

DEVELOPMENT COSTS AND TRANSPORTATION INFRASTRUCTURE FUNDING STUDY

CITY OF FORT WORTH

PUBLIC DRAFT REPORT

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	I
LIST OF TABLES	VI
LIST OF FIGURES.....	VIII
EXECUTIVE SUMMARY	X
Purpose of Study	x
Findings and Conclusions	x
Transportation Funding Gap Analysis	x
Transportation Funding and Planning Toolkit	x
Development and Occupancy Cost Survey	xii
Economic Impact Analysis	xii
Recommendations	xv
1. INTRODUCTION	1
Background	1
Study Objectives and Approach	2
Organization of the Report	3
2. GENERAL FUND FORECAST	5
Revenue Assumptions	5
Property Tax	5
Sales Tax	9
Other Revenue Sources	9
Expenditure Assumptions	11
Forecast by Expenditure Type	11
Transportation Infrastructure Expenditures	13
Findings and Conclusions	15
3. DEBT SERVICE FUND FORECAST	18
Revenue Assumptions	18
Expenditure Assumptions	18
Debt Capacity	18
Conclusion	21
4. TRANSPORTATION INFRASTRUCTURE FUNDING GAP	23
Transportation Revenue	23
Debt Service	23
Gas Well Revenue	25
Development Impact Fees	29
Transportation Needs	30
Findings and Conclusions	33
Property Tax Survey	33
Funding Gap	33

5. TRANSPORTATION FUNDING & PLANNING TOOLKIT	35
Revenue Enhancements	35
Property Tax for Debt Funding	36
Other City Tax Rates	37
Other Citywide Revenue Sources	38
Transportation Impact Fees and Special Assessments	39
Planning Strategies	41
New Development Infrastructure Planning	41
Infrastructure Delivery	44
Conclusion	44
6. DEVELOPMENT COST SURVEY	45
Introduction	45
Development Cost Affects On Real Estate Investment	45
Approach and Methods	46
Development Prototypes	46
Cities Surveyed	47
Development Costs Included in Survey	49
Site Plan and Cost Analysis	49
Development Cost Comparisons	50
Findings and Conclusions	69
Development Fee and Infrastructure Cost Conclusions	69
Building and Site Construction Costs	69
7. OCCUPANCY COST SURVEY	71
Introduction	71
Approach and Methods	71
Ongoing Costs Included in Survey	71
Ongoing Cost Comparisons	72
Findings and Conclusions	86
8. ECONOMIC IMPACT ANALYSIS	87
Introduction to Economic Analysis	87
Approach and Methods	87
Study Area	87
NCTCOG Traffic Model	87
Period of Analysis	88
TREDIS	88
Improvement Projects	88
Economic Impact Analysis Results	89
Direct Travel Impacts	89
Benefit-Cost Comparison	91
Economic Impact Analysis	93
Findings and Conclusions	102
9. EVALUATION & RECOMMENDATIONS	104
Toolkit Evaluation	104
Increase Transportation Impact Fees	105
Cost Competitiveness	106

Increase Transportation Share of Debt Funding	120
Adopt Transportation User Fee	120
Summary of Revenue Generation Options	128
Conclusions	129

List of Tables

Table E.1: 10-Year Transportation Funding Gap Analysis (\$nominal)	xi
Table E.2: Transportation Funding Options	xi
Table E.3: Development Cost Survey Summary – Rank	xiii
Table E.4: Development Cost Survey Summary – Percent Median.....	xiii
Table E.5: Benefit-Cost Comparison (\$2008)	xiv
Table E.6: Economic Impacts 2009 - 2030 (\$2008)	xiv
Table E.7: Transportation Funding Options Evaluation.....	xvi
Table E.8: 10-Year TIP With Recommended Options.....	xvii
Table E.9: Development Cost Survey Summary - Rank With Recommended Options	xvii
Table 1.1: Fort Worth 10-Year Transportation Improvement Plan (TIP)	2
Table 2.1: New Development Forecast.....	7
Table 2.2: Assessed Value (AV) Forecast	8
Table 2.3: Property Tax Revenue Forecast	10
Table 2.4: General Fund Revenue Summary	12
Table 2.5: Expenditure Summary Growth Rate Assumptions	13
Table 2.6: Expenditure Summary.....	14
Table 2.7: General Fund Revenue and Expenditure Summary	16
Table 3.1: Property Tax Revenue Available For Unissued Debt.....	19
Table 3.2: Debt - Authorized, Unissued	19
Table 3.3: Bond Issue Calculator	20
Table 3.4: Debt Capacity For Transportation Infrastructure	22
Table 4.1: Transportation Infrastructure - Available Debt Capacity.....	24
Table 4.2: Survey of Texas Cities, FY2008 - Per Capita Data	26
Table 4.3: Transportation Funding From Debt	26
Table 4.4: Impact Fee Revenue Forecast (\$nominal)	31
Table 4.5: 10-Year Transportation Improvement Plan (TIP)	32
Table 4.6: 10-Year Transportation Funding Gap Analysis (\$nominal)	34
Table 5.1: Debt Capacity For Transportation Infrastructure (\$ nominal)	37
Table 5.2: Impact Fee Increase To 50% Maximum Justified Fee	40
Table 6.1: Development Prototypes.....	48
Table 6.2: Cities Surveyed By Development Type.....	47
Table 6.3: Summary of Single Family Infrastructure Costs and Development Fees	51
Table 6.4: Summary of Multi-Family Infrastructure Costs and Development Fees	54
Table 6.5: Summary of Retail Infrastructure Costs and Development Fees	57
Table 6.6: Summary of Central Business District Office Infrastructure Costs and Development Fees	60
Table 6.7: Summary of Outer Loop Office Infrastructure Costs and Development Fees	63
Table 6.8: Summary of Industrial Infrastructure Costs and Development Fees ..	66

Table 7.1: City Property Tax Rates	73
Table 7.2: Selected City-Imposed Occupancy Costs - Single Family	74
Table 7.3: Selected City-Imposed Occupancy Costs - Multi-Family.....	76
Table 7.4: Selected City-Imposed Occupancy Costs – Retail.....	78
Table 7.5: Selected City-Imposed Occupancy Costs - Central Business District Office	80
Table 7.6: Selected City-Imposed Occupancy Costs - Outer Loop Office.....	82
Table 7.7: Selected City-Imposed Occupancy Costs – Industrial	84
Table 8.1: Direct, Indirect, and Induced Economic Impacts	89
Table 8.2: Annual Travel Impacts of Fee-Funded Improvements (2030)	90
Table 8.3: Annual Direct Cost Impacts of Fee-Funded Improvements (2030)	91
Table 8.4: Benefits from Transportation Improvements (2009-2030).....	92
Table 8.5: Benefit-Cost Comparison (\$2008).....	93
Table 8.6: Economic Impacts of Transportation Improvements	95
Table 8.7: Economic Impacts of Road Construction Spending	96
Table 8.8: Economic Impacts of Transportation Impact Fees, Scenario 1	97
Table 8.9: Economic Impacts of Transportation Impact Fees, Scenario 2	98
Table 8.10: Economic Impacts of Transportation Impact Fees, Scenario 3	99
Table 8.11: Combined Economic Impacts, Scenario 1	100
Table 8.12: Combined Economic Impacts, Scenario 2	101
Table 8.13: Combined Economic Impacts, Scenario 3	102
Table 9.1: Transportation Funding Options Evaluation	105
Table 9.2: Fort Worth Transportation User Fee	119
Table 9.3: Summary of Revenue Recommendations.....	127
Table 9.4: 10-Year TIP With Recommended Options	127

List of Figures

Figure 2.1: Residential Building Permits	7
Figure 2.2: Growth In Assessed Value.....	8
Figure 2.3: Property Tax Revenue	10
Figure 2.4: General Fund Revenue Forecast.....	12
Figure 2.5: General Fund Expenditure Forecast.....	14
Figure 2.6: General Fund Revenue & Expenditure Forecast	16
Figure 2.7: General Fund Net Revenue Percent of Expenditures	17
Figure 3.1: Bond Issuance By Decade.....	21
Figure 4.1: Assessed Value per Capita.....	27
Figure 4.2: Property Tax per Capita.....	27
Figure 4.3: Debt Service Property Tax per Capita	28
Figure 4.4: General Fund Expenditures per Capita.....	28
Figure 6.1: Single Family Development Fees and Infrastructure Costs per Lot	52
Figure 6.2: Single Family Construction, Development Fees and Infrastructure Costs per Lot	53
Figure 6.3: Multi-Family Development Fees and Infrastructure Costs per Unit.....	55
Figure 6.4: Multi-Family Construction, Development Fees and Infrastructure Costs per Unit.....	56
Figure 6.5: Retail Development Fees and Infrastructure Costs per 1,000 Square Feet	58
Figure 6.6: Retail Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet	59
Figure 6.7: Central Business District Office Development Fees and Infrastructure Costs per 1,000 SF	61
Figure 6.8: Central Business District Office Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet.....	62
Figure 6.9: Outer Loop Office Development Fees and Infrastructure Costs per 1,000 SF.....	64
Figure 6.10: Outer Loop Office Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet	65
Figure 6.11: Industrial Development Fees and Infrastructure Costs per 1,000 SF.....	67
Figure 6.12: Industrial Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet	68
Figure 7.1: Single Family Selected City-Imposed Occupancy Costs per Unit.....	75
Figure 7.2: Multi-Family Selected City-Imposed Occupancy Costs per Unit.....	77
Figure 7.3: Retail Selected City-Imposed Occupancy Costs per 1,000 Square Feet	79

Figure 7.4: Central Business District Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet 81

Figure 7.5: Outer Loop Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet 83

Figure 7.6: Industrial Selected City-Imposed Occupancy Costs per 1,000 Square Fee 85

Figure 9.1: Single Family Development Fees and Infrastructure Costs per Lot 107

Figure 9.2: Single Family Building Costs, Development Fees and Infrastructure Costs per Lot 108

Figure 9.3: Multi-Family Development Fees and Infrastructure Costs per Unit..... 109

Figure 9.4: Multi-Family Building Costs, Development Fees and Infrastructure Costs per Lot 110

Figure 9.5: Retail Development Fees and Infrastructure Costs per 1,000 Square Feet 111

Figure 9.6: Retail Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet 112

Figure 9.7: Central Business District Office Development Fees and Infrastructure Costs per 1,000 SF 113

Figure 9.8: Central Business District Office Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet..... 114

Figure 9.9: Outer Loop Office Development Fees and Infrastructure Costs per 1,000 SF..... 115

Figure 9.10: Outer Loop Office Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet 116

Figure 9.11: Industrial Development Fees and Infrastructure Costs per 1,000 SF..... 117

Figure 9.12: Industrial Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet 118

Figure 9.13: Single Family Selected City-Imposed Occupancy Costs per Unit..... 121

Figure 9.14: Multi Family Selected City-Imposed Occupancy Costs per Unit..... 122

Figure 9.15: Retail Selected City-Imposed Occupancy Costs per 1,000 Square Feet 123

Figure 9.16: Central Business District Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet 124

Figure 9.17: Outer Loop Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet 125

Figure 9.18: Industrial Selected City-Imposed Occupancy Costs per 1,000 Square Feet 126

Executive Summary

Purpose of Study

Like many cities across the country, Fort Worth is facing significant challenges providing adequate infrastructure in the face of continued growth. Transportation facilities are particularly challenging because of unfinished street networks and deferred maintenance while additional facilities are needed to accommodate growth. The City's Transportation Improvement Plan (TIP) calls for over \$2 billion over the next 10 years in \$2008. Disregard the ongoing maintenance component of the TIP, adjust for inflation and the need is still \$1.8 billion in nominal dollars.

Recently the City took significant steps to identify funding for these transportation needs. The City Council approved major bond issues in 2004 and 2008 that dedicated \$292 million for transportation improvements. In May 2008 the Council adopted its first transportation impact fee on new development projected to generate \$161 million over 10 years. In spite of these efforts the City still lacks sufficient capital funding resources to fully meet these transportation infrastructure needs.

As a result of the policy debate surrounding adoption of the transportation impact fee, the Council and the Fort Worth Chamber of Commerce agreed to jointly sponsor a development cost and infrastructure funding study focused on the City's transportation needs. The study was designed to provide impartial policy analysis to assist local leaders in identifying funding alternatives. An advisory committee was appointed by the City Manager to provide input to the study. The results of that study are documented in this report.

Findings and Conclusions

Transportation Funding Gap Analysis

Table E.1 summarizes the results of the TIP funding gap analysis. Against total needs of \$1.8 billion we could identify under \$800 million in revenue leaving a deficit of \$1.0 billion. The new impact fee revenues provide a significant contribution. However, the City is still heavily dependent on the share of its total property tax allocated to the Debt Service Fund for infrastructure funding.

The data in this table focuses on one-time costs and revenues and excludes ongoing roadway and related maintenance costs. Including these costs would increase the 10-year deficit by \$250 million (\$250 million in General Fund revenues against \$500 million in costs).

Transportation Funding and Planning Toolkit

No one policy or program will be adequate to close the transportation funding gap in its entirety. Rather, a combination of approaches is needed to help the City achieve a more viable long-term strategy for funding transportation infrastructure. **Table E.2** lists the "toolkit" of options that was evaluated for this study. These options either increase available revenues or manage infrastructure planning so that needs are better aligned with available funding.

Table E.1: 10-Year Transportation Funding Gap Analysis (\$nominal)

	Amount	% Costs
Revenue		
Debt Funding	\$ 587,000,000	33%
Appropriation from Gas Well Revenues	15,000,000	1%
Transportation Impact Fees	<u>161,000,000</u>	<u>9%</u>
Total	\$ 763,000,000	43%
Costs		
Capacity-Related		
Existing Deficiencies	\$ 585,000,000	
Future Needs From New Development	434,000,000	
Other Needs	140,000,000	
Deferred Maintenance	<u>400,000,000</u>	
Subtotal	1,559,000,000	
Inflation Factor	<u>1.1464</u>	
Total	<u>1,787,000,000</u>	100%
Funding Gap	\$(1,024,000,000)	(57%)

Note: Excludes ongoing roadway maintenance and related costs. Including these costs would increase the 10-year deficit by \$250 million (\$250 million in General Fund revenues against \$500 million in costs).

Sources: Tables 4.1, 4.4 and 4.5; Willdan Financial Services.

Table E.2: Transportation Funding Options

Option	Description
Revenue Options	
1 Increase Total Property Tax Rate	Increase current rate of \$0.8550 / \$100 and allocate to debt funding.
2 Increase Share of Property Tax To Debt Service	Alter current split of \$0.711 / \$0.144 for General / Debt Service to allocate more to Debt Service.
3 Increase Share of Debt Funding To Transportation Projects	Increase historical average rate of 75% for transportation to 90%.
4 Increase Sale Tax	Increase local option sales tax with state authorization.
5 Increase Hotel Occupancy Tax	Increase hotel occupancy tax 1%.
6 Adopt Transportation User Fees	Adopt transportation user fee, similar to stormwater fee on all property owners at a rate of about \$4.75 per month per single family unit equivalent.
7 Increase Transportation Impact Fees	Increase transportation impact fee from current average rate of 33% to 50% of maximum.
8 Facilitate Formation of Public Improvement Districts	Facilitate use of special assessment financing for developers and developed property.
Planning Options	
9 Require Infrastructure Financing Plan For Growth Areas	Prepare comprehensive infrastructure financing plans for new growth areas.
10 Adopt Adequate Public Facilities Ordinance	Develop a mechanism to provide for adequate facilities prior to development.
11 Incentivize Development To Use Existing Infrastructure	Implement pricing signals such as through the impact fee program to encourage development to locale close to available road capacity.
12 Defer Transportation Improvements	Defer transportation improvements to beyond the 10-year planning horizon.

Source: Chapter 5; Willdan Financial Services.

Development and Occupancy Cost Survey

The development cost survey provided a snapshot of the permitting, processing, infrastructure, and mitigation costs for development in Fort Worth and selected cities. The occupancy cost survey provided a similar look at ongoing costs such as property taxes and property-related charges.

The purpose of these surveys was not to conduct a comprehensive comparison of all development costs. For example, land is one of the largest costs of development and was not included in the survey. Rather the purpose of these surveys was to determine, based on a reasonably robust analysis of cost factors and competing cities, whether Fort Worth is an outlier in terms of an excessively high cost structure. Being an outlier would suggest caution in use of some of the revenue enhancement options presented above in Table E.2. The results of the survey cannot definitively answer whether a new development fee or other revenue source should be imposed or an existing source should be increased or reduced.

The research into the economic effects of impact fees is still evolving. The traditional view of impact fees - that they function as a tax on new development and depress growth – is being challenged by more sophisticated research. The research indicates that development fees cause housing prices to increase but it is not clear to what extent price increases are caused by (1) supply-side impacts (developers charging for higher development costs) or (2) demand-side impacts (buyers increased willingness to pay for better infrastructure). Both probably have effects.

With regards to the effect of impact fees on the rate of development, results are ambiguous. It is not clear to what extent fees depress growth because of higher development costs, or facilitate growth by providing adequate infrastructure. The evidence to date suggests that fees used to provide infrastructure that otherwise would be funded by property taxes have at worst a negligible impact and may have positive impacts on growth rates.

Tables E.3 and E.4 provide a summary of the development and occupancy cost survey results. Key findings include:

- ◆ For the one-time costs imposed at time of development (infrastructure costs and development fees) Fort Worth is ranked near or below the median of cities surveyed except for the Outer Loop Office project.
- ◆ When adding in building construction costs (“vertical construction”), the City tends to move lower in the rankings because of its below average building costs.
- ◆ For ongoing costs associated with occupancy the primary component is property tax. Fort Worth tends to rank low or near the median for residential prototypes but above the median for nonresidential prototypes. The primary factor is the City’s relatively high property tax rate that is mitigated substantially for owner-occupied housing due to the City’s 20 percent homestead exemption.

Economic Impact Analysis

The economic impact analysis compared the cost of the fee program to the benefits of the infrastructure improvements to estimate the net benefits to the community of the current fee program. This study considered two measures of the economic impacts of the transportation impact fee program:

Table E.3: Development Cost Survey Summary - Rank

Project Prototypes	Total Cities In Survey	Rank From Lowest to Highest ¹		
		Infrastructure Costs & Development Fees	Infrastructure, Fees, & Construction Costs	Occupancy Costs
Single Family	4	3	3	1
Multi-Family	4	1	2	3
Retail	5	3	1	5
Office Central	12	3	3	10
Office Outer	12	9	4	10
Industrial	12	3	3	9

¹ A ranking of "1" is the lowest cost city in the survey. A ranking equal to the number of cities in the survey indicates the highest cost city.

Source: Figures 6.1 through 6.12 and Figures 7.1 through 7.6; Willdan Financial Services.

Table E.4: Development Cost Survey Summary - Percent Median

Project Prototypes	Total Cities In Survey	Fort Worth Percent of Median Value		
		Infrastructure Costs & Development Fees	Infrastructure, Fees, & Construction Costs	Occupancy Costs
Single Family	4	104%	101%	98%
Multi-Family	4	91%	100%	106%
Retail	5	100%	99%	120%
Office Central	12	85%	97%	181%
Office Outer	12	111%	98%	177%
Industrial	12	83%	97%	117%

Source: Figures 6.1 through 6.12 and Figures 7.1 through 7.6; Willdan Financial Services.

1. A *benefit-cost analysis* estimated the dollar value of the benefits generated by the transportation projects funded with the transportation impact fee. These benefits are primarily the result of increased capacity in the transportation system, leading to reduced congestion and increased travel. The benefits were compared with the cost of the improvements to determine whether implementing the improvements is an efficient use of resources.
2. The *economic impact analysis* estimated the impacts that the transportation impact fee program will have on economic activity in Fort Worth, measured by business output, employment, and personal income. These economic impacts are the result of

road construction spending and an improved transportation system. Net impacts include the negative effect of impact fee payments.

The results of these two analyses are summarized in **Table E.5** and **Table E.6**. The key finding from this analysis is that transportation investments of the type included in the TIP (arterials) provide significant net benefits to the local Fort Worth economy:

- ◆ For every \$1.00 invested in arterial improvements the local economy would receive \$1.47 in benefits associated with reduced congestion (Table E.5).
- ◆ Over the period through 2030 net benefits include 52 to 73 jobs and \$124 million to \$192 million in business output (Table E.6).
- ◆ If the entire burden of the fee program is absorbed by the development industry the economy will still generate significant net benefits (Scenario 2 in Table E.6).

In conclusion, the results of the development and occupancy cost surveys and economic impact analysis indicate that the TIP will provide net benefits regardless of the funding sources used to fund the Plan. Additional evaluation is needed to determine which combination of funding sources would be most effective in closing the TIP's funding gap.

Table E.5: Benefit-Cost Comparison (\$2008)

Present Value of Benefits (A)	\$ 206,100,000
Present Value of Project Costs (B)	140,000,000
Net Present Value	\$ 66,100,000
Benefit-Cost Ratio (= A / B)	1.47

Sources: Table 8.5; Willdan Financial Services.

Table E.6: Economic Impacts 2009 - 2030 (\$2008)

Scenario	Business Output	Average Jobs	Wage Income
1 Fee Burden 100% On Households	\$ 192,162,000	73	\$ 81,010,000
2 Fee Burden 100% On Developers	\$ 124,098,000	52	\$ 48,163,000
3 Fee Burden Split 50 / 50 By Households & Developers	\$ 158,129,000	62	\$ 64,586,000

Source: Tables 8.11, 8.12, and 8.13; Willdan Financial Services..

Recommendations

The funding and planning options described in Table E.2 do not lend themselves to a quantitative evaluation. However, the options may be evaluated qualitatively against a list of reasonable criteria. The four criteria selected for this evaluation include:

- ◆ **Revenue potential:** All else being equal, options generating the most revenue are preferable.
- ◆ **Fairness:** Options that assign cost burdens to users in proportion to infrastructure impacts are preferable.
- ◆ **Efficiency:** Options that encourage efficient use of infrastructure will reduce costs and therefore are preferable.
- ◆ **Political feasibility:** Revenue enhancement options are generally less desirable given the current economic climate, City efforts to minimize taxes and fees, and a policy orientation towards facilitating development. Political feasibility is often a measure of relative “undesirability”.

Table E.7 provides an evaluation matrix for the options considered for closing the TIP funding gap and identifies the recommended options. The recommended options are designed to work in combination to maximize their impact on funding the TIP:

1. Increase transportation impact fees from the current average collection rate equal to 33 percent of the maximum defensible amount to 50 percent net of anticipated discounts (**Option 7**). Structure the fee increases across service areas and modify fee discounts to provide pricing incentives to development to reduce demand for new facilities (**Option 11**). Consider the fee program as an implementation tool for an adequate public facilities ordinance (**Option 10**).
2. Dedicate 90 percent of bond proceeds over the 10-year period to the TIP (**Option 3**);
3. Adopt a transportation user fee to fund current annual roadway maintenance spending by the General Fund (\$25 million) (**Option 6**). Adjust the property tax allocation to shift an equivalent amount from the General Fund to the Debt Service Fund and use exclusively for the TIP (**Option 2**).
4. Facilitate use of public improvement districts for new and existing development (**Option 8**).
5. Even with these efforts the City will likely need to defer some transportation projects beyond the 10-year planning horizon (**Option 12**).

Table E.7: Transportation Funding Options Evaluation

	Revenue Potential	Fairness	Efficiency	Political Feasibility	Recommendation
<i>Revenue Options</i>					
1 Increase Total Property Tax Rate	+	+/- ¹	-	-	Not recommended
2 Increase Share of Property Tax To Debt Service	+	+/- ¹	-	+	Recommend
3 Increase Share of Debt Funding To Transportation Projects	+	+/- ¹	-	+	Recommend
4 Increase Sale Tax	+	+/- ¹	-	-	Not recommended
5 Increase Hotel Occupancy Tax	-	-	-	-	Not recommended
6 Adopt Transportation User Fees	+	+	-	-	Recommend
7 Increase Transportation Impact Fees	-	+	+	-	Recommend
8 Facilitate Formation of Public Improvement Districts	-	+	+	+	Recommend
<i>Planning Options</i>					
9 Require Infrastructure Financing Plan For Growth Areas	-	+	+	+	Consider
10 Adopt Adequate Public Facilities Ordinance	-	+	+	+	Consider
11 Incentivize Development To Use Existing Infrastructure	-	+	+	+	Recommend
12 Defer Transportation Improvements	+ ²	+/- ¹	-	+	Recommend

¹ Fairness depends on the projects funded (or deferred). These are broad-based revenue sources suggesting that funded projects should have citywide benefits. Thus, fairness would be "+" if funds were used for existing deficiencies and deferred maintenance projects. Fairness would be a "-" if funds were used for projects to accommodate new development.

² Revenue potential evaluated as a reduced cost, i.e. deferring improvements has the potential to reduce costs significantly.

Source: Table 9.1; Willdan Financial Services.

Table E.8 shows the degree to which current and proposed revenue will fully address the TIP funding gap. Overall the recommended options would increase funding by \$681 million from \$763 million to \$1.4 billion. This funding level would fund 81 percent of the TIP. A funding gap of \$343 million would remain. We recommend that this amount of projects be deferred beyond the 10-year horizon. We estimate that the Debt Service Fund would have the capacity to fund this amount within three years following the 10-year planning horizon, or by FY2021.

We re-evaluated the city rankings from the development and occupancy cost survey with the recommended options. We included the increased transportation impact fee in the development cost survey data and new transportation user fee in the occupancy cost data. The result is that Fort Worth does not change significantly in the rankings. **Table E.9** shows how Fort Worth’s ranking among the cities surveyed would change with adoption of the recommended options. The shaded cells indicate under which prototypes and cost assumptions the City’s ranking would change from the current rankings shown in Table E.3:

- ◆ With regards to development cost the City would remain competitive particularly when considering the more comprehensive cost measure that includes building costs (middle column of table). Even though development costs for the retail prototype would rank Fort Worth highest, costs would still only be 1.7 percent above the median value for the cities surveyed.
- ◆ With regards to occupancy costs the City’s current high property tax burden would be increased with the Transportation User Fee. However, this impact would be mitigated by the positive economic impact returns from the increased infrastructure investment indicated in Tables E.5 and E.6. In addition the City can continue to

make use of the various economic development incentives it has at its disposal to attract particularly desirable development projects.

Table E.8: 10-Year TIP With Recommended Options

		% Costs
<u>Revenue - Base Case</u>		
Debt Funding	\$ 587,000,000	33%
Appropriation from Gas Well Revenues	15,000,000	1%
Transportation Impact Fees	<u>161,000,000</u>	<u>9%</u>
Subtotal	\$ 763,000,000	43%
<u>Recommended Revenue Options</u>		
Increase Transportation Impact Fee	83,000,000	5%
Allocate Greater Share of Debt Funding To Transportation	104,000,000	6%
Adopt Transportation User Fee	<u>494,000,000</u>	<u>28%</u>
Subtotal	<u>681,000,000</u>	<u>38%</u>
Total Revenue	\$ 1,444,000,000	81%
<u>Costs</u>		
Total	<u>1,787,000,000</u>	100%
Funding Gap - Defer Transportation Improvements To FY2019-FY2021	\$ (343,000,000)	(19%)

Note: Excludes ongoing roadway maintenance and related costs. Including these costs would increase the 10-year deficit by \$250 million (\$250 million in General Fund revenues against \$500 million in costs).

Source: Table 9.4; Willdan Financial Services.

Table E.9: Development Cost Survey Summary - Rank With Recommended Options

Project Prototypes	Total Cities In Survey	Rank From Lowest to Highest ¹		
		Infrastructure Costs & Development Fees	Infrastructure, Fees, & Construction Costs	Occupancy Costs
Single Family	4	3	3	4
Multi-Family	4	4	3	3
Retail	5	5	5	5
Office Central	12	3	3	11
Office Outer	12	12	5	10
Industrial	12	3	3	9

Note: Shaded cells indicate change in rank compared to current.

¹ A ranking of "1" is the lowest cost city in the survey. A ranking equal to the number of cities in the survey indicates the highest cost city.

Source: Figures 9.1 through 9.18; Willdan Financial Services.

1. Introduction

The City of Fort Worth in north Texas is a municipality of approximately 720,000 residents. It is characterized by a dynamic and fast growing economy common to many Sun Belt cities in the southern United States. The City covers nearly 350 square miles in Tarrant and Denton counties and serves as the county seat for Tarrant County. Based on population, the City is the second largest after Dallas in the Metroplex, a major metropolitan region with 6.5 million residents. The City ranks fifth within Texas and 17th nationally by population.

The City's growth has been supported by expansion of an extensive public infrastructure network. Infrastructure extensions to new "greenfield" areas as well as infrastructure rehabilitation in developed areas have been critical to the City's economic vitality. Indeed, the City is characterized by growth both on the fringe and through intensification and infill of existing developed areas. The need for expanded transportation infrastructure is particularly significant because of the City's low density compared to other metropolitan regions.¹

Background

Like many cities across the country, Fort Worth is facing significant challenges providing adequate infrastructure in the face of continued growth. Population increased at a rate of over three percent annually since 2000, from 530,000 to nearly 702,000 in 2008. **Table 1.1** summarizes the City's 10-Year Transportation Improvements Plan (TIP). The City needs an estimated \$2.2 billion to replace and expand transportation infrastructure over the next 10 years. Over half of this amount (\$1.3 billion) is associated with capacity-expanding projects, either to correct deficiencies caused by prior growth or to accommodate new development over the 10-year period.

Recently the City took several significant steps to identify funding for these transportation needs. The City Council approved major bond issues in 2004 and 2008 that dedicated \$292 million for transportation improvements. In May 2008 the Council adopted its first transportation impact fee on new development projected to generate \$161 million over 10 years. In spite of these efforts the City still lacks sufficient capital funding resources to fully meet these transportation infrastructure needs.

¹ Among 83 metropolitan regions (Primary Metropolitan Statistical Areas or PMSAs), the Fort Worth – Arlington region was ranked 28th in terms of development density (low to high) and 10th overall based on a comprehensive measure of sprawl in a recent study (Ewing, R., R. Pendall, and D. Chen, *Measuring Sprawl and Its Impact*, Washington, D.C.; Smart Growth America/U.S. Environmental Protection Agency, 2002).

Table 1.1: Fort Worth 10-Year Transportation Improvement Plan (TIP)

<u>Capacity Related Improvements</u> ¹	
Existing Deficiencies ²	\$ 585,000,000
Future Needs For New Development	434,000,000
Other Needs ³	<u>140,000,000</u>
Subtotal - Capacity Related Needs	\$ 1,159,000,000
<u>Roadway Maintenance</u>	
Deferred Maintenance ⁴	400,000,000
Preventative Maintenance ⁵	<u>500,000,000</u>
Total 10-Year Transportation CIP	<u>\$ 2,059,000,000</u>

Note: Totals have been rounded.

¹ These costs were originally Identified in Transportation Improvement Plan prepared for the transportation impact fee study.

² Represents roads that currently are congested based on the City's adopted level of service policy.

³ Includes bridges, signals, street lighting, railroad crossings, and intersection improvements.

⁴ Represents replacement of existing neighborhood streets in poor condition.

⁵ Includes \$300 million for roadway maintenance (resurfacing, potholing, etc.), and \$200 million for other maintenance (bridges, signals, etc.)

Sources: Kimley-Horn and Associates; Willdan Financial Services. See Table 4.4 for additional detail.

The Council passed the transportation impact fee last year over the strenuous objections of the development industry and some members of the business community. They expressed concern with the City's ability to continue to attract private investment if new development shouldered an unreasonable infrastructure funding burden. They suggested alternative policies such as shifting more of the existing property tax rate from operations to capital spending and reducing infrastructure costs. Regardless of one's opinion, everyone agreed that that the City needed to maintain its growth-oriented development policies for a strong local economy.

As a result of the policy debate surrounding adoption of the transportation impact fee, the Council and the Fort Worth Chamber of Commerce agreed to jointly sponsor a development cost and infrastructure funding study focused on the City's transportation needs. The study was designed to provide impartial policy analysis to assist local leaders in identifying funding alternatives. An advisory committee was appointed by the City Manager to provide input to the study. The results of that study are documented in this report.

Study Objectives and Approach

To address the challenges outlined above the objectives of this study are to:

- ◆ **Define the problem:** Estimate the gap in funding for transportation infrastructure for a 10-year planning horizon based on a forecast of funding resources holding current policies constant;
- ◆ **Identify funding alternatives:** Develop a “toolkit” of alternatives for closing the funding gap;
- ◆ **Analyze development costs and benefits:** To assist in evaluating funding alternatives, analyze the impacts of transportation funding and infrastructure on new development based on:
 - A survey of development costs among comparable cities, and
 - An estimate of the economic impacts of transportation infrastructure investments funded by impact fees; and
- ◆ **Evaluate and recommend:** Evaluate alternatives based on the results of the development cost research and the experience of other cities, and recommend a preferred approach.

Organization of the Report

This report is organized as follows:

- ◆ **Define the problem:**
 - Chapter 2, *General Fund Forecast*: Describes methodology and assumptions used to forecast General Fund revenues and expenditures through 2018;
 - Chapter 3, *Debt Service Fund Forecast*: Describes methodology and assumptions used to forecast the Debt Service Fund revenues and expenditures through 2018;
 - Chapter 4, *Transportation Capacity Funding Gap*: Estimate the 10-year gap between existing revenues and costs for transportation infrastructure.
- ◆ **Identify funding alternatives:**
 - Chapter 5, *Transportation Funding and Planning Toolkit*: Explores options for closing the transportation capacity funding gap, including alternative revenue sources and development planning techniques.
- ◆ **Analyze development costs and infrastructure benefits:**
 - Chapter 6, *Development Cost Survey*: Describes the methodology and results of a comparative survey of development costs across several American cities.
 - Chapter 7, *Occupancy Cost Survey*: Describes the methodology and results of a comparative survey of ongoing costs across the same cities surveyed in Chapter 6.

- Chapter 8, *Economic Impact Analysis*: Estimates the economic impact of increased impact fees on new development using Transportation and Economic Development Impact System (TREDIS) software modeling.
- ♦ **Evaluate and recommend:**
 - Chapter 9, *Evaluation & Recommendations*: Evaluates the alternatives in the toolkit based on the economic analysis in preceding chapters and experience with other cities, and recommends a preferred approach to closing the transportation funding gap.

2. General Fund Forecast

With over \$500 million in revenues and expenditures the General Fund is the largest component of the City of Fort Worth's budget. This chapter provides an assessment of the adequacy of funding for city services supported by the General Fund assuming no change in revenue or service level policies. The purpose of this analysis is to determine the availability of General Fund resources to meet the City's \$2.2 billion 10-year transportation infrastructure needs discussed in Chapter 1.

The forecast of General Fund costs and revenues was based the City's recently developed five-year financial model. We extended the forecast period an additional five years, for a 10-year General Fund forecast (FY2009 to FY2018). In addition to extending the forecast, we reviewed and, when needed, updated the assumptions driving the forecast. A description of key assumptions and methods are presented below. All values in this analysis are shown in nominal dollars unless otherwise noted.

Revenue Assumptions

The main revenue sources that contribute to the General Fund are property and sales tax, which have historically comprised over 70 percent of the annual revenue. Consequently these two sources were analyzed in more detail and separate forecasts developed for each.

Historical data from FY2004 to FY2008 were analyzed and used as the basis for the forecast. All revenue line items, with the exception of property tax, sales tax, and other items (noted in **Appendix Table A.1.1**) were forecast to increase at 2.0 percent annually. Trends from the historical data informed the analysis. The following section details the assumptions used in creating the 10-year General Fund revenue forecast.

Property Tax

Property tax revenue is the largest General Fund revenue line item, estimated at approximately \$325 million in FY2008. To project property tax revenue, several assumptions were made. The two drivers of property tax revenue are (1) property tax rate, and (2) assessed valuation.

Property Tax Rate

The property tax rate is divided into two categories: maintenance and operations (M&O), and interest and sinking (I&S). The allocation of property tax revenue between these two categories was held consistent with the FY2008 rate. The total current tax rate is 0.8550 percent, of which 0.7109 percent is allocated to M&O and 0.1441 percent is allocated to I&S. The M&O portion is allocated to the City's General Fund, and the I&S portion is allocated to the City's Debt Service Fund (see *Chapter 3*).

Assessed Valuation

Assessed valuation (AV) is modeled annually, and driven by several assumptions: prior year AV, inflation, and new development. We updated the development forecast included in the City's financial model based on a more current assessment of market trends. For residential development, the projection of building permits was completed using the following steps:

1. Market trends were evaluated based on building permit history and review of forecasts by local real estate market professionals.
2. Total Fort Worth dwelling unit production was assumed to continue to decline through FY2010. From FY2011 through FY2018 recovery from the current recession was assumed to slowly increase production to a level equal to approximately 80 percent of the maximum annual rate of permits achieved in FY2006.
3. Total residential units were allocated to single family and multifamily based on historical trends. The average of 24 percent multi-family from FY2002 through FY2008 was increased to 30 percent to reflect demographic trends towards smaller household sizes and greater demand for multi-family units.

Nonresidential new development was forecasted in the following steps:

1. A market analysis similar to residential development was applied to nonresidential development.
2. The recovery of commercial development from the current recession was assumed to lag the recovery of residential development reflecting cyclical differences in timing between these two market segments.
3. By FY2018 commercial development was assumed to reach a level equal to about 90 percent of the recent five-year average of 187 units.

Forecasts of development activity are challenging in the current economic environment and there exist a range of reasonable approaches. The forecast of total property tax is not that sensitive to the new development component because of the large share of total assessed value associated with the existing property tax base. **Table 2.1** displays the historical and forecast development activity used in this analysis. **Figure 2.1** illustrates the residential forecast data from Table 2.1.

To determine the increase in assessed valuation from new development the annual growth in units was multiplied by the average unit cost by type (single family, multi-family, commercial). FY2009 unit costs represent current average values. Values were increased annually for inflation at 3.0 percent annually for single family development and at the same rate as the base AV for multi-family and commercial development in that fiscal year (3.0 percent to 4.5 percent).

Increased AV from new development also included a separate forecast prepared by the City of planned commercial and industrial projects associated with economic development initiatives. Total AV from new development was added to the base AV from the prior year after increasing the prior year base for inflation. The base AV was increased at between 3.0 percent and 4.5 percent annually compared to the recent four-year average of 6.7 percent.

Table 2.2 shows the projection of assessed valuation, based on the building permit forecast from Table 2.1. **Figure 2.2** illustrates the cumulative effects of new development on assessed value.

Table 2.1: New Development Forecast

Fiscal Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	< Actual							Forecast >									
<i>New Residential</i>																	
Single Family Units	6,174	6,995	7,583	8,379	10,409	5,958	4,179	4,119	4,463	4,597	5,148	5,354	5,461	5,789	5,865	6,083	6,509
Multi-Family Units	<u>1,367</u>	<u>2,918</u>	<u>1,094</u>	<u>2,279</u>	<u>2,460</u>	<u>2,278</u>	<u>2,899</u>	<u>2,746</u>	<u>2,403</u>	<u>2,475</u>	<u>2,206</u>	<u>2,295</u>	<u>2,570</u>	<u>2,724</u>	<u>3,158</u>	<u>3,573</u>	<u>3,823</u>
Total	7,541	9,913	8,677	10,658	12,869	8,236	7,078	6,866	6,866	7,072	7,354	7,649	8,031	8,513	9,024	9,655	10,331
Change vs. Prior Yr.	NA	31.5%	(12.5%)	22.8%	20.7%	(36.0%)	(14.1%)	(3.0%)	0.0%	3.0%	4.0%	4.0%	5.0%	6.0%	6.0%	7.0%	7.0%
<i>New Commercial</i>																	
Commercial Units ¹	NA	9,866	9,921	10,216	10,564	10,704	10,704	10,704	10,704	10,704	10,811	10,973	11,138	11,361	11,645	11,936	12,294
Change vs. Prior Yr.	NA	NA	0.6%	3.0%	3.4%	1.3%	0.0%	0.0%	0.0%	0.0%	1.0%	1.5%	1.5%	2.0%	2.5%	2.5%	3.0%

Note: Commercial forecast does not include industrial development and development associated with economic development incentives. Forecasts for these land uses are included in the assessed value and property tax forecasts shown in Table 2.2 and 2.3.

¹ "Commercial Units" is a measure of development based on assessor data and does not represent parcels or building square feet.

Sources: City of Fort Worth; Willdan Financial Services.

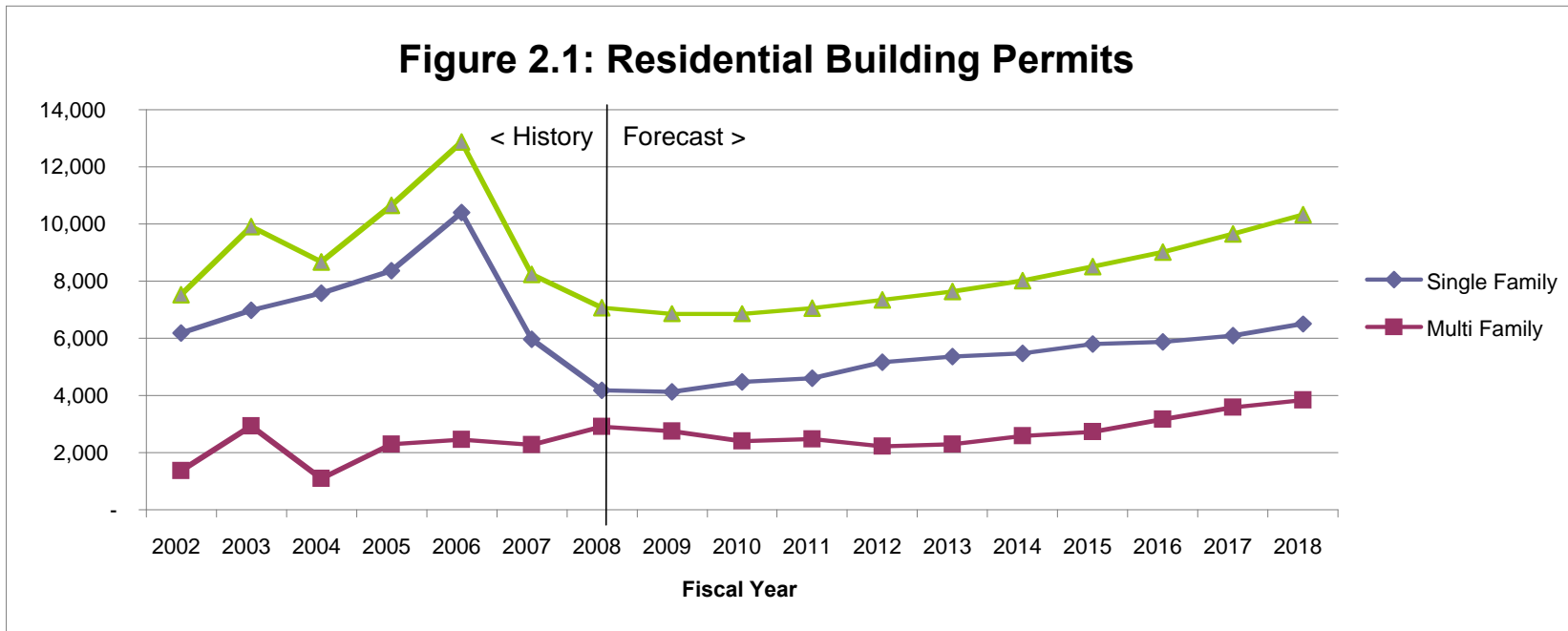


Table 2.2: Assessed Value (AV) Forecast

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Base A.V.	\$ 46,307,618,405	\$ 48,694,415,549	\$ 51,326,463,587	\$ 54,595,007,857	\$ 58,687,053,640	\$ 62,716,182,090	\$ 66,982,222,322	\$ 71,635,972,583	\$ 76,694,357,155	\$ 82,125,018,796
Change vs. Prior Yr. ¹	NA	3.1%	3.6%	4.1%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
New Development A.V.	968,513,196	896,370,526	1,168,736,276	1,564,852,086	1,328,431,613	1,381,638,314	1,568,947,613	1,755,756,752	1,894,177,578	2,144,136,788
Change vs. Prior Yr. ²	NA	(7.4%)	30.4%	33.9%	(15.1%)	4.0%	13.6%	11.9%	7.9%	13.2%
Total A.V.	\$ 47,276,131,601	\$ 49,590,786,074	\$ 52,495,199,863	\$ 56,159,859,943	\$ 60,015,485,254	\$ 64,097,820,404	\$ 68,551,169,936	\$ 73,391,729,335	\$ 78,588,534,733	\$ 84,269,155,584
Change vs. Prior Yr. ³	NA	4.9%	5.9%	7.0%	6.9%	6.8%	6.9%	7.1%	7.1%	7.2%

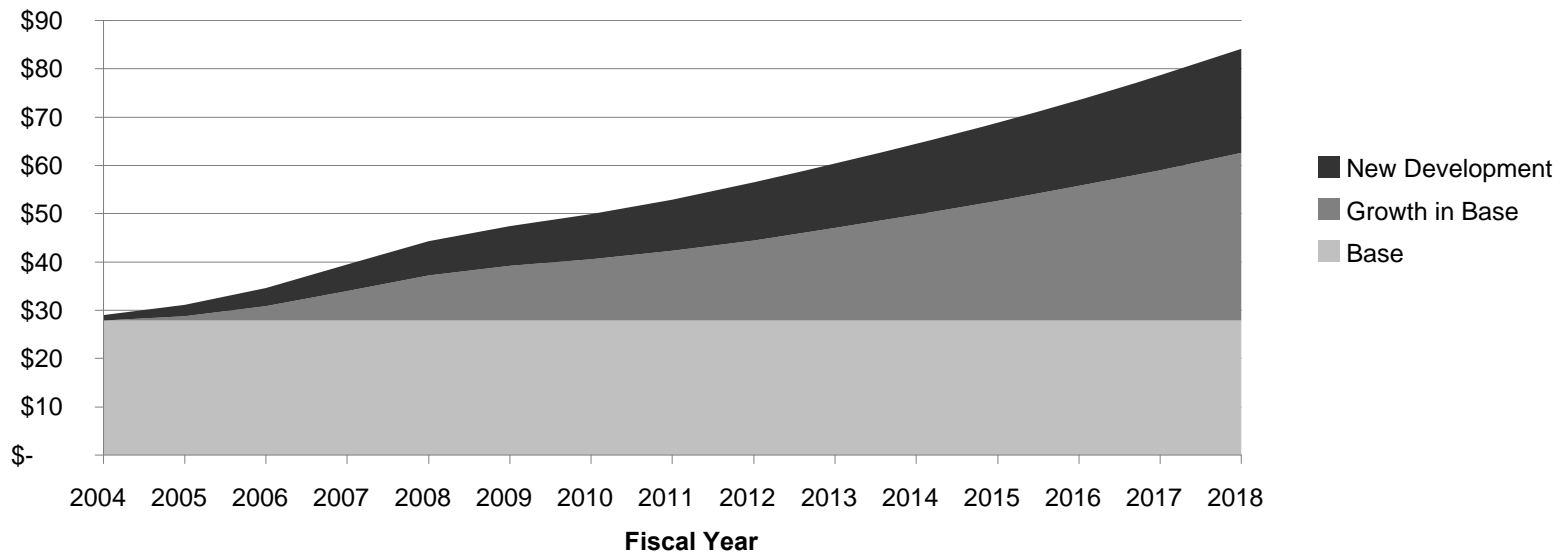
¹ Change calculated after deducting prior year new development to show increase in base assessed value only.

² Includes planned projects receiving property tax abatement incentives. Variability in AV in early years (through FY2013) associated with impact of these types of projects.

³ Percentage change in total A.V. does not always correlate with the change in base and new development AV because prior year new development is not included in the base A.V. percentage change (see footnote 1).

Source: Willdan Financial Services

Figure 2.2: Assessed Value



Before calculating property tax revenue, total AV was decreased 17 percent to reflect exemptions, collection rates, and other factors that result in net taxable AV. Property tax revenue estimates were determined by multiplying adjusted AV for a given year by the M&O property tax rate (0.7109 percent) and the I&S property tax rate (0.1441 percent). Projected property tax revenue is displayed in **Table 2.3**. **Figure 2.3** shows the property tax revenue projection, by component. The I&S rates generates revenue for the Debt Service Fund analyzed in Chapter 3.

Sales Tax

Sales tax revenue is the second largest General Fund revenue line item, estimated at approximately \$101 million in FY2008. The current sales tax rate in Fort Worth is 8.25 percent. By State statute the City can collect up to two percent for local purposes with the remaining 6.25 percent allocated to the State. In Fort Worth one percent of this rate is allocated to the City's General Fund. Revenues from the remaining one percent are split evenly between the Fort Worth Transportation Authority Fund and the Crime Prevention District Fund.

Sales tax revenue for a given year is estimated using the following process:

1. Sales tax revenue from the prior year was divided by the City's population to determine sales tax revenue per capita.
2. Sales tax per capita was increased by two percent annually to estimate nominal sales tax per capita, lagging behind the assumed inflation rate of three percent.
3. Nominal sales tax per capita was multiplied by estimated population to determine total sales tax revenue.

The assumption that sales tax will increase at a lower rate than inflation (2 percent versus 3 percent) is based on a review of recent historical trends in Fort Worth. Consequently, this revenue source is forecast to decline in value relative to inflation on a per capita basis.

Other Revenue Sources

The other revenue sources that were modeled in the forecast include:

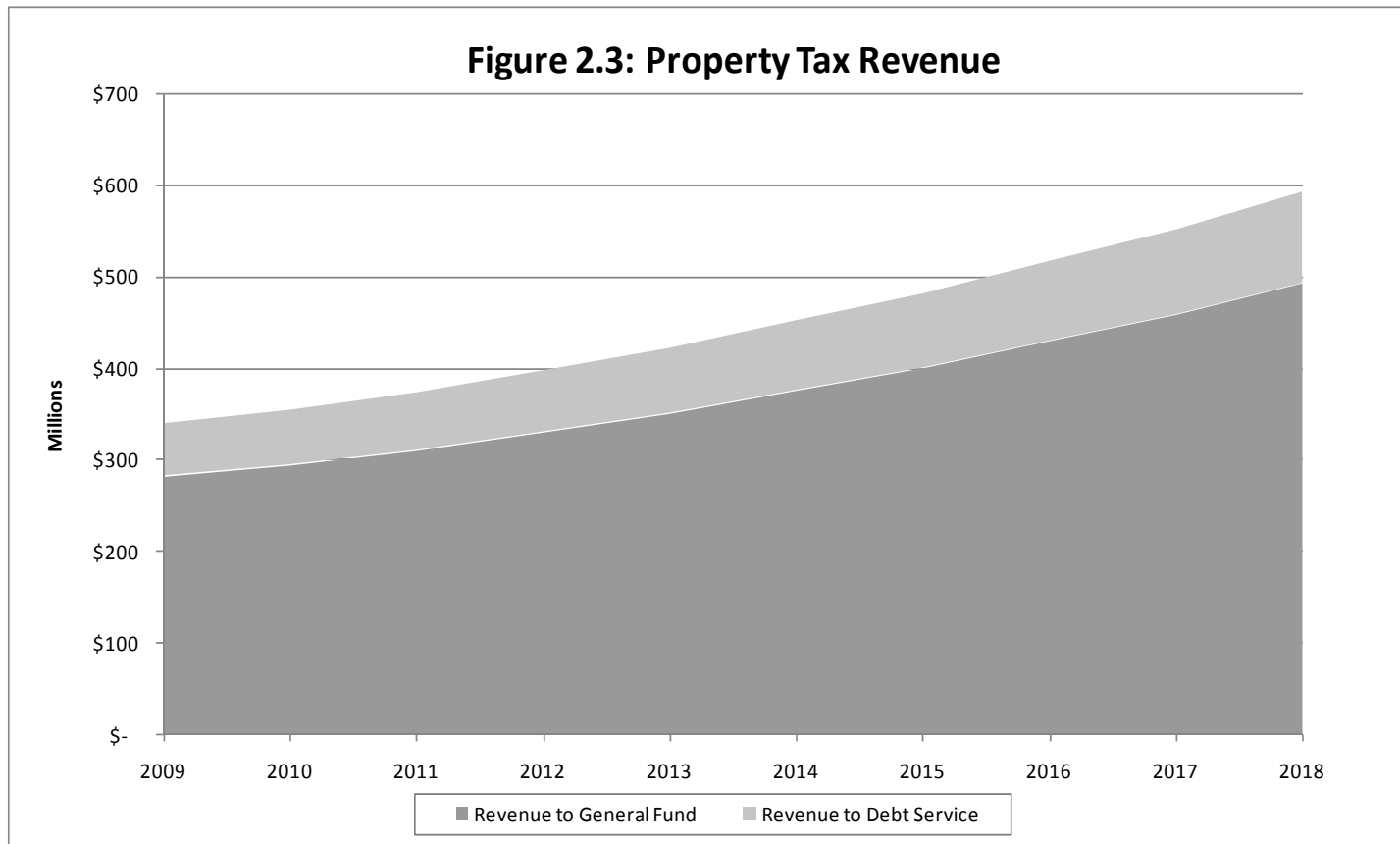
- ◆ Other local taxes
- ◆ Licenses and permits
- ◆ Fines and forfeitures
- ◆ Use of money and property
- ◆ From other agencies
- ◆ Service charges
- ◆ Other Revenue
- ◆ Transfers²

² Transfers are from special funds such as utility and public safety funds and offset related expenditures by the General Fund.

Table 2.3: Property Tax Revenue Forecast

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
General Fund (M&O)	\$ 282,076,058	\$ 294,331,443	\$ 310,177,439	\$ 330,296,116	\$ 350,752,177	\$ 375,943,894	\$ 400,320,792	\$ 429,972,129	\$ 458,657,584	\$ 493,178,947
Debt Service (I&S)	<u>57,177,043</u>	<u>59,661,219</u>	<u>62,873,215</u>	<u>66,951,287</u>	<u>71,097,748</u>	<u>76,204,129</u>	<u>81,145,345</u>	<u>87,155,695</u>	<u>92,970,260</u>	<u>99,967,768</u>
Total	\$ 339,253,101	\$ 353,992,662	\$ 373,050,654	\$ 397,247,403	\$ 421,849,924	\$ 452,148,023	\$ 481,466,137	\$ 517,127,824	\$ 551,627,844	\$ 593,146,715
Change vs. Prior Yr. ²	NA	4.3%	5.4%	6.5%	6.2%	7.2%	6.5%	7.4%	6.7%	7.5%

Source: Willdan Financial Services.



Forecasting these revenues was done in several steps:

1. For each General Fund revenue line item historical revenue was compiled.
2. Each line item was then annually adjusted by an assumed growth factor.
 - a. In general, revenue from these sources was estimated for a given year by multiplying the prior year's revenue by a growth assumption. A base growth rate of 2.0 percent was applied to all line items unless that particular line was deemed a special case.
 - b. Special case growth rates were applied to particular line items that were expected to change at different rates than the base rate of two percent, or not change at all. A summary of the growth assumptions for line items not using the two percent rate is shown in Appendix **Table A.1.1**. The assumptions were developed by the City, and reviewed by us.
3. Line items in each respective category were summed to determine the annual revenue forecast.

Table 2.4 displays the 10-year General Fund revenue forecast based on the methodology described above. **Figure 2.4** illustrates the same data as a graph.

Expenditure Assumptions

General Fund expenditures were modeled much like the revenue forecast based on historical trends from FY2003 to FY 2008. For certain expenditures, we forecast a deviation from the historical trend, and those expenditure forecasts were adjusted accordingly.

Forecast by Expenditure Type

For every City department General Fund expenditures are organized into four characters or types. Character 1 contains employee salaries, benefits and related costs. Character 2 contains supplies. Character 3 contains any contractual expense. Character 4 contains capital outlays. A fifth type of expenditure, Character 5, is listed as debt service, but these costs are funded by the Debt Service Fund analyzed in Chapter 3.

Forecasting expenditures was done in several steps:

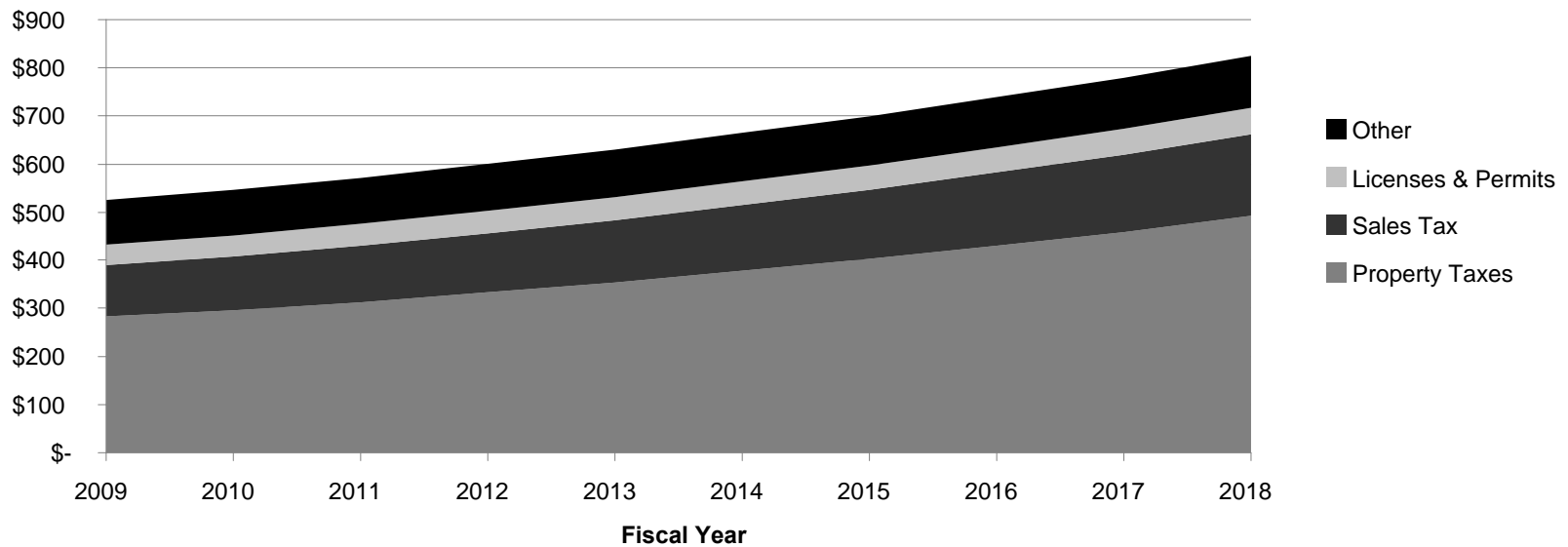
1. For each City department historical expenditures by line item were compiled.
2. Each line item was then annually adjusted by an assumed growth factor.
 - a. A base growth rate of 3.0 percent was applied to all line items except in specific instances where an alternative rate was more appropriate.
 - b. A growth rate of 4.7 percent was applied to salary (general and civil service) line items, to reflect contractual agreements with the employees unions.

Table 2.4: General Fund Revenue Summary

Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Revenue</i>										
Property Taxes	\$ 282,076,058	\$ 294,331,443	\$ 310,177,439	\$ 330,296,116	\$ 350,752,177	\$ 375,943,894	\$ 400,320,792	\$ 429,972,129	\$ 458,657,584	\$ 493,178,947
Sales Tax	106,250,281	111,843,284	117,730,817	123,928,188	130,451,695	137,318,672	144,547,127	152,156,088	160,165,584	168,596,700
Other Local Taxes	9,660,409	9,810,135	9,962,951	10,118,937	10,220,127	10,322,328	10,425,551	10,529,807	10,635,105	10,741,456
Licenses & Permits	43,332,022	44,498,427	45,698,419	46,932,979	48,203,115	49,512,008	50,858,628	52,244,079	53,669,495	55,136,043
Fines & Forfeitures	10,592,188	10,592,188	10,804,032	11,020,113	11,240,515	11,465,325	11,694,632	11,928,524	12,167,095	12,410,437
Use of Money and Property From Other Agencies	17,262,672	17,407,907	17,556,046	17,707,148	17,861,273	18,187,086	18,519,416	18,858,392	19,204,148	19,556,818
Service Charges	1,147,998	1,159,802	1,172,161	1,185,101	1,198,649	1,212,833	1,227,685	1,243,234	1,259,514	1,276,560
Other Revenue	24,909,894	25,435,510	25,973,481	26,524,114	27,087,723	27,664,630	28,255,166	28,859,671	29,478,494	30,111,991
Transfers	543,442	543,442	543,442	543,442	543,442	543,442	543,442	543,442	543,442	543,442
Total	<u>\$ 524,944,996</u>	<u>\$ 545,202,641</u>	<u>\$ 569,617,974</u>	<u>\$ 598,682,378</u>	<u>\$ 628,420,552</u>	<u>\$ 663,476,364</u>	<u>\$ 698,151,778</u>	<u>\$ 738,556,964</u>	<u>\$ 778,473,561</u>	<u>\$ 824,726,429</u>

Source: Willdan Financial Services.

Figure 2.4: General Fund Revenue Forecast



- c. Special case growth rates were applied to particular line items that are expected to increase at a different rate than the base rate of three percent. A list of these expenditure line items and their respective assumed growth rates is shown in **Table 2.5**.
3. Each line item, across departments was summed by year to forecast General Fund expenditures, by character.

Table 2.5: Expenditure Growth Rate Assumptions

Line Item	Growth Rate
Unemployment Compensation	2.0%
Worker's Compensation	11.4%
Group Health Insurance	17.0%
CS Retire Salary Continuation	0.0%
Retiree Insurance Contribution	17.0%
Employees Paid With Bond Funds	0.0%
Motor Vehicle Fuel	8.21% to 14.5%
Diesel Fuel	8.63% to 11.65%
Gas Utility	5.0%
Electric Utility	10.0%
Transfers Out	0.0%

Sources: City of Fort Worth; Willdan Financial Services.

Table 2.6 shows the General Fund expenditure forecast. In addition to expenses under the five characters discussed above, an expense called ‘General Fund Reserve’ is also included. The City intends to maintain an operating reserve fund balance of at least 10 percent of General Fund expenditures. Additions to the reserve to maintain the balance at 10 percent are shown as an annual expense.

Figure 2.5 shows the forecast of General Fund expenditures, by component. The greatest expenditure is for salaries and related personnel expenses, followed by contractual obligations.

Transportation Infrastructure Expenditures

The City currently spends about \$25 million annually on road maintenance from the General Fund (\$15 million for potholing and \$10 million for slurry sealing). Expenditures are for salaries, supplies, and contract services. These expenses are forecast to increase at the same rate as their respective expenditure categories. The General Fund does not provide any funding for road expansions; these expenditures are funded with debt (see Chapter 3).

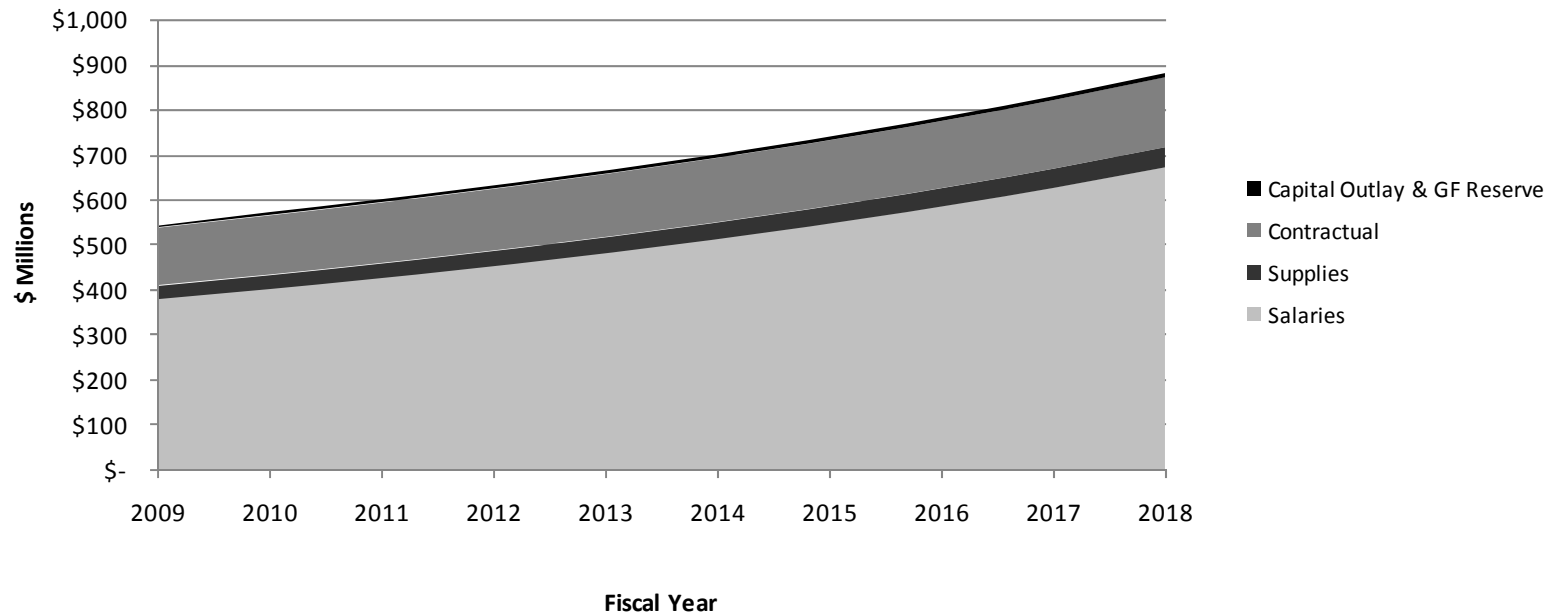
Table 2.6: General Fund Expenditure Summary

Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Salaries	\$ 379,960,263	\$ 402,080,913	\$ 426,350,141	\$ 452,690,766	\$ 481,355,842	\$ 512,636,372	\$ 546,867,469	\$ 584,435,548	\$ 625,786,719	\$ 671,436,577
Supplies	28,895,110	30,521,801	32,034,284	33,493,933	34,974,862	36,763,279	38,594,703	40,522,177	42,569,544	44,767,510
Contractual	127,669,789	131,470,901	134,466,771	137,553,480	139,866,522	143,117,296	146,301,546	149,582,494	152,963,098	156,446,411
Capital Outlay	3,151,777	3,246,330	3,343,720	3,444,032	3,547,353	3,653,773	3,763,387	3,876,288	3,992,577	4,112,354
General Fund Reserve ¹	-	2,764,301	2,887,497	3,098,730	3,256,237	3,642,614	3,935,638	4,288,940	4,689,543	5,145,091
Total	\$ 539,676,939	\$ 570,084,245	\$ 599,082,413	\$ 630,280,941	\$ 663,000,817	\$ 699,813,335	\$ 739,462,742	\$ 782,705,447	\$ 830,001,481	\$ 881,907,943

¹ General Fund reserve assumed to start at 10 percent of total expenditures in FY2009. Additions to the reserve are calculated based on 10 percent of the increase in expenditures from year to year

Sources: City of Fort Worth; Willdan Financial Services.

Figure 2.5: General Fund Expenditure Forecast



Findings and Conclusions

Table 2.7 shows the revenue summary from Table 2.4, and the expenditure summary from Table 2.6. The “Net Revenue” line in the table indicates whether the General Fund is forecast to generate a surplus or deficit in the given year. The “Surplus (Deficit) Percent” provides a measure of the magnitude of the surplus or deficit as a percent of total expenditures.

The City recently updated the model upon which this analysis was built to reflect the further deterioration of the local economy. The results of that updated City forecast are presented in the table in terms of the surplus or deficit percentage. As show in the table the City currently forecasts a larger deficit than our forecast in the first years of the period. The City forecast deficit then declines resulting in a deficit similar to ours in FY2014, the last year of the current City forecast.

Figure 2.6 charts the same data for total revenues and total expenditures. **Figure 2.7** charts net revenue (revenue minus expenditures) as a percentage of total expenditures, including the City’s current projection.

As these tables and charts indicate, General Fund expenditures are forecast to outpace revenues in each year of the 10-year timeframe of this study. By the end of the planning horizon in FY2018 expenditures are forecast to exceed revenues by 6.5 percent.

This analysis explicitly includes property tax generation from new development and implicitly includes all the fiscal impacts of growth. Thus, even if new development generates a fiscal surplus when examined in isolation, that surplus is insufficient to offset the underlying trends in the City’s revenue and cost structure.

The results of this analysis indicate that maintaining current revenue policies and services levels will cause expenditures to exceed revenues. The General Fund is under revenue constraints cause by slowing property tax revenue in the current recession, and sales tax revenue that is not keeping pace with inflation on a capita basis. At the same time expenditures are not as affected by the economic downturn and continue to rise primarily due to contractual increases for salaries and benefits. The City’s current forecast, though not extended to FY2018, suggests similar challenges.

In conclusion, these findings indicate that the General Fund does not have the capacity to fund transportation infrastructure at levels above the current road maintenance program of approximately \$25 million annually. Indeed, the City will be challenged to maintain current levels of service for public safety, parks, recreation, libraries and other General Fund services given the fiscal constraints described above.

Table 2.7: General Fund Revenue and Expenditure Summary

Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Revenues	\$ 524,944,996	\$ 545,202,641	\$ 569,617,974	\$ 598,682,378	\$ 628,420,552	\$ 663,476,364	\$ 698,151,778	\$ 738,556,964	\$ 778,473,561	\$ 824,726,429
Total Expenditures	539,676,939	570,084,245	599,082,413	630,280,941	663,000,817	699,813,335	739,462,742	782,705,447	830,001,481	881,907,943
Net Revenue	\$ (14,731,943)	\$ (24,881,604)	\$ (29,464,439)	\$ (31,598,563)	\$ (34,580,265)	\$ (36,336,971)	\$ (41,310,964)	\$ (44,148,484)	\$ (51,527,920)	\$ (57,181,514)
Surplus (Deficit) Percent ¹										
Willdan Forecast	(2.7%)	(4.4%)	(4.9%)	(5.0%)	(5.2%)	(5.2%)	(5.6%)	(5.6%)	(6.2%)	(6.5%)
Current City Forecast ²	(0.3%)	(6.2%)	(7.2%)	(7.5%)	(6.6%)	(5.4%)	NA	NA	NA	NA

¹ Net revenue percent of total expenditures.

² Completed March 2009. City forecast does not extend beyond FY2014.

Sources: City of Fort Worth; Willdan Financial Services.

Figure 2.6: General Fund Revenue and Expenditure Forecast

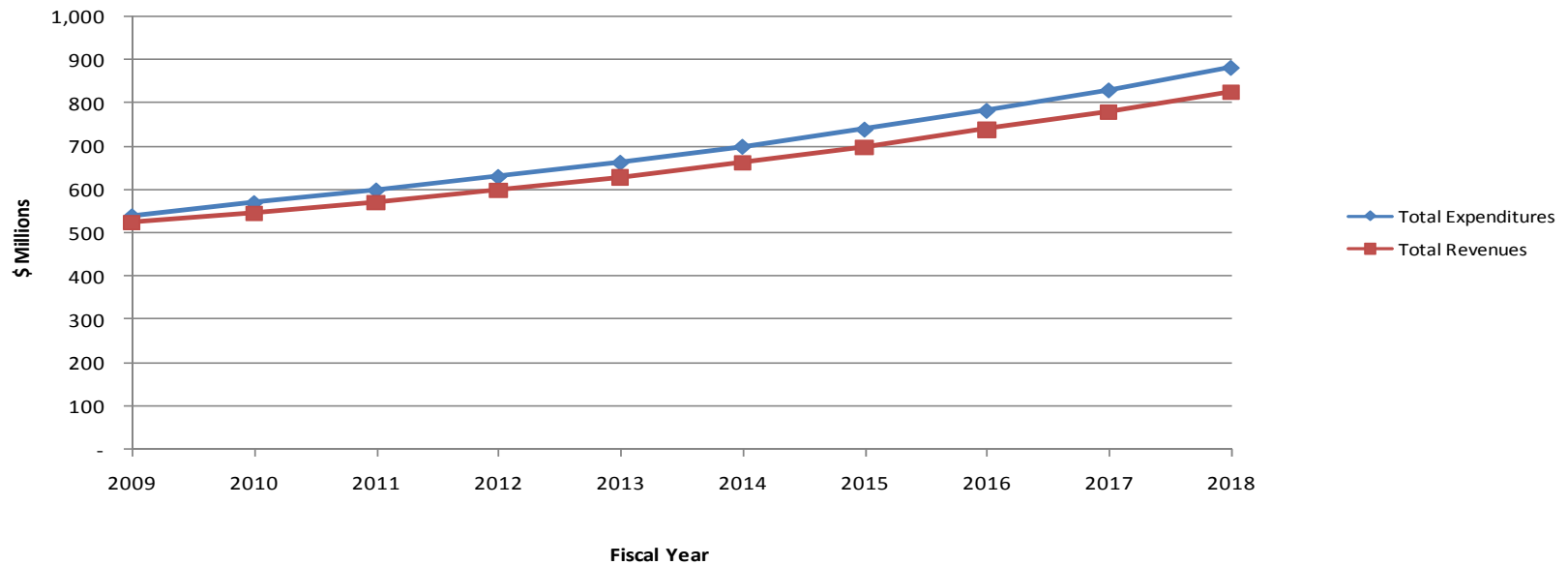
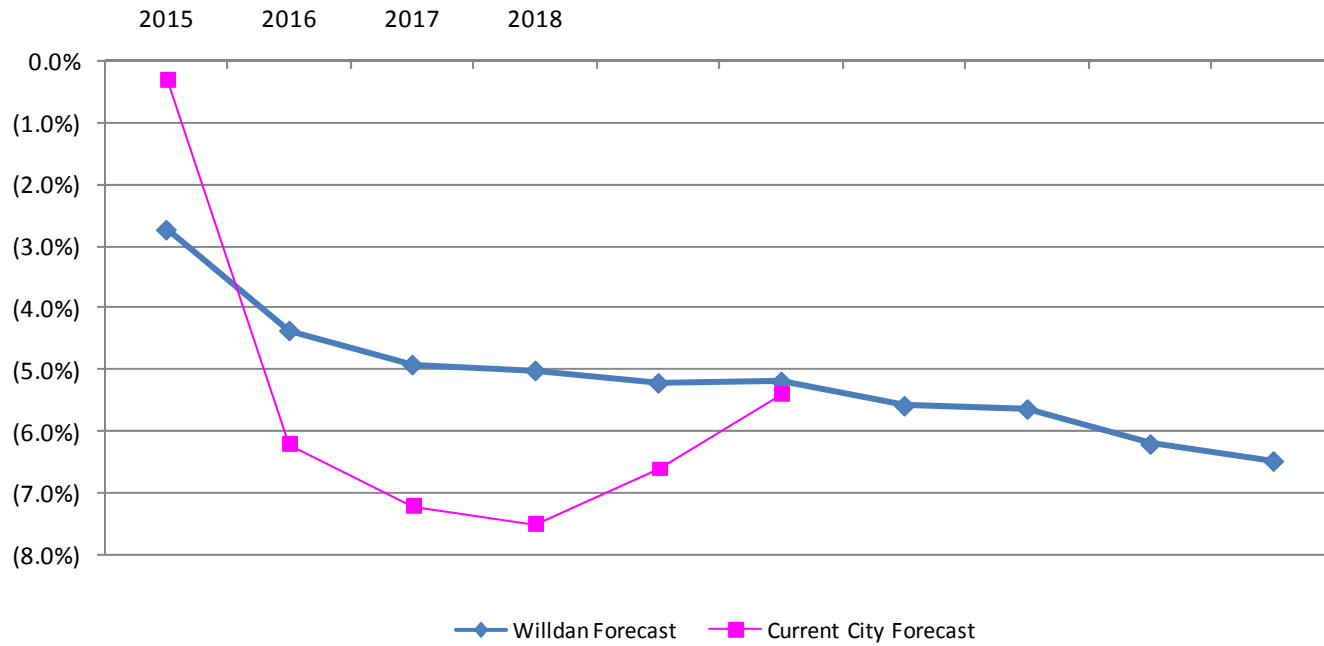


Figure 2.7: General Fund Net Revenue Percent of Expenditures



3. Debt Service Fund Forecast

Besides the General Fund, the other City fund that can fund transportation infrastructure is the Debt Service Fund. Similar to the analysis in the previous chapter, we completed a 10-year forecast of the Debt Service Fund assuming no change in revenue or service level policies. The purpose of this analysis is to determine if the Fund may have the capacity to address the City's \$2.2 billion transportation infrastructure needs discussed in Chapter 1.

Revenue Assumptions

The only revenue source for the Debt Service Fund is the allocation of the interest and sinking (I&S) component of the City's property tax revenue, calculated previously in Table 2.3, and shown again in the top row of **Table 3.1**. The allocation to debt service is based on holding constant the current property tax rate of 0.1441 percent. The revenue analysis was based on the same 10-year forecast of assessed valuation used for the General Fund analysis described in Chapter 2.

Expenditure Assumptions

The debt service expenditures estimates used in this Debt Service Fund forecast only include issued debt. The City provided a debt service schedule of issued debt current as of January 9, 2009. The schedule included a breakdown of each payment by principal and interest and is included in Table 3.1. The debt service schedule included all existing debt obligations as of that date. The schedule reflects the fact that not all of the authorized 2004 general obligation bonds, Critical Capital Needs certificates of obligation (CO), or 2008 general obligation bonds have been issued yet. **Table 3.2** shows the City's authorized, but unissued debt obligations allocated to transportation infrastructure and other needs as of last January.

In Table 3.1 the original principal amount for FY2018 was \$73,850,000, but is displayed as the same amount as the previous year, \$24,420,000. This adjustment was made because the original amount includes a balloon payment that we assume will be refinanced.

Debt Capacity

Once the annual amount available for debt service has been identified, it is possible to estimate the Fund's capacity to authorize additional debt for transportation infrastructure. Total debt capacity is first allocated to existing authorized but unissued debt. Any remaining debt capacity could be used for additional debt not yet authorized.

The bottom line in Table 3.1 provides an estimate of funding available for debt service after deducting payments for existing authorized and issued obligations. **Table 3.3** shows the potential proceeds from using this annual estimate of available funding for new debt service, assuming a 20-year term, an interest rate of 6.0 percent and a 1.5 percent cost of issuance. A six percent interest rate is comparable to recent municipal bond interest rates, as published by the Wall Street Journal, and is a reasonable assumption for the purposes of this analysis.

Table 3.1: Property Tax Revenue Available For Unissued Debt

Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>I&S Property</i>										
Tax Revenue	\$ 57,177,043	\$ 59,661,219	\$ 62,873,215	\$ 66,951,287	\$ 71,097,748	\$ 76,204,129	\$ 81,145,345	\$ 87,155,695	\$ 92,970,260	\$ 99,967,768
<i>Issued Debt Service Requirements</i>										
Principal ¹	\$ 39,524,916	\$ 28,913,301	\$ 29,547,143	\$ 27,000,000	\$ 27,160,000	\$ 28,490,000	\$ 28,650,000	\$ 25,770,000	\$ 24,420,000	\$ 24,420,000
Interest ¹	19,214,510	18,295,520	16,996,091	15,750,282	14,559,438	13,327,139	12,056,993	10,822,767	9,658,274	14,158,274
Total	\$ 58,739,426	\$ 47,208,821	\$ 46,543,234	\$ 42,750,282	\$ 41,719,438	\$ 41,817,139	\$ 40,706,993	\$ 36,592,767	\$ 34,078,274	\$ 38,578,274
<i>Available for Unissued Debt</i>										
Cumulative	\$ (1,562,383)	\$ 12,452,398	\$ 16,329,981	\$ 24,201,005	\$ 29,378,310	\$ 34,386,990	\$ 40,438,352	\$ 50,562,928	\$ 58,891,986	\$ 61,389,494
Net	\$ 12,452,398	\$ 12,452,398	\$ 3,877,583	\$ 7,871,024	\$ 5,177,304	\$ 5,008,680	\$ 6,051,363	\$ 10,124,576	\$ 8,329,058	\$ 2,497,508

¹ The City's debt service schedule indicates a \$50 million principal payment in FY2018. This forecast assumes that this balloon payment is refinanced instead to smooth out debt service. To estimate the impact of this refinancing in FY2018 this forecast holds principal payments constant and increases interest payments by \$4.5 million.

Sources: City of Fort Worth; Willdan Financial Services.

Table 3.2: Debt - Authorized, Unissued

Item	Transportation	Other	Total
<i>Critical Capital Needs CO (2008)</i>			
Transportation:	\$ 55,554,000	\$ -	\$ 55,554,000
Fire Safety and Emergency Services	-	51,000	51,000
ITS Communications		4,487,000	4,487,000
Subtotal			\$ 60,092,000
2004 Bond	91,850,000	-	91,850,000
2008 Bond	132,000,000	-	132,000,000
CO for overruns (2008 Bond)	15,854,000	-	15,854,000
Total Authorized, Unissued Debt	<u>\$295,258,000</u>	<u>\$ 4,538,000</u>	<u>\$299,796,000</u>

Source: City of Fort Worth.

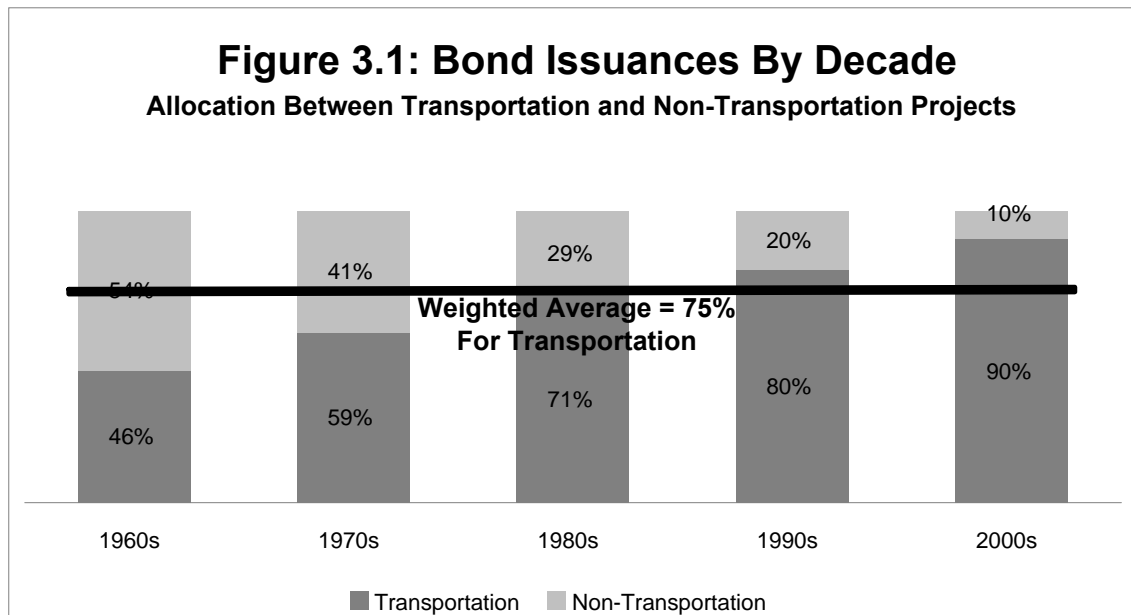
Table 3.3: Bond Issue Calculator

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Revenue Available	\$ -	\$ 12,452,398	\$ 3,877,583	\$ 7,871,024	\$ 5,177,304	\$ 5,008,680	\$ 6,051,363	\$ 10,124,576	\$ 8,329,058	\$ 2,497,508	
Term (Years)	20										
Interest Rate	6.00%										
Bond Issuance	\$ -	\$ 142,828,000	\$ 44,476,000	\$ 90,280,000	\$ 59,383,000	\$ 57,449,000	\$ 69,409,000	\$ 116,128,000	\$ 95,534,000	\$ 28,646,000	
Cost of Issuance	1.50%	(2,142,000)	(667,000)	(1,354,000)	(891,000)	(862,000)	(1,041,000)	(1,742,000)	(1,433,000)	(430,000)	
Net Proceeds for Capital Projects	\$ -	\$ 140,686,000	\$ 43,809,000	\$ 88,926,000	\$ 58,492,000	\$ 56,587,000	\$ 68,368,000	\$ 114,386,000	\$ 94,101,000	\$ 28,216,000	\$693,571,000

¹ Assume no capitalized interest period.

Sources: City of Fort Worth; Table 3.1, Willdan Financial Services.

To estimate the share of future debt capacity that could be allocated to transportation projects we analyzed historical bond issuances going back to 1961. Since 1961 approximately 75 percent of bond proceeds have been allocated to transportation infrastructure. **Figure 3.1** displays a graph of the allocation of bond proceeds between transportation and non-transportation projects, by decade. Over time the City has allocated an increasing share of debt to transportation infrastructure. In the 1960s, less than half of the bond proceeds were allocated to transportation. In the current decade, approximately 90 percent of the issuances have been allocated to transportation projects. The entire amount of most recently authorized bond in 2008 was allocated to transportation.



For the purposes of estimating the share of future debt capacity allocated to transportation this study uses the historical weighted average of 75 percent. **Table 3.4** shows the remaining debt capacity, after all authorized, but not yet issued transportation commitments are subtracted from the projected bond proceeds calculated in Table 3.3.

Conclusion

Considering the current property tax rate and the authorized, but unissued debt summarized in Table 3.2, there is little capacity to issue new debt in the short term. However, through the 10-year timeframe of this study and given the existing tax rate, authorized but unissued debt, and the historical allocation of bond proceeds to transportation projects, the City has approximately \$226 million in unused debt capacity.

Table 3.4: Debt Capacity For Transportation Infrastructure

Future Debt Capacity For Capital Projects ¹	\$	694,000,000
Allocation To Transportation Infrastructure		<u>75%</u>
Total Future Debt Capacity For Transportation Projects		521,000,000
Authorized, Unissued Debt For Transportation Projects		<u>295,000,000</u>
Net Future Debt Capacity For Transportation Projects	\$	226,000,000

¹ Net of existing authorized and issued debt.

Sources: Tables 3.2 and 3.3; Willdan Financial Services.

4. Transportation Infrastructure Funding Gap

This chapter builds on the General Fund and Debt Service Fund analyses in the preceding chapters to estimate the 10-year transportation infrastructure funding gap. The General Fund analysis concluded that the Fund provides \$23 million annually for street maintenance only and does not have capacity to fund additional transportation capital projects. This chapter compares the funding capacity of the Debt Service Fund plus several special revenue sources to the City's transportation infrastructure needs to determine the funding cap.

Transportation Revenue

The main source of funding for transportation projects is the Debt Service Fund. The property tax revenue from the I&S tax rate is allocated to the Debt Service Fund and is used for funding the debt service on general obligation bonds, notes and certificates of obligation (CO). There are also two special revenue sources for transportation projects: development impact fees and gas well revenue. This section forecasts available funding sources from these three sources for the 10-year planning horizon of this study.

Debt Service

This section estimates the City's debt capacity for funding the 10-year Transportation Improvement Plan (TIP). This section also includes an analysis of the City's allocation of property taxes to debt service compared to the seven largest cities in Texas.

Debt Capacity Forecast

The City's total debt capacity is comprised of authorized and unauthorized debt. Authorized debt is comprised of existing obligations, either issued or unissued that the City Council has approved and includes:

- ◆ 2004 General Obligation Bond
- ◆ 2008 General Obligation Bond
- ◆ 2008 Arterial & Streets Critical Capital Needs Certificates of Obligation (CO)

Unauthorized debt represents a share of the forecast debt capacity in the Debt Service Fund net of existing authorized debt obligations both issued and unissued. Chapter 3 provided this analysis assuming an allocation of 75 percent of available capacity to transportation infrastructure (see Table 3.4).

Table 4.1 summarizes the forecast of available debt capacity to fund the City's TIP, including authorized and unauthorized debt.

Table 4.1: Transportation Infrastructure - Available Debt Capacity

<u>2004 Bond</u>		
Arterial Improvements	\$ 57,000,000	
Other improvements (bridges, signals, etc.)	20,000,000	
Neighborhood Street Replacement	<u>65,000,000</u>	
Subtotal		142,000,000
<u>2008 Bond</u>		
Arterial Capacity Improvements	81,000,000	
Other Improvements (bridges, signals, etc.)	36,000,000	
Neighborhood Street Replacement	<u>33,000,000</u>	
Subtotal		150,000,000
<u>Arterials & Streets Critical Capital Needs CO (2008)</u>		
Arterial Capacity Improvements	18,000,000	
Neighborhood Streets	<u>51,000,000</u>	
Subtotal		<u>69,000,000</u>
Subtotal - Authorized Debt For Transportation ¹	\$ 361,000,000	
Net New Debt Capacity For Transportation Infrastructure		<u>226,000,000</u>
Total Debt Capacity For Transportation Infrastructure	\$ 587,000,000	

¹ Includes both issued and unissued authorized debt. Compare with Table 3.2.

Source: Table 3.4; City of Fort Worth; Willdan Financial Services.

Property Tax and Expenditure Survey

As explained in the Debt Service Fund forecast in the last chapter, debt capacity is based on holding constant the City's existing allocation of its total tax rate to debt service (the I&S tax share). To develop options for increasing property tax funding for debt service, we investigated property tax rates and general fund expenditures in other cities in Texas, and how those cities allocate property tax between maintenance and operations costs and debt service. We surveyed the seven largest cities in Texas based on population of which Fort Worth is ranked fifth from the highest. The cities are all older cities with varied infrastructure needs. The cities included in the survey are listed below. Population estimates are for January 1, 2008 and were developed by Institute for Demographic and Socioeconomic Research at the University of Texas at San Antonio.

1. Houston (population 2,149,948)
2. San Antonio (population 1,336,040)
3. Dallas (population 1,248,184)
4. Austin (population 736,172)
5. Fort Worth (population 688,222)
6. El Paso (population 609,327)
7. Plano (population 279,607)

The comparison was based on data from FY2008. Property tax rates, assessed values, and property tax revenues were compiled from each city's budget or comprehensive annual financial report (CAFR). The compiled data can be seen in **Table 4.2**. The assessed value data represents total current assessed value before deductions such as tax abatements and exemptions. Property tax rates and expenditure data change annually so this survey is a one-year snapshot of recent fiscal conditions. For example, Fort Worth shifted additional property tax from maintenance and operations to debt service in FY2009.

Assessed value, property tax revenue, and general fund expenditures were divided by each city's population to compare the amount per capita. This calculation is displayed in **Table 4.3**. Charts examining assessed value per capita, total property tax per capita, debt service property tax per capita, and general fund expenditures per capita can be found in **Figures 4.1, 4.2, 4.3, and 4.4**, respectively. The table and charts also show the median value for each measure.

We did not adjust the assessed value data for homestead exemptions, senior exemptions, abatements, and other impacts on the taxable assessed valuation of the cities surveyed. Consequently the assessed values per capita may not fully reflect each city's actual tax base. However, based on data gathered as part of the occupancy cost survey (see Chapter 7) we expect that Fort Worth probably has a greater level of exemptions than other cities due to its 20 percent homestead exemption.

Property tax revenue data was taken directly from the source documents and was not calculated based on assessed value and tax rates. Consequently comparisons of property tax revenue per capita are reflective of each city's net taxable assessed valuation.

This survey of property tax and expenditures among the seven largest cities in Texas indicates that:

- Assessed value per capita: Fort Worth is five percent below the median, ranking 4th highest among the seven cities surveyed;
- Total property tax per capita: Fort Worth is 33 percent above the median, ranking highest among the seven cities surveyed;
- Property tax for debt service per capita: Fort Worth is 27 percent below the median, ranking lowest among the seven cities surveyed.
- Property tax for maintenance and operations per capita: Fort Worth is 99 percent above the median, ranking highest among the seven cities surveyed.
- General fund expenditures per capita: Fort Worth is 14 percent above the median, ranking 2nd highest among the seven cities surveyed.

Gas Well Revenue

The City owns property that has significant natural gas deposits. The City has been collecting revenue from lease royalties associated with the gas well drilling. A significant portion of these proceeds is subject to federal restrictions requiring that they be invested in airports or parks. Additional City Council restrictions have been adopted that creates a permanent endowment for capital needs in the future.

Table 4.2: Survey of Texas Cities Property Tax and Expenditure Data (FY2008)

City	Population (1/1/08) ¹	Property Tax Rate			Share of Total Rate		Total Assessed Value	Property Tax Revenue			
		Total	Maintenance & Operations	Debt Service	M&O	Debt Service		Total	Maintenance & Operations	Debt Service	General Fund Expenditures
Houston	2,149,948	0.643750%	0.461975%	0.1817750%	71.8%	28.2%	\$ 173,824,783,000	\$744,613,668	\$ 541,263,668	\$203,350,000	\$ 1,565,917,364
San Antonio	1,336,040	0.545580%	0.334080%	0.2115000%	61.2%	38.8%	76,458,666,464	226,547,911	93,863,368	132,684,543	841,391,003
Dallas	1,248,184	0.747900%	0.519600%	0.2283000%	69.5%	30.5%	84,526,933,754	434,769,547	244,404,317	190,365,230	1,033,737,424
Austin	736,172	0.403400%	0.275816%	0.1275845%	68.4%	31.6%	68,200,000,000	272,300,000	184,300,000	88,000,000	506,610,969
Fort Worth	688,222	0.855000%	0.720900%	0.1341000%	84.3%	15.7%	44,313,510,435	317,834,637	267,984,783	49,849,854	562,732,205
El Paso	609,327	0.671097%	0.453294%	0.2178030%	67.5%	32.5%	25,842,360,340	174,930,146	118,429,156	56,500,990	298,429,000
Plano	279,607	0.473500%	0.321000%	0.1525000%	67.8%	32.2%	24,511,500,675	76,286,492	39,748,502	36,537,990	199,923,121

¹ Estimates for January 1, 2008 from Texas State Data Center, and the Office of the State Demographer. Web site: http://txsdc.utsa.edu/tpepp/2007_txpopest_place.php

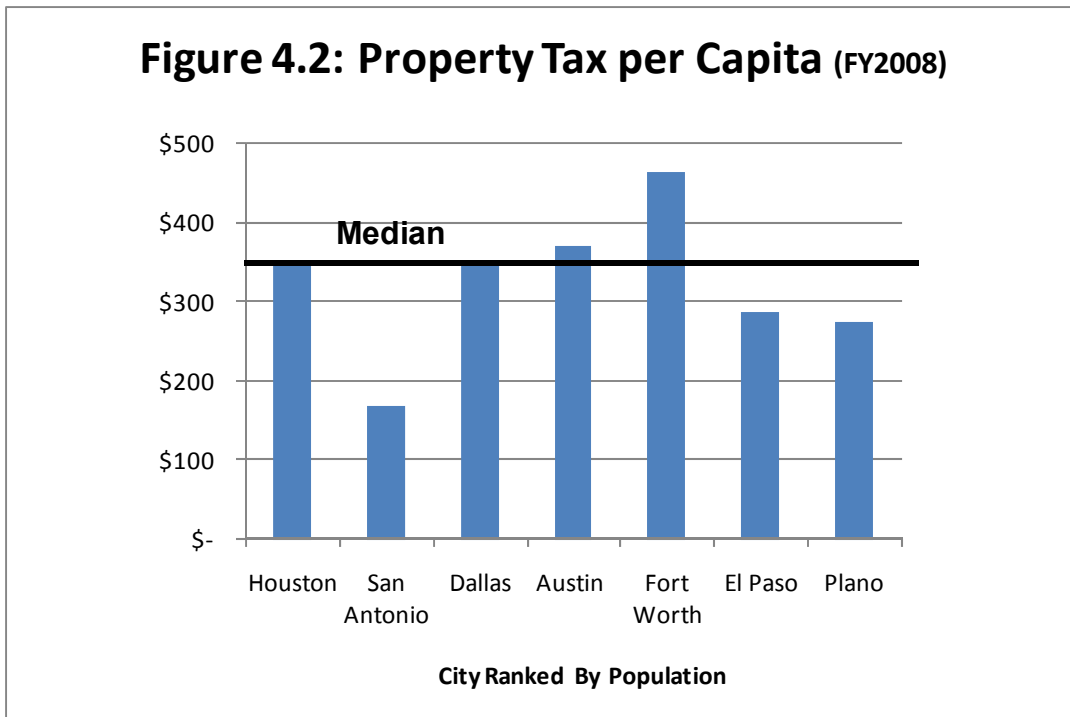
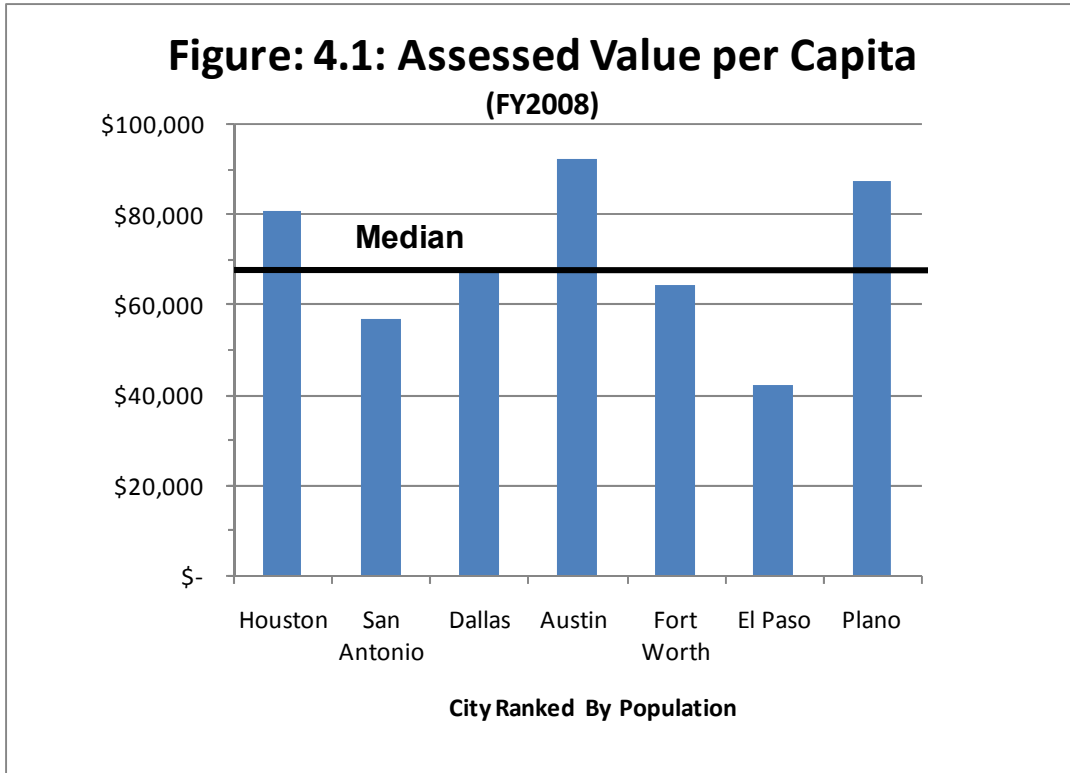
Sources: City of Fort Worth FY2009 Proposed Budget; City of El Paso FY2009 Budget; City of Plano FY2007-08 Status Report, FY2009 Budget; City of San Antonio FY2008 and FY2009 Budget; City of Austin FY2008 Budget, FY2009 Budget; City of Dallas FY2008 Budget, FY2009 Budget; City of Houston FY2008 CAFR, FY2009 Budget; Willdan Financial Services.

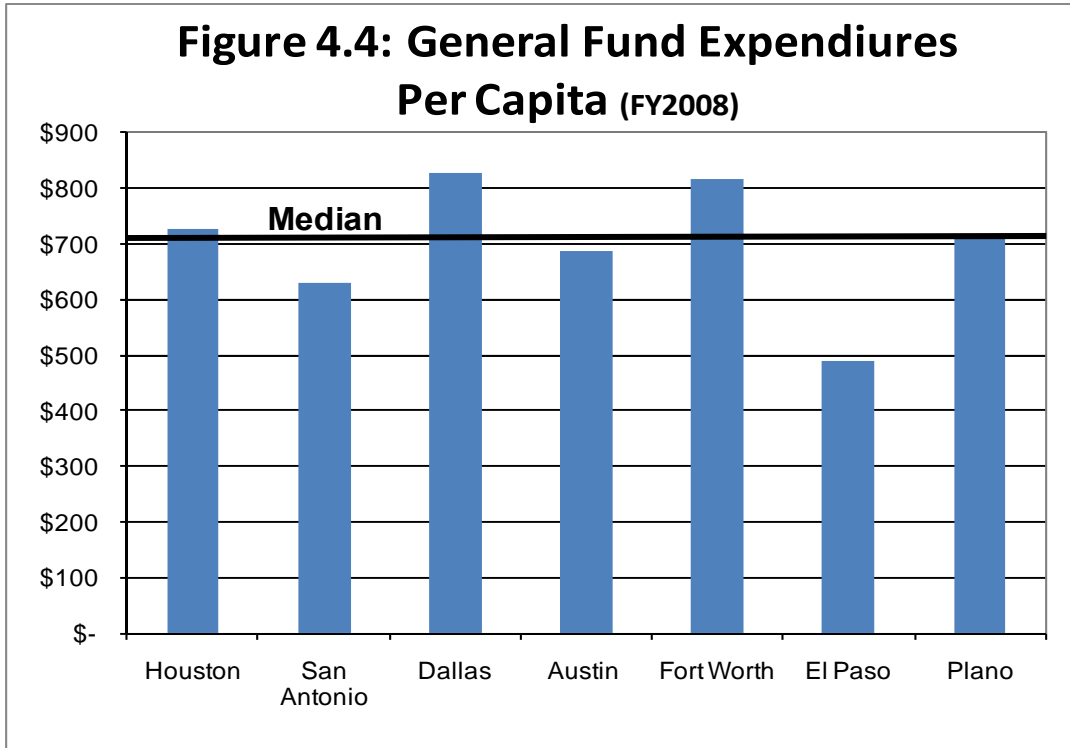
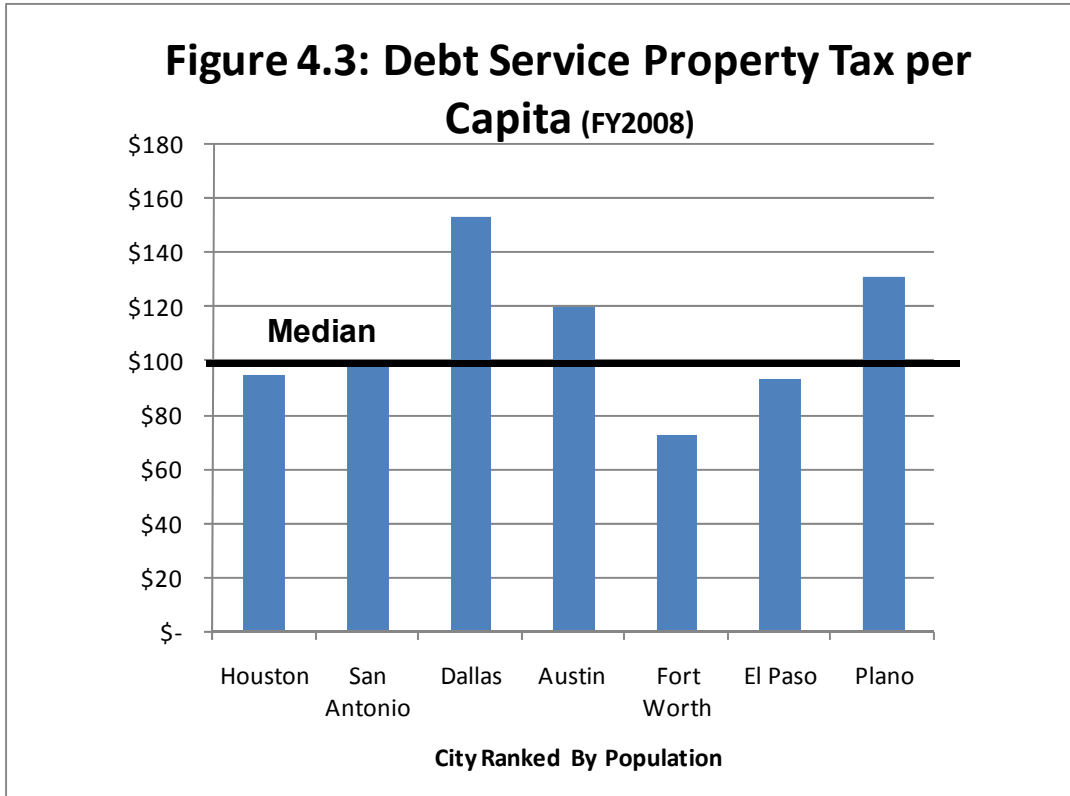
Table 4.3: Survey of Texas Cities, FY 2008 - Per Capita Data

City ¹	All Values Per Capita				
	Assessed Value	Total Property Tax	Property Tax For Debt	Property Tax For M&O	General Fund Expenditures
Houston	\$ 80,851	\$ 346	\$ 95	\$ 252	\$ 728
San Antonio	57,228	170	99	70	630
Dallas	67,720	348	153	196	828
Austin	92,641	370	120	250	688
Fort Worth	64,388	462	72	389	818
El Paso	42,411	287	93	194	490
Plano	87,664	273	131	142	715
Median	\$ 67,720	\$ 346	\$ 99	\$ 196	\$ 715

¹ Ranked by population.

Sources: Table 4.2; Willdan Financial Services.





Over the next 10 years, the City is assumed to allocate \$15 million from gas well revenue for transportation infrastructure. This estimate may be somewhat conservative but is appropriate for this analysis given the unpredictable nature of this revenue source and the restrictions discussed above.

Development Impact Fees

Impact fees are a one-time charge to new development to fund the share of infrastructure costs associated with new development. In 2008 the City adopted a development impact fee program to help fund new development's share of traffic infrastructure. Kimley-Horn and Associates prepared the nexus study, *Fort Worth Transportation Impact Fee*, in accordance with the enabling legislation Chapter 395 of the Texas Local Government Code. The Fort Worth impact fee is designed to fund the cost of the arterial capacity improvements necessary to accommodate new development.

The Kimley-Horn and Associates fee study calculated the maximum justified fee for each of 27 fee zones. The maximum justified fee varied by zone depending on the amount of development in the zone and the cost of the transportation infrastructure required in the zone to accommodate growth. Fee revenues only fund arterial improvements. The large number of zones was needed to comply with the State's impact fee statute that limits impact fee zones to a diameter no larger than six miles.

To minimize the economic impact of the fees on the development industry, the adopted fee program made two changes to the schedule of maximum justified fees:

- ◆ The adopted fee schedule was significantly lower than the maximum fees; and
- ◆ The fee amount in each zone was “smoothed” so that nearly all zones have the same fee, such that:
 - 17 zones have the same fee equivalent to \$1,500 per single family dwelling (SFD);
 - Two zones have lower fees set at their maximum justified level that are less than \$1,500 per SFD; and
 - Eight zones have no fee because there are no transportation improvements related to growth needed in those zones.

The result of these implementation decisions is that on average across all zones the City collects 27 percent of the maximum justified fee from non-residential development and 36 percent of the maximum justified fee from residential development. The estimated average collection rate across all zones and land uses is 33 percent.

The City's existing fee program offers discounts of 15 percent for:

- ◆ Projects that are located adjacent to arterials that already meet their ultimate capacity according to the Master Thoroughfare Plan (“adequate public facilities discount”).
- ◆ Projects with a demonstrated internal trip capture of 15 percent (“land use/transportation connection discount”). Five and 10 percent discounts are available with commensurably lower internal trip capture rates.
- ◆ Projects that result in at least \$15 million in investment, 100 jobs, and wages at least twice the minimum wage plus benefits (“extraordinary investment discount”).

Table 4.4 shows forecasted impact fee revenues over the 10-year period of \$161 million (\$nominal). Fee revenues were estimated as follows:

- ◆ The forecast is based on new development AV in 2007 (\$1,798.3 million) and the associated fee revenue had the fees been in place at that time (\$18.9 million), resulting in fee generation of \$0.0105 per \$AV.
- ◆ The fee revenue forecast is based on estimated AV for new development from Chapter 2 and the fee generation rate of \$0.0105.
- ◆ Based on development projects that have paid the fee to date, 40 percent received the adequate public facilities discount and received a 15 percent discount.
- ◆ The fee ordinance allows an inflation adjustment five years after the program was adopted in FY2013. Fee revenue was adjusted in FY2013 based on an estimated annual 3.0 percent inflation rate over five years.

This fee discount estimate is based on the small sample (73) of development projects that have paid the fee to date. Discount rates may vary substantially from this estimate in the future. However, the total revenue impact is not significant in relation to the size of the transportation infrastructure funding gap so alternative discount assumptions would unlikely affect the findings and conclusions of this study.

Transportation Needs

Kimley-Horn and Associates, Inc compiled the cost of transportation projects into a 10-year Transportation Improvement Plan (TIP). The projects included in this analysis fall into two categories; capacity related improvements and deferred maintenance. The 10-year TIP is shown in **Table 4.5**.

Under capacity related improvements, \$585 million (2008\$) is programmed to correct existing deficiencies. These projects will expand the existing transportation network to add capacity to relieve congestion and increase the existing level of service (LOS) to acceptable levels. These projects would be necessary even if no new development occurred. Transportation impact fees cannot be used to fund these projects.

Table 4.4: Impact Fee Revenue Forecast (\$nominal)

Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
<i>Impact Fee Revenue (Gross)</i>											
New Development AV	\$ 968,513,196	\$ 896,370,526	\$ 1,168,736,276	\$ 1,564,852,086	\$ 1,328,431,613	\$ 1,381,638,314	\$ 1,568,947,613	\$ 1,755,756,752	\$ 1,894,177,578	\$ 2,144,136,788	
Fee Revenue / New Dev. AV	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	<u>0.0105</u>	
Impact Fee Revenue	\$ 10,169,000	\$ 9,412,000	\$ 12,272,000	\$ 16,431,000	\$ 13,949,000	\$ 14,507,000	\$ 16,474,000	\$ 18,435,000	\$ 19,889,000	\$ 22,513,000	\$154,051,000
<i>Impact Fee Discounts¹</i>											
Fees Subject To Discount (40%)	\$ 4,068,000	\$ 3,765,000	\$ 4,909,000	\$ 6,572,000	\$ 5,580,000	\$ 5,803,000	\$ 6,590,000	\$ 7,374,000	\$ 7,956,000	\$ 9,005,000	\$ 61,622,000
Amount of Discoun (15%)	<u>610,000</u>	<u>565,000</u>	<u>736,000</u>	<u>986,000</u>	<u>837,000</u>	<u>870,000</u>	<u>989,000</u>	<u>1,106,000</u>	<u>1,193,000</u>	<u>1,351,000</u>	<u>9,243,000</u>
Revenue After Discount	\$ 9,559,000	\$ 8,847,000	\$ 11,536,000	\$ 15,445,000	\$ 13,112,000	\$ 13,637,000	\$ 15,485,000	\$ 17,329,000	\$ 18,696,000	\$ 21,162,000	\$144,808,000
<i>Impact Fee Inflation²</i>											
Inflation Adjustment Factor	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.16</u>	<u>1.16</u>	<u>1.16</u>	<u>1.16</u>	<u>1.16</u>	<u>1.16</u>	
Revenue With Inflation (\$nominal)	\$ 9,559,000	\$ 8,847,000	\$ 11,536,000	\$ 15,445,000	\$ 15,210,000	\$ 15,819,000	\$ 17,963,000	\$ 20,102,000	\$ 21,687,000	\$ 24,548,000	\$160,716,000

Note: Totals have been rounded.

¹ Discount based on building permits to date subject to the fee in which 40 percent were eligible for the adequate facilities discount. No permits were eligible for the other discounts available under the fee ordinance.

² Adjusted for inflation in 2013 as allowed by the impact fee ordinance. Inflation estimated at 3.0 percent per year for FY2008 through FY2013.

Source: Table 2.2; Willdan Financial Services.

**Table 4.5: 10-Year Transportation Improvement Plan (TIP)
(Excl. preventative maintenance)**

<u>Capacity Related Improvements</u>	
Existing Deficiencies ¹	
Arterials @ LOS D, E, or F	\$ 235,000,000
Arterials @ LOS C	78,000,000
Arterials - Other Needs	<u>272,000,000</u>
Subtotal - Existing Deficiencies	\$ 585,000,000
Future Needs from New Development ²	434,000,000
Other Needs ³	<u>140,000,000</u>
Subtotal - Capacity Related Needs	\$ 1,159,000,000
<u>Deferred Maintenance</u>	
Complete Replacement of Poor Neighborhood Streets	\$ <u>400,000,000</u>
Total - 10 Year Transportation Improvement Plan Costs (\$2008)	\$ 1,559,000,000
Inflation Factor ⁴	<u>1.1464</u>
Total - 10 Year Transportation Improvement Plan Costs (\$nominal)	\$ 1,787,000,000

Note: This table includes only one-time costs associated with the TIP appropriate for funding with the one-time revenues included in this analysis (bond proceeds, impact fees, etc.). Table excludes \$500 million in ongoing preventative maintenance needs that should be funded with ongoing revenues generated by the General Fund (see Table 1.1 and General Fund analysis in Chapter 2). Totals have been rounded.

¹ Identified in the City's Critical Capital Needs inventory.

² Identified in Transportation Impact Fee study.

³ Includes bridges, signals, street lighting, railroad crossings, and intersection improvements.

⁴ Assumes even phasing of costs over 10-year period and three percent annual inflation rate.

Sources: Kimley-Horn Associates, City of Fort Worth Transportation Impact Fee, December 2007; City of Fort Worth; Willdan Financial Services.

Also listed under capacity related improvements are \$434 million (2008\$) of projects required to accommodate new development. This figure is equal to the maximum justifiable fee revenue over the planning horizon that by definition equals total development cost impacts. This figure was calculated using forecast 10-year fee revenues after estimated discounts. Discounts are assumed to reduce facility needs by an amount equal to the discount. Fee revenues were multiplied by a factor of 3.0 to estimate total facility needs of new development. This factor was based on a weighted average of 33 percent ($1/0.33 = 3.0$) using the adopted fee level as a percent of the maximum justified fee. As discussed above, the adopted fee averages 27 percent and 36 percent of the maximum justified amount for nonresidential and residential land uses, respectively. Weighting residential-to-nonresidential development at a ratio of 2:1 based on total citywide AV resulted in the weighted average of 33 percent.

There is approximately \$1.17 billion total in projects listed in the impact fee study. The \$434 million estimate used in this analysis represents the amount of growth forecast over the 10-year planning horizon. Growth after that point would cause the need for the remaining TIP projects identified in the fee study. See **Appendix Table A.1.2** for a breakdown of project costs by fee service area.

The “Other Needs” costs listed in Table 4.6 include non-arterial capacity improvements for bridges, signals, street lighting, railroad crossings, and intersections.

Under roadway maintenance, the TIP shows \$400 million for the complete replacement of neighborhood streets. These projects are not associated with new development, and do not represent an increase in capacity. These projects represent deferred maintenance resulting in the need for one-time capital expenditures to return the street to an acceptable condition.

In contrast to the 10-year TIP shown in Table 1.1 (Chapter 1) Table 4.6 excludes \$500 million in ongoing preventative maintenance costs. These costs are for road resurfacing, potholing, and bridge and signal maintenance net of existing funding from the General Fund (about \$25 million annually). This ongoing funding deficit is excluded so that the one-time revenue sources described above (debt funding, impact fees) are allocated only to one-time costs (capacity needs and deferred maintenance). Ongoing maintenance should be funded with an ongoing revenue source such those in the General Fund.

Findings and Conclusions

Property Tax Survey

Drawing conclusions from the findings of the property tax survey presented above should be done with caution because that analysis represent only a portion of the Fort Worth’s fiscal challenges and opportunities. For example, Chapter 2 highlighted the funding challenges faced by the General Fund holding current tax rates and service levels constant.

Nonetheless, a key finding of the property tax survey is that the City generate above-median total property tax revenue but allocates a smaller share to debt service. The City should investigate why this is the case and how it may be able to allocate a greater share of the property tax to debt services in the future. Additional funding to increase debt capacity would be one of the most significant options for addressing the transportation infrastructure funding gap.

Funding Gap

The estimate of the City of Fort Worth 10-year transportation infrastructure funding gap is shown in **Table 4.6**. For the 10-year planning horizon, forecast TIP revenues are estimated to fund 43 percent of total TIP costs resulting in a funding gap of \$1.0 billion.

Table 4.6: 10-Year Transportation Funding Gap Analysis (\$nominal)

	Amount	% of Total Costs
<i>Revenue</i>		
Debt Funding	\$ 587,000,000	33%
Appropriation from Gas Well Revenues	15,000,000	1%
Transportation Impact Fees	<u>161,000,000</u>	<u>9%</u>
Total	\$ 763,000,000	43%
<i>Costs</i>		
Total	<u>1,787,000,000</u>	100%
Funding Gap	\$ (1,024,000,000)	(57%)

Note: Totals have been rounded.

Sources: Tables 4.1, 4.4 and 4.5; Willdan Financial Services.

5. Transportation Funding & Planning Toolkit

No one policy or program will be adequate to close the transportation funding gap in its entirety. Rather, a combination of approaches is most appropriate to help the City achieve a more viable long-term strategy for funding transportation infrastructure. This chapter details a variety of options available to help the City either increase available revenues or manage infrastructure planning so that needs are better aligned with available funding.

Options detailed in this chapter are categorized as:

- ◆ Revenue enhancements; and
- ◆ Planning strategies.

These categories are not mutually exclusive. Revenue enhancement options may send price signals to new development by imposing the marginal cost of needed infrastructure. This option would overlap with a planning strategy that steers development to areas where transportation infrastructure is already in place.

This chapter does not examine the only other possible strategy to closing the funding gap - reductions in the General Fund budget to allocate more existing property tax revenue to debt service. As shown in Chapter 2 the General Fund faces significant challenges simply maintaining a balanced budget during the current economic recession and through the 10-year planning horizon of this study.

Revenue Enhancements

This section estimates the potential to increase funding from existing revenue sources, and describes new sources to fund the City's transportation infrastructure needs.

Revenue enhancement options can be categorized into two groups:

- (1) Citywide sources such as property taxes and transportation user fees; and
- (2) New development sources such as impact fees and special assessments.

In a similar manner the 10-year Transportation Improvement Plan (TIP) includes two types of beneficiaries:

- (1) Projects such as existing deficiencies and deferred maintenance projects that benefit all transportation system users; and
- (2) Projects such as those identified in the TIP developed for the impact fee study that only benefit new development.

An effective revenue enhancement strategy should seek to match up those providing the funding with those that benefit from the improvements.

Revenue options related to increased state or federal funds are not examined because there are no sources of intergovernmental funds for the type of arterial improvements included in the TIP.

Property Tax for Debt Funding

Option 1: Increased Total Property Tax Rate

One revenue enhancement option is to increase the total property tax rate and allocate the increased rate to debt service, leaving the M&O rate constant. The property tax is the City's largest revenue source (see Chapter 2) so any change in the rate for debt services can have a significant impact on future debt capacity.

Based on the property tax survey of Texas cities presented in the last chapter, even with assessed values per capita slightly below the median, Fort Worth still generates the highest amount of property tax per capita due to its high tax rate. The City has made a concerted effort to lower its property tax rate over time to ensure its economic competitiveness. Any proposal to increase the rate is likely to meet with significant political opposition from a wide variety of interests. Thus for both economic and political reasons an increase in the total property tax rate does not seem feasible.

Option 2: Increase Share of Property Tax To Debt Service

Another key finding from the property tax survey is that even with a relatively high overall property tax rate, Fort Worth allocates the lowest share to debt services. This finding indicates that the City should consider shifting a portion of its existing property tax rate from the General Fund to the Debt Service Fund.

The challenge with this option is identifying the necessary expenditure reductions and/or revenue enhancements to backfill the loss of property tax revenue to the General Fund. As detailed in Chapter 2, forecast General Fund revenues are insufficient to fully fund expenditures at current service levels through the 10-year horizon of this study.

Option 3: Increase Share of Debt Funding To Transportation Projects

As noted in Chapter 4, on average the City allocated 75 percent of its debt funding over the past five decades to transportation infrastructure. As a base case this study used the 75 percent average to estimate the share of future debt capacity for transportation.

The share of debt funding allocated to transportation has been increasing over time. The recent 2004 and 2008 debt authorizations provided 85 percent and 98 percent for transportation, respectively.³ Consequently, a reasonable option would be to continue to allocate a high share of debt funding for transportation for the next decade. For this option we suggest that the City allocate 90 percent of future available debt capacity for transportation for the 10-year period of the TIP. **Table 5.1** shows the increase in debt funding that would result from implementation of this option.

We appreciate that this option is not being evaluated in the context of the City's other capital priorities. This study has not done a survey of the condition of the City's non-transportation infrastructure nor of the need for expanded infrastructure to correct capacity deficiencies or accommodate new development.

³ City of Fort Worth, FY 2008-09 Adopted Budget. p. F-1.

Table 5.1: Debt Capacity For Transportation Infrastructure(\$ nominal)

	Percent of Debt Funding Allocated To Transportation		Difference
	Current (75%)	Proposed (90%)	
Future Debt Capacity For Capital Projects ¹ Allocation To Transportation Infrastructure	\$ 694,000,000 75%	\$ 694,000,000 90%	\$ - 15%
Total Future Debt Capacity For Transportation Projects Authorized, Unissued Debt For Transportation Projects	\$ 521,000,000 295,000,000	\$ 625,000,000 295,000,000	\$ 104,000,000 -
Net Future Debt Capacity For Transportation Projects	\$ 226,000,000	\$ 330,000,000	\$ 104,000,000

¹ Net of existing authorized and issued debt.

Sources: Table 3.4; Willdan Financial Services.

Other City Tax Rates

We also analyzed the potential to raise other tax rates to increase funding for transportation infrastructure. Neither of the two options studied are feasible.

Option 4: Increase Sales Tax

Some cities in Texas, for example San Antonio, dedicate a share of sales tax revenue to transportation capital projects. This option cannot be implemented in Fort Worth because the City is already collecting the maximum sales tax rate of 2.0 percent allowed under State law for local purposes. As mentioned in Chapter 2, in addition to the 1.0 percent rate for the General Fund, the Fort Worth Transportation Authority Fund and the Crime Prevention District Fund each receive 0.5 percent.

Option 5: Hotel Occupancy Tax

The City currently charges a hotel occupancy tax (HOT) of 2.0 percent on hotel and motel room charges. The City budget projects HOT revenue of \$16.7 million in FY2009.⁴ HOT revenue accrues to the City's Culture and Tourism Fund not the General Fund. The HOT serves as the primary revenue source for this fund and also funds debt service related to the construction of the City's Convention Center.

A 1.0 percent increase to the HOT would generate an additional \$8 million annually, or a one-time debt issuance of approximately \$90 million.

This revenue estimate assumes no change in demand for hotel rooms. We did not conduct a survey of HOT rates among comparable cities nor of the City's competitive position in the national visitor economy so we cannot evaluate the potential negative economic impact of an increase in the rate.

Absent a change in City revenue policy, use of HOT revenues would only be appropriate for purposes consistent with the mission of the Culture and Tourism fund. A portion of the City's TIP could reasonably be allocated to the City's visitor economy based on the share of total vehicle trips associated with visitors. However, this approach would require a

⁴ Ibid. p. P-54.

significant shift in current City revenue policy that focuses HOT revenues on services with direct impacts on tourism.

Given the relatively low revenue potential and the restrictions on use, an increase in the HOT rate does not appear to be a viable option for transportation infrastructure funding.

Other Citywide Revenue Sources

Besides taxes, user fees represent the only other category of general purpose municipal revenue with the potential to contribute to the City's infrastructure funding gap. Increasingly across the country transportation agencies are giving serious consideration to imposing charges on the users of transportation infrastructure. The objective is to have the user pay for the benefit of using the facility to encourage a more efficient allocation of resources. The concept is similar to water and sewer utilities charging ratepayers for the cost of those infrastructure systems.

Option 6: Adopt Transportation User Fee

Transportation user fees represent an uncommon but innovative approach. The cities of Austin and Bryan have programs that include a small charge for transportation infrastructure maintenance on the monthly utility bills of most property owners. Transportation user fees function in a manner similar to storm water drainage fees, which are a fairly common tool in Texas. Fort Worth presently charges a drainage fee whereas Austin and Bryan charge fees for both transportation and drainage. In both cities, the amount of the transportation user fee varies by land use to reflect the vehicle trip generation of the property. The Austin program allows for fee exemptions for residents that do not regularly use a car or are over the age of 65.

Although the amount of the transportation user fee is relatively small in each city, the citywide rate base results in substantial revenue. Austin's FY2010 budget estimates that total revenue from its transportation user fee program will be approximately \$28 million. For the same fiscal year, Bryan estimates that revenues for the transportation user fee will be \$3.4 million. These annual revenue estimates for Austin and Bryan equate to \$38 and \$45 per capita, respectively.⁵ Because revenue is generated by both residential and nonresidential properties the actual amount paid per resident is substantially less. The monthly single-family home charge in Austin is \$4.97. Nonresidential fees per developed acre range from \$9.94 to \$124.25.

Both Austin and Bryan use their transportation user fee revenues for ongoing road maintenance costs rather than one-time capital projects for expansion. Maintenance is an appropriate use of funds because expenditures benefit all users. Those paying the fee benefit from the use of funds in proportion to their use of the city's roadways.

Although this report focuses primarily on one-time capital expenditures rather than ongoing maintenance, implementation of a transportation user fee could effectively free up other revenue sources for capital needs. Fort Worth presently spends roughly \$25 million in General Fund revenues per year on road maintenance. With a fee structure similar to what is used in Austin, the City could generate this annual maintenance amount through a transportation user fee. Doing so would enable the City to shift a greater share of property

⁵ Based on 2008 population estimates from the Office of the State Demographer.

tax revenue to the Debt Service Fund without negatively impacting the General Fund (see Option 2, above).

If used to support debt, an additional \$25 million in General Fund revenue would cause the current property tax allocation between the General and Debt Service Funds of 0.711/0.144 to shift to 0.648/0.207, an increase in debt funding of about 44 percent. For simplicity, this study assumes that those shares would remain constant over the 10-year planning horizon. In reality, constant shares of the property tax will send an increasing amount to the Debt Service Fund annually, reflecting both inflation-based growth in assessed value and the assessed value of new development. Under this approach, the transportation fee would need to be inflated annually to keep up with actual maintenance costs and ensure that the General Fund remained whole.

Independent of any other policy changes, implementation of a transportation user fee to fund road maintenance would ultimately result in \$494 million in increased bond proceeds for transportation over the 10-year period. Like property taxes, transportation user fees have substantial revenue generation potential because they are applied almost universally in the City. User fees, however, offer the following advantages over property taxes:

- ◆ Transportation user fees vary in amount based on the trip generation characteristics of the property. Accordingly, system users are required to contribute an amount that is proportionate to their impact on the transportation system. In effect, users will be getting what they pay for.
- ◆ The City will have discretion to craft a transportation user fee program in a manner that is consistent with local policy objectives. It will be possible, then, minimize fee burdens or eliminate fees altogether for those who do not create a substantial impact to the transportation system.
- ◆ Transportation user fees create a dedicated stream of funding that can only be used to fund authorized transportation needs. Whereas, property tax revenues can be diverted to a variety of uses based on changing priorities, transportation user fees provide a fixed source that will result in a significant long-term contribution to the City's transportation needs.

It is our understanding that the authority of local governments to enact transportation user fees is not explicitly provided by state statute. In contrast, storm water drainage fees are expressly allowed under §402.041 of the State of Texas Local Government Code. However, home rule cities are permitted to enact local laws so long as they do not conflict with state law. We recommend that the City conduct a legal review to evaluate the feasibility of a transportation user fee.

Transportation Impact Fees and Special Assessments

Unlike the options discussed above that draw from a citywide tax or user base, impact fees and special assessments are charged only to specific properties. Furthermore, there are more restrictions on the use of impact fee and assessment revenue. Impact fees can only fund projects that are needed to accommodate new development. Assessments can only be used for the special benefit of property owners approving the assessment.

Option 7: Increase Transportation Impact Fee

As discussed in Chapter 4 the City’s transportation impact fee program generates on average 33 percent of the maximum justifiable amount. If the City does not identify funding for the other 67 percent of costs the City will face on ongoing and growing funding gap. The City would keep “digging a bigger hole” as the infrastructure needs generated by growth outpace the City’s ability to fund those needs.

The fee may be increased by any amount up to the maximum justified levels calculated in the nexus study. Increases may vary by service area and land use type. Increasing fees to the maximum amount would fully fund the \$462 million transportation infrastructure need associated with growth (see Table 4.6 in Chapter 4).

The revenue impact of increasing fees to 50 percent of the maximum levels is shown below in **Table 5.1**. Fee revenues over 10 year would increase from \$161 million to \$244 million, a net increase of \$83 million.

Table 5.2: Impact Fee Increase To 50% Maximum Justified Fee

Impact Fee Revenue (FY2009 - FY2018) - Current Rate	\$	161,000,000
Current Average Fee Collection Rate (% max. justifie	0.33	
Potential Fee Collection Rate	0.50	
Fee Revenue Adjustment Factor		<u>1.52</u>
Impact Fee Revenue (FY2009 - FY2018) - Potential Rate	\$	<u>244,000,000</u>
Revenue Increase	\$	83,000,000

Sources: Table 4.4; Willdan Financial Services.

Option 8: Facilitate Formation of Public Improvement Districts

Public Improvement Districts (PIDs) are a type of assessment district, an infrastructure financing tool dating back to the Romans. Special assessment financing mechanisms are presently used in over 35 states. Assessment districts are typically small contiguous areas with boundaries defined as appropriate in each case. A special assessment is levied on property within the district and secured by a lien against the property. The assessment is typically used to finance debt thereby enabling significant investments in infrastructure over a short period of time. Financing is typically on favorable terms because the debt is tax-exempt. Property owners pay the assessment as part of their property tax bill. Property owners or the local jurisdiction cannot unilaterally alter the assessment once it is in place to avoid imperiling the debt financing. Once the debt is retired the lien is removed from the property and the assessment is no longer collected.

Chapter 372 of the Texas Local Government Code governs use of PIDs in Texas. Chapter 372 outlines requirements for property owner petitions to form a PID as well as the types of

public improvements that can be funded.⁶ Section 372.003.B.3 authorizes the use of a PID for “acquiring, constructing, improving, widening, narrowing, closing, or rerouting of sidewalks or of streets, any other roadways, or their right-of-way.” Formation of a PID must be initiated by a property-owner petition and approved by the City Council.

Currently the City limits the use of PIDs primarily due to equity considerations. The City has been wary that certain properties would pay an assessment while neighboring properties would not yet both would benefit from the same infrastructure. The most common use to date in the City has been for aesthetic improvements in specific areas such as landscaping and lighting.

The City could expand the use of this tool to fund transportation infrastructure. A critical criterion for any special assessment is that it reflects the property owner’s direct and special benefits received from the infrastructure funded by the assessment. Thus, assessment districts could be structured that clearly convey upon participating property owners the benefits of offsite transportation infrastructure improvements. To avoid reducing PIDs for transportation infrastructure could be limited to offsite arterial improvements only such as those in the TIP and exclude onsite roadways (within the subdivision).

PIDs could be used in two ways, one to serve new development and one to serve existing development:

- ◆ PIDs would offer developers a new tool for financing transportation infrastructure. The PID may enable the developer to finance infrastructure costs with tax-exempt debt rather than using their own capital. The ability of the developer to pass the cost of the assessment onto the future property owner would vary depending on the ultimate property ownership status (owner-occupied vs. tenant-occupied), the type of development (residential vs. nonresidential), and market conditions (strong vs. weak).
- ◆ PIDs could also be formed by existing property owners in developed areas seeking to build out the transportation infrastructure in their area. Formation of PIDs in developed areas is more difficult than by developers because of the larger number of property owners needed to agree on the approach. Nevertheless, PIDs are an option for existing developed areas where the lack of infrastructure is significant enough to spur property owners to approve an assessment to correct these deficiencies.

Planning Strategies

The following strategies represent changes in development and infrastructure planning to address the transportation infrastructure funding gap.

New Development Infrastructure Planning

Several techniques are available to increase the likelihood that adequate facilities will be in place to support new development. The programs and policies detailed in this section would help the City coordinate the processes of development approval and infrastructure planning so that one would not outpace the other. Generally, successful implementation of planning techniques to address the transportation funding gap would involve either controlling the

⁶ See <http://texasdevelopmentfinancing.com/PID.html> for a general description of the PID financing tool and the advantages and disadvantages to developers.

pace of new infrastructure needs or encouraging development that makes more efficient use of transportation infrastructure.

Option 9: Require Infrastructure Financing Plan For Growth Areas

In several states, including Arizona and California, municipalities require or participate in the preparation of “specific plans” or “area plans” that govern the development of a small sub-area of the City. Plan areas are typically undeveloped zones with a relatively small number of property owners that are expected to see substantial development in the foreseeable future. This tool is more difficult to use if development occurs in small subdivisions and/or with multiple developers because of the challenge coordinating participation in the planning effort.

In addition to providing guidelines for street layouts, design requirements, and general community characteristics, specific plans may include an infrastructure financing plan (IFP). IFPs are commonly used in California particularly in the Sacramento and San Diego areas. The IFP outline the facilities and infrastructure needed to serve the planned development, both onsite and offsite, and provide detail on costs, phasing, and funding sources. The IFP designate “backbone” infrastructure that the developer must provide when development commences along with feasible funding sources and financing mechanisms.

As another example, the City of Phoenix is divided into 15 urban villages for planning purposes. Each village has its own Village Planning Committee which is responsible for identifying needed refinement or revision of the City’s General Plan, guiding local implementation of the General Plan, defining the intended future function, density and character of sub areas of the village, and commenting on proposals for the new zoning districts or land use districts.⁷ Although local planning efforts do not, on their own, ensure adequate facility financing, they do increase community awareness of the infrastructure impacts of new development. The result may be the identification of infrastructure solutions prior to the creation of system deficiencies.

Although not a funding source on its own, an IFP requirement could provide value in Fort Worth in cases where the City wants to ensure that offsite arterials are delivered in a timely manner to serve development. The City could build on the infrastructure planning work for the 27 service areas done as part of the transportation impact fee study. The City will find this tool easier to implement in areas with fewer, larger property owners.

Option 10: Adopt Adequate Public Facilities Ordinance

Under an adequate public facilities ordinances (APFOs) the jurisdiction determines whether facilities are adequate to serve a proposed development before issuing development approval. If the jurisdiction’s schedule of capital improvement provision is not timely for the proposed development the project may not proceed unless the developer chooses to build or fund the needed facilities. Determination of adequate facilities is typically based on adopted facility standards.

Counties and cities in Maryland has had extensive experience with APFOs A 2005 study identified 13 counties and 12 municipalities with APFOs dating back as far as 1973 when

⁷ City of Phoenix. <http://phoenix.gov/PLANNING/vpcommitt.html>.

Montgomery County adopted their ordinance.⁸ Key challenges identified by that study include APFOs are most effective when paired with revenue options to fund infrastructure needs, and (2) APFOs should be one of a comprehensive package of effective planning policies and not the sole determinant of development.

Critics of APFOs have argued that these programs delay development, increase the cost of development, and encourage suboptimal development patterns.⁹ They argue that by requiring adequate facilities without a feasible funding mechanism these ordinances act as a growth moratorium, decrease land supply, and raise the cost of housing and commercial development. Absent revenue tools, developers are often faced with providing voluntary exactions in exchange for the right to develop. APFOs implemented without sufficient infrastructure financing options may have the impact of a de facto “no growth” policy in some areas.

The studies referenced above indicate that an effective APFO should:

- ◆ Be coupled with effective funding and financing mechanisms such as a capital improvement plan, an impact fee program, and mechanisms for developers to build needed facilities and be reimbursed for over-capacity;
- ◆ Limit the scope of the required facilities to essential categories and use reasonable facility standards;
- ◆ Include a waiver option to promote other planning objectives such as infill development;
- ◆ Provide as much information and certainty to developers as possible such as by doing capacity analysis at a sketch level early in the development process.

APFOs are neither expressly permitted nor prohibited under Texas state law. The City of Fort Worth has previously expressed interest in working with the Texas Municipal League to request changes to state law to clarify local jurisdiction authority.

Option 11: Incentivize Development To Use Existing Infrastructure

An option for facilitating development while seeking to control new infrastructure costs is to steer development to areas where infrastructure is already in place, or where higher densities will result in lower infrastructure costs per unit of development. Incentive policies might not reduce overall transportation costs at build-out but may facilitate delayed need for infrastructure improvements relative to what is currently anticipated. The result would be a longer time period during which the City could accrue revenue for transportation needs.

⁸ Maryland-National Capital Building Industry Association and National Center for Smart Growth Research and Education, *Adequate Public Facilities Ordinances in Maryland: An Analysis of their Implementation and Effects on Residential Development in the Washington Metropolitan Area*, January 12, 2005, Table 1, pp. vii-viii.

⁹ Ott, Steven H. and Dustin C. Read, *The Effect of Growth Management Strategies: Adequate Public Facilities Ordinances and Impact Fees: A Review of Existing Research*, Center for Real Estate at UNC Charlotte, January 2006, pp. 6-12.

High-density development reduces transportation costs because a greater increment of development takes place over a smaller land area. Consequently, high-density development generates less vehicle miles traveled per capita, reducing the need for transportation infrastructure compared to less dense development patterns. Transit-oriented development further reduces vehicle trips and related road infrastructure needs. A 2008 study of 17 built transit-oriented projects conducted by the Transit Research Cooperative Program, found that vehicle trip generation occurred at rates that are roughly half of those published by the Institute of Transportation Engineers (ITE).¹⁰ The ITE source is used for most transportation planning and impact fee studies (including the Fort Worth study), but obviously fails to capture the reduced generation from projects with efficient transit access. A fee or incentive structure that sends accurate pricing signals to development, reflecting the true cost of infrastructure to serve that development, could help the City steer building activity to the most efficient locations.

Infrastructure Delivery

Option 14: Defer Transportation Improvements

Deferring the completion of needed transportation improvements beyond this study's 10-year planning horizon is not desirable. The longer that the City's transportation infrastructure needs are not addressed the more expensive it will be to correct deficiencies and the more vehicle delays will occur due to congestion. However, the magnitude of the funding gap (\$1.0 billion, see Table 4.7) compared to potential revenue enhancement options makes some amount of deferral a distinct possibility. For example extending the planning horizon for the TIP by three years (FY2019 through FY2021) would result in \$363 million in new debt capacity based on the base case assumption that allocated 75 percent of available capacity to transportation needs.

Conclusion

The 14 options discussed above need to be evaluated and a preferred package of options selected to address the City's funding gap for transportation infrastructure. To inform that policy evaluation, the next three chapters provide an analysis of existing development and occupancy costs compared to competing cities (Chapters 6 and 7), and an analysis of the economic impacts of transportation infrastructure investment on the local economy (Chapter 8). The concluding chapter (Chapter 9) develops a recommended package of options for consideration.

¹⁰ "Effects of TOD on Housing, Parking, and Travel." Transit Cooperative Research Program, administered by the Transportation Research Board of the National Research Council. August 2008.

6. Development Cost Survey

This chapter summarizes the methods, assumptions, and results of the development cost survey. For the purposes of this study, data for several categories of development costs were collected for Fort Worth, seven other Texas cities, and eight national cities.

Introduction

The comparative analysis presented in this chapter provides a snapshot of the permitting, processing, infrastructure, and mitigation costs for development in Fort Worth and the selected cities. The purpose of this cost comparison was neither to conduct a precise nor comprehensive comparison of development costs. Rather the purpose of this effort was to determine, based on a reasonably robust analysis of cost factors and competing cities, whether Fort Worth is an outlier in terms of an excessively high cost structure. Being an outlier would constrain the use of some of the options discussed in the preceding chapter.

The survey and the results presented here are intended to provide a comparison of most costs of development. All fees for processing, infrastructure, and mitigation are included as are development standards with have a significant impact on costs. Also included are estimated vertical building costs. The survey excludes costs for land, financing, special studies, design and engineering, and developer profit and overhead. The survey focuses on development costs imposed or influenced by city government.

Development Cost Affects On Real Estate Investment

The results of the survey cannot definitively answer whether a new development fee should be imposed or an existing fee should be increased or reduced. However, the survey can provide context for decisions regarding new or increased fees. Many cities compare their local fees and other development costs with those of other cities in their region or other comparable cities. Cities often want to avoid being a “high-cost” location with fees far above its neighbors. It is possible, however, to compensate for higher development costs with positive location factors (workforce quality, adequate infrastructure, proximity to markets, etc.) to attract new development.

The research into the effects of impact fees is still evolving. The traditional view of impact fees is that they function as a tax on new development, with one or more of the following effects: increased prices for new development, reduced land prices, or reduced rates of development. However, a new view of impact fees is emerging from empirical research into their economic impacts. A recent review of the empirical literature shows that impact fees may provide overall benefits to communities where they are used.¹¹

With regards to price increases one recent survey of the literature concluded that impact fees increases prices of the development product 1.5 to 1.7 times the amount of the fees. Price

¹¹ Burge, Gregory S., Arthur C. Nelson, and John Matthews. 2007. Effects of Proportionate Share Impact Fees. *Housing Policy Debate* 18:679-710.

increases represent both positive and negative impacts. In other words it is not clear to what extent price increases are caused by (1) supply-side impacts (developers incorporating higher development costs) or (2) demand-side impacts (buyers increased willingness to pay) but both probably have effects.

- ◆ The major explanation offered for higher prices is that buyers value the infrastructure provided by impact fee programs more than the cost of the infrastructure itself. A secondary explanation is that fees reduce the need for property tax increases for infrastructure and lower property tax rates are capitalized into the property price.
- ◆ Price effects on residential development are not the same absolute amount regardless of home price. Instead prices increase proportional to the value of the home.
- ◆ Research to date has been unable to verify whether increased fees cause developers to push the cost back to landowners in the form of lower prices for undeveloped land.

With regards to the effect of impact fees on the rate of development, results are ambiguous. It is not clear to what extent fees depress growth because of higher development costs, or facilitate growth by providing adequate infrastructure. The evidence to date suggests that fees used to provide infrastructure that otherwise would be funded by property taxes have at worst a negligible impact and may have positive impacts on growth rates.

More research is needed to fully understand the economic impacts of impact fees on new development and their merit compared with alternative infrastructure funding sources. Comparing impact fees and other development costs among communities as presented in this chapter is a reasonable basis for informing policy decisions, but should not be the only basis.

Approach and Methods

This section describes the survey approach, including the development project prototypes used, the cities surveyed, and the development costs and fees included in the analysis.

Development Prototypes

Residential and nonresidential land uses typically have distinctly different fee structures. The following development prototypes are included in this analysis, allowing a comparison of development costs by type of development across cities:

- ◆ Single family detached residential;
- ◆ Multi-family residential;
- ◆ Retail;
- ◆ Office - Central Business District;
- ◆ Office - Outer Loop; and
- ◆ Industrial.

Two office prototypes were included in the survey because, in many cities, the development fee and infrastructure cost burden for a project located in the central business district would be lower than if the same project were located in a new growth area on the edge of the city.

To ensure that the development prototypes used in the survey are reasonably representative of the types and characteristics of development likely to occur in Fort Worth the prototypes were based on actual recent development projects in the City. **Table 6.1** summarizes the features of the prototype developments used in the analysis. Additional details about the development prototypes are in Appendix 2.

Cities Surveyed

Cities included in the survey include Fort Worth, seven cities in Texas, and eight cities outside of Texas. Not all development prototypes were surveyed in all cities. **Table 6.2** shows the prototypes analyzed for each of the cities surveyed. For each prototype the cities selected are considered to be competitors with Fort Worth for real estate development. The list of cities surveyed was developed with input from the Chamber of Commerce and members of the advisory committee appointed by the City Manager to provide input to this study.

For office and industrial development the City tends to compete larger cities in Texas and locations nationally from Atlanta in the southeast to Phoenix in the southwest. Major corporations often conduct national searches for their facilities. Businesses that serve a more local or regional market will focus on cities within Texas or only within the Metroplex.

Table 6.2: Cities Surveyed by Development Type

Cities	Development Types				
	Single Family	Multi Family	Retail	Office	Industrial
Fort Worth, TX	●	●	●	●	●
<i>Texas Comparison Cities</i>					
Austin, TX				●	●
Burleson, TX	●	●	●		
Dallas, TX			●	●	●
Grand Prairie, TX	●	●	●		
Irving, TX			●	●	●
McKinney, TX	●	●			
San Antonio, TX				●	●
<i>National Comparison Cities</i>					
Atlanta, GA				●	●
Charlotte, NC				●	●
Chicago, IL				●	●
Denver, CO				●	●
Kansas City, MO				●	●
Oklahoma City, OK				●	●
Phoenix, AZ				●	●

Table 6.1: Development Prototypes

Feature	Single Family	Multi-Family	Retail	Office	Industrial
Density	1 unit per lot - minimum 7,500 SF lots	16.4 units per acre	-	-	-
Minimum Lot	7,500 SF	-	-	-	-
Dwelling/Building Size (sq. ft.)	2,200	720 - 1,555	68,200 - 75,000	100,000	234,600 SF of Type S-1 Occupancy (storage) and 20,000 SF of Type B occupancy (business use)
Average Lot Size (acres)	0.17	17.90	0.99	1.50	8.10
Maximum Number of Floors	1-2	3	2	8	1
Total Project Area (acres)	75.0	17.9	7.9	1.5	16.2
Number of Lots/Units	266 - 277	286 - 294	8	1	2
Development Type	Single Family Medium Density	Multi-Family Medium Density	Neighborhood/ Community Retail	General Office/Mixed Use	Light Industrial
Type of Construction	Detached	Low-Rise 3 Stories	Tilt Wall	Type I - Steel Frame	Type I - Concrete Tilt Wall
Project Location	Outer City limits	Outer City limits	Outer City limits	Central Business District / Outer City Limits	Outer City limits
Garage area	600 SF Garage	1.98 Spaces per unit	-	-	-
Water Service Tap Size	1" domestic per lot	2-8" domestic / 2-2" irrigation	7-1.5" domestic / 1-4" domestic	4" domestic	2" domestic / 2" Irrigation

Source: ANA Consultants, LLC.

The survey focused on comparison cities in the Metroplex for residential and retail development. The demand for housing in the region is determined by population growth in the region, resulting from either migration or natural population increases. Cities within the region compete for residential development to accommodate this population growth. Household spending in turn drives the demand for retail development and retail development must be located reasonably close to residential development.

Development Costs Included in Survey

The development costs included in the survey were also developed with input from the Chamber of Commerce and the advisory committee. The survey included all of the following types of fees and infrastructure requirements imposed on the developer or the eventual property owner:

- ♦ **Processing fees:** Planning, engineering, and building permit fees charged by planning and building departments;
- ♦ **Impact and other mitigation fees:** One-time charges imposed on development to fund the facilities required to accommodate growth; and
- ♦ **Infrastructure costs:** Costs of selected infrastructure required of development based on each city's infrastructure standards.

For cities with transportation impact fees, the survey included an estimate of the fee credit that would be received by developers for constructing roadways adjacent to their development.

In addition to fees and infrastructure requirements the survey took into consideration the following development regulations and standards:

- ♦ **Park dedication;**
- ♦ **Storm water design standards;**
- ♦ **Paving/streets standards;** and
- ♦ **Tree preservation.**

For each standard or regulation, the cost of compliance was estimated for the prototype development projects.

Site Plan and Cost Analysis

To estimate the costs of fees and development regulations, a site map was prepared for each prototype in each city surveyed. Each city's development standards were applied to the site to determine how much development could be accommodated under the city's standards. The analysis found that the same amount of multi-family residential, office, and industrial could be accommodated on the development site in each of the cities surveyed. However, the development standards resulted in different amounts of single family residential and retail development among the cities. Infrastructure costs, fee amounts, and building costs were estimated based on the site development plan identified for each city.

For the single family residential subdivision, an engineering analysis was conducted to estimate the interior roadway, earthwork, water distribution, sanitary sewer collection, and storm drainage costs based on the site plan for each city and each city's development

standards. For the other development types, these costs are included in the estimated building costs. For all development types, the cost of perimeter streets was estimated. These streets would typically be constructed by the developer.

Development Cost Comparisons

This section summarizes estimates of development costs for all of the land use prototypes and cities surveyed. Further details on specific fees and costs are included in Appendix 2.

While development fees and infrastructure standards are policies where cities can directly influence development costs, these items typically comprise a relatively small amount of the total development cost for a real estate project. Building construction is typically a large component of project development costs. Thus a more comprehensive cost comparison would include building construction costs. Building and site construction costs for each development prototype were estimated using RSMeans construction cost data for the first quarter of 2009. RSMeans provides data on how construction costs vary across cities. This analysis excludes other development costs such as land, financing, special studies, design and engineering, and developer overhead and profit.

Tables 6.5 through 6.8 and **Figures 6.1 through 6.12** show results of the development cost survey. For each development type, one chart shows development fees and infrastructure costs, which are the components of development costs directly controlled by city policies. A second chart shows the same data as the first chart, with the addition of estimated building and site construction costs.

Complete development cost data was not available for all of the cities included in the survey. For a few cost items, both extensive Internet searching and repeated attempts to contact city staff members were not successful in providing data sufficient to estimate a fee. Data gaps were particularly evident for Atlanta. Items where information suggests that a fee is charged, but where no fee could be calculated, are marked as “Not Provided” (N/P) in the detailed cost tables in Appendix 2.

Table 6.3: Summary of Single Family Infrastructure Costs and Development Fees

	Fort Worth	Burleson	Grand Prairie	McKinney
<i>Costs for Entire Development</i>				
Home Construction Cost	\$ 35,675,640	\$ 35,978,976	\$ 35,978,976	\$ 34,971,552
Selected Infrastructure Costs	4,279,105	4,046,306	3,946,356	4,356,154
Processing Fees	548,099	487,726	388,717	464,963
Impact Fees (Net of Credits)	613,047	862,813	936,814	801,063
Subtotal - Development Fees and Infrastructure Cost	\$ 5,440,251	\$ 5,396,846	\$ 5,271,887	\$ 5,622,179
Total Construction, Infrastructure, and Fee Cost	\$ 41,115,891	\$ 41,375,822	\$ 41,250,863	\$ 40,593,731
<i>Costs per Lot</i>				
Number of Lots Accommodated by Site	273	277	277	266
Home Construction Cost per Lot	\$ 130,680	\$ 129,888	\$ 129,888	\$ 131,472
Selected Infrastructure Costs per Lot	15,674	14,608	14,247	16,377
Processing Fees per Lot	2,008	1,761	1,403	1,748
Impact Fees (Net of Credits) per Lot	2,246	3,115	3,382	3,012
Subtotal - Development Fees and Infrastructure Cost per Lot	\$ 19,928	\$ 19,483	\$ 19,032	\$ 21,136
Total Construction, Infrastructure, and Fee Cost per Lot	\$ 150,608	\$ 149,371	\$ 148,920	\$ 152,608

Note: See Appendix 2 for detailed cost components.

Source: ANA Consultants, LLC.

Figure 6.1: Single Family Development Fees and Infrastructure Costs per Lot

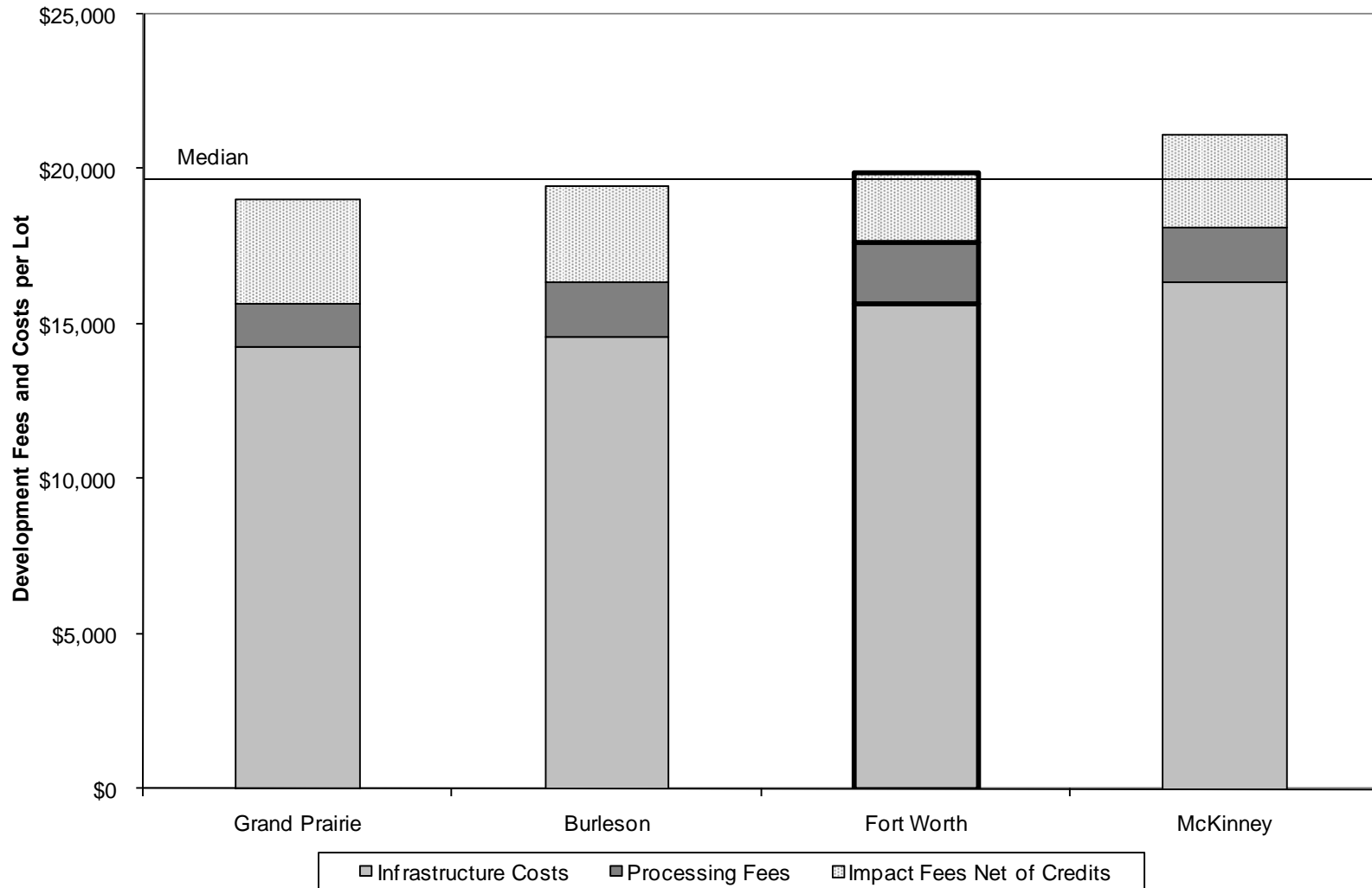


Figure 6.2: Single Family Construction, Development Fees and Infrastructure Costs per Lot

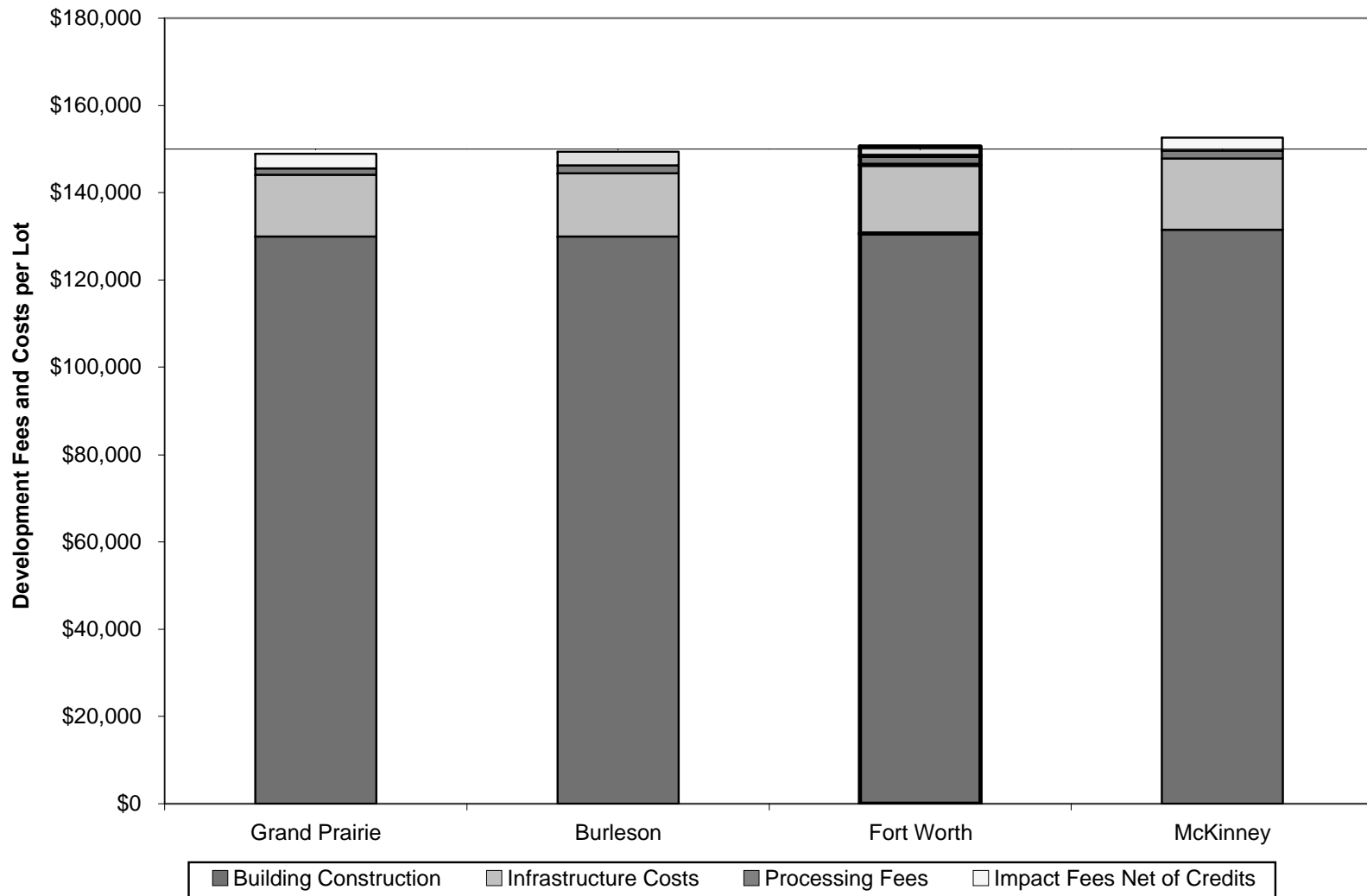


Table 6.4: Summary of Multi-Family Infrastructure Costs and Development Fees

	Fort Worth	Burleson	Grand Prairie	McKinney
<i>Costs for Entire Development</i>				
Building and Site Construction Costs	\$ 31,036,356	\$ 31,036,356	\$ 32,429,436	\$ 29,437,980
Selected Infrastructure Costs	382,578	351,435	351,435	387,721
Processing Fees	99,966	140,713	80,317	124,385
Impact Fees (Net of Credits)	354,290	604,681	388,016	449,549
Subtotal - Development Fees and Infrastructure Cost	\$ 836,834	\$ 1,096,828	\$ 819,768	\$ 961,655
Total Construction, Infrastructure, and Fee Cost	\$ 31,873,190	\$ 32,133,184	\$ 33,249,204	\$ 30,399,635
<i>Costs per Unit</i>				
Number of Units Accommodated by Site	294	294	286	286
Building and Site Construction Cost per Unit	\$ 105,566	\$ 105,566	\$ 113,390	\$ 102,930
Selected Infrastructure Costs per Unit	\$ 1,301	\$ 1,195	\$ 1,229	\$ 1,356
Processing Fees per Unit	340	479	281	435
Impact Fees (Net of Credits) per Unit	1,205	2,057	1,357	1,572
Subtotal - Development Fees and Infrastructure Cost per Unit	\$ 2,846	\$ 3,731	\$ 2,866	\$ 3,362
Total Construction, Infrastructure, and Fee Cost per Unit	\$ 108,412	\$ 109,297	\$ 116,256	\$ 106,292
Note: See Appendix 2 for detailed cost components.				
Source: ANA Consultants, LLC.				

Figure 6.3: Multi-Family Development Fees and Infrastructure Costs per Unit

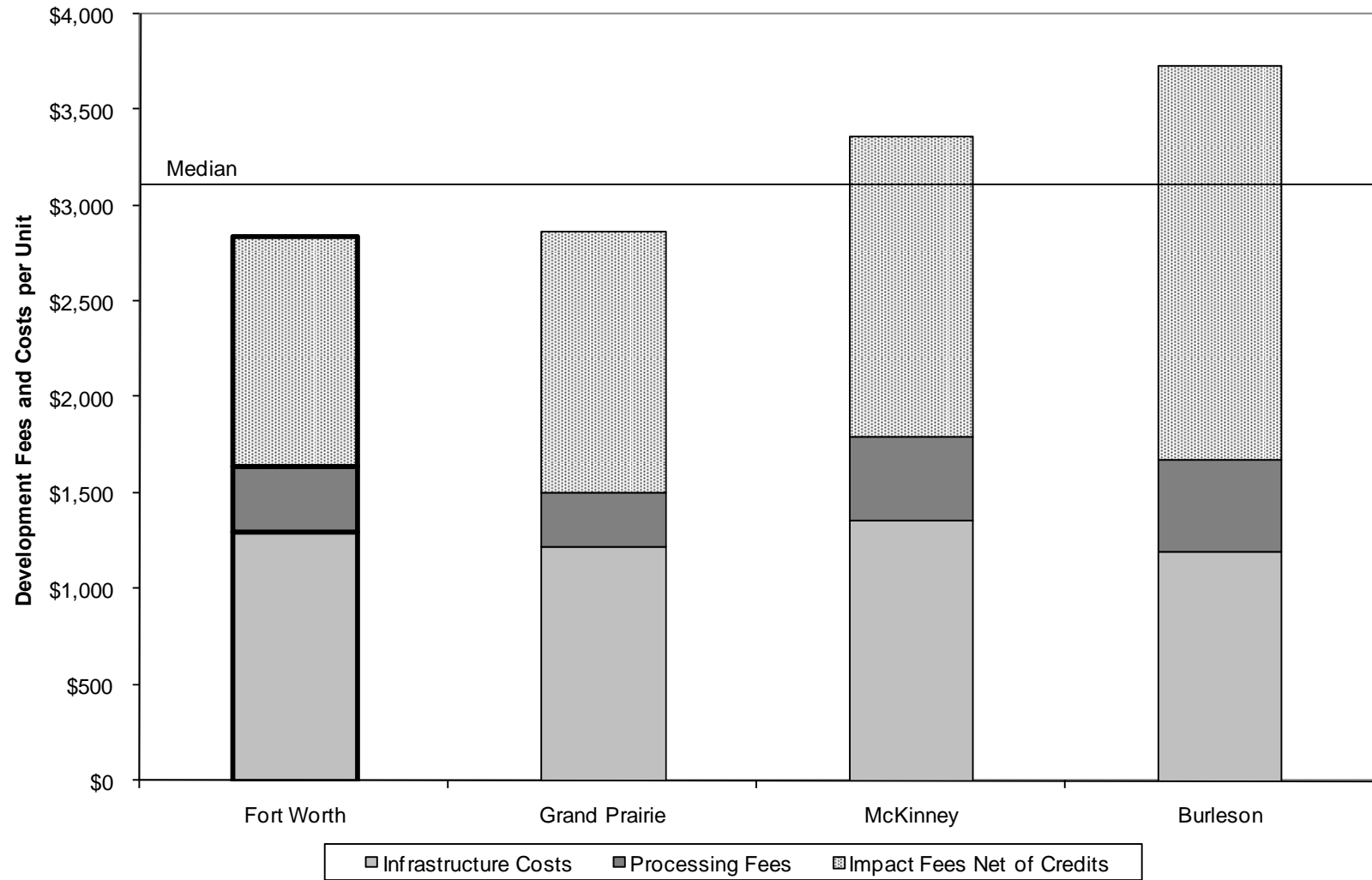


Figure 6.4: Multi-Family Construction, Development Fees and Infrastructure Costs per Unit

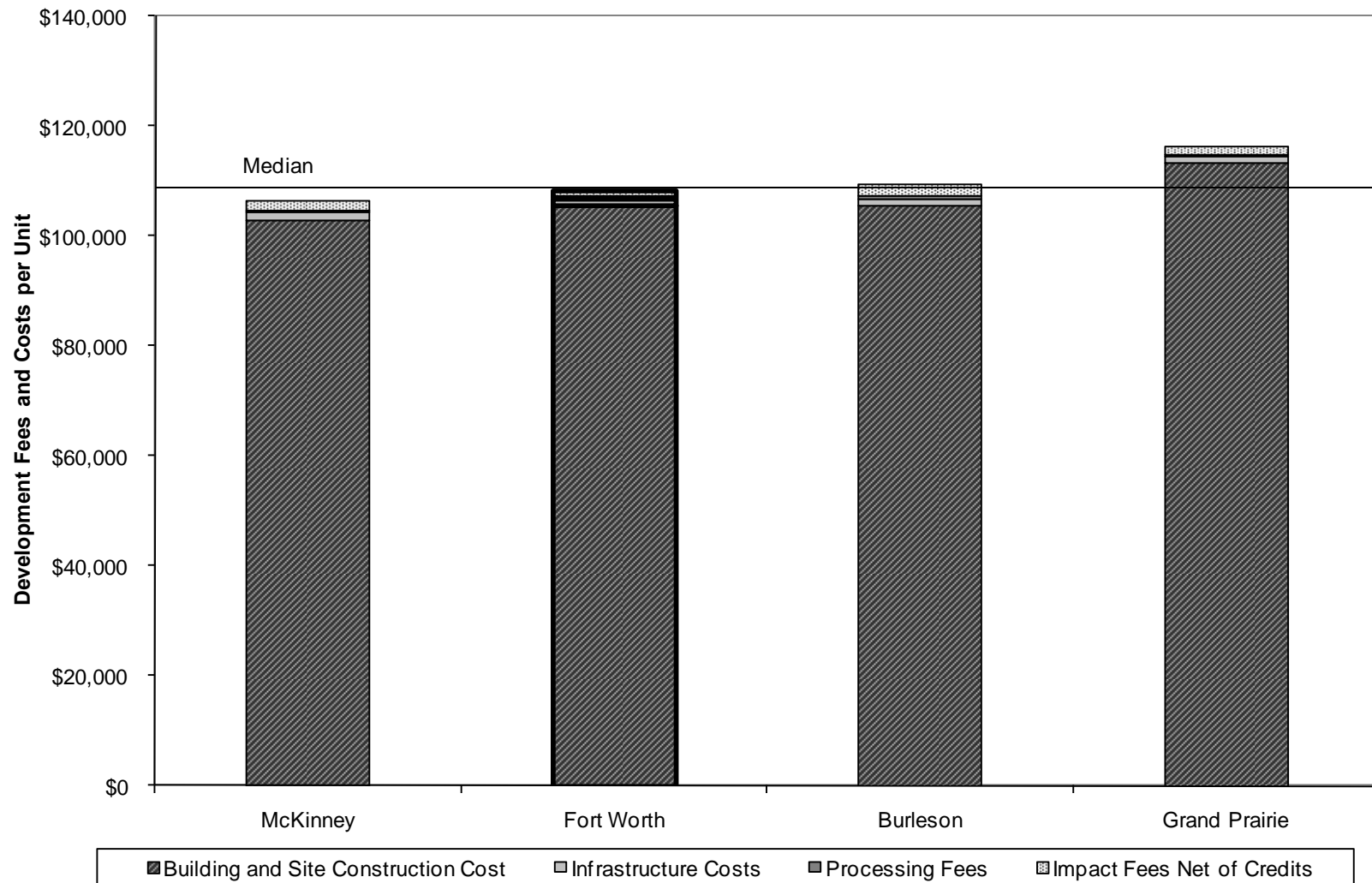


Table 6.5: Summary of Retail Infrastructure Costs and Development Fees

	Fort Worth	Burleson	Grand Prairie	Dallas	Irving
<i>Costs for Entire Development</i>					
Building and Site Construction Costs	\$ 6,509,282	\$ 5,887,706	\$ 6,645,756	\$ 6,011,148	\$ 6,235,905
Selected Infrastructure Costs	296,515	282,287	285,772	296,772	299,657
Processing Fees	50,332	44,249	31,592	33,815	23,455
Impact Fees (Net of Credits)	58,226	130,277	135,240	4,400	400
Subtotal - Development Fees and Infrastructure Cost	\$ 405,073	\$ 456,813	\$ 452,604	\$ 334,987	\$ 323,512
Total Construction, Infrastructure, and Fee Cost	\$ 6,914,355	\$ 6,344,519	\$ 7,098,360	\$ 6,346,135	\$ 6,559,417
<i>Costs per 1,000 Building Square Feet</i>					
Building Square Feet Accommodated by Site	75,400	68,200	75,400	68,200	70,750
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 86,330	\$ 86,330	\$ 88,140	\$ 88,140	\$ 88,140
Selected Infrastructure Costs per 1,000 Square Feet	3,933	4,139	3,790	4,351	4,235
Processing Fees per 1,000 Square Feet	668	649	419	496	332
Impact Fees (Net of Credits) per 1,000 Square Feet	772	1,910	1,794	65	6
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 5,372	\$ 6,698	\$ 6,003	\$ 4,912	\$ 4,573
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 91,702	\$ 93,028	\$ 94,143	\$ 93,052	\$ 92,713

Note: See Appendix 2 for detailed cost components.

Source: ANA Consultants, LLC.

Figure 6.5: Retail Development Fees and Infrastructure Costs per 1,000 Square Feet

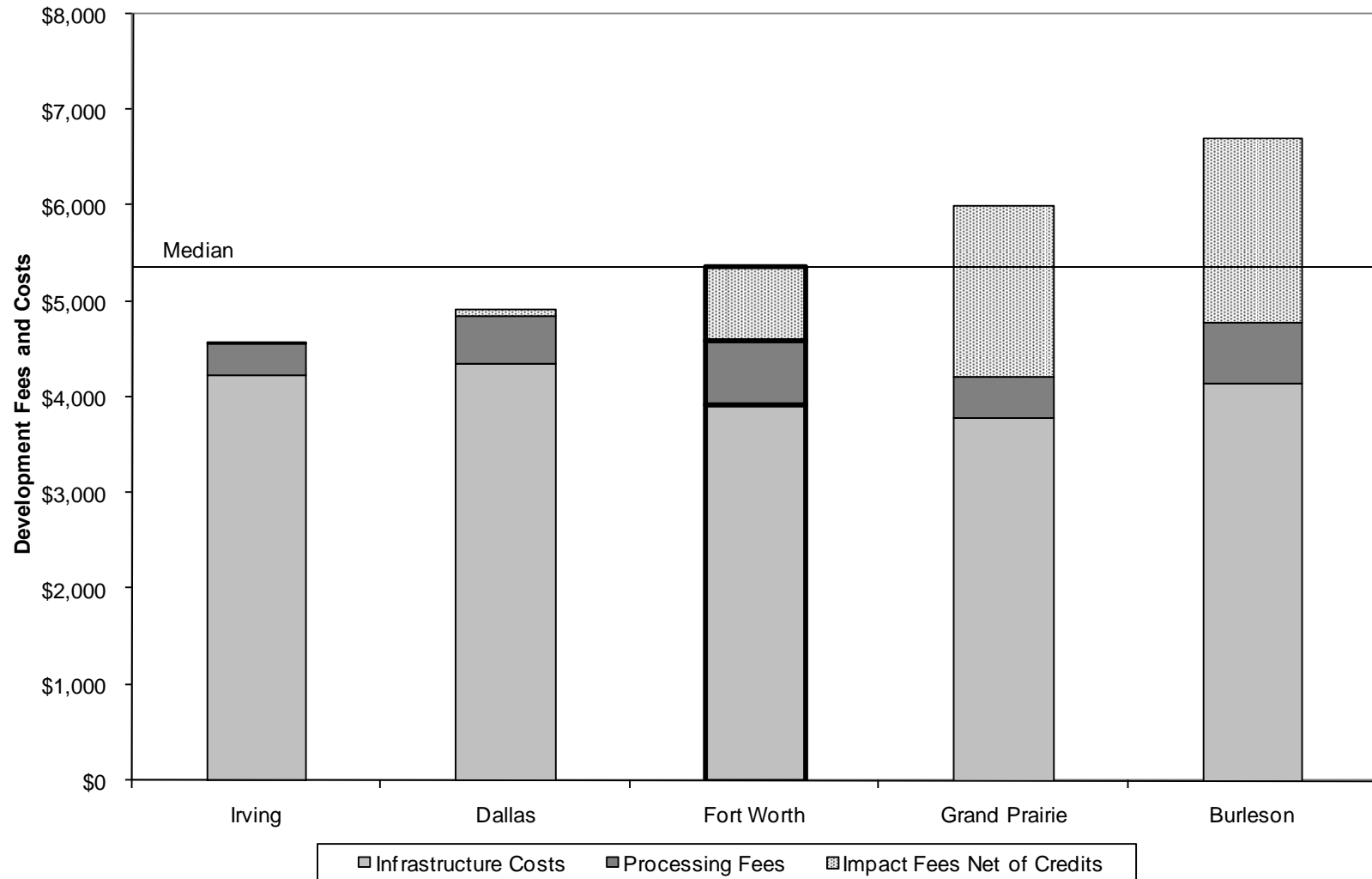


Figure 6.6: Retail Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet

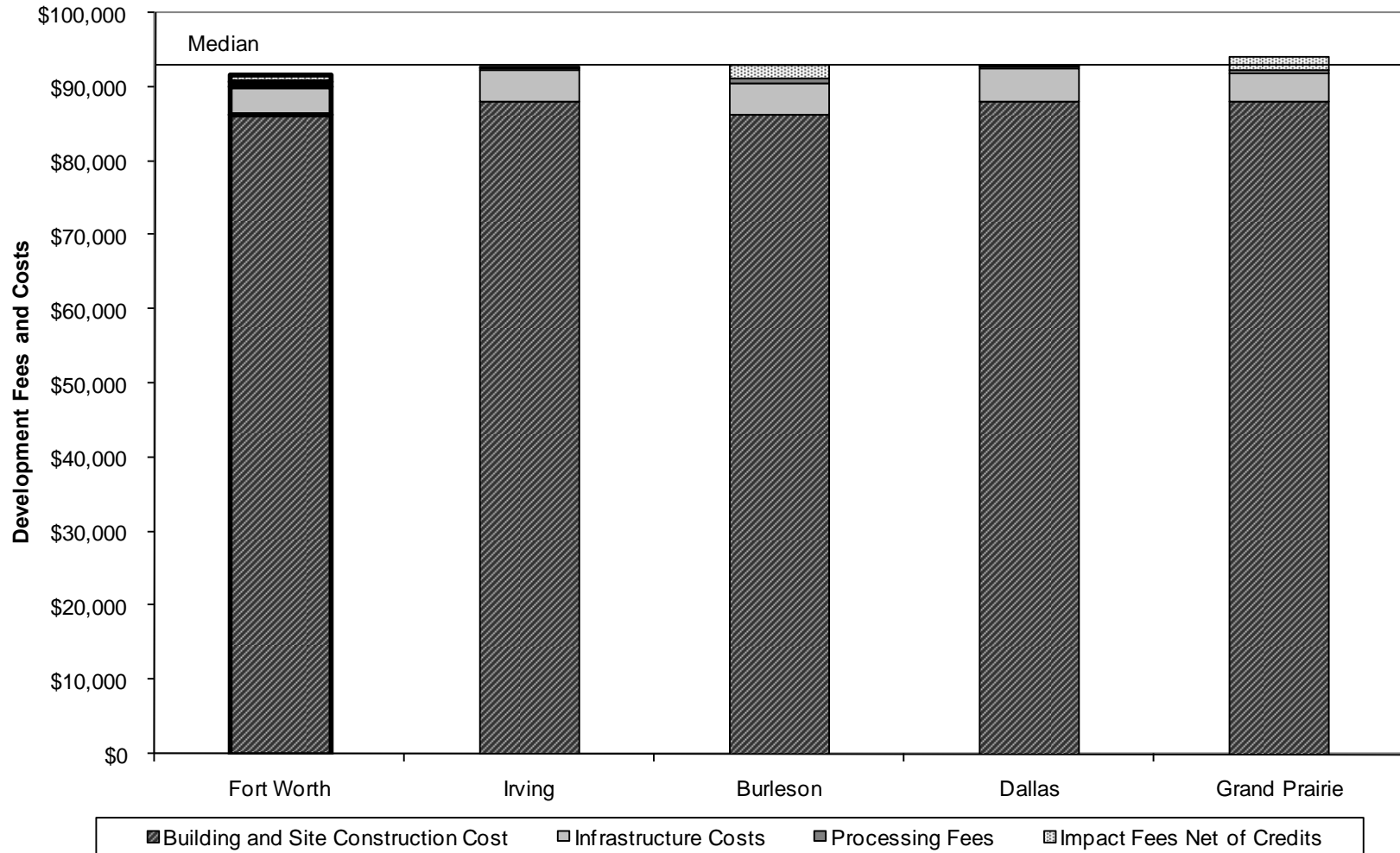


Table 6.6: Summary of Central Business District Office Infrastructure Costs and Development Fees

	Fort Worth	Austin	Dallas	Irving	San Antonio	Atlanta, GA
<i>Costs for Entire Development</i>						
Building and Site Construction Costs	\$ 12,908,000	\$ 12,675,000	\$ 13,390,000	\$ 13,390,000	\$ 12,951,000	\$ 13,824,000
Selected Infrastructure Costs	305,750	303,536	303,945	303,945	311,555	334,818
Processing Fees	34,886	47,885	39,291	29,671	43,047	72,260
Impact Fees (Net of Credits)	27,594	92,768	550	2,600	49,697	35,215
Subtotal - Dev. Fees and Infrast. Cost	\$ 368,230	\$ 444,189	\$ 343,786	\$ 336,216	\$ 404,299	\$ 442,293
Total Construction, Infrastructure, and Fee Cost	\$ 13,276,230	\$ 13,119,189	\$ 13,733,786	\$ 13,726,216	\$ 13,355,299	\$ 14,266,293
<i>Costs per 1,000 Building Square Feet</i>						
Building Square Feet Accommodated by Site	100,000	100,000	100,000	100,000	100,000	100,000
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 129,080	\$ 126,750	\$ 133,900	\$ 133,900	\$ 129,510	\$ 138,240
Selected Infrastructure Costs per 1,000 Square Feet	3,058	3,035	3,039	3,039	3,116	3,348
Processing Fees per 1,000 Square Feet	349	479	393	297	430	723
Impact Fees (Net of Credits) per 1,000 Square Feet	276	928	6	26	497	352
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 3,682	\$ 4,442	\$ 3,438	\$ 3,362	\$ 4,043	\$ 4,423
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 132,762	\$ 131,192	\$ 137,338	\$ 137,262	\$ 133,553	\$ 142,663
<i>Costs for Entire Development</i>						
	Charlotte, NC	Chicago, IL	Denver, CO	Kansas City, MO	Oklahoma City, OK	Phoenix, AZ
Building and Site Construction Costs	\$ 12,697,000	\$ 16,756,000	\$ 14,584,000	\$ 15,350,000	\$ 13,191,000	\$ 13,735,000
Selected Infrastructure Costs	297,727	423,045	339,255	376,127	304,945	329,209
Processing Fees	76,118	34,432	86,300	61,619	53,745	89,431
Impact Fees (Net of Credits)	57,234	-	220,511	177	18,161	21,003
Subtotal - Dev. Fees and Infrast. Cost	\$ 431,079	\$ 457,477	\$ 646,066	\$ 437,923	\$ 376,851	\$ 439,643
Total Construction, Infrastructure, and Fee Cost	\$ 13,128,079	\$ 17,213,477	\$ 15,230,066	\$ 15,787,923	\$ 13,567,851	\$ 14,174,643
<i>Costs per 1,000 Building Square Feet</i>						
Building Square Feet Accommodated by Site	100,000	100,000	100,000	100,000	100,000	100,000
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 126,970	\$ 167,560	\$ 145,840	\$ 153,500	\$ 131,910	\$ 137,350
Selected Infrastructure Costs per 1,000 Square Feet	2,977	4,230	3,393	3,761	3,049	3,292
Processing Fees per 1,000 Square Feet	761	344	863	616	537	894
Impact Fees (Net of Credits) per 1,000 Square Feet	572	-	2,205	2	182	210
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 4,311	\$ 4,575	\$ 6,461	\$ 4,379	\$ 3,769	\$ 4,396
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 131,281	\$ 172,135	\$ 152,301	\$ 157,879	\$ 135,679	\$ 141,746

Note: See Appendix 2 for detailed cost components.

Source: ANA Consultants, LLC.

Figure 6.7: Central Business District Office Development Fees and Infrastructure Costs per 1,000 SF

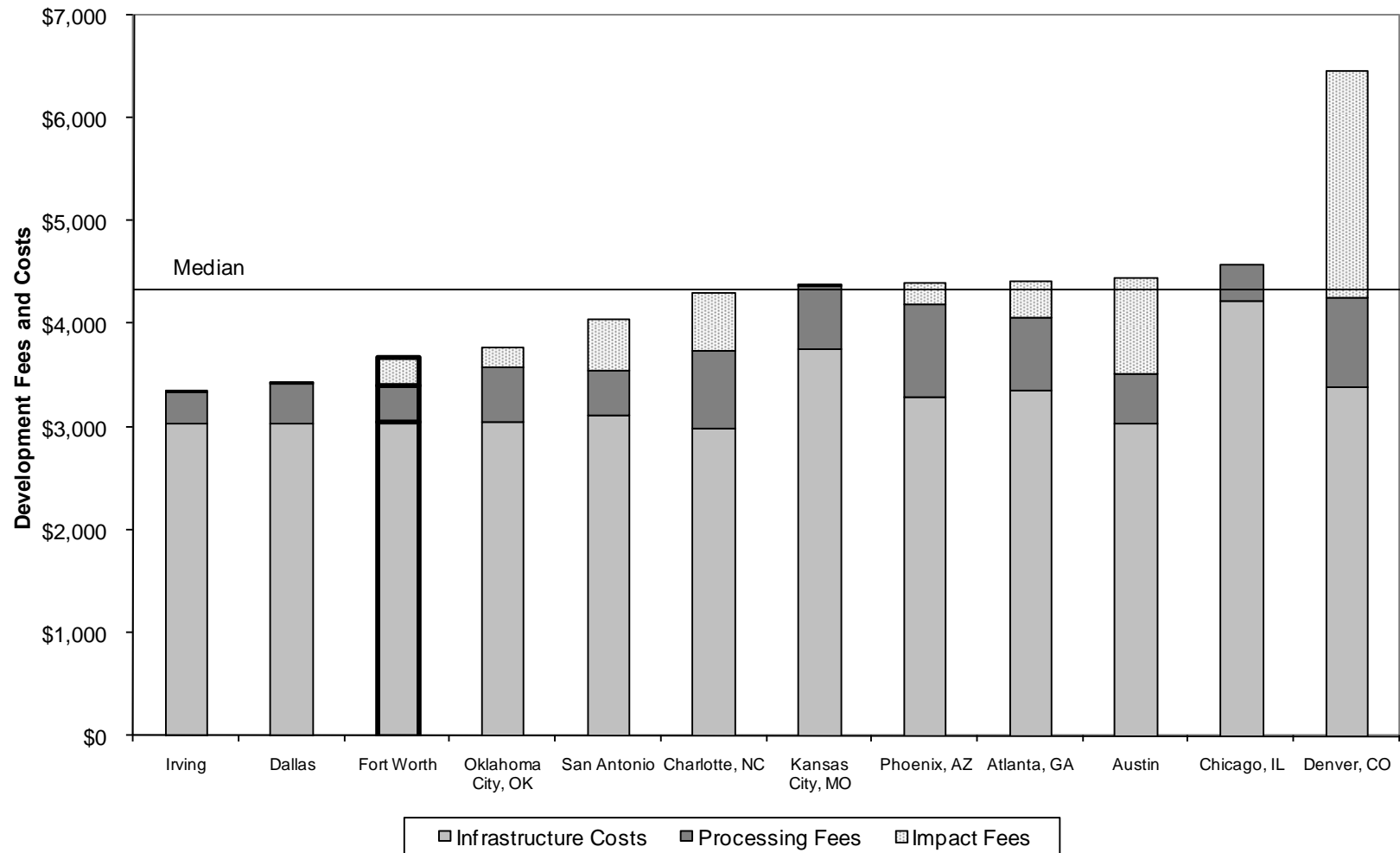


Figure 6.8: Central Business District Office Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet

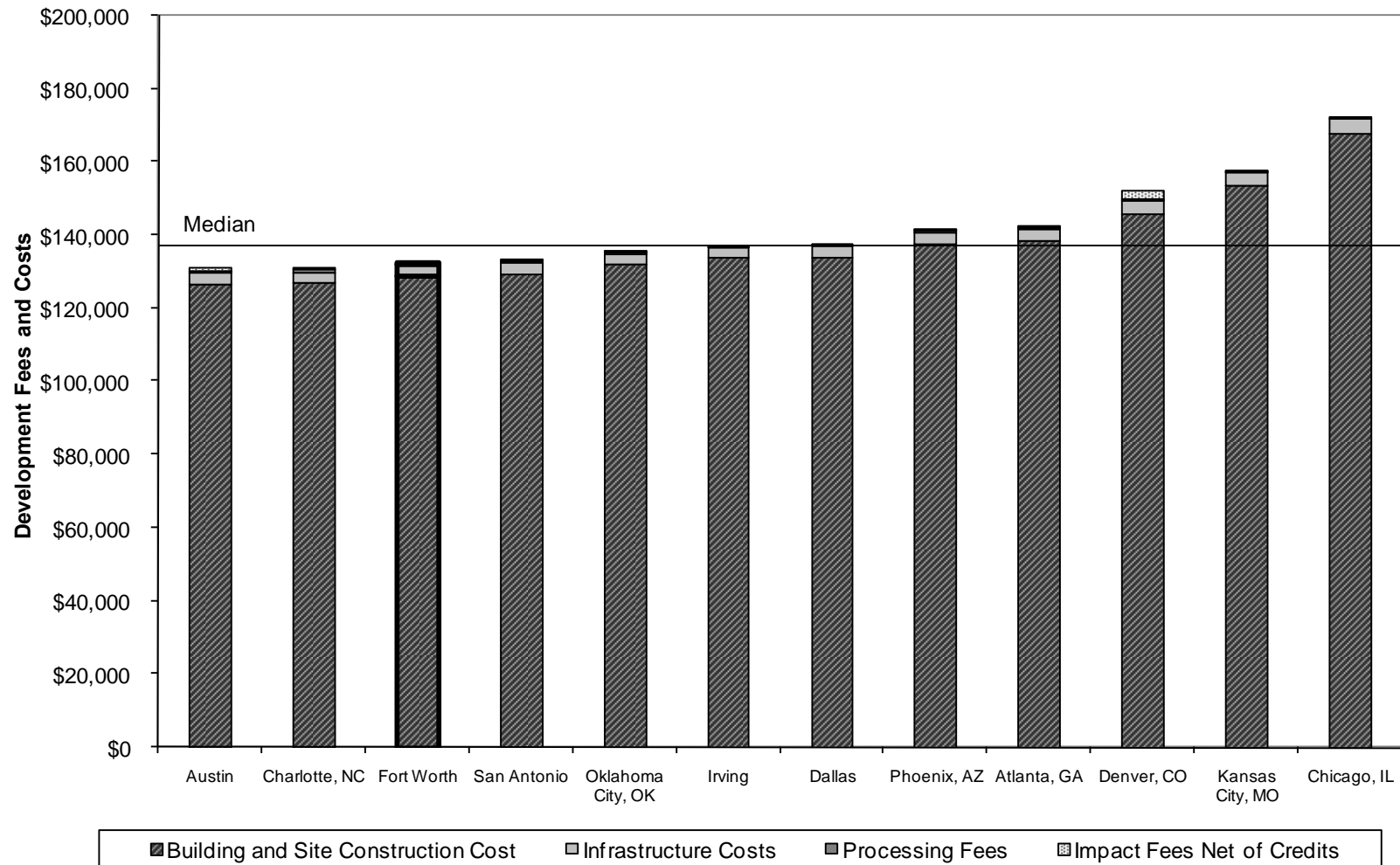


Table 6.7: Summary of Outer Loop Office Infrastructure Costs and Development Fees

	Fort Worth	Austin	Dallas	Irving	San Antonio	Atlanta, GA
<i>Costs for Entire Development</i>						
Building and Site Construction Costs	\$ 12,908,000	\$ 12,675,000	\$ 13,390,000	\$ 13,390,000	\$ 12,951,000	\$ 13,824,000
Selected Infrastructure Costs	305,750	303,536	303,945	303,945	311,555	334,818
Processing Fees	34,886	47,885	39,291	29,671	43,047	72,260
Impact Fees (Net of Credits)	154,656	92,768	550	2,600	49,697	232,010
Subtotal - Development Fees and Infrastructure Cost	\$ 495,292	\$ 444,189	\$ 343,786	\$ 336,216	\$ 404,299	\$ 639,088
Total Construction, Infrastructure, and Fee Cost	\$ 13,403,292	\$ 13,119,189	\$ 13,733,786	\$ 13,726,216	\$ 13,355,299	\$ 14,463,088
<i>Costs per 1,000 Building Square Feet</i>						
Building Square Feet Accommodated by Site	100,000	100,000	100,000	100,000	100,000	100,000
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 129,080	\$ 126,750	\$ 133,900	\$ 133,900	\$ 129,510	\$ 138,240
Selected Infrastructure Costs per 1,000 Square Feet	3,058	3,035	3,039	3,039	3,116	3,348
Processing Fees per 1,000 Square Feet	349	479	393	297	430	723
Impact Fees (Net of Credits) per 1,000 Square Feet	1,547	928	6	26	497	2,320
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 4,953	\$ 4,442	\$ 3,438	\$ 3,362	\$ 4,043	\$ 6,391
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 134,033	\$ 131,192	\$ 137,338	\$ 137,262	\$ 133,553	\$ 144,631
<i>Costs for Entire Development</i>						
Building and Site Construction Costs	\$ 12,697,000	\$ 16,756,000	\$ 14,584,000	\$ 15,350,000	\$ 13,191,000	\$ 13,735,000
Selected Infrastructure Costs	297,727	423,045	339,255	376,127	304,945	329,209
Processing Fees	76,118	34,432	86,300	61,619	53,745	89,431
Impact Fees (Net of Credits)	57,234	-	230,697	13,445	18,161	232,714
Subtotal - Development Fees and Infrastructure Cost	\$ 431,079	\$ 457,477	\$ 656,252	\$ 451,191	\$ 376,851	\$ 651,353
Total Construction, Infrastructure, and Fee Cost	\$ 13,128,079	\$ 17,213,477	\$ 15,240,252	\$ 15,801,191	\$ 13,567,851	\$ 14,386,353
<i>Costs per 1,000 Building Square Feet</i>						
Building Square Feet Accommodated by Site	100,000	100,000	100,000	100,000	100,000	100,000
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 126,970	\$ 167,560	\$ 145,840	\$ 153,500	\$ 131,910	\$ 137,350
Selected Infrastructure Costs per 1,000 Square Feet	2,977	4,230	3,393	3,761	3,049	3,292
Processing Fees per 1,000 Square Feet	761	344	863	616	537	894
Impact Fees (Net of Credits) per 1,000 Square Feet	572	-	2,307	134	182	2,327
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 4,311	\$ 4,575	\$ 6,563	\$ 4,512	\$ 3,769	\$ 6,514
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 131,281	\$ 172,135	\$ 152,403	\$ 158,012	\$ 135,679	\$ 143,864

Note: See Appendix 2 for detailed cost components.

Source: ANA Consultants, LLC.

Figure 6.9: Outer Loop Office Development Fees and Infrastructure Costs per 1,000 SF

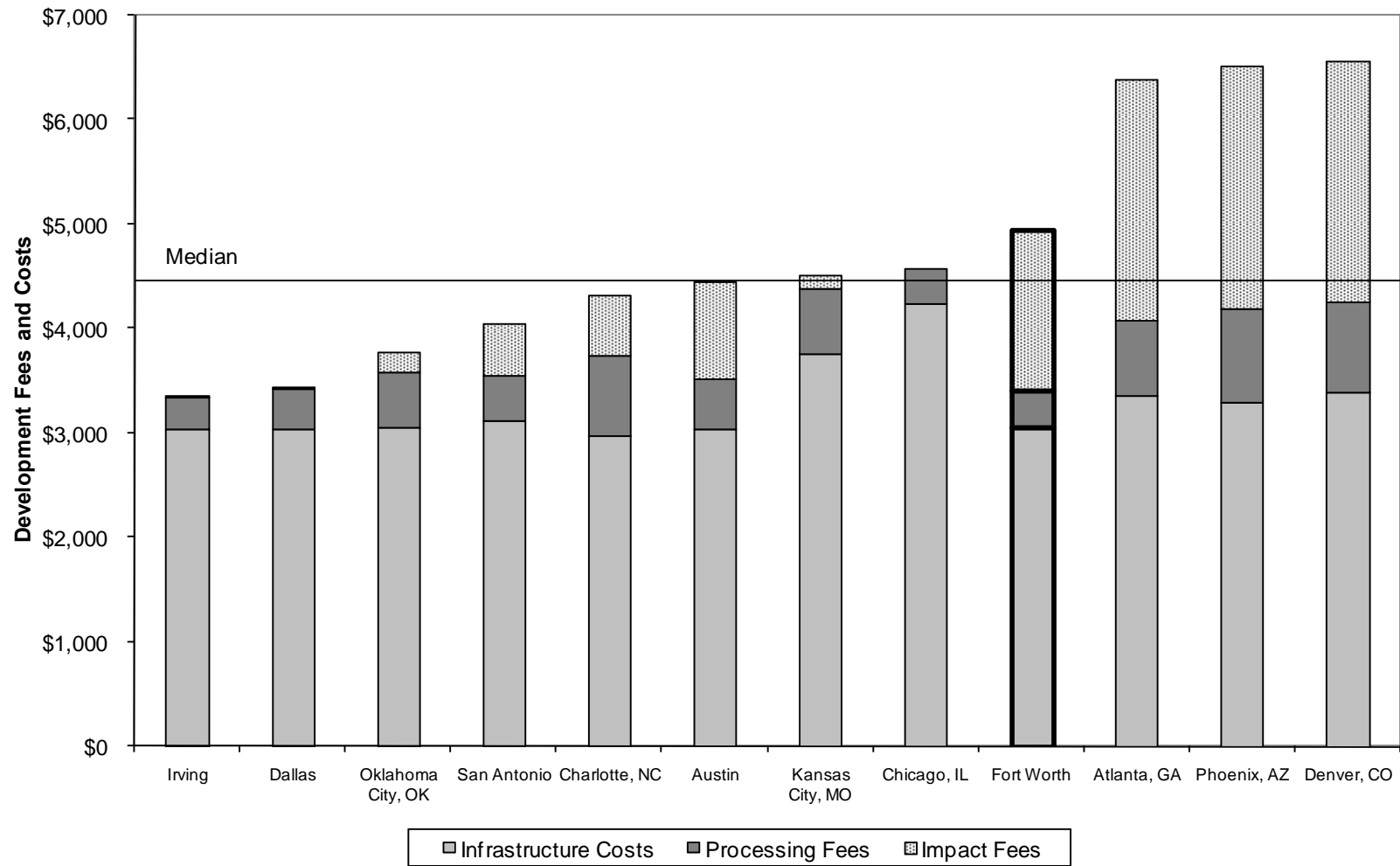


Figure 6.10: Outer Loop Office Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet

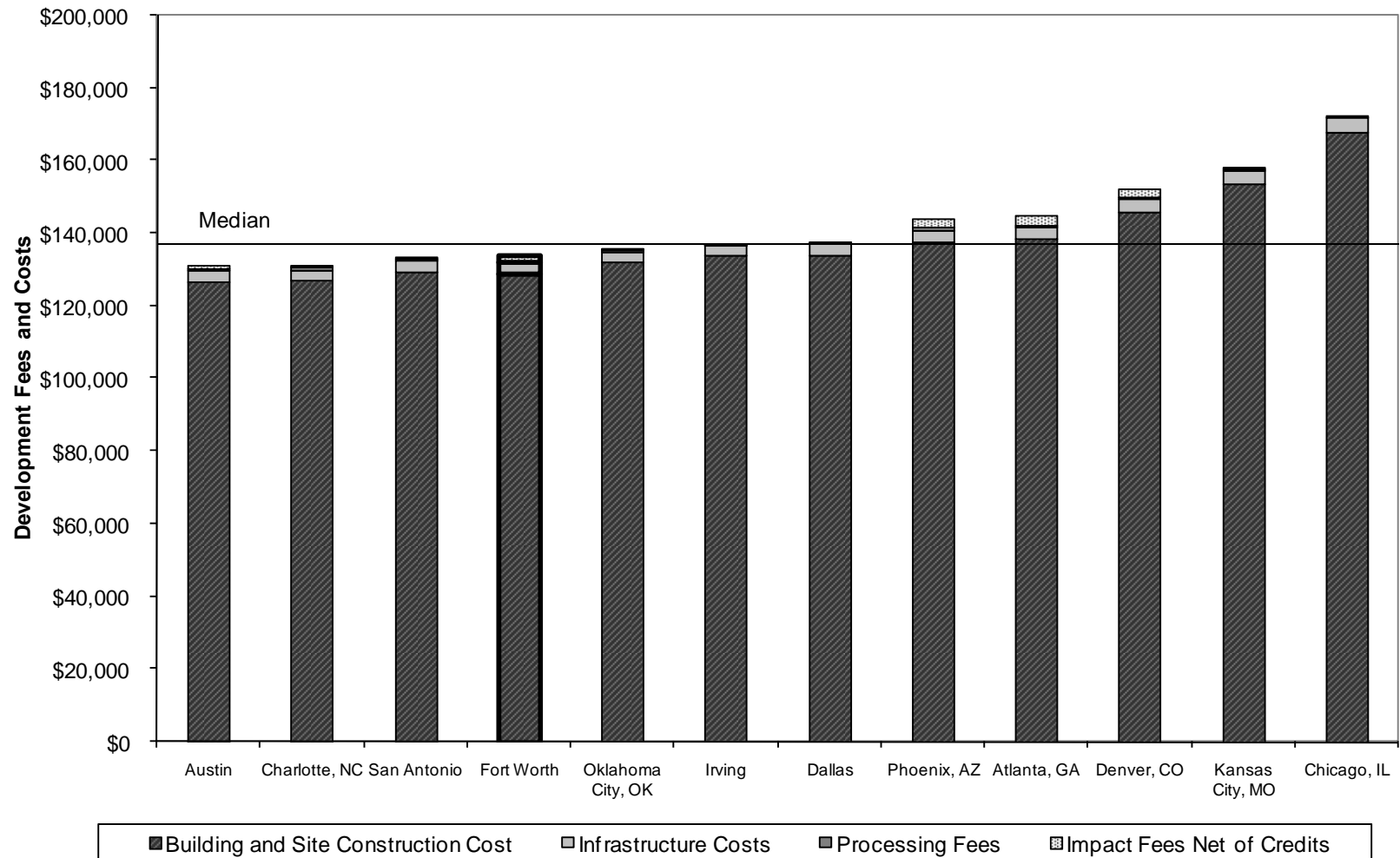


Table 6.8: Summary of Industrial Infrastructure Costs and Development Fees

	Fort Worth	Austin	Dallas	Irving	San Antonio	Atlanta, GA
<i>Costs for Entire Development</i>						
Building and Site Construction Costs	\$14,003,000	\$13,577,818	\$14,448,550	\$14,448,550	\$13,949,534	\$15,497,502
Selected Infrastructure Costs	212,703	212,181	211,463	211,463	217,944	233,313
Processing Fees	39,596	63,915	40,199	51,702	47,416	81,388
Impact Fees (Net of Credits)	32,839	176,476	825	100	157,161	66,727
Subtotal - Development Fees and Infrastructure Cost	\$ 285,138	\$ 452,572	\$ 252,487	\$ 263,265	\$ 422,521	\$ 381,428
Total Construction, Infrastructure, and Fee Cost	\$14,288,138	\$14,030,390	\$14,701,037	\$14,711,815	\$14,372,055	\$15,878,930
<i>Costs per 1,000 Building Square Feet</i>						
Building Square Feet Accommodated by Site	254,600	254,600	254,600	254,600	254,600	254,600
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 55,000	\$ 53,330	\$ 56,750	\$ 56,750	\$ 54,790	\$ 60,870
Selected Infrastructure Costs per 1,000 Square Feet	835	833	831	831	856	916
Processing Fees per 1,000 Square Feet	156	251	158	203	186	320
Impact Fees (Net of Credits) per 1,000 Square Feet	129	693	3	0	617	262
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 1,120	\$ 1,778	\$ 992	\$ 1,034	\$ 1,660	\$ 1,498
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 56,120	\$ 55,108	\$ 57,742	\$ 57,784	\$ 56,450	\$ 62,368
<i>Costs for Entire Development</i>						
	Charlotte, NC	Chicago, IL	Denver, CO	Kansas City, MO	Oklahoma City, OK	Phoenix, AZ
Building and Site Construction Costs	\$13,519,260	\$19,795,150	\$16,116,180	\$17,465,560	\$14,288,152	\$15,113,056
Selected Infrastructure Costs	207,500	293,344	233,238	261,088	212,463	228,831
Processing Fees	76,100	65,149	104,971	69,243	78,031	92,334
Impact Fees (Net of Credits)	30,576	-	117,297	177	2,670	187,083
Subtotal - Development Fees and Infrastructure Cost	\$ 314,176	\$ 358,493	\$ 455,506	\$ 330,508	\$ 293,164	\$ 508,248
Total Construction, Infrastructure, and Fee Cost	\$13,833,436	\$20,153,643	\$16,571,686	\$17,796,068	\$14,581,316	\$15,621,304
<i>Costs per 1,000 Building Square Feet</i>						
Building Square Feet Accommodated by Site	254,600	254,600	254,600	254,600	254,600	254,600
Building and Site Construction Cost per 1,000 Sq. Ft.	\$ 53,100	\$ 77,750	\$ 63,300	\$ 68,600	\$ 56,120	\$ 59,360
Selected Infrastructure Costs per 1,000 Square Feet	815	1,152	916	1,025	834	899
Processing Fees per 1,000 Square Feet	299	256	412	272	306	363
Impact Fees (Net of Credits) per 1,000 Square Feet	120	-	461	1	10	735
Subtotal - Dev. Fees and Infrast. Cost per 1,000 Sq. Ft.	\$ 1,234	\$ 1,408	\$ 1,789	\$ 1,298	\$ 1,151	\$ 1,996
Total Constr., Infrast., and Fee Cost per 1,000 Sq. Ft.	\$ 54,334	\$ 79,158	\$ 65,089	\$ 69,898	\$ 57,271	\$ 61,356

Note: See Appendix 2 for detailed cost components.

Source: ANA Consultants, LLC.

Figure 6.11: Industrial Development Fees and Infrastructure Costs per 1,000 SF

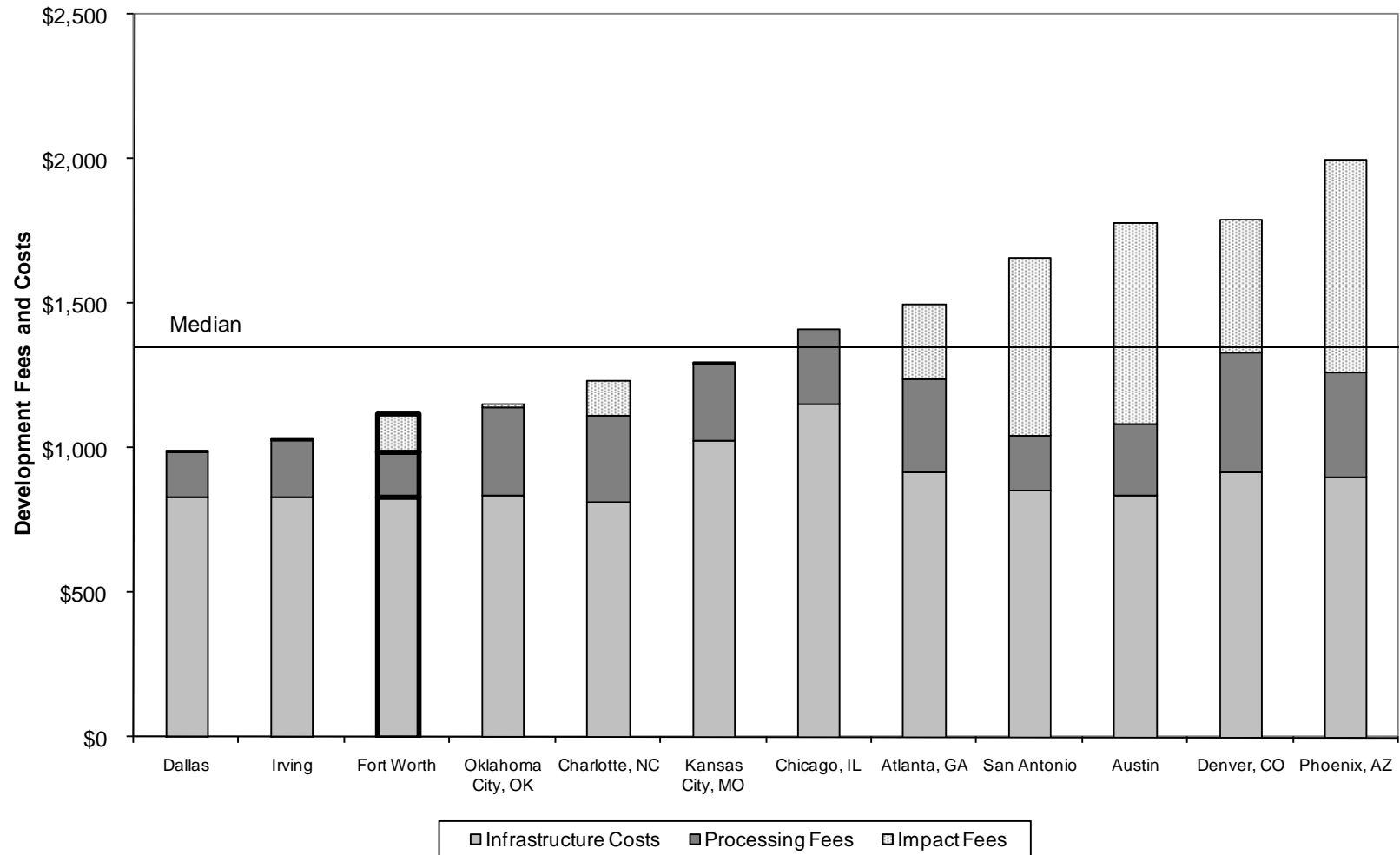
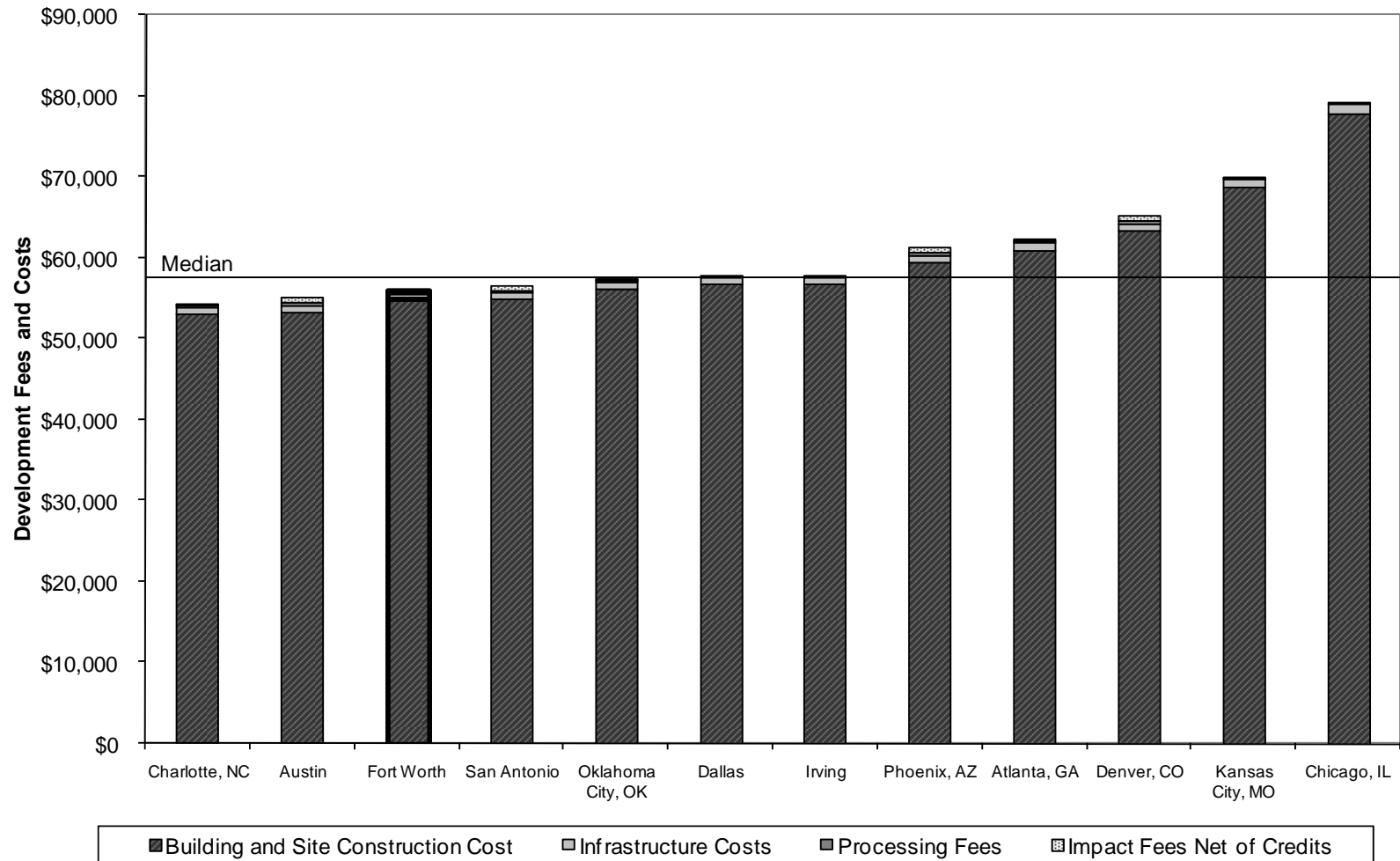


Figure 6.12: Industrial Construction, Development Fees and Infrastructure Costs per 1,000 Square Feet



Findings and Conclusions

This section discusses how development fees and infrastructure costs differ between Fort Worth and the other surveyed cities.

Development Fee and Infrastructure Cost Conclusions

In general, there is fairly low variability in development fees and costs. As shown in Figures 6.1 through 6.12, for most land use categories and cities, costs cluster above and below a median level with no outliers.

The survey found that Fort Worth tends to be at or below the median of the comparison cities when only infrastructure costs and development fees are considered. The exception is for the outer loop office development where Fort Worth's infrastructure costs and development fees are higher than eight of the 12 comparison cities. In this case the relatively high impact fees in Fort Worth are substantially offset by lower infrastructure and processing fee costs compared to the other cities.

Impact Fees

All of the cities surveyed charge significant impact fees to at least some land uses. Some cities charge impact fees for transportation infrastructure, and some for other types of facilities. Fort Worth's impact fees, of which the major component is the transportation impact fee, is within the range of the cities surveyed when the credit for developer-funded facilities are included. In cities that do not have transportation impact fees, developers are still generally required to construct adjacent streets, but do not receive a fee credit.

Infrastructure Costs

Infrastructure costs in Fort Worth's are within the range of the cities surveyed. Specific findings include:

- ◆ Costs of complying with the tree ordinance are minimal for all land use types. Most of the non-Texas comparison cities have tree ordinances with similar burdens.
- ◆ All residential comparison cities, except for Grand Prairie, have a parkland dedication or in-lieu fee requirement. The City of Burleson has a lower acreage dedication requirement, but this is offset by relatively high park acreage in-lieu fees and development fees.
- ◆ Storm drainage and paving costs are approximately the same across the single family residential project comparison cities. The storm drainage and street standards result in slight variation in the number of lots that would fit in the prototype subdivision in the different cities.

Processing Fees

Similar to the other cost categories, processing fees in Fort Worth's are within the range of the cities surveyed.

Building and Site Construction Costs

Building and site construction costs are a much larger component of development costs than the development fees and infrastructure costs directly controlled by city policies. Compared

to differences in construction costs, differences in development fees and infrastructure costs across cities are small.

Construction costs are fairly similar across cities, particularly within Texas. For development types where cities outside of Texas are included in the survey, there is greater variation in construction costs. Kansas City, Denver, and Chicago have the highest construction costs of the cities surveyed. Fort Worth's construction costs are relatively low, compared to cities both inside Texas and around the country.

7. Occupancy Cost Survey

This chapter summarizes the methods, assumptions, and results of a survey of selected occupancy costs for Fort Worth, seven other Texas cities, and eight national cities.

Introduction

To expand the picture of the comparison of development costs across cities presented in the prior chapter, certain ongoing costs were included in the data gathering. The comparative analysis presented in this chapter provides a snapshot of the selected ongoing costs of occupancy for development in Fort Worth and the selected cities. The purpose of this including these occupancy costs is to provide information on City-imposed property-related costs in Fort Worth and the selected cities. This information may inform considerations of revenue enhancement options discussed in Chapter 5 that affect occupancy costs such as property taxes and a transportation user fee.

Occupancy costs were limited to property-related charges under the control of each city, excluding ongoing utility user charges. Thus, the costs included in the survey are only a portion of total costs of building occupancy. The survey does not include property taxes imposed by counties and special districts, which are often greater than city property taxes.

As with the survey of development costs, the results of the ongoing cost survey cannot definitively answer whether a new cost should be imposed or an existing cost should be increased (or decreased). The preceding results do not include many important factors in business and residential development location decisions, including workforce education and wages, proximity to markets, and quality of life. In addition, this survey included only costs directly imposed by city governments, and not other operating costs, such as county and special district property taxes and utilities.

Approach and Methods

In general, the approach and methods used to analyze the ongoing costs are similar to those used in the analysis of development costs (Chapter 6). The occupancy cost survey included the same development prototypes and comparison cities as the development cost survey.

Ongoing Costs Included in Survey

The survey included ongoing costs of property occupancy charged by city governments, excluding utility charges. Utility charges were excluded because the local agency responsible for service delivery varies widely across cities. Occupancy costs included in the survey are:

- ◆ Stormwater fees;
- ◆ Transportation user fees;
- ◆ Landscape irrigation service fees;
- ◆ Fire protection fees; and
- ◆ City property taxes.

User Fees

Information on property-related user fees charged in each city was collected as part of the development cost survey. Fee amounts were estimated for each of the prototype development projects based on the prototype project characteristics shown previously in Table 6.1.

City Property Taxes

Estimating city property taxes required identifying the tax rate and estimating the assessed property value for each type of development in each city. Market values for new development were estimated based on current market data. The market valuation estimates are detailed in Appendix 3. The market valuation is multiplied by the city property tax rate to estimate the total city property taxes charged to the development. **Table 7.1** shows the tax rates charged by each city.¹²

Other key assumptions in the estimation of property taxes included:

- ◆ For the single family prototype we used the median value per square foot for each city and multiplied that factor by the house size to calculate gross assessed value.
- ◆ The analysis captured the effect of the homestead exemption for owner-occupied residences that varies among cities and that reduces the property value subject to taxation.
- ◆ The assessed value assumed for the industrial prototype does not include assessed value on inventory and equipment. The amount varies considerably and is subject to tax abatements in some cities. Fort Worth has one of the most aggressive tax incentives in this regard with its “triple freeport” that exempts inventories from city, county, and school district property tax for goods shipped out of state within 175 days.

The property values used in this analysis will not necessarily correlate with the building cost estimates used in the development cost survey in the preceding chapter. The former are based on market values and the latter are based on construction costs.

Ongoing Cost Comparisons

This section shows the results of a survey of selected ongoing city-imposed costs of property ownership. The largest component of city-imposed property ownership costs is property taxes. **Tables 7.2 through 7.7** summarize the estimated ongoing costs in each city for each development prototype. **Figures 7.1 through 7.6** show the results of the survey in bar chart format.

¹² In some jurisdictions, the property value is multiplied by an “assessment ratio” to yield the assessed value, which is then multiplied by the tax rate. For these cities, the assessment ratio and the tax rate are combined to yield the tax rate shown in Table 7.1.

Table 7.1: City Property Tax Rates

City	City Tax Rate		General Homestead Exemption ¹
	Residential	Nonresidential	
Fort Worth	0.86%	0.86%	20.00%
<i><u>Texas Comparison Cities</u></i>			
Austin	0.40%	0.40%	N/A
Burleson	0.69%	0.69%	None
Dallas	0.75%	0.75%	N/A
Grand Prairie	0.67%	0.67%	1%, \$5,000 minimum
Irving	0.54%	0.54%	N/A
McKinney	0.59%	0.59%	None
San Antonio	0.57%	0.57%	N/A
<i><u>Other Comparison Cities</u></i>			
Atlanta, GA	1.22%	1.22%	N/A
Charlotte, NC ²	0.46%	0.46%	N/A
Chicago, IL -- Office ³	0.64%	1.51%	N/A
Chicago, IL -- Industrial ³	0.64%	1.43%	N/A
Denver, CO ⁴	0.20%	0.74%	N/A
Kansas City, MO ⁵	0.29%	0.48%	N/A
Oklahoma City, OK	0.16%	0.16%	N/A
Phoenix, AZ	0.18%	0.46%	N/A

¹ General homestead exemption applies only to owner-occupied primary residences. Homestead exemption shown only for cities included in residential property tax comparison.

² Does not include any Municipal Service District taxes. Charlotte has five Municipal Service Districts that include small areas of the City. Municipal Service District tax rates vary from 0.02 percent to 0.07 percent.

³ City tax rate shown includes tax rates for City of Chicago, City of Chicago Library Fund, and Chicago Park District.

⁴ Denver has a consolidated city and county government. City tax rate shown is based on percentage of property tax revenue allocated to the County, as opposed to school districts and special districts.

⁵ Rates shown for Jackson County. Kansas City is located in four counties, with the greatest population in Jackson County.

Table 7.2: Selected City-Imposed Occupancy Costs - Single Family

	Fort Worth	Burleson	Grand Prairie	McKinney
<i>Property Taxes</i>				
Market Value per Unit	\$ 184,800	\$ 198,000	\$ 201,300	\$ 260,700
General Homestead Exemption ¹	<u>(36,960)</u>	<u>N/A</u>	<u>(5,000)</u>	<u>N/A</u>
Assessed Value per Unit	\$ 147,840	\$ 198,000	\$ 196,300	\$ 260,700
City Property Tax Rate	<u>0.86%</u>	<u>0.69%</u>	<u>0.67%</u>	<u>0.59%</u>
Property Tax per Unit	\$ 1,264	\$ 1,374	\$ 1,315	\$ 1,526
<i>Other Charges</i>				
Stormwater Fee	\$ 68	N/A	\$ 30	\$ 33
Subtotal - Other Charges	\$ 68	\$ -	\$ 30	\$ 33
Total Annual Charges per Unit	\$ 1,332	\$ 1,374	\$ 1,345	\$ 1,559

¹ Only General Homestead exemptions are included in this analysis. Additional exemptions are offered to some homeowners. All cities offer a disabled veteran's exemption of \$5,000 to \$12,000. Fort Worth offers a \$40,000 disabled exemption. McKinney has a \$50,000 exemption for homeowners over 65 years old and a \$50,000 exemption for disabled homeowners.

Sources: Willdan Financial Services and ANA Consultants, LLC.

Figure 7.1: Single Family Selected City-Imposed Occupancy Costs per Unit

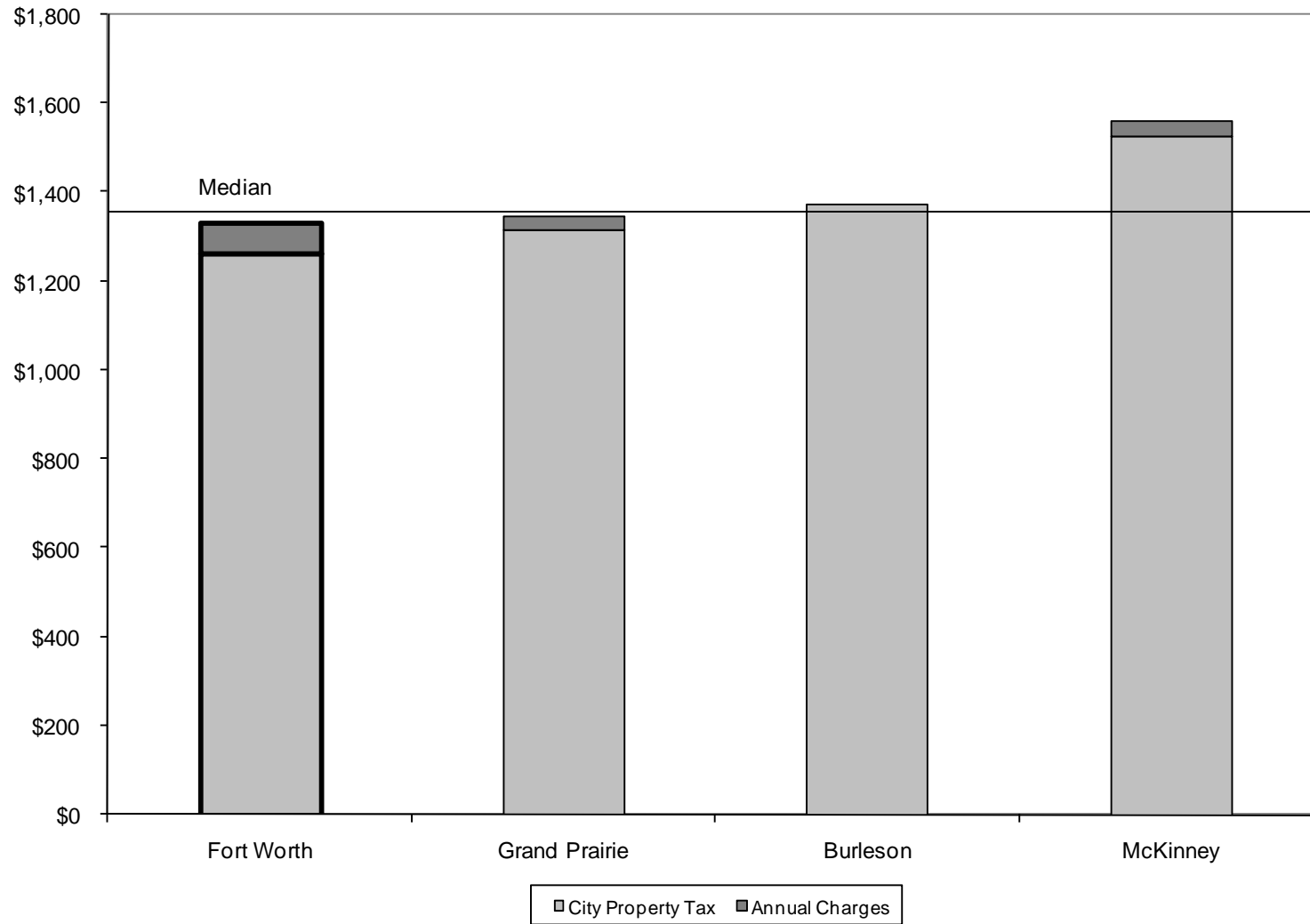


Table 7.3: Selected City-Imposed Occupancy Costs - Multi-Family

	Fort Worth	Burleson	Grand Prairie	McKinney
<i>Property Taxes</i>				
Assessed Value per Unit	\$ 131,723	\$ 147,627	\$ 149,059	\$ 220,626
City Property Tax Rate	<u>0.86%</u>	<u>0.69%</u>	<u>0.67%</u>	<u>0.59%</u>
Property Tax per Unit	\$ 1,126	\$ 1,025	\$ 999	\$ 1,292
<i>Other Charges</i>				
Stormwater Fee	\$ 22	N/A	\$ 9	\$ 8
Subtotal - Other Charges	\$ 22	\$ -	\$ 9	\$ 8
Total Annual Charges	\$ 1,148	\$ 1,025	\$ 1,008	\$ 1,300

Sources: Willdan Financial Services and ANA Consultants, LLC.

Figure 7.2: Multi Family Selected City-Imposed Occupancy Costs per Unit

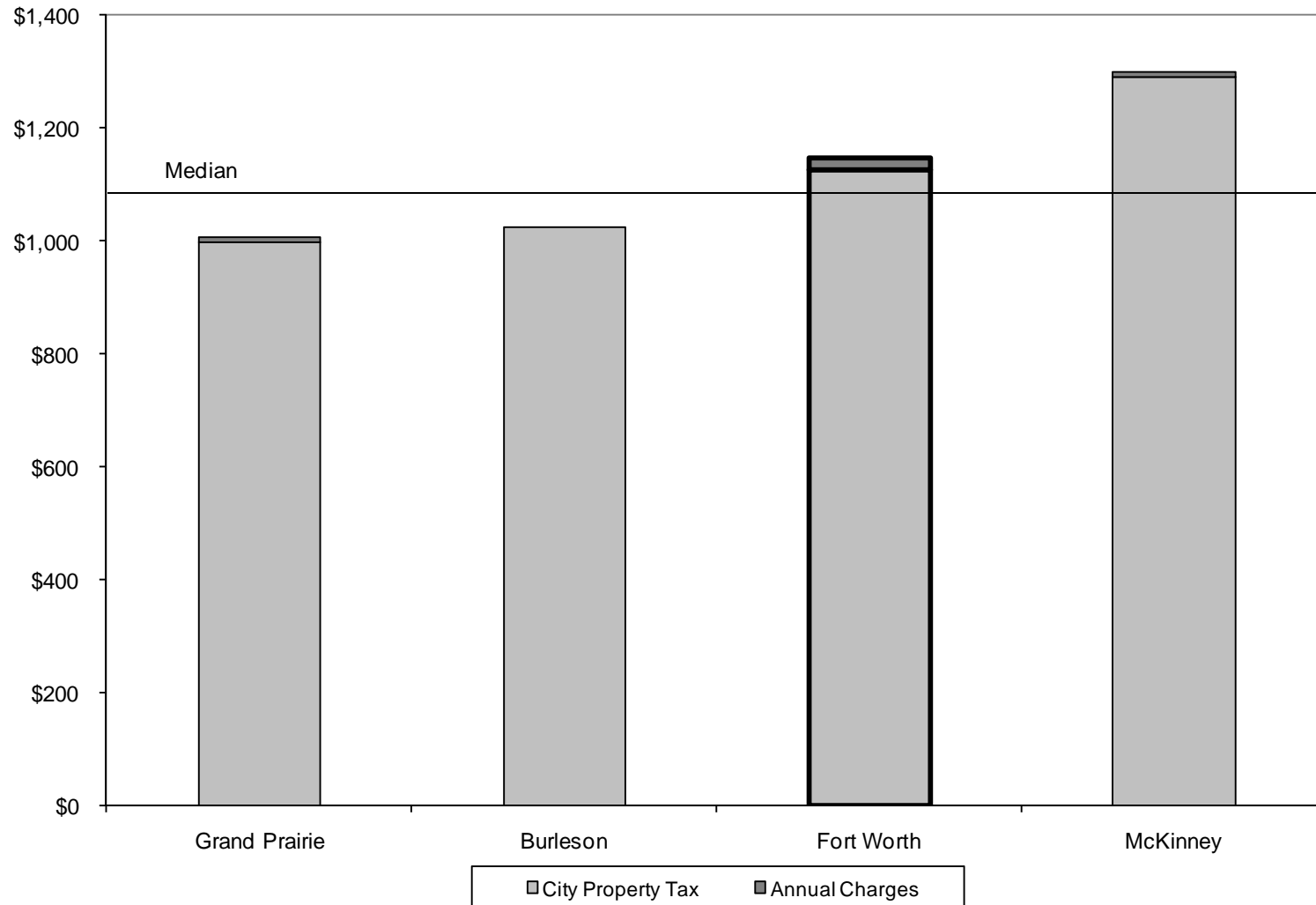


Table 7.4: Selected City-Imposed Occupancy Costs - Retail

	Fort Worth	Burleson	Grand Prairie	Dallas	Irving
<i>Property Taxes</i>					
Assessed Value (Entire Development)	\$ 13,572,000	\$13,162,600	\$ 10,933,000	\$ 12,753,400	\$ 15,352,750
City Property Tax Rate	<u>0.86%</u>	<u>0.69%</u>	<u>0.67%</u>	<u>0.75%</u>	<u>0.54%</u>
Property Tax (Entire Development)	\$ 116,041	\$ 91,348	\$ 73,251	\$ 95,383	\$ 82,905
Development Square Feet	<u>75,400</u>	<u>68,200</u>	<u>75,400</u>	<u>68,200</u>	<u>70,750</u>
Property Tax per 1,000 Square Feet	\$ 1,539	\$ 1,339	\$ 971	\$ 1,399	\$ 1,172
<i>Other Charges</i>					
Stormwater Fee	\$ 5,063	N/A	\$ 2,071	\$ 4,045	\$ 905
Subtotal - Other Charges	\$ 5,063	\$ -	\$ 2,071	\$ 4,045	\$ 905
Development Square Feet	<u>75,400</u>	<u>68,200</u>	<u>75,400</u>	<u>68,200</u>	<u>70,750</u>
Other Charges per 1,000 Square Feet	\$ 67	\$ -	\$ 27	\$ 59	\$ 13
Total Annual Charges per 1,000 Square Feet	\$ 1,606	\$ 1,339	\$ 999	\$ 1,458	\$ 1,185

Sources: Willdan Financial Services and ANA Consultants, LLC.

Figure 7.3: Retail Selected City-Imposed Occupancy Costs per 1,000 Square Feet

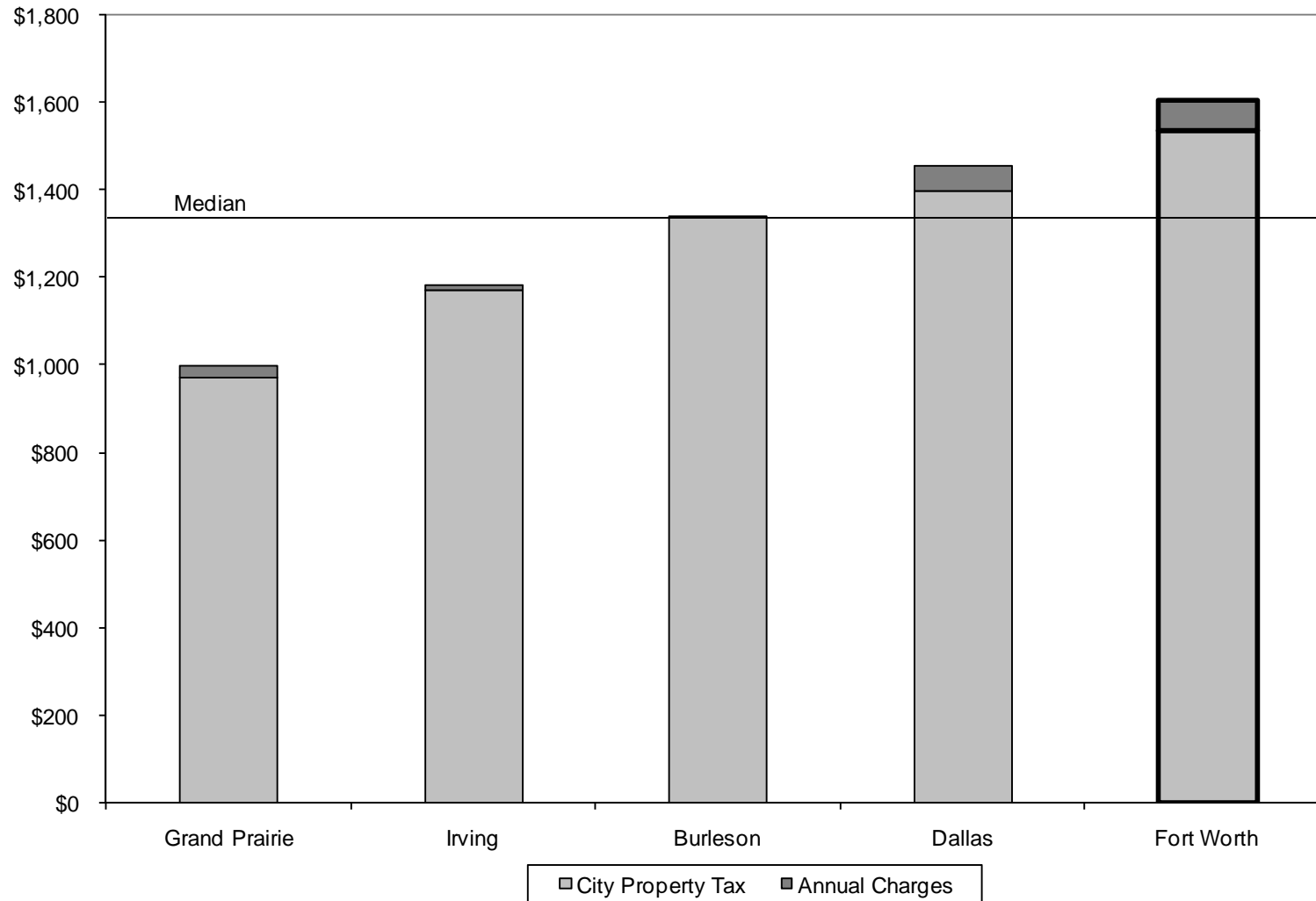


Table 7.5: Selected City-Imposed Occupancy Costs - Central Business District Office

	Fort Worth	Austin	Dallas	Irving	San Antonio	Atlanta, GA
<i>Property Taxes</i>						
Assessed Value (Entire Development)	\$ 16,195,290	\$19,387,625	\$ 9,428,823	\$ 11,550,491	\$ 12,441,267	\$12,000,643
City Property Tax Rate	0.86%	0.40%	0.75%	0.54%	0.57%	1.22%
Property Tax (Entire Development)	\$ 138,470	\$ 77,783	\$ 70,518	\$ 62,373	\$ 70,559	\$ 146,379
Development Square Feet	100,000	100,000	100,000	100,000	100,000	100,000
Property Tax per 1,000 Square Feet	\$ 1,385	\$ 778	\$ 705	\$ 624	\$ 706	\$ 1,464
<i>Other Charges</i>						
Stormwater Fee	\$ 1,074	\$ 821	\$ 768	\$ 1,200	\$ 1,078	N/A
Transportation User Fee	N/A	1,912	N/A	N/A	N/A	N/A
Landscape Irrigation Service Fee	N/A	N/A	N/A	N/A	2,117	N/A
Fire Protection Fee	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal - Other Charges	\$ 1,074	\$ 2,733	\$ 768	\$ 1,200	\$ 3,195	\$ -
Development Square Feet	100,000	100,000	100,000	100,000	100,000	100,000
Other Charges per 1,000 Square Feet	\$ 11	\$ 27	\$ 8	\$ 12	\$ 32	\$ -
Total Annual Charges per 1,000 Square Feet	\$ 1,395	\$ 805	\$ 713	\$ 636	\$ 738	\$ 1,464
<hr/>						
	Charlotte, NC	Chicago, IL	Denver, CO	Kansas City, MO	Oklahoma City, OK	Phoenix, AZ
<i>Property Taxes</i>						
Assessed Value (Entire Development)	\$ 17,677,800	\$20,459,127	\$ 18,691,833	\$ 9,468,000	\$ 9,374,400	\$15,498,000
City Property Tax Rate	0.46%	1.51%	0.74%	0.48%	0.16%	0.46%
Property Tax (Entire Development)	\$ 81,070	\$ 309,316	\$ 139,248	\$ 45,613	\$ 15,437	\$ 70,516
Development Square Feet	100,000	100,000	100,000	100,000	100,000	100,000
Property Tax per 1,000 Square Feet	\$ 811	\$ 3,093	\$ 1,392	\$ 456	\$ 154	\$ 705
<i>Other Charges</i>						
Stormwater Fee	\$ 2,058	N/P	N/A	\$ 745	\$ 1,035	N/P
Transportation User Fee	N/A	N/A	N/A	N/A	N/A	N/A
Landscape Irrigation Service Fee	N/P	N/P	N/A	N/A	N/A	N/A
Fire Protection Fee	N/P	N/P	N/A	67	N/A	N/A
Subtotal - Other Charges	\$ 2,058	\$ -	\$ -	\$ 812	\$ 1,035	\$ -
Development Square Feet	100,000	100,000	100,000	100,000	100,000	100,000
Other Charges per 1,000 Square Feet	\$ 21	\$ -	\$ -	\$ 8	\$ 10	\$ -
Total Annual Charges per 1,000 Square Feet	\$ 831	\$ 3,093	\$ 1,392	\$ 464	\$ 165	\$ 705

Note: N/A = Not applicable: Fee is not charged in the indicated city.

N/P = Note provided: Information indicates that a fee is charged, but the fee could not be estimated with the available data.

Sources: Willdan Financial Services and ANA Consultants, LLC.

Figure 7.4: Central Business District Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet

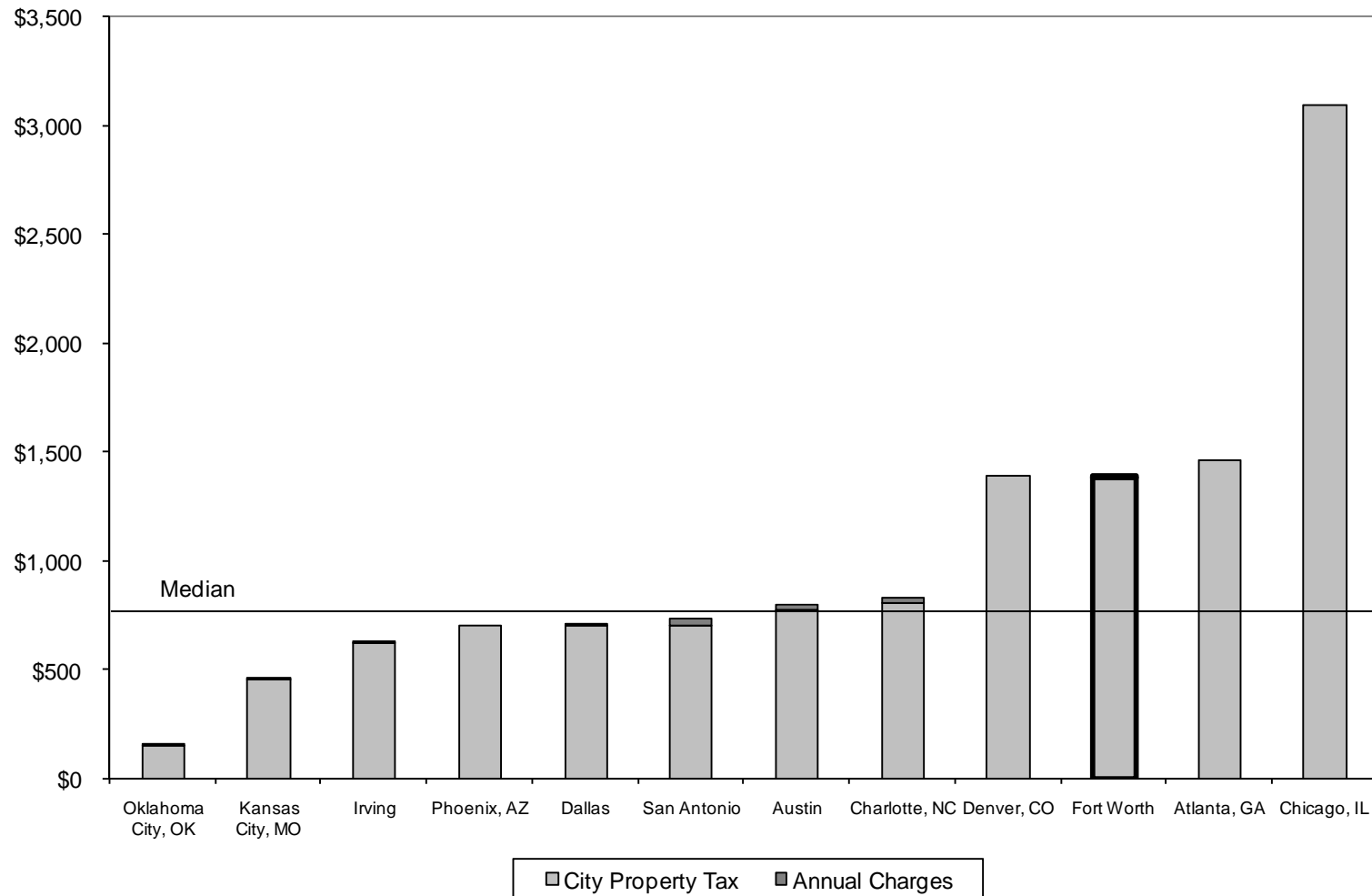


Table 7.6: Selected City-Imposed Occupancy Costs - Outer Loop Office

	Fort Worth	Austin	Dallas	Irving	San Antonio	Atlanta, GA
Property Taxes						
Assessed Value (Entire Development)	\$ 14,277,938	\$ 15,043,525	\$ 9,939,131	\$ 11,550,491	\$ 12,738,489	\$ 10,775,479
City Property Tax Rate	<u>0.86%</u>	<u>0.40%</u>	<u>0.75%</u>	<u>0.54%</u>	<u>0.57%</u>	<u>1.22%</u>
Property Tax (Entire Development)	\$ 122,076	\$ 60,355	\$ 74,335	\$ 62,373	\$ 72,245	\$ 131,435
Development Square Feet	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
Property Tax per 1,000 Square Feet	\$ 1,221	\$ 604	\$ 743	\$ 624	\$ 722	\$ 1,314
Other Charges						
Stormwater Fee	\$ 1,074	\$ 821	\$ 768	\$ 1,200	\$ 1,078	N/A
Transportation User Fee	N/A	1,912	N/A	N/A	N/A	N/A
Landscape Irrigation Service Fee	N/A	N/A	N/A	N/A	2,117	N/A
Fire Protection Fee	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal - Other Charges	\$ 1,074	\$ 2,733	\$ 768	\$ 1,200	\$ 3,195	\$ -
Development Square Feet	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
Other Charges per 1,000 Square Feet	\$ 11	\$ 27	\$ 8	\$ 12	\$ 32	\$ -
Total Annual Charges per 1,000 Square Feet	\$ 1,232	\$ 631	\$ 751	\$ 636	\$ 754	\$ 1,314
Property Taxes						
Assessed Value (Entire Development)	\$ 9,180,000	\$ 13,128,055	\$ 11,128,830	\$ 11,454,420	\$ 11,155,536	\$ 14,056,105
City Property Tax Rate	<u>0.46%</u>	<u>1.51%</u>	<u>0.74%</u>	<u>0.48%</u>	<u>0.16%</u>	<u>0.46%</u>
Property Tax (Entire Development)	\$ 42,099	\$ 198,480	\$ 82,906	\$ 55,183	\$ 18,370	\$ 63,955
Development Square Feet	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
Property Tax per 1,000 Square Feet	\$ 421	\$ 1,985	\$ 829	\$ 552	\$ 184	\$ 640
Other Charges						
Stormwater Fee	\$ 2,058	N/P	N/A	\$ 745	\$ 1,035	N/P
Transportation User Fee	N/A	N/A	N/A	N/A	N/A	N/A
Landscape Irrigation Service Fee	N/P	N/P	N/A	N/A	N/A	N/A
Fire Protection Fee	N/P	N/P	N/A	67	N/A	N/A
Subtotal - Other Charges	\$ 2,058	\$ -	\$ -	\$ 812	\$ 1,035	\$ -
Development Square Feet	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
Other Charges per 1,000 Square Feet	\$ 21	\$ -	\$ -	\$ 8	\$ 10	\$ -
Total Annual Charges per 1,000 Square Feet	\$ 442	\$ 1,985	\$ 829	\$ 560	\$ 194	\$ 640

Note: N/A = Not applicable: Fee is not charged in the indicated city.

N/P = Note provided: Information indicates that a fee is charged, but the fee could not be estimated with the available data.

Sources: Willdan Financial Services and ANA Consultants, LLC.

Figure 7.5: Outer Loop Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet

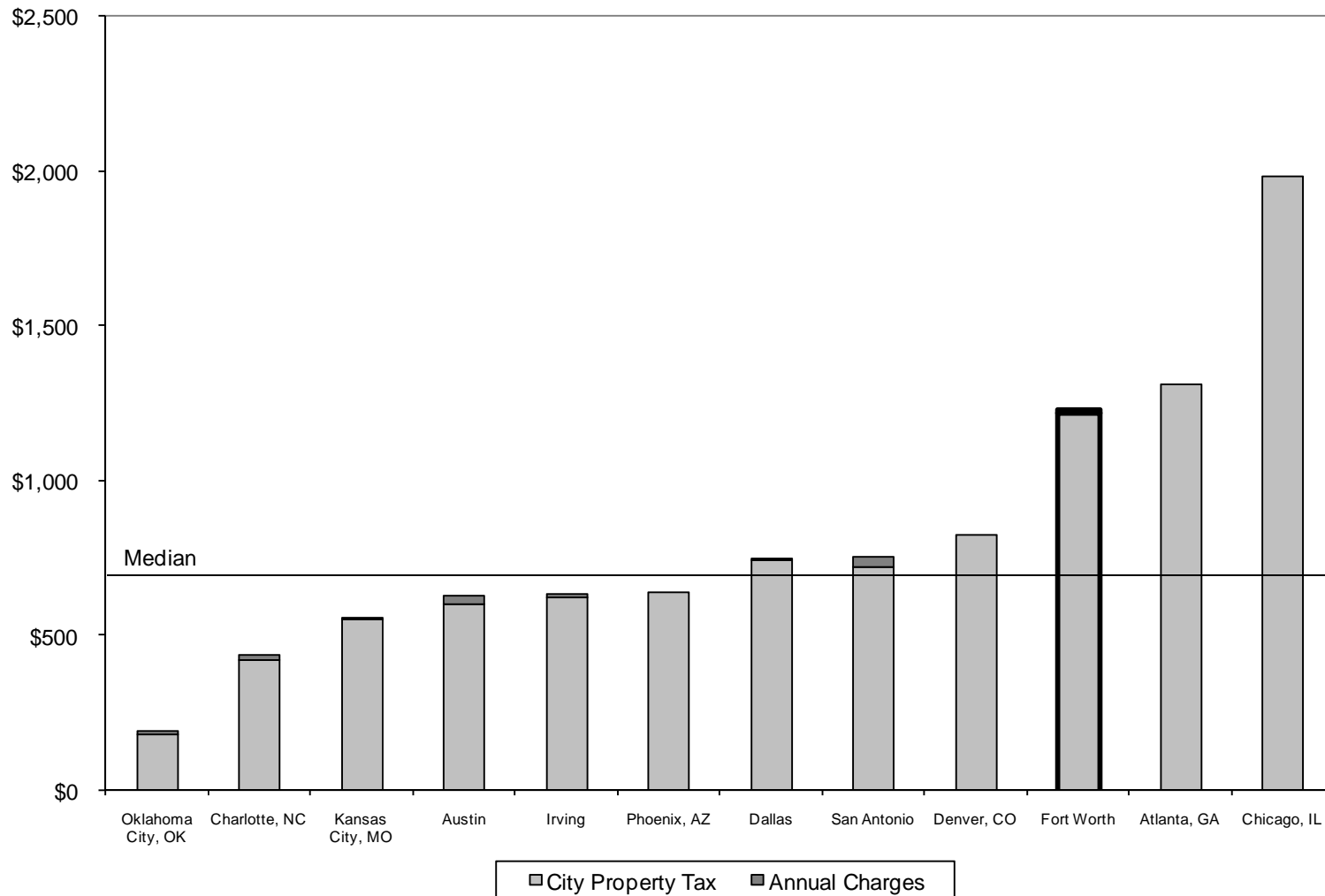


Table 7.7: Selected City-Imposed Occupancy Costs - Industrial

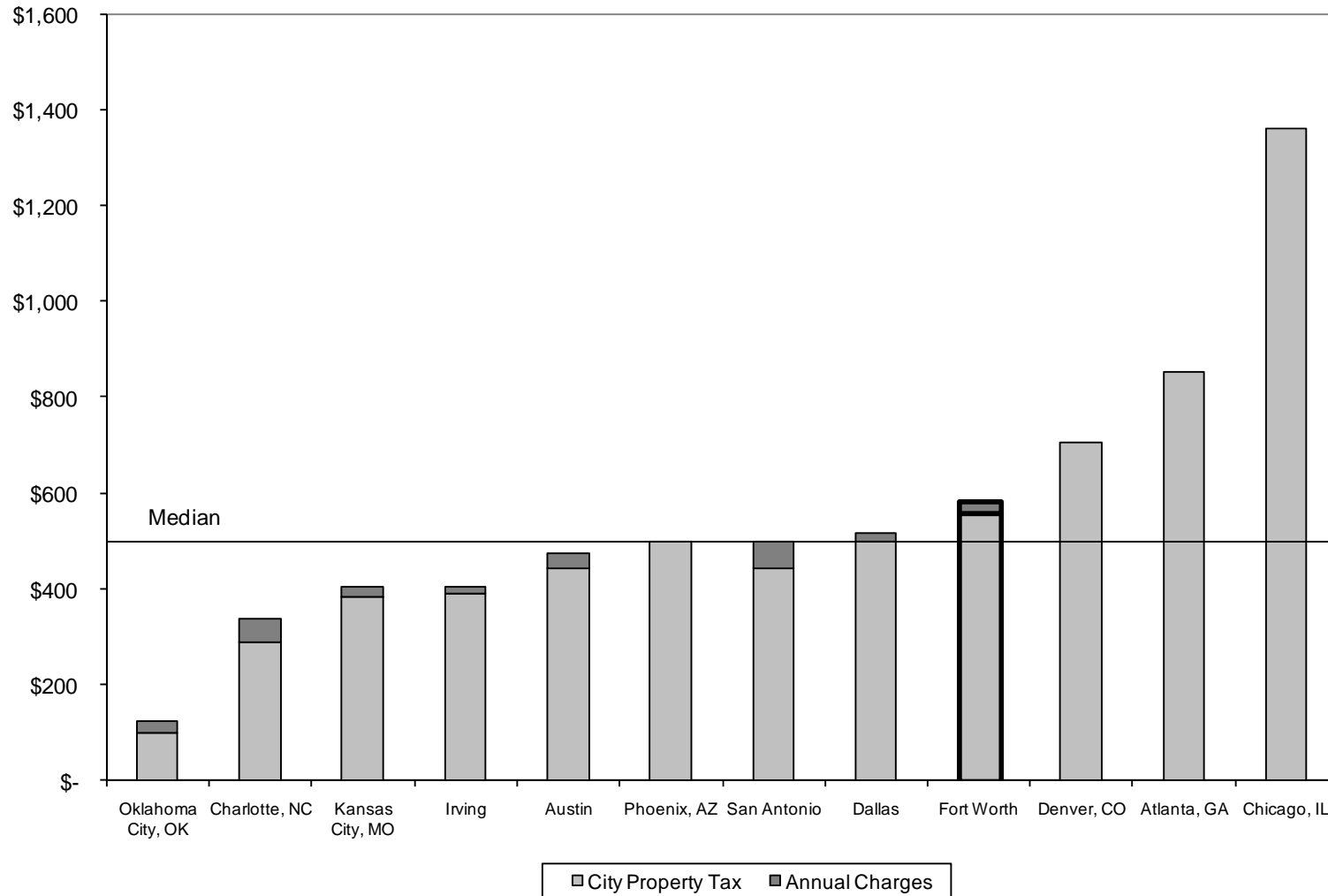
	Fort Worth	Austin	Dallas	Irving	San Antonio	Atlanta, GA
Property Taxes						
Assessed Value (Entire Development)	\$ 16,619,015	\$28,251,398	\$ 17,020,010	\$ 18,579,435	\$ 19,969,229	\$17,822,000
City Property Tax Rate	<u>0.86%</u>	<u>0.40%</u>	<u>0.75%</u>	<u>0.54%</u>	<u>0.57%</u>	<u>1.22%</u>
Property Tax (Entire Development)	\$ 142,093	\$ 113,345	\$ 127,293	\$ 100,329	\$ 113,253	\$ 217,386
Development Square Feet	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>
Property Tax per 1,000 Square Feet	\$ 558	\$ 445	\$ 500	\$ 394	\$ 445	\$ 854
Other Charges						
Stormwater Fee	\$ 6,644	\$ 5,076	\$ 4,750	\$ 3,055	\$ 12,313	N/P
Transportation User Fee	N/A	2,628	N/A	N/A	N/A	N/A
Landscape Irrigation Service Fee	N/A	N/A	N/A	N/A	1,902	N/A
Fire Protection Fee	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal - Other Charges	\$ 6,644	\$ 7,704	\$ 4,750	\$ 3,055	\$ 14,215	\$ -
Development Square Feet	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>
Other Charges per 1,000 Square Feet	\$ 26	\$ 30	\$ 19	\$ 12	\$ 56	\$ -
Total Annual Charges per 1,000 Square Feet	\$ 584	\$ 475	\$ 519	\$ 406	\$ 501	\$ 854
Property Taxes						
Assessed Value (Entire Development)	\$ 16,144,635	\$22,910,488	\$ 24,187,000	\$ 20,401,500	\$ 15,782,133	\$27,999,300
City Property Tax Rate	<u>0.46%</u>	<u>1.51%</u>	<u>0.74%</u>	<u>0.48%</u>	<u>0.16%</u>	<u>0.46%</u>
Property Tax (Entire Development)	\$ 74,039	\$ 346,378	\$ 180,185	\$ 98,286	\$ 25,988	\$ 127,397
Development Square Feet	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>
Property Tax per 1,000 Square Feet	\$ 291	\$ 1,360	\$ 708	\$ 386	\$ 102	\$ 500
Other Charges						
Stormwater Fee	\$ 12,730	N/A	N/A	\$ 4,607	\$ 5,863	N/A
Transportation User Fee	N/A	N/A	N/A	N/A	N/A	N/A
Landscape Irrigation Service Fee	N/P	N/A	N/A	N/A	N/A	N/A
Fire Protection Fee	N/P	N/A	N/A	201	133	N/A
Subtotal - Other Charges	\$ 12,730	\$ -	\$ -	\$ 4,808	\$ 5,996	\$ -
Development Square Feet	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>	<u>254,600</u>
Other Charges per 1,000 Square Feet	\$ 50	\$ -	\$ -	\$ 19	\$ 24	\$ -
Total Annual Charges per 1,000 Square Feet	\$ 341	\$ 1,360	\$ 708	\$ 405	\$ 126	\$ 500

Note: N/A = Not applicable: Fee is not charged in the indicated city.

N/P = Note provided: Information indicates that a fee is charged, but the fee could not be estimated with the available data.

Sources: Willdan Financial Services and ANA Consultants, LLC.

Figure 7.6: Industrial Selected City-Imposed Occupancy Costs per 1,000 Square Feet



Findings and Conclusions

Property taxes comprise the vast majority of the ongoing costs quantified in this survey. Other user charges are comparatively small. User charges are the most significant for industrial development, which has a relatively low valuation per square foot, leading to relatively low property taxes.

In contrast to the development cost survey findings discussed in the preceding chapter, and excepting single family development, Fort Worth ranks above the median in occupancy costs among the cities surveyed. Given the large role played by property taxes in these rankings, it is Fort Worth's tax rate that is the major driver behind these rankings. Fort Worth has the highest property tax rate among the Texas cities surveyed (see also the analysis in Chapter 4) and has a higher property tax rate than five of the seven comparison cities outside of Texas. The higher tax rate is mitigated partially by lower assessed values in Fort Worth.

Key findings by project prototype include:

- ◆ Single family: Fort Worth ranked lowest among the four cities surveyed primarily due to its large homestead exemption (20 percent of assessed value).
- ◆ Multi-family: Fort Worth's ranked just above the median, or third lowest among the four cities surveyed.
- ◆ Retail: Fort Worth ranked highest among the five cities surveyed.
- ◆ Office (both prototypes): Fort Worth ranked 10th lowest (3rd highest) among the five Texas and seven out of state cities surveyed.
- ◆ Industrial: Fort Worth ranked 9th lowest (4th highest) among the five Texas and seven out of state cities surveyed.

8. Economic Impact Analysis

The prior two chapters provided data on Fort Worth's development and occupancy costs among selected cities to assist in evaluating funding options for closing the City's transportation infrastructure funding gap. This chapter evaluates the benefits of the infrastructure spending associated with the Transportation Improvement Plan (TIP) to the local economy. Specifically this economic impact analysis compares the cost of the fee program to the benefits of the infrastructure improvements to estimate the net benefits to the community of the current fee program.

Introduction to Economic Analysis

This study considered two measures of the economic impacts of the transportation impact fee program:

3. A *benefit-cost analysis* estimated the dollar value of the benefits generated by the transportation projects funded with the transportation impact fee. These benefits are primarily the result of increased capacity in the transportation system, leading to reduced congestion and increased travel. The benefits were compared with the cost of the improvements to determine whether implementing the improvements is an efficient use of resources.
4. The *economic impact analysis* estimated the impacts that the transportation impact fee program will have on economic activity in Fort Worth, measured by business output, employment, and personal income. These economic impacts are the result of road construction spending and an improved transportation system. Net impacts include the negative effect of impact fee payments.

Approach and Methods

This section details the approach and methods that were used to conduct the economic analysis.

Study Area

The study area for the economic impact analysis was the City of Fort Worth. We limited the geographic area of the analysis to Fort Worth even though some of the economic impacts will occur beyond the City boundaries.

NCTCOG Traffic Model

The impacts of the transportation improvement projects on travel demand and traffic congestion were estimated using the North Central Texas Council of Governments (NCTCOG) travel demand model. The travel demand model was run both with and without the transportation projects to be funded with the transportation impact fees. The economic impact analysis of the fee program was based on the increase in travel and reduced congestion caused by the improvements.

Period of Analysis

The economic impact analysis covers the period from 2009 through 2030. An economic analysis of capital improvement projects should include their construction period and operational lifespan. While the improvements funded with the impact fees will still be in use after 2030, conducting the analysis through 2030 is a sufficient time to evaluate the impacts of the traffic improvements. This planning horizon coincides with the forecasts of households and employment included in the NCTCOG travel demand model.

This analysis includes only the improvements that can be funded with transportation impact fee revenue forecast generated over 11 years. Assuming the transportation impact fee continues beyond this period, additional improvements would be funded. Neither the economic impacts of those additional improvements nor the impact fees charged to fund them are included in this analysis.

TREDIS

The economic impacts of the changes in vehicle travel patterns and congestion resulting from the projects funded with impact fees were estimated using the Transportation and Economic Development Impact System (TREDIS) modeling software. TREDIS takes results generated by the travel demand model, such as estimated changes in vehicle miles traveled and vehicle hours of delay and estimates the dollar value of the associated increase in economic activity.

TREDIS uses the Impact Analysis for Planning system (IMPLAN) to estimate the impacts of the transportation improvements and transportation impact fees on economic activity in Fort Worth. IMPLAN is a widely used tool for regional economic modeling. IMPLAN uses data on the linkages between industries in a regional economy and the mix of industries in Fort Worth to estimate the effects of a change in economic conditions on the regional economy. The economic changes considered in this study include the imposition of a development fee, reductions in traffic congestion from transportation improvements, and increases in road construction spending.

A primary economic change, such as an increase in road construction spending, will have effects on economic activity that flow through the economy. The change will have *direct, indirect, and induced* effects. **Table 8.1** summarizes direct, indirect, and induced economic impacts.

Improvement Projects

The economic analysis is based on the impacts of the transportation improvements that would be funded with transportation impact fee revenue. The improvement projects selected for inclusion in this modeling effort correspond with estimated funding availability for each fee zone. Certain projects were added to substitute for projects already included in the baseline NCTCOG model. The construction of the improvements was assumed to coincide with the collection of impact fee revenues over the 11-year construction period on a year-by-year basis.

Table 8.1: Direct, Indirect, and Induced Economic Impacts

Type of Impact	Description	Example – Increase in Road Construction Spending
Direct	Economic activity generated directly by primary economic event	Increased business for road construction companies and workers
Indirect	Economic activity generated by increased demand to businesses that supply directly impacted firms	Increased business for firms that sell road construction equipment and materials
Induced	Economic activity generated by increased consumer spending by households whose income increases as a result of direct and indirect impacts	Increased business for firms that supply consumer goods and services – food, clothing, vehicles, recreation, etc.

Economic Impact Analysis Results

TREDIS uses the results of the travel demand modeling, information on construction spending, and information on the Fort Worth economy to estimate the dollar value of the impacts of the transportation improvements funded by impact fee revenues. The travel impacts are quantified as the difference between the scenario in which the impact fee-funded improvement projects are completed and the scenario in which those improvements are not part of the roadway network. Impacts are limited to trips that are generated by development in the City of Fort Worth. The impacts on trips generated by other development that are using the Fort Worth transportation network are excluded.

Direct Travel Impacts

Table 8.2 shows the estimated direct travel impacts in 2030 of the transportation improvements to be funded with the transportation impact fee revenue. Impacts are broken down into the following four trip types because of the different economic impacts of each trip type:

- ◆ Passenger car on the clock (while at work);
- ◆ Passenger car commute;
- ◆ Passenger car personal/recreational; and
- ◆ Truck freight.

The types of impacts that are quantified for each trip type are:

- ◆ Change in vehicle miles traveled (VMT),
- ◆ Change in vehicle hours traveled (VHT),
- ◆ Change in passenger miles,
- ◆ Change in freight ton-miles, and
- ◆ Change in fatalities, personal injuries, and property damage incidents from traffic accidents.

Table 8.2: Annual Travel Impacts of Fee-Funded Improvements (2030)

	Passenger Car On-the-Clock	Passenger Car Commute	Passenger Car Personal/ Recreational	Truck Freight	Total
Vehicle Miles Traveled	1,801,250	1,768,313	3,042,881	(173,966)	6,438,478
Vehicle Hours of Travel	(322,908)	(343,164)	(510,076)	(63,006)	(1,239,154)
Passenger Miles	2,521,750	1,998,194	4,959,896	-	9,479,840
Freight Ton - Miles	-	-	-	(2,957,422)	(2,957,422)
Fatalities	0.03	0.03	0.05	-	0.11
Personal Injuries	1.62	1.59	2.74	(0.02)	5.93
Property Damage Incidents	3.71	3.64	6.27	(0.34)	13.28

Source: TREDIS modeling.

As shown in Table 8.2, the transportation improvements are expected to result in an increase in passenger car vehicle miles traveled, presumably because the improvements will reduce traffic congestion and make vehicle trips more attractive. While passenger car vehicle miles traveled are expected to increase, passenger car vehicle hours of travel are expected to decrease because the planned improvements will reduce congestion, making the trips take less time.

The table shows a decrease in truck freight activity but this result actually indicates an increase in truck freight efficiency, an economic benefit. Based on the travel demand model, the planned transportation improvements will have virtually no impact on the total number of truck trips, but will slightly reduce the average trip length. This reduction in trip length results in fewer truck miles traveled. The reduction in trip length, combined with reductions in traffic congestion, result in a reduction in hours of truck travel.

TREDIS estimates the number of traffic accidents based on average accident rates per mile traveled. Thus, the increase in passenger car vehicle miles traveled is estimated to result in an increase in the number of accidents.

TREDIS applies cost factors to these travel impacts to estimate the dollar value of the transportation impacts, to allow them to be used in an economic analysis of the transportation improvement program. The value of the travel impacts in 2030 is shown in **Table 8.3**. All dollar values are estimated in present dollars.¹³ TREDIS estimates the dollar value of the following types of effects:

- ◆ Changes in passenger car driver and passenger time spent traveling,
- ◆ Changes in truck crew time,
- ◆ Changes in freight shipping costs,
- ◆ Changes in vehicle operating costs (fuel, maintenance, etc.),

¹³ In economic analyses, an impact in the future is generally considered to be less valuable than the same impact would be if it occurred in the present. This discounting is related to the increasing uncertainty of events as they get farther into the future and the fact that present dollars can be invested and grow to greater value in the future. In this analysis, a five percent discount rate is used. The present value of a future impact is the amount of money that would be needed today, if it were invested at a five percent interest rate until the future year, to generate the estimated future value.

- ◆ Changes in personal injury and property damage traffic accidents, and
- ◆ Changes in air pollution.

The assumptions used to estimate the dollar value of these effects are shown in Appendix 4.

Table 8.3: Annual Direct Cost Impacts of Fee-Funded Improvements (2030)

	Passenger Car On-the-Clock	Passenger Car Commute	Passenger Car Personal/ Recreational	Truck Freight	Total
Passenger Time	\$ (8,271,027)	\$ (3,549,347)	\$ (7,609,717)	\$ -	\$ (19,430,091)
Crew Cost	-	-	-	(1,152,303)	(1,152,303)
Freight Cost	-	-	-	(458,715)	(458,715)
Vehicle Operating Cost	621,701	584,776	1,084,848	(460,225)	1,831,100
Safety (Accident) Cost	454,632	446,902	767,227	(7,511)	1,661,250
Environmental Cost	90,720	89,178	153,098	(42,917)	290,079
Total Cost Impacts	\$ (7,103,974)	\$ (2,428,491)	\$ (5,604,544)	\$ (2,121,671)	\$ (17,258,680)

Source: TREDIS modeling.

Benefit-Cost Comparison

The benefit-cost analysis of the transportation improvements to be funded with the impact fee compares the present value of the benefits resulting from the transportation improvements with the present value of the project costs to determine whether the improvement projects are a worthwhile use of the community's resources. In a benefit-cost analysis, all of the different types of benefits and costs resulting from the proposed projects should be included. To allow comparison of different types of project impacts, such as time savings, changes in accident frequencies, and changes in air pollution, each type of impact must be expressed as a dollar value. TREDIS estimates the dollar value of the following types of impacts for the benefit-cost comparison:

- ◆ Vehicle Operating Costs: fuel, maintenance, and vehicle depreciation costs.
- ◆ Time Cost – Business Impacts: the value of travel time savings that accrues to businesses. Includes value of time savings of workers traveling while on the clock and 50 percent of the value of commute time savings.
- ◆ Time Cost – Household Impacts: the value of travel time savings that accrues to households. Include time savings for personal and recreational trips and 50 percent of the value of commute time savings.
- ◆ Safety Costs: Change in costs due to traffic accidents.
- ◆ Induced Travel Adjustment: Benefit from additional trips that are made as a result of reduced congestion or other improved transportation efficiencies. These trips are referred to as “induced travel.” The fact that individuals are making additional trips shows that the trips generate benefits for the travelers, which should be accounted

for in the benefit-cost analysis. The costs of the induced travel are accounted for in the estimates of vehicle operating costs, time costs, and other factors.¹⁴

- ◆ Shipper Logistic Costs: Changes in shipping costs for local businesses and value of shorter time to move goods around the city.
- ◆ Environmental Costs: Dollar value of changes in air pollution produced by vehicle travel.

Table 8.4 shows the estimated benefits from transportation improvements for the analysis period of 2009 through 2030. Some values in the table such as passenger car/light truck vehicle operating costs are shown as negative numbers. These figures reflect an increase in costs as a result of the transportation improvements, or a negative benefit. As shown, the most significant benefits result from business and household time savings and the induced travel adjustment. Vehicle operating costs, safety costs, and environmental costs have negative benefits, as a result of the increased passenger car vehicle miles traveled induced by the transportation improvements. Across all categories of benefits, the transportation improvements are estimated to produce \$206.1 million in benefits during the analysis period.

Table 8.4: Benefits from Transportation Improvements (2009-2030)

	Passenger Car/ Light Truck	Freight Truck	Total Benefits
Vehicle Operating Costs	\$ (18,500,000)	\$ 3,700,000	\$ (14,800,000)
Time Cost - Business Impacts	81,000,000	9,300,000	90,300,000
Time Cost - Household Impacts	75,700,000	-	75,700,000
Safety Costs	(13,500,000)	100,000	(13,400,000)
Induced Travel Adjustment	67,000,000	-	67,000,000
Shipper Logistic Costs	-	3,700,000	3,700,000
Environmental Costs	(2,700,000)	300,000	(2,400,000)
Total Benefits	\$ 189,000,000	\$ 17,100,000	\$ 206,100,000

Source: TREDIS modeling.

Table 8.5 compares the present value of the transportation benefits with the present value of the cost to construct the transportation improvements. The transportation improvements are estimated to generate \$66.1 million in net benefits. Compared to the present value of project costs, this is a benefit-cost ratio of 1.47, indicating that the benefits of the project are 1.47 times project costs. This shows that these transportation projects are a worthwhile investment for the City of Fort Worth – for every \$1.00 invested in transportation infrastructure the City gains \$1.47 in additional economic activity.

¹⁴ For more information on the induced travel adjustment, see <http://www.tredis.com/images/stories/pdf-docs/TREDIS-Summary-TechDoc-BenCost-v3.pdf>, page 10.

Table 8.5: Benefit-Cost Comparison (\$2008)

Present Value of Benefits (A)	\$ 206,100,000
Present Value of Project Costs (B)	<u>140,000,000</u>
Net Present Value	\$ 66,100,000
Benefit-Cost Ratio (= A / B)	1.47

Sources: Table 8.4; TREDIS modeling.

Economic Impact Analysis

The economic impact analysis is a separate analysis from the benefit-cost comparison. An economic impact analysis seeks to determine the impacts of the transportation impact fee program on business activity in Fort Worth. The program impacts business activity in three ways:

- ◆ Increased business activity resulting from road construction spending;
- ◆ Reduced business activity resulting from the impact fee raising development costs; and
- ◆ Increased business activity resulting from reduced traffic congestion and the resulting cost savings to businesses.

There is currently little consensus in the economics literature on the impacts of impact fees on business activity. As a result of this uncertainty, three scenarios for the impacts of the transportation impact fees were included in the analysis. The scenarios were:

- ◆ Scenario 1 – Fees are completely borne by households: This scenario assumes that the impact fee burden on residential development will be shifted from developers to households through higher home prices and residential rents. The impact fee burden on nonresidential developers will be shifted from nonresidential developers to businesses through increased building prices and rents, and then from businesses to households through higher prices for goods and services. This scenario would also apply if land prices decrease in an amount corresponding to the impact fees, and household income resulting from selling land to developers is reduced.
- ◆ Scenario 2 – Fees are completely borne by developers: In this scenario, it is assumed that developers are unable to pass along impact fees through higher building prices, and that impact fees are borne by developers' as unrecovered higher development costs.
- ◆ Scenario 3 – The fee burden is shared evenly between households and developers: This scenario assumes that developers are able to pass half of the fee burden on to households as described in the first scenario, but bear the other half of the fee burden as unrecovered development costs as described in the second scenario.

Economic impacts are measured in terms of changes in:

- ◆ Business output;
- ◆ Value added: Value of business output, less the cost of materials and other inputs. Value added is equal to the total of wage income and retained business income;
- ◆ Employment; and
- ◆ Wage income.

Economic Impacts of Transportation Improvements

Table 8.6 shows the economic impacts of the reductions in congestion resulting from the transportation improvements by year and the total impacts through the analysis period. The table does not include the impacts of construction spending or impact fee burden. In the economic impact analysis results tables, the total jobs shown for the analysis period is the sum of the jobs created in each year. As shown, the transportation improvements are estimated to generate approximately \$69 million in value added over the analysis period. At the end of the analysis period, when the transportation improvements are completed and the congestion reductions from the transportation improvements are at their maximum, the improvements are estimated to generate approximately \$4.7 million in value added and 75 jobs annually.

Economic Impacts of Construction Spending

Table 8.7 shows the economic impacts of constructing the impact fee-funded transportation improvement projects. Because this study focuses on the transportation improvements planned during the 11-year fee revenue and project construction horizon, no economic impacts from construction spending after 2019 are shown. In reality, the impact fee program is likely to continue after 2019 and there would be additional economic impacts from road construction spending. However, those economic impacts are not included in this analysis. As shown, construction spending on transportation projects funded by impact fees is estimated to generate between approximately 150 and 300 jobs per year, and approximately \$10 million to \$20 million of value added per year.

Economic Impacts of Transportation Impact Fees

This section shows the economic impacts of the transportation impact fees under each of the three fee burden scenarios described above. **Table 8.8** shows the economic impacts of the impact fees under Scenario 1, in which the fee burden is borne completely through higher household prices for housing, goods, and services. In this scenario, the impact fees would result in a loss of between 120 and 240 jobs per year and a reduction in value added of \$9 million to \$18 million per year through the 11-year fee revenue and project construction horizon.

Table 8.6: Economic Impacts of Transportation Improvements

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ 403,000	\$ 226,000	4	\$ 156,000
2010	878,000	492,000	8	341,000
2011	1,454,000	815,000	13	564,000
2012	2,129,000	1,194,000	19	826,000
2013	2,710,000	1,520,000	25	1,052,000
2014	3,333,000	1,869,000	30	1,294,000
2015	4,009,000	2,248,000	37	1,556,000
2016	4,731,000	2,653,000	43	1,836,000
2017	5,509,000	3,088,000	50	2,138,000
2018	6,357,000	3,564,000	58	2,467,000
2019	7,136,000	4,001,000	65	2,770,000
2020	7,236,000	4,057,000	66	2,809,000
2021	7,338,000	4,114,000	67	2,848,000
2022	7,442,000	4,172,000	68	2,888,000
2023	7,546,000	4,231,000	69	2,929,000
2024	7,653,000	4,291,000	70	2,970,000
2025	7,760,000	4,351,000	71	3,012,000
2026	7,870,000	4,412,000	72	3,054,000
2027	7,981,000	4,474,000	73	3,097,000
2028	8,093,000	4,537,000	74	3,141,000
2029	8,207,000	4,601,000	75	3,185,000
2030	8,323,000	4,666,000	76	3,230,000
Total Impacts	\$ 124,098,000	\$ 69,576,000	1,133	\$ 48,163,000

Source: TREDIS modeling.

Table 8.7: Economic Impacts of Road Construction Spending

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ 21,119,000	\$ 10,951,000	158	\$ 8,253,000
2010	20,306,000	10,529,000	152	7,935,000
2011	25,577,000	13,263,000	192	9,995,000
2012	30,686,000	15,912,000	230	11,991,000
2013	25,708,000	13,331,000	193	10,046,000
2014	27,823,000	14,427,000	208	10,872,000
2015	30,524,000	15,828,000	229	11,928,000
2016	32,899,000	17,060,000	246	12,856,000
2017	35,698,000	18,511,000	267	13,950,000
2018	39,342,000	20,401,000	295	15,374,000
2019	35,665,000	18,494,000	267	13,937,000
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030	-	-	-	-
Total Impacts	\$ 325,347,000	\$ 168,707,000	2,437	\$ 127,137,000

Source: TREDIS modeling.

Table 8.8: Economic Impacts of Transportation Impact Fees, Scenario 1

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ (16,701,000)	\$ (9,544,000)	(128)	\$ (6,121,000)
2010	(16,058,000)	(9,177,000)	(123)	(5,885,000)
2011	(20,226,000)	(11,559,000)	(155)	(7,413,000)
2012	(24,267,000)	(13,868,000)	(186)	(8,893,000)
2013	(20,329,000)	(11,618,000)	(156)	(7,450,000)
2014	(22,002,000)	(12,574,000)	(169)	(8,063,000)
2015	(24,138,000)	(13,795,000)	(185)	(8,846,000)
2016	(26,016,000)	(14,868,000)	(200)	(9,535,000)
2017	(28,230,000)	(16,133,000)	(217)	(10,346,000)
2018	(31,112,000)	(17,780,000)	(239)	(11,402,000)
2019	(28,204,000)	(16,118,000)	(217)	(10,336,000)
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030	-	-	-	-
Total Impacts	\$ (257,283,000)	\$ (147,034,000)	(1,975)	\$ (94,290,000)

Source: TREDIS modeling.

The reductions in economic activity resulting from the fee burden are less than the increases in economic activity generated by the road construction spending shown in Table 8.7. This is because construction spending results in greater indirect and induced economic impacts than household spending. Construction activity is labor intensive, so construction spending leads to relatively large increases in wage income in Fort Worth, which is partially respent in the City, generating induced economic activity. In contrast, household spending in Fort Worth is more heavily weighted toward goods that are produced outside of the City, generating less induced economic activity.

Table 8.9 shows the economic impacts of the transportation impact fees under Scenario 2, in which the fee burden is completely borne by the development industry through unrecovered higher development costs. This scenario is modeled by assigning the fee burden to the construction sector, which is the best match to the building development industry available through the modeling software.¹⁵

¹⁵ The modeling software uses an industry breakdown at the three-digit North American Industrial Classification System (NAICS) code level, or approximately 50 industry sectors.

Table 8.9: Economic Impacts of Transportation Impact Fees, Scenario 2

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ (21,119,000)	\$ (10,951,000)	(158)	\$ (8,253,000)
2010	(20,306,000)	(10,529,000)	(152)	(7,935,000)
2011	(25,577,000)	(13,263,000)	(192)	(9,995,000)
2012	(30,686,000)	(15,912,000)	(230)	(11,991,000)
2013	(25,708,000)	(13,331,000)	(193)	(10,046,000)
2014	(27,823,000)	(14,427,000)	(208)	(10,872,000)
2015	(30,524,000)	(15,828,000)	(229)	(11,928,000)
2016	(32,899,000)	(17,060,000)	(246)	(12,856,000)
2017	(35,698,000)	(18,511,000)	(267)	(13,950,000)
2018	(39,342,000)	(20,401,000)	(295)	(15,374,000)
2019	(35,665,000)	(18,494,000)	(267)	(13,937,000)
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030	-	-	-	-
Total Impacts	\$ (325,347,000)	\$ (168,707,000)	(2,437)	\$ (127,137,000)

Source: TREDIS modeling.

Because the impact fee burden is assigned to the same industry sector as the road construction spending, the economic impacts of the impact fee program are estimated to exactly offset the economic impacts of the road construction spending shown in Table 8.7. Therefore, the road construction spending and the impact fee burden would combine to have no economic impacts. While the total combined impacts on the economy would be zero, the program would benefit firms and workers engaged in road construction, while negatively impacting the building development industry.

Table 8.10 shows the economic impacts of the transportation impact fees under Scenario 3. In this scenario, the fee burden is split equally between households and building developers. Because this scenario is a blend of Scenarios 1 and 2, the economic impacts of the impact fees are estimated to be greater in Scenario 1, but less than in Scenario 2.

Combined Economic Impacts

Tables 8.11, 8.12, and 8.13 show the combined economic impacts of the transportation improvements, road construction spending, and the impact fees under each of the three burden scenarios.

Table 8.10: Economic Impacts of Transportation Impact Fees, Scenario 3

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ (18,910,000)	\$ (10,248,000)	(143)	\$ (7,187,000)
2010	(18,182,000)	(9,853,000)	(138)	(6,910,000)
2011	(22,902,000)	(12,411,000)	(173)	(8,704,000)
2012	(27,477,000)	(14,890,000)	(208)	(10,442,000)
2013	(23,018,000)	(12,474,000)	(174)	(8,748,000)
2014	(24,912,000)	(13,501,000)	(189)	(9,468,000)
2015	(27,331,000)	(14,811,000)	(207)	(10,387,000)
2016	(29,458,000)	(15,964,000)	(223)	(11,195,000)
2017	(31,964,000)	(17,322,000)	(242)	(12,148,000)
2018	(35,227,000)	(19,090,000)	(267)	(13,388,000)
2019	(31,935,000)	(17,306,000)	(242)	(12,137,000)
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030	-	-	-	-
Total Impacts	\$ (291,316,000)	\$ (157,870,000)	(2,206)	\$ (110,714,000)

Source: TREDIS modeling.

Table 8.11: Combined Economic Impacts, Scenario 1

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ 4,821,000	\$ 1,633,000	34	\$ 2,288,000
2010	5,126,000	1,844,000	37	2,391,000
2011	6,805,000	2,519,000	50	3,146,000
2012	8,548,000	3,238,000	63	3,924,000
2013	8,089,000	3,233,000	62	3,648,000
2014	9,154,000	3,722,000	69	4,103,000
2015	10,395,000	4,281,000	81	4,638,000
2016	11,614,000	4,845,000	89	5,157,000
2017	12,977,000	5,466,000	100	5,742,000
2018	14,587,000	6,185,000	114	6,439,000
2019	14,597,000	6,377,000	115	6,371,000
2020	7,236,000	4,057,000	66	2,809,000
2021	7,338,000	4,114,000	67	2,848,000
2022	7,442,000	4,172,000	68	2,888,000
2023	7,546,000	4,231,000	69	2,929,000
2024	7,653,000	4,291,000	70	2,970,000
2025	7,760,000	4,351,000	71	3,012,000
2026	7,870,000	4,412,000	72	3,054,000
2027	7,981,000	4,474,000	73	3,097,000
2028	8,093,000	4,537,000	74	3,141,000
2029	8,207,000	4,601,000	75	3,185,000
2030	8,323,000	4,666,000	76	3,230,000
Total Impacts	\$ 192,162,000	\$ 91,249,000	1,595	\$ 81,010,000

Source: TREDIS modeling.

Table 8.12: Combined Economic Impacts, Scenario 2

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ 403,000	\$ 226,000	4	\$ 156,000
2010	878,000	492,000	8	341,000
2011	1,454,000	815,000	13	564,000
2012	2,129,000	1,194,000	19	826,000
2013	2,710,000	1,520,000	25	1,052,000
2014	3,333,000	1,869,000	30	1,294,000
2015	4,009,000	2,248,000	37	1,556,000
2016	4,731,000	2,653,000	43	1,836,000
2017	5,509,000	3,088,000	50	2,138,000
2018	6,357,000	3,564,000	58	2,467,000
2019	7,136,000	4,001,000	65	2,770,000
2020	7,236,000	4,057,000	66	2,809,000
2021	7,338,000	4,114,000	67	2,848,000
2022	7,442,000	4,172,000	68	2,888,000
2023	7,546,000	4,231,000	69	2,929,000
2024	7,653,000	4,291,000	70	2,970,000
2025	7,760,000	4,351,000	71	3,012,000
2026	7,870,000	4,412,000	72	3,054,000
2027	7,981,000	4,474,000	73	3,097,000
2028	8,093,000	4,537,000	74	3,141,000
2029	8,207,000	4,601,000	75	3,185,000
2030	8,323,000	4,666,000	76	3,230,000
Total Impacts	\$ 124,098,000	\$ 69,576,000	1,133	\$ 48,163,000

Source: TREDIS modeling.

Table 8.13: Combined Economic Impacts, Scenario 3

Year	Business Output	Value Added	Jobs	Wage Income
2009	\$ 2,612,000	\$ 929,000	19	\$ 1,222,000
2010	3,002,000	1,168,000	22	1,366,000
2011	4,129,000	1,667,000	32	1,855,000
2012	5,338,000	2,216,000	41	2,375,000
2013	5,400,000	2,377,000	44	2,350,000
2014	6,244,000	2,795,000	49	2,698,000
2015	7,202,000	3,265,000	59	3,097,000
2016	8,172,000	3,749,000	66	3,497,000
2017	9,243,000	4,277,000	75	3,940,000
2018	10,472,000	4,875,000	86	4,453,000
2019	10,866,000	5,189,000	90	4,570,000
2020	7,236,000	4,057,000	66	2,809,000
2021	7,338,000	4,114,000	67	2,848,000
2022	7,442,000	4,172,000	68	2,888,000
2023	7,546,000	4,231,000	69	2,929,000
2024	7,653,000	4,291,000	70	2,970,000
2025	7,760,000	4,351,000	71	3,012,000
2026	7,870,000	4,412,000	72	3,054,000
2027	7,981,000	4,474,000	73	3,097,000
2028	8,093,000	4,537,000	74	3,141,000
2029	8,207,000	4,601,000	75	3,185,000
2030	8,323,000	4,666,000	76	3,230,000
Total Impacts	\$ 158,129,000	\$ 80,413,000	1,364	\$ 64,586,000

Source: TREDIS modeling.

Findings and Conclusions

Both the benefit-cost analysis and the economic impact analysis suggest that the current transportation impact fee program will, overall, have a beneficial impact on the City of Fort Worth. The benefit-cost analysis shows that the benefits of the projects will outweigh their costs, meaning that the City, as a whole, will be better off as a result of investing in the transportation improvements. The economic impact analysis shows that the impact fee program will generate increased economic activity in Fort Worth. While charging a development impact fee will reduce some economic activity, those impacts are offset by the effects of increased road construction and reduced traffic congestion.

Benefit-Cost Analysis

The benefit-cost analysis shows that the planned transportation improvements will generate benefits that are greater than the improvement costs. The largest benefits come from the value of time saved as a result of reduced congestion and the benefit gained from induced travel, or trips that would not have been worthwhile without the transportation improvements. The ratio of benefits resulting from the transportation improvements to the project costs is 1.47. This analysis shows that the transportation improvements are a

worthwhile investment for the City of Fort Worth, whether they are funded through impact fees or an alternative funding source.

Economic Impact Analysis

The economic impact analysis estimated the impacts of the transportation impact fee program on economic activity, as measured by business output, value added, employment, and wage income. Positive economic impacts are generated by road construction activity and congestion reductions resulting from the planned transportation improvements. Charging impact fees to new development causes negative economic impacts.

The analysis found that, in total, the transportation improvements, road construction, and impacts result in positive economic impacts in each year of the 2009 to 2030 analysis period. For any given year, the impacts depend on the amount of fees collected and road construction projected in that year. The economic impacts of the transportation improvements themselves, primarily resulting from reduced traffic congestion, increase over time. Over time, more of the projects are completed and travel growth makes the difference in congestion that would be present with and without the projects greater. By the end of the analysis period, the projects to be constructed in the first 10 years of the impact fee program are estimated to result in the creation of approximately 75 jobs, \$8.3 million in additional business output per year, and \$4.7 million in additional value added per year.

9. Evaluation & Recommendations

This chapter evaluates the options presented in Chapter 5 with the assistance of the additional analysis provided in Chapters 6 through 8. Based on this evaluation this chapter outlines a recommended approach for closing the City’s transportation infrastructure funding gap.

As shown in Chapter 4 (see Table 4.7) the City faces a \$1.0 billion gap over the next 10 years in its Transportation Improvement Plan (TIP). Addressing this gap in any significant way will require politically challenging policies to raise revenues and potentially a need to defer transportation needs if revenues are inadequate.

Toolkit Evaluation

The funding and planning options described in Chapter 5 do not lend themselves to a quantitative evaluation. However, the options may be evaluated qualitatively against a list of reasonable criteria. The four criteria selected for this evaluation include:

- ◆ **Revenue potential:** All else being equal, options generating the most revenue are preferable.
- ◆ **Fairness:** Options that assign cost burdens to users in proportion to infrastructure impacts are preferable.
- ◆ **Efficiency:** Options that encourage efficient use of infrastructure will reduce costs and therefore are preferable.
- ◆ **Political feasibility:** Revenue enhancement options are generally less desirable given the current economic climate, City efforts to minimize taxes and fees, and a policy orientation towards facilitating development. Political feasibility is often a measure of relative “undesirability”.

Table 9.1 below provides an evaluation of the options, according to the above criteria.

The recommended options are designed to work in combination to maximize their impact on addressing the TIP funding gap as follows:

6. Increase transportation impact fees from the current average collection rate equal 33 percent of the maximum defensible amount to 50 percent net of anticipated discounts (**Option 7**). Structure the fee increases across service areas and modify fee discounts to provide pricing incentives to development to reduce demand for new facilities (**Option 11**). Consider the fee program as an implementation tool for an adequate public facilities ordinance (**Option 10**).
7. Dedicate 90 percent of bond proceeds over the 10-year period to the TIP (**Option 3**);
8. Adopt a transportation user fee to fund current annual roadway maintenance spending by the General Fund (\$25 million) (**Option 6**). Adjust the property tax

allocation to shift an equivalent amount from the General Fund to the Debt Service Fund and use exclusively for the TIP (**Option 2**).

Table 9.1: Transportation Funding Options Evaluation

	Revenue Potential	Fairness	Efficiency	Political Feasibility	Recommendation
<i>Revenue Options</i>					
1 Increase Total Property Tax Rate	+	+/- ¹	-	-	Not recommended
2 Increase Share of Property Tax To Debt Service	+	+/- ¹	-	+	Recommend
3 Increase Share of Debt Funding To Transportation Projects	+	+/- ¹	-	+	Recommend
4 Increase Sale Tax	+	+/- ¹	-	-	Not recommended
5 Increase Hotel Occupancy Tax	-	-	-	-	Not recommended
6 Adopt Transportation User Fees	+	+	-	-	Recommend
7 Increase Transportation Impact Fees	-	+	+	-	Recommend
8 Facilitate Formation of Public Improvement Districts	-	+	+	+	Recommend
<i>Planning Options</i>					
9 Require Infrastructure Financing Plan For Growth Areas	-	+	+	+	Consider
10 Adopt Adequate Public Facilities Ordinance	-	+	+	+	Consider
11 Incentivize Development To Use Existing Infrastructure	-	+	+	+	Recommend
12 Defer Transportation Improvements	+ ²	+/- ¹	-	+	Recommend

¹ Fairness depends on the projects funded (or deferred). These are broad-based revenue sources suggesting that funded projects should have citywide benefits. Thus fairness would be "+" if funds were used for existing deficiencies and deferred maintenance projects. Fairness would be a "-" if funds were used for projects to accommodate new development.

² Revenue potential evaluated as a reduced cost, i.e. deferring improvements has the potential to reduce costs significantly.

Source: Willdan Financial Services.

9. Facilitate use of public improvement districts for new and existing development (**Option 8**).

10. Even with these efforts the City will likely need to defer some transportation projects beyond the 10-year planning horizon (**Option 12**).

Increase Transportation Impact Fees

Increasing the recently adopted transportation impact fee is likely to be vigorously opposed by the development industry given the concerns expressed with the original program was adopted. However, we would recommend some increase in the fee given the lack of other available options and the findings from the development cost survey and economic impact analysis. Without increasing funding of development-related impacts the City will continue to “dig a deeper hole” as infrastructure deficiencies and related traffic congestion increase.

The City has a wide range of implementation alternatives to increase the transportation impact fee. The City should consider how a fee increase can provide pricing incentives to development to reduce demand for new facilities. Alternatives include:

- ♦ **Uniform fee increase by service area and land use type:** This alternative would maintain the current “smoothing” of fee rates across service areas. An increase in the current fee of \$1,500 per single family equivalent to \$2,273 would be sufficient.

Areas would continue to vary in the level of the maximum justified fee collected. This alternative would not provide pricing incentives to use infrastructure more efficiently.

- ◆ **Vary fee increase across service areas:** This alternative would vary the increase across area so that each area generates 50 percent of that area’s maximum justified fee. The fee for individual areas would range from \$1,700 to \$6,100 per single family equivalent (not including the areas that are already at their maximum amount or have no fee). This alternative moves away from the “smoothing” approach to reflect actual development impacts by area. This alternative would provide pricing incentives to use infrastructure more efficiently.
- ◆ **Vary fee increase for “groups” of service areas:** This alternative would be a compromise between a uniform fee increase and an increase that varied across all service areas. The City could group service areas together to minimize the variance in fees among areas while still maintaining some price signals to use infrastructure more efficiently. Service areas could be grouped by “infill” versus “suburban”, “core” versus “outer ring”, “quadrant”, or other geographical divisions.
- ◆ **Increase discount for adequate facilities:** The City should analyze the cost savings associated with the adequate public facilities discount to determine if the discount could be increased without placing an additional funding burden on the TIP. This alternative would also provide pricing incentives to use infrastructure more efficiently.
- ◆ **Increase discount for extraordinary investment:** Major office and industrial developments for national corporations that evaluate multiple locations are probably the most sensitive to increased development costs. The City should analyze the cost impact of this discount and increase it if financially feasible.
- ◆ **Support potential adequate public facilities ordinance:** One of the key challenges of an adequate public facilities ordinance is to ensure a funding stream to provide facilities. The City could begin to build this funding stream with a more robust impact fee program.
- ◆ **Facilitate use of public improvement districts:** Developers could use public improvements districts to reduce the burden of an increased fee. PIDs may also be effectively paired with area-based planning efforts to offer comprehensive infrastructure planning for growth areas.

Cost Competitiveness

Figures 9.1 to 9.12 show updated survey results, assuming the fee was increased from an average of 33 percent to an average of 50 percent of the maximum justified amount. At 50 percent of the maximum justified amounts, most project prototypes Fort Worth’s total development costs would remain within the range of costs to develop in the other cities surveyed in this study (see Chapter 6). Exceptions include:

- ◆ Retail development costs would place Fort Worth at the high end of the cities surveyed. With building costs included, the difference between the revised Fort Worth costs and the median would be about 1.6 percent.

- ◆ Development costs for Outer loop office would place Fort Worth at the high end of the cities surveyed though the City would still remain below the median with building costs included.

Figure 9.1: Single Family Development Fees and Infrastructure Costs per Lot

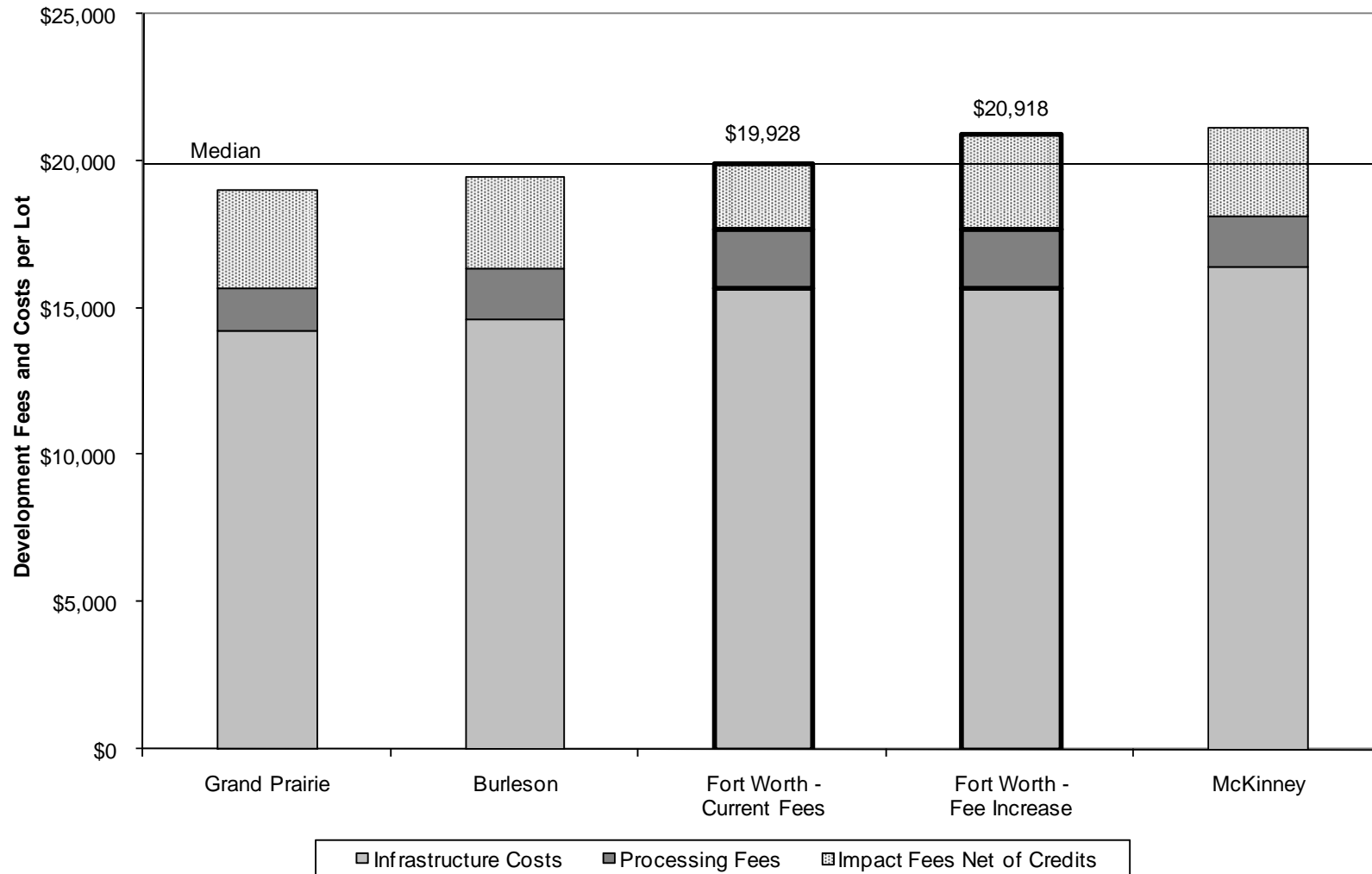


Figure 9.2: Single Family Building Costs, Development Fees and Infrastructure Costs per Lot

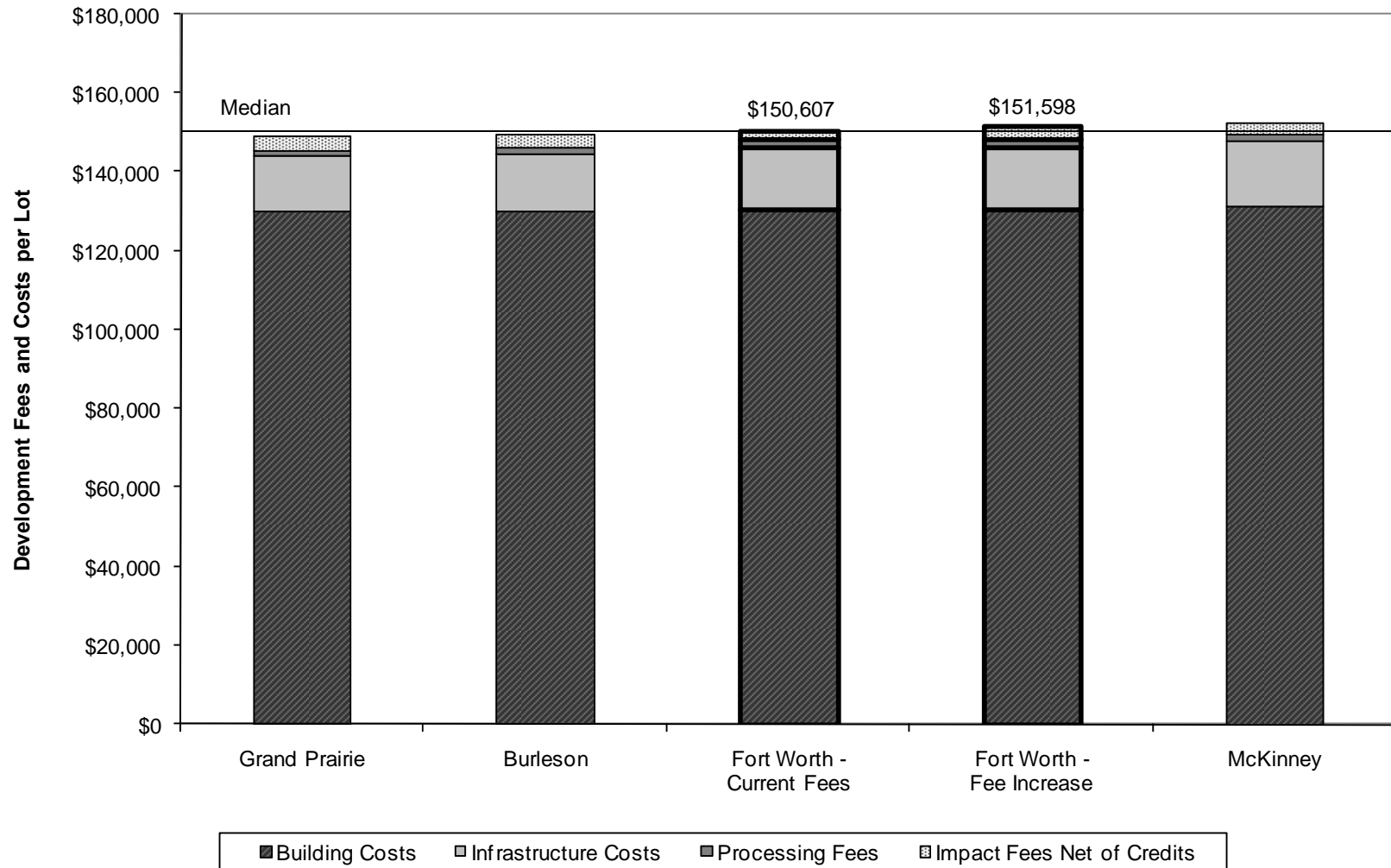


Figure 9.3: Multi-Family Development Fees and Infrastructure Costs per Unit

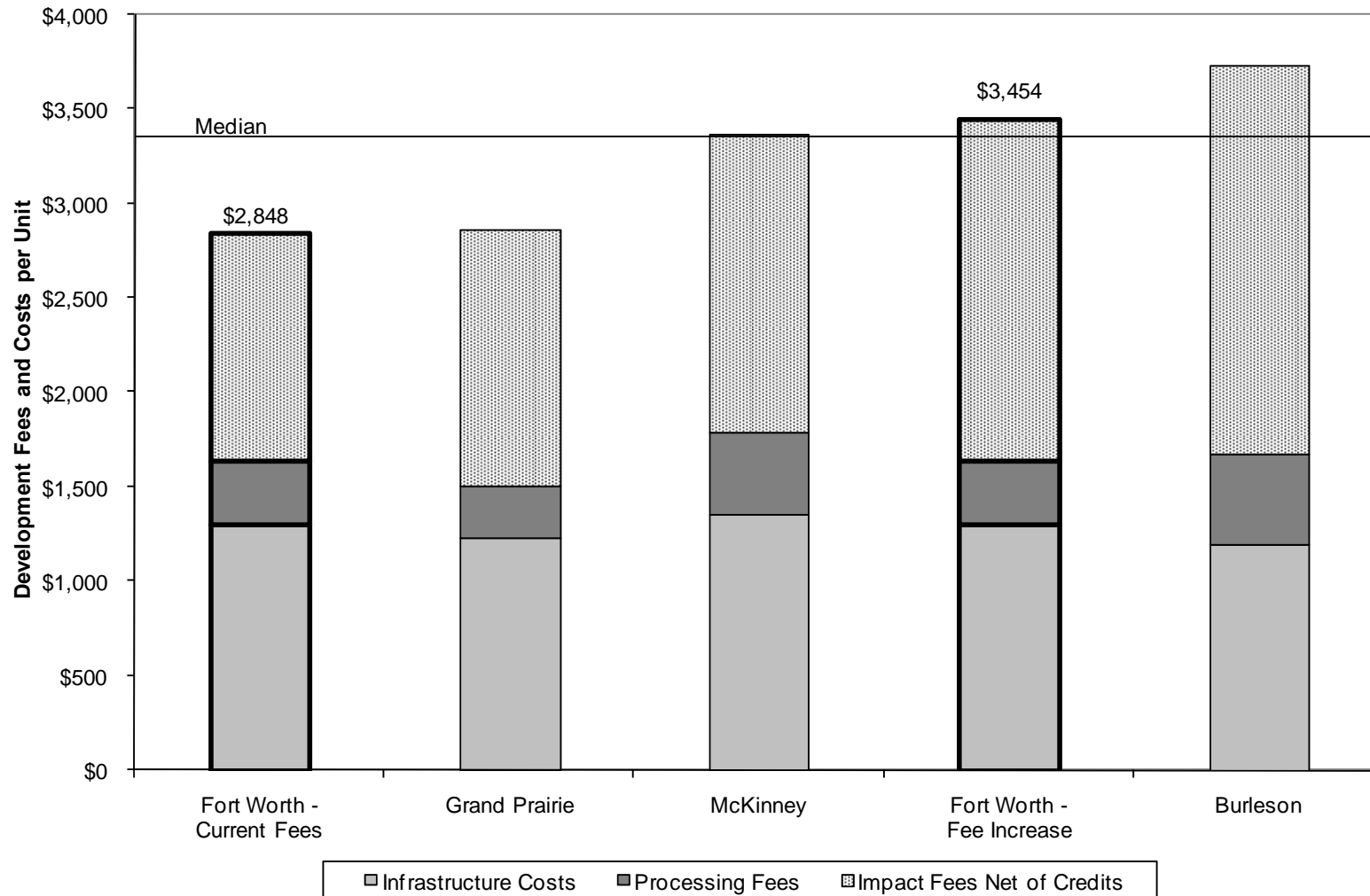


Figure 9.4: Multi-Family Building Costs, Development Fees and Infrastructure Costs per Lot

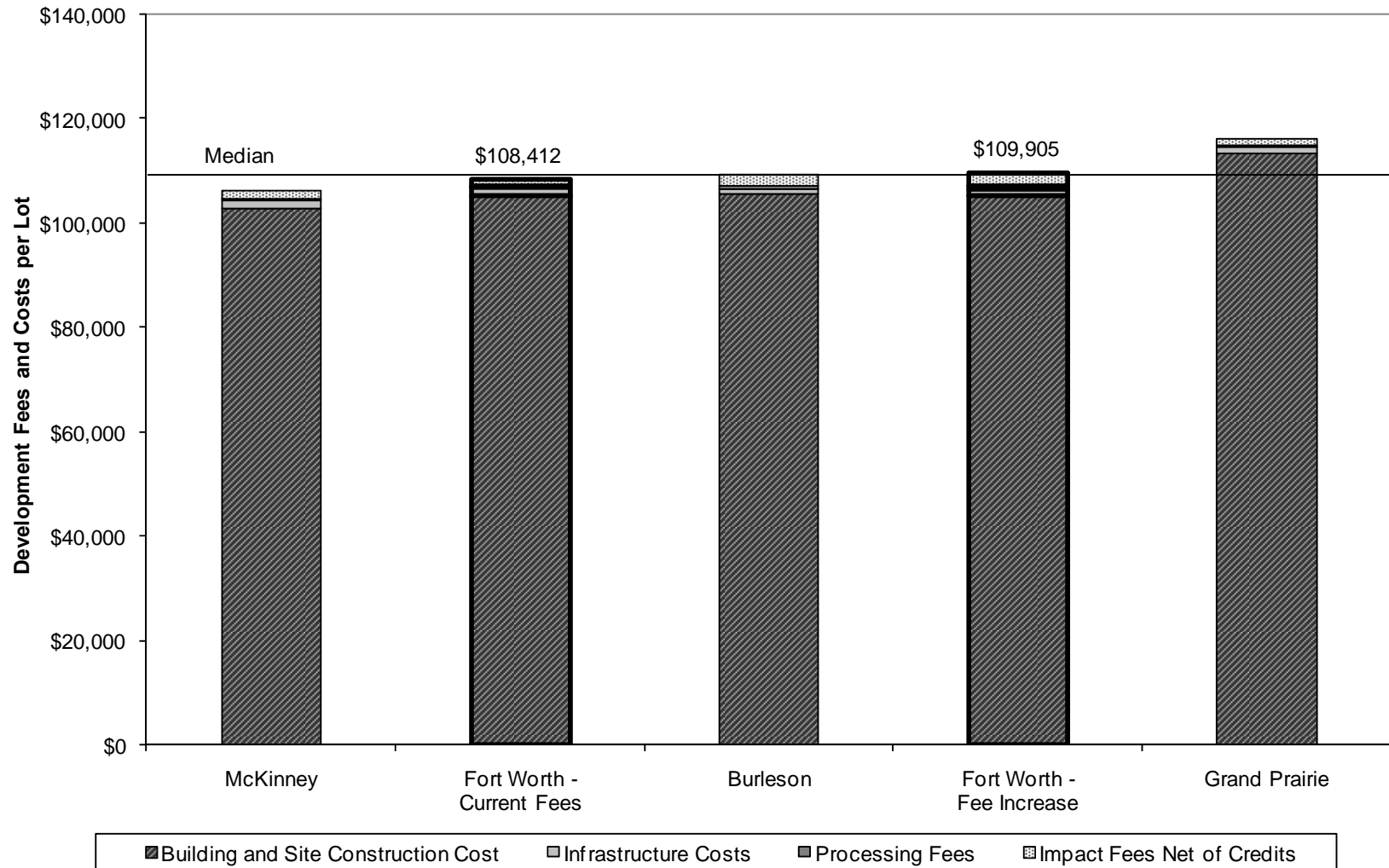


Figure 9.5: Retail Development Fees and Infrastructure Costs per 1,000 Square Feet

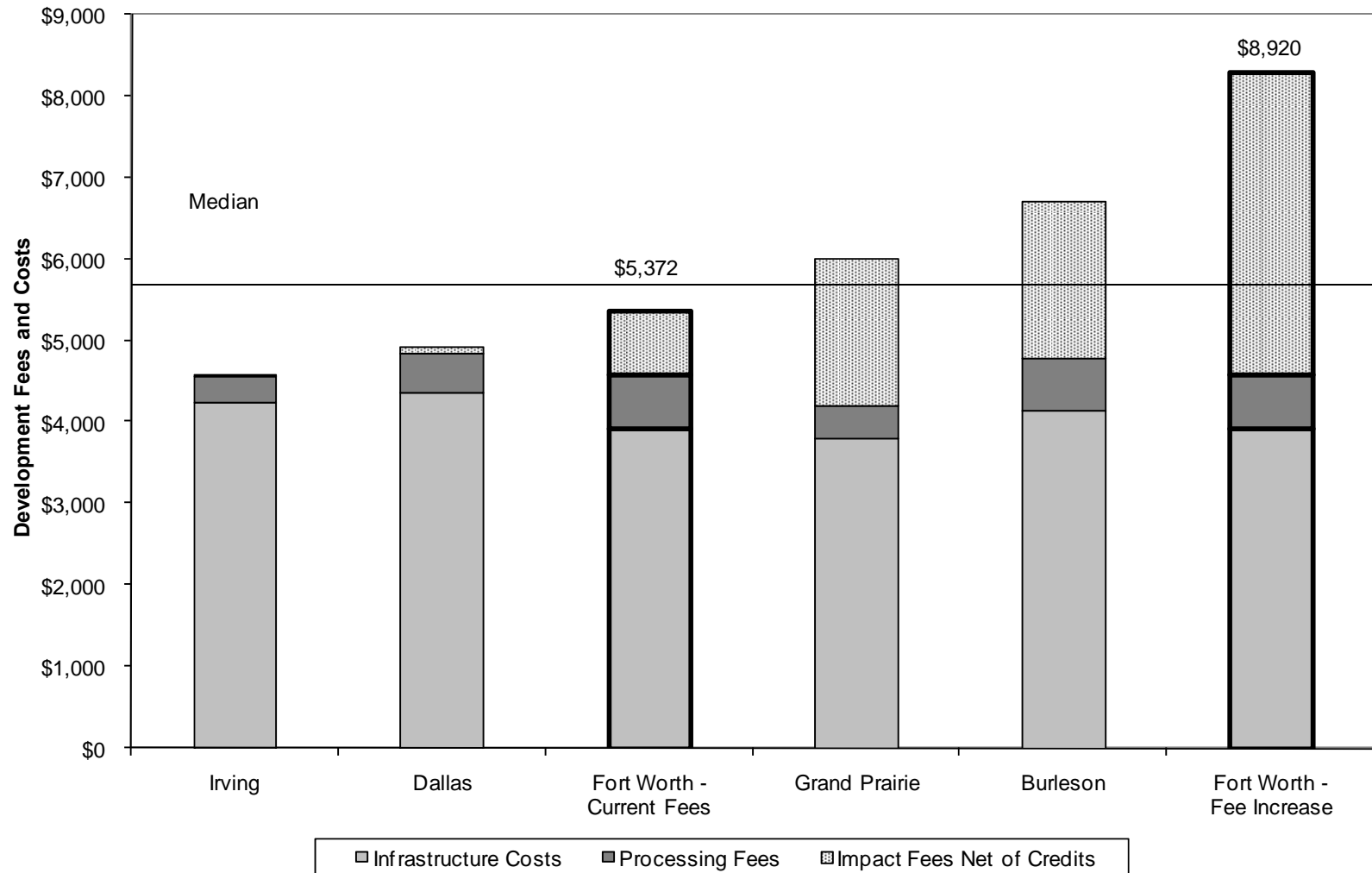


Figure 9.6: Retail Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet

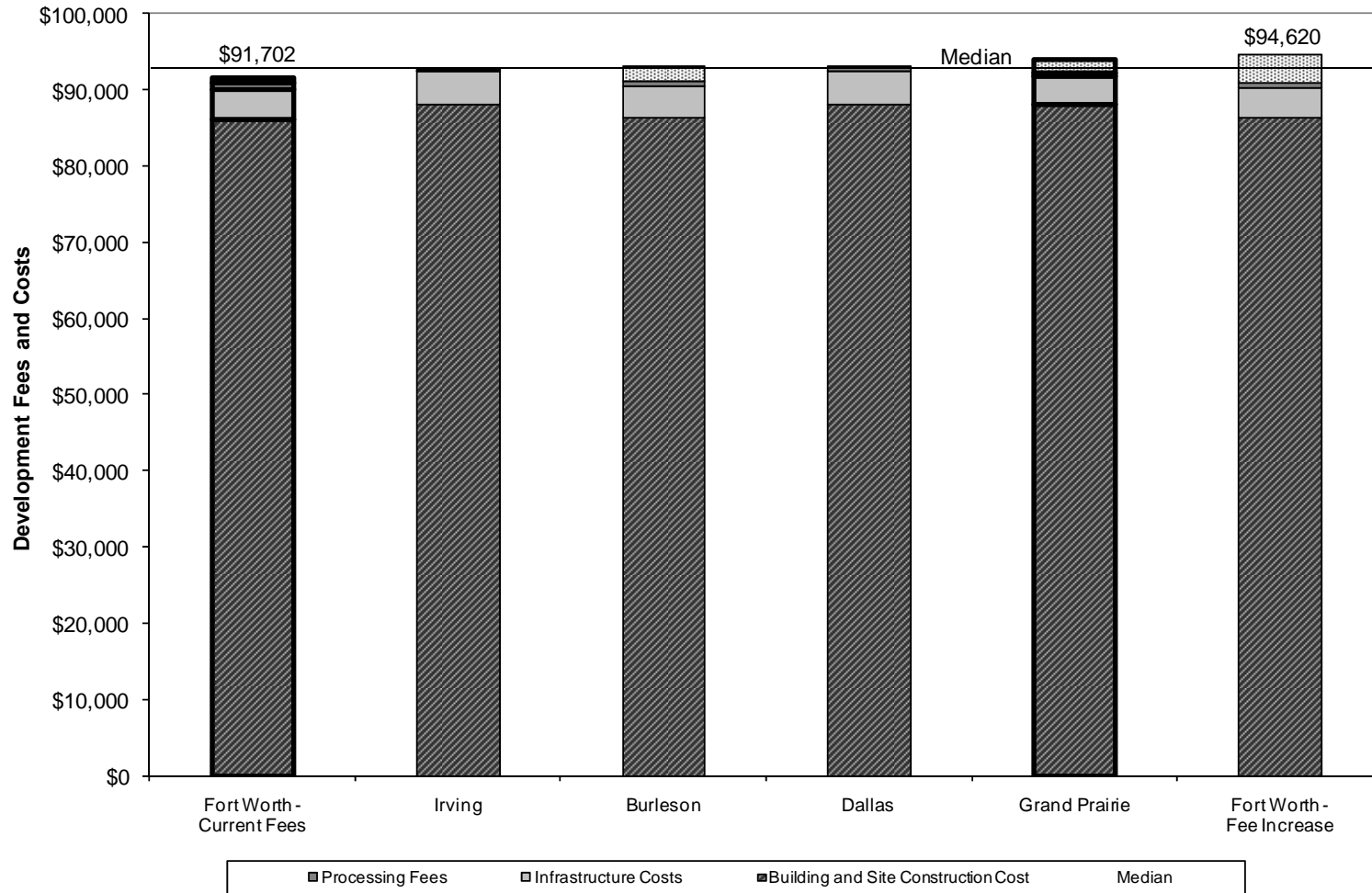


Figure 9.7: Central Business District Office Development Fees and Infrastructure Costs per 1,000 Square Feet

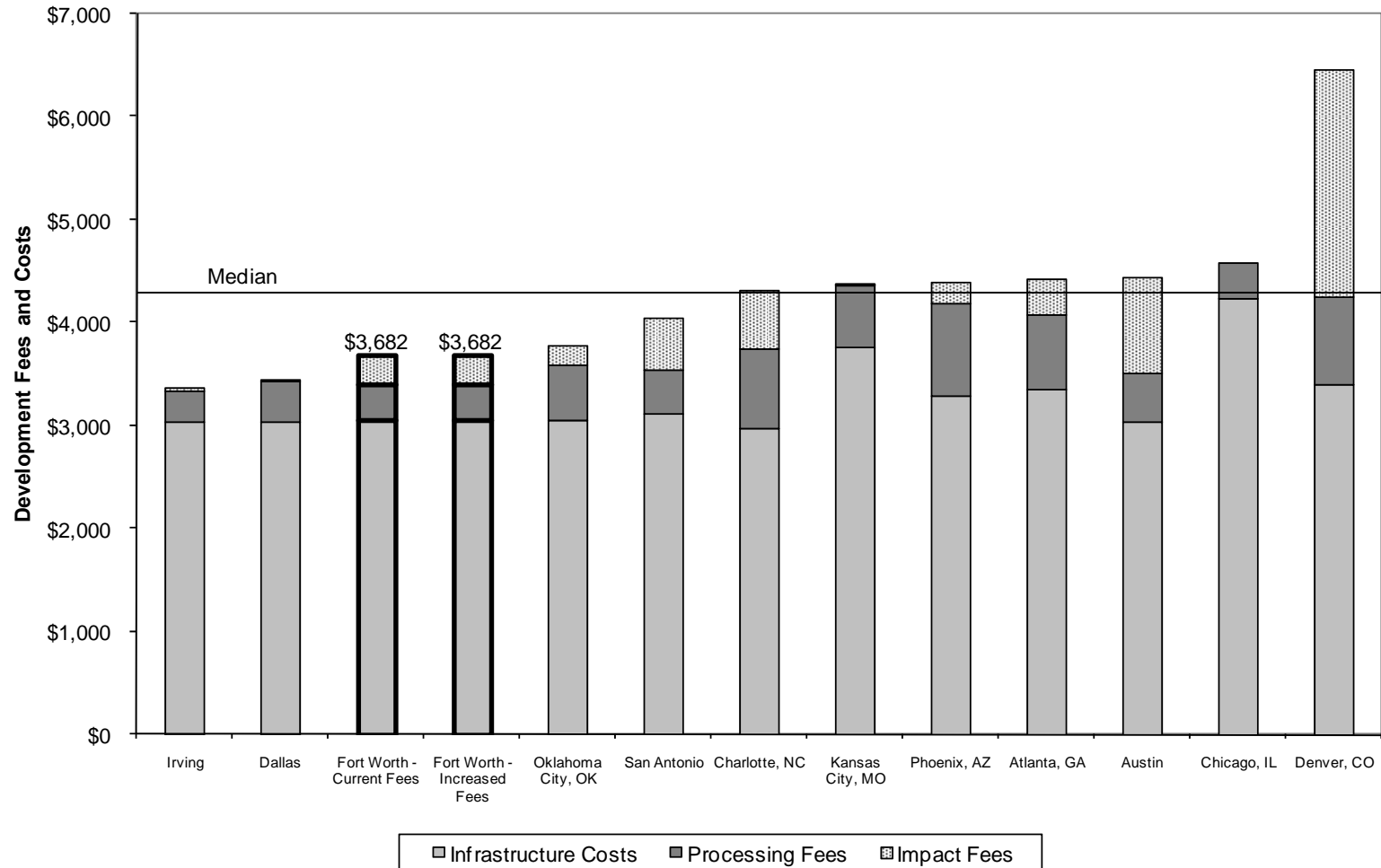


Figure 9.8: Central Business District Office Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet

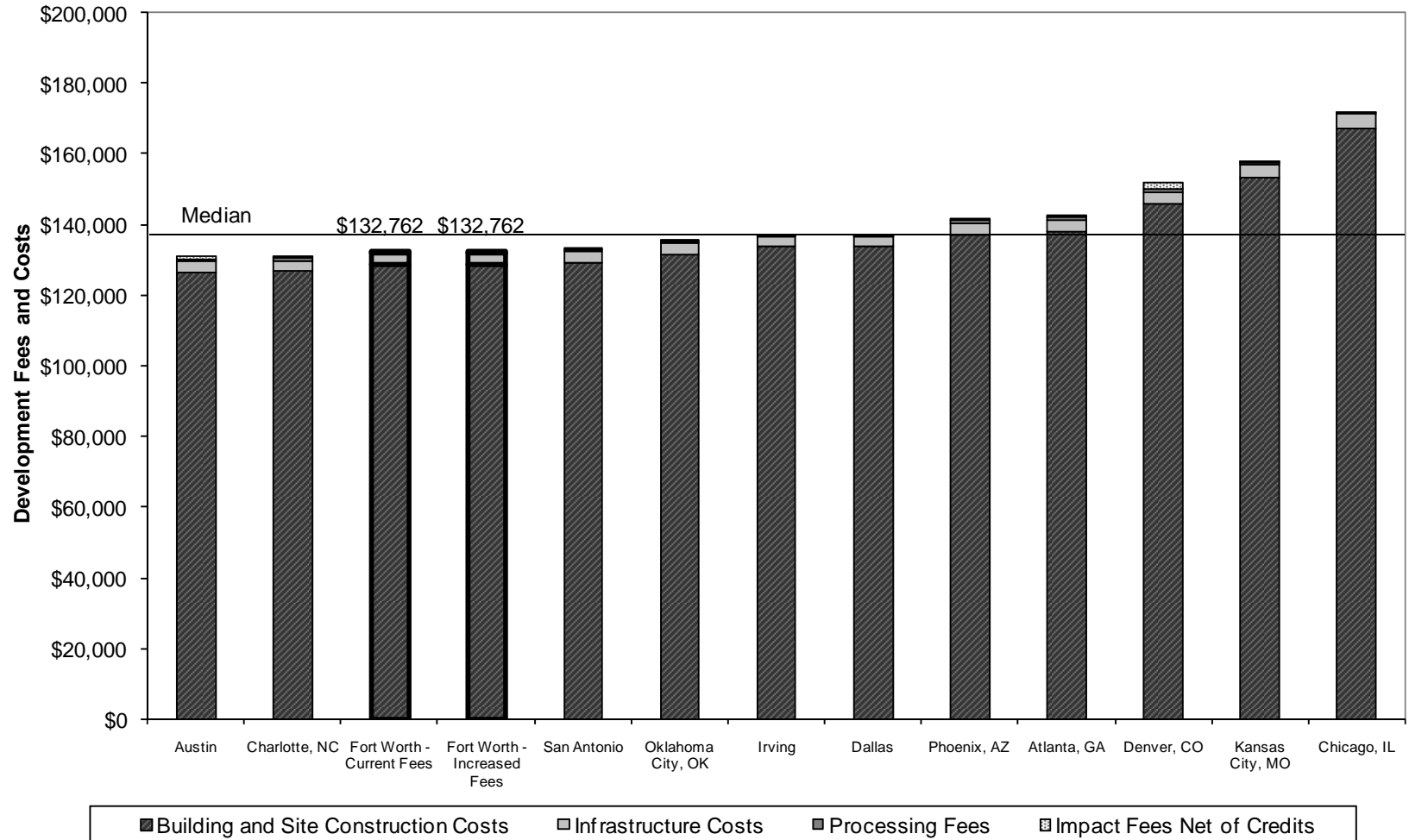


Figure 9.9: Outer Loop Office Development Fees and Infrastructure Costs per 1,000 Square Feet

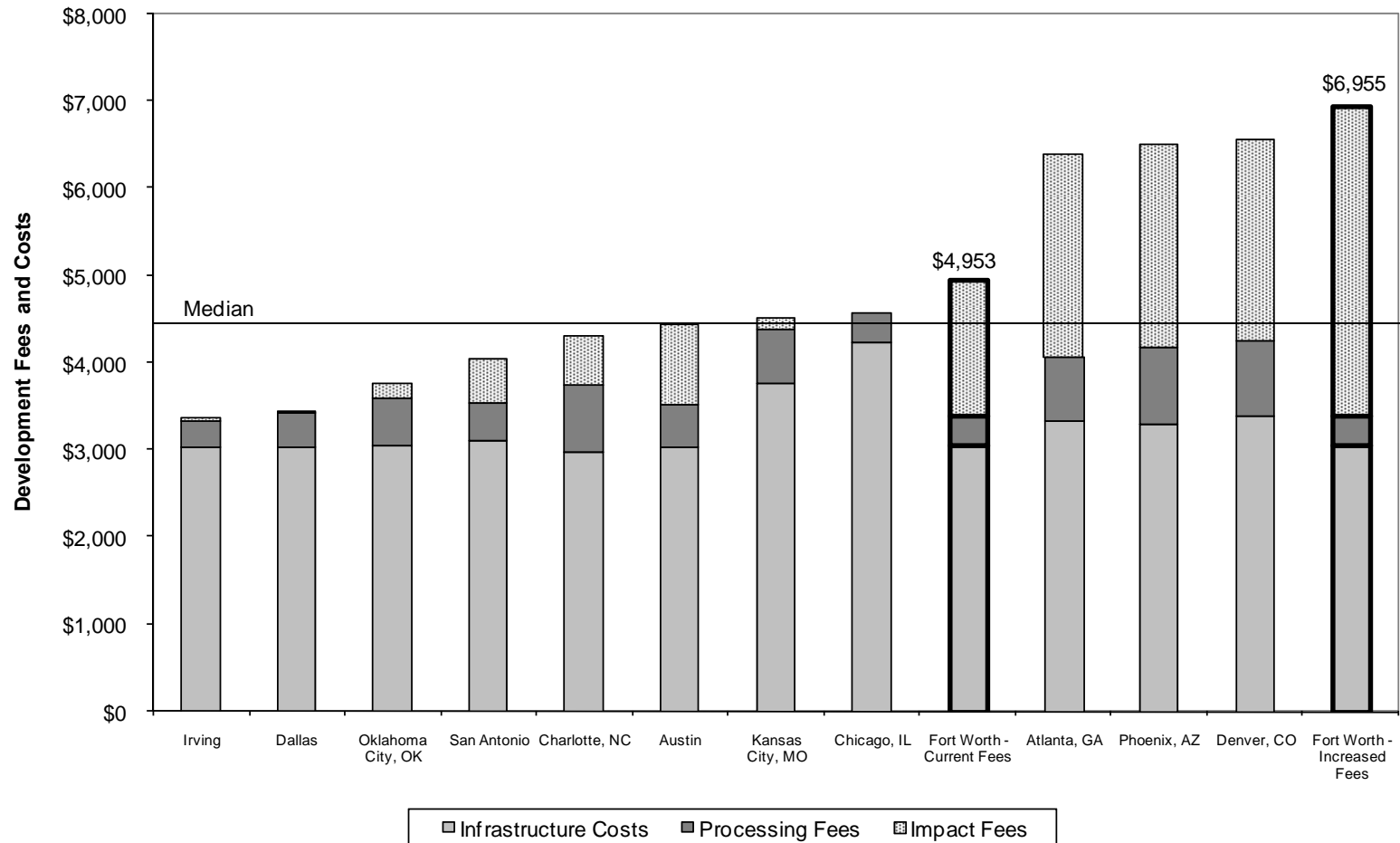


Figure 9.10: Outer Loop Office Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet

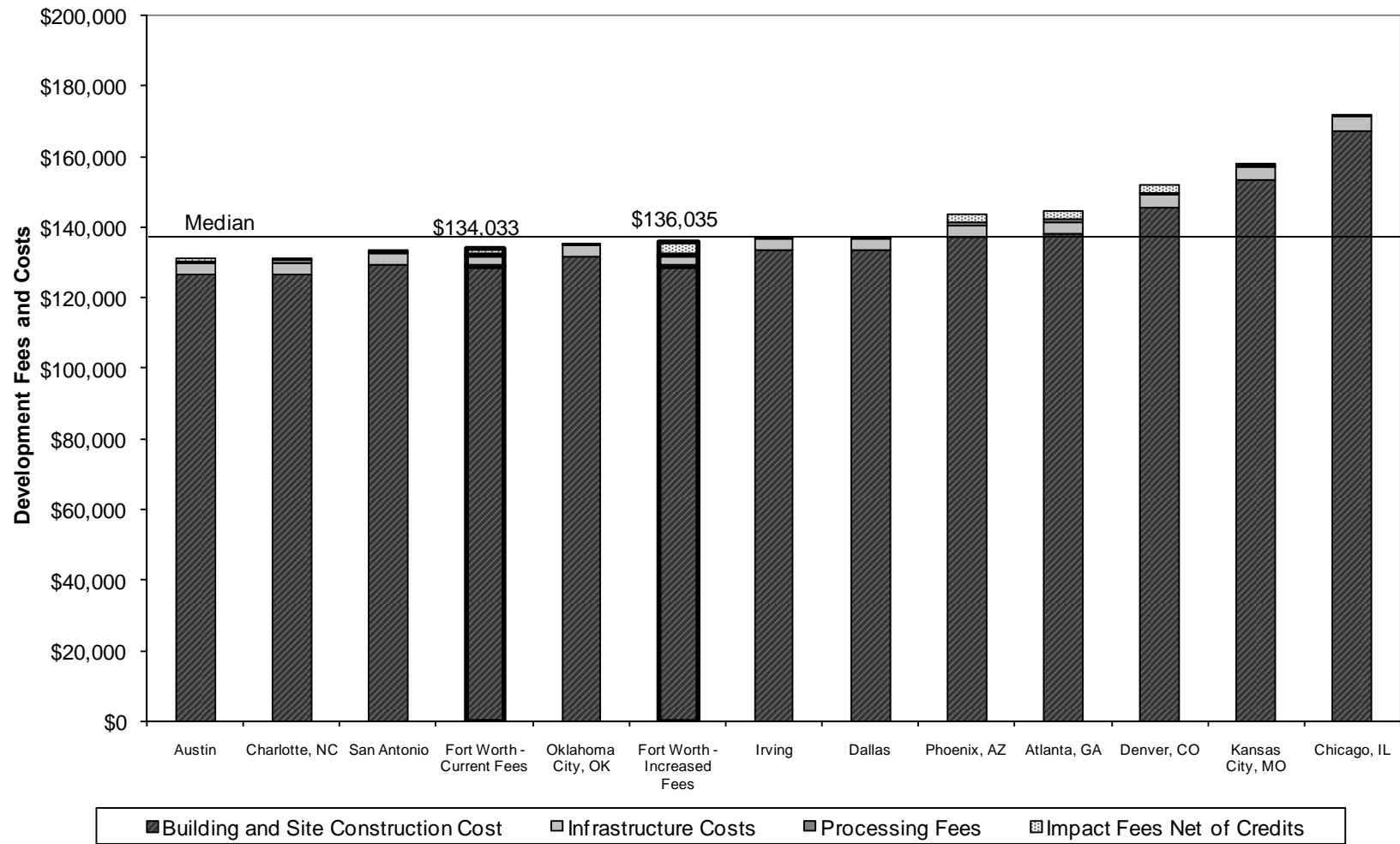


Figure 9.11: Industrial Development Fees and Infrastructure Costs per 1,000 Square Feet

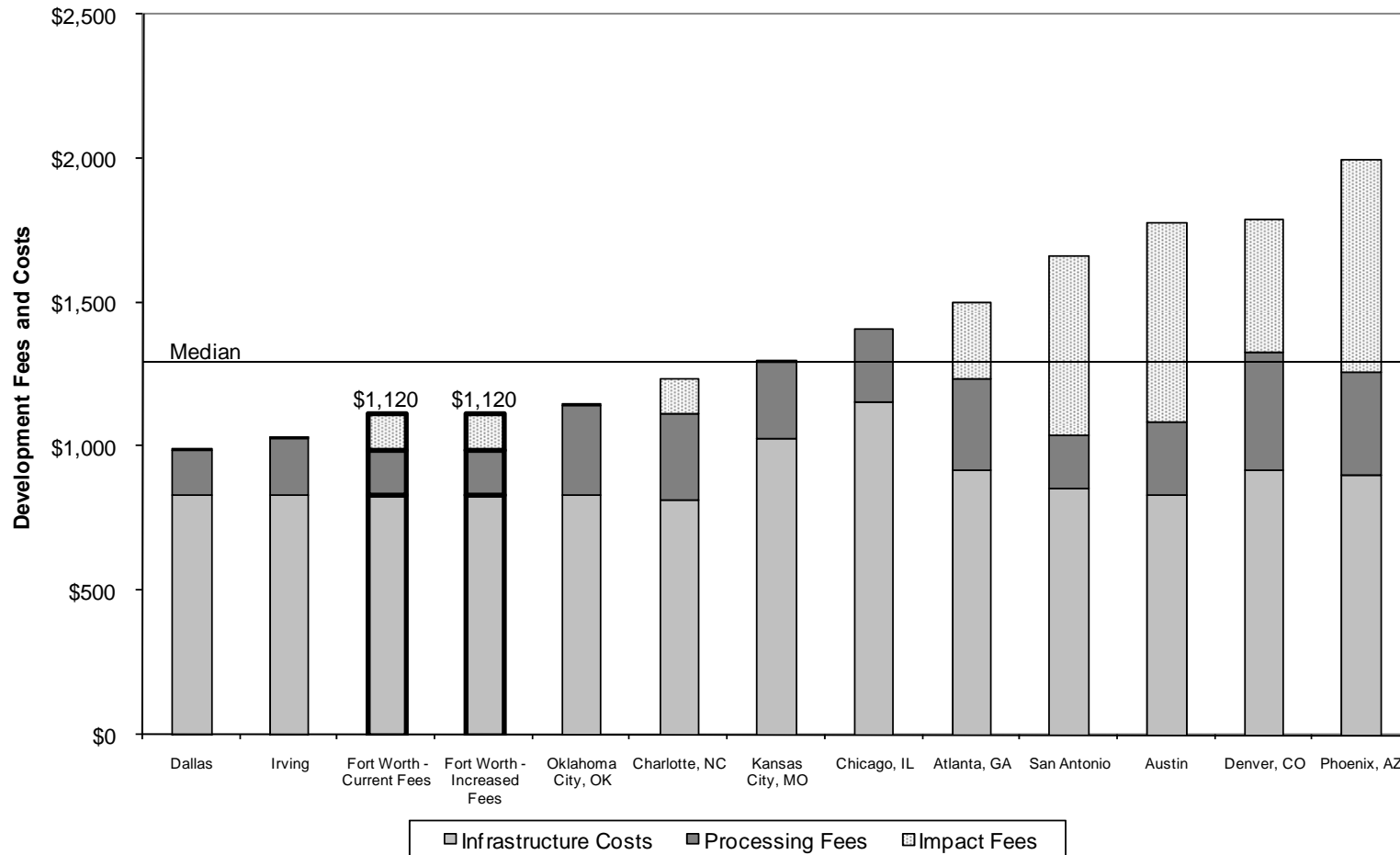
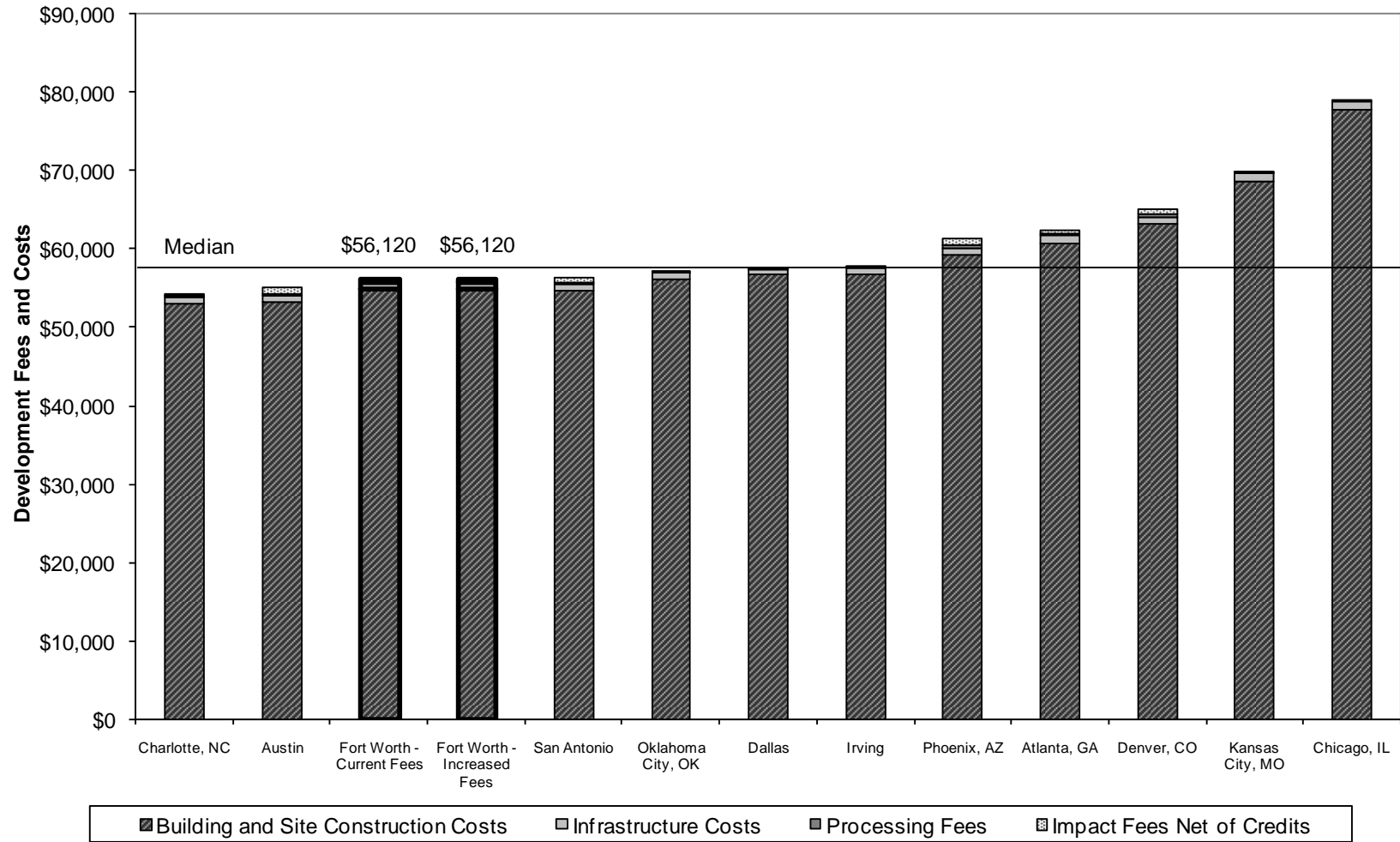


Figure 9.12: Industrial Building Costs, Development Fees and Infrastructure Costs per 1,000 Square Feet



Increase Transportation Share of Debt Funding

As discussed in Chapter 5 the City could maintain its recent high level of debt expenditures for transportation project and increase funding by \$104 over 10 years (see Table 5.1). This represents an increase from the historical average of 75 percent of all debt expenditures to the more recent average of 90 percent.

This increase does not represent new revenue to the City, but rather a reallocation of funding priorities. Accordingly, the option should be evaluated in the context of the policy trade-offs it represents. This study did not include a comprehensive assessment of non-transportation needs over the next 10 years.

Adopt Transportation User Fee

From a revenue standpoint, implementation of a transportation user fee would generate the most revenue of the options recommended. As discussed in Chapter 5, adopting a user to fee to fund current General Fund expenditures on road maintenance would free up approximately \$25 million. Shifting an equivalent amount in property tax to the Debt Service Fund would provide an additional \$494 million in debt capacity over the next 10 years.

Table 9.2 shows a conceptual transportation user fee schedule that would generate revenue roughly equal to \$25 million. The fee per equivalent dwelling unit is slightly less than what is currently charged in Austin. Relative fees by land use reflect the trip generation data used in the Fort Worth Transportation Impact Fee nexus study. Only major land uses are shown in the fee schedule. The fee could be adopted with the same detailed trip generation table by land use category used by the transportation impact fee.

Unlike the current allocation of property tax to the Debt Service Fund, we assume that this increased revenue would be dedicated 100 percent to transportation purposes.

Table 9.2: Fort Worth Transportation User Fee

Land Use	EDU Factor	Monthly Charge	Dwelling Unit /
Revenue Objective = \$25 million annually			
<i>Residential (Dwelling Units)</i>			
Single Family	1.00	\$	4.75
Multifamily	0.61		2.90
Residential Condominium/Townhome	0.51		2.42
<i>Nonresidential (1,000 square feet)</i>			
Retail (Shopping Center)	1.32		6.27
General Office Building	1.34		6.36
General Light Industrial	0.81		3.84

Sources: City of Austin; 2006-2016 Transportation Impact Fee Study, City of Fort Worth; Willdan Financial Services.

We analyzed the impact of the transportation user fee based on the occupancy cost survey presented in Chapter 7. The Fort Worth's occupancy costs would remain within the range of costs represented by the other cities surveyed in this study. The only exception was for retail development. Retail development occupancy costs were already the highest in Fort Worth. The transportation user fee would place Fort Worth about 20 percent above the median for the cities surveyed.

Figure 9.13: Single Family Selected City-Imposed Occupancy Costs per Unit

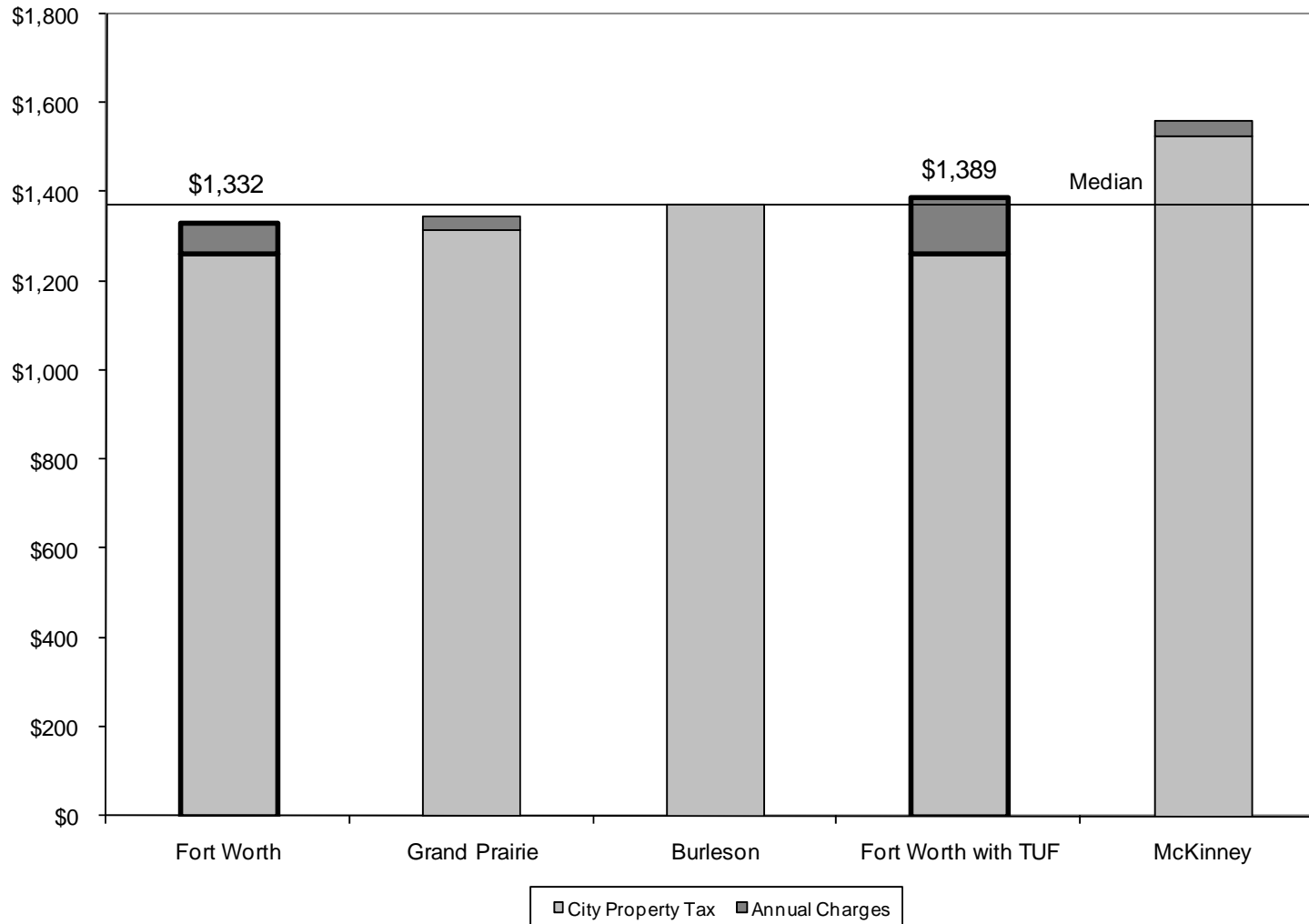


Figure 9.14: Multi Family Selected City-Imposed Occupancy Costs per Unit

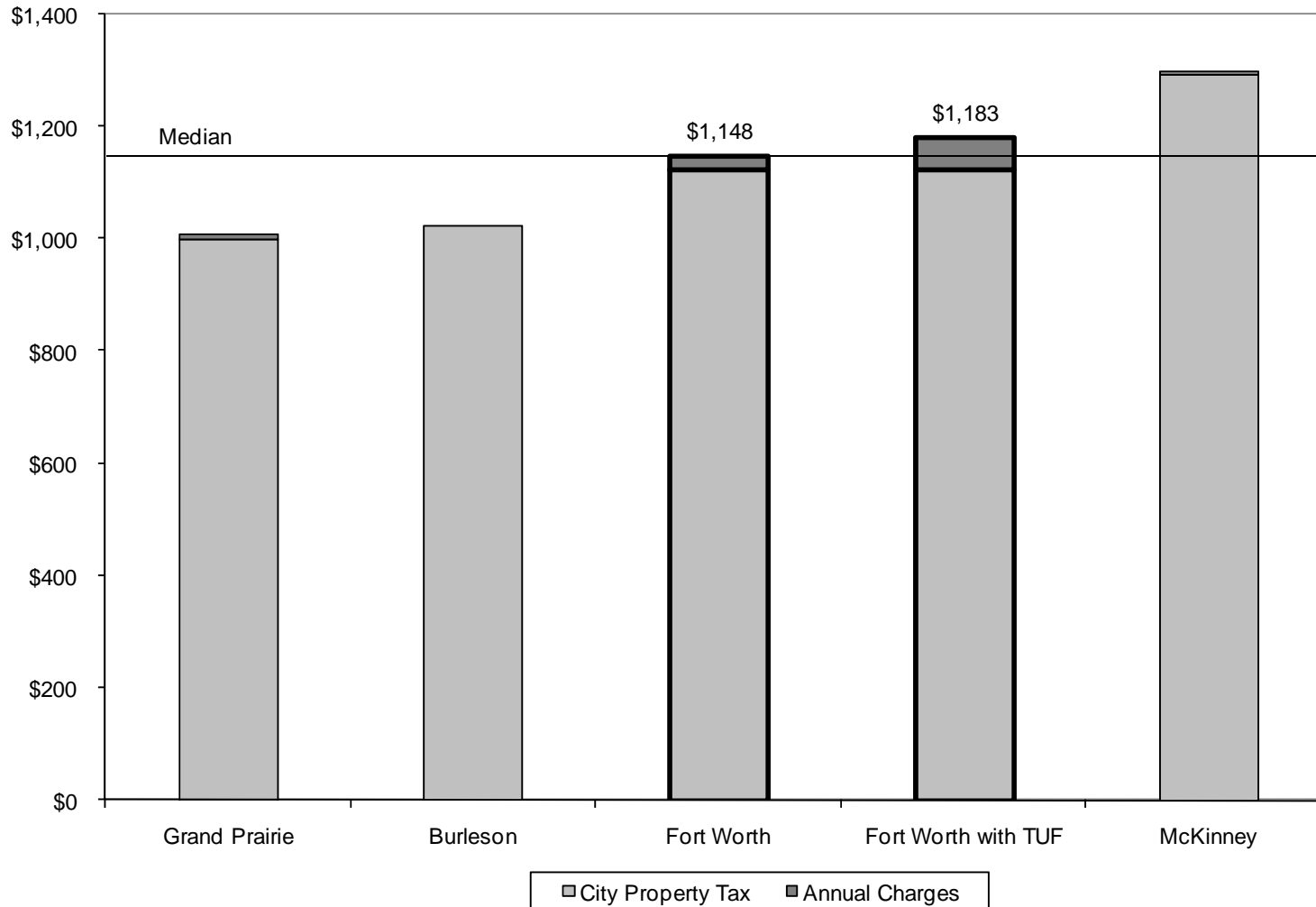


Figure 9.15: Retail Selected City-Imposed Occupancy Costs per 1,000 Square Feet

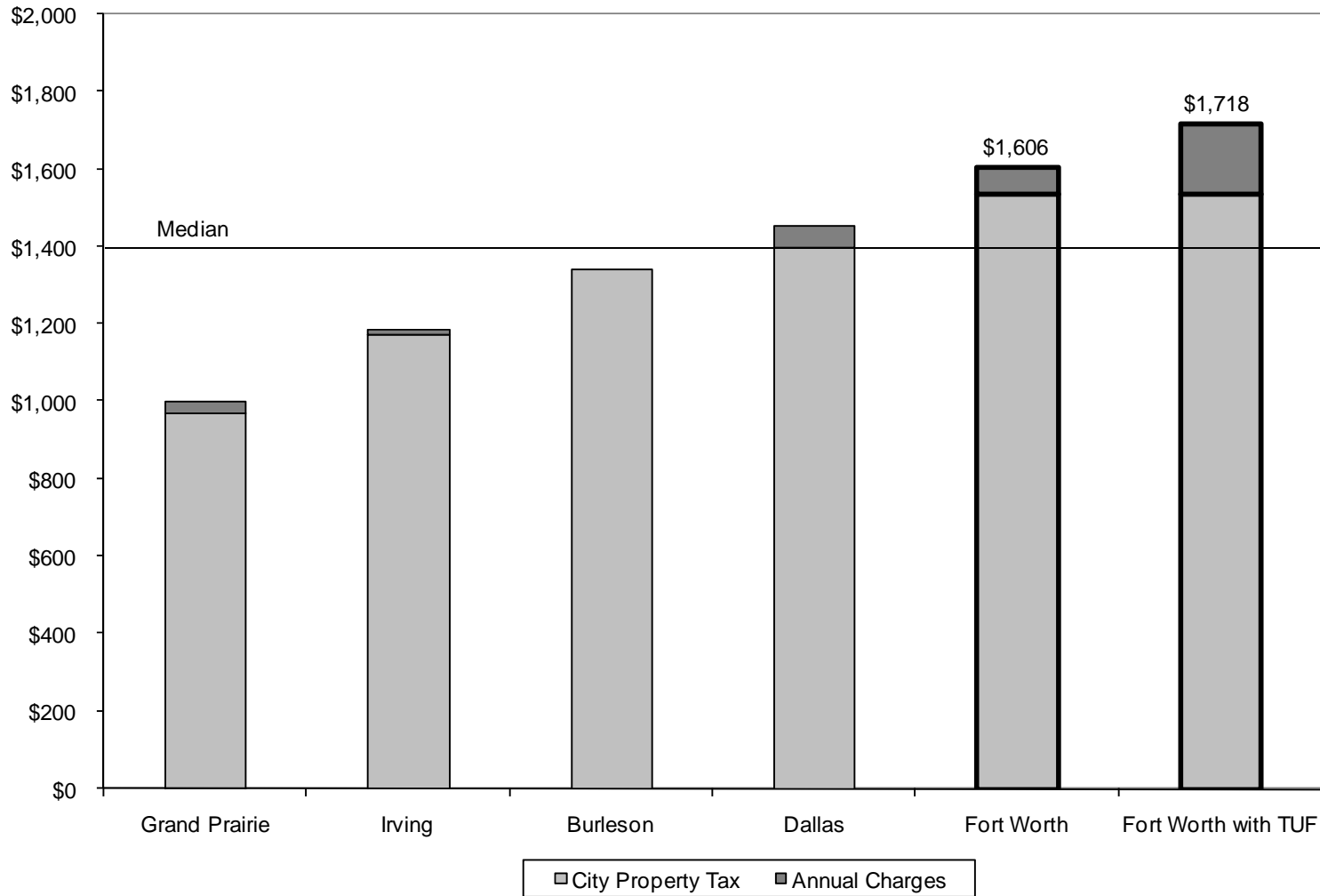


Figure 9.16: Central Business District Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet

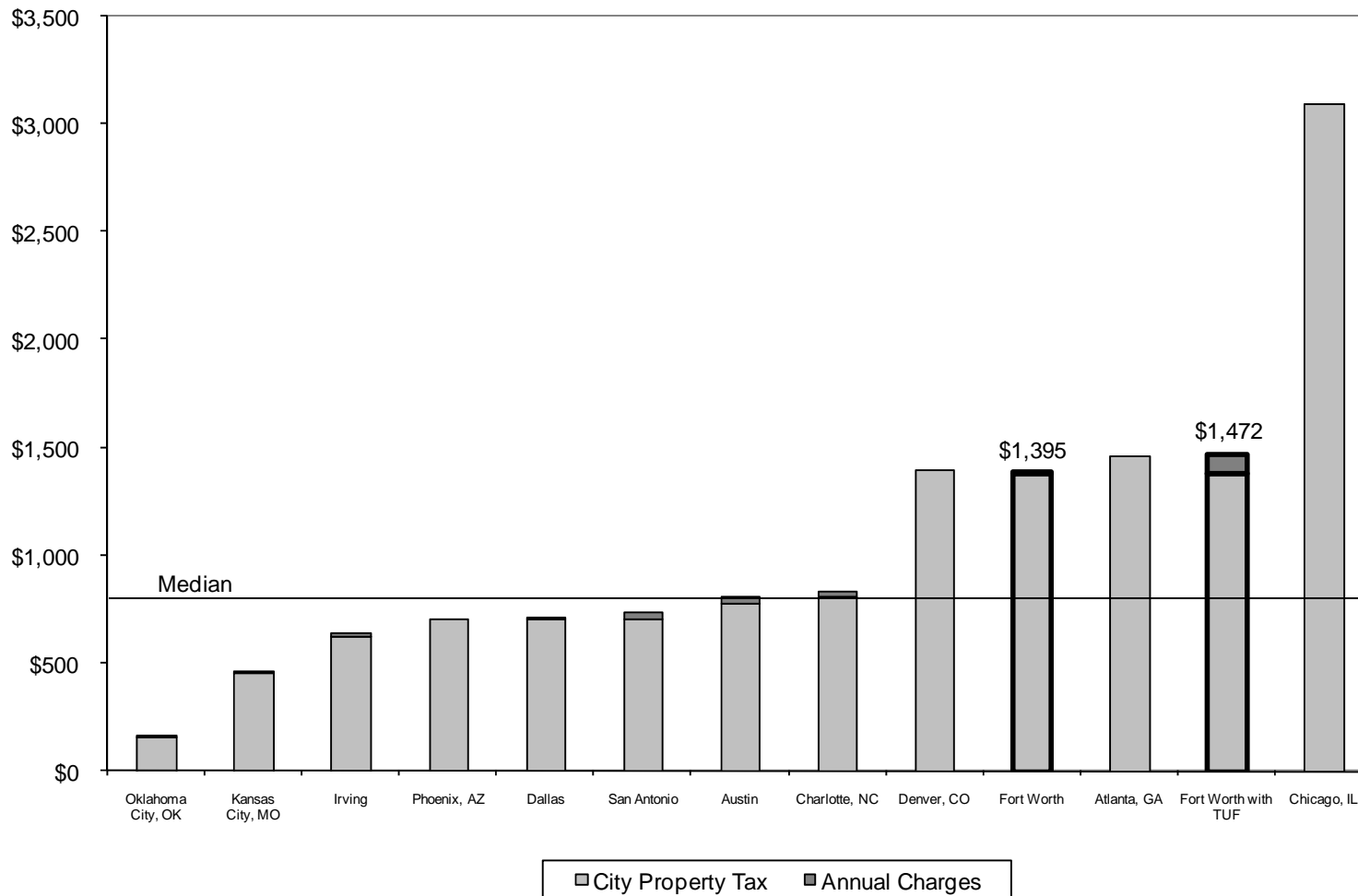


Figure 9.17: Outer Loop Office Selected City-Imposed Occupancy Costs per 1,000 Square Feet

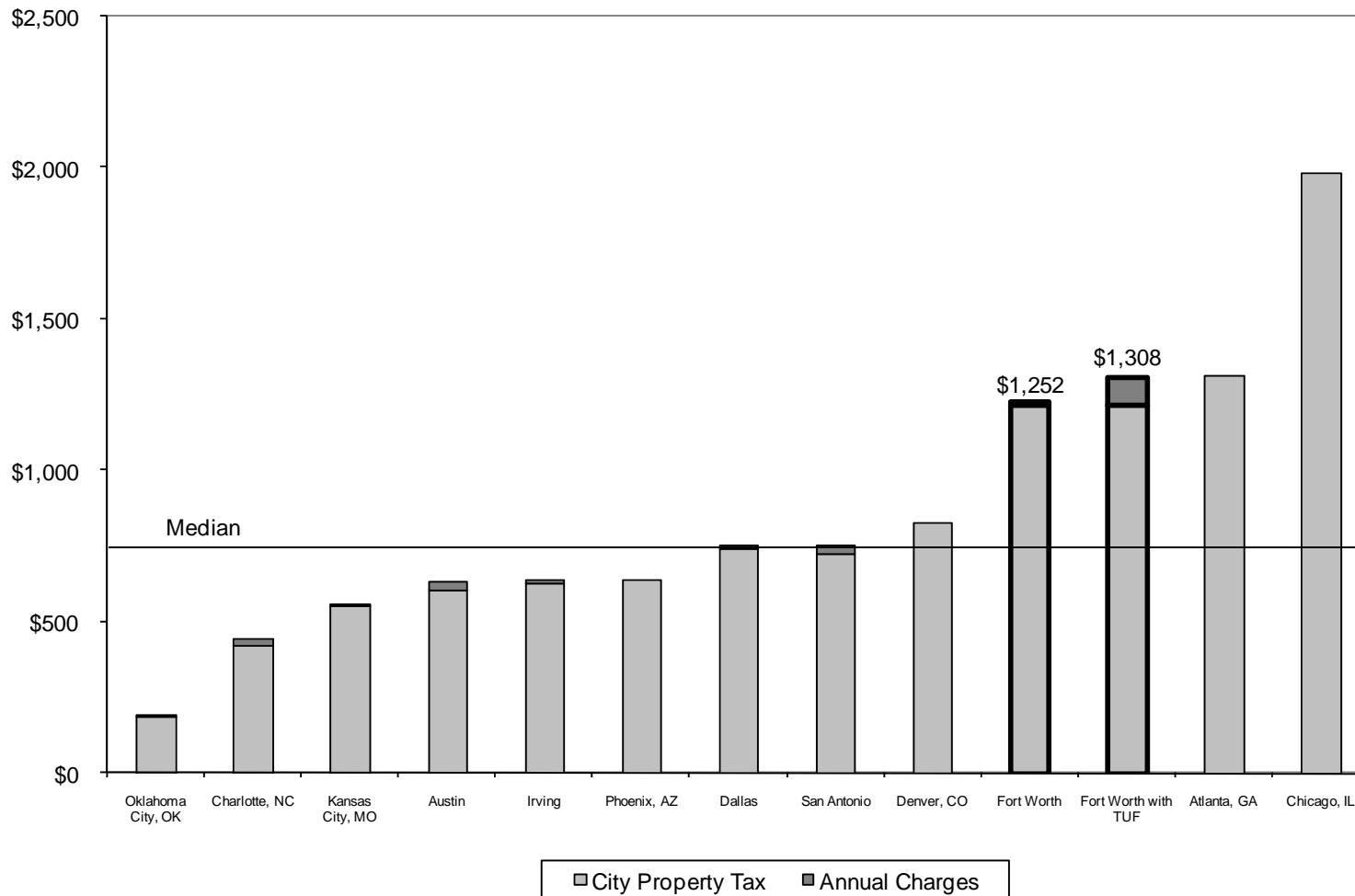
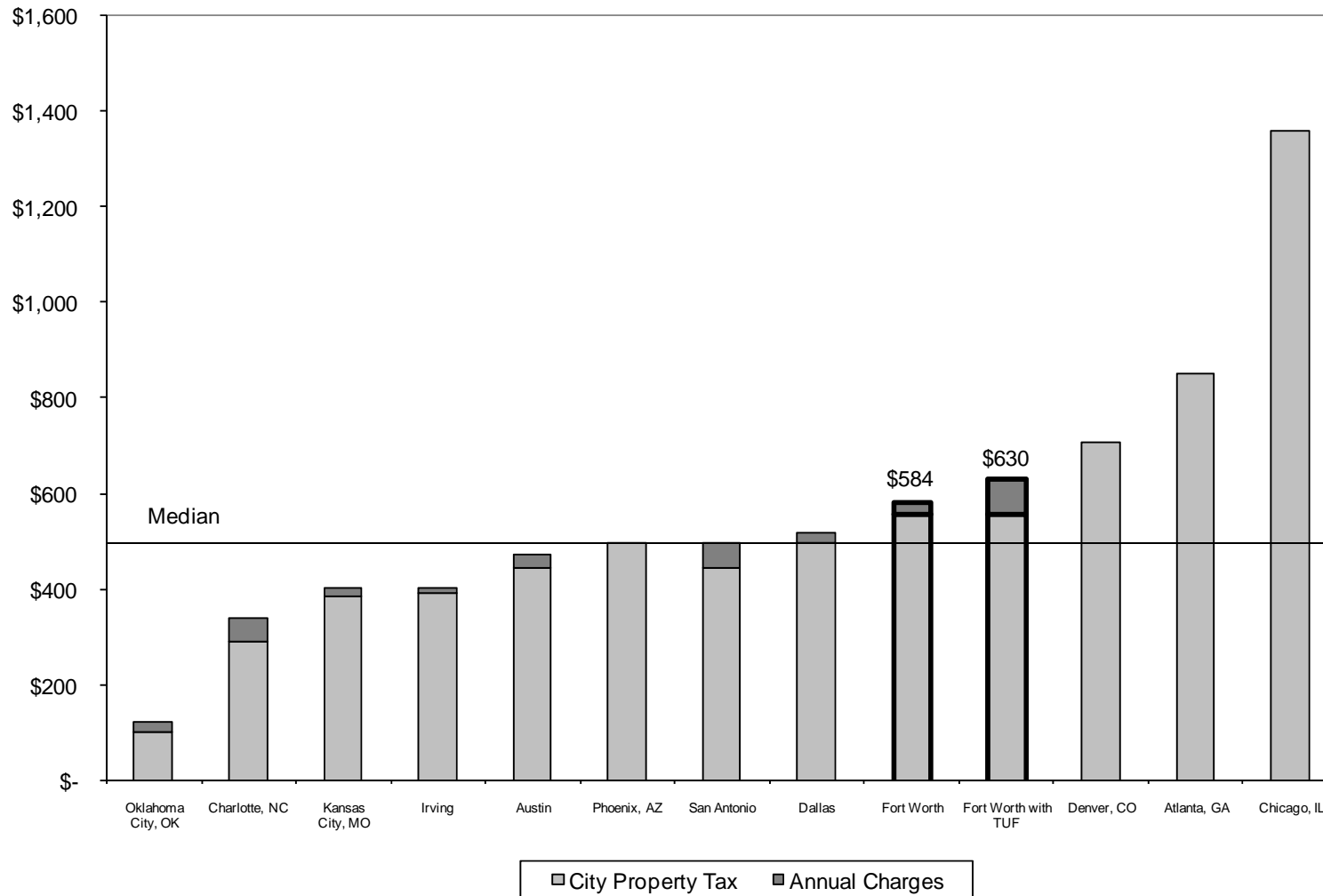


Figure 9.18: Industrial Selected City-Imposed Occupancy Costs per 1,000 Square Feet



Summary of Revenue Generation Options

With regards to development cost the City would remain competitive particularly when considering the more comprehensive cost measure that includes building costs (middle column of table). With regards to occupancy costs the City's current high property tax burden would be increased with the Transportation User Fee. However, this impact would be mitigated by the positive economic impact returns from the increased infrastructure investment indicated in Chapter 8. In addition the City can continue to make use of the various economic development incentives it has at its disposal to attract particularly desirable development projects.

Table 9.3 summarizes the revenue potential for the three recommended revenue options. **Table 9.4** shows the degree to which current and proposed revenue will fully address the TIP funding gap. Overall the recommended options would increase funding by \$681 million from \$763 million to \$1.4 billion. This funding level would fund 81 percent of the TIP. A funding gap of \$343 million would remain. We recommend that this amount of projects be deferred beyond the 10-year horizon. We estimate that the Debt Service Fund would have the capacity to fund this amount within three years following the 10-year planning horizon, or by FY2021.

Table 9.3: Summary of Revenue Recommendations

Option	10-Year Estimate
7 Increase Transportation Impact Fee (To 50% Maximum Justified)	\$ 83,000,000
3 Allocate Greater Share of Debt Funding To Transportation Projects (90%)	104,000,000
6, 2 Adopt Transportation User Fee / Increase Property Tax Allocation To Debt Service	494,000,000
Total Additional Revenue From Recommended Options	\$ 681,000,000

Source: Tables 5.1 and 5.2; Willdan Financial Services.

Table 9.4: 10-Year TIP With Recommended Options

		% of Total Costs
<u>Revenue - Base Case</u>		
Debt Funding	\$ 587,000,000	33%
Appropriation from Gas Well Revenues	15,000,000	1%
Transportation Impact Fees	161,000,000	9%
Subtotal	\$ 763,000,000	43%
<u>Recommended Revenue Options</u>		
Increase Transportation Impact Fee	83,000,000	5%
Allocate Greater Share of Debt Funding To Transportatic	104,000,000	6%
Adopt Transportation User Fee	494,000,000	28%
Subtotal	681,000,000	38%
Total Revenue	\$ 1,444,000,000	81%
<u>Costs</u>		
Total	1,787,000,000	
Funding Gap - Defer Transportation Improvements To FY2019-FY2021	\$ (343,000,000)	(19%)

Source: Tables 4.6 and 9.3; Willdan Financial Services.

Conclusions

Even with successful implementation of the revenue options noted in this chapter, significant transportation needs will remain unfunded. This study does not attempt to match specific revenues sources to specific components of the overall needs list. The City will need to prioritize projects. Increased transportation impact fee revenues would be restricted for growth-related projects. Increased bond proceeds resulting from the shift to 90 percent funding for transportation and the increased Debt Service Fund allocation enabled by the user fee could be used for either existing deficiencies or growth-related projects.