



MEMORANDUM

To: City of Phoenix

From: Joel Varner, P.E.
Kimley-Horn and Associates, Inc.

Date: April 19, 2019

Subject: 2019 Impact Fee Update Approach

Kimley-Horn & Associates, Inc. (Kimley-Horn) was approached by the City of Phoenix (City) to assist with updating the City's Developer Impact Fees. Below is a summary of Kimley-Horn's approach to updating the Impact Fees and the associated unit prices.

For the purposes of this task, Kimley-Horn utilized historical bid prices from readily-available bid tabulations from projects for various municipalities around the Valley. Kimley-Horn selected projects of a similar size and complexity, typically projects that provided reconstruction or widening improvements to major arterial streets. Additionally, Kimley-Horn looked for projects that had been bid since the previous Impact Fees were established in 2015. In total, eighteen projects were identified for comparison.

The City provided a summary list of bid items ("Cost Estimate for Unit Pricing Analysis.xlsx") for which average unit prices should be developed. In order to accomplish this, Kimley-Horn averaged the unit prices for each bid item in the eighteen comparison projects mentioned above, creating a project average unit price for each bid item. Kimley-Horn identified the bid item from the City's list that most closely matched the bid item from a comparison project and applied the project average unit prices to that bid item. Once this was done for all eighteen comparison projects, these unit prices were averaged together to create an overall average unit price. Care was taken to exclude project average unit prices projects that varied widely from the overall average unit price in order to eliminate skewing from outliers. The number of samples, standard deviation of project average unit prices, and the standard deviation as percentage of the average were shown for each derived overall average unit price. Comparable unit prices were not found for every bid item provided by the City; in these instances, the unit price for that bid item was left blank. Below-the-line construction percentages were adjusted to more closely match current City and industry averages.

Unit prices for structural items (I-Beam Bridge, Deck Slab Bridge, and Box Culvert) were derived using a separate approach due to the complexity associated with these items. This approach is detailed in the "Structural Cost Estimation Approach" memo dated June 27, 2018.

When generating the impact fees for the City standard cross-sections, care was taken to follow the procedures used in the 2015 update to create a comparable set of prices. Average quantities by mile

were developed for each City standard cross-section (A, B, C, C-M, and D). Unit costs for subgrade preparation, asphalt concrete pavement, concrete single curb (median) were taken from the overall average unit prices derived as described above. Unit costs for median (landscaping) as a square foot were derived from prices on previous recent projects on which landscaping and irrigation was installed to City development standards, with the landscaping quantities adjusted based on input from the City of Phoenix. Unit prices for Signs (both sides) and Traffic Control were derived by adding together the total costs of all items associated with those items on previous projects and dividing by the length of those projects to get a linear foot unit price. The impact fee street cross-section unit costs per mile are summarized in the accompanying tables for 2015 and 2018. 2019 street cross-section unit costs per mile are estimated by increasing the 2018 unit costs by three percent to account for inflation. Backup for these calculations is provided in the "Cost Estimate for Unit Pricing Analysis.xlsx" spreadsheet. Percentages for Design Costs and COP Administrative Costs were adjusted to more closely match current City and industry averages.

A detailed breakdown of each City cross-section was developed that included bid items found in a typical mile of City street. These breakdowns included items not provided in the Impact Fee prices, with the intent of providing a more inclusive "all-in" estimate of a mile of roadway for the City's reference and use. The 2018 "all-in" street cross-section unit costs per mile are detailed in the "Street Cost Estimate Worksheet_04-19-19.xls" spreadsheet. Unit prices were taken from the overall average unit prices developed in the "Cost Estimate for Unit Pricing Analysis.xlsx" spreadsheet, and quantities are an average over a typical mile of the associated City standard cross-section.

Impact Fee Street Cross-Section Unit Costs Per Mile

2015

	Unit Cost	A		B		C		C-M		D	
		Amount	Total	Amount	Total	Amount	Total	Amount	Total	Amount	Total
Subgrade preparation and compaction (SF)	\$ 0.69	739,200	\$ 510,048	686,400	\$ 473,616	580,800	\$ 400,752	580,800	\$ 400,752	528,000	\$ 364,320
Asphalt concrete pavement (SF)	\$ 1.39	422,400	\$ 588,026	422,400	\$ 588,026	390,720	\$ 543,924	316,800	\$ 441,019	337,920	\$ 470,421
Concrete single curb -- median (LF)	\$ 10.00	10,560	\$ 105,600	10,560	\$ 105,600	10,560	\$ 105,600	10,560	\$ 105,600	10,560	\$ 105,600
Landscaping -- median (SF)	\$ 3.38	126,720	\$ 428,314	73,920	\$ 249,850	-	\$ -	73,920	\$ 249,850	-	\$ -
Signs -- both sides (LF)	\$ 9.29	10,560	\$ 98,142	10,560	\$ 98,142	10,560	\$ 98,142	10,560	\$ 98,142	10,560	\$ 98,142
Traffic Control (LF)	\$ 14.00	5,280	\$ 73,920	5,280	\$ 73,920	5,280	\$ 73,920	5,280	\$ 73,920	5,280	\$ 73,920
Subtotal, Construction Costs			\$ 1,804,050		\$ 1,589,154		\$ 1,222,338		\$ 1,369,283		\$ 1,112,403
Design Costs (% of construction costs)	10%		\$ 180,405		\$ 158,915		\$ 122,234		\$ 136,928		\$ 111,240
COP Administrative Costs (% of cost)	22%		\$ 396,891		\$ 349,614		\$ 268,914		\$ 301,242		\$ 244,729
Subtotal, Soft Costs			\$ 577,296.00		\$508,529.28		\$391,148.16		\$438,170.56		\$355,968.96
TOTAL, per mile (2015)			\$ 2,381,346		\$ 2,097,683		\$ 1,613,486		\$ 1,807,454		\$ 1,468,372

2018

	Unit Cost	A		B		C		C-M		D	
		Amount	Total	Amount	Total	Amount	Total	Amount	Total	Amount	Total
Subgrade preparation and compaction (SF)	\$ 0.56	739,200	\$ 410,667	686,400	\$ 381,333	580,800	\$ 322,667	580,800	\$ 322,667	528,000	\$ 293,333
Asphalt concrete pavement (SF)	\$ 3.89	422,400	\$ 1,643,136	422,400	\$ 1,643,136	390,720	\$ 1,519,901	316,800	\$ 1,232,352	337,920	\$ 1,314,509
Concrete single curb -- median (LF)	\$ 20.00	10,560	\$ 211,200	10,560	\$ 211,200	10,560	\$ 211,200	10,560	\$ 211,200	10,560	\$ 211,200
Landscaping -- median (SF)	\$ 4.00	101,376	\$ 405,504	59,136	\$ 236,544	-	\$ -	59,136	\$ 236,544	-	\$ -
Signs -- both sides (LF)	\$ 3.11	10,560	\$ 32,842	10,560	\$ 32,842	10,560	\$ 32,842	10,560	\$ 32,842	10,560	\$ 32,842
Traffic Control (LF)	\$ 17.77	5,280	\$ 93,826	5,280	\$ 93,826	5,280	\$ 93,826	5,280	\$ 93,826	5,280	\$ 93,826
Subtotal, Construction Costs			\$ 2,797,175		\$ 2,598,881		\$ 2,180,436		\$ 2,129,431		\$ 1,945,710
Design Costs (% of construction costs)	15%		\$ 419,576		\$ 389,832		\$ 327,065		\$ 319,415		\$ 291,857
COP Administrative Costs (% of cost)	22%		\$ 615,379		\$ 571,754		\$ 479,696		\$ 468,475		\$ 428,056
Subtotal, Soft Costs			\$ 1,034,955		\$ 961,586		\$ 806,761		\$ 787,889		\$ 719,913
TOTAL, per mile (2018)			\$ 3,832,130		\$ 3,560,467		\$ 2,987,197		\$ 2,917,320		\$ 2,665,623

2019

TOTAL, per mile (2019) (3% Inflation Factor)			\$ 3,947,094		\$ 3,667,281		\$ 3,076,813		\$ 3,004,840		\$ 2,745,591
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