CITY OF HEALDSBURG ELECTRIC DEPARTMENT
REPORT ON DETERMINATION OF POLE ATTACHMENT FEES PURSUANT TO AB1027

The City of Healdsburg (City), a Publicly Owned Utility (POU), owns and maintains electric utility equipment, including power poles, throughout its service territory. These facilities are primarily constructed and operated in order to provide reliable electric service to the community. The City's utility poles also support communication cable attachments of Communication Service Providers (CSP) such as AT&T, Comcast, and Sonic Telecom. The City has agreements with each attaching CSP governing the terms and conditions under which cable attachments are processed and permitted, as well as the City's fees and charges for the facilities and services provided to accommodate the cable attachments.

In 2011, California enacted Assembly Bill 1027 (AB1027), which regulates the rates, terms and conditions of pole attachment agreements between POUs and CSPs. Contracts in effect prior to the passage of AB1027 are grandfathered in and not affected by AB2017; only new or replacement contracts and amendments to existing agreements must comply with AB1027. AB1027 requires POUs to make available utility pole space and capacity to any CSP requesting attachment on a non-discriminatory basis, and also requires POUs to ensure that POU ratepayers do not subsidize the service provided by CSPs. In regards to pole attachment fees, AB1027 requires: 1) that pole attachment fees should cover the costs to provide the service rendered, 2) that POUs must assess CSP pole attachment fees under the statute's cost allocation methodology, and 3) that the City Council must take specific steps to notice and adopt pole attachment fees. AB1027's pole attachment fee cost allocation methodology consists of multiple rules. Some rules regarding this methodology (the annual cost of ownership of a pole) require the use of hard data. Other elements of the methodology (percentage allocation of pole costs) allow the use of presumptive values subject to factual rebuttal when required to accurately capture the costs incurred by POUs in providing pole attachments.

To accommodate new CSPs requesting attachments to the City owned poles, the City developed pole attachment fees pursuant to AB1027 requirements. Those fees are now being contested by Sonic

Telecom. This report responds to Sonic's concerns and sets forth further analysis regarding the City's pole attachment rates calculated pursuant to AB1027.

BACKGROUND

AB1027 provides a formula for pole attachment fees based upon the percentage of the usable space rendered unusable by each attachment multiplied by the POU's annual costs of ownership for an average pole and any supporting structures. AB1027 includes the presumption, subject to factual rebuttal, that 13.5 feet of usable space is available for the attachment of wires, cables, and associated equipment and that each attachment occupies 1 foot of space. However, AB1027 also prohibits the City from forcing its customers to subsidize attachment rates for CSPs. To that end, AB1027 allows factual rebuttal of AB1027's cost allocation formula. Because the City's pole plant significantly differs from the presumptive values used in AB1027, the City is required to rebut the AB1027 presumptions of 13.5 feet of usable space and 1 foot of space rendered unusable by each attachment in order to reflect the reality of the City's current utility pole assets, design requirements, and costs incurred to provide pole attachments to CSPs. The following sets forth the conditions under which Healdsburg designs and incurs construction costs for utility poles used to provide electric, cable and telecommunications uses.

COST ALLOCATION METHODOLOGY (SPACE RENDERED "UNUSABLE" DIVIDED BY "USABLE SPACE")

The concept of 13.5 feet of usable space arose many years ago based on the two most common pole heights of the time (35 feet and 40 feet) and safety clearance requirements of the National Electric Safety Code (NESC). This assumption does not reflect the pole inventory and design requirements of the City's poles. The City's electric distribution poles have been designed and maintained in compliance with the California Public Utilities Commission's (CPUC) General Order 95 (GO-95), which prescribes overhead line construction standards and is more restrictive than the NESC with regard to wind-loading and space requirements. As applied to the City's distribution poles, these standards include the need to plan for multiple potential attachments, and how those attachments affect the load bearing capability and ability of each pole to withstand wind loadings. The City has accommodated

CSP cable attachments for several decades, which has influenced the size and strength of the City's pole plant.

As a result, the City's pole plant consists predominantly of 45-foot class-3 poles.[1] GO-95 requires at least 18 feet of clearance above or along the roadway (thoroughfare). GO-95 further requires the lowest attachment on each pole to account for the drop in height of the communication cable (sag) over the span length as well as ground clearance for any service attached at the middle of the span. As a result, field studies of the City's poles show the average attachment height of communication cables on Healdsburg's poles at 22 feet above the ground level, resulting in 12.5 feet of theoretically usable space[2]. However, the application of GO-95 wind-loading requirements increases the amount of pole space rendered unusable by cable attachments larger than 0.5" in diameter due to a corresponding decrease in the pole's available capacity to withstand wind loading. As a result, the City is also required by AB 1027 to rebut the presumptive one foot of space occupied by attachments under certain circumstances, as further explained below.[3]

GO-95's material strength and wind-loading reduces the number of <u>possible</u> attachments on a given pole depending on the diameter of the cable attachments. Within the City of Healdsburg, the average diameter for communication cables is 1.5 inches[4]. Healdsburg's average utility pole, in good condition, can typically support four 1.5" communication attachments, one low-voltage attachment and one high-voltage attachment[5]. Under this configuration, the average communication attachment consumes roughly 16% of an existing utility pole's allowable strength. Other related attachments such as equipment, boxes, and/or risers may consume additional pole strength and capacity due to wind loading. Therefore, to achieve a fair allocation of Healdsburg's pole costs the City must take into account the

[1] Thirty-seven percent of Healdsburg's pole asset inventory consists of roughly 450 45-foot class-3 poles, 18% are 50-foot class-3 poles, 8% are 35-foot class-3 poles, 4% are 50-foot class 1 poles and all other poles represent less than 32% of the City's wood pole inventory.

[2] Unusable space consisting of 21 feet from grade to lowest attachment, 5 feet clear space between the communication space and low voltage conductor, and 6.5 feet below ground (embedment depth) totals 32.5 feet. This leaves a remainder of 12.5 feet available for wire and cable attachments but wind loading further reduces the poles capacity to support attachments.

[3] Public Utility Code 9520 (b). The use of a utility pole or support structure by a communications service provider shall comply with Public Utilities Commission General Orders 95 and 128 and all other applicable provisions of law.

[4] While cable attachments can vary in size, a survey of the City average cable attachment size shows 1.5 inches as the predominant communication attachment size.

[5] Decay of the wood pole can reduce capacity and in some cases will lower the allowable bending strength of the utility pole. The loading was based upon the average span length of 120 feet and average attachment heights.

volume of the capacity of the structure rendered unusable by the equipment of the communications service provider.[6] That is, the cost methodology must consider the average pole's capacity (strength) to resist the wind loading of each attachment.

The City's pole cost allocation methodology determines the amount of the pole capacity that is rendered unusable by each attachment based upon the design requirements of GO-95 (wind-loading and allowable bending moment). The methodology first identifies the amount of space used by an attachment and then considers the attachments associated wind loading. Larger diameter cable attachments impress additional wind loading on the pole, leading such attachments to consume larger portions of the pole's available capacity and therefore limit the pole's ability to support additional attachments.

Because every attachment consumes a portion of the usable physical space, each cable attachment will receive a minimum allocation of costs based upon the consumed usable physical space. Each attachment is allocated a minimum of one foot of Healdsburg's average pole's usable space (12.5 feet), which reflects the required clearance between communications line conductors. Therefore, the minimum cost of any attachment is the "space factor allocation" and is 1/12.5 or eight (8) percent of the average annual pole cost.

Where an attachment, due to size, impresses a wind-load that results in less usable space available for other attachers, the attachment is assigned a higher cost allocation based upon the average pole's capacity (i.e., strength) to resist wind loading. The assigned wind-loading allocation is based upon: the City's average span length, GO-95 wind loading for light loading districts, the City's average communication attachment height, the total diameter of the communication cable assembly (cable, lashings, messenger, etc.), and Healdsburg's predominant pole size and class. The formulas below illustrate the allocation of the pole costs for each attachment:

$$\textbf{\textit{Percent Pole Cost Allocation}} = \textit{the greater of either the Space Factor or Wind Loading Factor}$$

$$\textbf{\textit{Space Factor Allocation}} = \frac{\textit{Number of Cable Attachments}}{\textit{Total Usable Space of Healdsburg's Average Pole}}$$

[6] *See* Pub. Util. Code § 9512(a)(2) (stating that the annual fee is calculated based upon the "volume of the capacity of the structure rendered unusable by the equipment of the communications service provider").

$$\textbf{Wind Loading Factor Allocaction} = \frac{Wind\ Loading\ of\ Cable\ Attachment}{Average\ Pole's\ Allowable\ Bending\ Strength}$$

$$\textbf{Final Pole Cost Allocation} = Annual\ Pole\ Cost\ x\ (Percent\ Pole\ Cost\ Allocation)$$

The table below lists typical communication cable and messenger sizes alongside their associated allocation for wind loading. For cable lashings, the wind loading allocation will be the sum of each lashed cable's diameter. For other, non-standard sizes or groupings of cable (lashings), the next higher percent cost allocation will be applied.

Communication Cable Diameter (inches)	Communication Messenger Diameter (inches)	Wind-Loading Allocation
0.50	1/4	8%
0.75	1/4	9%
1.0	5/16	12%
1.5	5/16	16%
1.9	3/8	20%
2.5	3/8	25%

ANNUAL COST OF OWNERSHIP OF A UTILITY POLE

By design, the cost of the attachment fee (rent of space) should fairly allocate and recover the following one-time and ongoing costs of: city staff and consultants, equipment to perform the work, procurement and storage of materials, routine inspection, maintenance and testing programs, cost of right of ways and/or public utility easements, future planned and unplanned replacement costs, capital costs, financing costs, regulatory costs (disposal, relocation, etc.), as well as other pole related costs. AB1027 lumps each of these costs into two main categories of "annual operating costs" and "annual capital costs" to create the total "annual cost of ownership".

The "annual capital cost" is the historical capital cost of utility poles less depreciation. Per AB1027, the depreciated capital cost should not include assets related to the pole not benefiting cable attachments. This "net" capital cost is referred to as the cost of a bare pole and supporting structures. The capital cost of a bare pole does not include the cost of electric utility equipment, but does include costs such as

disposal costs, engineering, administrative overhead, sidewalk repair/replacement, cost of related support structures, procurement costs, labor costs, and other costs required to replace or install a utility pole. Since the City's asset records are based upon total asset costs, a new depreciation schedule was developed based upon the install cost of a bare pole. Historical installation costs for a bare pole were developed by applying historical consumer price index data, the average expected life of wood poles, and straight-line depreciation. In addition to the annual depreciation costs, capital-related cost such as the cost of money, taxes based upon current asset value, and other related items are included in the annual cost of ownership. The table below summarizes these costs and fully represents the City's annual costs of ownership.

Annual Capital Cost Description	**FY2016 Valuation**
Depreciated Capital Asset Value	$ 1,809,721
Cost of Capital (@ 3.5%)	$ 65,258
Annual Depreciation	$ 63,340
Total Annual Capital Cost Of Utility Poles	$ 128,598

The "annual operating costs" of utility poles represents ongoing expenses not capitalized but necessary to maintain the wood utility poles. Annual pole costs include City staff and consultants, annual inspections and testing costs, contract maintenance costs, ongoing legal costs, preventive maintenance costs, tree trimming, administrative and general overhead costs, inventory costs, and other costs not otherwise capitalized. The table below summarizes these costs and fully represents the City's annual operating costs.

Annual Operating Cost Description	**FY2016 Costs**
FY Utility Pole Direct Expenses	$ 46,162
A&G Operation Expenses	$ 56,130
Total Annual Operating Cost	$ 102,292

The summation of the annual operating costs and annual capital costs represents the City's fiscal year annual cost of ownership. The average annual cost per pole is the annual cost of ownership divided by the number of City owned utility poles. The table below lists the City's annual cost of ownership, number of poles, and resulting average cost per pole is listed in the table below.

Cost Item Description	Valuation
Total Annual Ownership and Capital Costs	$ 230,890
Number of Poles	1,222
Average Annual Pole Cost per Pole	$ 188.94

From the annual ownership and capital costs the following attachment fees are established based upon the attachment's overall diameter and effected wind-loading. For attachments that do not match the sizes listed below, the next larger attachment size will be used to assign the annual fee.

Communication Cable Diameter (inches)	Cost Allocation	Annual Cost per Attachment
0.50 (w/ 1/4 messenger)	8%	$ 12.47
0.75 (w/ 1/4 messenger)	9%	$ 16.63
1.0 (w/ 5/16 messenger)	12%	$ 21.83
1.5 (w/ 5/16 messenger)	16%	$ 30.14
1.9 (w/ 3/8 messenger)	20%	$ 37.83
2.5 (w/ 3/8 messenger)	25%	$ 47.81

AB1027 allows one-time fees to recover costs associated with the processing of attachment requests, costs incurred to rearrange a utility pole to accommodate a new CSP attachment (make ready work), and other work created by the new attachment (i.e. pole replacements). Due to potential variances in the number and types of attachments as well as varying existing conditions, these fees can only be estimated after receiving a complete application.

ONE-TIME FEES	
Attachment Review Cost, less than 20 Poles	$ 80 per pole
Attachment Review Cost, between 21 and 40 Poles	$ 54 per pole
Attachment Review Cost, more than 40 Poles*	Per Project
Cost of Rearrangements*	Per Project
Pole Replacement Cost*	Per Project

**Due to varying field conditions, these costs can only be determined and set after receiving and reviewing a complete attachment request. A deposit will be required for the performance of the engineering and office work.*

AB1027 allows the City to reserve usable pole space on existing poles for future use for the delivery of its core utility service. In some cases, usable pole space exists, but the City will reserve this capacity for safety, system reliability, future projects, or other design considerations. Examples of typical situations where the City is likely to withhold pole space are replacement of conductors (wire), future expansion necessary to serve planned development, system reliability and design standards that increase clearance between wires or increase pole safety factors. Under these circumstances, the CSP requesting attachment has the option to pursue another route or compensate the City for the replacement of the existing utility poles to gain more usable space or pole strength.