

## **Consolidated Edison Company of New York, Inc.**

### **Rider X - Workpapers**

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## Backbone/Spur Route Rate Calculation

**Formula based on FCC "Reconsideration Order", Appendix F-2, adopted May 22, 2001**

Rate = (1 / number of innerduct per duct) X (Net Conduit Investment / Total System Conduit Footage) X Carrying Charge

Where;

Information Source

Net Conduit Investment	(A)	1,661,500,598	Schedule 1, page 2 of 5
Carrying Charge	(B)	45.73%	Schedule 1, page 4 of 5
Total System Conduit Footage	(C)	130,641,754	Schedule 1, page 5 of 5
Rate per Foot of Innerduct (Existing Conduit)	= (1 / Number of Innerducts per duct) X ( A / C ) X B		
Average Innerduct per Duct		2.93	Schedule 1, page 5 of 5
Rate per Foot of Innerduct (Existing Conduit)		<b>\$1.9848</b>	Annual Rate

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## Net Conduit Investment Calculation

Information Source

Gross Conduit Investment, Acct. 366	\$ 3,246,391,803	PSC Annual Report, p. 207, line 61, col g
Less Accumulated Depreciation, Acct. 366	680,983,955	Schedule 1, page 3 of 5
Less ADIT, Conduit	<u>903,907,250</u>	Schedule 1, page 3 of 5
Net Conduit Investment	\$ 1,661,500,598	

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**ADIT & Accumulated Depreciation**

Formula based on FCC "Reconsideration Order", Appendix F-2, adopted May 22, 2001

**ADIT****Accounts 366, 367, 369**

ADIT (366, 367, 369) = [Gross Conduit Investment (Account 366, 367, or 369) / Total Gross Plant (electric)] X (Total ADIT Account 190, electric)

Given:

			<u>Information Source</u>
Gross Conduit Investment, Account 366	A	3,246,391,803	PSC Annual Report, p. 207, line 61, col g
Gross UG Conductors and Devices Investment, Account 367	B	4,898,003,553	PSC Annual Report, p. 207, line 62, col g
Gross Services Conduit Investment, Account 369	C	578,291,642	PowerPlant CPR
Total Gross Plant, electric	D	20,979,626,015	PSC Annual Report, p. 200, line 8, col c
	E	5,841,450,205	Acct (281, 282, 283) - 190

Then:

ADIT, conduit, Account 366	= (A / D) X E	903,907,250
ADIT, UG Conductors and Devices, Account 367	= (B / D) X E	1,363,772,826
ADIT, services, Account 369	= (C / D) X E	<u>161,016,304</u>
		2,428,696,380

**Accumulated Depreciation****Accounts 366, 367, 369**

			<u>Information Source</u>
Electric Plant			
Accumulated Depreciation, Plant	F	4,400,820,837	PSC Annual Report, p. 200, line 22, col c
Gross Plant Investment	G	20,979,626,015	PSC Annual Report, p. 200, line 8, col c
Plant Depreciation Ratio, overall	= (F / G)	0.21	
Conduit, Account 366			
Gross Conduit Investment	H	3,246,391,803	PSC Annual Report, p. 207, line 61, col g
Plant Depreciation Ratio	I	<u>0.21</u>	
Accumulated Depreciation, Conduit	= (H X I)	680,983,955	
Underground Conductors and Devices, Account 367			
Gross UG Conductors and Devices Investment	J	4,898,003,553	PSC Annual Report, p. 207, line 62, col g
Plant Depreciation Ratio	K	<u>0.21</u>	
Accumulated Depreciation	= (J X K)	1,027,436,623	
Services, Account 369			
Gross Services Conduit Investment	L	578,291,642	PowerPlant CPR
Plant Depreciation Ratio	M	<u>0.21</u>	
Accumulated Depreciation, services	= (L X M)	121,306,162	

**BACKBONE / SPUR Carrying Charge**

Formula based on FCC "Reconsideration Order", Appendix F-2, adopted May 22, 2001

**PSC 366 Carrying Charge****A) Administrative Element** = Total A&G / (Gross plant - Depreciation - ADIT)Information Source

Total A&G	1,173,113,341	PSC Annual Report, p. 323, line 168, col b
Gross Plant Investment, electric	20,979,626,015	PSC Annual Report, p. 200, line 8, col c
Accumulated Depreciation, plant	4,400,820,837	PSC Annual Report, p. 200, line 22, col c
	5,841,450,205	Acct (281, 282, 283) - 190

**Administrative Element** **10.93%****B) Maintenance Element** =  $\frac{\text{Account 594}}{[(\text{Book Cost } 366+367+369) - (\text{Depreciation } 366+367+369) - (\text{ADIT } 366+367+369)]}$ 

Account 594 142,735,114 PSC Annual Report, p. 322, line 120, col b

Conduit Investment		
Book Cost, 366	3,246,391,803	PSC Annual Report, p. 207, line 61, col g
Book Cost, 367	4,898,003,553	PSC Annual Report, p. 207, line 62, col g
Book Cost, 369	578,291,642	PowerPlant CPR
	8,722,686,998	

Conduit Depreciation		
Account 366	680,983,955	Schedule 1, page 3 of 5
Account 367	1,027,436,623	Schedule 1, page 3 of 5
Account 369	121,306,162	Schedule 1, page 3 of 5
	1,829,726,739	

ADIT 366	903,907,250	Schedule 1, page 3 of 5
ADIT 367	1,363,772,826	Schedule 1, page 3 of 5
ADIT 369	161,016,304	Schedule 1, page 3 of 5
	2,428,696,380	

**Maintenance Element** **3.20%****C) Depreciation Element** =  $\frac{(\text{Gross Conduit Investmt, Acct. 366}) \times \text{Depreciation rate}}{\text{Net Conduit Investment}}$ 

Gross Conduit Investment, Acct. 366	3,246,391,803	PSC Annual Report, p. 207, line 61, col g
Net Conduit Investment	1,661,500,598	Schedule 1, page 2 of 5
Depreciation Rate	1.75%	

**Depreciation Element** **3.42%****D) Taxes Element** =  $\frac{(\text{Account } 408.1 + 409.1 + 410.1 + 411.4 - 411.1)}{(\text{Gross Plant Inv} - \text{Depreciation} - \text{ADIT})}$ 

Account 408.1	1,403,448,695	PSC Annual Report, p. 115, line 13, col e
Account 409.1	148,805,697	
Account 410.1	1,187,108,287	PSC Annual Report, p. 115, line 16, col e
Account 411.4	(4,398,000)	PSC Annual Report, p. 115, line 18, col e
Account 411.1	916,856,274	PSC Annual Report, p. 115, line 17, col e
Gross Plant Inv	20,979,626,015	PSC Annual Report, p. 200, line 8, col c
Depreciation, Electric Plant	4,400,820,837	PSC Annual Report, p. 200, line 22, col c
ADIT	5,841,450,205	

**Taxes Element** **16.93%****E) Rate of Return Element** **11.25%** FCC default**Carrying Charge Rate** **(A+B+C+D+E)** **45.73%**

Consolidated Edison Company of New York, Inc.  
Rider X**Innerduct Footage, Account 366**

Accounts 6096 &amp; 6994

Duct size diameter

Footage

Number of innerduct

Total Footage of Innerduct

< 3"	3" - 3.5"	4" - 4.5"	5"+	Total System Footage
406,556	25,407,076	88,174,961	16,653,161	<b>130,641,754</b>
1	2	3	4	
<b>406,556</b>	<b>50,814,152</b>	<b>264,524,883</b>	<b>66,612,644</b>	<b>382,358,235</b>

Total Footage of Innerduct for  
Backbone / Spur System**2.93**Innerduct per duct,  
current weighted averageAccount 6096

Footage less than 3"

3 - 3.5

4" - 4.5"

5"+

393,792

11,225,660

62,733,903

9,037,109

Sub-total

393,792

11,225,660

62,733,903

9,037,109

83,390,464

Account 6994

Footage less than 3"

3 - 3.5

4" - 4.5"

5"+

12,764

14,181,416

25,441,058

7,616,052

Sub-total

12,764

14,181,416

25,441,058

7,616,052

47,251,290

Total

**130,641,754**

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## Service Lateral Rental Rate Calculation

Rate = (1 / number of innerduct per duct) X (Net Service Investment / Total Service Footage) X Carrying Charge

**Note:** The weighted average number of innerduct per service duct is **1.89** from Schedule 2, page 3 of 4

Where;

			<u>Information Source</u>
Net Service Investment	(A)	295,969,177	Schedule 2, page 2 of 4
Carrying Charge	(B)	48.82%	Schedule 2, page 4 of 4
Total footage of duct	(C)	18,449,044	Acct. 369, PowerPlant CPR , Acct 369200
Rate per Foot of Service Lateral	= ( A / C ) X B X 1 / 1.89		Schedule 2, page 3 of 4
Rate per Foot of Service Lateral	\$	<b>4.14</b>	Annual Rate

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## Net Service Investment Calculation

Where;

Net Service Conduit Investment = (Gross Service Investment, Acct. 369) - (Accum. Service Depreciation) - (ADIT, services)

Book Cost, Acct. 369	\$ 578,291,642	PowerPlant CPR
Less Depreciation 369	\$ 121,306,162	Schedule 1, page 3 of 5
Less ADIT (services)	<u>\$ 161,016,304</u>	Schedule 1, page 3 of 5
Net Service Conduit Investment	\$295,969,177	



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## **Service Laterals- Average Weighted Innerduct per Duct**

**Acct. 369**

**Based on Data From PowerPlant CPR and PowerPlant Equipment ledger Year-end 2012**

<u>Diameter</u>	<u>No. Svcs</u>	<u>Feet</u>	<u>Innerduct per Duct</u>	<u>Innerduct feet</u>
1	175	4,448	0	-
1.5	1,814	56,481	0	-
2	217,381	8,189,050	1	8,189,050
2.5	20,270	731,820	1	731,820
3	89,145	2,437,543	2	4,875,086
3.5	3,999	126,949	2	253,898
4	155,376	6,748,378	3	20,245,134
4.5	13	506	3	1,518
5	2,042	152,541	4	610,164
6	1	1,328	5	6,640
	490,216	18,449,044		<b>34,913,310</b>

Total Innerduct Footage	34,913,310
Total Service Footage	18,449,044
Average Innerduct per Service Duct	<b>1.89</b>

## Consolidated Edison Company of New York, Inc.

Schedule 2

**Service Lateral Carrying Charge** Rider X

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**Account 369****A) Administrative Element**

Same as Backbone/Spur	<b>10.93%</b>	Schedule 1, page 4 of 5
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**B) Maintenance Element**

Same as Backbone/Spur	<b>3.20%</b>	Schedule 1, page 4 of 5
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**C) Depreciation Element =  $\frac{(\text{Gross Service Investment, 369}) \times \text{Depreciation Rate}}{\text{Net Service Investment, 369}}$** **Information Source**

Gross Service Conduit Investment, 369	578,291,642	PowerPlant CPR
Net Service Conduit Investment	295,969,177	Schedule 2, page 2 of 4
Depreciation rate, services	3.33%	
	<b>6.51%</b>	

**D) Taxes Element**

Same as Backbone/Spur	<b>16.93%</b>	Schedule 1, page 4 of 5
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**E) Rate of Return Element**

<b>11.25%</b>	Schedule 1, page 4 of 5	, FCC Default
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<b><u>Carrying Charge Rate</u></b>	(A+B+C+D+E)	<b>48.82%</b>
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**Consolidated Edison Company of New York, Inc.****Rider X****Calculation of Rates Effective September 1, 2013****Calculation of Rental Rate for Use of Innerduct****Electric Underground Facilities**

a	Rental Rate (\$/ft of innerduct)	\$1.9848
b	Innerduct Footage in existing duct	<u>514,862</u>
c	Revenue Requirement, Electric Underground Facilities (a * b)	\$1,021,898

**Telecommunications Underground Facilities**

d	Innerduct Footage	103,623
<u>Calculation of Levelized Charge</u>		
e	Telecommunications Underground Facilities Costs	\$1,753,270
f	Levelized Carrying Charge	19.45%
g	Levelized Charge (e * f)	\$341,011
<u>Calculation of 10% Charge on Original Book Cost</u>		
h	Original Book Cost	\$13,989,265
i	10% Charge (h * 10%)	1,398,926
j	Revenue Requirement, Telecom Underground Facilities (g + i)	\$1,739,937

**Calculation of Rental Rate for Use of Innerduct**

k	Total Revenue Requirement (c + j)	\$2,761,835
l	Footage of Innerduct in use or reserved in Electric (b)	514,862
m	Footage of Telecom Underground Facilities (d)	<u>103,623</u>
n	Total Footage (l + m)	618,485
o	Rental Rate for Use of Innerduct (k / n), \$ Per Innerduct Foot Per Year	<b>\$4.4655</b>

**Calculation of Rental Rate for Telecom Manholes****Calculation of Levelized Charge**

p	Telecom Underground Facilities Costs, with Adders	\$0
q	Levelized Carrying Charge	19.45%
r	Levelized Charge (p * q)	\$0

**Calculation of 10% Charge on Original Book Cost**

s	Original Book Cost	\$9,157,417
t	10% Charge (s * 10%)	915,742
u	Rev Requirement, Telecom Manholes (r + t)	\$915,742
v	Number of Manhole Uses	<u>412</u>
w	Rental Rate, \$ / manhole use / year (u / v)	<b>\$2,223</b>

**Tunnel Rate Calculations**

Formula =  $\frac{(\text{Revenue Requirement of Unusable Space})}{\text{Number of Users}} + \frac{((25\% \text{ of Book Cost} - \text{Revenue Requirement of Unusable Space}) \times \text{Area of Innerduct w/ hanger})}{\text{Usable Area}}$

		Tunnel Crossings		
		A	B	C
Book Cost, Year-End 2012	a	\$ 5,137,096	\$ 16,547,680	\$ 9,505,110
25% Carrying Charge = a X 0.25	b	\$ 1,284,274	\$ 4,136,920	\$ 2,376,277
Shaft Diameter, feet	c	10	26	18
Total Area sq footage = $3.14 \times (c / 2)^2$	d	78.5	530.7	254.3
Usable Area = d - f	e	31.6	227.4	75.1
Common Area, See p. 2 of 2	f	46.9	303.3	179.2
Percent Unusable Area = $f / d$	g	59.7%	57.2%	70.5%
Revenue Requirement of Usable Area = b - j	h	\$ 517,391	\$ 1,772,347	\$ 701,763
Cost per Sq. Ft., Usable Area = $h / e$	i	\$ 16,360	\$ 7,795	\$ 9,344
Revenue Requirement of Unusable Area = b X g	j	\$ 766,883	\$ 2,364,573	\$ 1,674,514
Area of innerduct with hanger, 2" x 2" space	k	0.03	0.03	0.03
Cost per innerduct = i X k	l	\$ 491	\$ 234	\$ 280
Total Cost per innerduct or cable = $(j / m) + l$				
Number of Users*				
5	m	\$153,868		
5	m		\$473,149	
6	m			\$279,366

\* Con Edison electric is considered a separate user for each transmission voltage in a tunnel.  
Con Edison Gas, Steam and communication are each considered separate users.  
Each Telecom innerduct/cable is considered a user.

**Tunnel Rate Calculations****UNUSABLE SPACE CALCULATION****Tunnel Crossing A**

		Total Area
Diameter	10.17 ft	
Total Area	78.5 sq-ft	78.5
<u>Unusable/common space items in shaft</u>		
Elevator	(5 x 2.5)/2	6.3
Landing	25% of shaft inclusive of 1/2 elev & Maint riser	19.6
I beams	.67 x 27ft	18
Ladder	1.5 x 2	3
Maintenance riser	0	0
	unusable/common space	<u>46.9</u>

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**Tunnel Crossing B**

		Total Area
Dia	26 ft	
Total Area	530.7 sq-ft	530.7 sq-ft
<u>Unusable/common space items in shaft</u>		
Elevator	8.125 x 3.25	0.0 sq-ft
Landing	4.875 x 19.5 inclusive of elevator	95.1 sq-ft
I beams	(.83 x 68.25) + (.5 x 51.2)	82.485 sq-ft
Ladder	1.5 x 2	3 sq-ft
Maintenance riser		122.8 sq-ft
	unusable/common space	<u>303.3</u>

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**Tunnel Crossing C**

		Total Area
Dia	18 ft	
Total Area	254.34 sq-ft	254.34 sq-ft
<u>Unusable/common space items in shaft</u>		
Elevator	0	0 sq-ft
Landing	6.25 x 20 inclusive of elevator & Maint riser	125 sq-ft
I beams	(.67 x 69.3) + (.5 x 10)	51.2 sq-ft
Ladder	1.5 x 2	3 sq-ft
Maintenance riser	0	0 sq-ft
	unusable/common space	<u>179.2</u>

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## River Crossings

### **River Crossing, D**

Original book cost	645,518	A
Number of duct	7	B
Average cost per duct	\$92,217	$C = (A / B)$
Number of Innerduct per Duct	5	D
Carrying Charge	25.00%	E
Annual Rate	<b>\$4,611</b>	$F = (C/D)*E$

### **River Crossing, E**

Original book cost	79,938	A
Number of duct	2	B
Average cost per duct	\$39,969	$C = (A / B)$
Number of Innerduct per Duct	7	D
Carrying Charge	25.00%	E
Annual Rate	<b>\$1,427</b>	$F = (C/D)*E$

**Consolidated Edison Company of New York, Inc.**  
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## Manhole POE to Enter/Exit Company Facilities

Formula = 
$$\frac{(\text{Carrying Chg. of an Elec. MH}) \times (\text{Avg. Original Bk. Cost of an Elec. MH})}{(\text{Avg. No. of POE's in an Elec. MH})}$$

		<u>Formula</u>	
Average Original Book Cost of Electric Manhole	a		\$5,559
Carrying Charge of an Electric Manhole	b		25%
Average Number of POE's in an Electric Manhole	c		16
<b>Rate</b>		(a X b)/c	<b>\$86.8594</b>

## Consolidated Edison Company of New York, Inc.

## Rider X

## Transmission Tower Attachments

$$\text{Formula} = \frac{(\text{Book Cost, facility}) \times (\text{Number of Pot. Telecom Attachments per Tower}) \times (\text{Carrying Charge})}{\text{Total Potential Attachments per Tower}}$$

## "K" Line

Book Cost, entire facility- towers and fixtures only	a	\$31,376,771
Potential Number of Telecom Attachments (used) per Tower	b	1
Carrying Charge	c	25.00%
Total Potential Attachments* per Tower	d	16
Rate, entire facility	e	(a x b xc)/d \$490,262.05
Number of Towers	f	378
Rate/Tower	g	g = (e / f ) \$1,296.99
Usable Space Factor	h	80.00%
<b>Attachment/Tower</b>	i	i = g * h <b>\$1,038</b>

## "E" Line

Book Cost, entire facility- towers and fixtures only	a	\$6,033,597
Potential Number of Telecom Attachments (used) per Tower	b	1
Carrying Charge	c	25.00%
Total Potential Attachments* per Tower	d	16
Rate, entire facility	e	(a x b xc)/d \$94,274.95
Number of Towers	f	144
Rate/Tower	g	g = (e / f ) \$654.69
Usable Space Factor	h	80.00%
<b>Attachment/Tower</b>	i	i = g * h <b>\$524</b>

\* 16 Total Potential Attachments

2 pair of 3 phase conductors	<a href="#">6</a>
2 Circuits	12
2 Static lines	<a href="#">2</a>
	14
Potential Telecom Attachments	<a href="#">2</a>
Total Potential Attachments	<b>16</b>



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## Rights-of-Way

Findings based on Real Estate Appraisal study of February 27, 1997 with 3% annual escalation

<b>Aerial:</b>	<b>\$0.7634</b> per foot	1998	0.4900	1.03
		1999	0.5047	
		2000	0.5198	
		2001	0.5354	
		2002	0.5515	
		2003	0.5680	
		2004	0.5851	
		2005	0.6026	
		2006	0.6207	
		2007	0.6393	
		2008	0.6585	
		2009	0.6783	
		2010	0.6986	
		2011	0.7196	
		2012	0.7412	
		<b>2013</b>	<b>0.7634</b>	
<b>Underground:</b>	<b>\$1.5580</b> per foot	1998	1.0000	1.03
		1999	1.0300	
		2000	1.0609	
		2001	1.0927	
		2002	1.1255	
		2003	1.1593	
		2004	1.1941	
		2005	1.2299	
		2006	1.2668	
		2007	1.3048	
		2008	1.3439	
		2009	1.3842	
		2010	1.4258	
		2011	1.4685	
		2012	1.5126	
		<b>2013</b>	<b>1.5580</b>	

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**Rider X****Calculation of Average Cost of a Telecom Manhole**

Manhole Construction Costs Through May 2003 (incl adders)	\$9,100,368
Manhole Costs June through October 2003	51,660
Telergy Manholes Occupied by CEC through Oct. 2003	531,505
Manhole Costs Nov. 2003 through Jan. 2004	51,656
Subtotal	\$9,735,189
Customer Contributions to Manhole Depreciation	(1,330,196)
Manhole Costs Net of Depreciation Recoveries	\$8,404,993
CIAC Tax	1,284,332
Manhole Cost Including CIAC	\$9,689,325
Add Back Depreciation Recoveries	1,330,196
Subtotal	\$11,019,521
Manhole Costs Feb. 2004 - June 2004	\$74,800
Manhole Costs July 2004 - June 2005	\$41,379
Manhole Costs July 2005 - June 2006	\$104,669
Manhole Costs July 2006 - June 2007	\$30,716
Manhole Costs July 2007 - June 2008	\$0
Manhole Costs July 2008 - June 2009	\$0
Manhole Costs July 2009 - June 2010	\$0
Manhole Costs July 2010 - June 2011	\$60,987
Manhole Costs July 2011 - June 2012	\$95,344
Manhole Costs July 2012 - June 2013	\$0
Total Manhole Costs	\$11,427,415
Number of Telecom Manholes	281
Average Cost Per Telecom Manhole	<b>\$40,667</b>

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**Unused Telecom Manhole Average Cost**

	Number of Manholes	Total Costs	Average Cost Per Manhole
Telergy Manholes	83	\$2,925,641	\$35,249