

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)	1,603,159,431	Schedule 1, page 2 of 5
Carrying Charge	(B)	46.38%	Schedule 1, page 4 of 5
Total System Conduit Footage	(C)	130,416,861	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)		\$1.9460	Annual Rate

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Net Conduit Investment Calculation

		<u>Information Source</u>
Gross Conduit Investment, Acct. 366	\$ 3,086,956,033	PSC Annual Report, p. 207, line 61, col g
Less Accumulated Depreciation, Acct. 366	634,278,919	Schedule 1, page 3 of 5
Less ADIT, Conduit	<u>849,517,683</u>	Schedule 1, page 3 of 5
Net Conduit Investment	\$ 1,603,159,431	

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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:

Information Source

Gross Conduit Investment, Account 366	A	3,086,956,033	PSC Annual Report, p. 207, line 61, col g
Gross UG Conductors and Devices Investment, Account 367	B	4,650,660,376	PSC Annual Report, p. 207, line 62, col g
Gross Services Conduit Investment, Account 369	C	560,110,525	PowerPlant CPR
Total Gross Plant, electric	D	19,802,506,077	PSC Annual Report, p. 200, line 8, col c
	E	5,449,568,733	Acct (281, 282, 283) - 190

Then:

ADIT, conduit, Account 366	= (A / D) X E	849,517,683
ADIT, UG Conductors and Devices, Account 367	= (B / D) X E	1,279,842,727
ADIT, services, Account 369	= (C / D) X E	<u>154,140,127</u>
		2,283,500,537

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

Electric Plant			
Accumulated Depreciation, Plant	F	4,068,834,158	PSC Annual Report, p. 200, line 22, col c
Gross Plant Investment	G	19,802,506,077	PSC Annual Report, p. 200, line 8, col c
Plant Depreciation Ratio, overall	= (F / G)	0.21	
Conduit, Account 366			
Gross Conduit Investment	H	3,086,956,033	PSC Annual Report, p. 207, line 61, col g
Plant Depreciation Ratio	I	<u>0.21</u>	
Accumulated Depreciation, Conduit	= (H X I)	634,278,919	
Underground Conductors and Devices, Account 367			
Gross UG Conductors and Devices Investment	J	4,650,660,376	PSC Annual Report, p. 207, line 62, col g
Plant Depreciation Ratio	K	<u>0.21</u>	
Accumulated Depreciation	= (J X K)	955,574,296	
Services, Account 369			
Gross Services Conduit Investment	L	560,110,525	PowerPlant CPR
Plant Depreciation Ratio	M	<u>0.21</u>	
Accumulated Depreciation, services	= (L X M)	115,086,284	

BACKBONE / SPUR Carrying Charge

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

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

Total A&G	1,063,885,632	PSC Annual Report, p. 323, line 168, col b
Gross Plant Investment, electric	19,802,506,077	PSC Annual Report, p. 200, line 8, col c
Accumulated Depreciation, plant	4,068,834,158	PSC Annual Report, p. 200, line 22, col c
	5,449,568,733	Acct (281, 282, 283) - 190

Administrative Element **10.34%**

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	142,340,000	PSC Annual Report, p. 322, line 120, col b
Conduit Investment		
Book Cost, 366	3,086,956,033	PSC Annual Report, p. 207, line 61, col g
Book Cost, 367	4,650,660,376	PSC Annual Report, p. 207, line 62, col g
Book Cost, 369	560,110,525	PowerPlant CPR
	8,297,726,934	
Conduit Depreciation		
Account 366	634,278,919	Schedule 1, page 3 of 5
Account 367	955,574,296	Schedule 1, page 3 of 5
Account 369	115,086,284	Schedule 1, page 3 of 5
	1,704,939,499	
ADIT 366	849,517,683	Schedule 1, page 3 of 5
ADIT 367	1,279,842,727	Schedule 1, page 3 of 5
ADIT 369	154,140,127	Schedule 1, page 3 of 5
	2,283,500,537	

Maintenance Element **3.30%**

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

Gross Conduit Investment, Acct. 366	3,086,956,033	PSC Annual Report, p. 207, line 61, col g
Net Conduit Investment	1,603,159,431	Schedule 1, page 2 of 5
Depreciation Rate	1.75%	

Depreciation Element **3.37%**

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	1,428,235,717	PSC Annual Report, p. 115, line 13, col e
Account 409.1	13,389,168	
Account 410.1	1,752,027,548	PSC Annual Report, p. 115, line 16, col e
Account 411.4	(4,581,000)	PSC Annual Report, p. 115, line 18, col e
Account 411.1	1,326,063,954	PSC Annual Report, p. 115, line 17, col e
Gross Plant Inv	19,802,506,077	PSC Annual Report, p. 200, line 8, col c
Depreciation, Electric Plant	4,068,834,158	PSC Annual Report, p. 200, line 22, col c
ADIT	5,449,568,733	

Taxes Element **18.12%**

E) **Rate of Return Element** **11.25%** FCC default

Carrying Charge Rate **(A+B+C+D+E)** **46.38%**

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Innerduct Footage, Account 366

Accounts 6096 & 6994

Duct size diameter

Footage

< 3"	3" - 3.5"	4" - 4.5"	5"+	Total System Footage
405,576	25,496,231	87,971,038	16,544,016	130,416,861

Number of innerduct

1	2	3	4	
405,576	50,992,462	263,913,114	66,176,064	381,487,216

Total Footage of Innerduct

Total Footage of Innerduct for
Backbone / Spur System

2.93	Innerduct per duct, current weighted average
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<u>Account 6096</u>	Footage less than 3"	3 - 3.5	4" - 4.5"	5"+	
	392,812	11,233,055	62,458,804	8,919,448	
Sub-total	<u>392,812</u>	<u>11,233,055</u>	<u>62,458,804</u>	<u>8,919,448</u>	83,004,119

<u>Account 6994</u>	Footage less than 3"	3 - 3.5	4" - 4.5"	5"+	
	12,764	14,263,176	25,512,234	7,624,568	
Sub-total	<u>12,764</u>	<u>14,263,176</u>	<u>25,512,234</u>	<u>7,624,568</u>	<u>47,412,742</u>
Total					130,416,861

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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)	290,884,114	Schedule 2, page 2 of 4
Carrying Charge	(B)	49.42%	Schedule 2, page 4 of 4
Total footage of duct	(C)	18,489,297	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	\$	4.12	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	\$ 560,110,525	PowerPlant CPR
Less Depreciation 369	\$ 115,086,284	Schedule 1, page 3 of 5
Less ADIT (services)	<u>\$ 154,140,127</u>	Schedule 1, page 3 of 5
Net Service Conduit Investment	\$290,884,114	

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Service Laterals- Average Weighted Innerduct per Duct

Acct. 369

Based on Data From PowerPlant CPR and PowerPlant Equipment Year-End 2011

<u>Diameter</u>	<u>No. Svcs</u>	<u>Feet</u>	<u>Innerduct per Duct</u>	<u>Innerduct feet</u>
1	172	4,448	0	-
1.5	1,804	56,564	0	-
2	218,704	8,240,162	1	8,240,162
2.5	20,307	733,467	1	733,467
3	88,689	2,448,041	2	4,896,082
3.5	4,024	127,266	2	254,532
4	163,220	6,724,974	3	20,174,922
4.5	13	506	3	1,518
5	2,220	152,541	4	610,164
6	<u>4</u>	<u>1,328</u>	5	<u>6,640</u>
	499,157	18,489,297		34,917,487

Total Innerduct Footage	34,917,487
Total Service Footage	18,489,297
Average Innerduct per Service Duct	1.89

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Service Lateral Carrying Charge
Account 369

A) Administrative Element

Same as Backbone/Spur **10.34%** Schedule 1, page 4 of 5

B) Maintenance Element

Same as Backbone/Spur **3.30%** Schedule 1, page 4 of 5

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	560,110,525	PowerPlant CPR
Net Service Conduit Investment	290,884,114	Schedule 2, page 2 of 4
Depreciation rate, services	3.33%	
	6.41%	

D) Taxes Element

Same as Backbone/Spur **18.12%** Schedule 1, page 4 of 5

E) Rate of Return Element **11.25%** Schedule 1, page 4 of 5 , FCC Default

Carrying Charge Rate (A+B+C+D+E) **49.42%**

Consolidated Edison Company of New York, Inc.**Rider X****Calculation of Rates Effective September 1, 2012****Calculation of Rental Rate for Use of Innerduct****Electric Underground Facilities**

a	Rental Rate (\$/ft of innerduct)	\$1.9460
b	Innerduct Footage in existing duct	<u>687,801</u>
c	Revenue Requirement, Electric Underground Facilities (a * b)	\$1,338,461

Telecommunications Underground Facilities

d	Innerduct Footage	133,936
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Calculation of Levelized Charge

e	Telecommunications Underground Facilities Costs	\$6,094,768
f	Levelized Carrying Charge	19.45%
g	Levelized Charge (e * f)	\$1,185,432

Calculation of 10% Charge on Original Book Cost

h	Original Book Cost	\$13,989,265
i	10% Charge (h * 10%)	1,398,926
j	Revenue Requirement, Telecom Underground Facilities (g + i)	\$2,584,358

Calculation of Rental Rate for Use of Innerduct

k	Total Revenue Requirement (c + j)	\$3,922,819
l	Footage of Innerduct in use or reserved in Electric (b)	687,801
m	Footage of Telecom Underground Facilities (d)	<u>133,936</u>
n	Total Footage (l + m)	821,737
o	Rental Rate for Use of Innerduct (k / n), \$ Per Innerduct Foot Per Year	\$4.7738

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	294
w	Rental Rate, \$ / manhole use / year (u / v)	\$3,115

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 2011	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	
7	m			\$239,496

* 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>

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>

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	\$4,611	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	\$1,427	F = (C/D)*E

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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	\$5,527
Carrying Charge of an Electric Manhole	b	25%
Average Number of POE's in an Electric Manhole	c	16
Rate	(a X b)/c	\$86.3594

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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%
Attachment/Tower	i i = g * h	\$1,038

"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%
Attachment/Tower	i i = g * h	\$524

* 16 Total Potential Attachments

2 pair of 3 phase conductors	<u>6</u>
2 Circuits X 2	<u>12</u>
2 Static lines	<u>2</u>
	<u>14</u>
Potential Telecom Attachments	<u>2</u>
Total Potential Attachments	16

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Rights-of-Way

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

Aerial:	\$0.7412 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	
Underground:	\$1.5126 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	

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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
Total Manhole Costs	\$11,427,415
Number of Telecom Manholes	281
Average Cost Per Telecom Manhole	\$40,667

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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