



CITY OF BEVERLY HILLS

COST ALLOCATION STUDY

November 6, 2017



HF&H Consultants, LLC

CITY OF BEVERLY HILLS

455 North Rexford Drive
Beverly Hills, CA 90210

COST ALLOCATION STUDY

November 6, 2017

HF&H CONSULTANTS, LLC

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Walnut Creek, CA 94596



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November 6, 2017

Ms. Trish Rhay
Assistant Director of Public Works Services
City of Beverly Hills
345 Foothill Road
Beverly Hills, CA 90210

Subject: Cost Allocation Study

Dear Ms. Rhay,

HF&H is pleased to submit this Cost Allocation Study for your review and comment. The report summarizes the analysis that was conducted to determine the recommended reimbursements from the Water Enterprise to the General Fund related to public safety, the use of City facilities, for right-of-way maintenance, and property leases. A proportionate share of these reimbursements is allocated to the City of West Hollywood through the water rates it pays the City of Beverly Hills.

Very truly yours,

HF&H CONSULTANTS, LLC

John W. Farnkopf, P.E., Senior Vice President
Rick Simonson, C.M.C., Vice President

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LIMITATIONS

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Rounding differences caused by stored values in electronic models may exist.



CITY OF BEVERLY HILLS

COST ALLOCATION STUDY



I. EXECUTIVE SUMMARY

The purpose of this study is to quantify West Hollywood's share of certain costs that have historically been funded from the General Fund. This study focused on three cost allocation areas: public safety, governmental facilities, and right-of-way maintenance. Each of these areas represents a service provided for the benefit of the Enterprise by the General Fund and for which the Enterprise should provide reimbursement. This report documents the allocation of West Hollywood's portion of the Enterprise's share of these costs.

Generally speaking, city enterprise funds receive administrative services from the General Fund for which reimbursement is appropriately due. One category of these services is considered governmental overhead of which the City Manager, City Attorney, Finance, IT, and Human Resources are examples. The reimbursements from the enterprises are typically based on overhead cost allocation plans that derive the reimbursements using commonly accepted cost allocation formulae. The Water Enterprise currently reimburses the General Fund for overhead.

A second category of services is related to specific activities that are directly charged to the enterprise. Public Works engineering associated with enterprise capital improvements is an example. The Water Enterprise also reimburses the General Fund for these services.

A third category of services is typically not considered to be overhead and is not charged directly. These services can include public safety, the use of governmental facilities such as city halls and corporation yards, and right-of-way maintenance.

The analysis documented in this report establishes a cost allocation framework for determining the reimbursements from the Water Enterprise to the General Fund for providing public safety services, the use of governmental facilities, and for right-of-way maintenance. In effect, the General Fund covers these reimbursements for Beverly Hills rate payers only. This report also describes contributions made by the City of Beverly Hills for the sole benefit of Beverly Hills rate payers.

FINDINGS

Public Safety

Property taxes paid by taxable residents and businesses currently fund the police and fire budgets. Public safety services protect property – both private (taxable) and public (tax exempt) property. It is appropriate for the cost of public safety services to be funded by not only taxable residents and businesses but also by tax-exempt, public

property owners.

The public safety allocation represents the Water Enterprise's share of police and fire services. The allocation is in proportion to the value of the Water Enterprise's capital assets compared with the value of all public and private property in the City.

Governmental Facilities

The General Fund has funded governmental facilities that are used to conduct its services, including its enterprise services. The City currently allocates the cost of operating and maintaining these facilities to all departments as an Internal Service charge. The capital cost of these facilities should also be reimbursed.

The governmental facilities allocation represents the Water Enterprise's share of the costs of several facilities that were constructed by the General Fund and for which the Water Enterprise has heretofore shared in none of the capital cost. The allocated cost is based on the Water Enterprise repaying the General Fund for its share of the cost over the remaining life of City Hall. In addition, the Water Enterprise is charged interest on its outstanding balance for the unpaid portion. In effect, the Water Enterprise's repayment for its share of City Hall is amortized at an interest cost equal to the City's cost of debt. The Water Enterprise's share is based on headcount, which is a reasonable criterion that is used for allocating other forms of overhead.

Right-of-Way Maintenance

The right-of-way maintenance allocation is the Water Enterprise's shares of the cost of street construction and maintenance including City staff and construction costs. The Water Enterprise's share is proportionate to the structural impacts that surface and subsurface activities have on the rights of way.

Leases

The City of Beverly Hills General Fund contributes revenue to the Water Enterprise for two leases. Because the properties are leased for non-utility purposes, the revenue is credited only for the benefit of Beverly Hills rate payers.

SUMMARY

The allocations of public safety, governmental facilities, and right-of-way maintenance costs to the Water Enterprises are summarized in **Figure I-1**. These allocations represent the reimbursements that the Water Enterprise could provide the General Fund in return for the Water Enterprise's proportionate share of these costs. The City of Beverly Hills' and the City of West Hollywood's proportionate shares are apportioned based on the number of connections.

Figure I-1 indicates that the City of Beverly Hills credits Beverly Hills' rate payers with \$5,009,423 from the General Fund. The City of West Hollywood receives no credits and

is allocated \$425,093 to cover the costs of public safety, governmental facilities, and right-of-way maintenance.

Figure I-1. Summary

Allocation	Water Enterprise	Beverly Hills				West Hollywood			
		Allocation [5]	LESS: GF Contribution	Net (to)/from Rates		Allocation [5]	LESS: GF Contribution	Net (to)/from Rates	
Public Safety [1]	\$743,050	82.6%	\$613,759	(\$613,759)	\$0	17.4%	\$129,291	\$0	\$129,291
Government Facility [2]	\$359,066	82.6%	\$296,588	(\$296,588)	\$0	17.4%	\$62,477	\$0	\$62,477
Right-of-Way Maintenance [3]	\$1,340,947	82.6%	\$1,107,622	(\$1,107,622)	\$0	17.4%	\$233,325	\$0	\$233,325
Lease Revenue [4]	\$2,991,453	100.0%	\$2,991,453	(\$2,991,453)	\$0	0.0%	\$0	\$0	\$0
				(\$5,009,423)	\$0			\$0	\$425,093

1. Source: Figure II-8
2. Source: Figure III-6
3. Source: Figure IV-5
4. Source: Section V
5. Based on water connections

II. PUBLIC SAFETY REIMBURSEMENT

COST ALLOCATION METHODOLOGY

The Water Enterprise benefits from police and fire services in a variety of ways. Police and fire personnel are obviously available to respond to emergencies during power outages, natural disasters, accidents, and to unlawful activity. In addition, police presence helps deter tampering with instrumentation and controls; vandalism at substations; theft of salvageable materials; and criminal acts of sabotage or terrorism.

In some cases, such as at sites that are prone to vandalism or intrusion, additional security guards or equipment may be required. These additional security measures supplement the police and fire services rather than replace the need for such services.

Funding for police and fire services is derived from a variety of sources, of which property tax revenue is the primary source. Taxes paid by owners of private property constitute their share of reimbursement for public safety services. Absent from these funding sources is reimbursement from the enterprises for their share of public safety services. The enterprises' shares of the cost of public safety services should be commensurate with the services received.

In the case of public safety services, the benefit provided is the protection of property against theft of or damage to assets. Because police and fire services protect property, it is appropriate and reasonable to apportion the cost of police and fire services in proportion to property value. The apportionment should include the approximate value of both public and private property protected by the City's public safety services. The value of property does not need to be overly precise. It is sufficient to base the value on major assets such as structures, improvements, and vehicles.

The value of most contents is not needed for purposes of apportioning the cost of public safety services. It is assumed that the value of contents is proportionately equal to the value of major public and private assets. For example, if the value of contents adds, say, 10% to the values of both public and private property, respectively, the resulting allocation percentages remain the same as the allocation percentages without the contents; the algebra is unaffected. Hence, it is important to understand that it is not necessary to perform an appraisal of all property value including contents to derive allocation factors to apportion the cost of public safety services. Using the value of major assets provides a sufficient basis for the apportionment.

To establish each enterprise's proportionate share of the Police Department and Fire Department budgets, the following steps were used:

1. The value of each utility's property was determined based on the City's capital asset records.
2. The property value (from Step 1) was escalated to current fair market value using the change in the *Engineering News Record* (ENR CCI)¹ between each asset's acquisition date and today.
3. The current fair market value of all private property in the City was estimated based on the County's assessed value and increased to its fair market value using a market value adjustment factor.
4. Each utility's proportionate share of market value (from Step 3) was determined by dividing its value by the total of all property value in the City (sum of Steps 2 and 3).
5. The public safety budget was reduced to eliminate any programs that are unrelated to protecting property.
6. Each utility's share of the adjusted public safety budget was derived by multiplying the proportionate share of the utility's market value (from Step 4) by the adjusted public safety budget (from Step 5).

These steps were applied consistently to the enterprises to maintain proportionality in compliance with the provisions of Article XIII D of the California Constitution. The result is a set of reimbursements that are analogous to the overhead allocations that are commonly conducted by cities to proportionately allocate the costs of governmental overhead among all benefiting funds.

VALUE OF PUBLIC PROPERTY

Because public property is tax exempt, it has no assessed value for comparison with taxable private property. For lack of assessed value, another form of value was calculated based on the City's capital asset records. The approach used to value the City's public property relies on a valuation procedure commonly used to estimate the fair market value of utilities. This approach determines fair market value based on "replacement cost new less depreciation" (or RCNLD as it is referred to by appraisers). RCNLD represents the value in today's cost minus wear and tear. RCNLD represents the cost as though the assets were constructed today, minus the accrued depreciation. The RCNLD value is commonly recognized by the courts for purposes of estimating fair market value.

¹ This nationwide index is commonly used by financial analysts, engineers, and economists for including the effects of construction cost inflation on cost analysis.

In order to establish today's fair market value, the cost is estimated in today's dollars by escalating the depreciated original cost (i.e., net book value) of each of the City's capital assets as reported in the City's Comprehensive Annual Financial Report (CAFR) using the ENR CCI.

The City's capital asset records indicate the original cost of its assets, the accrued depreciation, and the net book value (original cost minus depreciation). The capital assets include structures and appurtenances, vehicles, and major equipment.

It is noted that there are certain conditions that result in undervaluing the City's utility assets for which no adjustment could be made. First, the City's inventory of its infrastructure may not be complete. Municipalities were not required to maintain capital assets records as accurately as private utilities until the 1986 Tax Reform Act. Prior to that time, many public agencies had incomplete capital asset records; the problem persists today in some cases.

In addition to missing assets in the capital asset records, the original costs of the City's infrastructure may be low because some assets were donated or dedicated to the City at nominal value. Land values may also be undervalued. By comparison, the County's tax rolls are considered to include all major private property. The result of omissions and low values in the City's capital assets is an undervaluation of the City's assets, which results in a lower allocation of the public safety budget to the utilities.

Figure II-1 shows the RCNLD value based on the list of individual assets in the City's capital asset database. The net book value for each asset was escalated from its acquisition date to 2017 using the ENR CCI. The result represents the RCNLD, which is about \$812 million prior to adjustments. Assets that are located outside of the City are deducted (i.e., pipelines, meters, and hydrants located in West Hollywood). The City's Police and Fire Departments do not protect property outside of the City so these assets should not be included. With this adjustment, the total value of public property in the City is just less than \$800 million.

Figure II-1. Public Property Value

	Water Enterprise	Other Enterprises	Gov't Activities	Total Public
2017 RCNLD [1]	\$156,450,925	\$161,358,079	\$494,265,127	\$812,074,131
Less Assets outside City Pipelines, Meters, and Hydrants	(\$12,424,622)			(\$12,424,622)
Total Asset Value in City	\$144,026,303	\$161,358,079	\$494,265,127	\$799,649,509

1. Based on net book value from City asset data, escalated to Replacement Cost New Less Depreciation (Public Asset Valuation model).

VALUE OF PRIVATE PROPERTY

The majority of private property can be valued using assessed value. Assessed value represents the market value at the time of sale plus subsequent annual increases by the tax assessor, which have been limited to 2% per year since the passage of Proposition 13 in 1978. As such, the total assessed value in the City is the composite of all taxable and tax-exempt secured and unsecured property at the time of the most recent sale plus any subsequent increases and reassessments. The amount by which assessed value differs from current fair market value will depend on (1) how long ago it was last sold, (2) the lag in assessed value since that the last sale caused by restrictions imposed by Proposition 13.

Assessed value is typically less than RCNLD value (i.e., fair market value). For example, the construction cost index increased 30% over the last 10 years. However, Proposition 13 limits assessed value to 2% increases per year, which equates to 22% over the same period. Because construction cost has escalated at a greater rate than assessed values, the value of the City's public infrastructure increased greater than the assessed value of private property. To adjust for the lag between assessed value and market value, a factor was applied to the assessed value so that it would more closely correspond to fair market value. In this way, the difference between assessed value in private property and the RCNLD for public property was substantially eliminated.

The adjustment factor was based on data provided by the State Board of Equalization, which has developed what is known as the "4R Ratio" for commercial/industrial property.² The Board has maintained annual records since 1990 comparing the assessed value of commercial/industrial property with its value at the time of sale.

The numerator of the 4R Ratio is assessed value and the denominator is market value. Whereas assessed value generally increases gradually over time, market value can fluctuate considerably from year to year depending on the real estate market. Year-to-year fluctuations in the real estate market should not have an undue influence on the annual allocation of public safety costs. There is also considerable difference among counties. To stabilize the allocation, the State-wide average of the 4R Ratio from 1990 to 2016 was used. The resulting long-term, State-wide average 4R Ratio is 0.7257, which represents an estimate of how much less assessed value is compared with market value.

The adjustment made in this report is the mathematical inverse of the 4R Ratio. In this report, assessed value is factored up to market value to bring it to parity with the RCNLD market value derived for public property. The resulting "market value adjustment ratio" is 1.378.

² The 4R Ratio originates from the Railroad Revitalization and Reform Act of 1976. The 4R Ratio is used to reduce the value of railroad property to approximate assessed value so that railroad property can be taxed on par with the assessed value of other commercial and industrial property.

Figure II-2 shows the assessed value of taxable and tax-exempt (e.g., County, State, and Federal property) private property at \$16.6 billion and, when the market value adjustment ratio is applied, it becomes \$22.9 billion in fair market value. In other words, the fair market value of private property is estimated to be 137.8% of its assessed value.

Figure II-2. Assessed Value Adjusted to Market Value

A. Private Property Assessed Value	
Total Assessed Value [1]	\$16,655,311,354
B. Private Property Market Value	
Market Value Adjustment Factor [2]	1.378
Assessed Value Factored up to Market Value	\$22,951,019,046

1. City of Beverly Hills CAFR FY 2016, pg 129

2. Based on California State Board of Equalization, Legislative and Research Division 4R Ratio (statewide long-term average)

The property value shown in **Figure II-2** includes property from the County tax rolls, which does not include vehicles. The RCNLD value derived for the public property includes City-owned vehicles and rolling stock. Hence, to maintain parity, an estimate of the value of private vehicles was added to the value of private property.

Figure II-3 shows the calculation of the private vehicle value in the City. The analysis relies on vehicle registration from Los Angeles County, which includes the City of Beverly Hills' vehicles. The calculation begins by apportioning the number of total vehicles registered in the County to the City based on population, which assumes that the distribution of cars in the County correlates with population.

Determining the value of vehicles relies on data for the value of used automobiles upon sale, which is currently \$19,232.³ Factors were applied to the trucks, trailers, motorcycles, and buses to equate them to automobiles. For example, it was assumed that the value of a truck is 1.5 times an automobile. Hence, 3,753 trucks equals 5,630 automobiles. The use of a 1.5 factor recognizes that the average truck (which can range from many pickup trucks to comparatively few trailer trucks) has more value than an automobile. Sensitivity analysis indicates that the bottom-line reimbursements are relatively insensitive to the amount of the factors that were assumed.

When these factors are applied to all vehicle categories, the result is 29,339 equivalent automobiles in the City. To avoid double counting, the number of City-owned vehicles is subtracted, leaving 28,929 equivalent private automobiles. Multiplying the number of equivalent automobiles times the average value equals \$572,125,451 in vehicle value.

³ Edmunds Q1 2017 Used Vehicle Market Report.

Figure II-3. Private Vehicle Value

Population					
City	34,763	0.34%			
Los Angeles County	10,170,292	100%			
Equivalent Autos					
	Registered Vehicles in County: [1]	Pro Rate Allocation	Est. Vehicles in City:	Equivalent Auto Factors	Equivalent Autos
Automobiles	6,481,351	0.34%	22,037	1.00	22,037
Trucks	1,103,918	0.34%	3,753	1.50	5,630
Trailers	300,306	0.34%	1,021	1.50	1,532
Motorcycles	165,275	0.34%	562	0.25	140
TOTAL	8,050,850		27,373		29,339
Value of Private Vehicles					
Equivalent Autos in City	29,339				
Average Used Car Sales Price [2]	\$19,232				
Total Vehicle Value	\$564,240,331				
City Owned Vehicles [3]	410				
Deduct City Vehicle Value	\$7,885,120				
Private Vehicles Value	\$572,125,451				

1. Source: CA DMV Estimated Vehicles by County

2. Source: Edmunds Q1 2017 Used Vehicle Market Report

3. City Owned Rolling Stock. Source: City

Figure II-4 adds the estimated market value of private and public property to get the total value of property in the City.

Figure II-4. Public and Private Property Value

Total City Market Value	
Private Property Market Value [1]	\$ 22,951,019,046
Private Vehicles [2]	\$ 572,125,451
Total Private Property	\$ 23,523,144,497
Public Property Market Value [3]	\$ 799,649,509
Total Value in City	\$ 24,322,794,006

1. Source: Figure III-2

2. Source: Figure III-3

3. Source: Figure III-1

PUBLIC SAFETY REIMBURSEMENTS

The public safety reimbursements are derived by multiplying allocation percentages representing proportionate shares of property value times the public safety budgets.

Property Value Allocation Factors

Figure II-5 determines how much the Water Enterprise's value is as a percent of the total value of all private and public property in the City. The market value of Water Enterprise property represents 0.59% of the total property value in the City, whereas the property of other enterprises represents 0.66%.

Figure II-5. Proportionate Shares of Total Property Value

	Property Value [1]	% of Total Property in City
Public		
Water Enterprise	\$144,026,303	0.59%
Other Enterprises	\$161,358,079	0.66%
Enterprise Total	\$305,384,382	1.26%
Other Municipal	\$494,265,127	2.03%
Total Public	\$799,649,509	3.29%
Private		
Property	\$22,951,019,046	94.36%
Vehicles	\$572,125,451	2.35%
Total Private	\$23,523,144,497	96.71%
Total Public & Private [2]	\$24,322,794,006	100.00%

1. Source: Figure II-1

2. Source: Figure II-4

In effect, the allocation factors in **Figure II-5** represent how much of the public safety budget is of benefit to the Water Enterprise. Multiplying these factors times the public safety budget determines the amount of reimbursement due from the Enterprise.

Public Safety Budget

Figure II-6 shows the derivation of the portion of the Police and Fire Departments' budgeted operating costs. The total public safety budget is \$125 million. In addition to budgeted operating costs, the Police and Fire Departments have depreciable capital assets in the form of stations and administration buildings. These buildings have already been paid for and are not in the current budget. Depreciation has been derived for these assets and included with the operating budgets to reflect the capital cost of the respective departments.

In reviewing the public safety budgets, we did not identify any items that are not related to protecting property and, hence, deductions were made.

Figure II-6. Police and Fire Operating Budgets

Police Service Operating Costs	FY 2017-18 Budget	Fire Service Operating Costs	FY 2017-18 Budget
General Fund FY 2017-18 [1]		General Fund FY 2017-18 [1]	
Salaries & Benefits	\$48,590,083	Salaries & Benefits	\$30,414,121
Materials & Supplies	\$383,860	Materials & Supplies	\$395,280
Contractual Services	\$3,058,927	Contractual Services	\$343,633
Capital Outlay	\$165,497	Capital Outlay	\$292,717
Internal Service Fund Charges	\$18,700,691	Internal Service Fund Charges	\$9,353,542
Other Charges	\$2,391,152	Other Charges	\$2,354,661
General Fund FY 2017-18 [1]	\$73,290,210	General Fund FY 2017-18 [1]	\$43,153,954
Police Facilities Annual Depreciation	\$4,215,657	Fire Facilities Annual Depreciation	\$4,824,586
Total Department Budget	\$77,505,867	Total Department Budget	\$47,978,540
Adjustments		Adjustments	
None		None	
Total Adjustments	\$0	Total Adjustments	\$0
Police Operating Budget to be Allocated	\$77,505,867	Fire Operating Budget to be Allocated	\$47,978,540

1. Source: City of Beverly Hills 2017-18 Budget

As shown in **Figure II-7**, the Water Enterprise's share of the public safety budget is based on the relative fair market value of the Water Enterprise compared with the total value in the City (as calculated in **Figure II-4**).

Figure II-7. Reimbursement for Public Safety Services

	Water Enterprise Fund
Police Service Budget to be Allocated [1]	\$77,505,867
Allocation to Enterprise [2]	0.59%
Enterprise Share of Police Budget	\$458,947
Fire Service Budget to be Allocated [1]	\$47,978,540
Allocation to Enterprise [2]	0.59%
Enterprise Share of Fire Budget	\$284,103
Total Reimbursement	\$743,050
Total Public Safety Budget	\$125,484,407
Reimbursement Percent	0.59%

1. Source: Figure II-6

2. Source: Figure II-5

In total, the Water Enterprise could reimburse the City's General Fund \$743,050 for the public safety services provided to protect the portion of the Water Enterprise that is located in the City of Beverly Hills. The reimbursement is proportionate to the value of the Water Enterprise's property protected within the City, compared to the value of all public and private property within the City.

III. GOVERNMENTAL FACILITIES REIMBURSEMENT

METHODOLOGY

City Hall/Civic Center is a governmental facility that was paid for by the General Fund and that provides benefits to the Water Enterprise. The General Fund allocates the operating and maintenance costs of the City Hall/Civic Center through its overhead cost allocation plan but has not recovered the cost of capital. The General Fund is entitled to recover the capital cost as well. The methodology in this report recovers the capital cost from the Water Enterprise through amortization over the remaining life of the facilities. In effect, the expenditure by the General Fund on a facility that is used by the Water Enterprise is treated as a loan to be repaid at the City's cost of debt.

VALUE OF GOVERNMENTAL FACILITIES

Figure III-1 identifies the major governmental facilities for which the Water Enterprise should provide its proportionate share of reimbursement. The original cost is escalated to today's cost based on the ENR CCI. The repayment is based on today's value rather than the original cost to give effect to the fact that heretofore the Water Enterprise has not paid its share of the historical costs. In effect, the Water Enterprise received an interest-free loan from the General Fund for the use of these facilities. Using today's value as the basis for the repayment recoups the lost interest earnings.

Figure III-1. Original and 2017 Value of Governmental Facilities

Description	Location/Address	Date Acquired	Original Cost [1]	ENR CCI Index at Acq.	ENR CCI Index Apr-17	Const. Cost Inflation Factor	2017 Value
City Hall	455 N. Rexford Dr.	1915-1931	\$331,346	Land	Land	1.00	\$331,346
City Hall (ARROW)	455 N. Rexford Dr.	1984	\$80,001	Land	Land	1.00	\$80,001
SW Wing Art Gallery	455 N. Rexford Dr.	2001	\$430,172	7,227	1,642	1.61	\$693,001
Customer Service Center	455 N. Rexford Dr., Rm. 240	2002	\$148,071	7,403	1,642	1.57	\$232,874
Civic Center Design	455 N. Rexford Dr.	1983	\$206,058	5,064	1,642	2.30	\$473,751
Civic Center Project	455 N. Rexford Dr.	1991	\$7,988,120	6,090	1,642	1.91	\$15,270,873
City Hall Earthquake Retro	455 N. Rexford Dr.	1992	\$2,350,000	6,349	1,642	1.83	\$4,309,615
City Hall Remodel	455 N. Rexford Dr.	1992	\$8,584,506	6,349	1,642	1.83	\$15,742,942
Civic Center	455 N. Rexford Dr.	1992	\$19,752,224	6,349	1,642	1.83	\$36,223,181
Civic Center Reserves	455 N. Rexford Dr.	1992	\$1,913,951	6,349	1,642	1.83	\$3,509,954
Civic Center Project	455 N. Rexford Dr.	1994	\$1,782,444	6,533	1,642	1.78	\$3,176,521
Civic Center Project	455 N. Rexford Dr.	1995	\$15,624	6,526	1,642	1.78	\$27,872
City Hall Master Plan	455 N. Rexford Dr.	2001	\$178,812	7,227	1,642	1.61	\$288,064
Lib Level Print Graphics	444 N. Rexford Dr.	2007	\$412,095	8,871	1,642	1.31	\$540,836
City Hall Ground Floor	455 N. Rexford Dr.	2009	\$7,656,028	9,811	1,642	1.19	\$9,085,274
City Hall Master Plan	455 N. Rexford Dr.	2010	\$4,775,400	9,762	1,642	1.19	\$5,695,328
City Hall Master Plan	455 N. Rexford Dr.	2011	\$278,415	10,000	1,642	1.16	\$324,134
Civic Center Plaza	455 N. Rexford Dr.	1991	\$4,182,351	6,090	1,642	1.91	\$7,995,392
Civic Center Plaza	455 N. Rexford Dr.	1991	\$7,715,712	6,090	1,642	1.91	\$14,750,111
Civic Center Design	455 N. Rexford Dr.	1995	\$86,423	6,526	1,642	1.78	\$154,175
Civic Center Plaza	455 N. Rexford Dr.	2008	\$1,164,598	9,183	1,642	1.27	\$1,476,443
City Hall IT Dept. Interior Improv. & C	455 N. Rexford Dr.	2013	\$588,408	10,277	1,642	1.13	\$666,608
Civic Center Sculptures	455 N. Rexford Dr.	1994	\$94,345	6,533	1,642	1.78	\$168,134
Total			\$70,715,103				\$121,216,429

1. Source: City of Beverly Hills Fixed Asset Listing

The annual cost recovery is summarized in **Figure III-2**. Annual cost recovery is calculated by dividing the 2017 value for each asset by its remaining life. In other words, the repayment of the asset's value is amortized over the remaining life of the asset.

Figure III-2. Annual Cost Recovery

Description	2017 Value ¹	Year ² Built	Service Life ³ (Yrs)	Remaining ² Life ⁴ (Yrs)	Annual Cost Recovery
City Hall	\$331,346	Land			n/a
City Hall (ARROW)	\$80,001	Land			n/a
SW Wing Art Gallery	\$693,001	2001	20	10	\$69,300
Customer Service Center	\$232,874	2002	35	20	\$11,644
Civic Center Design	\$473,751	1983	45	11	\$43,068
Civic Center Project	\$15,270,873	1991	45	19	\$803,730
City Hall Earthquake Retro	\$4,309,615	1992	45	20	\$215,481
City Hall Remodel	\$15,742,942	1992	45	20	\$787,147
Civic Center	\$36,223,181	1992	45	20	\$1,811,159
Civic Center Reserves	\$3,509,954	1992	45	20	\$175,498
Civic Center Project	\$3,176,521	1994	45	22	\$144,387
Civic Center Project	\$27,872	1995	45	23	\$1,212
City Hall Master Plan	\$288,064	2001	20	10	\$28,806
Lib Level 2 Print Graphics	\$540,836	2007	20	10	\$54,084
City Hall Ground Floor	\$9,085,274	2009	45	37	\$245,548
City Hall Master Plan	\$5,695,328	2010	45	38	\$149,877
City Hall Master Plan	\$324,134	2011	45	39	\$8,311
Civic Center Plaza	\$7,995,392	1991	45	19	\$420,810
Civic Center Plaza	\$14,750,111	1991	45	19	\$776,322
Civic Center Design	\$154,175	1995	45	23	\$6,703
Civic Center Plaza	\$1,476,443	2008	45	36	\$41,012
City Hall - IT Dept. Interior Improv A/C	\$666,608	2013	10	10	\$66,661
Civic Center Sculptures	\$168,134	1994	25	10	\$16,813
Total	\$121,216,429				\$5,877,574

1. Source: Figure III-1

2. The greater of either the calculated remaining life or 10 years

WATER ENTERPRISE ALLOCATION

The Water Enterprise's share of City Hall is based on the Water Enterprise's headcount compared to the total headcount. Headcount (i.e. the number of employees using the facility) is a reasonable measure of the size of an Enterprise's activities compared to other activities occurring in these shared spaces.

Figure III-3. Government Facility Allocation Factors

Facility	Total City	Water
City Hall/Civic Center		
Headcount [1]	936	35
Share of Total	100.00%	3.77%

1. Source: FY 2015-16 Beverly Hills CAFR

WATER ENTERPRISE REIMBURSEMENT

The Water Enterprise's share of the governmental facilities' capital cost recovery is derived in **Figure III-4**, using the allocation percentages derived in **Figure III-3**.

Figure III-4. Annual Capital Cost Recovery

Facility	Annual Cost Recovery [1]	Water Enterprise Allocation [2]	Share
City Hall/Civic Center	\$5,877,574	3.77%	\$221,822
Annual Cost Recovery	\$5,877,574		\$221,822

1. Source: Depreciation from Figure III-2

2. Source: Figure III-3

The Enterprise's share of the interest cost is shown in **Figure III-5**.

Figure III-5. Annual Interest Cost

Facility	2017 Value [1]	Water Enterprise Allocation [2]	Share
City Hall/Civic Center	\$121,216,429	3.77%	\$4,574,767
Interest Rate [3]			3.00%
Interest Cost			\$137,243

1. Source: Remaining Value from Figure III-2

2. Source: Figure III-3

3. Recent interest rate on City Bond Issues

The sum of the annual capital cost recovery and interest cost allocated to the Water Enterprise is summarized in **Figure III-6**.

Figure III-6. Combined Capital Cost Recovery and Interest Cost

	Water Enterprise Share
Annual Cost Recovery [1]	\$221,822
Interest Cost [2]	\$137,243
	\$359,066

1. Source: Figure III-4

2. Source: Figure III-5

Each year, the asset value of these facilities decreases by the amount of annual cost recovery. Conversely, the asset value would increase by any capital asset additions of similar facilities. As a result, the interest cost may vary assuming no change in the rate of return. The City should update the value of these facilities for any future improvements or new facilities that are constructed by the General Fund on behalf of the Enterprise. The City should also periodically update the interest rate to reflect its current borrowing rate.

IV. RIGHT-OF-WAY MAINTENANCE REIMBURSEMENT

METHODOLOGY

This report uses the term right-of-way to generally refer to the streets, sidewalks, alleys, footpaths, bikeways, etc. owned by the City. The right-of-way can be thought of as the “fence to fence” land used for the public’s easement. Right-of-way maintenance expenses include operations, maintenance, renovation, and capital projects related to pavement and sidewalks, traffic signals, storm drainage, signage and markings, mapping and record keeping. Among other benefits, these activities maintain the structural integrity of the City’s roads and alleyways overlying the buried infrastructure.

The purpose of this section is to determine the reimbursements due from the Water Enterprise to the General Fund for right-of-way maintenance costs in compliance with Proposition 218. This study’s calculated reimbursements are derived by apportioning right-of-way maintenance expenses in proportion to the influence that surface and subsurface utilities and other activities have on the right of way.

Right-of-way maintenance encompasses a variety of activities ranging from pavement management and repair to signage and markings, traffic control, mapping, fencing, etc. The majority of the cost involves pavement management. Any service such as water with buried infrastructure located within the right-of-way benefits from well-constructed and maintained pavement, which protects against vehicle and environmental impacts such as erosion and subsidence.

When buried infrastructure is constructed, the costs of excavation and pavement repair are included in the construction cost. Hence, when a water main is installed, the cost of the installation is covered by water rates. After the construction, the City incurs ongoing pavement repair and maintenance expenses that are partially related to the presence of buried infrastructure. For example, trench excavations disturb the soil when buried infrastructure is installed or repaired. Backfill and compaction are typically not as sound as undisturbed soil. As a result, subsidence and differential settlement can occur, particularly where vehicle loads are greatest. When excessive settlement occurs, pavements are weakened, allowing water to intrude, which shortens the pavement service life.

The majority of the surface damage to the rights-of-way may be attributed to vehicles. The damage caused by vehicles increases exponentially with size and weight; hence, maintenance costs are greater for trips made by heavy vehicles. A single, large truck or transit bus can cause as much damage as thousands of automobiles. Solid Waste vehicles and transit buses are generally some of the heaviest vehicles regularly operating on the City's residential streets. Accordingly, these vehicles contribute significantly more to the cost of maintaining those streets.

The cost of routine right-of-way maintenance expenses is borne by the General Fund, which does not receive direct reimbursement from its enterprises. As previously mentioned, this cost is in addition to the cost of pavement repair that occurs when buried infrastructure is installed or repaired. In those cases, the cost of pavement repair is included in the installation cost, which is a capital cost that is directly funded within the enterprise's budget.

The methodology for determining the proportionate shares of reimbursement from the enterprises follows a series of steps that allocate appropriate costs to surface and subsurface functions. The allocation steps begin by identifying any costs that can be directly attributable to a specific surface or subsurface service. The remaining costs are associated with both surface and subsurface infrastructure and are allocated accordingly. Surface costs can then be allocated among the various surface activities of which vehicles and storm drainage are the primary categories. For purposes of this study, the allocation among surface activities is not being considered. These steps are further explained below.

ALLOCATIONS BETWEEN SURFACE AND SUBSURFACE ACTIVITIES

Streets are designed to withstand vehicle loads, to drain runoff, and to cover and protect buried infrastructure. Studies indicate that the installation and repair of buried infrastructure result in a reduction in pavement service life. The installation of subsurface infrastructure begins with cutting pavement, which has a significant impact on pavement service life. The impact is a function of the number of cuts regardless of the depth of excavation if trenching occurs.

Based on the results presented in the previous sections of this report, it will be assumed that the utility patches decrease the life of the pavement by at least 25%.⁴

The study concluded that when compared to streets with fewer than 3 cuts, on average, streets with 3 to 9 cuts had a 30% shorter service life.

⁴ *Analysis of the Impact of Utility Cuts on Rehabilitation Costs in Santa Cruz County, CA.* Shahin & Associates, prepared for Santa Cruz County. November 6002. Page 3.

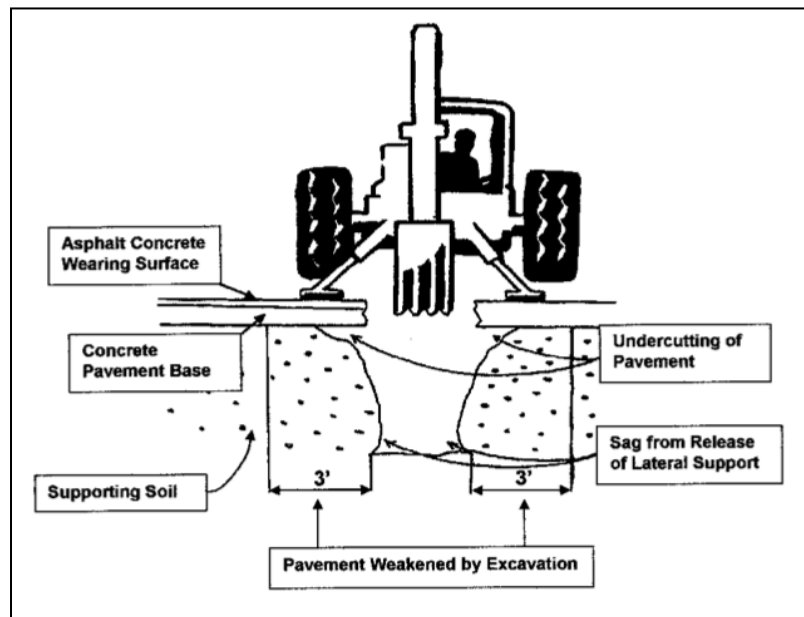
When compared to streets with fewer than 3 cuts, on average, streets with more than 9 cuts had a 50% shorter service life.⁵

Studies also indicate that the adjacent pavement is damaged by street cuts:

Street cuts disrupt pavement layers and supporting soil in the area surrounding the trench. This disruption can be minimized, but cannot be eliminated. As a result, trenching causes unavoidable damage to the pavement layers and soil supporting the pavement around the perimeter of the utility cut.⁶

Trenching further reduces pavement service life. The process of trenching removes and later replaces soil, which disturbs soil. In addition to the disturbed soil in the trench, adjacent soil that is not removed is also disturbed. As shown in **Figure IV-1**, an estimated three feet of adjacent soil is disturbed adjacent to the open trench.

Figure IV-1. Impact of Excavations on Pavement



Source: Shahin, P. 30.

The amount of adjacent disturbed soil is a function of the depth and width of the trench. Shallower trenches have shorter exposed sides with less sag from lost lateral support. Deeper trenches disturb more adjacent soil even when shoring is present. In addition to

⁵ *Impact of Utility Cuts on Seattle Streets*. Nichols-Vallerga & Associates. January 2000 p. 43.

⁶ *The Impact of Excavation On San Francisco Streets*. Department of Public Works. City and County of San Francisco. 1998. Figure 2.

disturbed adjacent soil on the sides of trenches, soil is also disturbed in the bottom of trenches.

The combined volume of the disturbed soil in the trench and the adjacent lateral and bottom soil represents the influence that buried infrastructure has on pavement service life. One study quantified the impact as follows:

Accordingly, the reduction in pavement lifecycle due to utility trenching, when proportioned back based on the contributing trenched areas, is calculated to be 32.4 percent.⁷

In addition to street cuts and trenching, moisture is another critical factor that affects pavement service life.

Premature distress in both flexible and rigid pavements is generally caused by exposure to heavy truck traffic when the pavement structural section is in a saturated condition. Saturation of the structural section or underlying foundation materials or both generally results in a decrease in strength or ability to support heavy truck axle loads.⁸

At the pavement surface, drainage is important in protecting roadways from saturation. The presence of buried infrastructure can also lead to saturation because it often entails pavement cuts, excavation, backfilling, compaction, and pavement repair, which in turn can lead to a reduction in pavement service life because of uneven settling, percolation of runoff into cuts, and trench and subgrade saturation from pipeline leaks.

Buried infrastructure consists of “dry” and “wet” utilities. Dry utilities such as telecommunication conduits, gas pipelines, and electrical conduits pose less risk to roadways because they are typically smaller in diameter, not buried as deeply, and do not convey liquids. Because these conduits and pipelines are smaller diameters, it is possible to install them by boring horizontally without trenching. When trenchless installation is possible, the soil is virtually undisturbed.⁹

By comparison, “wet” utilities such as water, wastewater, and storm drain pipelines are often larger and buried deeper. Because of their size, trenchless installation is rarely

⁷ *Impact of Utility Trenching and Appurtenances on Pavement Performance in Ottawa-Carleton*. Steven Lee, Katherine Lauter, prepared for the Environment and Transportation Department, Ottawa, Ontario. July 1999. Page 16.

⁸ *Highway Design Manual*. California Department of Transportation. July 1, 1995. Page 600-14.

⁹ Many of these “dry” utilities are privately owned by companies that pay franchise fees for the use of the public rights-of-way; revenue from franchise fees can be used to help offset the costs associated with pavement repair.

possible. All water and some sewer pipelines are under pressure. Leaks from these pipelines weaken soils, which can lead to subsidence and accelerate vehicle wear when pavement subgrade is saturated.

Both “dry” and “wet” utilities typically have service connections that connect individual customers to the infrastructure in the right-of-way. The impact of “wet” service connections is proportionately greater than “dry” service connections because of the greater relative size, depth, and fluid content of “wet” utilities. Studies^{10,11} conducted in other cities have attributed significantly more impact to “wet” utilities than “dry” utilities. Pipelines carrying fluids under pressure are the source of the greatest damage to pavements. The failure mechanism is explained by one researcher.

Street pavements respond in different ways to the leaks and breaks of water mains. In the most noticeable cases, pavements burst when large pipe breaks release enough water pressure to launch geysers in the air. In other cases, pavements display no apparent signs of water damage for years; leaking water remains undetected, drains through pipe beddings and roads subgrades, and eventually erodes them and undermines the pavement, which may collapse when vehicles drive over. Sometimes leaking water surfaces and then flows into the gutter or accumulates under pavement and lifts extended areas of pavement.¹²

Figure IV-2¹³ further illustrates the failure mechanism. The depth and width of excavations including the adjacent disturbed soil establishes the baseline influence of the buried infrastructure. If the pipeline leaks fluid, the fluid typically migrates upward through the disturbed soil toward the pavement subgrade, where it may travel laterally, weakening broad areas of overlying pavement. The extent of the damage can extend well beyond the dimensions of the excavation and will be dependent on the volume of the leak, which may merely soften the subgrade, may erode the subgrade and produce cavities, or, in the extreme, uplift the pavement.

Based on the research cited, it is assumed that one-third (33%) of the costs of right-of-way maintenance is attributable to subsurface activities and two-thirds (67%) to surface

¹⁰ “Unlike “dry” utilities, the presence of “wet” utility trenching has a significant impact on the performance and life cycle of a street and as a result has a pronounced impact on the expenditures related to street maintenance.” *Water Fund to General Fund Transfer Study*. City of Fullerton. March 2012. Page 13.

¹¹ “Dry utilities require a smaller trench compared to wet utilities, are located at the edge of the roadbed, and do not carry water that can leak into the ground.” *Utility Operations Impacts on Street Maintenance*. City of Roseville. September 5, 2003. Page 8.

¹² *Failure of Street Pavement Resulting From Underground Water Pipeline Breaks*. Jean-Pierre Bardet, Tat Fu, and Craig A. Davis. Journal of the American Water Works Association. December 2014. Pages ES25 – ES37.

¹³ Ibid.

activities. In balance, using 33% results in a conservative allocation of costs to subsurface activities. The cost allocation could be higher because the impact that liquid-bearing buried infrastructure has on right-of-way maintenance is only partially reflected in the allocations. This infrastructure is typically buried deeper and thereby occupies more subsurface volume, which is accounted for in the analysis. However, the analysis does not additionally weight the allocation to subsurface activities to account for the influence of moisture, which can flow well beyond the soil area disturbed by installing liquid-bearing pipelines.

Figure IV-2. Pipeline Failure Mechanism

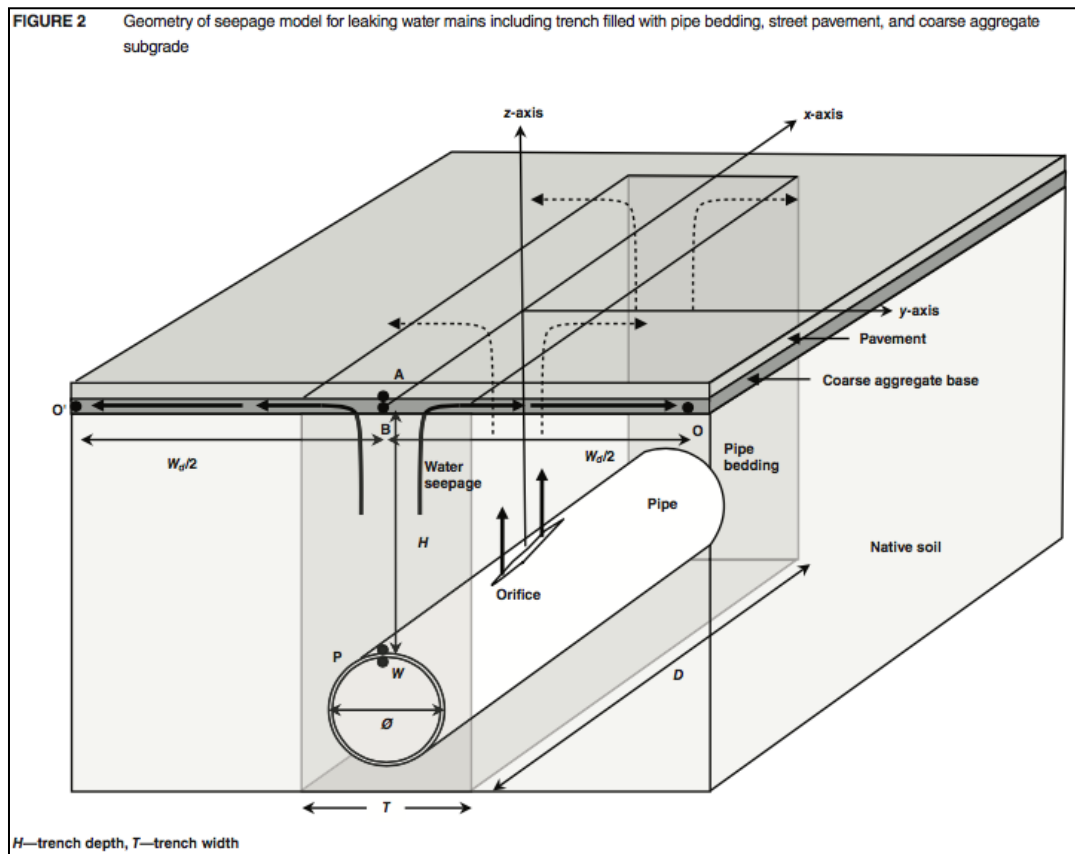


Figure IV-3 shows the allocation of the FY 2017-18 budgeted right-of-way expenditures to surface and subsurface infrastructure. The first step subtracts costs that can be directly allocated to various specific activities. In the City's case, a portion of the right-of-way capital expenses for street and sidewalk improvements is already directly allocated to the Solid Waste Enterprise. The net expenditures are then split between surface and subsurface infrastructure two-thirds and one-thirds, respectively.

Figure IV-3. Surface/Subsurface Cost Allocation

Right-Of-Way Maintenance Expenses [1]	
ROW O&M Expenses	
076 - Street Maintenance	\$4,543,597
124 - Civil Engineering	\$3,268,385
123 - Project Management [2]	\$60,456
ROW Capital Expenses	
0125 - Underground Utilities	\$0
0195 - Street & Sidewalk Improvements	\$3,350,000
0740 - S. Santa Monica Blvd - Complete Streets	\$350,000
0863 - Street Sign and Striping	\$50,000
CIP Project Management [2]	\$540,028
Subtotal	\$12,162,467
Less: Direct Allocations	
0195 - Solid Waste Enterprise	(500,000)
Net ROW Expenses to be Allocated	\$11,662,467
Surface Allocation (67%)	\$7,813,853
Subsurface Allocation (33%)	\$3,848,614

1. Source: Public Works budget FY 2017-18

2. Reflects allocated proportion of budgeted Project Management costs based on ROW's percentage share of total Public Works' O&M and CIP expenses, respectively.

ALLOCATIONS AMONG SUBSURFACE ACTIVITIES

Allocation factors were developed for the subsurface infrastructure based inventories of the infrastructure in the rights-of-way. Working with City staff, estimates of trench width and depth were developed. To these trench dimensions, additional depth and width was added for the adjacent disturbed soil.

Figure IV-4 shows the resulting volumes. Based on these volumes, allocation factors are calculated for each type of infrastructure. Large, deep fluid-bearing pipelines impose the greatest impact within the right-of-way and have the largest allocation factors. By comparison, infrastructure comprising conduits or smaller, shallower pipelines occupies much less volume and thereby has a comparatively small impact on the right-of-way. This other infrastructure comprises natural gas pipelines, electrical conduits, communications wires, much of which is either installed without trenching or in pavement cuts is difficult to quantify because it is owned by private utilities. Where the data is available, our studies have indicated that this other infrastructure amounts to no more the one-quarter of the subsurface infrastructure volume. Other studies¹⁴ confirm our findings.

¹⁴ Lee, *et al.*, Table 7.

Figure IV-4. Subsurface Infrastructure Allocation Factors

	Count [1]	Units	Trench		Length (feet) [2]	Diameter (feet) [2]	Surface Area (Sq ft)	Depth (feet) [2]	Volume (cubic ft)	
			Width (feet) [2]							
"Wet" Utilities										
Water Enterprise										
Mains	950,400	lin. ft	7				6,652,800	7	46,569,600	
Services	9,899	each	6	25.0			1,484,850	6	8,909,100	
Hydrants	1,366	each	4	25.0			136,600	6	819,600	
Valves	5,338	each				6	150,948	7	1,056,636	
									57,354,936	11.5%
Wastewater Enterprise										
Collection Lines	528,000	lin. ft	7				3,696,000	12	44,352,000	
Laterals	8,176	each	6	25.0			1,226,400	9	11,037,600	
Manholes in ROW	2,165	each				10	170,061	13	2,210,790	
									57,600,390	11.5%
Stormwater Enterprise										
Drains	174,240	lin. ft	7				1,219,680	8	9,757,440	2.0%
Subtotal									124,712,765	25.0%
Other Infrastructure [3]									39,900,000	8.0%
Total									164,612,765	33.0%

1. Source: City of Beverly Hills.

2. Includes adjacent disturbed earth.

3. HF&H assumption; includes: electrical, cable, telecommunication, etc.

Subsurface Reimbursements

Figure IV-5 summarizes the reimbursements that are derived when the subsurface costs in **Figure IV-3** are allocated to each infrastructure using the allocation factors shown in **Figure IV-4**. The resulting allocation to the Water Enterprise is 11.5% of the total right-of-way maintenance costs. This allocation represents the Water Enterprise's share of the cost of right-of-way maintenance for the portion of water infrastructure located in the City of Beverly Hills.

Figure IV-5. Subsurface Reimbursements

	Subsurface Allocation % [1]	Subsurface Cost Allocation
"Wet" Pipelines		
Water	11.5%	\$1,340,947
Wastewater	11.5%	\$1,346,686
Storm Drain	2.0%	\$228,127
Subtotal	25.0%	\$2,915,760
"Dry" Utilites		
	8.0%	\$932,854
Subsurface Subtotal	33.0%	\$3,848,614
Surface		
	Surface Allocation %	Surface Cost Allocation
Surface Activities	67.0%	\$7,813,853
Total	100.0%	\$11,662,467

1. Source: Figure IV-4

V. GENERAL FUND CONTRIBUTIONS

It is the policy of the City of Beverly Hills to contribute funding to the Water Enterprise for the benefit of only Beverly Hills rate payers. The General Fund covers the cost of Beverly Hills' share of the public safety, governmental facilities, and right-of-way maintenance reimbursements. In addition, the General Fund makes the following contributions.

LEASE REVENUE

The Water Enterprise owns two properties that are no longer used to provide water service. One property is located at 333 La Cienaga and was formerly the site of the City's water treatment plant. The other property is the Robertson Yard, which was used by Water Enterprise for storage. Both properties are now leased for non-utility purposes. The City conducted a study to determine the market value for the leases, which are \$1,500,000 for the La Cienaga property and \$1,491,453 for the Robertson Yard, for a total of \$2,991,453.

The General Fund compensates the Water Enterprise for the market value of the leases. This lease revenue is credited only to the Beverly Hills customers because the land is leased for non-utility purposes. Absent this arrangement that allows the General Fund to lease the property, the Water Enterprise could potentially lease the property. In either case, the property is surplus to the Water Enterprises' uses for providing water service and the revenue would not be shared with the City of West Hollywood.

OTHER GENERAL FUND CONTRIBUTIONS

The City of Beverly Hills General Fund has made contributions to the Water Enterprise at various times. In recent times, \$2.0 million contribution was made towards the shallow groundwater development program and another \$3.0 million was contributed towards the Cabrillo non-potable water conveyance facilities. The City has not maintained historical records on other contributions toward capital improvements such as these. There is no documentation of any General Fund contributions from the City of West Hollywood for any purpose.

APPENDICES

APPENDIX A – 4R RATIOS

Year Published	Roll Year	Year Applied	Assessed Value	Market Value	AV to Market Ratio	Market to AV Ratio
1990	1988-89	1990-91	631,406,235	897,169,093	70.38%	142.09%
1991	1989-90	1991-92	616,440,541	867,466,974	71.06%	140.72%
1992	1990-91	1992-93	683,352,730	920,879,605	74.21%	134.76%
1993	1991-92	1993-94	741,496,223	989,621,762	74.93%	133.46%
1994	1992-93	1994-95	766,671,391	936,407,606	81.87%	122.14%
1995	1993-94	1995-96	778,840,987	917,581,231	84.88%	117.81%
1996	1994-95	1996-97	766,385,274	875,402,700	87.55%	114.22%
1997	1995-96	1997-98	744,155,166	858,420,848	86.69%	115.36%
1998	1996-97	1998-99	742,948,114	862,729,964	86.12%	116.12%
1999	1997-98	1999-00	765,529,827	949,800,748	80.60%	124.07%
2000	1998-99	2000-01	800,141,790	1,050,715,877	76.15%	131.32%
2001	1999-2000	2001-02	843,741,066	1,116,638,591	75.56%	132.34%
2002	2000-01	2002-03	898,169,778	1,252,295,636	71.72%	139.43%
2003	2001-02	2003-04	972,485,305	1,298,884,851	74.87%	133.56%
2004	2002-03	2004-05	1,031,311,811	1,418,849,274	72.69%	137.58%
2005	2003-04	2005-06	1,086,231,023	1,518,929,816	71.51%	139.83%
2006	2004-05	2006-07	1,143,786,168	1,742,390,887	65.64%	152.34%
2007	2005-06	2007-08	1,224,148,563	2,007,660,405	60.97%	164.00%
2008	2006-07	2008-09	1,349,661,751	2,251,541,014	59.94%	166.82%
2009	2007-08	2009-10	1,442,709,942	2,487,099,291	58.01%	172.39%
2010	2008-09	2010-11	1,514,691,725	2,325,192,378	65.14%	153.51%
2011	2009-10	2011-12	1,523,916,033	1,881,104,046	81.01%	123.44%
2012	2010-11	2012-13	1,511,622,838	1,849,979,223	81.71%	122.38%
2013	2011-12	2013-14	1,523,352,973	1,893,402,518	80.46%	124.29%
2014	2012-13	2014-15	1,551,929,412	2,031,744,657	76.38%	130.92%
2015	2013-14	2015-16	1,612,196,273	2,175,292,919	74.11%	134.93%
2016	2014-15	2016-17	1,665,063,687	2,488,931,184	66.90%	149.48%
Total			28,932,386,626	39,866,133,098	72.57%	137.79%

APPENDIX B – ENR LA CCI

1913=100		LOS ANGELES		2003	Dec.	7,532	1.74%
		CCI	% Chg.	2004	Dec.	8,192	8.77%
1955		813	5.10%	2005	Dec.	8,567	0.32%
1956		853	4.85%	2006	Dec.	8,879	-0.16%
1957		892	4.62%	2007	Dec.	9,182	0.03%
1958		935	4.83%	2008	Dec.	9,823	-0.54%
1959		982	5.01%	2009	Dec.	9,764	0.03%
1960		1,016	3.39%	2010	Dec.	10,004	-0.03%
1961		1,044	2.79%	2011	Dec.	10,089	0.00%
1962		1,075	2.95%	2012	Dec.	10,271	-0.11%
1963		1,110	3.33%	2013	Dec.	10,739	-0.02%
1964		1,154	3.88%	2014	Jan.	10,736	-0.02%
1965		1,197	3.74%	2014	Feb.	10,734	-0.02%
1966		1,256	4.94%	2014	Mar.	10,732	-0.03%
1967		1,324	5.40%	2014	Apr.	10,735	0.03%
1968		1,423	7.54%	2014	May	10,736	0.01%
1969		1,564	9.87%	2014	June	10,739	0.03%
1970		1,702	8.83%	2014	July	10,737	-0.02%
1971		1,948	14.48%	2014	Aug.	10,737	0.00%
1972		2,160	10.88%	2014	Sept.	10,738	0.01%
1973		2,335	8.10%	2014	Oct.	10,748	0.09%
1974		2,490	6.60%	2014	Nov.	10,760	0.11%
1975		2,726	9.50%	2014	Dec.	10,748	-0.11%
1976		2,959	8.54%	2015	Jan.	10,999	2.34%
1977		3,175	7.29%	2015	Feb.	11,004	0.04%
1978	Dec.	3,421	7.76%	2015	Mar	10,995	-0.08%
1979	Dec.	3,639	6.36%	2015	Apr	10,989	-0.06%
1980	Dec.	4,102	12.74%	2015	May	10,995	0.06%
1981	Dec.	4,531	10.45%	2015	Jun	10,981	-0.13%
1982	Dec.	4,934	8.90%	2015	Jul	10,981	0.00%
1983	Dec.	5,064	2.63%	2015	Aug	10,981	0.00%
1984	Dec.	5,260	3.87%	2015	Sep	11,121	1.27%
1985	Dec.	5,447	3.55%	2015	Oct	11,628	4.56%
1986	Dec.	5,452	0.10%	2015	Nov	11,116	-4.41%
1987	Dec.	5,474	0.40%	2015	Dec	11,117	0.01%
1988	Dec.	5,771	5.42%	2016	Jan	11,115	-0.02%
1989	Dec.	5,790	0.33%	2016	Feb	11,147	0.28%
1990	Dec.	5,995	3.54%	2016	Mar	11,158	0.10%
1991	Dec.	6,090	1.59%	2016	Apr	11,159	0.01%
1992	Dec.	6,349	4.24%	2016	May	11,150	-0.08%
1993	Dec.	6,478	2.04%	2016	Jun	11,148	-0.02%
1994	Dec.	6,533	0.85%	2016	Jul	11,155	0.06%
1995	Dec.	6,526	-0.10%	2016	Aug	11,155	0.00%
1996	Dec.	6,558	0.49%	2016	Sep	11,178	0.21%
1997	Dec.	6,664	1.60%	2016	Oct	11,526	3.11%
1998	Dec.	6,852	2.83%	2016	Nov	11,527	0.01%
1999	Dec.	6,826	-0.38%	2016	Dec	11,555	0.24%
2000	Dec.	7,068	3.55%	2017	Jan	11,555	0.00%
2001	Dec.	7,227	2.25%	2017	Feb	11,555	0.00%
2002	Dec.	7,403	2.43%	2017	Mar	11,555	0.00%
				2017	Apr	11,642	0.76%



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