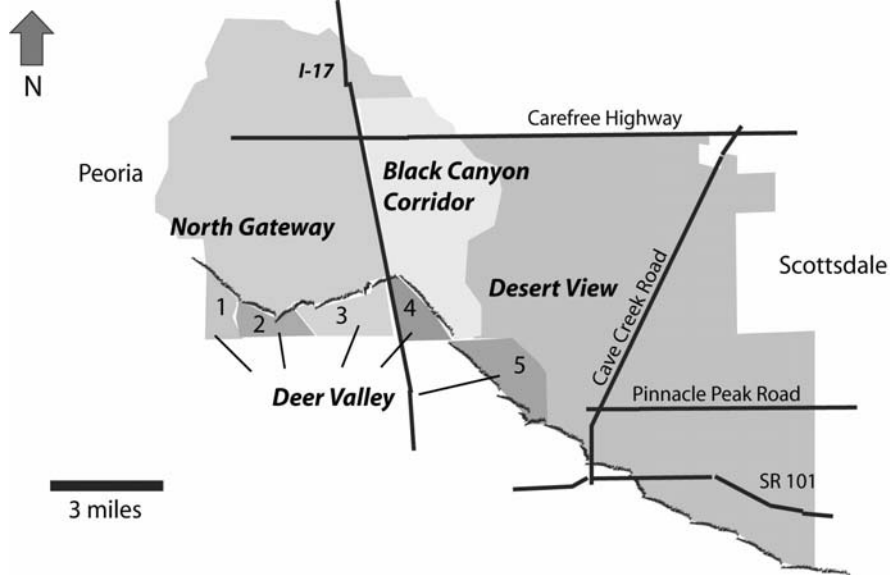
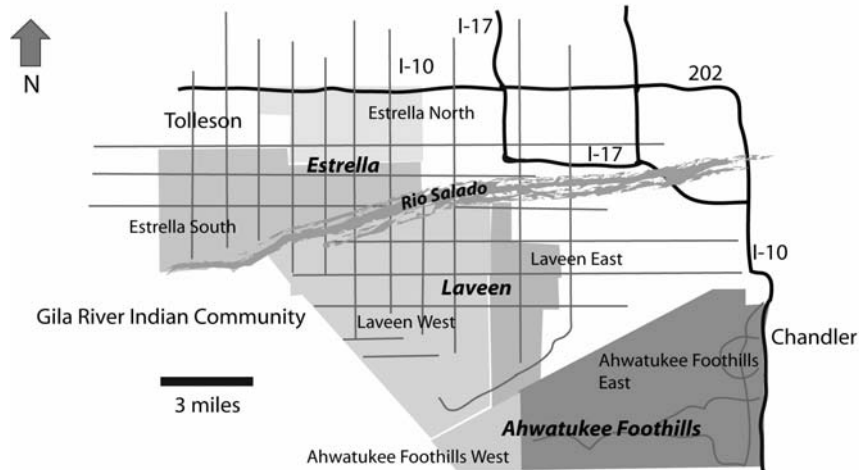


Figure 2. Southern Phoenix Growth Area Map



Phoenix has attracted a steady inflow of residents since the mid-20th century. Since 1950, when the population was approximately 100,000 residents, the city has maintained one of the fastest growth rates for a large municipality in the country, growing to approximately 1.6 million residents in 2008. The city's rapid growth creates demands for new infrastructure and facilities in order to maintain acceptable levels of service. The City's impact fees are charged in the areas of the city that account for much of the current and recent residential growth.

Documentation of Impact Fee Update

The City is updating the fire, police, library and drainage impact fees as part of the annual review of impact fees directed by the City Council at the conclusion of the 2006 update. In 2006, the City Council directed City staff to update the impact fees for one-third of the City's impact fee categories each year starting in 2007. The roadway facility, parks and trails and open space impact fees were updated in the first of the three updates with the updated fee schedules adopted by the City Council on March 4, 2009. The water, wastewater, equipment repair and solid waste fees will be updated in 2010.

In addition to City Council-mandated review, this study provides an opportunity to update the impact fees using the most current best practices for calculating impact fees, to use current costs and to comply with changes in State law. Methodology-specific changes are discussed in the methodology section below and changes to the State law are discussed in the following section. The data and analysis used to calculate the maximum impact fee amounts are included in Section II of this report, and are included herein by reference.

Relationship between Impact Fees and Infrastructure Improvements Plan

The Infrastructure Improvements Plan includes all data and calculations resulting in the recommended impact fees for each capital facility category. However, the City Council has the ultimate authority over the final fee amounts and may choose to alter or phase-in implementation of any or all impact fees from those recommended in the Infrastructure Improvements Plan.

The impact fees that are assessed at the time building permits (or water/sewer service connections) are purchased are the amounts stated in or calculated from the tables contained in the impact fee ordinance (Section 29 of the City Code). These amounts reflect the final fee amounts adopted by City Council at the time of the Council hearing, and may differ in all or in part from the fees recommended in the Infrastructure Financing Plan presented in the following section of this report.

Legal Framework

Impact fees are charges that are assessed on new development to help pay for the capital facility costs they impose on the community. Impact fees require that each new residential or commercial project pay its pro-rata share of the cost of new facilities required to serve that development. This section discusses the legal framework that governs impact fees in Arizona and within the City of Phoenix.

State Law

Arizona is one of more than two dozen states that have adopted specific enabling legislation authorizing the use of impact fees, also called "development fees," as a method of financing improvements to public facilities necessitated by the increased demands resulting from new development. The Arizona impact fee enabling act for cities, Section 9-463.05, Arizona Revised Statutes (A.R.S.), provides that:

A municipality may assess development fees to offset costs to the municipality associated with providing necessary public services to a development, including the costs of infrastructure, improvements, real property, engineering

and architectural services, financing, other capital costs and associated appurtenances, equipment, vehicles, furnishings and other personality. (A.R.S. 9-463.05.A)

While this is a broad grant of authority, the Arizona Supreme Court has ruled that facilities that are not directly provided by a municipality, such as schools, do not represent “costs to the municipality” and therefore are not eligible for impact fees.²

To conform to State law, a municipal impact fee must meet the following standards, which are set forth in Section 9-463.05.B:

1. *Development fees shall result in a beneficial use to the development.*
2. *Monies received from the development fees assessed pursuant to this section shall be placed in a separate fund and accounted for separately and may only be used for the purposes authorized by this section. Monies received from a development fee identified in an infrastructure improvements plan adopted or amended pursuant to subsection D of this section shall be used to provide the same category of necessary public service for which the development fee was assessed for the benefit of the same area, as defined in the infrastructure improvements plan, within which the development fee was assessed. Interest earned on monies in the separate fund shall be credited to the fund.*
3. *The schedule for payment of fees shall be provided by the municipality. The municipality shall provide a credit toward the payment of a development fee for the required dedication of public sites, improvements and other necessary public services included in the infrastructure improvement plan and for which a development fee is assessed to the extent the public sites, improvements and necessary public services are provided by the developer....*
4. *The amount of any development fees assessed pursuant to this section must bear a reasonable relationship to the burden imposed on the municipality to provide additional necessary public services to the development. The municipality shall forecast the contribution to be made in the future in cash or by taxes, fees, assessments or other sources of revenue derived from the property owner towards the capital costs of the necessary public service covered by the development fee, and shall include these contributions in determining the extent of the burden imposed by the development.*
5. *If development fees are assessed by a municipality, such fees shall be assessed in a nondiscriminatory manner.*

The State statute also requires that “before the assessment of a new or modified fee, the governing body of the municipality shall adopt or amend an infrastructure improvements plan.” The infrastructure improvements plan may be adopted concurrently with the impact fee update, and it must include an estimate of future facilities that will be required as a result of new development, a forecast of the infrastructure costs and revenues, a schedule of planned infrastructure construction, and “a comparison of the necessary public services provided to existing development and the necessary public services to be provided to new development.” The act also allows municipalities to automatically adjust an impact fee annually based on a nationally-recognized cost index without a public hearing, provided that the municipality provides public notice of the adjustment at least thirty days prior to its effective date. The statute also provides that, except for annual inflationary adjustments, no new or increased impact fee shall “be assessed against a development for twenty-four

² Homebuilders of Central Arizona, et. al. v. City of Apache Junction, 2000.

months after the date of the municipality's final approval of the development if no material changes are made to the site plan or subdivision plat that was the subject of the final approval."

A bill adopted during the 2009 legislative session (House Bill 2008) imposed a two-year moratorium on any new or increased development impact fees, effective retroactively from June 29, 2009 and lasting until June 30, 2011.

Case Law

The adoption of impact fee legislation in Arizona and its interpretation by the Arizona courts has taken place in the larger context of the evolution of development financing methods nationally. Since impact fees were pioneered in states like Florida that lacked specific enabling legislation, such fees have generally been legally defended as an exercise of local government's broad "police power" to protect the health, safety and welfare of the community. The courts have gradually developed guidelines for constitutionally-valid impact fees, based on a "rational nexus" that must exist between the regulatory fee or exaction and the development activity that is being regulated. The standards set by court cases generally require that an impact fee meet a two-part test:

- 1) The amount of the fee must be proportional to the need for new facilities created by the new development; and
- 2) The expenditure of impact fee revenues must provide benefit to the fee-paying development.

Of key importance in calculating legally-valid development impact fees in Arizona is the proper interpretation of the phrase that the fee "must bear a reasonable relationship to the burden imposed upon the municipality to provide additional necessary public services." The following four principles developed from case law provide guidance for interpreting this issue:

- 1) Fees should not exceed the cost of needed facilities;
- 2) Fees should be proportional to the demand generated by the development;
- 3) Fees should not charge new development for a higher level of service; and
- 4) New development should not be charged twice for the same level of service.

The first principle was often linked to the second principle in early impact fee cases. For example, the Florida Supreme Court in the 1976 Dunedin case held that water and sewer connection fees charged for the purpose of funding system capacity expansion were permissible if they "do not exceed a pro rata share of reasonable anticipated costs of expansion."

The second principle sets a somewhat different standard; not only is it necessary not to overcharge new development generally, each particular development must pay no more than its proportionate share of the costs. Impact fees for various types of developments should be proportional to the impact of each development on the need to construct additional or expanded facilities. The fees do not have to recover the full cost, but if the fees are reduced by a percentage from the full cost, the percentage reduction should apply evenly to all types of developments.

The third principle is that impact fees should not charge new development for a higher level of service than is provided to existing development. While the impact fees could be based on a higher level of service than the one existing at the time of the adoption of the fees, two things are required if this is done. First, another source of funding other than impact fees must be identified and committed to fund the capacity deficiency created by the higher level of service. Second, the impact fees must generally be reduced to ensure that new development does not pay twice for the same level of service, once through impact fees and again through general taxes that are used to remedy the capacity deficiency for existing development.

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

In general, offsets against impact fees are not required for other types of funding that may be used for growth-related, capacity-expanding improvements. While new development may contribute toward such funding, so does existing development, and both existing and new development benefit from the higher level of service that the additional funding makes possible. As long as the fees are based on new development paying to maintain existing levels of service that have been paid for in full by existing development, and additional funding can reasonably be used to raise the level of service for existing and new development alike, no additional revenue offsets are warranted.

City Ordinance

Chapter 29 of the City's Code of Ordinances contains the standards and procedures relating to the development impact fee program. Key provisions of the ordinance include the circumstances under which impact fees will be imposed, specific infrastructure financing plans, administration of development impact fees, method for computation of fees and rules for the issuance of development credits and development agreements.

As previously mentioned, the impact fees do not apply city-wide, but are assessed only on new development located within growth areas. Impact fees are calculated for two general geographic areas, the Northern Growth Area and Southern Growth Area, which are both divided further into additional service areas for certain facility types. The fees are charged at building permit and are based on the land use and the impact fee service area in which the development is located. These practices conform to standard impact fee principles and State law.

Study Methodology

This section provides an overview of the methodology used in developing this impact fee update and the legal and policy rationale for changes to the impact fee methodology used in prior studies.

Facility-specific methodology changes are discussed in more detail for each facility in the Section II of this study.

The State enabling act and national case law guide the appropriate approach to calculating and analyzing impact fees. There are several alternative methodologies that can be used in impact fee analysis. The plan-based methodology, also called an “improvements-based” approach, essentially divides the cost of growth-related improvements required over a fixed planning horizon by the number of new service units projected to be generated by growth over the same planning horizon in order to determine a cost per service unit.

In the past, the City of Phoenix nominally utilized the plan-based methodology in developing the impact fees. The calculation of the cost was based on a list of planned major improvements in each service area. The cost of the improvements was then divided by projected EDUs for each service area.

The City’s 2006 update differed from the traditional plan-based approach in that the City utilized total service units expected to be in the service area in 2030 as the basis for the impact fee calculation, rather than the expected new growth in service units added through 2030, which is the planning horizon on which the improvements are based. If a service area has no existing development, the two approaches would yield the same result; but as the service area builds out, the fees based on this approach become much smaller than the actual cost to accommodate growth. While some of the growth areas may have had very little existing development when the fees were first established; most areas have experienced growth over the past two decades and are, on average, at about one-third of residential build-out. Since the planned improvements are designed to serve new growth rather than existing development, the cost of growth’s portion of the improvements should be divided by new EDUs over the planning horizon, not existing plus new EDUs as is currently done.

Service Units

To make a level of service standard, it is necessary to define a common unit of expression for service demand, known as a “service unit.” This study maintains the use of Equivalent Dwelling Units (EDUs) to standardize the demand generated by each land use type for the calculation and assessment of the impact fees. The EDUs associated with each land use represent the demand that it places on each capital facility category compared to the demand created by a detached single-family housing unit.

Fire and police service units. The two most common methodologies used in calculating fire and police impact fee service units are the “calls-for-service” approach and the “functional population” approach. The calls-for-service approach uses calls by land use type to make the connection between land use type and demand for facilities and equipment. The functional population approach is a more generalized approach than calls-for-service, and it presumes that the demand for fire and police services is strongly related to the presence of people at the site of a land use. This update utilizes the functional population approach for both the fire and police impact fees. While the Fire Department has call data available for some generalized land uses, land use-specific data for police calls are not readily available.

Library service units. The City currently charges a library impact fee for nonresidential land uses, although the fees are zero in most service areas because the property tax offset outweighs the cost. This update eliminates the nonresidential fees and updates the library EDUs based on relative household size.

Drainage service units. This update retains the current basis for the storm drainage EDU factors. The service unit calculation for storm drainage is based on the number of acres benefiting from regional storm drainage improvements. One EDU is based on the standard single-family density of four dwellings per acre, with one EDU equal to one-quarter acre of lot area.

Planning Horizon

Generally, a plan-based approach must be based on a facility master plan that ensures that the listed improvements are going to be needed over the planning horizon on which the fees are based. However, a time-specific plan is not required if the planning horizon is build-out and the community has determined the ultimate facilities needed to accommodate build-out conditions. For consistency with the recently adopted roadway facilities, parks and trails and open space impact fee updates, this study utilizes the build-out time horizon for fire, police, library and drainage fees as well. Existing and build-out housing units and nonresidential development are based on population and employment projections provided by Maricopa Association of Governments (MAG).

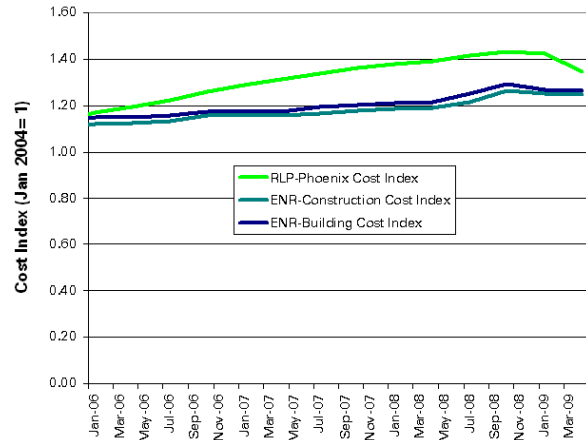
Planned Improvements

A minimum standard in any plan-based impact fee calculation is that the improvements used in calculating the fee must expand the capacity of the system to serve additional development. The current methodology includes the cost of improvements that are deemed to be “capacity-expanding.” Capacity-expanding improvements can be identified based on the nature of the improvement (e.g., renovating an existing fire station or replacing existing equipment such as a patrol car would not be eligible, but building a new fire station or adding patrol cars to the fleet would be capacity-expanding). For all four facility types, the City has identified planned capacity-expanding improvements to serve anticipated build-out development. In addition to future improvements, future principal payments on outstanding debt for existing facilities are also future costs. Total future costs are reduced by impact fee account balances to determine net future costs needed to serve build-out development.

Improvement Costs

Many of the fire and drainage costs contained in this update are based on construction cost estimates developed for the last update in 2006. These 2006 costs have been updated to current 2009 costs using the *Engineering News-Record* national construction cost and building cost indices. These national cost indices, which are based on materials and labor costs, but do not include overhead and profit, have stabilized or declined slightly over the last eight months (November 2008 to June 2009). A different index of building construction costs that does include overhead and profit is provided by the *RLB Construction Cost Quarterly*, both for Phoenix and the nation. This index is more volatile, since contractors will tend to increase their profit margins when business is booming and reduce them in slack times as they try to keep their workers busy. The RLB index indicates that construction costs in Phoenix have declined by 6.3% in the last six months. However, it also indicates that construction costs have increased by 15.0% from January 2006 to April 2009, whereas the ENR Building Cost Index indicates an increase of only 9.8% over the same period. To be conservative, the actual cost per square foot being paid by the City for the branch library that is under construction were reduced by 6.3% to take into account these recent construction cost declines.

Figure 3. Construction Cost Indices



Level of Service

One of the principles of impact fees is that new development should not be charged for a higher level of service than is provided to existing development. To determine if impact fees are equitable, it is necessary to determine what level of service is currently being provided by the City for existing residents and businesses. As long as the fees are not based on a higher level of service than is currently provided to existing development, the fees are consistent with rational nexus principles.

The City has not needed to measure the existing level of service in previous updates, since its methodology (dividing cost of improvements needed over a planning period by total EDUs at the end of the planning period) was so conservative. However, the methodology used in this study raises the possibility that the final increment of development could be required to pay for more than its share of the cost (e.g., the last 10 percent of growth paying for 50 percent of the cost of facilities). To ensure that this does not happen, this study includes a level of service analysis for existing development.

While various indicators can be used to measure level of service, such as patrol officers per 1,000 residents, it is possible to address these issues without specifying a level of service standard in terms of an explicit ratio. In reality, the level of service is a set of capital facilities, including land, buildings and equipment that provide service to a given amount of development. The use of explicit level of service standards generally over-simplifies this complex relationship by emphasizing one element of the capital facilities, such as patrol officers for police. An alternative approach is to measure the existing level of service in terms of the replacement cost of existing facilities per existing service unit. The existing level of service calculation includes the impact fee account balance, since these funds have been paid by existing development, even if they have not yet be spent on an actual facility. On the

other hand, outstanding debt on existing facilities is subtracted from the total replacement cost, because this portion of the value of existing facilities has not been paid for by existing development.

For fire, library and drainage facilities, this study analyzes the existing level of service for each service area. This was not possible for police facilities, since the service areas are currently part of one or even two larger police precincts. Consequently, the existing police level of service is based on a city-wide analysis.

If the level of service at build-out is lower than the existing level of service, the cost per service unit is calculated by dividing remaining project costs by new service units. If the level of service at build-out is higher than the existing level of service, the cost per service unit is based on the existing level of service.

Inflation Indexing

The Arizona State Legislature amended the statute relating to municipal impact fees during the 2007 legislative session. As a result of that amendment, municipalities are now permitted to automatically adjust an impact fee on an annual basis based on a nationally recognized cost index without a public hearing or update to the infrastructure improvement plan. The amendment requires public notice of any adjustment at least thirty days prior to their effective date. Communities in other states have utilized indexing in order to minimize the “jump” in an impact fee each time the municipality updates their fees and the corresponding shock to the cost of development. Depending on the type of index, fee indexing helps maintain the relationship between the actual impact fee and changes in the costs to provide facilities.

The City’s current impact fee ordinance has a provision for an automatic adjustment on an annual basis using the *Engineering News-Record* twenty-city construction cost index or equivalent nationally recognized index unless otherwise directed by the City Council.³ The adjustment will may be made at the end of each calendar year during which the impact fee study, infrastructure improvements plan and impact fee schedule for the type of facility has not been updated, and is based on the percentage change in the index over the preceding 12 month period. The City must provide at least thirty days notice in advance of the effective date of the adjustment, the amount of the adjusted fees will be provided to the public.

³ City of Phoenix Code of Ordinances, Sec. 29-15. Automatic Adjustment.

**Section II: Infrastructure
Improvements Plan:
Fire, Police Library and Drainage Fee Categories
Specific Infrastructure Financing Plan for the City
of Phoenix, Arizona**

INFRASTRUCTURE IMPROVEMENTS PLAN: INTRODUCTION

In 2007, the Arizona State Legislature passed Senate Bill 1423, which amended State law relating to municipal development impact fees. Among the provisions included in the bill, the revised statute requires municipalities to adopt an infrastructure improvements plan, which provides a list and schedule of planned infrastructure that will be funded with the development fee. The revised statute requires that “before the assessment of a new or modified fee, the governing body of the municipality shall adopt or amend an infrastructure improvements plan.” The infrastructure improvements plan (IIP) must include an estimate of future facilities that will be required as a result of new development, a forecast of the infrastructure costs and a schedule of planned infrastructure construction.

The requirements for the infrastructure improvements plan were further modified by the Arizona State Legislature through House Bill 2008. The amendment to the State Act requires the following for each facility that is the subject of an impact fee:

1. *Estimate future necessary public services that will be required as a result of new development in the area, as defined in the infrastructure improvements plan, within which the development fee will be assessed and the basis for the estimate, including a comparison of the necessary public services provided to existing development and the necessary public services to be provided to new development.*
2. *Forecast the costs of infrastructure, improvements, real property, financing, other capital costs and associated appurtenances, equipment, vehicles, furnishings and other personality that will be associated with meeting those future needs for necessary public services.*
3. *Forecast the revenue sources that will be available to fund the necessary public services and estimate the time required to finance and provide the necessary public services.*

This section of the report provides the infrastructure improvements plan required by State law for each of the City’s fire, police, library and drainage impact fees.

Facility Needs

The planned improvements used in calculating the future facility needs in this update are based on the build-out facility needs. The planned improvement costs in this update are divided by new service units expected in each service area through build-out. The plan-based costs per EDU are derived by dividing future capacity-expanding expenditures by future growth in EDUs for the service area. To ensure that development does not pay for more than its share of the remaining improvement costs, this update includes an existing level of service analysis for each service area.

Facility Costs

The cost components for each fee were reviewed and updated to reflect current costs. In particular, the land cost components were updated to reflect recent costs paid by the City of Phoenix for fire, police, library and storm drainage sites. The lists of planned improvements were updated to reflect the City’s current plans for the build-out of the service areas.

Revenue Sources

The net cost per EDU represents new development's fair share of future capacity-expanding improvements, and is the maximum impact fee that may be charged by the City based on the study. In all cases, the net cost per EDU is less than the plan-based cost per EDU. This is because (1) the net cost per EDU is based on the plan-based cost per EDU or the existing level of service, whichever is less, and (2) if the fee is based on plan-based costs, it has been reduced to account for future property tax payments that will retire outstanding debt. The ratio of the net cost per EDU to the plan-based cost per EDU gives the percentage of the future planned expenditures that can be attributed to new development in the service area and that could be funded by the impact fee revenue if the potential fee is fully adopted by the City.

The mix of funding sources available to fund necessary public services beyond the portion covered by the impact fee calculated in this report will be determined by the actions of future City Councils in prioritizing projects, allocating funding in future Capital Improvement Programs and the availability of impact fee revenue in each service area. As such, this study does not include a specific plan for financing the portion of necessary public services that will not be covered by the potential impact fee calculated in this report.

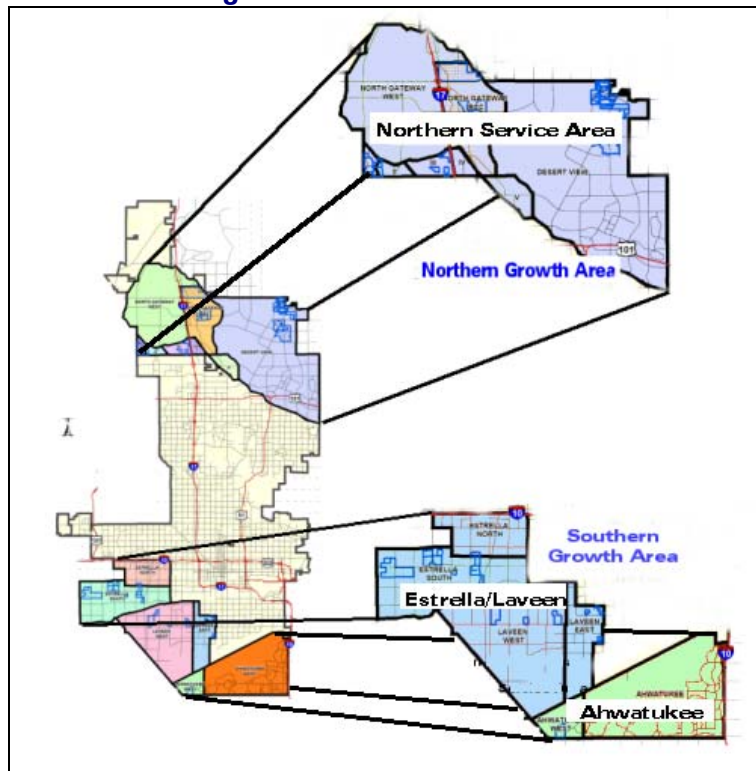
INFRASTRUCTURE IMPROVEMENTS PLAN: FIRE

The Phoenix Fire Department provides fire protection and emergency medical services (EMS) city-wide. In 2008, the Fire Department responded to more than 146,000 calls for service, including 14,500 fire calls and 124,500 EMS calls. The fire and EMS apparatus are dispatched to responses from 57 fire stations located throughout the city. The City's fire impact fee funds the construction of fire stations and the acquisition of related capital equipment in the Northern and Southern Growth Areas.

Service Areas

In an impact fee system, it is important to clearly define the geographic areas within which impact fees will be collected and within which the fees collected will be spent. There are really two types of geographic areas that serve different functions in an impact fee system: service areas and benefit districts. The service areas define the area within which a set of common capital facilities provides service, and for which a fee schedule based on average costs within that district is calculated. Benefit districts, on the other hand, represent an area within which the fees collected must be spent. The City has established three fire protection service areas; one service area for the entire Northern Growth Area that includes all of the villages in that area, and two separate service areas in the Southern Growth Area (Estrella/Laveen and Ahwatukee). The fire service areas are shown in Figure 4.

Figure 4. Fire Service Areas



Methodology

The City’s fire station facility planning is based upon a service standard of a four-minute emergency response time, which roughly equates to a five square-mile grid with 10,000 to 25,000 people. The response time planning standard conforms to the National Fire Protection Association deployment standard for first responder service delivery. In planning future stations and general locations, the Fire Department analyzes the existing and future street network to determine ideal locations and facility needs.

Regardless of the level of service established for planning purposes, this update examines the existing provision of fire facilities within each service area based on the ratio of the replacement value of existing facilities to existing development in order to ensure that the impact fees are not based on a higher level of service than currently provided to development in the service area. The service area level of service is appropriate for fire facilities, since they tend to serve a limited geographical area, and new stations are generally added as warranted by growth.

The total cost per service unit for fire facilities consists of three components: the cost of land for the fire stations, the fire stations and the vehicles. The updated component costs for land and improvements will be applied to the existing fire facilities to determine the existing fire facility level of service in each service area.

The cost per service unit for fire facilities is based on the existing or planned level of service within the service area, whichever is less. The impact fee per service unit is determined by subtracting the property tax offset per service unit from the cost per service unit. The impact fee per unit of development is calculated by multiplying the net cost per service unit for the service area by the EDUs per development unit.

Service Units

In impact fee analysis, disparate types of development must be translated into a common unit of measurement that reflects the impact of new development on the demand for new facilities. This unit of measurement is called a “service unit.” This study maintains the City’s current practice of utilizing the Equivalent Dwelling Unit, or EDU, as the basis for measuring the demand for each land use relative to the impact of a typical single-family detached dwelling unit.

The two most common methodologies used in calculating fire impact fees are the “calls-for-service” approach and the “functional population” approach. The calls-for-service approach uses historical data on calls by land use type to make the connection between land use type and demand for Fire Department services. The functional population approach is a more generalized approach than calls-for-service, and it presumes that the demand for fire services is strongly related to the presence of people at the site of a land use. In developing the current fire EDU factors, the City utilized a random sample of emergency medical service and structural fire call data, and allocated the call data among single-family, multi-family (including mobile homes) and nonresidential land uses. The allocation of the call data included a factor for both the number of calls and time spent on the call by the fire

department. The call data were then weighted to reflect the proportion of calls related to fires and emergency service. The service unit factor for each land use was based on the relative total minutes per unit for each land use compared to the single-family call minutes per unit.

In developing the methodology for this fire facility impact fee update, the consultant, in consultation with City staff, decided to switch to the functional population approach. While the Fire Department has some call data available for very generalized land uses, the availability of police call data by land use is even more limited. In order to be able to use more refined land use categories and maintain consistency between the two impact fee calculations, the functional population approach is used as the basis for the service unit calculation in both fire and police impact fee updates.

The functional population approach is based on the premise that the demand for fire services is strongly related to the presence of people at the site of a land use. This is reasonable, since 85 percent of Fire Department calls are related to emergency medical response, rather than structure fires. Functional population is analogous to the concept of “full-time equivalent” employees. It represents the number of “full-time equivalent” people present at the site of a land use, and it is used for the purpose of determining the impact of a particular development on the need for fire facilities. For residential development, functional population is simply average household size times the percent of time people are assumed to spend at home. For nonresidential development, functional population is based on a formula that factors trip generation rates, average vehicle occupancy and average number of hours spent by employees and visitors at a land use. The functional population multipliers for various land use types are then converted to equivalent dwelling units (EDUs), based on the functional population of the average single-family detached unit. The calculations of functional population and EDUs are presented in Appendix B.

The proposed EDU factors for developing the impact fee calculation are compared to the current factors in Table 6.

Table 6. Fire Service Unit Multiplier Comparison

Land Use	Unit	Existing EDUs/Unit	Func. Pop. EDUs/Unit
Single-Family, Detached	Dwelling	1.00	1.00
Multi-Family	Dwelling	0.68	0.76
Mobile Home/RV Park	Space	0.68	0.85
Retail	1,000 sq. ft.	0.59	0.55
Office	1,000 sq. ft.	0.59	0.63
Public/Institutional	1,000 sq. ft.	0.59	0.61
Industrial	1,000 sq. ft.	0.59	0.49

Source: Existing EDUs per unit from City of Phoenix ordinance; residential functional population EDUs per unit from Table 74; nonresidential functional population EDUs per unit from Table 75.

To determine the cost per service unit using the plan-based methodology, the planned improvement costs are divided by the projected growth in service units over the planning horizon. As discussed in the prior section, the planning horizon used in this update is build-out. The growth through build-out in each of the fire impact fee service areas and city-wide is shown in Table 7.

Table 7. Existing and Build-Out Fire Service Units

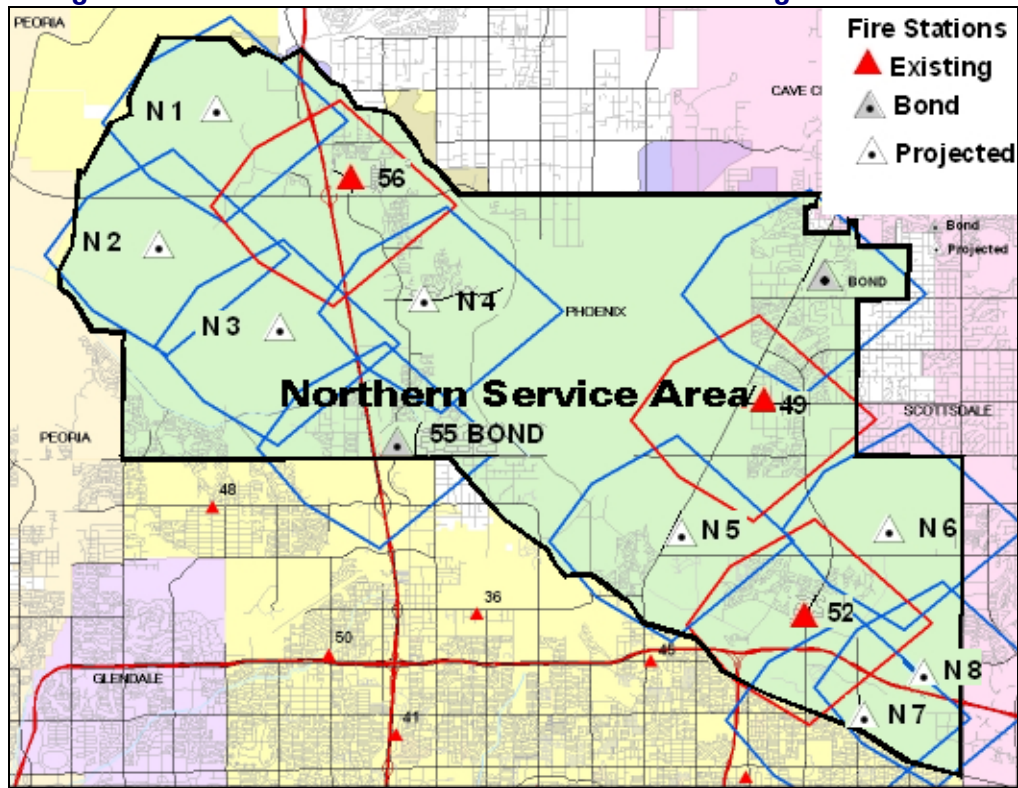
	Build-Out	Existing	New
Northern Growth Area	192,691	29,343	163,348
Estrella/Laveen	119,457	40,687	78,770
Ahwatukee	40,496	37,389	3,107
Subtotal, Growth Areas	352,644	107,419	245,225
+ Non-Growth Area	910,262	631,355	278,907
City-Wide Total	1,262,906	738,774	524,132

Source: Build-out service units from Table 77, Appendix B; existing service units from Table 76, Appendix B.

Planned Improvements

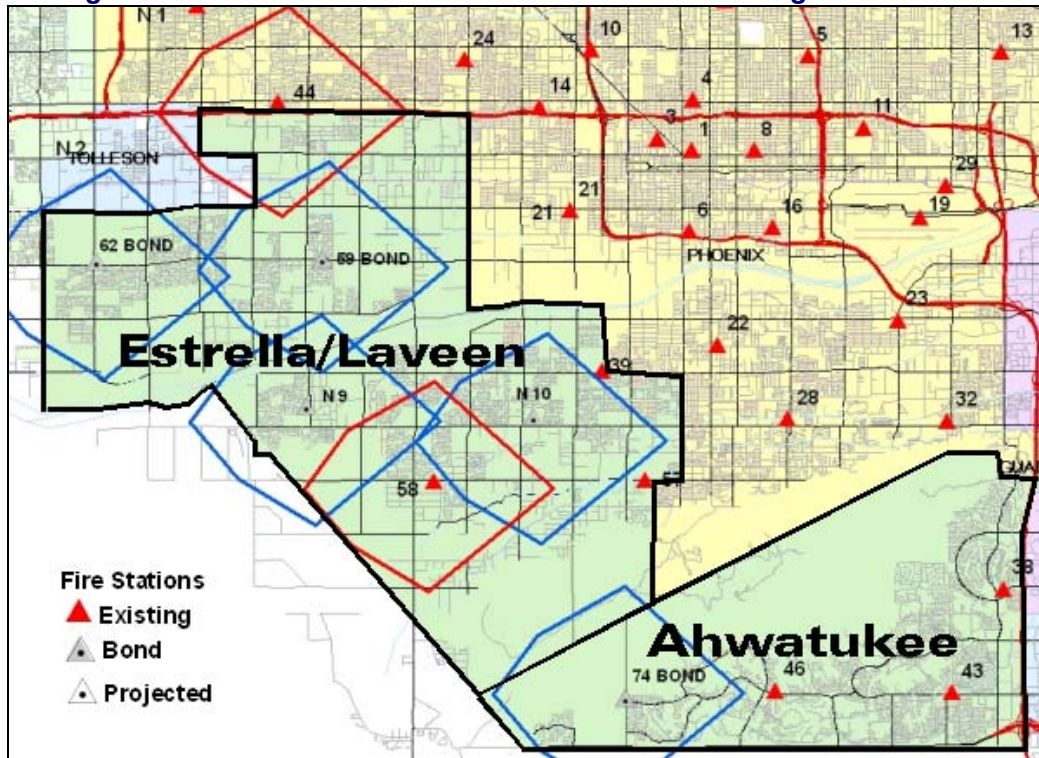
The existing and planned fire stations are shown in Figure 5 for the Northern Growth Area, and in Figure 6 for the Southern Growth Area. The stations are shown surrounded by response polygons that indicate the generalized first-response area for each station. Stations that are identified as bond-funded will be partially funded with general obligation debt issues funded through the secondary property tax. Based on the Fire Department analysis, the Northern Growth Area will need a total of 13 fire stations; there are three existing stations in the area and the City has purchased land for two of the planned stations (Station #55 and Station #72).

Figure 5. Northern Growth Area Planned and Existing Fire Facilities



The Southern Growth Area includes the Estrella/Laveen and Ahwatukee service areas. In Estrella/Laveen, the Fire Department has identified the need for four additional stations in addition to the three existing stations that will be required at build-out. The existing stations within the Estrella/Laveen service area boundary include Stations #44, #57 and #58; the City has also purchased land for a fourth station (Station #59). In Ahwatukee, the Fire Department has planned one additional station (Station #74) in addition to the existing three stations, and has purchased land for the planned station.

Figure 6. Southern Growth Area Planned and Existing Fire Facilities



The existing and planned fire stations for each service area are summarized below in Table 8. Every fifth station in Phoenix is designed as a battalion headquarters facility, which houses additional staff and battalion vehicles.

Table 8. Fire Station Planning Summary

Service Area	Total Planned Stations		Existing Stations		New Stations	
	Station	Battalion HQ	Station	Battalion HQ	Station	Battalion HQ
Northern Growth Area	11	2	2	1	9	1
Estrella/Laveen	6	1	3	0	3	1
Ahwatukee	3	1	2	1	1	0

Source: Planned and existing fire stations based on planning maps in Figure 5 and Figure 6 provided by the City of Phoenix Fire Department, Office of Strategic Planning, March 12, 2009; battalion headquarters demand based on Fire Department planning standard.

Fire Facility Cost

The cost associated with each fire station includes land acquisition, facility construction and furnishings and the purchase of necessary equipment and fire protection vehicles. Standard equipment for fire stations includes an advanced life support (ALS) ambulance/rescue vehicle, an engine and a brush truck; battalion headquarters also include a battalion vehicle. The Fire Department has developed standardized fire station designs that include 14,000 square feet and are typically located on two and one-half acre sites. The facilities include four truck bays, overnight rooms, offices, restrooms and a kitchen. Every fifth planned fire station serves as a battalion office, which requires an additional 5,000 square feet of space and an additional half acre of site area to accommodate additional staff and vehicles.

The land cost estimates used in this study are based on recent City land purchases with the service areas and analysis by a professional real estate appraiser. The land cost data and analysis is presented in Appendix F.

The total cost of the fire stations used in the impact fee calculation is based on prototype fire station facilities. The facilities utilized in the impact fee include a typical fire station with 14,000 square feet and a battalion headquarters fire station with an additional 5,000 square feet. The fire facility impact fee cost components were last updated in 2006 as part of the most recent *Infrastructure Financing Plan* and were based on a cost analysis conducted by an engineering firm of the costs associated with Station #32. The total costs include direct construction costs as well as the costs associated with fees, taxes, bond/insurance and general conditions. The fire station costs exclude the costs of fire-fighting apparatus and related equipment.

Since the City updated the costs in 2006 as part of the *Infrastructure Financing Plan*, this update retains the basis for the cost estimates and updates the costs based on the change in the *Engineering News-Record* (ENR), Building Cost Index (BCI) from January 2007 to January 2009. According to Fire Department staff, the estimated cost for the fire stations derived in Table 9 of \$371 per square foot is similar to recent fire station construction costs for fire stations constructed since 2006.

Table 9. Fire Station Construction Cost

Total Assembly Cost		\$3,597,113
Construction Fee	6.30%	\$226,618
Tax	5.27%	\$189,568
Bond/Insurance	3.00%	\$107,913
A/E (Design)	8.00%	\$287,769
CoP Eng. And Arch.	14.00%	\$503,596
Const. Management	8.00%	\$287,769
Total Construction Cost		\$5,200,346
÷ Square Feet		14,000
Cost per Square Foot		\$371

Source: Construction cost derived from 3 D/I, Construction Cost Analyses and Recommendations for the City of Phoenix, April 20, 2006 and updated to January 2009 value using Engineering News-Record, Building Cost Index (BCI).

The total planned fire facility cost is based on fire station land and construction costs, standardized facility and site characteristics and planned new stations in each service area. The cost associated with land that has already been purchased for future fire stations is excluded from the planned costs. As mentioned, the City has purchased sites for two of the planned stations in the Northern Growth Area (Stations #55 and #72), for Station #59 in Estrella/Laveen and for Station #74 in Ahwatukee. The planned facility and site costs for each service area are summarized in Table 10.

Table 10. Planned Fire Station Costs

	Planned	Unit Cost	Total Cost
Fire Stations	9.0	\$5,200,346	\$46,803,114
Fire Station Land (Acres)	17.5	\$197,833	\$3,462,069
Fire Station w/ Battalion HQ	1.0	\$7,049,000	\$7,049,000
Fire/Battalion Land (Acres)	3.0	\$197,833	\$593,498
Total, Northern Growth Area			\$57,907,680
Fire Stations	3.0	\$5,200,346	\$15,601,038
Fire Station Land (Acres)	5.0	\$134,526	\$672,630
Fire Station w/ Battalion HQ	1.0	\$7,049,000	\$7,049,000
Fire/Battalion Land (Acres)	3.0	\$134,526	\$403,578
Total, Estrella/Laveen			\$23,726,246
Fire Stations	1.0	\$5,200,346	\$5,200,346
Fire Station Land (Acres)	0.0	\$182,006	\$0
Fire Station w/ Battalion HQ	0.0	\$7,049,000	\$0
Fire/Battalion Land (Acres)	0.0	\$182,006	\$0
Total, Ahwatukee			\$5,200,346

Source: Planned fire stations and battalion headquarters from Table 8; fire station land based on City of Phoenix Fire Department planning standards of 2.5 acres for stations and 3 acres for battalion headquarters; land requirement excludes existing sites purchased for future fire stations; fire station cost from Table 9; battalion headquarters cost derived from cost per square foot in Table 9 and standard facility size of 19,000 square feet; land cost per acre from Table 82.

Fire Equipment Costs

The cost of fire-fighting apparatus is based on current pricing for fully-equipped vehicles. The standard vehicle pricing by equipment type is shown in Table 11.

Table 11. Fire Equipment Unit Costs

Apparatus Type	Vehicle	Equipment	Total
Engine	\$400,000	\$157,368	\$557,368
Ladder	\$754,887	\$135,610	\$890,497
Ladder Tender	\$211,856	\$135,610	\$347,466
Utility	\$450,500	\$20,000	\$470,500
Ambulance/Rescue	\$121,500	\$67,512	\$189,012
Brush	\$85,500	\$18,556	\$104,056
Tanker	\$160,000	\$29,156	\$189,156
Battalion Command	\$30,000	\$80,000	\$110,000

Source: City of Phoenix Fire Department, February 17, 2009.

For planning purposes, each fire station will be equipped with an ALS rescue vehicle, fire engine and brush truck. The battalion headquarters also includes a battalion vehicle. The total planned vehicle costs for each service area are shown in Table 12.

Table 12. Planned Fire Equipment Cost

Vehicle Type	Demand	Unit Cost	Total Cost
ALS Rescue	10	\$189,012	\$1,890,120
Engine	10	\$557,368	\$5,573,680
Brush Truck	10	\$104,056	\$1,040,560
Battalion Vehicle	1	\$110,000	\$110,000
Total, Northern Growth Area			\$8,614,360
ALS Rescue	4	\$189,012	\$756,048
Engine	4	\$557,368	\$2,229,472
Brush Truck	4	\$104,056	\$416,224
Battalion Vehicle	1	\$110,000	\$110,000
Total, Estrella/Laveen			\$3,511,744
ALS Rescue	1	\$189,012	\$189,012
Engine	1	\$557,368	\$557,368
Brush Truck	1	\$104,056	\$104,056
Battalion Vehicle	0	\$110,000	\$0
Total, Ahwatukee			\$850,436

Source: Planned vehicles based on planned new fire stations and battalion headquarters from Table 8 and fire equipment costs from Table 11.

Cost per Service Unit

The cost per service unit is developed by dividing the planned improvement costs by the projected growth in service units through build-out. In addition to future improvement costs, principal payments on outstanding debt used to build existing fire stations within each service area are also a future cost. The growth-related improvement costs for fire facilities must be adjusted to account for the net cash balance available in the fire facility impact fee funds. The available cash balance is subtracted from the total costs since the fund balance will be used to pay for a portion of the future infrastructure and decrease the amount needed to be collected from future impact fees. There are currently no outstanding developer credits related to the fire facility impact fee in any of the service areas. The plan-based cost per service unit is determined by dividing the total plan-based cost by the number of service units that will be added through build-out, as shown in Table 13. Note, however, that the fee in Ahwatukee will not be based on this extraordinarily high plan-based cost, due to the existing level of service analysis in the next section.

Table 13. Plan-Based Fire Cost per Service Unit

	Northern Growth Area	Estrella/ Laveen	Ahwatukee
Facility Cost	\$57,907,680	\$23,726,246	\$5,200,346
+ Vehicle/Equipment Cost	\$8,614,360	\$3,511,744	\$850,436
Total Planned Facility and Vehicle Cost	\$66,522,040	\$27,237,990	\$6,050,782
+ Outstanding Debt	\$1,826,949	\$4,882,799	\$4,532,929
- Existing Balance	-\$696,244	-\$2,255,526	-\$185,326
Total Planned Costs	\$67,652,745	\$29,865,263	\$10,398,385
÷ New Service Units (EDUs)	163,348	78,770	3,107
Plan-Based Cost per EDU	\$414	\$379	\$3,347

Source: Facility costs from Table 10; vehicle/equipment cost from Table 12; existing balance from City of Phoenix Planning Department and based on January 2009 balance; outstanding debt on existing fire stations in the service areas from City of Phoenix Budget and Research Department, June 11, 2009; new EDUs from Table 7.

Level of Service Analysis

One of the fundamental principles of impact fees, central to the “rational nexus” standard enunciated by the courts and echoed in Arizona’s “reasonable relationship” language, is that new development cannot be asked to pay for a higher level of service than existing development. Prior infrastructure financing plans did not measure the existing level of service for fire facilities in each of the impact fee service areas. Normally, this might make it difficult to determine whether new development in these areas was being charged for a higher level of service; however, under the City’s past methodology the total cost of remaining planned improvements was divided by total service units (including both new and existing development), which ensured that new growth did not pay more than its share of the costs. As a result, a detailed level of service analysis was not necessary under the City’s past approach, since there was no danger that new development would be charged for a higher level of service.

Dividing the planned costs by the new service units rather than dividing by the ultimate (existing and new) service units, as was done by Phoenix in prior fee updates, requires an analysis of the current

level of service provided to existing development in each service area. The methodology used in this report raises the possibility that the final increment of development could be required to pay for more than its share of the cost (e.g., the last 10 percent of growth paying for 50 percent of the cost). To ensure that this does not happen, this study provides an analysis of the existing level of service. If the level of service at build-out is lower than the existing level of service, the cost per service unit used in the fee schedule will be based on the planned improvement cost per EDU. If the level of service at build-out is higher than the existing level of service, the cost per service unit will be based on the existing level of service.

The existing level of service for fire facilities in this study is based on the replacement cost of existing facilities and major fire-fighting capital equipment located within each service area, less outstanding debt on those facilities and equipment, plus the amount of the impact fee account balance. The value of existing facilities is based on the cost estimates used in developing the fee and the square feet and land associated with existing facilities. Also included in the value of the existing facilities is the value of land that has been acquired for future stations (recall that those parcels were excluded from the plan-based costs). The estimated value of the existing facilities in each of the service areas are shown in Table 14.

Table 14. Existing Fire Facilities

Fire Station	Building (Sq. Ft.)	Land (Acres)
Station 49	7,300	1.75
Station 52 w/ Battalion HQ	13,300	1.16
Station 56	15,000	2.00
Station 55 (Planned)	NA	3.00
Station 72 (Planned)	NA	3.23
Subtotal, Northern Growth Area		11.14
x Unit Cost		\$197,833
Total Cost, Northern Growth Area		\$2,203,854
Station 44	7,300	1.46
Station 57	15,000	2.29
Station 58	6,300	1.28
Station 59 (Planned)	NA	3.00
Subtotal, Estrella/Laveen		8.03
x Unit Cost		\$134,526
Total Cost, Estrella/Laveen		\$1,080,244
Station 38	7,600	1.40
Station 43 w/ Battalion HQ	17,200	2.00
Station 46	6,600	1.00
Station 74 (Planned)	NA	3.00
Subtotal, Ahwatukee		7.40
x Unit Cost		\$182,006
Total Cost, Ahwatukee		\$1,346,844

Source: Existing facilities inventory from City of Phoenix Fire Department, April 21, 2009; facility replacement cost per square foot from Table 9; land costs per acre from Table 82 in Appendix F.

As shown in Table 15, the replacement cost of fire-fighting apparatus is based on the current unit cost and the inventory of existing equipment located at stations within each service area. The existing

equipment inventory includes both the standard equipment, such as engines and brush trucks, as well as equipment types that are specific to a certain location, such as ladder trucks. Such equipment is necessary based on the type of development within the area served by the fire station.

Table 15. Existing Fire Vehicle Inventory

Paramedic/Engine 49	\$557,368
Brush 49	\$104,056
Paramedic/Engine 52	\$557,368
Brush 52	\$104,056
Battalion 6 (Station 52)	\$110,000
Paramedic/Engine 56	\$557,368
Tanker 56	\$189,156
Total, Northern Growth Area	\$2,179,372
Paramedic/Engine 44	\$557,368
Squad/Rescue 44	\$189,012
Paramedic/Engine 57	\$557,368
Rescue 57	\$189,012
Paramedic/Engine 58	\$557,368
Brush 58	\$104,056
Total, Estrella/Laveen	\$2,154,184
Paramedic/Engine 38	\$557,368
Rescue 38	\$189,012
Hazmat 38	\$350,000
Brush 38	\$104,056
Engine 43	\$557,368
Rescue 43	\$189,012
Ladder 43	\$890,497
Ladder Tender 43	\$347,466
Battalion 7 (Station 43)	\$110,000
Paramedic/Engine 46	\$557,368
Brush 46	\$104,056
Total, Ahwatukee	\$3,956,203

Source: Existing vehicle inventory from City of Phoenix Fire Department, "Fire Station Locations and Apparatus Report," June 23, 2008; unit replacement costs from Table 11.

The total cost of facilities, land and vehicles for each service area is divided by the existing service units to determine the cost per service unit to maintain the existing Fire Department level of service. The existing impact fee account balances are added to the value of facilities, because these cash funds have been paid by existing development. A city-wide offset for outstanding debt on existing fire stations must be deducted from the total cost per EDU, since these facilities or portions of facilities have not been paid for by existing development. As shown in Table 16, the existing level of service, measured in terms of the net cost per EDU, is highest in the Northern Growth Area and lowest in Estrella/Laveen.

Table 16. Existing Fire Level of Service

Building Replacement Value	\$13,207,600
Land Value	\$2,203,854
Vehicle Replacement Cost	\$2,179,372
Total Value, Northern Growth Area	\$17,590,826
+ Existing Balance	\$696,244
Total Replacement Cost	\$18,287,070
÷ Existing Service Units (EDUs)	29,343
Existing Cost per EDU, Northern Growth Area	\$623
- City-Wide Debt Offset per EDU	-\$86
Existing Net Cost per EDU, Northern Growth Area	\$537
Building Replacement Value	\$10,610,600
Land Value	\$1,080,244
Vehicle Replacement Cost	\$2,154,184
Total Value, Estrella/Laveen	\$13,845,028
+ Existing Balance	\$2,255,526
Total Replacement Cost	\$16,100,554
÷ Existing Service Units (EDUs)	40,687
Existing Cost per EDU, Estrella/Laveen	\$396
- City-Wide Debt Offset per EDU	-\$86
Existing Net Cost per EDU, Estrella/Laveen	\$310
Building Replacement Value	\$11,649,400
Land Value	\$1,346,844
Vehicle Replacement Cost	\$3,956,203
Total Value, Ahwatukee	\$16,952,447
+ Existing Balance	\$185,326
Total Replacement Cost	\$17,137,773
÷ Existing Service Units (EDUs)	37,389
Existing Cost per EDU, Ahwatukee	\$458
- City-Wide Debt Offset per EDU	-\$86
Existing Net Cost per EDU, Ahwatukee	\$372

Source: Building and land replacement value from Table 14; vehicle replacement cost from Table 15; city-wide offset for debt on existing fire stations from Table 19; existing balance from Table 13; existing EDUs from Table 76.

As discussed, an impact fee should not charge new development for a higher level of service than is provided to existing development. To ensure this does not occur, the fees should be based on the lower of the existing or planned level of service. As shown in Table 17, the value of the existing level of service is lower than the planned improvements through build-out in Estrella/Laveen and Ahwatukee. Basing the fees in these two service areas on the plan-based cost, and a higher-than-existing level of service, would create existing deficiencies that must be funded and would require an offset against the impact fee for revenue generated by new development that would be used to remedy the deficiencies. To avoid these complications, the updated fees in Estrella/Laveen and Ahwatukee should be based on the existing level of service. The fee in the Northern Growth Area should be based on the plan-based costs.

Table 17. Fire Level of Service Analysis

	Northern Growth Area	Estrella/Laveen	Ahwatukee
Existing Level of Service (Net Cost per EDU)	\$537	\$310	\$372
Plan-Based Cost per EDU	\$414	\$379	\$3,347

Source: Existing level of service from Table 16; plan-based cost per EDU from Table 13.

Net Cost per Service Unit

The major funding sources for fire facilities in Phoenix have generally consisted primarily of debt funded through the secondary property tax along with impact fee funds in the growth areas. The secondary property tax in Arizona can only be used to repay debt used for capital improvements. The City issues general obligation debt funded with the secondary property tax to fund street, bridge and storm drain improvements. In this update, the debt offset recognizes the expenditure of property tax proceeds from new development that will be used to repay outstanding fire facility debt from prior bond-funded improvements. Under the City’s current offset schedule, the offset varies for each land use category. The approach used in this study allows for a uniform debt offset per EDU.

In past updates, the City used a forward-looking offset methodology to account for secondary property tax debt by analyzing the future facilities that may be funded with debt. However, the legal principle involved applies much more clearly to the existing debt than to future debt. In other words, new development should not have to pay for the fire facilities it will require in the growth areas, while also having to help repay debt on existing fire-related facilities and equipment serving existing development. Consequently, the impact fee should be reduced to account for the amount that new development will pay to retire the debt on existing facilities in order to avoid double-payment issues.

In this update, the secondary property tax offset is based on the outstanding city-wide debt for fire facilities and the existing city-wide fire service units. This approach avoids double-payment issues and creates a uniform offset per EDU for all land uses. Outstanding fire-related debt issues are summarized in Table 18.

Table 18. Outstanding Fire-Related Bond Issues

Series	Original Principal	Bonds Outstanding
Fire 1995A	\$610,000	\$170,000
Fire 2002B	\$3,000,000	\$2,390,000
Fire 2004	\$23,000,000	\$14,165,000
Fire 2005B	\$17,000,000	\$11,170,000
Fire 2007B	\$300,000	\$300,000
Fire 2007A	\$12,500,000	\$12,500,000
Fire 2007A	\$8,700,000	\$8,700,000
Subtotal, Fire Debt	\$65,110,000	\$49,395,000
2002B	\$51,500,000	\$14,515,000
2004	\$33,000,000	\$25,125,000
2004R	\$7,300,000	\$1,960,000
2005B	\$30,000,000	\$20,000,000
2007A	\$4,300,000	\$4,300,000
2007B	\$21,110,000	\$21,110,000
Subtotal, Fire/Police/Tech Debt	\$147,210,000	\$87,010,000
Total Fire-Related Debt	\$212,320,000	\$136,405,000

Source: Outstanding secondary property tax funded debt series, original principal and outstanding balance provided by City of Phoenix Finance Administration, February 20, 2009.

A portion of the outstanding debt issues shown in Table 18 were used to fund police facilities and technology upgrades and projects for non-fire facilities. Since the exact allocation of the joint debt issues cannot be determined, this study includes an analysis of all existing fire facilities that were funded in whole or in part with secondary property tax in the CIP over the past 25 years (see Table 78, Appendix C). Based on this analysis, the City of Phoenix has utilized \$99.2 million in secondary property tax bonds for fire-related projects.

The secondary property tax offset is based on the fire facility share of outstanding secondary property tax bonds that have been utilized for fire facilities. As shown in Table 19, approximately 47 percent of the fire-related debt was utilized for fire facilities. Based on the outstanding fire-related bond issue principal, the fire facility share of fire-related debt and existing city-wide EDUs, the secondary property tax offset is per EDU. As with all secondary property tax offset calculations in this study, city-wide service units are utilized in the calculation, since the debt will be repaid by city-wide property tax payers and not just those residing in the impact fee service areas.

Table 19. Fire Debt per Service Unit

Total Orig. Cost of Existing Debt-Funded Fire Facilities	\$99,215,377
÷ Total of Original Principal Fire-Related Debt	\$212,320,000
Fire Facility Share of Fire-Related Debt	46.7%
x Fire-Related Bonds Outstanding	\$136,405,000
Outstanding Fire Facility Debt	\$63,701,135
÷ Existing City-Wide EDUs	738,774
Outstanding Fire Debt per EDU	\$86

Source: Existing debt-funded facilities from Table 78, Appendix C; total of original fire-related debt principal and fire-related bonds outstanding from Table 18; existing city-wide EDUs from Table 76, Appendix B.

The net cost per service unit for fire facilities is derived by reducing the cost per service unit by the secondary property tax debt offset. As shown in Table 20, the net cost per EDU is \$328 in the Northern Growth Area, \$310 in Estrella/Laveen and \$372 in Ahwatukee.

Table 20. Fire Net Cost per Service Unit

	Northern Growth Area	Estrella/ Laveen	Ahwatukee
Fire Protection Cost per EDU	\$414	\$396	\$458
– Secondary Property Tax Offset per EDU	-\$86	-\$86	-\$86
Net Cost per EDU	\$328	\$310	\$372

Source: Cost per EDU for Northern Growth Area based on plan-based cost from Table 13; cost per EDU for Estrella/Laveen and Ahwatukee based on existing level of service cost per EDU from Table 16; secondary property tax offset per EDU from Table 19.

Potential Fee Schedules

The potential fire impact fees that can be adopted by the City based on this study are derived by multiplying the EDUs associated with each land use type by the net cost per EDU for the service area. The potential impact fee schedules for the three service areas are shown in Table 21. The updated fire facility impact fees are compared with current fees in each service area. While the City does not publish an official net impact fee schedule for fire, the current impact fee schedule for all areas can be calculated based on the EDU factors in the impact fee ordinance, the adopted cost per EDU and the 2006 *Offsets Report*. In some instances, there is no impact fee for certain nonresidential land uses because the offset exceeds the cost per unit (offsets vary by land use type under the City’s offset methodology used in 2006). Fees would increase most in Ahwatukee, where current fees are very low.

Table 21. Potential Fire Impact Fee Schedules

	Unit	EDUs/ Unit	Net Cost/EDU	Net Cost/Unit	Current Fees	Change
Northern Growth Area						
Single-Family, Detached	Dwelling	1.00	\$328	\$328	\$322	\$6
Multi-Family	Dwelling	0.76	\$328	\$249	\$270	-\$21
Mobile Home/RV Park	Space	0.85	\$328	\$279	\$270	\$9
Retail/Commercial	1,000 Sq. Ft.	0.55	\$328	\$180	\$96	\$84
Office	1,000 Sq. Ft.	0.63	\$328	\$207	\$119	\$88
Public/Institutional	1,000 Sq. Ft.	0.61	\$328	\$200	\$203	-\$3
Industrial/Warehouse	1,000 Sq. Ft.	0.49	\$328	\$161	\$165	-\$4
Estrella/Laveen						
Single-Family, Detached	Dwelling	1.00	\$310	\$310	\$162	\$148
Multi-Family	Dwelling	0.76	\$310	\$236	\$161	\$75
Mobile Home/RV Park	Space	0.85	\$310	\$264	\$161	\$103
Retail/Commercial	1,000 Sq. Ft.	0.55	\$310	\$171	\$2	\$169
Office	1,000 Sq. Ft.	0.63	\$310	\$195	\$25	\$170
Public/Institutional	1,000 Sq. Ft.	0.61	\$310	\$189	\$109	\$80
Industrial/Warehouse	1,000 Sq. Ft.	0.49	\$310	\$152	\$71	\$81
Ahwatukee						
Single-Family, Detached	Dwelling	1.00	\$372	\$372	\$60	\$312
Multi-Family	Dwelling	0.76	\$372	\$283	\$91	\$192
Mobile Home/RV Park	Space	0.85	\$372	\$316	\$91	\$225
Retail/Commercial	1,000 Sq. Ft.	0.55	\$372	\$205	\$0	\$205
Office	1,000 Sq. Ft.	0.63	\$372	\$234	\$0	\$234
Public/Institutional	1,000 Sq. Ft.	0.61	\$372	\$227	\$48	\$179
Industrial/Warehouse	1,000 Sq. Ft.	0.49	\$372	\$182	\$10	\$172

Source: EDUs/unit from Table 74 and Table 75; net cost per EDU from Table 20; current fees based on EDUs per unit from City Code, Sec. 29-5E, existing cost per EDU from *Infrastructure Financing Plan, 2006* and offsets from *Offsets Report, 2006* (nonresidential fees shown are for retail center, general office, nursing home and manufacturing).

Improvements Plan

The portion of the cost of future fire protection capital improvements in each service area attributable to new development and the potential revenue from fire impact fees if adopted at the full net cost should be the identical amount, because the fees are calculated to cover the growth-related cost. Any additional cost not covered by potential impact fee revenue is not attributable to existing development in the service area – this would only be the case if the fees were based on a higher level of service than currently exists, in which case the deficit would be attributable to an existing capacity deficiency. The fees calculated in this report have been based on the existing level of service or the cost to construct remaining improvements, whichever is less. For this reason, any cost not covered by potential impact fee revenue is for improvements that will raise the level of service for, and benefit, both existing and new development in the service area. Consequently, no additional offset against the impact fees is warranted for any additional non-impact fee funding used to pay for needed fire capital improvements in the impact fee service areas.

The growth share of future costs, which is the same as potential impact fee revenue, is the product of the net cost per service unit and the number of future service units from now to build-out. Potential impact fee revenue for each of the three service areas is shown in Table 20.

Table 22. Potential Fire Impact Fee Revenue

	Growth Area	Laveen	Ahwatukee
Net Cost per EDU	\$328	\$310	\$372
x New EDUs, 2009-Buildout	163,348	78,770	3,107
Potential Impact Fee Revenue	\$53,578,144	\$24,418,700	\$1,155,804

Source: Net cost per EDU from Table 20; new EDUs from Table 7.

The fire improvements plan for all three service areas is shown in Table 21. The improvements plan provides a list of planned capital improvements and other expenditures that are eligible to be funded by the impact fees. Eligible expenditures include capacity-expanding fire facility improvements and equipment funded in the 2009-2013 Capital Improvement Program (CIP) and beyond 2013 through build-out. In addition to the planned facility and equipment costs, eligible expenditures include debt repayment for newly constructed facilities that have the capacity to serve future growth. In addition, the planned expenditures are adjusted to reflect the impact fee account balance for each service area.

Projects not currently in the five-year CIP will be programmed by the City Council in future CIPs based on need and will depend on availability of funding. If the fire impact fee is adopted at the full potential impact fee schedule calculated in this report, a portion of the planned improvements in each service area will still need to be funded by other revenue sources. The mix of funding sources available to fund necessary public services beyond the portion covered by the impact fees calculated in this report will be determined by the actions of future City Councils in prioritizing projects, allocating funding in future Capital Improvement Programs and the availability of impact fee revenue in each service area. This study does not include a specific estimate of the time required to finance and provide the necessary public services between 2013 and build-out for each service area, since the build-out of each impact fee service area will vary depending on market conditions and availability of land for new development.

Table 23. Fire Improvements Plan

Fire Facility	FY 2009-2013	Beyond 2013	Total
Unnamed Future Fire Stations	\$0	\$48,302,700	\$48,302,700
Fire Equipment/Apparatus	\$0	\$6,829,360	\$6,829,360
Fire Station 72--Equipment	\$855,000	\$0	\$855,000
Fire Station 72--Facility	\$2,508,660	\$0	\$2,508,660
Fire Station 55--Equipment	\$930,000	\$0	\$930,000
Fire Station 55--Facility	\$7,096,320	\$0	\$7,096,320
Outstanding Debt on Station 52	\$0	\$1,826,949	\$1,826,949
Total Planned Expenditures, Northern Growth Area	\$11,389,980	\$56,959,009	\$68,348,989
– Impact Fee Fund Balance			-\$696,244
Total Future Costs			\$67,652,745
– Growth Costs & Potential Impact Fee Revenue			-\$53,578,144
Additional Funding Requirement, Northern Growth Area			\$14,074,601
Unnamed Future Fire Stations	\$0	\$14,685,235	\$14,685,235
Fire Equipment/Apparatus	\$0	\$1,957,744	\$1,957,744
Fire Station 59--Equipment	\$1,404,000	\$0	\$1,404,000
Fire Station 59--Facility	\$6,914,240	\$0	\$6,914,240
Fire Station 62--Equipment	\$150,000	\$0	\$150,000
Fire Station 62--Facility	\$2,126,771	\$0	\$2,126,771
Outstanding Debt on Station 57	\$0	\$4,882,799	\$4,882,799
Total Planned Expenditures, Estrella/Laveen	\$10,595,011	\$21,525,778	\$32,120,789
– Impact Fee Fund Balance			-\$2,255,526
Total Future Costs			\$29,865,263
– Growth Costs & Potential Impact Fee Revenue			-\$24,418,700
Additional Funding Requirement, Estrella/Laveen			\$5,446,563
Fire Equipment/Apparatus	\$0	\$156,436	\$156,436
Fire Station 74--Equipment	\$694,000	\$0	\$694,000
Fire Station 74--Facility	\$5,200,346	\$0	\$5,200,346
Outstanding Debt on Station 43	\$0	\$4,532,929	\$4,532,929
Total Planned Expenditures, Ahwatukee			\$10,583,711
– Impact Fee Fund Balance			-\$185,326
Total Future Costs			\$10,398,385
– Growth Costs & Potential Impact Fee Revenue			-\$1,155,804
Additional Funding Requirement, Ahwatukee			\$9,242,581

Source: 2009-2013 project cost based on total programmed project expenditure in the City of Phoenix 2009-2013 Capital Improvement Program; total project costs, outstanding debt and impact fee fund balances from Table 13; growth cost/potential impact fee revenue from Table 22.

INFRASTRUCTURE IMPROVEMENTS PLAN: POLICE

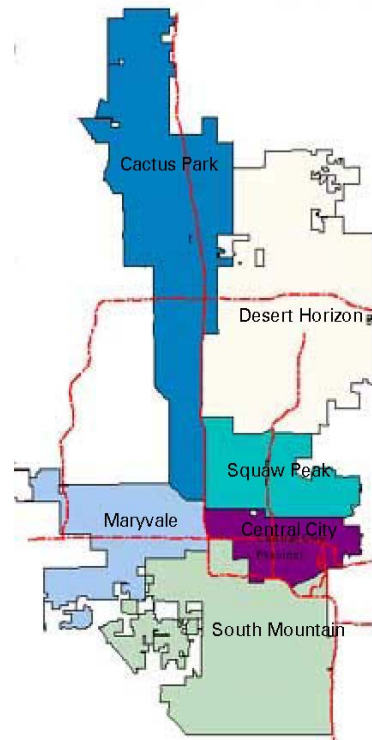
City of Phoenix Police Department services are provided out of both precinct and neighborhood stations. The capital facility needs for police services required by new development in the growth areas are based on the same standard of service provided in the other areas of the city.

Service Areas

The City's police impact fee service areas are the same as those used for the fire impact fee, with one unified service area in the Northern Growth Area and two separate service areas in the Southern Growth Area (Estrella/Laveen and Ahwatukee). Currently, no police impact fee is charged for any land use in Ahwatukee, because in every case the offset exceeded the cost.

The precinct stations are the primary geographic unit for the allocation of police services for impact fees, and the three service areas are divided into three future precinct areas: north, southwest and southeast. However, the existing service area boundaries do not correspond with the existing six precinct boundaries, which are illustrated in Figure 7. The Northern Growth Area is split between the Cactus Park and Desert Horizon precincts, the Estrella/Laveen service area is split between the Maryvale and South Mountain precincts, and the Ahwatukee service area is only a small part of the South Mountain precinct. As a result, the existing developments in the growth areas share facilities with developments outside of the growth areas. The mismatch between impact fee service areas and existing precinct areas will require a city-wide level of service analysis, rather than a service-area specific level of service analysis used for other facilities.

Figure 7. Phoenix Police Precinct Map



Methodology

The demand for future police facilities creates the basis upon which the police impact fee is calculated. Each precinct is planned to serve approximately 80,000 to 120,000 EDUs. The precinct size varies based on the geography or service needs of a specific area.

Regardless of the level of service established for planning purposes, the update will examine the existing city-wide provision of police facilities based on the ratio of the replacement value of existing

facilities to existing development in order to ensure that the impact fees are not based on a higher level of service than currently provided to residents throughout the city. The updated component costs for land and improvements will be applied to the existing police facilities to determine the existing Police Department level of service.

The cost per service unit for police facilities is based on the existing or planned level of service, whichever is less. The net cost per service unit is determined by subtracting the property tax offset per service unit from the cost per service unit. The net cost per unit of development is calculated by multiplying the net cost service per unit for the service area by the EDUs per development unit. The net cost represents the maximum impact fee that may be charged based on this study.

Service Units

As with fire protection, the two most common methodologies used in calculating the demand for law enforcement services are the “calls-for-service” approach and the “functional population” approach. The calls-for-service approach uses calls by land use type to make the connection between land use type and demand for facilities and equipment. The functional population approach is a more generalized approach than calls-for-service, and it presumes that the demand for fire and police services is strongly related to the presence of people at the site of a land use.

The current police impact fee service unit calculation is based on calls for service and time spent at calls, with the average time spent per call for one single-family unit equal to one EDU. This study uses functional population in order to be consistent with the fire facility impact fees calculated in this report and because detailed call data by land use are not available. Police calls are often not directly related to existing land uses; they often occur on streets or in parking lots, where they are related to movement between land uses. While non-attributed incidents can be indirectly attributed to specific land uses, the functional population provides a more consistent and simpler approach to allocating police costs across all land uses based on the number of “full-time equivalent” people present at the site of a land use. The police service units are based on the functional population analysis presented in Appendix B.

The proposed EDU factors for developing the impact fee calculation are compared to the current factors in Table 24. The police impact fee is assessed for both residential and nonresidential land uses; however, the current EDU factors do not differ among the major nonresidential land use categories.

Table 24. Police Service Unit Multiplier Comparison

Land Use	Unit	Existing EDUs/Unit	Func. Pop. EDUs/Unit
Single-Family, Detached	Dwelling	1.00	1.00
Multi-Family	Dwelling	0.42	0.76
Mobile Home/RV Park	Space	0.42	0.85
Retail	1,000 sq. ft.	0.65	0.55
Office	1,000 sq. ft.	0.65	0.63
Public/Institutional	1,000 sq. ft.	0.65	0.61
Industrial	1,000 sq. ft.	0.65	0.49

Source: Existing EDUs per unit from City of Phoenix ordinance; residential functional population EDUs per unit from Table 74; nonresidential functional population EDUs per unit from Table 75.

To determine the cost per service unit using the plan-based methodology, the planned improvement costs are divided by the projected growth in service units over the planning horizon. As shown in Table 25, development in the growth areas is expected to add almost 0.25 million EDUs through build-out, while city-wide growth is expected to add 0.52 million EDUs.

Table 25. Existing and Build-Out Police Service Units

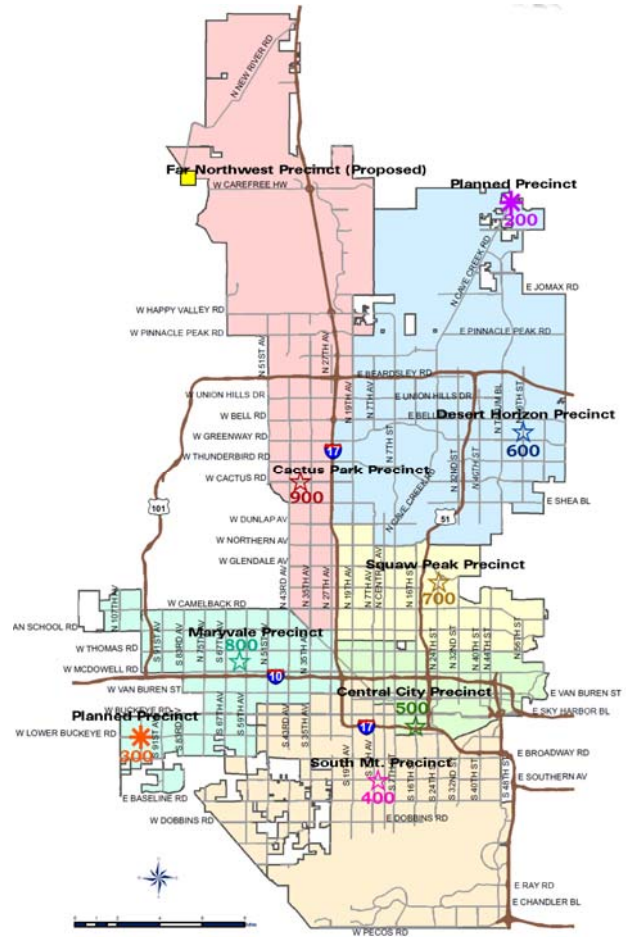
	Build-Out	Existing	New
Northern Growth Area	192,691	29,343	163,348
Estrella/Laveen	119,457	40,687	78,770
Ahwatukee	40,496	37,389	3,107
Subtotal, Growth Areas	352,644	107,419	245,225
+ Non-Growth Area	910,262	631,355	278,907
City-Wide Total	1,262,906	738,774	524,132

Source: Build-out service units from Table 77, Appendix B; existing service units from Table 76, Appendix B.

Planned Improvements

The City’s Police Department services are provided from both centralized facilities and precinct stations. Precinct stations are the primary geographic unit for the allocation of police services, and the standard precinct includes facilities for sworn officers and patrol functions. The City’s precinct stations typically include a briefing room, lobby, holding cells and administrative offices, and house the vehicle fleet related to the patrol functions. The City has developed neighborhood stations in certain areas to support a portion of the personnel for the overall precinct area and supplement the level of service in areas with unique geographic constraints and service demands. The City of Phoenix Police Department houses other essential components of law enforcement in centralized facilities; such facilities include communications, command centers and centralized command and support. As in prior impact fee updates, this impact fee update includes the allocation of planned precinct costs related to new growth along with growth-related expansion of the City’s police communications facility. No neighborhood stations are currently planned for either growth area, so this plan focuses on precinct facilities and other capital needs.

Figure 8. Current and Proposed Precinct Facilities



The City of Phoenix Police Department precinct planning is designed to maintain a safe and equivalent level of service across the city, as well as to maintain adequate response times to calls for service. The level of service provided by the City’s existing six precinct stations, expressed in terms of EDUs per station, is shown in Table 26. Based on that existing level of service, the City will need a total of ten precinct stations at build-out. This is consistent with the Police Department’s current plans. Since the last plan update, the Police Department has acquired land for and started construction on two new precinct stations, one located in the Northern Growth Area and one located in Estrella/Laveen. The City will have eight precincts upon completion of these precinct stations in mid-2010. In addition, the Department still anticipates needing to add at least two additional precinct stations prior to build-out, one of which is proposed in the far northwest part of the city. The existing six precincts and three of the planned precinct stations are illustrated in Figure 8.

Table 26. Existing Precinct Station Level of Service

Existing City-Wide EDUs	738,774
÷ Existing Precinct Stations	6
Current EDUs/Station	123,129
Build-Out City-Wide EDUs	1,262,906
÷ Current EDUs/Station	123,129
Total Future City-Wide Precinct Demand	10

Source: Existing city-wide EDUs from Table 76, Appendix B; existing precinct stations from Table 79, Appendix D; build-out city-wide EDUs from Table 77, Appendix B.

The planned precinct improvement costs are based on prototype facility costs and recent land acquisition costs. The land costs for the police impact fee are the same as those used for the fire impact fee, since the site requirements are similar to fire stations.

The prototypical precinct station is based on the design for the 99th Avenue and Lower Buckeye Road precinct station currently under development. As with this new station, the prototypical precinct station has 24,500 square feet and includes a briefing room, lobby, holding cells, secretarial and supervisory offices, workstations, rest rooms, space for support staff and locker space. The cost to construct precinct stations is based on the current bid and cost data for the 99th Avenue facility. As shown in Table 27, a prototypical 24,500 square foot precinct station costs approximately \$9.0 million based on the current construction costs. Despite the fact that construction costs have been falling in the Phoenix area, no downward adjustment was deemed necessary, since over \$2 million in on-site and off-site costs have been excluded.

Table 27. Precinct Station Construction Cost

Design/Build Process - Design and Construction Cc	\$5,997,312
FF&E and Telecommunications	\$1,199,462
Engineering and Architectural Services (incl Permit	\$1,799,194
Total Construction Cost	\$8,995,968
÷ Square Feet	24,500
Adjusted Cost per Square Foot	\$367

Source: City of Phoenix Police Department 99th Ave. and Lower Buckeye Precinct Station project cost breakdown and square feet, January 7, 2010.

The vehicle fleet necessary for the initial operation of each precinct station is also included in the impact fee costs. The average precinct station currently has more than 160 vehicles with 145 marked vehicles. In planning the vehicles necessary for future precinct stations, the Police Department includes 125 officer cars, 26 sergeant cars and 7 lieutenant cars. The cost of patrol vehicles is based on current pricing for fully equipped vehicles. The costs of these vehicles vary from \$50,265 for officer vehicles to \$63,121 for lieutenant vehicles due to additional equipment needs. While current precinct stations include a mix of patrol cars and patrol SUVs, the impact fee analysis assumes that all precinct vehicles will be cars.

The existing police impact fee includes an allocation of the cost of a planned communications facility that will serve all precincts, but will be necessary to accommodate new growth. The existing communications facility takes all 9-1-1 calls and transfers them to the appropriate response unit. The addition of a new communications center will increase the ability to respond and manage police resources, increase the security of the communication abilities of the Police Department and improve officer safety. This new central facility will be required based on projected growth, to provide equivalent levels of service throughout the city. It should be noted that recent planning discussions for this facility have included expanding the communications facility to be a joint facility between the Police Department and Fire Department. However, since a specific funding source has not yet been obtained for this project, the initial cost of a police-only facility will be retained in the impact fee calculation. The Police Department has also begun planning for an expansion of the centralized training facility and a new specialty vehicle facility; however, these projects are not included in this update.

Planned police improvements needed to serve build-out development of the entire city are summarized in Table 28. The need for these improvements cannot be entirely attributed to new development in the growth areas, because the growth areas are part of larger precinct areas and because the new communications facility will serve the entire city. For these reasons, it is appropriate to divide the cost of the improvements by all new service units anticipated from development throughout the city in order to determine the planned improvement cost per service unit.

Table 28. Planned City-Wide Police Improvements

	Number	Unit Cost	Total Cost
New Precinct Stations	4	\$8,995,968	\$35,983,870
New Precinct Land Sites (acres)	20	\$178,049	\$3,560,986
New Officer Vehicles (at 125/station)	500	\$50,265	\$25,132,500
New Sergeant Vehicles (at 26/station)	104	\$58,133	\$6,045,832
New Lieutenant Vehicles (at 7/station)	28	\$63,121	\$1,767,388
New Communications Facility	1	\$50,600,000	\$50,600,000
Total Planned Improvements			\$123,090,576
÷ New City-Wide EDUs			524,132
Planned Precinct Station Cost/EDU			\$69
Planned Precinct Land Cost/EDU			\$7
Planned Officer Vehicle Cost/EDU			\$48
Planned Sergeant Vehicle Cost/EDU			\$12
Planned Lieutenant Vehicle Cost/EDU			\$3
Planned Communications Facility Cost/EDU			\$97
Total Planned Cost per EDU			\$236

Source: New station need is build-out need at existing LOS from Table 26; precinct station unit cost from Table 27; land site need based on two 10-acre sites (the City has already acquired the other two sites); cost per acre from Table 82 in Appendix F; vehicles per station and unit cost from City of Phoenix Police Department, April 2, 2009; communications facility cost estimate from City of Phoenix Police Department, April 2, 2009; city-wide new service units from Table 25.

Cost per Service Unit

As with the fire impact fee, the cost per service unit by service area is developed by dividing the planned improvement costs by the projected growth in service units through build-out. The growth-related improvement costs for each service area based on the costs per EDU for the various types of improvements calculated in the previous table based on a city-wide analysis. From the total cost attributed to growth in each service area is subtracted the net cash balance available in each service area's police impact fee account. The available cash balance is subtracted from the total costs since the fund balance will be used to pay for a portion of the future infrastructure and decrease the amount needed to be collected from future impact fees. There are currently no outstanding developer credits related to the police impact fee in any of the service areas. The plan-based cost per service unit is determined by dividing the total plan-based cost by the number of service units that will be added through build-out. This approach produces a relatively uniform police fee among all service areas, as shown in Table 29.

Table 29. Plan-Based Police Cost per Service Unit

	Northern Growth Area	Estrella/ Laveen	Ahwatukee
Facility Cost	\$11,271,012	\$5,435,130	\$214,383
Land Cost	\$1,143,436	\$551,390	\$21,749
Vehicle Cost	\$10,290,924	\$4,962,510	\$195,741
Communications Facility	\$15,844,756	\$7,640,690	\$301,379
Total Planned Facility and Vehicle Cost	\$38,550,128	\$18,589,720	\$733,252
- Existing Balance	-\$3,778,283	-\$243,457	\$0
Total Planned Costs	\$34,771,845	\$18,346,263	\$733,252
÷ New Service Units (EDUs)	163,348	78,770	3,107
Plan-Based Cost per EDU	\$213	\$233	\$236

Source: Facility, land, vehicle and communications facility costs are products of new service units and costs per EDU from Table 28; existing balances from City of Phoenix Planning Department and based on January 2009 balance; new EDUs from Table 25.

Level of Service Analysis

It is not possible to determine an existing police level of service for each service area, since the service areas are currently part of one or even two larger police precincts and essential centralized facilities, which serve the entire city, are not located within specific service areas. As a result, the existing level of service for police facilities is based on the city-wide provision of service. The existing inventory of police facilities is presented in Table 79, Appendix D. The existing facilities that are included in the level of service analysis include precinct stations, neighborhood stations, command and communications facilities and training facilities. The examination of the existing provision of police facilities and equipment to existing development will ensure that the police impact fees in each service area are not based on a level of service that is higher than currently provided city-wide.

The existing level of service for police facilities in this study is based on the replacement cost of existing precincts, neighborhood police stations and central police training and command and communications facilities that serve as part of the city-wide police protection service, which play an important role in the provision of public safety along with the precinct and neighborhood stations.

The value of the existing facilities is based on the cost estimates used in developing the fee and the square feet and land associated with existing facilities. The analysis excludes temporary and leased facilities along with ancillary structures, such as storage sheds and metal/pre-fabricated warehouse and repair facilities. Based on precinct station construction costs per square foot and existing permanent facility square feet, the replacement value of existing police facilities is \$160.9 million, as shown in Table 30.

Table 30. Existing Police Facilities

Precinct Stations (sq. ft.)	68,588
+ Neighborhood Stations (sq. ft.)	18,056
Total Precinct/Neighborhood Facilities (sq. ft.)	86,644
x Precinct Facility Cost/Sq. Ft.	\$367
Precinct/Neighborhood Facility Cost	\$31,798,348
Command/Communications Facilities (sq. ft.)	235,645
+ Training Facilities (sq. ft.)	116,260
Total Central Facilities (sq. ft.)	351,905
x Central Facility Cost/Sq. Ft.	\$367
Central Facility Replacement Cost	\$129,149,135
Total Facility Replacement Cost	\$160,947,483

Source: Facility square foot from Table 79, Appendix D; police facility construction cost per square foot derived from Table 27; central facility replacement cost assumed to be one-half of precinct cost due to need for less specialized space.

The land replacement costs are based on the facility site sizes and the cost per acre for the area in which the facility is located, which is illustrated in Figure 13, Appendix D. The site replacement costs for the driving track and regional training academy are based on the district park land costs used in the parks and trails impact fee update for Estrella/Laveen given their location and the large tract size necessary for such facilities. As shown in Table 31, the land replacement cost \$23.7 million.

Table 31. Police Facility Land Replacement Cost

Facility	Land (Acres)	Cost/Acre	Total Value
Cactus Park Precinct	4.00	\$197,833	\$791,330
Central City Precinct	5.00	\$197,833	\$989,163
Desert Horizon Precinct	5.00	\$197,833	\$989,163
Maryvale Precinct	5.00	\$134,526	\$672,630
South Mountain Precinct	5.80	\$182,006	\$1,055,635
Squaw Peak Precinct	4.00	\$197,833	\$791,330
Future Precinct #300 (99th Ave & Lower Buckeye Rd.)	12.00	\$197,833	\$2,373,990
Future Precinct #200 (Cave Creek & Smokehouse Tr.)	15.00	\$134,526	\$2,017,890
Subtotal, Precinct Stations			\$9,681,131
North Command Station	6.00	\$197,833	\$1,186,995
Crime Lab	2.00	\$197,833	\$395,665
Property Management/Communications	9.00	\$134,526	\$1,210,734
Southern Command Station	5.00	\$134,526	\$672,630
Driving Track	24.40	\$134,526	\$3,282,434
Phoenix Police Regional Training Academy	54.00	\$134,526	\$7,264,404
Subtotal, City-Wide Facilities			\$14,012,862
Total Land Replacement Value			\$23,693,993

Source: Facility land from Table 79, Appendix D; cost per acre based on facility location and land costs from Table 82.

The existing precinct patrol vehicles include both patrol cars and patrol SUVs, as shown in Table 32. The level of service analysis excludes specialized vehicles and support vehicles.

Table 32. Existing Precinct Vehicle Inventory

Precinct	Vehicle Type	
	Patrol Car	Patrol SUV
South Mountain	128	45
Central City	100	43
Desert Horizon	100	42
Squaw Peak	91	41
Maryvale	103	44
Cactus Park	92	42
Total	614	257

Source: City of Phoenix Police Department, April 2, 2009.

The vehicle replacement costs are based on the weighted cost of officer, sergeant and lieutenant cars and their share of the precinct fleets. As shown in Table 33, the replacement cost of patrol cars is \$52,038 and the cost of patrol SUVs is \$61,038

Table 33. Patrol Vehicle Unit Cost

Vehicle Type	Vehicle Distribution	Cost	Weighted Cost
Officer Car	80%	\$50,265	\$40,212
Sergeant Car	16%	\$58,133	\$9,301
Lieutenant Car	4%	\$63,121	\$2,525
Avg. Patrol Car Cost			\$52,038
Officer SUV	80%	\$59,265	\$47,412
Sergeant SUV	16%	\$67,133	\$10,741
Lieutenant SUV	4%	\$72,121	\$2,885
Avg. Patrol SUV Cost			\$61,038

Source: Vehicle distribution and cost per vehicle from City of Phoenix Police Department, April 2, 2009.

The total precinct patrol vehicle replacement cost is based on the weighted average cost per vehicle and the inventory of existing vehicles. As shown in Table 34, the replacement cost is \$47.6 million.

Table 34. Police Precinct Vehicle Replacement Cost

Vehicle Type	Units	Cost/Vehicle	Total Value
Patrol Cars	614	\$52,038	\$31,951,332
Patrol SUV	257	\$61,038	\$15,686,766
Total Police Vehicle Replacement Cost			\$47,638,098

Source: Vehicle units from Table 32; cost per unit from Table 33.

The City's existing communications equipment is located in the communications facility and police headquarters. The radio and 9-1-1 communications equipment replacement cost is based on the cost for the console positions. As shown in Table 35, the replacement cost of the existing communications equipment is \$1.2 million for each type of equipment.

Table 35. Police Communications Equipment Replacement Cost

Location	Communications Type	
	Radio	911
Communications	26	30
+ Police Headquarters	21	22
Total Consoles	47	52
x Cost per Console	\$24,879	\$22,147
Total Console Cost	\$1,169,313	\$1,151,644

Source: Inventory and replacement cost from City of Phoenix Police Department, April 2, 2009.

A final component of the existing level of service analysis is a review of outstanding debt. Not all of the existing police facilities and equipment have been paid for by existing development. The summary of outstanding police-related debt issues are shown in Table 36.

Table 36. Outstanding Police-Related Bond Issues

Series	Original Principal	Bonds Outstanding
1995A	\$3,530,000	\$975,000
2002B	\$4,555,000	\$3,365,000
2004	\$10,000,000	\$5,845,000
2005B	\$35,680,000	\$30,530,000
2007	\$12,675,000	\$10,060,000
2007A	\$25,905,000	\$26,050,000
Subtotal, Police Debt	\$92,345,000	\$76,825,000
2002B	\$51,500,000	\$14,515,000
2004	\$33,000,000	\$25,125,000
2004R	\$7,300,000	\$1,960,000
2005B	\$30,000,000	\$20,000,000
2007A	\$4,300,000	\$4,300,000
2007B	\$21,110,000	\$21,110,000
Subtotal, Fire/Police/Tech Debt	\$147,210,000	\$87,010,000
Total Police-Related Debt	\$239,555,000	\$163,835,000

Source: Outstanding property tax funded debt series, original principal and outstanding balance provided by City of Phoenix Finance Administration, February 20, 2009.

A portion of the outstanding debt issues shown in the preceding table was used to fund other non-police facilities. Since the exact allocation of the joint debt issues cannot be determined, this study includes an analysis of all existing police facilities that were funded in whole or in part with debt issues in the City’s CIP over the past 25 years. The debt funded facilities are listed in Table 80, Appendix E. Based on this analysis, the City of Phoenix has utilized \$122.8 million in secondary property tax bonds for police-related projects.

The secondary property tax offset is based on the police facility share of outstanding secondary property tax bonds that have been partially utilized for fire facilities. Based on this analysis, approximately 51 percent of the police-related debt issues were utilized for police facilities. Based on the outstanding police-related bond issues principal, the police facility share of police-related debt is \$84 million, as shown in Table 37.

Table 37. Outstanding Police Debt

Total Debt-Funded Police Facilities	\$122,845,390
÷ Total of Original Principal Police-Related Debt	\$239,555,000
Police Facility Share of Debt Issues	51.3%
x Police-Related Bonds Outstanding	\$163,835,000
Outstanding Police Facility Debt	\$84,047,355
÷ Existing City-Wide EDUs	738,774
Outstanding Police Debt per EDU	\$114

Source: Existing debt-funded facilities from Table 80, Appendix E; total of original police-related debt principal from Table 36; existing city-wide EDUs from Table 25.

Total facility, land, vehicle and equipment cost used in the city-wide provision of the Police Department’s public protection activities is divided by the existing city-wide service units to determine the per service unit capital investment necessary to maintain the existing Police Department level of service. The total existing impact fee account balances for all three service areas are added to the value of the facilities, because these cash funds have been paid by existing development. The amount of police-related debt per EDU is subtracted to account for existing facilities that are not yet paid for. As shown in Table 38, the existing level of service, measured as the net cost per EDU, is \$209 per EDU.

Table 38. Existing Police Facility Level of Service

Facility Replacement Cost	\$160,947,483
Facility Land Replacement Cost	\$23,693,993
Precinct Vehicle Replacement Cost	\$47,638,098
Radio Equipment Cost	\$1,169,313
911 Equipment Cost	\$1,151,644
Subtotal, Facility and Equipment Value	\$234,600,531
+ Existing City-wide Police Impact Fee Balance	\$4,021,740
Total Replacement Value	\$238,622,271
÷ Existing City-Wide EDUs	738,774
Existing Police Facility Cost/EDU	\$323
- Outstanding Police Debt per EDU	-\$114
Existing Net Cost per EDU	\$209

Source: Facility replacement cost from Table 30; land replacement cost from Table 31; vehicle replacement cost from Table 34; radio and 911 equipment cost from Table 35; existing city-wide police impact fee balance from Table 29; outstanding debt per EDU from Table 37; existing city-wide EDUs from Table 25.

The cost per service unit based on the existing city-wide provision of Police Department facilities is compared with the adjusted cost of planned improvements in each service area in order to ensure that new development in the growth areas does not pay for a higher level of service than provided to existing city-wide development. As shown in Table 39, the value of the existing police facilities is less than the plan-based cost per EDU in all of the three service areas.

Table 39. Police Level of Service Analysis

	Northern Growth Area	Estrella/ Laveen	Ahwatukee
Existing LOS (Net Cost per EDU)	\$209	\$209	\$209
Plan-Based Cost per EDU	\$213	\$233	\$236

Source: Existing level of service cost per EDU from Table 38; plan-based cost per EDU from Table 29.

Net Cost per Service Unit

The major funding sources for police facilities in Phoenix consist primarily of debt funded through the secondary property tax along with impact fee funds in the growth areas. As noted in the previous section, there is a considerable amount of outstanding debt on existing police facilities. However, the fees in all three service areas will be based on the existing level of service, and the calculation of the existing level of service excludes the portion of any existing facilities that have not been paid for.

Thus an offset for outstanding debt has already been applied. Consequently, the net cost per EDU based on the existing level of service from the previous table represents the net cost per EDU for all three service areas.

Potential Fee Schedules

The potential police impact fees that can be adopted by the City based on this study are derived by multiplying the EDUs associated with each land use type by the net cost per EDU for the service area. The potential impact fee schedules are identical for all three service areas, as shown in Table 40.

The updated police facility impact fees are compared with current fees in each service area. While the City does not publish an official net police impact fee schedule, the current impact fee schedule for all areas can be calculated based on the EDU factors in the impact fee ordinance, the adopted cost per EDU and the 2006 *Offsets Report*. Currently, there is no police impact fee charged for most land uses in Ahwatukee, because the methodology used in the 2006 study created an offset that was greater than the cost per service unit in that area. The reduction in the proposed fee in the Northern Growth Area for most land uses is largely due to the updated methodology in this report that measures the existing city-wide level of service. In addition, the plan-based fee for the Northern Growth Area in the prior update had included the construction of three new precincts in that area by build-out; the City no longer plans on building a third precinct in that area.

Table 40. Potential Police Impact Fee Schedules

	Unit	EDUs/ Unit	Net Cost/EDU	Net Cost/Unit	Current Fees	Change
Northern Growth Area						
Single-Family, Detached	Dwelling	1.00	\$209	\$209	\$344	-\$135
Multi-Family	Dwelling	0.76	\$209	\$159	\$153	\$6
Mobile Home/RV Park	Space	0.85	\$209	\$178	\$153	\$25
Retail/Commercial	1,000 Sq. Ft.	0.55	\$209	\$115	\$189	-\$74
Office	1,000 Sq. Ft.	0.63	\$209	\$132	\$198	-\$66
Public/Institutional	1,000 Sq. Ft.	0.61	\$209	\$127	\$231	-\$104
Industrial/Warehouse	1,000 Sq. Ft.	0.49	\$209	\$102	\$216	-\$114
Estrella/Laveen						
Single-Family, Detached	Dwelling	1.00	\$209	\$209	\$90	\$119
Multi-Family	Dwelling	0.76	\$209	\$159	\$47	\$112
Mobile Home/RV Park	Space	0.85	\$209	\$178	\$47	\$131
Retail/Commercial	1,000 Sq. Ft.	0.55	\$209	\$115	\$24	\$91
Office	1,000 Sq. Ft.	0.63	\$209	\$132	\$33	\$99
Public/Institutional	1,000 Sq. Ft.	0.61	\$209	\$127	\$66	\$61
Industrial/Warehouse	1,000 Sq. Ft.	0.49	\$209	\$102	\$51	\$51
Ahwatukee						
Single-Family, Detached	Dwelling	1.00	\$209	\$209	\$0	\$209
Multi-Family	Dwelling	0.76	\$209	\$159	\$0	\$159
Mobile Home/RV Park	Space	0.85	\$209	\$178	\$0	\$178
Retail/Commercial	1,000 Sq. Ft.	0.55	\$209	\$115	\$0	\$115
Office	1,000 Sq. Ft.	0.63	\$209	\$132	\$0	\$132
Public/Institutional	1,000 Sq. Ft.	0.61	\$209	\$127	\$0	\$127
Industrial/Warehouse	1,000 Sq. Ft.	0.49	\$209	\$102	\$0	\$102

Source: Residential EDUs per unit from Table 74; proposed nonresidential EDUs per unit from Table 75; net cost per EDU from Table 38; current fees based on EDUs per unit from City Code, Sec. 29-5E, existing cost per EDU from *Infrastructure Financing Plan*, 2006 and offsets from *Offsets Report*, 2006 (nonresidential fees shown are for retail center, general office, nursing home and manufacturing).

Improvements Plan

The portion of the cost of future police protection capital improvements in each service area attributable to new development and the potential revenue from police impact fees if adopted at the full net cost should be the identical amount, because the fees are calculated to cover the growth-related cost. Any additional cost not covered by potential impact fee revenue is not attributable to existing development in the service area – this would only be the case if the fees were based on a higher level of service than currently exists, in which case the deficit would be attributable to an existing capacity deficiency. The fees calculated in this report have been based on the existing level of service or the cost to construct remaining improvements, whichever is less. For this reason, any cost not covered by potential impact fee revenue is for improvements that will raise the level of service for, and benefit, both existing and new development in the service area. Consequently, no additional offset against the impact fees is warranted for any additional non-impact fee funding used to pay for needed police capital improvements in the impact fee service areas.

The growth share of future costs, which is the same as potential impact fee revenue, is the product of the net cost per service unit and the number of future service units from now to build-out. Potential impact fee revenue for each of the three service areas is shown in Table 41.

Table 41. Potential Police Impact Fee Revenue

	Northern Growth Area	Estrella/ Laveen	Ahwatukee
Net Cost per EDU	\$209	\$209	\$209
x New EDUs, 2009-Buildout	163,348	78,770	3,107
Potential Impact Fee Revenue	\$34,139,732	\$16,462,930	\$649,363

Source: Net cost per EDU from Table 39; new EDUs from Table 25.

The police improvements plan for all three service areas is shown in Table 42. The improvements plan provides a list of planned capital improvements and other expenditures that are eligible to be funded by the impact fees. Since the fees are based on the city-wide level of service and the future precinct boundaries do not match existing service area boundaries, a portion of impact fee revenues from each area may be programmed for precinct stations that will serve the impact fee service areas and the growth-related share of centralized facilities. Currently, the 2009-2013 CIP includes expenditures for two planned precinct stations that will serve the northern growth area, the Northwest and Northeast precincts. The new Squaw Peak Precinct station will be located in Estrella/Laveen. The addition to the South Mountain Precinct station will benefit Ahwatukee, which is served by that station. It should be kept in mind, however, that these planned expenditures may change with subsequent CIPs as the City revisits the city-wide precinct plans. The planned expenditures are adjusted to reflect the impact fee account balance in each service area.

Projects not currently in the five-year CIP will be programmed by the City Council in future CIPs based on need and will depend on availability of funding. If the police impact fee is adopted at the full potential impact fee schedule calculated in this report, a portion of the planned improvements in each service area will still need to be funded by other revenue sources. The mix of funding sources available to fund necessary public services beyond the portion covered by the impact fee calculated in this report will be determined by the actions of future City Councils in prioritizing projects, allocating funding in future CIPs and the availability of impact fee revenue in each service area. This study does not include a specific estimate of the time required to finance and provide the necessary public services between 2013 and build-out for each service area, as the build-out for each impact fee service area is likely to vary depending on market conditions and availability of land for new development.

Table 42. Police Improvements Plan

Police Facility	FY 2009-2013	Beyond 2013	Total
NE/Cave Creek Precinct	\$19,336,000	\$0	\$19,336,000
NW Precinct Land	\$2,600,000	\$0	\$2,600,000
NW Precinct Construction	\$0	\$8,995,968	\$8,995,968
Future Planned Improvements	\$0	\$7,618,160	\$7,618,160
Total Planned Expenditures, Northern Growth Area	\$21,936,000	\$16,614,128	\$38,550,128
– Impact Fee Fund Balance			-\$3,778,283
Total Future Costs			\$34,771,845
– Growth Costs & Potential Impact Fee Revenue			-\$34,139,732
Additional Funding Requirement, Northern Growth Area			\$632,113
Squaw Peak Precinct	\$14,260,000	\$0	\$14,260,000
Future Planned Improvements	\$0	\$4,329,720	\$4,329,720
Total Planned Expenditures, Estrella/Laveen	\$14,260,000	\$4,329,720	\$18,589,720
– Impact Fee Fund Balance			-\$243,457
Total Future Costs			\$18,346,263
– Growth Costs & Potential Impact Fee Revenue			-\$16,462,930
Additional Funding Requirement, Estrella/Laveen			\$1,883,333
South Mountain Precinct Addition	\$733,252	\$0	\$733,252
Future Planned Improvements	\$0	\$0	\$0
Total Planned Expenditures, Ahwatukee	\$733,252	\$0	\$733,252
– Impact Fee Fund Balance			\$0
Total Future Costs			\$733,252
– Growth Costs & Potential Impact Fee Revenue			-\$649,363
Additional Funding Requirement, Ahwatukee			\$83,889

Source: 2009-2013 project cost based on total programmed project expenditure in the City of Phoenix, 2009-2013 Capital Improvement Program (except that only a portion of the South Mountain Precinct addition is attributed to growth, since the total cost exceeds the build-out plan-based costs attributable to Ahwatukee); total planned project costs and impact fee fund balances by service area from Table 29; beyond 2013 costs are differences between 2009-2013 and total planned expenditures; growth costs/potential revenue from Table 41.

INFRASTRUCTURE IMPROVEMENTS PLAN: LIBRARY

The City of Phoenix has a comprehensive library system with a central library and 15 neighborhood branch libraries. A new branch library, Agave Regional Branch Library, is currently under construction in the northwestern part of the city. Library facilities offer residents of the City free access to collection materials, public-use computers and periodicals along with providing space for meetings and civic events. The City's library impact fee funds the construction of branch libraries and collection materials in the City's northern and southern growth areas. The existing library facilities are shown in Figure 9, and a detailed inventory of existing branch library facilities and collection materials is provided in Table 48, Appendix F.

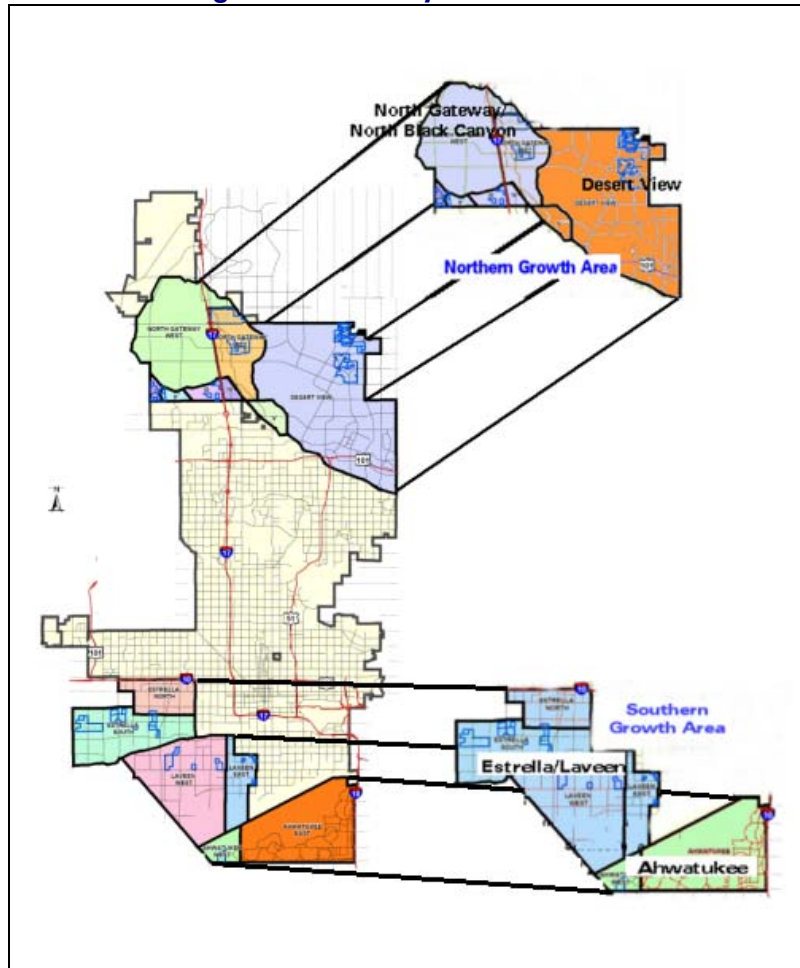
Service Areas

The library impact fee is charged in all areas of the Northern and Southern Growth Areas, with both of these growth areas currently divided into two service areas. The Northern Growth Area service areas include North Gateway and Desert View; the Southern Growth Area service areas include Estrella/Laveen and Ahwatukee. Given that the library impact fee is used to fund branch libraries, which serve relatively small geographic areas, the existing service areas assure that impact fee funds are spent in reasonable proximity to the development that pays the fee. The library impact fee service areas are shown in Figure 10.

Figure 9. Existing Library Facilities



Figure 10. Library Service Areas



Methodology

As in the past, the methodology used to calculate the library impact fee is based on the facilities that will be needed to serve new development in the growth area. As with the other fees in this report, the new facilities that will be needed are based on the build-out conditions rather than a specific planning horizon. To ensure that the final increment of development in each service area does not bear more than its share of the planned improvements, this study includes an existing level of service analysis. If the level of service at build-out is lower than the existing level of service, the cost per service unit will be based on the build-out level of service. In addition to the level of service analysis, the planning standard used in developing the plan-based fee is updated in this study to reflect the current provision of library facilities city-wide.

Service Units

As with the other impact fee calculations, the demand for library facilities is calculated using an EDU factor that relates facility demand for each land use to the demand of a single-family detached residence. The EDU factors used in the current fee for libraries are derived from data on library usage, vacancy rates, persons per household and employees per 1,000 square feet. While the City only charges residential development the library impact fee, the City utilized both residential and nonresidential service units in developing the total service units from which the fees are derived in the 2006 update. This update eliminates the EDU factors associated with nonresidential land uses.

As mentioned above, the current library EDU factors are derived from household size and library usage data. The library usage data were developed by an outside consultant based on user surveys conducted in 1998 and were used to estimate the relative per-capita likelihood of library usage for each land use.⁴ This update utilizes a service unit that avoids the need to update the 10-year-old usage survey or make assumptions about library usage and vacancy rates among different types of units.

Service Unit Multipliers

In general, the demand for library facilities is proportional to the number of people in a dwelling unit. Consequently data on average household size for various types of units is a critical component of a library impact fee. The household size data utilized to develop the EDUs associated with each housing type are shown in Table 43. As mentioned above, the City of Phoenix does not currently assess library impact fees for nonresidential land uses; as a result, the updated EDU factors do not include nonresidential EDU factors. These EDU factors will be used both in the preparation of the infrastructure improvements plan and in the development of the impact fee schedules.

Table 43. Library Service Unit Multipliers

Land Use	Avg. HH Size	EDUs/ Unit
Single Family, Detached	3.07	1.00
Multi-Family	2.34	0.76
Mobile Home/RV Park	2.61	0.85

Source: Average household size from Table 73.

The updated EDU factors are compared with the current factors used in assessing the library impact fees in Table 44. Under this update, EDU factors for single-family attached, multi-family standard and multi-family 2-4 unit categories have been eliminated. The single-family low density category has been eliminated and combined with single-family detached; this category had the same EDUs per unit as single-family detached under the City’s existing library EDU factor schedule. The timeshare category is eliminated because it is a form of ownership rather than a land use category; instead, timeshare should be charged at the rate associated with the type of structure.

⁴ Hausrath Economics Group, *Phoenix Park and Library EDU Factors*, September 1998.

Table 44. Library Service Unit Multipliers Comparison

Land Use	EDUs Per Unit	
	Existing	Potential
Single Family, Detached	1.00	1.00
Single Family, Attached	0.49	0.76
Multi-Family, Standard	0.43	0.76
Multi-Family, 2-4 Units	0.55	0.76
Mobile Home/RV Park	0.46	0.85
Timeshare	0.14	NA*

*Timeshare EDU factor determined based on building type.

Source: Current EDU factors from City of Phoenix and based on factors used for development impact fee calculation from City Code, Sec. 29-5E; proposed EDUs per unit from Table 43.

Existing and Future Service Units

In order to determine the existing level of service and calculate the library impact fee it is necessary to determine the existing and future service units in each service area and city-wide. The service unit calculations are based on the EDU factors calculated in the previous section and estimates of existing residential development and projections of future residential development prepared by Maricopa Association of Governments (MAG) for the City of Phoenix. The existing and build-out service units (EDUs) for each service area and city-wide are shown in Table 45. Based on the forecast increase in residential units, there will be an estimated 827,348 EDUs city-wide at build-out. Total build-out EDUs by service area range from 32,360 in Ahwatukee to 86,704 in Estrella/Laveen. In this update, the plan-based cost per service unit is developed by dividing the planned improvement costs by the projected growth in service units over the planning horizon rather than the total future service units. Both of the northern service areas and Estrella/Laveen will experience significant growth in service units through build-out. Residential development in Ahwatukee is already relatively built-out as reflected in the projected service units.

Table 45. Existing and Build-Out Library Service Units

Land Use	Dwelling Units		EDUs/ Unit	Equivalent Dwelling Units		
	Existing	Build-out		Existing	Build-out	New
Single-Family, Detached	13,500	54,400	1.00	13,500	54,400	40,900
Multi-Family	2,800	33,100	0.76	2,128	25,156	23,028
Total EDUs, Desert View/DV 5				15,628	79,556	63,928
Single-Family, Detached	7,900	33,800	1.00	7,900	33,800	25,900
Multi-Family	700	21,500	0.76	532	16,340	15,808
Total EDUs, North Gateway/DV 1-4				8,432	50,140	41,708
Single-Family, Detached	29,900	76,900	1.00	29,900	76,900	47,000
Multi-Family	2,100	12,900	0.76	1,596	9,804	8,208
Total EDUs, Estrella/Laveen				31,496	86,704	55,208
Single-Family, Detached	24,800	25,900	1.00	24,800	25,900	1,100
Multi-Family	7,900	8,500	0.76	6,004	6,460	456
Total EDUs, Ahwatukee				30,804	32,360	1,556
Single-Family, Detached	379,800	515,900	1.00	379,800	515,900	136,100
Multi-Family	186,000	409,800	0.76	141,360	311,448	170,088
City-Wide Total EDUs				521,160	827,348	306,188

Source: Existing units from Table 71; build-out units from Table 72; EDUs per unit from Table 43.

Planned Improvements

The City plans to build four more branch libraries in the growth areas – one in each of the four library impact fee service areas. All four library sites have been acquired. The new Agave branch library is already under construction in the North Gateway service area; it will be a 25,000 square foot building on a 3.84-acre site. The planned new branch libraries in Desert View and Ahwatukee will also be 25,000 square feet, while the new Estrella/Laveen branch will be 15,000 square feet. All three of these planned libraries will be on three-acre sites already owned by the City.

The City is currently in the final stages of constructing the Agave Branch Library in North Gateway. The construction and related design, permit, fixtures, furnishing and equipment costs are used to develop the cost per square foot for libraries in this study. As shown in Table 46, the library construction cost is \$411 per square foot. However, construction costs have been falling in the Phoenix area. According to the construction cost index for Phoenix prepared by the international real estate and construction firm Rider Levett Bucknall (RLB), total building costs in Phoenix, including materials, labor, profit and taxes and fees, fell by 6.3 percent from October 1, 2008 to April 1, 2009. While the Agave Branch costs represent current actual costs for that facility, a new construction contract entered into today may cost less. To acknowledge this possibility, the cost per square foot is adjusted downward.

Table 46. Library Construction Cost per Square Foot

Design/Engineering/Permits	\$1,197,637
Construction	\$7,374,081
Furnishings, Fixtures & Equipment	\$1,706,970
Total Construction Cost	\$10,278,688
÷ Square Feet	25,000
Original Cost per Square Foot	\$411
x Phoenix Cost Index (Apr 2009/Oct 2008)	0.937
Adjusted Cost per Square Foot	\$385

Source: City of Phoenix Library Department, Agave Library budget status report, December 15, 2008; adjustment factor is ratio of April 1, 2009 to October 1, 2008 construction cost index for Phoenix from *RLB Quarterly Construction Cost Report*.

As noted above, all of the future library sites have already been purchased, so there are no planned expenditures for land acquisition. The final cost component for the plan-based library impact fee is the cost to acquire library collection materials. This update utilizes a standard of 5.72 items per square foot based on the current provision of collection materials.

Cost per Service Unit

The plan-based cost per service unit is developed by dividing the planned improvement costs by the projected growth in service units through build-out. In addition to future improvement costs, principal payments on outstanding debt used to build existing libraries within each service area are also a future cost. These future expenditures are reduced to account for cash balance available in the library impact fee funds. The cash balance is subtracted from the total planned expenditures, since the fund balance will be used to pay for a portion of the future library facility needs and collection materials and decrease the amount needed to be collected from future impact fees. The results are shown in Table 47. The library fees will clearly not be based on the planned cost per service unit in Ahwatukee, as this far exceeds the existing level of service, as demonstrated in the next section.

Table 47. Plan-Based Library Cost per Service Unit

Cost Element	Desert View/ DV 5	N. Gateway/ DV 1-4	Estrella/ Laveen	Ahwatukee
Planned New Building Sq. Ft.	25,000	25,000	15,000	25,000
x Cost per Sq. Foot	\$385	\$385	\$385	\$385
Planned Building Cost	\$9,625,000	\$9,625,000	\$5,775,000	\$9,625,000
Planned New Building Sq. Ft.	25,000	25,000	15,000	25,000
x Collections per Sq. Foot	5.72	5.72	5.72	5.72
Collection Items Needed	143,000	143,000	85,800	143,000
x Cost per Item	\$48.18	\$48.18	\$48.18	\$48.18
Planned Collections Cost	\$6,889,740	\$6,889,740	\$4,133,844	\$6,889,740
Total Planned Expenditures	\$16,514,740	\$16,514,740	\$9,908,844	\$16,514,740
+ Outstanding Debt	\$5,443,459	\$0	\$5,292,165	\$0
- Fee Balance	-\$1,369,400	-\$1,913,005	-\$4,046,676	-\$440,658
Net Planned Expenditures	\$20,588,799	\$14,601,735	\$11,154,333	\$16,074,082
÷ New EDUs	63,928	41,708	55,208	1,556
Plan-Based Cost per EDU	\$322	\$350	\$202	\$10,330

Source: Planned building sq. ft. from City of Phoenix Library Department, June 9, 2009; construction cost per square foot from Table 46; collection items per sq. ft. based on existing level of service from Table 48; cost per item provided by City of Phoenix Library Department, December 15, 2008; outstanding debt on existing libraries in each service area from City of Phoenix Budget and Research Department, June 10, 2009; existing fee balance from City of Phoenix Planning Department and based on January 2009 balance; new EDUs from Table 45.

Level of Service Analysis

This study examines the existing provision of library facilities relative to existing development in order to ensure that the impact fees for libraries are not based on a higher level of service than currently provided to residents of the service areas. As with other facilities, the existing level of service is based on the ratio of the value of the existing facilities, land and collection materials to existing development in each service area. The existing city-wide inventory of branch library facilities, site acreages and number of collection materials is presented in Table 48.

Table 48. Existing City-Wide Branch Libraries

Library	Building (Sq. Ft.)	Land (Ac.)	Collection Materials
Burton Barr Central Library*	56,000	1.59	525,161
Acacia Library	6,600	1.42	38,979
Century Library	6,500	1.52	36,741
Cholla Library	30,000	0.69	119,526
Desert Sage Library	13,400	2.30	80,370
Harmon Library	12,300	1.40	19,180
Ironwood Library (Ahwatukee)	15,000	2.10	102,792
Juniper Library	14,435	1.43	106,427
Mesquite Library	19,875	1.90	133,691
Ocotillo Library	6,600	1.35	35,391
Palo Verde Library	16,000	1.40	86,275
Saguaro Library	10,500	2.00	44,780
Yucca Library	10,000	1.00	64,041
Desert Broom Library (Desert View)	15,000	3.00	96,866
Cesar Chavez Library (Estrella/Laveen)	25,000	3.63	123,405
Agave Library (N Gateway-under const.)	0	3.84	0
Future Desert View Branch	0	3.00	0
Future Estrella Laveen Branch	0	3.00	0
Future Ahwatukee Branch	0	3.00	0
Total	257,210	39.57	1,613,625

*Branch portion of central library facility only.

Source: City of Phoenix Library Department, December 15, 2008.

As with the fire and police impact fee calculations, the land costs used in this update are based on recent City land purchases and an analysis by professional real estate appraiser.

The inventory of existing library facilities in each service area and the unit costs used in developing the plan-based fee are used to determine the building, land and collections replacement costs. Total facility, land and collection materials cost for each service area is divided by the existing service units to determine the capital cost per service unit to maintain the existing library level of service. The existing impact fee account balances are added to the value of facilities because these cash funds have been paid by existing development. There is no existing branch library building in North Gateway, but the land has been purchased and there is a significant balance in the library impact fee account. A city-wide offset for outstanding debt on existing fire stations must be deducted from the total cost per EDU, since these facilities or portions of facilities have not been paid for by existing development. As shown in Table 49, the existing level of service, measured in terms of the net cost per EDU, is highest in Desert View and lowest in North Gateway.

Table 49. Existing Library Level of Service

	Desert View/ DV 5	N. Gateway/ DV 1-4	Estrella/ Laveen	Ahwatukee
Existing Building x Cost/Sq. Ft.	15,000 \$385.00	0 \$385.00	25,000 \$385.00	15,000 \$385.00
Building Replacement Cost	\$5,775,000	\$0	\$9,625,000	\$5,775,000
Existing Land x Cost/Acre	6.00 \$237,399	3.84 \$158,266	6.63 \$134,526	5.10 \$182,006
Land Replacement Cost	\$1,424,394	\$607,741	\$891,907	\$928,231
Existing Collection x Cost/Item	96,866 \$48.18	NA \$48.18	123,405 \$48.18	102,792 \$48.18
Collection Replacement Cost	\$4,667,004	\$0	\$5,945,653	\$4,952,519
Total Replacement Cost + Existing Impact Fee Balance	\$11,866,398 \$1,369,400	\$607,741 \$1,913,005	\$16,462,560 \$4,046,676	\$11,655,750 \$440,658
Total Investment Value ÷ Existing EDUs	\$13,235,798 15,628	\$2,520,746 8,432	\$20,509,236 31,496	\$12,096,408 30,804
Existing Cost per EDU	\$847	\$299	\$651	\$393
- City-Wide Debt Offset per EDU	-\$156	-\$156	-\$156	-\$156
Existing Net Cost per EDU	\$691	\$143	\$495	\$237

Source: Existing branch library square feet, acres and collection items from Table 48; building cost per sq. ft. from Table 46; land cost per acre from Table 82 in Appendix F; cost per collection item provided by City of Phoenix Library Department, December 15, 2008; existing fee balance from City of Phoenix Planning Department and based on January 2009 balance; city-wide offset for outstanding debt on existing libraries from Table 51; new EDUs from Table 45.

The cost per service unit based on the existing provision of branch libraries in each service area is compared with the adjusted cost of planned improvements in order to ensure that new development in the growth areas does not pay for a higher level of service than provided to existing development within each service area. As shown in Table 50, the value of the branch library facilities in North Gateway and Ahwatukee are higher than plan-based cost per EDU. As a result, the updated library impact fee in Desert View and Estrella/Laveen are based on the planned improvements, and the North Gateway and Ahwatukee fees are based on the existing level of service.

Table 50. Library Level of Service Analysis

	Desert View/ DV 5	N. Gateway/ DV 1-4	Estrella/ Laveen	Ahwatukee
Existing LOS (Net Cost per EDU)	\$691	\$143	\$495	\$237
Plan-Based Cost per EDU	\$322	\$350	\$202	\$10,330

Source: Existing level of service cost from Table 49; plan-based cost per EDU from Table 47.

Net Cost per Service Unit

The major funding sources for library facilities in Phoenix has generally consisted primarily of debt funded through the secondary property tax along with impact fee funds in the growth areas. Other funding for the library system includes grants for operational costs and Maricopa County funding to

reimburse costs related to the county-wide inter-loan program for collection materials. This update provides a debt offset to recognize the expenditure of property tax proceeds from new development that will be used to repay outstanding library facility debt from prior bond-funded improvements. As shown in Table 51, the debt offset is per EDU.

Table 51. Library Debt per Service Unit

Series	Original Principal	Bonds Outstanding
1993A	\$13,180,000	\$1,225,000
1993C	\$855,000	\$40,000
1998	\$33,595,000	\$16,965,000
1999	\$6,165,000	\$3,135,000
2002A	\$2,470,000	\$2,470,000
2002B	\$3,200,000	\$3,200,000
2002B	\$700,000	\$700,000
2003	\$3,215,000	\$3,150,000
2004	\$7,000,000	\$7,000,000
2005B	\$12,000,000	\$12,000,000
2007A	\$7,800,000	\$7,800,000
2007A	\$5,700,000	\$5,700,000
2007B	\$17,730,000	\$17,730,000
Total Outstanding Bonds		\$81,115,000
÷ Existing City-wide EDUs		521,160
Debt Offset/EDU		\$156

Source: City of Phoenix Finance Administration, February 20, 2009 based on outstanding balance as of June 30, 2008; outstanding debt on libraries in the service areas (Desert Broom and Caesar Chavez) from City of Phoenix Budget and Research Department, June 10, 2009; city-wide EDUs from Table 45.

The net cost per service unit for the library impact fee is derived by reducing the cost per service unit by the secondary property tax debt offset. As discussed, the cost per service unit is based on the existing level of service in North Gateway and Ahwatukee, and on plan-based costs in Desert View and Estrella/Laveen. The net cost per EDU ranges from \$46 in Estrella/Laveen to \$237 in Ahwatukee, as shown in Table 52.

Table 52. Library Net Cost per Service Unit

Cost Element	Desert View/ DV 5	N. Gateway/ DV 1-4	Estrella/ Laveen	Ahwatukee
Cost/EDU	\$322	\$299	\$202	\$393
- Debt Offset/EDU	-\$156	-\$156	-\$156	-\$156
Net Cost/EDU	\$166	\$143	\$46	\$237

Source: Cost per EDU for Desert View and Estrella/Laveen are plan-based costs from Table 47; costs per EDU for N. Gateway and Ahwatukee are existing cost per EDU from Table 49; library debt offset from Table 51.

Potential Fee Schedules

The potential library impact fee schedule for all areas are calculated based on the updated EDU factors and the net cost per EDU for each service area. The maximum library impact fees that can be adopted by the City based on this study are derived by multiplying the EDUs associated with each housing type by the net cost per EDU. The potential fees are shown in Table 53.

While the City does not publish an official net impact fee schedule, the current impact fee schedule for all areas can be calculated based on the EDU factors in the impact fee ordinance, the adopted cost per EDU and the 2006 *Offsets Report*. The fees would decline in three of the four service areas. The fees would increase in Ahwatukee, where the fees are currently the lowest.

Table 53. Potential Library Impact Fee Schedules

	Unit	EDUs/ Unit	Net Cost/EDU	Net Cost/Unit	Current Fees	Change
Desert View/DV 5						
Single-Family, Detached	Dwelling	1.00	\$166	\$166	\$370	-\$204
Multi-Family	Dwelling	0.76	\$166	\$126	\$151	-\$25
Mobile Home/RV Park	Space	0.85	\$166	\$141	\$151	-\$10
N Gateway/DV 1-4						
Single-Family, Detached	Dwelling	1.00	\$143	\$143	\$425	-\$282
Multi-Family	Dwelling	0.76	\$143	\$109	\$175	-\$66
Mobile Home/RV Park	Space	0.85	\$143	\$122	\$175	-\$53
Estrella/Laveen						
Single-Family, Detached	Dwelling	1.00	\$46	\$46	\$196	-\$150
Multi-Family	Dwelling	0.76	\$46	\$35	\$77	-\$42
Mobile Home/RV Park	Space	0.85	\$46	\$39	\$77	-\$38
Ahwatukee						
Single-Family, Detached	Dwelling	1.00	\$237	\$237	\$52	\$185
Multi-Family	Dwelling	0.76	\$237	\$180	\$15	\$165
Mobile Home/RV Park	Space	0.85	\$237	\$201	\$15	\$186

Source: EDUs per unit from Table 43; net cost per EDU from Table 52; current fees based on EDUs per unit from City Code, Sec. 29-5E, existing cost per EDU from *Infrastructure Financing Plan*, 2006 and offsets from *Offsets Report*, 2006

Improvements Plan

The portion of the cost of future library capital improvements in each service area attributable to new development and the potential revenue from library impact fees if adopted at the full net cost should be the identical amount, because the fees are calculated to cover the growth-related cost. Any additional cost not covered by potential impact fee revenue is not attributable to existing development in the service area – this would only be the case if the fees were based on a higher level of service than currently exists, in which case the deficit would be attributable to an existing capacity deficiency. The fees calculated in this report have been based on the existing level of service or the cost to construct remaining improvements, whichever is less. For this reason, any cost not covered by potential impact fee revenue is for improvements that will raise the level of service for, and benefit, both existing and new development in the service area. Consequently, no additional offset against the impact fees is warranted for any additional non-impact fee funding used to pay for future library capital improvements in the impact fee service areas.

The growth share of future costs, which is the same as potential impact fee revenue, is the product of the net cost per service unit and the number of future service units from now to build-out. Potential impact fee revenue for each of the four service areas is shown in Table 41.

Table 54. Potential Library Impact Fee Revenue

	Desert View/ DV 5	N. Gateway/ DV 1-4	Estrella/ Laveen	Ahwatukee
Net Cost per EDU	\$166	\$143	\$46	\$237
New EDUs, 2009-Buildout	63,928	41,708	55,208	1,556
Potential Impact Fee Revenue	\$10,612,048	\$5,964,244	\$2,539,568	\$368,772

Source: Net cost per EDU from Table 52; new EDUs from Table 45.

The library improvements plan for all four service areas is shown in Table 42. The improvements plan provides a list of planned capital improvements and other expenditures that are eligible to be funded by the impact fees. The plan for each service area reflects capacity-expanding improvements included in the City’s 2009-2013 CIP. However, the improvements plan does not include the funding programmed in the CIP to acquire library sites in Ahwatukee and North Gateway and completion of the Cesar Chavez library in Laveen, since these facilities were have been largely completed and are reflected in the existing level of service. The future costs are adjusted to reflect outstanding debt and impact fee fund balances.

Projects not currently in the five-year CIP will be programmed by the City Council in future CIPs based on need and will depend on availability of funding. If the library impact fees are adopted at the full potential impact fee schedules calculated in this report, a portion of the planned improvements in each service area will still need to be funded by other revenue sources. The mix of funding sources available to fund necessary public services beyond the portion covered by the impact fee calculated in this report will be determined by the actions of future City Councils in prioritizing projects, allocating funding in future CIPs and the availability of impact fee revenue in each service area. This study does not include a specific estimate of the time required to finance and provide the necessary public

services between 2013 and build-out for each service area, as the build-out for each impact fee service area is likely to vary depending on market conditions and availability of land for new development.

Table 55. Library Improvements Plan

Library Facility	FY 2009-2013	Beyond 2013	Total
Future Library Facility	\$1,248,427	\$8,376,573	\$9,625,000
Library Collection Materials	\$0	\$6,889,740	\$6,889,740
Total Planned Expenditures, Desert View/DV 5	\$1,248,427	\$15,266,313	\$16,514,740
+ Outstanding Debt			\$5,443,459
- Impact Fee Fund Balance			-\$1,369,400
Total Future Costs			\$20,588,799
- Growth Costs & Potential Impact Fee Revenue			-\$10,612,048
Additional Funding Requirement, Desert View/DV 5			\$9,976,751
Future Library Facility	\$4,136,970	\$0	\$4,136,970
Library Collection Materials	\$0	\$0	\$0
Total Planned Expenditures, N. Gateway/DV 1-4	\$4,136,970	\$0	\$4,136,970
+ Outstanding Debt*			\$12,377,770
- Impact Fee Fund Balance			-\$1,913,005
Total Future Costs			\$14,601,735
- Growth Costs & Potential Impact Fee Revenue			-\$5,964,244
Additional Funding Requirement, N Gateway/DV 1-4			\$8,637,491
Future Library Facility	\$3,618,588	\$2,156,412	\$5,775,000
Library Collection Materials	\$0	\$4,133,844	\$4,133,844
Total Planned Expenditures, Estrella/Laveen	\$3,618,588	\$6,290,256	\$9,908,844
+ Outstanding Debt			\$5,292,165
- Impact Fee Fund Balance			-\$4,046,676
Total Future Costs			\$11,154,333
- Growth Costs & Potential Impact Fee Revenue			-\$2,539,568
Additional Funding Requirement, Estrella/Laveen			\$8,614,765
Future Library Facility	\$0	\$9,625,000	\$9,625,000
Library Collection Materials	\$0	\$6,889,740	\$6,889,740
Total Planned Expenditures, Ahwatukee	\$0	\$16,514,740	\$16,514,740
+ Outstanding Debt			\$0
- Impact Fee Fund Balance			-\$440,658
Total Future Costs			\$16,074,082
- Growth Costs & Potential Impact Fee Revenue			-\$368,772
Additional Funding Requirement, Ahwatukee			\$15,705,310

* outstanding debt for Agave branch library and collection materials (represents difference between planned costs and funding listed in CIP)

Source: 2009-2013 project cost based on total programmed project expenditure in the City of Phoenix 2009-2013 Capital Improvement Program; total project costs, outstanding debt and impact fee fund balances are from Table 47; growth costs/potential impact fee revenues from Table 54.

INFRASTRUCTURE IMPROVEMENTS PLAN: DRAINAGE

The City of Phoenix assesses a storm drainage impact fee in the Estrella and Laveen areas because these areas are prone to severe flooding events. The storm drainage fees fund a network of channels, basins and large storm drains designed to address 100-year flood events. The regional facilities needed to serve new development are based on Flood Control District of Maricopa County (FCDMC) drainage master plans that are developed through topographical and hydrological modeling. Localized protection from limited duration storm events for all growth areas are provided by drainage facilities in streets (the street drainage facilities are included in the major streets and bridges impact fee) and onsite retention requirements.

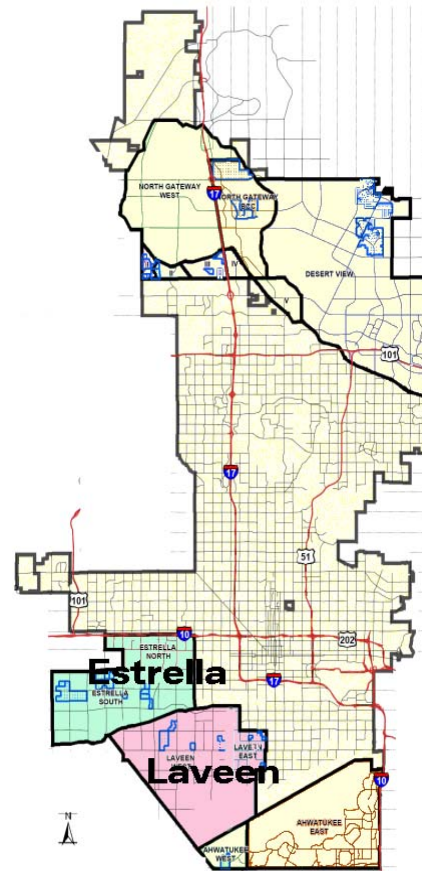
Service Areas

The storm drainage impact fee is currently charged only in the Estrella and Laveen service areas, because these areas are prone to severe flooding events and have drainage infrastructure plans to address 100-year flood events. The storm drainage impact fee areas are illustrated in Figure 11. The Salt River serves as the boundary between the two service areas.

Methodology

As in the 2006 study, the methodology used to calculate the drainage impact fee is based on the regional drainage facilities necessary in Estrella and Laveen that will be needed to protect the area from 100-year flood events. As with the other fees in this report, the new facilities that will be needed are based on build-out conditions rather than a specific planning horizon. To ensure that the final increment of development in each service area does not bear more than its share of the planned improvements, this study includes an existing level of service analysis. If the level of service at build-out is lower than the existing level of service, the cost per service unit will be based on planned improvement costs.

Figure 11. Storm Drainage Service Areas



Service Units

The service unit calculation for storm drainage is based on the number of acres benefiting from regional storm drainage improvements. One EDU is based on the standard single-family density of four dwellings per acre. The fee is assessed based on lot size with one EDU equal to one quarter acre of lot area.

In order to develop the level of service analysis, it is necessary to determine the existing and future service units for each service area as well as city-wide. The service units are based on total developed acres, which are derived from the land use data in Appendix A of this study. The existing and build-out acres and EDUs are shown in Table 56. The total EDUs are developed by multiplying total acres by four, since the single-family EDU is based on the standard single-family density of four dwellings per acre.

Table 56. Existing and Build-Out Drainage Service Units

	Existing	Build-Out	New
Estrella Service Area			
Total Developed Acres	6,528	20,179	13,651
– Right-of-Way Acres	-979	-3,027	-2,048
Net Developed Acres	5,549	17,152	11,603
x EDUs per Net Acre	4	4	4
EDUs, Estrella	22,196	68,608	46,412
Laveen Service Area			
Total Developed Acres	8,378	25,142	16,764
– Right-of-Way Acres	-1,257	-3,771	-2,514
Net Developed Acres	7,121	21,371	14,250
x EDUs per Net Acre	4	4	4
EDUs, Laveen	28,484	85,484	57,000
City-Wide			
Total Developed Acres	171,096	303,936	132,840
– Right-of-Way Acres	-25,664	-45,590	-19,926
Net Developed Acres	145,432	258,346	112,914
x EDUs per Net Acre	4	4	4
EDUs, City-Wide	581,728	1,033,384	451,656

Source: Total build-out acres for Estrella and Laveen from City Planning based on MAG data, March 24, 2009; total city-wide build-out acres from U.S. Census, *County and City Data Book*, 2007; total existing acres estimated based on build-out acres and percent developed (ratio of existing to build-out sum of dwelling units and 1,000s of square feet from Table 71 and Table 72); right-of-way acres estimated based on assumed 15% of total acres; total EDUs is derived by multiplying developed acres by four.

Planned Improvements

The list of planned drainage improvements in Laveen and Estrella are based on Area Drainage Master Plans (ADMP) developed by the Flood Control District of Maricopa County (FCDMC). The master plans were developed based on extensive topographical and hydrological modeling to identify

improvements necessary to minimize widespread flooding during severe 100-year flood events. Typically, drainage facilities include a combination of channels, storm drains and basins that capture and convey floodwaters to a regional watercourse such as the Salt River.

In the Laveen and Estrella service areas, there are three primary drainage master plans: the *Durango ADMP* (2002) for the Estrella area, and the *South Phoenix/Laveen ADMP* (1997) and the *Laveen ADMP* (2001) for the Laveen service area. The Laveen Area Conveyance Channel (FCDMC, 2003) is also the result of drainage master planning and design, but it is considered a separate project from the other ADMPs. The planned projects associated with the drainage master plans for Laveen and Estrella are shown in Table 57. As with the 2006 impact fee study, the planned improvements related to the Durango Regional Conveyance Channel reflect the reduced project scope recommended in the 2006 amendment to the *Durango ADMP*.

Table 57. Planned Drainage Projects

Fee Area	Master Plan	Project Details
Laveen	South Phoenix/Laveen	27th Ave Basin
Laveen	South Phoenix/Laveen	43rd Ave/Baseline Basin
Laveen	South Phoenix/Laveen	27th Ave Storm Drain (Southern to SR) & 23rd Ave Basin
Laveen	South Phoenix/Laveen	27th Ave Storm Drain (Dobbins-Baseline) and Dobbins Basin
Laveen	South Phoenix/Laveen	7th Ave Storm Drain (Baseline to South Mountain)
Laveen	South Phoenix/Laveen	43rd Ave Storm Drain
Laveen	Laveen ADMP	51st Ave & Baseline Detention Basin
Laveen	Laveen ADMP	51st Ave & Dobbins Detention Basin
Laveen	Laveen ADMP	51st Ave & Elliot Detention Basin
Laveen	Laveen ADMP	51st Ave Storm Drain (Baseline to Elliot)
Laveen	Laveen ADMP	67th Ave Channel (Southern to South Mountain Ave)
Laveen	Laveen ADMP	44th Ave & Carver Detention Basin
Laveen	Laveen ADMP	Carver Hills Storm Drain
Laveen	Laveen ADMP	Dobbins Rd. Storm Drain (43rd to 51st)
Laveen	Laveen ADMP	43rd Ave & Dobbins Detention Basin
Laveen	Laveen ADMP	Reservation Channel (Dobbins to LACC)
Laveen	Laveen ADMP	Western Canal Channel
Laveen	LACC FCDMC	Laveen Area Conveyance Channel
Estrella	Durango ADMP	Durango Regional Conveyance Channel (75th to 107th)
Estrella	Durango ADMP	75th Ave. Drain System (DRCC Phase 1)
Estrella	Durango ADMP	Sunland Ave. Channel
Estrella	Durango ADMP	47th Ave. Channel System

Source: City of Phoenix Street Transportation Department.

The design and construction of drainage facilities often involve intergovernmental cooperation between the City of Phoenix, the FCDMC and in some cases adjacent jurisdictions. The total costs used in this study are based on cost estimates developed by the Street Transportation Department and FCDMC. The intergovernmental cooperation often involves cost-sharing agreements with other agencies; however, the impact fee calculation only includes Phoenix’s share of project costs. In some cases, such as the land acquisition and construction costs associated with the Laveen Area Conveyance Channel (LACC), the actual costs and breakdown of the cost-sharing are known. In other cases, the facility and land costs are estimated, and the cost-sharing arrangements are assumed based on historic cost-sharing arrangements.

Land acquisition costs for stormwater channels and basins are based on land acquisition needs for each project and land costs estimates. The LACC project has existing agreements in place for the land acquisition necessary for the project at a cost of \$42,500 per acre. For other projects, the land cost is based on recent drainage land acquisitions. As shown in Table 58, the City has purchased two large parcels for drainage improvements over the past two years at an average cost of \$84,356 per acre.

Table 58. Drainage Land Costs

Project	Land Cost	Acres	Cost/Acre
Durango Regional Conveyance Channel (April, 2009)	\$2,800,000	37.52	\$74,627
Loop 303 Drainage Improvements (June, 2008)	\$3,155,532	33.08	\$95,391
Total (Average Cost per Acre)	\$5,955,532	70.60	\$84,356

Source: City of Phoenix Street Transportation Department and Flood Control District of Maricopa County, March 26, 2009.

Planned drainage project costs, amount expended to-date, remaining costs, anticipated external funding and City of Phoenix share of remaining costs are shown in Table 59. Total planned costs include both land and improvement costs. The land cost for each project is estimated based on land acquisition needs and the average land cost calculated above, with the exception noted above. There are no separate land cost estimates available for the Durango Regional Conveyance Channel project and the 75th Avenue drain system, since the land costs for those projects are included in the total improvement cost estimate. The improvement costs are based on estimates by the Street Transportation Department developed for the 2006 impact fee. The January 2007 cost estimates were adjusted by the *Engineering News-Record* (ENR) Construction Cost Index (CCI) to January 2009 costs. Individual cost components for some of the multi-phase projects are presented in Table 83, Appendix G.

Many of the planned projects involve cost-sharing agreements. Although cost-shares have varied in the past, it is anticipated that the FCDMC will generally be responsible for half of the costs projected for land and facilities specified in the Estrella and Laveen ADMPs, and that the remainder will be covered by the City of Phoenix. As a result, the costs used in the impact fee calculations are less than the actual construction cost of the channels and basins. In this update, the cost-share ratio has been applied to the remaining costs. In Estrella, the City will be responsible for the full cost of the Durango Regional Conveyance Channel project from 75th Avenue to 107th Avenue, but anticipates cost-sharing for the other three major drainage projects. The cost-share agreement for the 75th Avenue Drain System will require the City to fund 35 percent of the project cost, while the Sunland Avenue and 47th Avenue channel systems are expected to be half funded by the City. The cost-share assumption for South Phoenix/Laveen and the Laveen ADMP projects is 50 percent, while the City's share of the Laveen Area Conveyance Channel is an estimated 59 percent.

Table 59. Planned Drainage Project Costs

Project	Acres	Total Planned Cost	Total Expended	Remaining Cost	External Funding	Phoenix Costs
DRCC (75th to 107th)	NA	\$21,734,817	\$0	\$21,734,817	\$0	\$21,734,817
75th Ave. Drain Sys (Ph 1)	NA	\$37,971,500	\$24,533,660	\$13,437,840	\$8,677,005	\$4,760,835
Sunland Ave. Channel	43.0	\$11,558,094	\$0	\$11,558,094	\$5,779,047	\$5,779,047
47th Ave. Channel System	88.0	\$27,912,102	\$0	\$27,912,102	\$13,956,051	\$13,956,051
Total Project Costs, Estrella		\$99,176,513	\$24,533,660	\$74,642,853	\$28,412,103	\$46,230,750
South Phoenix/Laveen	30.0	\$27,222,733	\$1,083,544	\$26,139,189	\$12,527,822	\$13,611,367
Laveen	92.0	\$45,257,610	\$0	\$45,257,610	\$22,628,805	\$22,628,805
Laveen Conveyance Channel	125.0	\$25,925,600	\$8,967,652	\$16,957,948	\$6,974,274	\$9,983,674
Total Project Costs, Laveen		\$98,405,943	\$10,051,196	\$88,354,747	\$42,130,901	\$46,223,846

Source: Acres from City of Phoenix; total planned cost is sum of land and improvement costs; land cost is product of acres times average land cost from Table 58, with exception that Laveen Conveyance Channel land cost based on existing land acquisition agreement cost of \$42,500 per acre; South Phoenix/Laveen and Laveen improvement cost from Table 83, Appendix G; other improvement costs based on City of Phoenix Street Transportation Department costs from *Infrastructure Financing Plan*, November 15, 2006, updated with ENR CCI to January 2009 dollars; external funding based on City of Phoenix funding estimate, March 20, 2009.

Cost per Service Unit

The cost per service unit is developed by dividing the City’s share of the planned improvement costs by the projected growth in service units through build-out. The planned costs in Laveen are adjusted to reflect the value of outstanding developer credits. The value of the outstanding credit agreement is added to the total costs in order to recognize the portion of the existing developer-provided infrastructure that will be funded with future impact fee revenue. The impact fee cash balance is subtracted from the total cost, since the fund balance will be used to pay for a portion of planned drainage facilities and decrease the amount needed to be collected from future impact fees. The plan-based cost per service unit is determined by dividing the total plan-based cost by the number of service units that will be added through build-out. The planned service units for drainage represent one-quarter acre single-family equivalent lot sizes. As shown in Table 60, the planned drainage impact fee cost ranges from \$864 per EDU in Laveen to \$821 in Estrella.

Table 60. Plan-Based Drainage Cost per Service Unit

	Estrella	Laveen
Total Planned Drainage Costs	\$46,230,750	\$46,223,846
+ Outstanding Developer Credits	\$0	\$2,582,000
– Existing Fund Balance	\$6,136,470	\$2,004,216
Adjusted Planned Improvement Costs	\$40,094,280	\$46,801,630
÷ New EDUs	46,412	57,000
Plan-Based Cost per EDU	\$864	\$821

Source: Total planned drainage costs from Table 59; outstanding developer credits from City of Phoenix Planning Department, February 27, 2009; existing fund balance from City of Phoenix Planning Department and based on January 2009 balance; new EDUs from Table 56.

Level of Service Analysis

The storm drainage impact fee is only charged in Estrella and Laveen because this area has a flat topography, does not have much natural drainage and is prone to flooding. Given that natural drainage does not exist in the area, the impact fee level of service analysis for drainage is based on the existing drainage facilities that have been constructed in the each service area and current development. Similar to the level of service analysis for the other facilities in this report, the existing level of service is compared with the plan-based cost per service unit to ensure that future growth does not pay a disproportionate share of the necessary drainage facilities remaining to be built in each service area.

Existing development in Estrella and Laveen is currently being served by a number of completed or partially completed drainage projects, which were funded by the City and FCDMC. As shown in Table 61, the value of the completed projects, which reflects the amount expended for the project, is \$24.5 million for the DRCC project in Estrella. In Laveen, the City has constructed a portion of the LACC project and the FCDMC has completed drainage projects on 43rd Avenue and Baseline Road. The completed costs do not reflect funds appropriated for the 75th Avenue detention channel and the DRCC detention basin, since these projects are scheduled in the CIP for fiscal year 2009 and 2010 and have not yet been completed.

Table 61. Completed Drainage Projects

Project	Completed Cost
67th Ave/Harrison St. Box Culvert	\$534,780
75th Ave Detention Channel	\$0
75th Ave: Buckeye Rd to Van Buren St	\$8,960,057
75th Ave: Salt River to Papago Freeway	\$14,239,294
DRCC Detention Basin	\$0
Santa Maria Basin 71st Ave & Elwood	\$799,530
Total, Estrella Service Area	\$24,533,660
Laveen Area Conveyance Crossing	\$8,967,652
43rd Ave. Storm Drain	\$6,446,792
Baseline Road Storm Drain	\$5,490,472
Total, Laveen Service Area	\$20,904,916

Source: City of Phoenix Street Transportation Department analysis of completed and partially completed drainage projects, March 24, 2009 and April 7, 2009.

The existing drainage infrastructure investment in each service area is used to determine the per service unit capital cost to maintain the existing storm drainage level of service. The existing impact fee account balance are added to the value of facilities, because these cash funds have been paid by existing development and will fund future drainage facilities. The outstanding developer credit is subtracted from the total value, because the cost of the facilities funded by the developers has not been fully recovered. As shown in Table 62, the existing level of service ranges from \$1,382 in Laveen to \$714 in Estrella.

Table 62. Existing Drainage Level of Service

	Estrella	Laveen
Completed Project Value	\$24,533,660	\$20,904,916
+ Existing Fund Balance	\$6,136,470	\$2,004,216
- Outstanding Developer Credits	\$0	-\$2,582,000
Adjusted Planned Improvement Costs	\$30,670,130	\$20,327,132
÷ Existing EDUs	22,196	28,484
Existing LOS (Cost per EDU)	\$1,382	\$714

Source: Completed project value from Table 61; existing fund balance and developer credits from Table 60; existing drainage EDUs from Table 56.

The cost per service unit based on the existing storm drainage improvements in each service area is compared with the adjusted cost of planned improvements in order to ensure that new development in the each growth area does not pay for a higher level of service than provided to existing development within each service area. As shown in Table 63, the value of the existing level of service exceeds the plan-based cost per EDU in Estrella, but is lower than the plan-based cost in Laveen.

Table 63. Drainage Level of Service Analysis

	Estrella	Laveen
Existing Level of Service (Cost per EDU)	\$1,382	\$714
Plan-Based Cost per EDU	\$864	\$821

Source: Existing level of service from Table 62; plan-based cost per EDU from Table 60.

Net Cost per Service Unit

This section updates the offsets to the drainage impact fee in order to recognize other revenues that will be generated by new development and used to offset the planned improvement costs in order to determine the net cost per service unit. Traditionally, the City has published and adopted a fee schedule based on the cost per service unit and published a separate offset schedule. For storm drainage, the adopted fees were based on the cost per acre, whereas the offsets were calculated for dwelling units or 1,000 square feet of nonresidential buildings. With the exception of standard-density single-family development and golf courses (where both costs and offsets are per acre), the fees for other uses cannot be determined without knowing the density or intensity of the development (dwelling units per acre or nonresidential square footage per acre). This update integrates the cost and offset calculations to develop a net impact fee schedule for storm drainage facilities.

As in prior studies, this update includes an offset to account for the secondary property tax used to secure bonds for growth-related major storm drainage improvements in the growth areas. A separate offset for external funding is not necessary, since the fee calculation is based on the City’s share of the planned project costs. In past updates, the City used a forward-looking offset methodology to account for secondary property tax debt by analyzing the future facilities that may be funded with debt. However, the legal principal involved applies much more clearly to the existing debt than to future debt. In other words, new development should not have to pay for the storm drainage improvements required in the growth areas, while also having to help repay debt on existing storm drainage improvements serving existing development. Consequently, the impact fee should be

reduced to account for the amount that new development will pay to retire the debt on existing transportation facilities to avoid double payment issues.

The City has issued general obligation debt funded with the secondary property tax to fund storm drainage improvements. An offset for the City’s outstanding debt for storm drainage improvements was included in the roadway facilities impact fee update. The roadway facilities impact fee update provided an offset to account for the \$241.4 million in storm sewer and drainage debt under the assumption that all of the debt was related to storm drainage in streets. Rather than duplicating the roadway facilities offset, the offset used in the update is based on an analysis of existing storm drainage facilities and their funding source. As shown in Table 64, the analysis shows that outstanding debt related to storm drainage is \$12.2 million.

Table 64. Outstanding Drainage Debt

Project	Bond Authorization	Outstanding Debt
75th Ave: Buckeye Rd to Van Buren St	2001	\$6,077,804
75th Ave: Buckeye Rd to Van Buren St	2006	\$33,713
75th Ave: Salt River to Papago Freeway	2001	\$6,077,804
Santa Maria Basin 71st Ave & Elwood	2006	\$7,434
Total Outstanding Debt		\$12,196,755

Source: City of Phoenix Street Transportation Department analysis of completed and partially complete drainage projects, March 24, 2009.

The calculation of the offset for outstanding storm drainage debt is similar than the secondary offset used in the other fee calculations in this study. Dividing the outstanding debt by the existing city-wide service units ensures that new development will be allowed to fund the same portion of its storm drainage costs through secondary property tax-funded debt that existing development does. As shown in Table 65, the secondary property tax debt offset is \$22 per EDU based on the city-wide service units and outstanding storm drainage debt.

Table 65. Drainage Debt per Service Unit

Outstanding Storm Drainage Debt	\$12,196,755
÷ Existing EDUs (City-Wide)	549,172
Debt Offset per EDU	\$22

Source: Outstanding storm drainage debt from Table 64; existing city-wide EDUs from Table 56.

The secondary property tax-funded debt offset is subtracted from the cost per service unit to determine the net cost per service unit on which the potential storm drainage impact fee may be based. An additional offset is provided for anticipated outside funding in Laveen (the cost per service unit in Estrella, which is based on plan-based costs, has already been reduced to reflect only future City costs). As shown in Table 66, the net cost per service unit for storm drainage facilities ranges from \$352 in Laveen to \$842 in Estrella.

Table 66. Drainage Net Cost per Service Unit

	Estrella	Laveen
Cost/EDU	\$864	\$714
– Debt Offset/EDU	-\$22	-\$22
– Outside Funding/EDU	NA	-\$340
Net Cost/EDU	\$842	\$352

Source: Laveen cost per EDU based on existing level of service from Table 62; Estrella cost per EDU based on plan-based cost per EDU from Table 60; debt offset per EDU from Table 65; outside funding offset for Laveen is ratio of outside funding to total remaining costs from Table 59 times cost per EDU.

Potential Fee Schedules

The potential net storm drainage impact fee schedule calculated in this study is derived by multiplying the net cost per EDU for each service area by the EDU factor associated with each land use. One EDU represents a typical quarter-acre single-family lot; thus, one acre is the equivalent to four EDUs and the potential fees for all land uses aside from single-family in Table 67 are based on the fee per acre.

Table 67. Potential Drainage Impact Fee Schedules

Land Use	Unit	EDUs/ Unit	Net Cost/ EDU	Net Cost/ Unit
Estrella Service Area				
Single-Family, Detached	Dwelling	1.00	\$842	\$842
Multi-Family	Acre	4.00	\$842	\$3,368
Mobile Home/RV Park	Acre	4.00	\$842	\$3,368
Retail/Commercial	Acre	4.00	\$842	\$3,368
Office	Acre	4.00	\$842	\$3,368
Public/Institutional	Acre	4.00	\$842	\$3,368
Industrial/Warehouse	Acre	4.00	\$842	\$3,368
Laveen Service Area				
Single-Family, Detached	Dwelling	1.00	\$352	\$352
Multi-Family	Acre	4.00	\$352	\$1,408
Mobile Home/RV Park	Acre	4.00	\$352	\$1,408
Retail/Commercial	Acre	4.00	\$352	\$1,408
Office	Acre	4.00	\$352	\$1,408
Public/Institutional	Acre	4.00	\$352	\$1,408
Industrial/Warehouse	Acre	4.00	\$352	\$1,408

Source: Non-single-family EDUs per unit based on 4 EDUs per acre; net cost per EDU from Table 66.

The potential storm drainage impact fees are compared with the current fees in Table 68. The City’s current storm drainage fee costs are per acre, whereas offsets are per dwelling unit or per 1,000 square feet of nonresidential building, which makes determining the existing fee schedule somewhat problematic. With the exception of standard-density single-family development, the fees for other major land uses cannot be determined without knowing the density or intensity of the development

(dwelling units per acre or nonresidential square footage per acre). Reasonable assumptions based on typical densities and intensities of development have been made to allow approximate fee comparisons. In general, residential fees would go down, while nonresidential fees would increase modestly.

Table 68. Comparative Drainage Impact Fees

Land Use	Unit	Existing	Potential	Change
Estrella Service Area				
Single-Family, Detached	Dwelling	\$1,154	\$842	-\$312
Multi-Family*	Dwelling	\$374	\$281	-\$93
Retail/Commercial**	1,000 sq. ft.	\$194	\$309	\$115
Office***	1,000 sq. ft.	\$0	\$99	\$99
Industrial/Warehouse****	1,000 sq. ft.	\$184	\$227	\$43
Laveen Service Area				
Single-Family, Detached	Dwelling	\$919	\$352	-\$567
Multi-Family*	Dwelling	\$296	\$117	-\$179
Retail/Commercial**	1,000 sq. ft.	\$108	\$129	\$21
Office***	1,000 sq. ft.	\$0	\$41	\$41
Industrial/Warehouse****	1,000 sq. ft.	\$120	\$95	-\$25

*Multi-family assumes average density of 12 units per acre **Retail/Commercial assumes 0.25 FAR; ***Office assumes 0.78 FAR; ****Industrial/Warehouse assumes 0.34 FAR.

Source: Existing fee derived from above assumptions, cost/EDU from City of Phoenix, *Infrastructure Financing Plan*, November 15, 2006 and secondary property tax offset per unit from City of Phoenix, *Offsets Report Appendices*, Appendix B, 2006 (revised August 22, 2007); potential fee derived from above assumptions and net cost per EDU from Table 66.

Improvements Plan

The portion of the cost of future drainage capital improvements in Estrella and Laveen attributable to new development and the potential revenue from drainage impact fees if adopted at the full net cost should be the identical amount, because the fees are calculated to cover the growth-related cost. Any additional cost not covered by potential impact fee revenue is not attributable to existing development in the service area – this would only be the case if the fees were based on a higher level of service than currently exists, in which case the deficit would be attributable to an existing capacity deficiency. The fees calculated in this report have been based on the existing level of service or the cost to construct remaining improvements, whichever is less. For this reason, any cost not covered by potential impact fee revenue is for improvements that will raise the level of service for, and benefit, both existing and new development in the service areas. Consequently, no additional offset against the impact fees is warranted for any additional non-impact fee funding used to pay for needed drainage capital improvements in the impact fee service areas.

The growth share of future costs, which is the same as potential impact fee revenue, is the product of the net cost per service unit and the number of future service units from now to build-out. Potential drainage impact fee revenue for each of the two service areas is shown in Table 20.

Table 69. Potential Drainage Impact Fee Revenue

	Estrella	Laveen
Net Cost per EDU	\$842	\$352
New EDUs, 2009-Buildout	46,412	57,000
Potential Impact Fee Revenue	\$39,078,904	\$20,064,000

Source: Net cost per EDU from Table 66; new EDUs from Table 56.

The drainage improvements plan for both service areas is shown in Table 21. The improvements plan provides a list of planned capital improvements and other expenditures that are eligible to be funded by the impact fees. Eligible expenditures include capacity-expanding drainage facility improvements funded in the 2009-2013 Capital Improvement Program (CIP) and beyond 2013 through build-out. The net cost per EDU accounts for most of the plan-based cost in Estrella, but only 2006400000.0 percent in Laveen. The lower share of growth costs in Laveen reflects that the net cost in that service area is based on existing level of service and is adjusted to reflect anticipated outside funding.

Projects not currently in the five-year CIP will be programmed by the City Council in future CIPs based on need and will depend on availability of funding. If the drainage impact fees are adopted at the full potential impact fee schedules calculated in this report, a portion of the planned improvements in each service area will still need to be funded by other revenue sources. The mix of funding sources available to fund necessary public services beyond the portion covered by the impact fee calculated in this report will be determined by the actions of future City Councils in prioritizing projects, allocating funding in future CIPs and the availability of impact fee revenue in each service area. This study does not include a specific estimate of the time required to finance and provide the necessary public services between 2013 and build-out for each service area, as the build-out for each impact fee service area is likely to vary depending on market conditions and availability of land for new development.

Table 70. Drainage Improvements Plan

Drainage Project	FY 2009-2013	Beyond 2013	Total
Durango Regional Conveyance Channel (75th to 107th)	\$0	\$21,734,817	\$21,734,817
75th Ave. Drain System (DRCC Phase 1)	\$4,572,000	\$188,835	\$4,760,835
Sunland Ave. Channel	\$0	\$5,779,047	\$5,779,047
47th Ave. Channel System	\$0	\$13,956,051	\$13,956,051
Total Planned Expenditures (City Share), Estrella	\$4,572,000	\$41,658,750	\$46,230,750
+ Outstanding Developer Credits			\$0
- Impact Fee Fund Balance			\$6,136,470
Total Future Costs			\$40,094,280
- Growth Costs & Potential Impact Fee Revenue			-\$39,078,904
Additional Funding Requirement, Estrella			\$1,015,376
27th Ave Basin	\$0	\$1,978,124	\$1,978,124
43rd Ave/Baseline Basin	\$0	\$1,978,124	\$1,978,124
27th Ave Storm Drain (Southern to SR) & 23rd Ave Basin	\$0	\$3,956,248	\$3,956,248
27th Ave Storm Drain (Dobbins-Baseline) and Dobbins Basin	\$0	\$2,256,920	\$2,256,920
7th Ave Storm Drain (Baseline to South Mountain)	\$0	\$2,124,160	\$2,124,160
43rd Ave Storm Drain	\$0	\$564,230	\$564,230
Misc. Land Acquisition and Other Costs	\$0	\$753,562	\$753,562
51st Ave & Baseline Detention Basin	\$0	\$1,566,325	\$1,566,325
51st Ave & Dobbins Detention Basin	\$0	\$1,347,989	\$1,347,989
51st Ave & Elliot Detention Basin	\$0	\$1,471,396	\$1,471,396
51st Ave Storm Drain (Baseline to Elliot)	\$0	\$2,211,840	\$2,211,840
67th Ave Channel (Southern to South Mountain Ave)	\$0	\$2,563,077	\$2,563,077
44th Ave & Carver Detention Basin	\$0	\$3,417,435	\$3,417,435
Carver Hills Storm Drain	\$0	\$598,051	\$598,051
Dobbins Rd. Storm Drain (43rd to 51st)	\$0	\$740,445	\$740,445
43rd Ave & Dobbins Detention Basin	\$0	\$1,196,103	\$1,196,103
Reservation Channel (Dobbins to LACC)	\$0	\$1,063,202	\$1,063,202
Western Canal Channel	\$0	\$2,572,569	\$2,572,569
Misc. Land Acquisition and Other Costs	\$0	\$3,880,376	\$3,880,376
Laveen Area Conveyance Channel	\$0	\$9,983,674	\$9,983,674
Subtotal, Planned Expenditures (City Share), Laveen	\$0	\$46,223,846	\$46,223,846
Unidentified Impact Fee-Funded Storm Drainage Projects	\$2,303,140	-\$2,303,140	\$0
Total Planned Expenditures, Laveen	\$2,303,140	\$43,920,706	\$46,223,846
+ Outstanding Developer Credits			\$2,582,000
- Impact Fee Fund Balance			\$2,004,216
Total Future Costs			\$46,801,630
- Growth Costs & Potential Impact Fee Revenue			-\$20,064,000
Additional Funding Requirement, Laveen			\$26,737,630

Source: 2009-2013 planned expenditures from City of Phoenix 2009-2013 Capital Improvement Program; total project costs, outstanding developer credits and impact fee fund balances from Table 83, Appendix G; growth share of future costs from Table 69.

APPENDIX A: LAND USE DATA

In order to determine the existing level of service for the various facilities, it is necessary to estimate the existing and future city-wide housing units and nonresidential development. This study utilizes socio-economic data provided for Phoenix and each service area by the Maricopa Association of Governments (MAG). The MAG data are used for both the existing land use estimates and future land use projections in order to provide a consistent basis for measuring existing and future service units. The nonresidential square feet projections are based on employment projections, which are converted to square feet utilizing employee per square foot assumptions used by the City in long range land use planning. As shown in Table 71, the existing impact fee service areas include 89,600 single-family and multi-family residential units and 38.4 million square feet of nonresidential development.

Table 71. Existing Residential and Nonresidential Development

Impact Fee Area	Single-Family (Dwelling Unit)	Multi-Family (Dwelling Unit)	Retail (1,000 Sq. Ft.)	Office (1,000 Sq. Ft.)	Industrial (1,000 Sq. Ft.)	Public/Other (1,000 Sq. Ft.)
Estrella North	2,800	1,000	1,892	65	7,836	231
Estrella South	10,400	100	1,441	0	1,642	538
Laveen East	4,500	500	360	0	75	269
Laveen West	12,200	500	2,072	0	448	731
Ahwatukee East	24,300	7,900	7,477	1,677	448	1,923
Ahwatukee West	500	0	0	0	0	38
Deer Valley 1	700	0	0	0	0	0
Deer Valley 2	700	0	0	0	0	0
Deer Valley 3	900	0	0	0	0	0
Deer Valley 4	1,200	0	0	0	0	0
Deer Valley 5	100	0	0	0	112	38
Desert View	13,400	2,800	4,595	968	410	2,308
N Gateway West	1,100	0	541	0	0	154
N Gateway NBCC	3,300	700	0	32	0	77
Service Area Total	76,100	13,500	18,378	2,742	10,971	6,307
Outside Fee Areas	303,700	172,500	142,253	78,000	55,708	68,655
City-Wide Total	379,800	186,000	160,631	80,742	66,679	74,962

Source: Existing residential units based on 2007 socio-economic analysis provided by Maricopa Association of Governments, July 29, 2008; nonresidential square feet based on MAG employment estimates and City of Phoenix Planning Department employee density assumptions per 1,000 square feet (1.11 for retail, 3.10 for office, 2.68 for industrial and 2.60 for public/other).

The future residential and nonresidential projections were developed for a build-out scenario for each service area and city-wide based on new development proposals and the land-use plan in the City's adopted General Plan, which includes bulk and zoning density targets. As shown in Table 72, total residential development in the service areas will grow to 267,000 units while nonresidential development will grow to 184.4 million square feet.

Table 72. Build-Out Residential and Nonresidential Development

Impact Fee Area	Single-Family (Dwelling Unit)	Multi-Family (Dwelling Unit)	Retail (1,000 Sq. Ft.)	Office (1,000 Sq. Ft.)	Industrial (1,000 Sq. Ft.)	Public/Other (1,000 Sq. Ft.)
Estrella North	3,900	4,200	2,703	871	21,194	885
Estrella South	26,400	3,500	5,495	4,419	11,119	1,692
Laveen East	8,300	800	1,171	65	75	423
Laveen West	38,300	4,400	6,036	2,419	1,231	1,769
Ahwatukee East	24,800	8,300	8,378	2,613	709	2,000
Ahwatukee West	1,100	200	360	0	0	192
Deer Valley 1	1,300	0	0	0	0	192
Deer Valley 2	1,700	0	0	0	0	77
Deer Valley 3	1,600	0	0	0	0	0
Deer Valley 4	2,600	400	90	97	75	38
Deer Valley 5	500	0	811	1,161	2,015	346
Desert View	53,900	33,100	20,360	7,581	6,567	6,577
N Gateway West	15,300	17,400	15,405	35,484	5,373	1,346
N Gateway NBCC	11,300	3,700	4,324	258	0	423
Service Area Total	191,000	76,000	65,133	54,968	48,358	15,960
Outside Fee Areas	324,900	333,800	191,353	195,935	97,761	90,309
City-Wide Total	515,900	409,800	256,486	250,903	146,119	106,269

Source: Build-out land use analysis based on 2007 socio-economic projections provided by Maricopa Association of Governments, July 29, 2008 nonresidential square feet based on MAG employment estimates and City of Phoenix Planning Department employee density assumptions per 1,000 square feet (1.11 for retail, 3.10 for office, 2.68 for industrial and 2.60 for public/other).

APPENDIX B: FUNCTIONAL POPULATION

For the fire and police impact fee update it is appropriate to apply a concept referred to as “functional population” in the impact fee literature. This is a generally-accepted methodology for these facility types and is based on the observation that demand for certain facilities is generally proportional to the presence of people.

To a large extent, the demand for public safety functions, including fire and police, is proportional to the presence of people. The functional population concept is analogous to the concept of “full-time equivalent” employees. It represents the number of “full-time equivalent” people present at the site of a land use. Functional population is the equivalent number of people occupying a building or land use site on a 24-hour-per-day basis.

Determining residential functional population multipliers is considerably simpler than the nonresidential component. The demand for facilities is proportional to the number of people in a dwelling unit. Consequently, data on average household size for various types of units is a critical component of calculating the residential EDUs. Table 73 presents the city-wide 2000 U.S. Census data on the total number of housing units, household population and average number of residents per occupied housing unit for the residential land use categories utilized in this update.

Table 73. Average Household Size, 2000

Land Use	Total Units	Vacant Units	Occupied Units	Household Population	Avg. HH Size
Single Family, Detached	285,575	8,184	277,391	852,681	3.07
Multi-Family	188,422	19,007	169,415	396,165	2.34
Mobile Home/RV Park	21,796	2,738	19,058	49,832	2.61

Source: U.S. Census Bureau, 2000 Census SF-3 (1-in-6 weighted sample data) for City of Phoenix.

It is assumed that people spend 12 hours per day at home during week days and 20 hours per day during weekends. In total, people are assumed to spend 100 hours per week, or 60 percent of their time, at home. The other 40 percent of their time spent away from home accounts for working, shopping and other away-from-home activities. For residential uses, then, equivalent dwelling units are calculated by first multiplying average household size by 60 percent to determine functional population per unit, then dividing by the functional population per single-family unit to determine equivalent dwelling units. The equivalent dwelling units for single-family, multi-family and mobile home/RV units are shown in Table 74.

Table 74. Residential Functional Population and EDU Multipliers

Housing Type	Avg. HH Size	Occupancy	Func. Pop./Unit	EDUs/Unit
Single-Family	3.07	0.60	1.842	1.00
Multi-Family	2.34	0.60	1.404	0.76
Mobile Home/RV Park	2.61	0.60	1.566	0.85

Source: Average household size from Table 73.

The functional population methodology for nonresidential uses is based on national trip generation data compiled by the Institute of Transportation Engineers (ITE). Functional population per 1,000 square feet is derived by dividing the total number of hours spent by employees and visitors during a day by 24 hours. Employees are assumed to spend eight hours per day at their place of employment, and visitors are assumed to spend one hour per visit depending on land use. The formula used to derive the nonresidential function population estimates is summarized in Figure 12.

Figure 12. Nonresidential Functional Population Formula

$\text{Functional population/1000 sf} = (\text{employee hours/1000 sf} + \text{visitor hours/1000 sf}) \div 24 \text{ hours/day}$ <p>Where:</p> $\text{Employee hours/1000 sf} = \text{employees/1000 sf} \times 8 \text{ hours/day}$ $\text{Visitor hours/1000 sf (retail, office and public/institutional)} = \text{visitors/1000 sf} \times 1 \text{ hour/visit}$ $\text{Visitor hours/1000 sf (industrial/warehouse)} = \text{visitors/1000 sf} \times \frac{1}{2} \text{ hour/visit}$ $\text{Visitors/1000 sf} = \text{weekday ADT/1000 sf} \times \text{avg. vehicle occupancy} - \text{employees/1000 sf}$ $\text{Weekday ADT/1000 sf} = \text{one way average daily trips (total trip ends} \div 2)$
--

Using this formula and information on trip generation rates from the ITE manual, nonresidential functional population estimates per 1,000 square feet of gross floor area were calculated. These functional population estimates were then converted into equivalent dwelling units by dividing them by the functional population per single-family unit calculated in the preceding table. Table 75 presents the results of these calculations for a number of nonresidential land use categories.

Table 75. Nonresidential Functional Population and EDU Multipliers

Land Use	Unit	Trip Rate	Persons/ Trip	Employee/ Unit	Visitors/ Unit	Functional Pop./Unit	EDUs/ Unit
Retail/Commercial	1000 sq. ft.	9.232	1.77	1.11	15.23	1.005	0.55
Office	1000 sq. ft.	5.505	1.14	3.10	3.18	1.166	0.63
Public/Institutional	1000 sq. ft.	5.505	1.63	2.60	6.37	1.132	0.61
Industrial/Warehouse	1000 sq. ft.	1.780	1.14	2.68	0.69	0.908	0.49

Source: Trip rate is one-half average daily trip ends on a weekday from Institute of Transportation Engineers (ITE), *Trip Generation*, 8th Ed., 2008 (retail based on shopping center, reduced by 57% to reflect only primary trips per ITE, *Trip Generation Handbook*, 2004; office and public/institutional based on general office; industrial/warehouse based on light industrial); persons per trip are average vehicle occupancies from U.S. Department of Transportation, *National Household Travel Survey*, 2001 for following trip purposes: "shopping" for retail, "to work" for office, industrial and warehouse and "all personal vehicle trips" for public/institutional; employees per unit based on City of Phoenix Planning Department employee density per 1,000 square feet assumptions used in the build-out analysis; visitors/unit and functional population /unit calculated based on formula in Figure 12.

In order to determine the existing levels of service for fire and police facilities, it is necessary to estimate the existing total functional population-based service units for the city. These are shown in Table 76 for the three fire/police service areas and for the city as a whole.

Table 76. Existing Total Functional Population-Based Service Units

Land Use	Unit	Number	EDU/Unit	EDUs
Single-Family, Detached	Dwelling	21,400	1.00	21,400
Multi-Family	Dwelling	3,500	0.76	2,660
Retail/Commercial	1,000 sq. ft.	5,136	0.55	2,825
Office	1,000 sq. ft.	1,000	0.63	630
Public/Institutional	1,000 sq. ft.	2,577	0.61	1,572
Industrial/Warehouse	1,000 sq. ft.	522	0.49	256
Northern Growth Area				29,343
Single-Family, Detached	Dwelling	29,900	1.00	29,900
Multi-Family	Dwelling	2,100	0.76	1,596
Retail/Commercial	1,000 sq. ft.	5,765	0.55	3,171
Office	1,000 sq. ft.	65	0.63	41
Public/Institutional	1,000 sq. ft.	1,769	0.61	1,079
Industrial/Warehouse	1,000 sq. ft.	10,001	0.49	4,900
Estrella/Laveen				40,687
Single-Family, Detached	Dwelling	24,800	1.00	24,800
Multi-Family	Dwelling	7,900	0.76	6,004
Retail/Commercial	1,000 sq. ft.	7,477	0.55	4,112
Office	1,000 sq. ft.	1,677	0.63	1,057
Public/Institutional	1,000 sq. ft.	1,961	0.61	1,196
Industrial/Warehouse	1,000 sq. ft.	448	0.49	220
Ahwatukee				37,389
Single-Family, Detached	Dwelling	379,800	1.00	379,800
Multi-Family	Dwelling	186,000	0.76	141,360
Retail/Commercial	1,000 sq. ft.	160,631	0.55	88,347
Office	1,000 sq. ft.	80,742	0.63	50,867
Public/Institutional	1,000 sq. ft.	74,962	0.61	45,727
Industrial/Warehouse	1,000 sq. ft.	66,679	0.49	32,673
City-Wide Total				738,774

Source: Number of residential and nonresidential units from Table 71; residential EDUs per unit from Table 74; nonresidential EDUs per unit from Table 75; EDUs is product of units and EDUs per unit.

Build-out service units based on the functional population approach, both city-wide and for the three fire/police service areas, are shown in Table 77.

Table 77. Build-Out Functional Population-Based Service Units

Land Use	Unit	Number	EDU/Unit	EDUs
Single-Family, Detached	Dwelling	88,200	1.00	88,200
Multi-Family	Dwelling	54,600	0.76	41,496
Retail/Commercial	1,000 sq. ft.	40,990	0.55	22,545
Office	1,000 sq. ft.	44,581	0.63	28,086
Public/Institutional	1,000 sq. ft.	8,999	0.61	5,489
Industrial/Warehouse	1,000 sq. ft.	14,030	0.49	6,875
Northern Growth Area				192,691
Single-Family, Detached	Dwelling	76,900	1.00	76,900
Multi-Family	Dwelling	12,900	0.76	9,804
Retail/Commercial	1,000 sq. ft.	15,405	0.55	8,473
Office	1,000 sq. ft.	7,774	0.63	4,898
Public/Institutional	1,000 sq. ft.	4,769	0.61	2,909
Industrial/Warehouse	1,000 sq. ft.	33,619	0.49	16,473
Estrella/Laveen				119,457
Single-Family, Detached	Dwelling	25,900	1.00	25,900
Multi-Family	Dwelling	8,500	0.76	6,460
Retail/Commercial	1,000 sq. ft.	8,738	0.55	4,806
Office	1,000 sq. ft.	2,613	0.63	1,646
Public/Institutional	1,000 sq. ft.	2,192	0.61	1,337
Industrial/Warehouse	1,000 sq. ft.	709	0.49	347
Ahwatukee				40,496
Single-Family, Detached	Dwelling	515,900	1.00	515,900
Multi-Family	Dwelling	409,800	0.76	311,448
Retail/Commercial	1,000 sq. ft.	256,486	0.55	141,067
Office	1,000 sq. ft.	250,903	0.63	158,069
Public/Institutional	1,000 sq. ft.	106,269	0.61	64,824
Industrial/Warehouse	1,000 sq. ft.	146,119	0.49	71,598
City-Wide Total				1,262,906

Source: Number of build-out residential and nonresidential units from Table 72; residential EDUs per unit from Table 74; nonresidential EDUs per unit from Table 75; EDUs is product of units and EDUs per unit.

APPENDIX C: BOND-FUNDED FIRE FACILITIES

Table 78. Bond-Funded Fire Facilities

Project	Bond Issue	Debt Funding
Operations Center	1984 Res Yld Fire Bonds	\$4,497,582
FS #49 Artwork	1988 Fire Protection Bonds	\$77,872
Preservation Of Artwork	1988 Fire Protection Bonds	\$8,221
FS #12 Artwork	1988 Fire Protection Bonds	\$37,928
FS #44 Artwork	1988 Fire Protection Bonds	\$65,125
Fire Station #30 - A	1988 Fire Protection Bonds	\$80,542
Fire Station #44	1988 Fire Protection Bonds	\$1,330,898
Fire Station # 30	1988 Fire Protection Bonds	\$2,190,926
Fire Station #26 Land	1988 Fire Protection Bonds	\$319,485
Fire Station #28 Land	1988 Fire Protection Bonds	\$75,565
Operations Center	1988 Fire Protection Bonds	\$9,237,244
CAD II	1988 Fire Protection Bonds	\$5,059,545
CAD Equipment	1988 Fire Protection Bonds	\$1,155,851
Fs #28 Remodeling	1988 Fire Protection Bonds	\$173,597
Relocate Fs #12	1988 Fire Protection Bonds	\$2,857,933
New Station 60 at 19th Ave & Dunlap-Infill	2001 Fire Protection Technology	\$129,466
New Station 61 - 16th St/Indian School Infill	2001 Fire Protection Technology	\$120,944
Firefighter Training	2001 Fire Protection Technology	\$553,770
Firefighter Safety	2001 Fire Protection Technology	\$2,492,381
Additional Allocation for Traffic Preemption	2001 Fire Protection Technology	\$1,217,100
Fire Station #43	2001 Fire Protection	\$4,532,929
Fire Station #52	2001 Fire Protection	\$1,826,949
Temp Battalion 6 Office	2001 Fire Protection	\$186,500
New Station 50 at 35 Avenue & Beardsley Rd	2001 Fire Protection	\$5,649,698
New Station 54 at 107th Ave & Camelback	2001 Fire Protection	\$5,143,079
New Station 32 at 40th St and Baseline Rd	2001 Fire Protection	\$5,637,027
FS62 @ 99th Ave and Lower Buckeye	2001 Fire Protection	\$447,641
New Station 60 at 19 Ave & Bunlap-Infill	2001 Fire Protection	\$5,580,863
New Station 57 at 15 Ave & Dobbins Rd	2001 Fire Protection	\$4,882,799
New Station 61 - 16th St/ Indian School Infill	2001 Fire Protection	\$6,707,773
Fire Station 55 at I-17 & Jomax Rd Land	2001 Fire Protection	\$1,330,741
Fire Station 63 - 7th St/Thunderbird Land	2001 Fire Protection	\$2,416
New Station 56 at I-17 & Carefree Hwy	2001 Fire Protection	\$4,840,119
Public Safety Driver Education Facility	2001 Fire Protection	\$6,968,377
Logistic Building Roof Repair	2001 Fire Protection	\$283,037
Support Service Warehouse	2001 Fire Protection	\$3,563,224
Land for Command Training Center	2001 Fire Protection	\$307,761
Fire Station 16 - 1216 s 18th St Replace	2001 Fire Protection	\$400,000
New Station 72-N. Desert View Village	2006 GO Fire Protection (Emergency Mgmt)	\$1,401,220
New Station 55-Deer Valley/N Gateway	2006 GO Fire Protection (Emergency Mgmt)	\$2,387
New Station 59-Estrella Village	2006 GO Fire Protection (Emergency Mgmt)	\$17,246
New Fire Train./Comm	2006 GO Fire Protection (Emergency Mgmt)	\$5,792,793
Fire Communications	2006 GO Fire Protection (Emergency Mgmt)	\$2,028,824
Total Existing Debt-Funded Facilities		\$99,215,377

Source: Fire CIP projects that have utilized General Obligation Bond funding provided by City of Phoenix Budget and Research Department, March 14, 2009; debt funding based on life-to-date actual debt expenditure for each project.

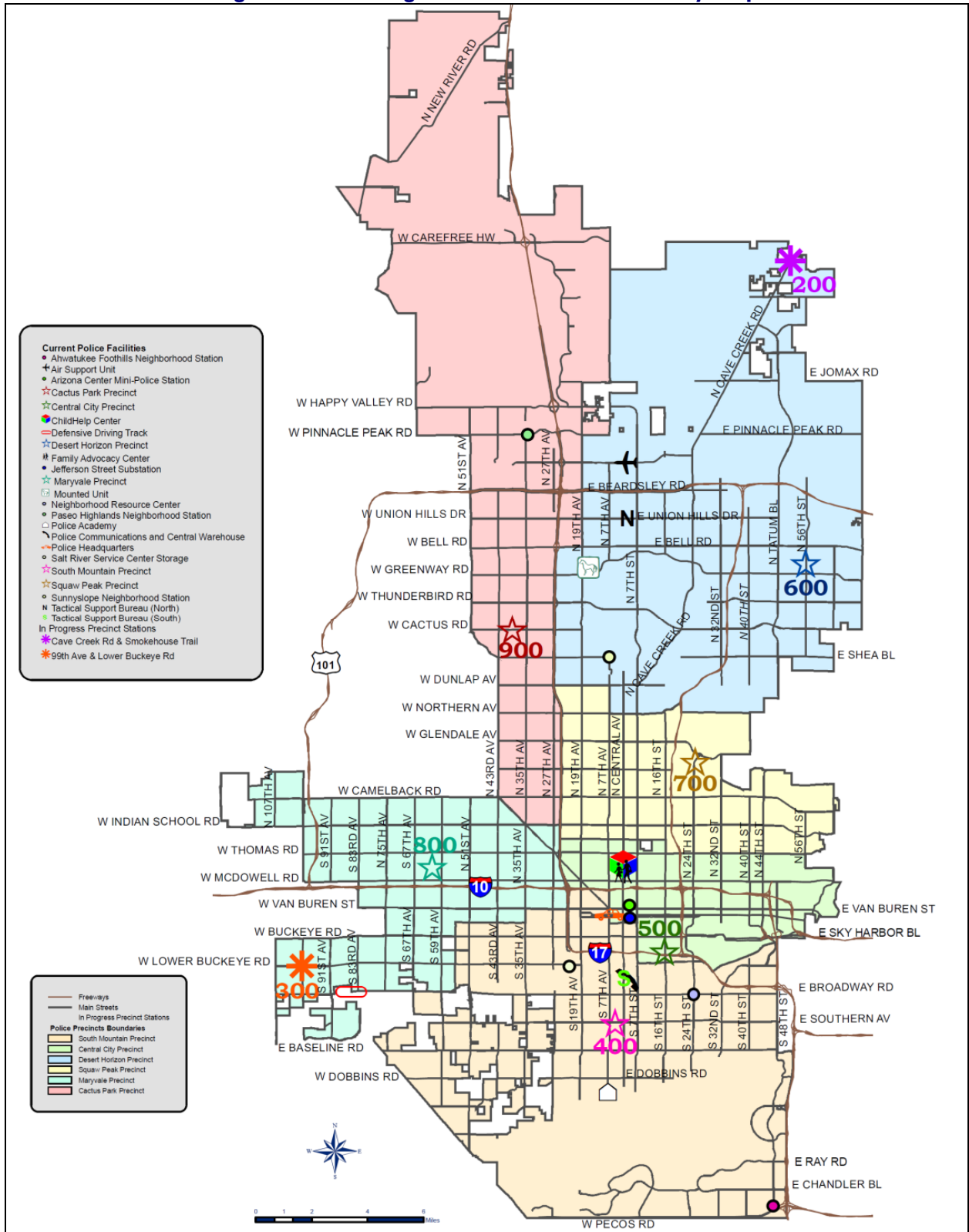
APPENDIX D: POLICE FACILITY INVENTORY

Table 79. Existing City-Wide Police Facility Inventory

Facility	Building (Sq. Ft.)	Land (Acres)
Cactus Park Precinct	13,434	4.00
Central City Precinct	11,007	5.00
Desert Horizon Precinct	11,007	5.00
Maryvale Precinct	11,077	5.00
South Mountain Precinct	11,077	5.80
Squaw Peak Precinct	10,986	4.00
Future Precinct #300 (99th Ave & Lower Buckeye Rd.)	NA	12.00
Future Precinct #200 (Cave Creek & Smokehouse Tr.)	NA	15.00
Total, Precinct Stations	68,588	55.80
Ahwatukee Foothills Neighborhood Station	7,474	Shared
Four Corners Neighborhood Station	4,950	Shared
Paseo Highlands Neighborhood Station	5,632	Shared
Sunnyslope (Under Construction)	NA	3.00
Total, Neighborhood Stations	18,056	3.00
North Command Station	10,128	6.00
Property Management/Communications	96,517	9.00
Police Crime Lab	104,000	2.00
Southern Command Station	25,000	5.00
Total, Command/Communications	235,645	22.00
Driving Track	1,400	24.40
Phoenix Police Regional Training Academy	45,480	54.00
Police Academy and Firing Range	69,380	NA
Total, Training Facilities	116,260	78.40
Air Patrol	Leased	Leased
Arizona Center Mini Station	Leased	Leased
Broadway Center	Leased	Leased
Drug Enforcement Bureau	Leased	Leased
Jefferson Substation	Leased	Leased
Mounted Unit	2,400	NA
Police Code Enforcement	Leased	Leased
Police Public Safety Building	155,880	NA
Salt River Service Center Storage	Leased	Leased
Special Vehicle and MDT Shop	Leased	Leased
Total, Other Facilities	158,280	0.00

Source: City of Phoenix Police Department, April 2, 2009.

Figure 13. Existing and Planned Police Facility Map



APPENDIX E: BOND-FUNDED POLICE FACILITIES

Table 80. Bond-Funded Police Facilities

Project	Bond Issue	Debt Funding
Police Facility Reno	1988 Police Protection Bonds	\$2,281,418
PPSB Remodel	1988 Police Protection Bonds	\$2,958,682
Squaw Peak Renovation	1988 Police Protection Bonds	\$221,460
Cactus Park Renovation	1988 Police Protection Bonds	\$241,749
CAD/MDT System	1988 Police Protection Bonds	\$9,214,056
PAL Projects % Arts	1988 Police Protection Bonds	\$125,800
2 New Precincts (Land Only)	1988 Police Protection Bonds	\$232,745
Police Helicopter and FLIR Project	2001 Police Protection	\$4,568,821
2 New Precincts (Land Only)	2001 Police Protection	\$1,000,640
Twin Engine Helicopter (Shared with Fire)	2001 Police Protection	\$4,792,058
Family Advocacy Center (Land Only)	2001 Police Protection	\$4,055,814
Range Design & Driving Track Improvement	2001 Police Protection	\$246,959
Mobile Activity Command Vehicle	2001 Police Protection	\$469,497
Headquarters Renovations	2001 Police Protection	\$5,688,551
Facilities Renovations	2001 Police Protection	\$649,568
Crime Lab	2001 Police Protection	\$43,862,589
Neighbrhd Police Stn.24th St/Broadway	2001 Police Protection	\$1,800,517
Paseo Highlands Neighborhood Police St	2001 Police Protection	\$1,069,885
Sunnyslope Neighbd Police Station	2001 Police Protection	\$1,387,014
Northwest/I-17 & Happy Valley Precinct	2001 Police Protection	\$1,707,684
Police South Mountain Precinct Add'n	2001 Police Protection	\$51,022
Police Uninterrupted Power Supply	2001 Police Protection	\$467,081
Police Power Distribution Unit	2001 Police Protection	\$3,130
Police Headquarter Basement Renovation	2001 Police Protection	\$75,194
Police Surveillance/Pace Imaging/COPLINK	2001 Police Protection Technology	\$2,044,213
Police CAD Upgrade/MDT Replacement	2001 Police Protection Technology	\$12,690,253
Crime Lab	2006 GO Police Protection	\$2,970,000
Police Family Advocacy Ctr- New Constr	2006 GO Police Protection	\$15,302,046
Police NW Precinct (Daisy Trail)-Land	2006 GO Police Protection	\$2,097
Northeast/Cave Crk Precinct & Smoke	2006 GO Police Protection	\$34,152
Northwest/I-17 & Happy Valley Precinct	2006 GO Police Protection	\$2,527,024
MDC Broadband	2006 GO Police Technology	\$103,671
Total Debt-Funded Facilities		\$122,845,390

Source: Police CIP projects that have utilized General Obligation Bond funding provided by City of Phoenix Budget and Research Department, March 14, 2009; debt funding based on life-to-date actual debt expenditure for each project.

APPENDIX F: LAND COSTS

This section addresses average land costs per acre to be used in the impact fee calculations for fire, police and library facilities. All three of these facility types typically require commercial tracts with good roadway access.

One approach to estimating current and future land costs is to look at recent historical purchases. Since 2003, the City has purchased seven sites for future facilities in the impact fee service areas. The recent City purchases are a mixture of small and large tracts, some with off-site improvements such as road access and utilities, and others with few or no off-site improvements. No clear pattern emerges as to average land costs by service area. As summarized in Table 81, these recent purchases average \$178,049 per acre.

Table 81. Recent City Land Purchases in the Growth Areas

Impact Fee Area	Year	Facility	Cost	Acres	Cost/Acre
Desert View/DV 5	2004	Police	\$890,682	15.00	\$59,379
North Gateway/DV 1-4	2009	Library, Other	\$1,436,850	18.00	\$79,825
North Gateway/DV 1-4	2009	Unknown	\$1,635,700	15.00	\$109,047
North Gateway/DV 1-4	2008	Fire	\$1,895,000	3.19	\$594,044
Estrella/Laveen	2003	Police	\$316,000	12.00	\$26,333
Estrella/Laveen	2009	Unknown	\$1,070,000	3.51	\$304,843
Ahwatukee	2009	Fire/Library/Preserve	\$18,000,000	247.00	\$72,874
Unweighted Average Cost per Acre					\$178,049

Source: City of Phoenix, 2009.

As part of this project, the City retained the Phoenix-based professional real estate appraisal firm Brekan-Nava Group to assist in determining appropriate average land costs for fire, police and library sites. The firm reviewed sales of comparable sites over the last few years; the comparables were relatively small, improved sites ready for vertical development. Recent downward trends in land prices were taken into consideration. Based on this review, Brekan-Nava Group determined average costs for the four service areas, which ranged from \$370,260 per acre in Estrella/Laveen to \$653,400 per acre in Desert View. These costs per acre are significantly higher than most of the City's recent purchases. This may be due to a couple of factors, including the fact that several of the City's purchases were of large tracts that will be used for multiple purposes, as well as the fact that several of these sites are relatively unimproved and will require significant expenditures on off-site improvements such as road and utility access.

For the purposes of this study, the average cost per acre of recent sites acquired by the City will be used. The Brekan-Nava analysis will be relied upon as a reasonable measure of the differences in relative land costs between the service areas. The overall average cost per acre of recent City land purchases in the service areas is adjusted by the relative Brekan-Nava land costs to estimate average land costs by service area for fire, police and library sites, as shown in Table 82.

Table 82. Fire, Police and Library Land Costs per Acre by Service Area

Impact Fee Area	Brekan-Nava Cost/Acre	Perent of Average	Avg. City Cost/Acre	Assumed Cost/ Ac.
Desert View/DV 5	\$653,400	133%	\$178,049	\$237,399
North Gateway/DV 1-4	\$435,600	89%	\$178,049	\$158,266
Estrella/Laveen	\$370,260	76%	\$178,049	\$134,526
Ahwatukee	\$500,940	102%	\$178,049	\$182,006
Average, All Service Areas	\$490,050			
Average, North Growth Area				\$197,833

Source: Brekan-Nava costs per acre from Brekan-Nava Group, *Land Cost Analysis for the Northern Development Impact Area* and *Land Cost Analysis for the Southern Development Impact Area*, February 1, 2009 (costs projected to December 2009); average City cost per acre from Table 81.

APPENDIX G: DRAINAGE PROJECT COSTS

Table 83. Drainage Project Cost Components

Facility	Cost
27th Ave Basin	\$3,798,777
43rd Ave/Baseline Basin	\$3,798,777
27th Ave Storm Drain (Southern to SR) & 23rd Ave Basin	\$7,597,555
27th Ave Storm Drain (Dobbins-Baseline) and Dobbins Basin	\$4,334,176
7th Ave Storm Drain (Baseline to South Mountain)	\$4,079,224
43rd Ave Storm Drain*	\$1,083,544
Subtotal, South Phoenix/Laveen Costs	\$24,692,053
51st Ave & Baseline Detention Basin	\$3,132,649
51st Ave & Dobbins Detention Basin	\$2,695,977
51st Ave & Elliot Detention Basin	\$2,942,791
51st Ave Storm Drain (Baseline to Elliot)	\$4,423,680
67th Ave Channel (Southern to South Mountain Ave)	\$5,126,153
44th Ave & Carver Detention Basin	\$6,834,870
Carver Hills Storm Drain	\$1,196,102
Dobbins Rd. Storm Drain (43rd to 51st)	\$1,480,889
43rd Ave & Dobbins Detention Basin	\$2,392,205
Reservation Channel (Dobbins to LACC)	\$2,126,404
Western Canal Channel	\$5,145,138
Subtotal, Laveen Project Costs	\$37,496,858

Source: City of Phoenix Street Transportation Department costs from *Infrastructure Financing Plan*, November 15, 2006; costs updated with ENR CCI January, 2009.