

MEMORANDUM



TO Jim Fleming
FROM Amber Gschwend
DATE February 11, 2025
RE Unmetered Electric Service Rate Technical Memo

INTRODUCTION

This memo summarizes the methodology and assumptions used to develop rates for the City of Palo Alto's Unmetered Electric Service Rate Schedule (E-16). This schedule includes the following services:

1. Unmetered Electric Service
2. License Fee for Electric Conduit Use
3. License Fee for Utility Pole Attachments
4. License Fee for mounting communications equipment on utility poles (including antenna systems)

This memo provides the rate calculations for each of the above fees. The appendix contains a rate survey of local utilities providing the same services.

UNMETERED ELECTRIC SERVICE

The current rate for Unmetered Electric service is \$9/month plus estimated energy use billed at the E-2 energy rate. The fixed charge is based only on the staffing cost to calculate bills for unmetered customers. At the current rate for Program Assistant I, the staff who performs the annual billing, it requires on average two hours to recalculate, invoice, and track each unmetered customer bill on an annual basis. At a current fully loaded labor rate of \$65.78/hour for a Program Assistant I,¹ the annual cost is \$131.55, or \$10.96/month. This rate should be updated when the City of Palo Alto Labor Agreements Salary Schedule is updated. The energy charges are equal to E-2 rates.

POLE ATTACHMENT RATE

To provide electric service, CPAU owns 5,888 utility poles. Communication providers and PG&E have attachments on CPAU's poles and share the maintenance costs.

This memo describes the assumptions and methodologies used to calculate an appropriate pole attachment rate for potential new attachments. The recommended pole attachment rates are based on the AB1027 (2011) framework for calculating pole attachment rates, codified at Public Utilities Code (PUC) section 9510 et seq.; with the goal that adopted pole attachment rates do not either subsidize or over-charge communication providers. PUC section 9512(c) exempts poles that are under joint ownership including Northern California Joint Pole Association. This memo applies to attachments that are not part of the joint ownership agreement.

¹ Labor rate of \$43.85/hour plus 50% for benefits.



Input Assumptions and Methodology

Assembly Bill 1027² allows utilities to recover the annual ownership cost of associated utility poles including ongoing maintenance costs and annual capital costs (depreciation). Costs are based on a utility’s current asset values and maintenance costs. The annual cost is calculated based on the attachment’s share of the utility pole’s capacity. In addition to the annual fee, a one-time fee may also be charged for new pole attachments.

Key inputs to the pole attachment rate are summarized in Table 1.

TABLE 1: POLE ATTACHMENT RATE METHODOLOGY

	Description	Assumption or Data Source
Usable Space	Measured in feet, the space available for attachments	<ul style="list-style-type: none"> • PUC 9512(a)(1) dictates 13.5 feet, subject to factual rebuttal
Space Occupied by Attachment	Measured in feet, space required for each attachment	<ul style="list-style-type: none"> • 1 ft is standard
Usable Space Share	Measured as a percentage equal to the space occupied by the attachment divided by usable space	<ul style="list-style-type: none"> • 7.4% using 1 foot per attachment and 13.5 feet of usable space
Pole Height	Average pole height for all utility poles	<ul style="list-style-type: none"> • 46 ft • CPAU pole database
Number of Poles	Total number of utility poles	<ul style="list-style-type: none"> • 5,888 • CPAU pole database
Net Book Value Poles	Depreciated cost of poles	<ul style="list-style-type: none"> • Depreciation equal to 46.9 years average age from CPAU pole database • Useful life of a pole is 80 years based on CPAU replacement schedule • Estimated values as described later in this memo
Net Book Value All Plant	Total plant value of all pole assets less depreciation	<ul style="list-style-type: none"> • Fixed Assets as of FY2024 end
Net Cost of Bare Pole	Pole only costs (net of depreciation)	<ul style="list-style-type: none"> • Depreciated pole investment is adjusted by 15% to remove value of appurtenances used only for electric service
Overhead Maintenance Expense	Annual cost of overhead maintenance costs	<ul style="list-style-type: none"> • Based on FY2024 preliminary actual costs
Administrative Expense	Annual administrative and general expense	<ul style="list-style-type: none"> • Based on FY2023 actual costs
Depreciation	Annual cost of capital	<ul style="list-style-type: none"> • Annual depreciation expense is 1.3% based on 80-year asset life

The net book value for poles is an important input for calculating the cost share for overhead maintenance, depreciation, and administration cost adders. The net book value must be adjusted for capital contributions. The City does not have a long-standing record for capital contributions for the history of its current pole population. However, the current agreements indicate that pole costs are often

²Now part of the California Public Utilities Code (PUC) section 9510 et seq



shared 50% between the City and communications providers. Therefore, it is conservatively assumed that 50% of the net book value for poles is contributed capital. This amount is removed from the bare cost of the poles.

POLE ATTACHMENT RATE

Figure 1 illustrates the pole attachment rate methodology. Table 2 details the resulting pole attachment rate using the methodology and inputs described. The resulting annual fee is \$47.60/ attachment. CPAU is planning for significant pole replacements in the next 5-10 years and should revisit this calculation with updates, as the net book value of the poles is expected to increase over time with the capital expenses planned.

FIGURE 1: POLE ATTACHMENT LEASE METHODOLOGY

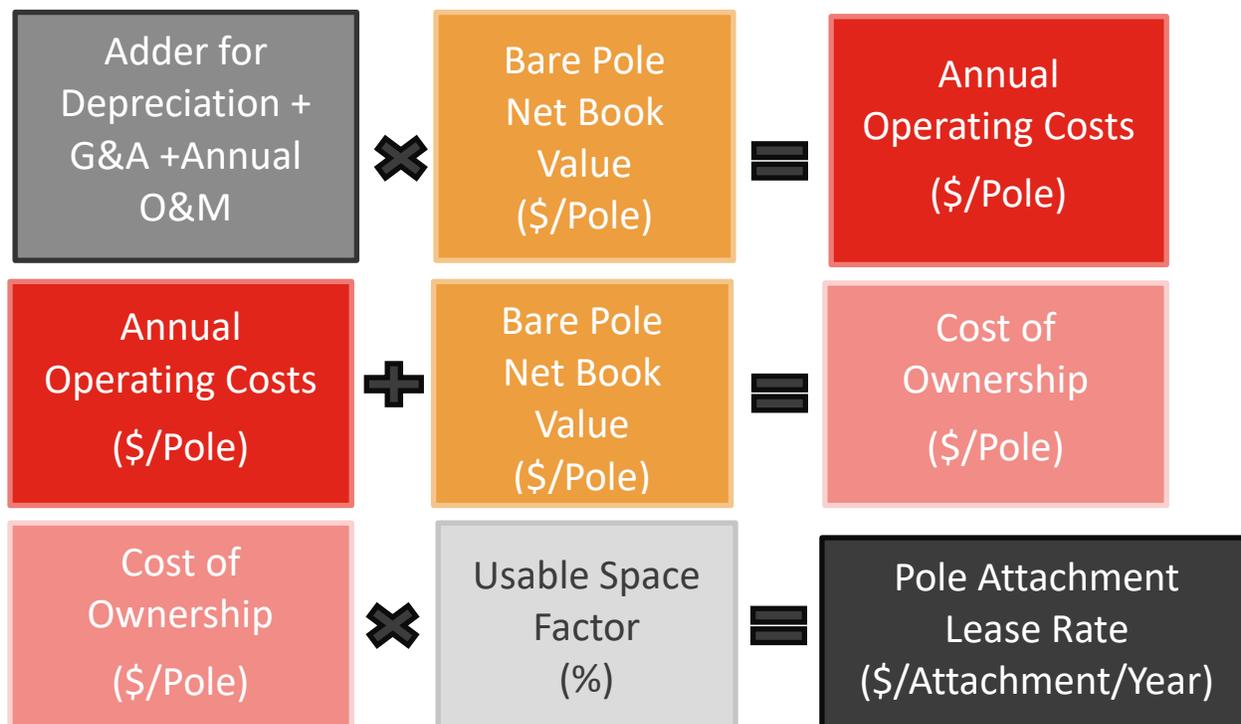


TABLE 2: POLE ATTACHMENT RATE CALCULATION

Line		Formula/Source	
Carrying Cost Adder Calculations			
	<i>O & M Adder</i>		
1	Maintenance Expense	<i>FY2024 Prelim. Actual</i>	\$3,690,146
2	Net Investment (Accumulated Depreciation)	<i>Line 8 - Line 9</i>	\$10,757,928
3	Overhead Maintenance Expense Adder	<i>Line 1/Line 2</i>	34.3%
	<i>G & A Adder</i>		
4	Total General & Administrative Expense	<i>FY2023 Actual</i>	\$6,090,703
5	Net Book Value (All Plant in Service)	<i>As of Ending FY2023</i>	\$215,968,770
6	G&A Adder	<i>Line 4/Line 5</i>	2.8%
	<i>Capital Cost Adder</i>		
7	Annual Depreciation Rate	<i>1/80 years</i>	1.3%
8	Capital Cost	<i>Original Cost</i>	\$21,622,546
9	Net Book Value	<i>Original Cost less Depreciation</i>	\$10,864,618
10	Capital Carrying Cost Adder	<i>Line 8/Line 9 × Line 7</i>	2.5%
Net Book Value Calculations			
11	Net Book Value	<i>Line 9</i>	\$10,864,618
12	Number of Poles	<i>Pole Database</i>	5,888
13	Net Cost of Bare Pole	<i>(Line 11/Line 12) × (1-15%)</i>	\$1,568.43
Attachment Fee Calculation			
14	Average Height of Pole (ft)	<i>From CPAU Pole Database</i>	46
15	Space Occupied by Attachment	<i>Number of Feet Required</i>	1
16	Usable Space (ft)	<i>PUC section 9510 et seq</i>	13.5
17	Usable Space Share of Pole Height (%)	<i>Line 16/Line 14</i>	29.3%
18	Net Cost of Bare Pole	<i>Line 13</i>	\$1,568.43
19	Carrying Cost Percentage	<i>Sum lines 3, 6, 10</i>	39.6%
20	Annual Operation Cost per pole	<i>Line 18 × Line 19</i>	\$621.25
21	Cost of Ownership	<i>Line 18+ Line 20</i>	\$2,189.68
22	Cost of Ownership (Based on Usable Space)	<i>Line 17× Line 21</i>	\$642.62
23	Usable Space Factor (%)	<i>Line 15/ Line 16</i>	7.4%
24	Pole Attachment Fee (\$/year)	<i>Line 22 × Line 23</i>	\$47.60

In addition to the attachment fee, a processing fee is charged per pole to cover engineering and field review. This processing fee is calculated based on the current labor rate of \$152/hour and the hours required (1.0 hours). This hourly rate includes benefits and administrative overhead. The resulting fee is \$152 per pole. This

is the same charge from URS C-1 Utility Miscellaneous Charge. The rate schedule could reference URS C-1 rather than providing the rate in URS-16.

TABLE 3: POLE ATTACHMENT PROCESSING FEE

	Hours	Labor Rate	Cost
Engineering Review	0.5	\$152.00	\$76.00
Field Review	0.5	\$152.00	\$76.00
Total, \$/pole			\$152.00

LICENSE FEE FOR SMALL CELL ATTACHMENTS

In 2018, the Federal Communications Commission (FCC) established new rules around small cell attachments to utility poles. The order intended to make more available the deployment of 5G networks. Utilities may recover the annual cost of service to small cell attachments as long as those costs are deemed reasonable. The FCC further states that reasonable annual costs are typically limited to \$270 per pole per year for small cell attachments. The current annual fee for small cell attachments is set at the 2018 value of \$270. The recommended annual fee updates this value using the Consumer Price Index for All Urban Consumers in the San Francisco-Oakland-Hayward area. The recommended updated license fee is \$329.44 per year per pole.

CONDUIT LEASE RATE

The lease fee for electric conduit use is calculated much the same way as the pole attachment rate. The conduit lease is for exclusive use only since conduit is not shared. The City tracks O&M costs for underground conduit separately. Annual O&M costs are \$300,000. General and administrative costs plus depreciation expense is calculated at 4.9% of the net book value for conduit. These costs plus direct conduit O&M costs total to produce an annual rate of \$1.94/foot. Figure 2 illustrates the general methodology while Table 4 provides the detailed calculations.

FIGURE 2: CONDUIT LEASE FEE METHODOLOGY



TABLE 4: CONDUIT LEASE RATE CALCULATION

<i>line</i>	<i>Formula/Source</i>		
1	CPAU Records	Feet of Conduit	575,264
2	Account 366 Fixed Assets	Capital Cost	\$34,186,622
3	Net Book Account 366	Depreciation	\$17,403,632
4	Line 2 - Line 3	Net Book Value	\$16,782,990
5	Line 4 / Line 1	Net Book Value per Foot of Conduit, \$/ft	\$29.17
6	CPAU Records	Annual O&M Costs	\$300,000
7	Line 6 / Line 1	Net Cost of per Foot of Conduit	\$0.52
8	Actual FY23 Expenses	Total General & Administrative Expense	\$6,090,703
9	Fixed Assets	Net Book Value (All Plant in Service)	\$215,968,770
10	Line 8 / Line 9	Administrative Expense Adder	2.8%
11	1/100 years	Annual Depreciation Rate	1.0%
12	(Line 2/Line 4) × Line 11	Depreciation Adder	2.0%
13	Line 10 + Line 12	Total Carrying Cost Adder	4.9%
14	Line 13 × Line 5	Carrying Cost, \$/ft/year	\$1.42
15	Line 7 + Line 14	Annual Lease Rate, \$/ft Exclusive Use	\$1.94

SUMMARY

Table 5 compares the current and recommended rates for Unmetered Utility Service:

TABLE 5: RECOMMENDED RATES

Service	Current Rate	Recommended FY2026 Rate
C. Unmetered Electric Service		
1. Customer Charge, \$/month	\$9.00	\$10.96
2. Energy Charge, \$/kWh	Same as E-2	Same as E-2
E. Misc Rates		
1. Conduit License Fee, \$/foot/year	\$1.94	\$1.94
2. Processing Fee for Electric Conduit Usage	Actual Cost	Actual Cost
3. Pole Attachment License Fee, \$/Foot/Year	\$29.51 ¹	\$47.60
4. Processing Fee for Utility Pole Attachments, \$/pole	\$55.00	\$152.00
5. License Fee for mounting communication equipment including distributed antenna systems on utility poles, \$/pole	\$270.00	\$329.44

1. The current rate includes a small incremental increase of \$2.80/year for each additional foot of leased space up to 4 feet.

The recommended unmetered service rate aligns closely with the FY2025 E-2 rate and excludes costs related to meter reading since Utility Rate Schedule E-16 provides the process for determining energy requirements based on equipment specifications. For pole attachments, it is recommended that CPAU charge the same fee for each foot of usable space licensed for communications use. This recommendation is consistent with PUC 9510(a)(1). The Appendix shows that the calculated pole attachment rate is higher than the rates published by other utilities surveyed. The sampling of utilities for pole attachment rates is difficult since many participate in the Northern California Joint Pole Association that manages standard pole attachments for member agencies. Pole attachment rates in other states are commonly in the \$30-\$40/attachment range. The rate level is mostly impacted by the net book value of the pole attachment and the depreciation schedule.



APPENDIX

TABLE 6: POLE ATTACHMENT RATE COMPARISON

	\$/foot
City of Palo Alto (Recommended)	\$47.60
Silicon Valley Power	\$18.50
Lodi Electric Utilities	\$21.94

TABLE 7: SMALL CELL ATTACHMENT RATE COMPARISON

	\$/foot
City of Palo Alto (Recommended)	\$329.44
Alameda Municipal Power	\$1,475 deposit
Silicon Valley Power	\$94.08 increased 2.5% annually
Lodi Electric Utilities (2025)	\$303.41 increased 3% annually
Roseville Electric Utilities	\$270 increased 3% annually each effective date

TABLE 8: UNMETERED SCHEDULE

	\$/month	\$/kWh
City of Palo Alto (Recommended FY2026)	\$10.96 ¹	
Summer (May 1-Oct 31) (E-2)		\$0.26485
Winter (Nov 1- Apr 30) (E-2)		\$0.17290
Alameda Municipal Power	\$15.75	\$0.20113
Silicon Valley Power	\$5.06	
First 800 kWh		\$0.24377
Above 800 kWh		\$0.22130
Roseville Electric Utility	\$13.28	\$0.15700
Redding Electric Utility	\$20.75	\$0.27180

1. Updates according to hourly rate of Program Assistant I at 2 hours per year.
<https://www.cityofpaloalto.org/Departments/Human-Resources/Labor-Agreements-and-Salary-Schedules>