

Ontario Energy Board (OEB)

May 20, 2016

Delivered to

Pole Attachment Working
Group (PAWG)

Prepared by

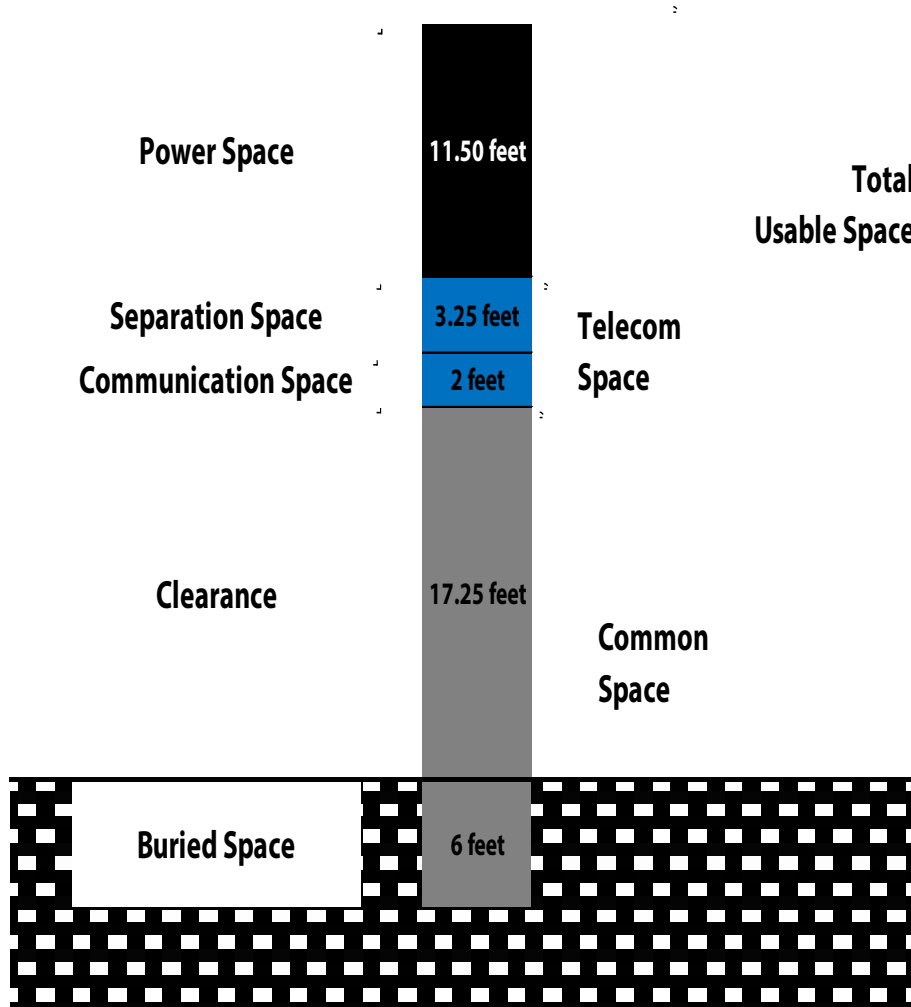
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Objectives

- **Review and discuss PWAG member input and position regarding technical and methodological issues associated with the determination of pole attachment rate**
- **Present best practice principles that may be applied to address underlying issues and receive participants' feedback**

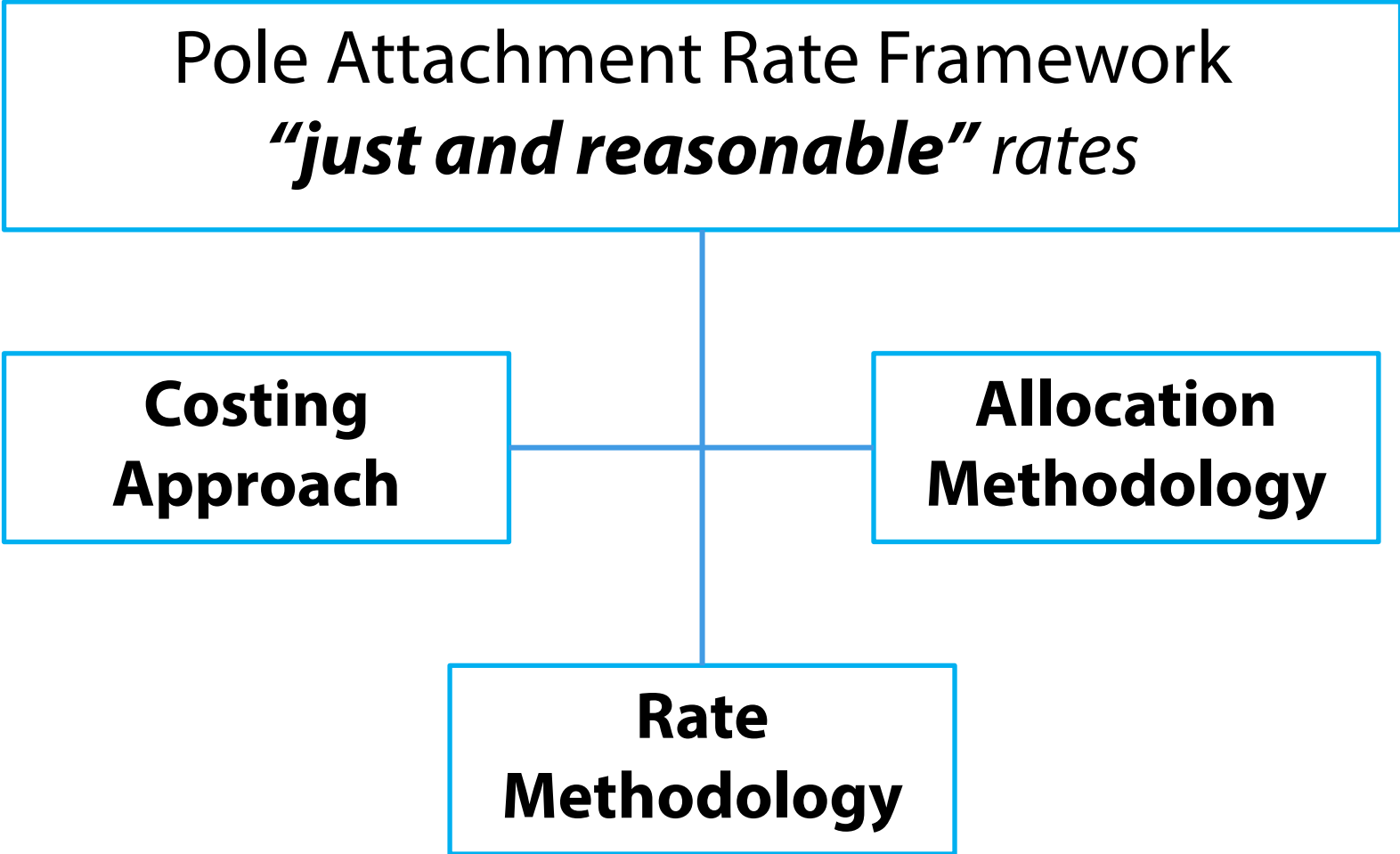
*Develop pole attachment rate model that is
“just and fair”
(based on best practice principles)*

Typical Pole Structure



	Feet
Power Space	11.50
Seperation Space	3.25
Communication Space	2.00
Telecom Space	5.25
Total Usable Space	16.75
Clearance Space	17.25
Buried Space	6.00
Total Common Space	23.25
Total	40.00

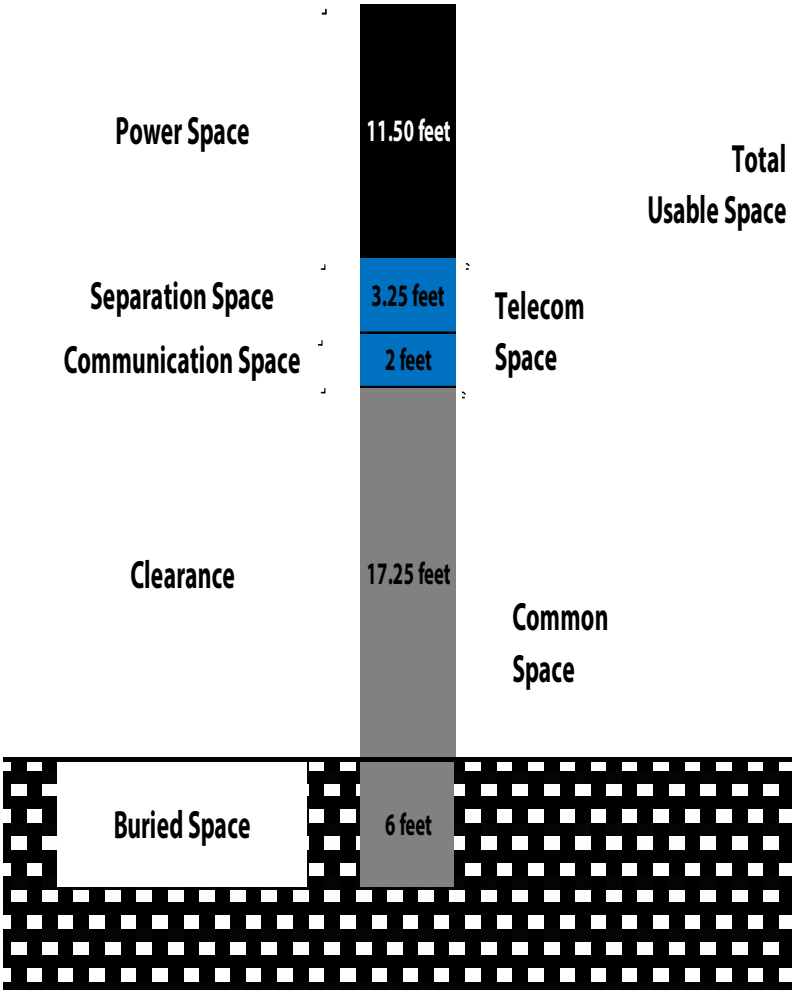
Key Elements of Pole Attachment Rate Model



Allocation Methodology

Options	Description
1) Proportional	Usable Space (<i>rate is determined based on total usable space to allocate common cost between power and telecom attachers</i>) Examples: 2016 NBEUB and FCC (USA) decisions
2) Equal Sharing	[Telecom Space 100% + Common Space Distributed Equally] Examples: 2005 OEB decision
3) Incremental	Increment Space required for Telecom/3rd Party Attachments (<i>rate is determined based on incremental space required for telecom attachers relative to total pole size</i>) No recent precedence

Example of Allocation Rate: *Proportional basis*

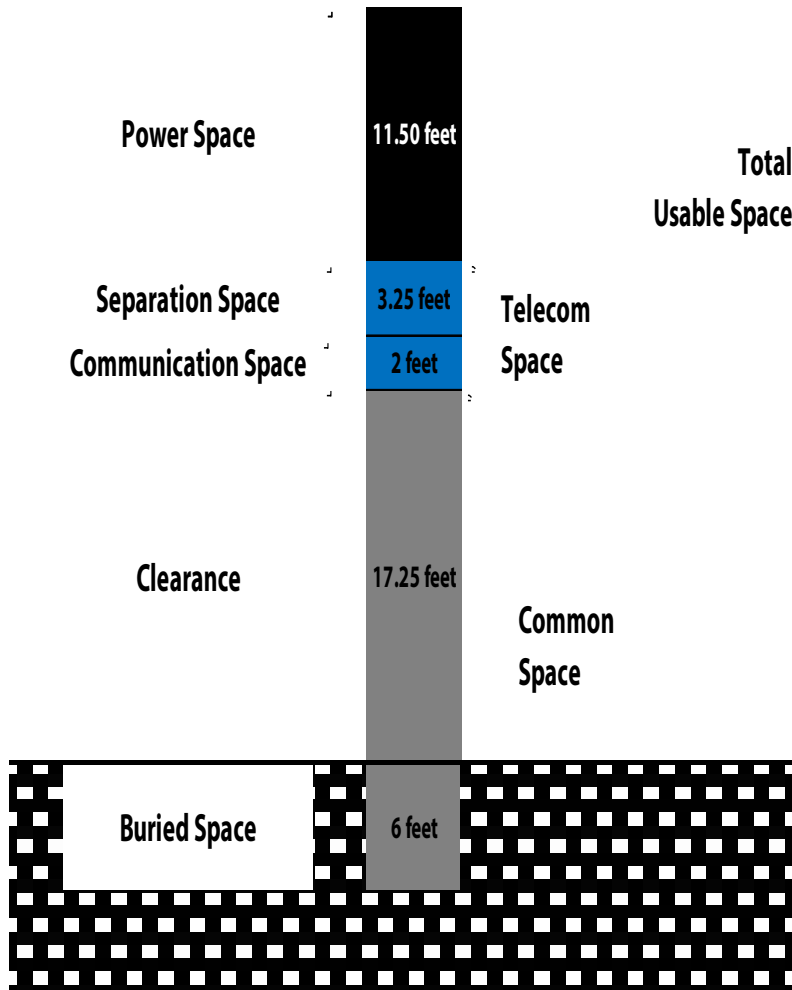


	Feet	Ratio	Attachers Assumed	Allocation Rate
	(A)	(B)	(C)	(D) = (B) x (C)
Power Space	11.50	68.7%	1	68.7%
Telecom Space	5.25	31.3%	1.5	20.9%
	16.75	100.0%	2.5	

Assume Indirect (Common) Cost = \$100 per pole

Pole Attachment Rate = 20.9% x \$100 = \$20.9 per telecom attacher

Example of Allocation Rate: *Equal Basis*



Standard Methodology

	Pole Space (Feet)		
	Total	Attachers	Space Per Attacher
A Power	11.50	1.00	11.50
B Telecom	5.25	1.50	3.50
C Total Usable (A+B)	16.75		
D Common Space	23.25	2.50	9.30
E Total Feet (C+D)	40.00		
D Space Allocated to Telecom Attacher (B+D)			12.80
F Allocation Ratio per Telecom attacher (D/E)			32.0%

Assume Indirect (Common) Cost = \$100 per pole

Pole Attachment Rate = 32.0% x \$100 = \$32.0 per telecom attacher

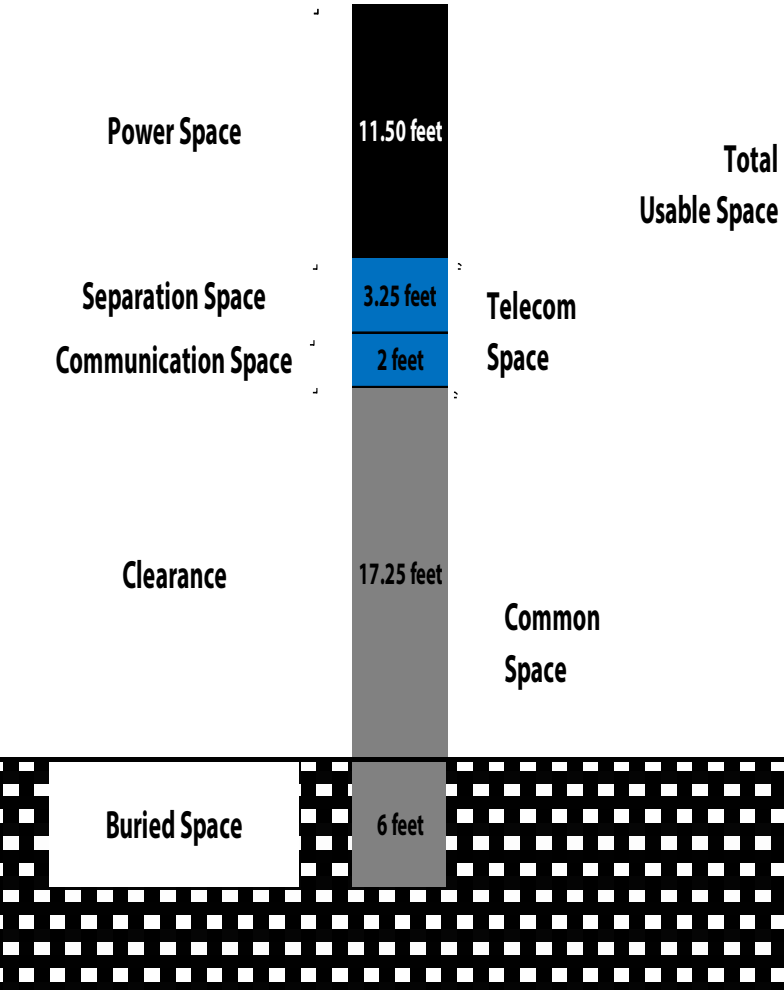
Alternative Approach

	Pole Space (Feet)		
	Total	Power	Telecom
A Usable Space	16.75	11.50	5.25
B Common Space	23.25	11.63	11.63
C Total Feet (A+B)	40.00	23.13	16.88
D Ratio	100.0%	57.8%	42.2%
E Number of attachers	2.5	1	1.5
F Allocation Ratio per attacher (D/E)		57.8%	28.1%

Assume Indirect (Common) Cost = \$100 per pole

Pole Attachment Rate = 28.1% x \$100 = \$28.1 per telecom attacher

Example of Allocation Rate: *Incremental basis*



Total Usable Space

- A Usable Space
 - B Common Space
 - C Total Feet (A+B)
 - D Ratio
 - E Number of attachers
 - F Allocation Ratio per attacher (D/E)
- n.a. applicable being not incremental*

Pole Space (Feet)		
Total	Power	Telecom

16.75	11.50	5.25
23.25	23.25	n.a
40.00	34.75	5.25
100.0%	86.9%	13.1%
2.5	1	1.5
	86.9%	8.8%

Assume Indirect (Common) Cost = \$100 per pole

Pole Attachment Rate = 8.8% x \$100 = \$8.8 per telecom attacher

Rate Methodology

Options

Basis

*Number of
“attachers” or
“users”*

- Presumptive number of attachers – **e.g. 2005 OEB and 1999 CRTC**
- Presumptive number of attachers by geography (rural, urban, sub-urban) – **e.g. FCC USA**
- Average number of attachers based on actual system data – **e.g. 2016 NBEUB and 2016 OEB – Ottawa Hydro**
- Attachers by Pole Type - 1 User (Power), 2 Users (Power + Telco), 3 Users (Power + Telco + Cable/3rd Party)

*Number of
“attachments”*

- Actual number of attachments by individual pole
- Presumptive number of attachments
- Presumptive number of attachments by geography (rural, urban, sub-urban)

Costing Approach

Options

Basis

1) Historical

Actual costs and/or 2 to 3 year budget (*may be based on latest actual costs. Since rates are determined for next 2 to 3 years, actual cost may be trended to reflect next 2 to 3 years budget estimates*)

2) Forward looking cost

5 to 7 year forecast (*applied if significant changes in cost structure are anticipated in future*)

3) Standard Costing

Benchmarking (cost based on industry normal cost structure and comparable jurisdictions which excludes extraordinary costs such as disaster recovery costs.

Relevant Decisions

Equal Sharing

1) 2005 OEB (Ontario)

2) 2016 OEB (Ontario) Ottawa Hydro

Pole Specs	2005 OEB (Equal Sharing)				2016 OEB (Equal Sharing) - Ottawa Hydro			
	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation
A Power space	11.50 ÷	1.00		A	11.50 ÷	1.00		A
B Communication space	2.00 ÷	2.50 =	0.80	B	2.00 ÷	1.74 =	1.10	B
C Separation space	3.25 ÷	2.50 =	1.30	C	3.25 ÷	1.74 =	1.90	C
D Total Usable Space	16.75	3.50	2.10	= A+B+C	16.75	2.74	3.00	= A+B+C
E Clearance	17.25			E	17.25			E
F Buried	6.00			F	6.00			F
G Total Common Space	23.25	3.50	6.64	= D+E+F	23.25	2.74	8.50	= D+E+F
H Total Pole Length	40.00		8.74	= D+G	40.00		11.50	= D+G
I Allocation Rate			21.9%	= 8.74 ÷ 40.0			28.8%	= 11.5 ÷ 40.0
J Common Cost	\$93.31		\$20.43	= \$93.21 X 21.9%	\$169.69		\$48.80	= \$169.69 X 28.8%
K Direct Cost (Admin)			\$1.92				\$4.23	
L Total Rate			\$22.35	= J+K			\$53.03	= J+K

- Both 2005 and 2016 (Ottawa Hydro) decisions include same pole specifications: **40 feet**
- Cost base per pole used is significantly different: **\$93.31 (2005)** versus **\$169.69 (2016)**
- 2016 Ottawa Hydro used average number of actual attachers (**1.74**) and the original 2005 used presumptive number of attachers (**2.5**) – as result allocation rate increased from **21.9% (2005)** to **28.8% (2016)**

Relevant Decisions

Proportional Sharing

1) 2016 NBEUB (New Brunswick): NB Power

2) 1999 CRTC: Telecom Poles

Pole Specs	2016 NBEUB (Proportional) - NB Power				1999 CRTC (Proportional)			
	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation
A Power space	9.70	÷ 1.00		A	11.50	÷ 1.00		A
B Communication space	2.00	÷ 1.40	= 1.43	B	2.00	÷ 2.00	= 1.00	B
C Separation space	3.30	÷ 1.40	= 2.30	D	3.25	÷ 2.00	= 1.60	C
D Total Usable Space	15.00	2.40	3.73	= A+B+C	16.75	2.60	2.60	= A+B+C
E Clearance	19.00			E	17.25			E
F Buried	6.00			F	6.00			F
G Total Common Space	25.00			= D+E+F	23.25			= D+E+F
H Total Pole Length	40.00		3.73	= D+G	40.00	2.60	2.60	= D+G
I Allocation Rate			25.2%	= [(2+3.3) ÷ 15.0] ÷ 1.4			15.50%	= 2.60 ÷ 16.75
J Common Cost	\$ 79.91		\$ 20.15	= \$93.21 X 21.9%	\$ 78.21		\$ 12.12	= \$84.13 X 15.5%
K Direct Cost (Admin)			\$ 0.62				\$ 3.77	
L Total Rate			\$ 20.77	= J+K			\$ 15.89	= J+K

- Pole size (40 feet) was used in both 2016 (NBEUB) and 1999 (CRTC) decisions
- CRTC used higher power space 11.5 feet versus 9.7 feet; CRTC applied presumptive number of attachers (**2.00**); NBEUB applied average number of actual attachers (**1.4**)
- No major difference in cost base per pole
- Due to higher power space and number of attachers applied in CRTC decision its allocation rate is 15.5% compared to 25.2% (NBEUB)

Cost Base Comparison

- 2005 OEB (Ontario) Ottawa Hydro (Equal Sharing)
- 2016 OEB (Ontario) Ottawa Hydro (Equal Sharing)
- 2016 NBEUB (New Brunswick): NB Power (Proportional Sharing)
- 1999 CRTC: Telecom Poles (Proportional Sharing)

Cost Components per Pole			2005 OEB	2016 OEB	2016 NBEUB	1999 CRTC
Direct Cost	Administration Cost	A	\$ 0.69	\$ 2.28	\$ 0.62	\$ 0.62
	Loss in Productivity	B	\$ 1.23	\$ 1.96	incl. below	\$ 3.15
	Total Direct Cost	C = A+B	\$ 1.92	\$ 4.23	\$ 0.62	\$ 3.77
Indirect Direct (Common) Cost	Net Embedded Cost per pole	D	\$ 478.00	\$ 1,479.02	\$ 346.68	\$ 478.00
	Capital Carrying Cost Rate %	E	11.42%	8.04%	5.13%	8.50%
	Depreciation Expense	F	\$ 31.11	\$ 38.89	\$ 19.34	\$ 31.11
	Pole Maintenance Expense	G	\$ 7.61	\$ 11.89	\$ 30.93	\$ 6.47
	Capital Carrying Cost	H = D x E	\$ 54.59	\$ 118.91	\$ 17.78	\$ 40.63
	Utility Tax Cost	I	-	-	\$ 6.43	-
	Loss in Productivity	J	incl. above	incl. above	\$ 5.43	incl. above
	Total Indirect (Common) Cost	K = F+...+J	\$ 93.31	\$ 169.69	\$ 79.91	\$ 78.21

- \$169.69 per pole cost base (2016 Ottawa Hydro decision) is almost 2.5 time higher than that of other three decisions
- \$30.93 maintenance cost (2016 NBEUB) is significantly higher compared to others

2016 OEB - Ottawa Hydro

Impact on rate if decision based on proportional use basis

Pole Specs	2016 OEB (Equal Sharing) - Ottawa Hydro				2016 OEB (PROPORTIONAL instead of Equal Sharing) -			
	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation
A Power space	11.50 ÷	1.00		A	11.50 ÷	1.00		A
B Communication space	2.00 ÷	1.74 =	1.10	B	2.00 ÷	1.74 =	1.10	B
C Separation space	3.25 ÷	1.74 =	1.90	C	3.25 ÷	1.74 =	1.90	C
D Total Usable Space	16.75	2.74	3.00	= A + B + C	16.75	2.74	3.00	= A + B + C
E Clearance	17.25			E	17.25			E
F Buried	6.00			F	6.00			F
G Total Common Space	23.25	2.74	8.50	= D + E + F	23.25	2.74	8.50	= D + E + F
H Total Pole Length	40.00		11.50	= D + G	40.00		11.50	= D + G
I Allocation Rate			28.8%	= 11.5 ÷ 40.0			18.0%	= [(2+3.25) ÷ 16.75] ÷ 1.74
J Common Cost	\$ 169.69		\$ 48.80	= \$169.69 X 28.8%	\$ 169.69		\$ 30.60	= \$169.69 X 18.0%
K Direct Cost (Admin)			\$ 4.23				\$ 4.23	
L Total Rate			\$ 53.03	= J + K			\$ 34.83	= J + K

- If methodology to allocate common costs changed from equal sharing to proportion sharing the allocation rate decreases from 28.8% to 18.0%
- As a result the attachment rate per pole would decrease by 34% decrease from \$53.03 to \$34.83

2016 NBEUB – New Brunswick Electric Power

Impact on rate if decision based on equal sharing basis

Pole Specs	2016 NBEUB (Proportional) - NB Power				2016 NBEUB (EQUAL SHARING instead of Proportional) - NB			
	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation	Joint Pole Length (ft.)	Attachers	Length Per Attacher (ft.)	Explanation
A Power space	9.70	÷ 1.00		A	9.70	÷ 1.00		A
B Communication space	2.00	÷ 1.40	= 1.43	B	2.00	÷ 1.40	= 1.43	B
C Separation space	3.30	÷ 1.40	= 2.30	D	3.30	÷ 1.40	= 2.30	D
D Total Usable Space	15.00	2.40	3.73	= A + B + C	15.00	2.40	3.73	= A + B + C
E Clearance	19.00			E	19.00			E
F Buried	6.00			F	6.00			F
G Total Common Space	25.00			= D + E + F	25.00	2.40	10.40	= D + E + F
H Total Pole Length	40.00		3.73	= D + G	40.00		14.13	= D + G
I Allocation Rate			25.2%	= [(2+3.3) ÷ 15.0] ÷ 1.4			35.3%	= 14.13 ÷ 40.0
J Common Cost	\$ 79.91		\$ 20.15	= \$93.21 X 21.9%	\$ 79.91		\$ 28.24	= \$79.91 X 35.3%
K Direct Cost (Admin)			\$ 0.62				\$ 0.62	
L Total Rate			\$ 20.77	= J + K			\$ 28.86	= J + K

- If methodology to allocate commons cost changed from proportional use to equal sharing basis the allocation rate increases from 25.2% to 35.3%
- As a result the attachment rate per pole would increase by 36% from \$20.77 to \$28.86

Key Issues

Framework	Costing Approach	Allocation Methodology	Rate Methodology
<ul style="list-style-type: none"> • Rate Framework Approach and Inputs • Nature and quantum of the joint use pole-sharing arrangement that exists between the hydro company and the local telephone company • Whether there should be a province-wide rate or a company-specific rate • Relationship between pole attachment rates and electricity rates to consumers • Time period and process for pole rate review • Future Proofing 	<ul style="list-style-type: none"> • Historical versus Forecasted Costs • How power-specific assets on the pole should be treated to ensure that they are not recovered through the pole attachment rate • How special circumstances and events should be treated (ice storms, fires, large pole replacement programs) 	<ul style="list-style-type: none"> • Direct and Indirect Costs • Cost Allocation / Accounting Principles/ Cost Sharing Model • How the common costs of a pole should be allocated among the various users of the pole • Appropriate space on a pole that should be allocated to each of the different attachers 	<ul style="list-style-type: none"> • Third Party Attachments / Overlapping / Access (Shared Access) • Number and types of all possible attachers, including actual and potential, third party power and wireless service providers • Joint use poles that are not used by communications attachers

Next Steps.....
